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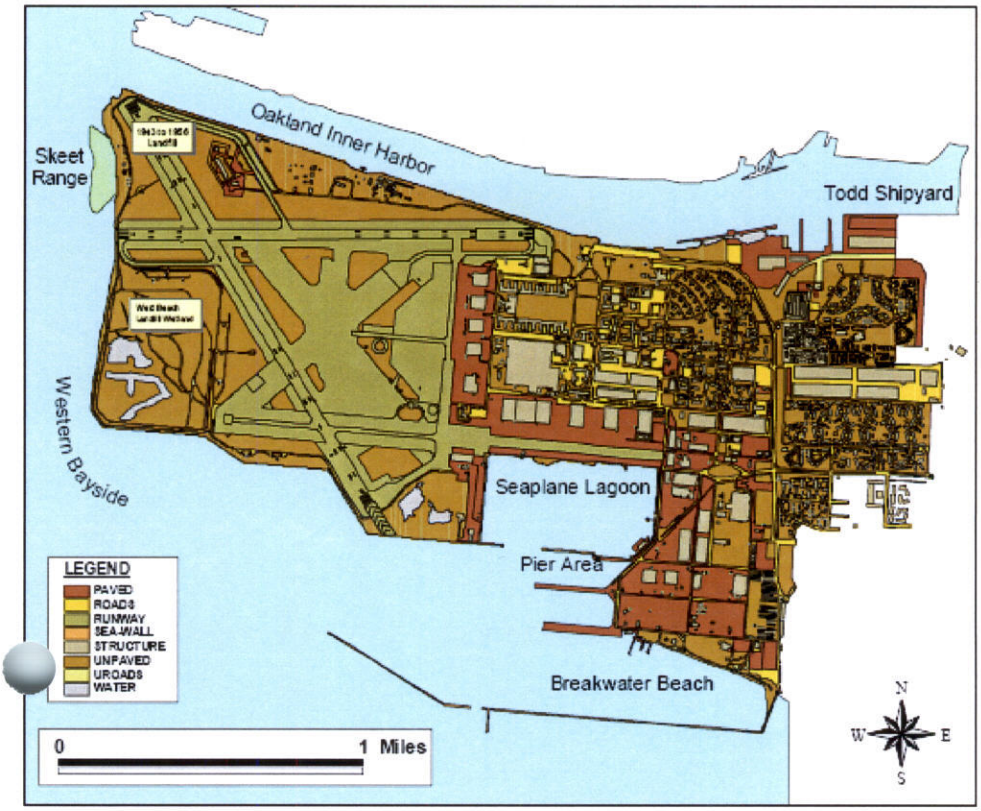
FINAL

Remedial Investigation Report

IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area)

Alameda Point, California



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August 2007

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REMEDIAL INVESTIGATION REPORT
IR SITE 20 (OAKLAND INNER HARBOR)
AND IR SITE 24 (PIER AREA)
ALAMEDA POINT, ALAMEDA, CALIFORNIA

Contract No. N47408-01-D-8207/0085

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APPROVAL PAGE

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Comment No.	Comment	Response
	IR Site 24 surface sediment (e.g. alpha-chlordane), or are confined to very small areas in the immediate vicinity of the outfalls and eastward of the quay wall (e.g. dieldrin and 4,4'-DDx)." This statement implies that pesticide concentrations declined over time, based on elevated pesticide results from a 1996 data set as compared to the 1998 and 2005 data set, when the more recent data sets were not co-located with the 1996 data set. Please revise the text to acknowledge that this apparent decrease over time may be associated with the distance between sampling locations, or remove the statement from the RI Report.	based on the examination of all years of data, which are indeed confined to the area mentioned. The RI report does not state or imply possible reasons for the lack of detections in the recent sampling events. Therefore, no change has been made to the text of the Draft Final RI report.
9	**Response to Specific Comment #33**: The response addresses the comment; however, the Navy states that the expanded text added to the Executive Summary has been added to this section. A review of the RI Report text indicates that some, not all, of this expanded text has been added to Section 4.3.5. Please include the full expanded text in this section.	The full expanded text added to the Executive Summary has been added to Section 4.3.5 of the Draft Final RI report.
10	**Response to Specific Comment 37**: The response addresses the comment. However, this information should be included in the RI Report.	The referenced materials from the RTCs have been incorporated into the Draft Final RI report.
General Comments from DTSC HERD (dated May 2, 2007)		
1	The Ecological Risk Assessment (ERA) of the IR Site 20 and IR Site 24 and the Human Health Risk Assessment (HHRA) evaluation of IR Site 20 exposure, for collection and consumption of shellfish, are concise and well written. HERD has only minor comments on presentation and methodology listed below. Human exposure to sediments (dermal and incidental ingestion) during collection and ingestion fish and shellfish in IR Site 20 appear similar to reference areas. While the ecological hazard for IR Site 20 and IR Site 24 appear to be minimal when averaged over the entire area of each	Comment noted.

Comment No.	Comment	Response
		the 2001 results, as noted on Page 4-7 of the Draft RI report. There is no apparent pattern indicative of a release from an outall, such as an increase in concentrations closer to outfalls, which are located both to the west and east of these samples. Please see Section 3.1, which describes the Conceptual Site Model for IR Site 20, including the potential sources of chemical contamination and transport mechanisms at the site, and to Section 2.0, which indicates that historical Naval operations may have impacted IR Site 20 through a number of routes. Site conceptual model Figures 3-1 and 3-2 in the RI report for IR Sites 20 and 24 include direct surface runoff and stormwater discharged through outfalls as transport mechanisms. The Conceptual Site Model Section 3.1 text regarding potential sources of contamination refers to Section 2 for additional description of the historical activities. The historical activities at IR Sites 20 and 24 specified in Section 2 include activities that may have been potential sources of metals contamination to sediments, such as the sandblasting and metal plating identified in U.S. EPA's comment, but Section 2 activities are more comprehensive.
7	**Response to Specific Comment #26**: The response partially addresses the comment; however, the text was not modified to discuss the potential that the observed contaminant distribution is the result of discharges from the outfalls. The Navy states that use of the term "urban background" is intended to imply that the site has been affected by a wide variety of sources. While this term is intended to encompass outfall discharges, please specifically state that discharges from the outfalls are a potential source of contamination.	The Navy has deleted the sentence referring to a number of sources, including urban background on Page 4-8 of the Draft Final RI. U.S. EPA is referred to the more detailed evaluation of potential sources of chemical contamination in Section 3.1, where the Alameda storm-sewer system is mentioned as the primary transport route for chemicals and surface water runoff to the offshore sites.
8	**Response to Specific Comment #30**: The response partially addresses the comment. The referenced sentence, as currently written, acknowledges that the samples between years are not co-located and concludes that "the elevated pesticide concentrations observed in the surface sediment in 1996 are not currently present in	As specified in this U.S. EPA comment, the RI report states that the referenced samples are not co-located. The two stations where *alpha*-chlordane was previously observed in 1996 were extremely close to locations re-sampled in 2005/2006; therefore, the statement that concentrations previously observed are not currently present, seems appropriate. Statements regarding dieldrin and 4,4'-DDx are

EXECUTIVE SUMMARY

This Remedial Investigation Report was prepared for the Base Realignment and Closure Program Management Office West under Contract No. N47408-01-D-8207 in support of the offshore evaluations at Oakland Inner Harbor (Installation Restoration [IR] Site 20) and Pier Area (IR Site 24) at the former Naval Air Station Alameda, currently called Alameda Point, in Alameda, California. This Remedial Investigation Report was prepared in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidance and takes into account current conditions as well as proposed future uses. This revised Remedial Investigation Report incorporates the nearshore sampling conducted in September 2006 in the northeastern corner of IR Site 24.

The primary objectives of this Remedial Investigation Report are to characterize the quality of sediment at IR Sites 20 and 24, identify any area(s) of unacceptable risk, and delineate the area(s) requiring evaluation in a Feasibility Study of remedial alternatives. Analytical results from both historical and recent sediment samples were evaluated in this Remedial Investigation Report to assess the nature and extent of sediment-associated chemicals that may pose an unacceptable risk to human and ecological receptors.

The Remedial Investigation Report uses all sediment and biological data available for these sites for the purpose of determining the nature and extent of contamination as well as the potential for human and ecological risks. Specific objectives of this Remedial Investigation include the following:

- Describe the physical site conditions and ecological setting;
- Describe the nature and extent of sediment contaminants based on chemical distributions from previous investigations and the remedial investigation;
- Present the methods and results of the ecological risk assessment;
- Present the methods and results of the human health risk assessment; and,
- Determine if there are area(s) that pose unacceptable risks to human health and the environment which require evaluation in a Feasibility Study of remedial alternatives.

Site Characterization and Previous Investigations

Alameda Point is located on the western end of Alameda Island, which lies on the eastern side of San Francisco Bay, adjacent to the City of Oakland. Alameda Point is rectangular, with dimensions of 2 miles long from east to west and 1 mile wide from north to south, and occupies 1,734 acres of land. The southwestern tip of the original Alameda peninsula was used as agricultural land prior to development as an industrial, ferry, and transit center in the late 1800s. From the 1850s, Alameda Point was used for whaling oil operations until 1869 when the Alameda Point Ferry was built. In the northern section of the point, railroad yards and rights-of-way for Southern Pacific, Central Pacific, and small local railways were built over the land and the sloughs.

IR Site 20 (Oakland Inner Harbor)

Oakland Inner Harbor is the 1,207-meter (m) portion of the Oakland Estuary adjacent to the northern boundary of Alameda Point. The Oakland Inner Harbor Channel is a major industrial waterway serving marine terminals and repair facilities in the cities of Oakland and Alameda. IR Site 20 is located on the southern side of the Oakland Inner Harbor Channel, adjacent to the northern shoreline of Alameda Point, and is managed under the Navy's Installation Restoration Program.

The shoreline of the area is almost entirely modified by human activity, and a variety of industries are located along its entire length including port facilities, ship-building and repair facilities, sand and gravel offloading areas, and marinas. In addition, stormwater and industrial wastes were discharged from Alameda Point to Oakland Inner Harbor via a series of drains located along the shore. The eastern portion of IR Site 20 potentially may have been impacted from the Navy's historical operations through wastewater, stormwater, ship wastewater discharge, fuel transfers, and the dissolution/fragmentation of ship bottom paints and creosote pilings.

Environmental data were collected at IR Site 20 in 1993 and 1994 as part of an ecological assessment of Alameda Point. During that investigation, four surface sediment samples were collected near stormwater discharge points in IR Site 20 for chemical and toxicity analyses. In addition, samples were collected to the west of IR Site 20, spanning the entire length of the Oakland Inner Harbor shoreline. The available sediment and tissue chemistry data and bioassay results from the previous ecological assessments were summarized and evaluated in the draft *Data Summary Memorandum for Oakland Inner Harbor Offshore Area.*

The draft *Data Summary Memorandum* recommended that additional data be collected from IR Site 20 because the nature and extent of sediment toxicity was not well defined and the source of the contamination could not be identified. Based on the recommendations of the draft *Data Summary Memorandum*, a sediment screening study was performed in March 2001 at IR Site 20 to characterize the nature and extent of chemicals in the offshore sediment resulting from historical operations. This evaluation employed an initial sediment screening evaluation for the purpose of more fully characterizing the nature and extent of indicator contaminants. In addition, seven of the samples were analyzed for the full suite of potential chemicals of concern following National Oceanic and Atmospheric Administration National Status and Trends methods. Concentrations of most chemicals evaluated were consistent with the San Francisco Bay ambient background levels.

Additional data were collected as part of the remedial investigation in June 2005 to supplement historical data by filling existing data gaps and characterizing the horizontal and vertical extent of contaminants at IR Site 20.

IR Site 24 (Pier Area)

IR Site 24, referred to as the Pier Area, is located along the southern edge of Alameda Point. The site consists of three piers located within the breakwall of Breakwater Beach and is currently being used to dock naval ships including the USS Hornet, which is permanently docked at Pier 3 as a naval museum. The Navy began actively using the piers, which are constructed with concrete pilings/footings and walkways, in 1943. A single layer of treated wood pilings spaced every 1.5 m and extending 0.61 m from the piers runs along the perimeter of the piers and quay walls. Piers 2 and 3 were routinely used to berth nuclear-powered surface ships as well as occasional nuclear-powered submarines. Three storm-sewer outfalls lead into IR Site 24. System lines J and K discharge into the northeastern end of IR Site 24 between Piers 1 and 2, and line L discharges between Piers 2 and 3. Sewer lines leading to outfall K and L were replaced with polyvinyl chloride piping in 1991, and line J was cleaned and inspected in 1991. During a site visit with the regulatory agencies on July 10, 2006, the location of the sediment shelf between Piers 1 and 2 in the northeastern corner of IR Site 24 was examined. In this area, the shelf extends eastward past the quay wall beneath the roadway. Based on this site visit, additional sampling was performed near the shoreline and under the roadway in September 2006.

Nature and Extent of Contamination

Analytical results for sediment samples collected in previous Navy investigations were compiled and loaded into a centralized database prior to data evaluation, along with data collected as part of the June 2005 remedial investigation. During the remedial investigation, samples were collected and analyzed for polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), pesticides, and inorganic constituents (metals). Three separate data sets were evaluated for each site, representing different time periods and exposure scenarios. These data sets were:

1. All Years: This data set encompassed all the historical data collected in the surface sediment (0-5 centimeters) at a particular site.

2. 2005/2006 Surface: This data set includes all the surface data (0-5 centimeters) collected in 2005 at IR Site 20 and in 2005 and 2006 at IR Site 24.

3. 2005/2006 Subsurface: This data set includes the deeper sediment (5-25 centimeters) collected in 2005 at IR Site 20 and in 2005 and 2006 at IR Site 24 that was requested by the regulatory agencies to be evaluated in the ecological risk assessment. It also includes deeper core intervals (25-50 cm) collected to help bound the extent of any observed chemicals.

IR Site 20 (Oakland Inner Harbor)

Concentrations of most inorganic constituents (metals) and organic chemicals in sediment are relatively uniform across the site, both horizontally and vertically, and typically do not exceed ecological screening benchmark values such as the effects range-median (ER-Ms). Additional information on the concentrations and distribution of metals and organic chemicals follows.

At IR Site 20, all metals analytical results were below the ER-M and/or ambient values in all surface sediment samples collected during the 2005 remedial investigation, with the exception of mercury at one location. Chromium, lead, nickel, and mercury were the only metals with historical concentrations exceeding their respective ER-Ms in surface sediment. Only nickel showed an ER-M exceedance in the 1993/1994 samples, which were collected near storm water discharge points. The historical surface sediment data with concentrations exceeding the ER-M for the other metals were from the 2001 sampling event. Concentrations of these metals exceeded the ER-M in 2001 surface sediment samples at only a few locations.

In the subsurface samples collected at IR Site 20, metals are generally uniform with depth and all metals are consistent with background reference concentrations except at one location, where copper, lead, mercury, and zinc exceeded the ER-M. However, copper, lead, and zinc did not exceed the ER-M in the surface sample collected at this location in 2005. In 2001, a surface sediment sample was collected at this location, and background and ER-M values were not exceeded for any metals.

At IR Site 20, Total PAHs, pesticides, and Total PCBs were not detected at concentrations exceeding the screening benchmark ER-M values in any of the samples collected during the 2005 remedial investigation. Two PAHs, pyrene and phenanthrene, exceeded their ER-Ms at one location. In the historical surface sediment data set, no PAHs exceeded the ER-M values, and most pesticides were either not detected or below the ER-M. In the 1993/1994 data set, only 4,4'-DDD was detected in each sample collected from the outfall areas, with a maximum concentration near the ER-M (detected maximum of 22.37 parts per billion (ppb) and ER-M of 20 ppb). In 1993/1994, most other pesticides were not detected, and no other pesticides exceeded the ER-M. Concentrations of Total PCBs in the historical data

exceeded the ER-M at a few stations, but the ER-M for PCBs was not exceeded in the 2005 sampling event. The detection limits for the PCBs in the historical data were high, so use of one half the reported detection limit for the non-detects resulted in anomalously high PCB concentrations in the historical data.

In the subsurface samples collected at IR Site 20, organic chemicals are generally uniform with depth, except at a few locations, where concentrations are higher. For Total PAHs, pesticides, and Total PCBs, between 1 and 3 of the 27 subsurface samples exceeded the ER-M.

IR Site 24 (Pier Area)

Concentrations of most inorganic constituents (metals) and organic chemicals in sediment in the open water portions of the Pier Area are low and typically do not exceed ecological screening benchmark values such as the ER-M. Concentrations of inorganics and some organic constituents were higher in the area under the roadway between Piers 1 and 2 than in the open water areas. Additional information on the concentrations and distribution of metals and organic chemicals follows.

The 2006 sampling, which was conducted near the shoreline and under the roadway in an area not previously sampled, showed that concentrations of cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc each exceeded their respective ER-Ms in at least one sample from underneath the roadway. In the open water portions of IR Site 24, all analytical results for metals were below the ER-M values in all surface sediment samples collected during the 2005 remedial investigation, with the exception of nickel and silver. For silver, one sample in each of three open water studies (1996, 1998, and 2005) showed an elevated concentration in the northeast corner adjacent to outfall J, indicating that Navy industrial activities were the likely source. However, silver concentrations drop down to levels indistinguishable from background concentrations throughout the rest of the open water area. Nickel concentrations throughout the open water area were not statistically different from background; however given the highest concentration was found under the roadway at station PA C-24, Navy operations may have released a small amount of nickel. Historical data included sediment samples collected in 1996 from each of the storm-sewer outfalls, 1997 surface sediment data collected from a wider area, and 1998 surface sediment data collected in non-dredged areas near the seawall and piers. Therefore, the 1996 and 1998 data represent conditions where contamination would be most likely to be found. In the three historical sampling events, nickel was the only metal detected in all three sampling events above the ER-M. Cadmium, chromium, copper, mercury, nickel, and silver were detected at least once in the historical data above their ER-Ms. Mercury was detected once in 1996 at a concentration of 0.76 ppb, which is slightly above the ER-M of 0.71 ppb. In the 2005 subsurface samples collected in open water areas at IR Site 24, metals were generally uniform with depth, and all metals were below the ER-M except for nickel and silver. In the 2006 subsurface samples collected underneath the roadway, concentrations of most metals were highest in the 5-25 cm depth interval, primarily in samples located adjacent to outfalls J and K.

At IR Site 24, PAH concentrations were higher in samples collected in 2006 beneath the roadway than in the 2005 samples collected from the open water portions of IR Site 24. High molecular weight PAH and low molecular weight PAH concentrations in the 2006 surface sediment samples collected underneath the road exceeded ER-Ms at six locations. Total PAHs were not detected at concentrations exceeding the screening benchmark ER-M values in any of the surface sediment samples collected in the open water areas during the 2005 remedial investigation sampling, but PAHs exceeded their ER-Ms in all historical sampling events. During the 1996 sampling event, the majority of the PAHs exceeded their ER-Ms at the two southern outfall locations. PAHs in the 1997 samples collected in offshore areas generally had similar concentrations to the 1996 outfall samples (sometimes higher and sometimes lower for individual PAHs). Concentrations of PAHs in the 1998 samples collected from the undredged areas near the seawall

and piers were much lower than the PAH concentrations in the 1996 outfall and 1997 offshore samples, but several PAH ER-Ms were exceeded in these samples.

Dieldrin, *gamma*-chlordane, 4,4'-DDD, and 4,4'-DDT exceeded their respective ER-M values in at least one surface sediment sample beneath the roadway in 2006, but pesticides were not detected at concentrations exceeding the screening benchmark ER-M values in any of the surface sediment samples collected in the open water areas during the 2005 remedial investigation sampling. For the historical data, pesticides were sampled in 1996 and 1998, and were seldom detected. In 1996, 4,4'-DDT was detected in one outfall sample at a concentration over the ER-M (10 ppb with ER-M of 7 ppb). In 1998, no pesticides were detected in the samples collected from the undredged areas near the seawall and piers at concentrations exceeding the ER-Ms.

In samples collected eastward of the quay wall in 2006, Total PCB concentrations in surface sediment exceeded the ER-M at ten of twelve sampling locations. Total PCBs at one open water location at IR Site 24 were detected at concentrations exceeding the screening benchmark ER-M during the 2005 remedial investigation sampling. In addition, two 1996 samples from the two northern outfalls and two 1998 surface sediment samples had Total PCB concentrations exceeding the ER-M.

As evidenced by the 2005 samples at IR Site 24, organic chemicals are generally uniform with depth in the open water areas, and Total PCBs, Total PAHs, and pesticides were not detected at concentrations exceeding the screening benchmark ER-M values in any of the subsurface sediment samples, except for Total PCBs at one location. PAH concentrations in subsurface sediment under the roadway increased with depth at five of the twelve 2006 sampling locations, and exceeded ER-Ms at six locations. *Alpha*-chlordane, *gamma*-chlordane, dieldrin, and the DDx compounds were the only pesticides detected in subsurface sediment samples. Maximum concentrations of 4,4,'-DDx occurred in the 5-25 cm subsurface interval at 2006 sampling locations C-21 and C-24, but were uniform or decreased at depth across the remaining 2005 and 2006 samples. With the exception of dieldrin at one location, the remaining pesticides were uniform or decreased with depth in sediments under the road. Eight 2006 subsurface locations had Total PCB concentrations exceeding ER-M values.

Ecological Risk Assessment

To evaluate potential risks to ecological receptors, a tiered process was used that encompasses the eight steps consistent with the United State Environmental Protection Agency (U.S. EPA) and Navy guidelines. In the first tier, the problem formulation was developed, including a conceptual site model, identification of chemicals of concern, and a conservative screening. Based on the results of this conservative screening, the exposure assumptions and chemicals of concern selection were refined further in a baseline ecological risk assessment. Risks then were characterized for each of the endpoints. Three assessment endpoints were evaluated in this assessment including: (1) risks to benthic invertebrates; (2) risks to fish; (3) and risks to fish-eating (e.g., cormorant) and benthic-feeding (e.g., surf scoter) birds, including potential special status species.

As part of the first tier, sediment concentrations were compared to conservative, direct contact toxicity screening benchmarks. A majority of the compounds for all three data sets (All Years, 2005/2006 Surface, and 2005/2006 Subsurface) were carried on to the site-specific baseline risk assessment at both sites. Additionally, there were numerous analytes that were detected in sediment but had no benchmarks for comparison. Therefore, benthic invertebrate and fish were recommended for further evaluation in the site-specific baseline risk assessment. Similarly, the food-chain screening-level risk estimate for birds also indicated that a number of chemicals at both IR Sites 20 and 24 should be evaluated further in the baseline risk assessment.

In the baseline risk assessment, the preliminary problem formulation was refined and then measurements of exposure and effects were refined and integrated into a characterization of risk that included a comprehensive discussion of the potential uncertainties associated with the assessment. Based on this refined evaluation, no unacceptable risk was identified at IR Site 20.

For all of the assessment endpoints evaluated at IR Site 24, the majority of the area in the site poses acceptable ecological risks. There was an indication of the potential for adverse effects to the ecological receptors assessed in a small area in the northeastern corner of IR Site 24, specifically the sediment shelf eastward of the quay wall and beneath the roadway between outfalls J and K, which are located between Piers 1 and 2. Due to uncertainties inherent in the risk assessment, it is not possible to conclude definitively whether this small sediment shelf area presents an unacceptable risk to the three assessment endpoints evaluated.

Human Health Risk Assessment

The human health risk assessment was conducted following methodology recommended by U.S. EPA and Department of Toxic Substances Control guidance documents as outlined in the *Offshore Sediment Study Work Plan*. Standard regulatory dose relationships were incorporated and cumulative risks as well as comparisons to reference conditions were evaluated. Risks associated with reference were based on data collected from 10 locations within the San Francisco Bay that are believed to represent ambient or background conditions.

IR Site 20 is a waterway in a highly industrialized area, serving as a major transit route for ships moving in and out of docks and repair facilities. The majority of the waterway is lined with riprap and a seawall, is continuously submerged to a depth of up to 12.8 m, and is subjected to significant tidal currents. Shellfish have been observed along the shoreline areas and could be accessible to individuals wishing to harvest them. Currently, no actual or anecdotal evidence indicates that individuals are actually harvesting and consuming shellfish from this area; however, due to the accessibility of shellfish, indirect exposures to chemicals associated with the consumption of shellfish located along the riprap and seawall were conservatively considered in this evaluation. In addition, it was assumed that individuals harvesting shellfish would also be exposed to chemicals through dermal contact and incidental ingestion of sediment. Direct contact with surface water was identified as a complete pathway but, as discussed in Section 3.0, water is not considered a primary exposure medium due to the rapid dilution resulting from tidal action and San Francisco Bay currents. In addition, activities associated with shellfish collection would occur at low tide, further limiting contact with surface water. Consequently, exposures to chemicals via surface water were not proposed for quantitative evaluation.

Similar to IR Site 20, sediments are the primary exposure medium at IR Site 24. However, the current and potential future land uses are very different. Whereas the physical setting at IR Site 20 makes it possible for individuals to access the shoreline areas to harvest shellfish, similar activities at IR Site 24 are unlikely. As described above, the area is dominated by three piers consisting of concrete platforms supported by concrete columns, with water depths of up to 12 m. As a result, the habitat required to support clam beds (i.e., intertidal mudflats) is not present and, therefore, a resident shellfish population is not likely. A small population of mussels has been noted on the pier structures; however, the limited and difficult access to water and the shoreline reduces the likelihood that humans could harvest sufficient numbers of these mussels to make shellfish consumption a significant exposure pathway. In addition, IR Site 24 is fully operational under its proposed reuse to berth cruise ships and historical landmark vessels. Both of these activities further limit the ability of individuals to access the area for recreational purposes. Based on this information, no complete human health exposure pathways were identified for IR Site 24, and this area was not evaluated further.

Based on the results of the human health evaluation, risks to humans from chemicals in IR Site 20 sediments appear to be similar to risks from ambient conditions for both the All Years and 2005 surface data sets. Total cumulative risks for all exposure scenarios were comparable to or even less than those estimated for reference conditions. Four PAHs were identified for which the individual risk estimates exceeded risk estimates associated with reference conditions; however, the distribution of these compounds throughout IR Site 20 is consistent with that of a typical urban background, therefore, these chemicals are not considered site-related. The chemicals contributing most to risk (e.g., arsenic, chromium) are all present at concentrations below reference values.

Conclusions and Recommendations

Overall, concentrations of chemicals in sediments at IR Site 20 are relatively uniform, both in the surface and at depth. No unacceptable risks were identified for any of the ecological receptors at IR Sites 20 and human health risks were determined to be consistent with ambient conditions. Based on this information, no further action is recommended for IR Site 20.

For IR Site 24, Total PAH, pesticide, Total PCB, and several metal concentrations exceeded ER-Ms in 2006 sediment samples collected in the sediment shelf located nearshore and under the roadway in the northeastern corner of the site. While sediments from samples collected from the sediment shelf in 2006 between outfall locations J and K have the highest concentrations of chemicals, there is no evidence that these sediments are acting as a secondary source to sediment in the open water portion of IR Site 24. Because of the limited habitat for shellfish at the site, as well as the limited and difficult access to the water and shoreline, no complete exposure pathways for human receptors were identified at IR Site 24. The ecological risk assessment concluded that risks are acceptable over the majority of IR Site 24 and that the only area where there was an indication of the potential for adverse impacts was associated with the sediment shelf in the northeast corner that extends eastward past the quay wall between outfalls J and K. The potential for risk in this area is expected to be limited due to the small size of the area and the location of the sediment shelf, where exposure to receptors is likely to be minimal. Due to the uncertainties inherent in the risk assessment, it is not possible to conclude definitively whether this area presents an unacceptable risk to the three assessment endpoints evaluated. If this part of the site is examined separately, using conservative assumptions about the area over which an organism would be exposed, then concentrations in this small area may be of concern. Therefore, based on the ecological risk assessment conclusions, a Feasibility Study is recommended for a small area of elevated sediment concentrations. This area is located in the sediment shelf east of the quay wall and beneath the roadway between outfalls J and K, as represented by samples C-21, C-23, C-24, C-26, and C-27.

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TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS XXI

1.0 INTRODUCTION 1-1
1.1 Objectives 1-1
1.2 Report Organization 1-1

2.0 SITE CHARACTERIZATION 2-1
2.1 Site History and Description 2-1
2.1.1 IR Site 20 2-1
2.1.2 IR Site 24 2-2
2.2 Physical Setting 2-3
2.2.1 IR Site 20 2-3
2.2.2 IR Site 24 2-3
2.3 Ecological Setting 2-4
2.4 Previous Investigations 2-4
2.4.1 IR Site 20 2-4
2.4.2 IR Site 24 2-6

3.0 CONCEPTUAL SITE MODEL 3-1
3.1 IR Site 20 3-1
3.1.1 Sources of Chemical Contamination 3-1
3.1.2 Transport Mechanisms 3-1
3.1.3 Exposure Media 3-2
3.2 IR Site 24 3-3
3.2.1 Sources of Chemical Contamination 3-3
3.2.2 Transport Mechanisms 3-3
3.2.3 Exposure Media 3-3

4.0 NATURE AND EXTENT OF SEDIMENT CONTAMINATION 4-1
4.1 Methods 4-1
4.1.1 Data Preparation 4-1
4.1.2 Ambient Sediment Data 4-3
4.1.3 Sediment Chemistry Box Plots 4-4
4.1.4 Sediment Chemistry Bubble Plots 4-5
4.2 Distribution of Chemicals at IR Site 20 4-6
4.2.1 Distribution of Inorganic Constituents at IR Site 20 4-6
4.2.1.1 Surface Sediment Spatial Distribution 4-6
4.2.1.2 Surface Sediment Temporal Distribution 4-7
4.2.1.3 Subsurface Sediment Spatial Distribution 4-7
4.2.2 Distribution of Organic Chemicals at IR Site 20 4-8
4.2.2.1 Surface Sediment Spatial Distribution 4-8
4.2.2.2 Surface Sediment Temporal Distribution 4-9
4.2.2.3 Subsurface Sediment Spatial Distribution 4-9
4.2.3 IR Site 20 Background Comparisons 4-10
4.2.4 Summary of IR Site 20 Sediment Data 4-11
4.3 Distribution of Chemicals at IR Site 24 4-11
4.3.1 Distribution of Inorganic Constituents at IR Site 24 4-11
4.3.1.1 Surface Sediment Spatial Distribution 4-11
4.3.1.2 Surface Sediment Temporal Distribution 4-12
4.3.1.3 Subsurface Sediment Spatial Distribution 4-12

4.3.2 Distribution of Organic Chemicals at IR Site 24 4-13
4.3.2.1 Surface Sediment Spatial Distribution 4-13
4.3.2.2 Surface Sediment Temporal Distribution 4-14
4.3.2.3 Subsurface Sediment Spatial Distribution 4-15
4.3.3 Distribution of Radionuclides at IR Site 24 4-16
4.3.4 IR Site 24 Background Comparisons 4-16
4.3.5 Summary of IR Site 24 Sediment Data 4-16

5.0 DATA EVALUATION TO SUPPORT RISK ASSESSMENTS 5-1
5.1 Summary of Tissue Data 5-1
5.1.1 IR Site 20 Tissue Data 5-2
5.1.2 Summary of IR Site 24 Tissue Data 5-2
5.2 Statistical Approach for EPC Calculations 5-3
5.3 Statistical Approach for Calculation of Bioaccumulation Factors 5-4
5.4 Sediment Exposure Point Concentrations 5-4
5.5 *M. nasuta* Tissue Exposure Point Concentrations 5-5
5.5.1 Measured *M. nasuta* Tissue Concentrations 5-5
5.5.2 Modeled *M. nasuta* Tissue Concentrations 5-6
5.5.3 *M. nasuta* Bioaccumulation Factors 5-6
5.6 Development of Fish Tissue EPCs 5-6
5.6.1 Modeled Forage Fish Tissue Concentrations 5-7
5.6.2 Forage Fish Bioaccumulation Factors 5-7
5.7 Summary of EPC Calculations 5-8

6.0 ECOLOGICAL RISK ASSESSMENT 6-1
6.1 Ecological Risk Assessment Objectives and Approach 6-1
6.2 Preliminary Problem Formulation 6-2
6.2.1 Ecological Setting 6-3
6.2.1.1 Invertebrates 6-3
6.2.1.2 Fish 6-3
6.2.1.3 Birds 6-4
6.2.1.4 Mammals 6-4
6.2.1.5 Special-Status Species 6-4
6.2.2 Development of Conceptual Site Model 6-4
6.2.3 Selection of Assessment Endpoints 6-5
6.2.4 Selection of Receptors of Concern 6-6
6.2.4.1 Selection of the Benthic Invertebrate-Eating ROC 6-7
6.2.4.2 Selection of the Piscivorous Avian ROC 6-8
6.2.5 Selection of SLERA Measurement Endpoints 6-10
6.2.6 Data To Be Considered 6-10
6.2.7 Selection of Preliminary COPECs 6-11
6.3 Tier 1 Screening-Level Risk Estimate 6-11
6.3.1 Screening-Level Exposure Assessment 6-11
6.3.1.1 Calculation of EPCs for Screening-Level Direct Contact Evaluation .. 6-12
6.3.1.2 Calculation of EPCs for Screening-Level Dose Assessment 6-12
6.3.1.3 Exposure Parameters for the Surf Scoter 6-13
6.3.1.4 Exposure Parameters for the Least Tern 6-15
6.3.1.5 Exposure Parameters for the Double-Crested Cormorant 6-16
6.3.2 Screening-Level Effects Assessment 6-17
6.3.2.1 Benthic Invertebrate Direct Contact Benchmarks 6-17
6.3.2.2 Food Web Toxicity Reference Values 6-18
6.3.3 Screening-Level Risk Estimate 6-20

6.3.3.1 Direct Contact Screening-Level Risk Estimate 6-20
6.3.3.2 Food Chain Screening-Level Risk Estimate 6-21
6.3.3.3 Summary of Screening-Level Risk Estimate 6-22
6.4 Baseline Ecological Risk Assessment 6-22
6.4.1 Refined Problem Formulation 6-22
6.4.1.1 Selection of BERA Measurement Endpoints 6-22
6.4.1.2 Tier 2 COPEC Selection 6-23
6.4.2 Assessment of AE(1): Benthic Invertebrate Community 6-24
6.4.2.1 IR Site 20 6-24
6.4.2.2 IR Site 24 6-26
6.4.3 Assessment of AE(2): Fish Community 6-29
6.4.3.1 IR Site 20 6-29
6.4.3.2 IR Site 24 6-30
6.4.4 Assessment of AE(3): Avian Community 6-31
6.4.4.1 IR Site 20 6-31
6.4.4.2 IR Site 24 6-34
6.5 Summary 6-36
6.6 Conclusion 6-44

7.0 HUMAN HEALTH RISK ASSESSMENT 7-1
7.1 Data Evaluation and Identification of Chemicals of Concern 7-1
7.2 Exposure Assessment 7-2
7.2.1 Exposure Pathways and Receptors 7-2
7.2.1.1 IR Site 20 7-2
7.2.1.2 IR Site 24 7-3
7.2.2 Exposure Point Concentrations 7-4
7.2.3 Exposure Parameters 7-5
7.2.4 Exposure to Lead 7-6
7.2.5 Dose Estimates 7-7
7.3 Toxicity Assessment 7-8
7.4 Risk Characterization 7-10
7.4.1 Estimating Cancer Risks 7-11
7.4.2 Estimating Noncarcinogenic Hazard Quotients 7-11
7.4.3 Risk Characterization Results 7-12
7.5 Summary of Human Health Evaluation 7-13

8.0 UNCERTAINTY ANALYSIS 8-1
8.1 Uncertainty Associated with Sediment and Tissue Chemistry Results 8-1
8.2 Uncertainty Associated with the Ecological Risk Assessment 8-2
8.2.1 Uncertainty Associated with the Problem Formulation 8-3
8.2.1.1 Development of Conceptual Site Model 8-3
8.2.1.2 Use of 95% UCLs to Develop Exposure Estimates 8-3
8.2.1.3 Estimation of Prey Concentrations 8-3
8.2.1.4 Selection of Assessment and Measurement Endpoints 8-4
8.2.1.5 Comparison of Site Sediment Concentrations to Ambient Concentrations 8-4
8.2.2 Uncertainty Associated with the Exposure Assessment 8-5
8.2.2.1 Treatment of Non-Detected Individual Constituents for Summed Parameters 8-5
8.2.2.2 Species-Specific Exposure Parameters 8-5
8.2.3 Uncertainty Associated with the Effects Assessment 8-6
8.2.3.1 Invertebrate Bioassays 8-6

8.2.3.2 Fish Ecotoxicity Reference Values 8-7
8.2.3.3 Avian Toxicity Reference Values 8-8
8.2.4 Uncertainty Associated with the Risk Characterization 8-10
8.3 Uncertainty Associated with the Human Health Risk Assessment 8-10
8.3.1 Data Evaluation 8-10
8.3.2 Exposure Assessment 8-11
8.3.3 Toxicity Assessment 8-12
8.3.4 Risk Characterization 8-13

9.0 CONCLUSIONS AND RECOMMENDATIONS 9-1
9.1 IR Site 20 9-1
9.1.1 Nature and Extent of Sediment Contamination 9-1
9.1.2 Ecological Risk Assessment 9-2
9.1.3 Human Health Risk Assessment 9-2
9.2 IR Site 24 9-3
9.2.1 Nature and Extent of Sediment Contamination 9-3
9.2.2 Ecological Risk Assessment 9-5
9.2.3 Human Health Risk Assessment 9-6
9.3 Recommendations 9-6

10.0 REFERENCES 10-1

APPENDICES

Appendix A. Summary of Analytical Data
Appendix B. PAH Forensics Analysis for IR Site 24
Appendix C. Background Comparison Test
Appendix D. Development of Bioaccumulation Factors (BAFs)
Appendix E. Ecological Risk Assessment
Appendix F. Human Health Risk Assessment
Appendix G. Response to Agency Comments

FIGURES

Figure 2-1. Alameda Point Site Location Map F-1
Figure 2-2. Alameda Point F-2
Figure 2-3. Storm-Sewer Lines and Outfalls at Alameda Point F-3
Figure 2-4. 1993/1994 Historical Sampling Locations along IR Site 20 ..... F-4
Figure 2-5. Sediment Screening Samples from IR Site 20 ..... F-5
Figure 2-6. Sampling Stations in IR Site 20 ..... F-6
Figure 2-7. IR Site 24 Sampling Stations F-7
Figure 2-8. IR Site 24 Supplemental Sampling Stations, September 2006 ..... F-8
Figure 3-1. Conceptual Site Model for Offshore Sites at IR Site 20 ..... F-9
Figure 3-2. Conceptual Site Model for Offshore Sites at IR Site 24 ..... F-10
Figure 4-1. 1998 Reference Sampling Locations F-11
Figure 4-2. 2001 Reference Site Sampling Locations F-12
Figure 4-3. Box Plot of Antimony Showing Elevated 1993 Concentrations at IR Site 20 ..... F-13
Figure 4-3A. Antimony Concentrations by Year at Alameda Point F-14
Figure 4-4. Bubble Plot of Chromium Concentrations in IR Site 20 ..... F-15
Figure 4-5. Bubble Plot of Lead Concentrations in IR Site 20 ..... F-16

Figure 4-6. Bubble Plot of Nickel Concentrations in IR Site 20 ..... F-17
Figure 4-7. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment F-18
Figure 4-8. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment F-19
Figure 4-9. Box Plots of Total HPAH and LPAH Concentrations in IR Site 20 Surface Sediment F-20
Figure 4-10. Histograms Showing the PAH Distributions and Concentrations for Three Urban Sediments Impacted by Urban Runoff and for IR Site 20 ..... F-21
Figure 4-11. Bubble Plot of Total DDx Concentrations in Surface Sediment in IR Site 20 ..... F-22
Figure 4-12. Box Plot of Total PCB Concentrations in IR Site 20 Surface Sediment with Non-Detects = 0 (Top) and Non-Detects = One-Half Detection Limit (Bottom) F-23
Figure 4-13. Bubble Plot of Total PCB Concentrations in Surface Sediment in IR Site 20 (Non-Detects = One-Half Detection Limit) F-24
Figure 4-14. Box Plot of HPAH and LPAH Concentrations in Subsurface Sediment at IR Site 20 ..... F-25
Figure 4-15. Box Plot of Total 4,4′-DDx Concentrations in Subsurface Sediment at IR Site 20 ..... F-26
Figure 4-16. Box Plot of Total PCB Concentrations in Subsurface Sediment at IR Site 20 ..... F-26
Figure 4-17. Spatial Distribution of Cadmium Concentrations in Surface Sediment at IR Site 24 ..... F-27
Figure 4-18. Spatial Distribution of Lead Concentrations in Surface Sediment at IR Site 24 ..... F-28
Figure 4-19. Spatial Distribution of Arsenic Concentrations in Surface Sediment at IR Site 24 ..... F-29
Figure 4-20. Spatial Distribution of Zinc Concentrations in Surface Sediment at IR Site 24 ..... F-30
Figure 4-21. Box Plots of Nickel and Chromium Concentrations Showing Elevated 1997 Concentrations Due to Different Sample Extraction Methodologies F-31
Figure 4-22. Bubble Plots of Lead Concentrations in the 5-25 cm Depth Interval at IR Site 24 ..... F-32
Figure 4-23. Bubble Plots of Lead Concentrations in the 25-40 cm Depth Interval at IR Site 24 ..... F-33
Figure 4-24. Box Plots of Total LPAH and HPAH Concentrations in IR Site 24 Surface Sediment (Non-Detects = One-Half Detection Limit) F-34
Figure 4-25. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment by Year F-35
Figure 4-26. Bubble Plot of Total HPAH (6) Concentrations in the IR Site 24 Surface Sediment by Year F-36
Figure 4-27. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 24 Surface Sediment by Year F-37
Figure 4-28. Bubble Plot of 4,4′-DDT Concentrations in IR Site 24 Surface Sediment by Year F-38
Figure 4-29. Box Plot of Total PCB Concentrations in IR Site 24 Surface Sediment by Year F-39
Figure 4-30. Bubble Plot Total PCB Concentrations in IR Site 24 Surface Sediment by Year F-40
Figure 4-31. Box Plots of Total LPAH and Total HPAH Concentrations in IR Site 24 Sediment by Depth F-41
Figure 4-32. Box Plot of *alpha*-Chlordane and 4,4′-DDT Concentrations in IR Site 24 Sediment by Depth F-42
Figure 4-33. Box Plot of Total PCB Concentrations in IR Site 24 Sediment by Depth F-43
Figure 4-34. Box Plots of Radium-226 and Radium-228 Concentrations in Surface and Subsurface Sediment at IR Site 24 ..... F-44
Figure 5-1. Bivariate Plots of Chromium and Benzo(a)pyrene Concentrations from Sediment and Shellfish Tissue Exposures at Alameda Point Stations. The slope of the line is the BAF ratio. F-45
Figure 5-2. Trawl Polygons Defining Forage Fish Collection Areas within Seaplane Lagoon. Polygons in blue collectively define collection area distant from outfalls. Sediment stations used to characterize a trawl polygon are labeled in the same color as the trawl line. F-45
Figure 5-3. Bivariate Plot of Sediment versus Tissue Concentrations of Total PCBs. The BAF ratio is presented as the slope of the diagonal black line. F-46
Figure 6-1. Overview of Ecological Risk Assessment Process (from CNO, 1999) F-47
Figure 6-2. Conceptual Food Web for the Offshore Areas of Alameda Point. F-48
Figure 6-3. General Ecological Conceptual Site Model for Offshore Sites at IR Site 20 ..... F-49
Figure 6-4. General Ecological Conceptual Site Model for Offshore Sites at IR Site 24 ..... F-50

Figure 6-5. Least Tern Study Areas Around Alameda Point (Adapted from: Collins and Feeney, 1995) F-51
Figure 7-1. Human Health Conceptual Site Model F-52

TABLES

Table 2-1. Historical Summary of the Offshore Areas at Alameda Point, Including Potential Sources and Releases T-1
Table 2-2. Summary of Available Data from IR Site 20 Sampling Locations T-2
Table 2-3. Summary of Available Data from IR Site 24 Sampling Locations T-3
Table 4-1. Summary of Inorganic Constituent Results for Surface Sediment at IR Site 20 ..... T-6
Table 4-2. Summary of Inorganic Constituent Results for Subsurface Sediment at IR Site 20 ..... T-7
Table 4-3. Summary of Organic Chemical Results for Surface Sediment at IR Site 20 ..... T-8
Table 4-4. Summary of Organic Chemical Results for Subsurface Sediment at IR Site 20 ..... T-10
Table 4-5. Summary of Background Comparison Test Results for Inorganic Constituents at IR Site 20 ..... T-12
Table 4-6. Summary of Background Comparison Test Results for Organic Chemicals at IR Site 20 ..... T-13
Table 4-7. Summary of Inorganic Constituent Results for Surface Sediment at IR Site 24 ..... T-14
Table 4-8. Summary of Inorganic Constituent Results for Subsurface Sediment at IR Site 24 ..... T-15
Table 4-9. Summary of Organic Chemical Results for Surface Sediment at IR Site 24 ..... T-16
Table 4-10. Summary of Organic Chemical Results for Subsurface Sediment at IR Site 24 ..... T-19
Table 4-11. Summary of Background Comparison Test Results for Inorganic Constituents at IR Site 24 ..... T-21
Table 4-12. Summary of Background Comparison Test Results for Organic Chemicals at IR Site 24 ..... T-22
Table 5-1. Summary of *M. nasuta* Tissue Concentrations for IR Site 20 ..... T-23
Table 5-2. Summary of *M. nasuta* Tissue Concentrations for IR Site 24 ..... T-24
Table 5-3. EPCs for Sediment at IR Site 20 ..... T-26
Table 5-4. EPCs for Sediment at IR Site 24 ..... T-28
Table 5-5. Statistical Summary of *M. nasuta* Data at IR Site 20 ..... T-30
Table 5-6. Statistical Summary of *M. nasuta* Data at IR Site 24 ..... T-31
Table 5-7. Modeled Dry Weight *M. nasuta* Tissue Concentrations for IR Site 20 ..... T-33
Table 5-8. Modeled Dry Weight *M. nasuta* Tissue Concentrations for IR Site 24 ..... T-34
Table 5-9. Modeled Wet Weight *M. nasuta* Tissue Concentrations for IR Site 20 ..... T-35
Table 5-10. Modeled Dry Weight Forage Fish Tissue Concentrations for IR Site 20 ..... T-36
Table 5-11. Modeled Dry Weight Forage Fish Tissue Concentrations for IR Site 24 ..... T-37
Table 5-12. Modeled Wet Weight Forage Fish Tissue Concentrations for IR Site 20 ..... T-38
Table 5-13. Comparison of Measured and Modeled *M. nasuta* Tissue Concentrations for IR Site 24 ..... T-39
Table 5-14. Summary of EPCs for IR Site 20 Dry Weight Tissues T-40
Table 5-15. Summary of EPCs for IR Site 24 Dry Weight Tissues T-41
Table 5-16. Summary of EPCs for IR Site 20 Wet Weight Tissues T-42
Table 6-1. Dose Assessment Exposure Parameters for Receptors of Concern at Offshore Sediment Sites T-43
Table 6-2. Least Tern Foraging Distribution Patterns around Alameda Point T-43
Table 6-3. Direct Contact Toxicity Benchmarks T-44
Table 6-4. Toxicity Reference Values T-45
Table 6-5. Screening-Level Direct Contact Toxicity Evaluation for IR Site 20 ..... T-46
Table 6-6. Screening-Level Direct Contact Toxicity Evaluation for IR Site 24 ..... T-47
Table 6-7. Summary of Screening-Level Hazard Quotients for IR Site 20 ..... T-48

Table 6-8. Summary of Screening-Level Hazard Quotients for IR Site 24 ..... T-49
Table 6-9. Evaluation Criteria for Toxicity Tests T-50
Table 6-10. Bulk Porewater Salinity and Sediment Grain Size at IR Site 20 ..... T-50
Table 6-11. Survival of *E. estuarius* in IR Site 20 and Native Control Sediment T-50
Table 6-12. Survival Data for *N. arenaceodentata* Test in IR Site 20 and Native Control Sediment ... T-50
Table 6-13. Growth Data for *N. arenaceodentata* Test in IR Site 20 and Native Control Sediment T-51
Table 6-14. Survival and Normal Development of Mussel Larvae Exposed to Sediment from IR Site 20 ..... T-51
Table 6-15. Summary of Biological Effects in Toxicity Tests at IR Site 20 ..... T-51
Table 6-16. Bulk Porewater Quality Values of Bioassay Samples at Time of Setup at IR Site 24 ..... T-52
Table 6-17. Survival and Reburial of Amphipods after Exposure to IR Site 24, Control, and Reference Stations T-52
Table 6-18. Survival and Growth of Polychaetes after Exposure to Sediment from IR Site 24, Native Control, and Reference Areas T-53
Table 6-19. Percentage of Surviving Larvae that Developed Normally after Exposure to SWI at IR Site 24 ..... T-53
Table 6-20. Summary of Biological Test Results for IR Site 24 ..... T-54
Table 6-21. Fish Ecotoxicity Reference Values T-55
Table 6-22. Summary of Forage Fish HQs for IR Site 20 ..... T-56
Table 6-23. Summary of Forage Fish HQs for IR Site 24 ..... T-57
Table 6-24. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 20 (All Years Data Set) T-58
Table 6-25. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 20 (2005 Surface Data Set) T-59
Table 6-26. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 20 (2005 Subsurface Data Set) T-60
Table 6-27. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 20 (All Years Data Set) T-61
Table 6-28. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 20 (2005 Surface)... T-62
Table 6-29. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 20 (2005 Subsurface) T-63
Table 6-30. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 20 (All Years Data Set) T-64
Table 6-31. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 20 (2005 Surface Data Set) T-65
Table 6-32. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 20 (2005 Subsurface) T-66
Table 6-33. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 24 (All Years Data Set) T-67
Table 6-34. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Surface Data Set) T-68
Table 6-35. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Subsurface Data Set) T-69
Table 6-36. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 24 (All Years Data Set) T-70
Table 6-37. Summary of Least Tern BERA HQs for a Range of SUF at IR Site 24 (2005/2006 Surface Data Set) T-71
Table 6-38. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Subsurface Data Set) T-72
Table 6-39. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 24 (All Years Data Set) T-73

Table 6-40. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Surface Data Set) T-74
Table 6-41. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Subsurface Data Set) T-75
Table 7-1. Chemicals of Potential Concern for the Human Health Risk Assessment T-76
Table 7-2 . Comparison of Modeled Fish Tissue Concentrations for IR Site 24 to Reference T-77
Table 7-3. Total Cumulative Risks from Exposures at Reference Locations Based on U.S. EPA Toxicity Values T-78
Table 7-4. Exposure Factors T-79
Table 7-5. Summary of Toxicity Criteria T-80
Table 7-6. Summary of Non-Cancer Hazards Associated with Shellfish Consumption Pathway for IR Site 20 ..... T-81
Table 7-7. Summary of Cancer Risks Associated with Shellfish Consumption Pathway for IR Site 20 ..... T-82
Table 7-8. Summary of Non-Cancer Hazards Associated with Direct Contact with Sediments for IR Site 20 ..... T-83
Table 7-9. Summary of Non-Cancer Hazards to Children Associated with Direct Contact with Sediments for IR Site 20 ..... T-84
Table 7-10. Summary of Cancer Risks Associated with Direct Contact with Sediments for IR Site 20 ..... T-85
Table 7-11. Summary of Cancer Risks to Children Associated with Direct Contact with Sediments for IR Site 20 ..... T-86
Table 7-12. Summary of Non-Cancer Hazards Associated with Fish Consumption Pathway for IR Site 20 ..... T-87
Table 7-13. Summary of Cancer Risks Associated with Fish Consumption Pathway for IR Site 20 ..... T-88
Table 7-14. Summary of Non-Cancer Hazards to Children Associated with Fish Consumption Pathway for IR Site 20 ..... T-89
Table 7-15. Summary of Cancer Risks to Children Associated with Fish Consumption Pathway for IR Site 20 ..... T-90
Table 8-1. HQ Comparison for Nagy 1999 and Nagy 2001 ..... T-91
Table 9-1. Summary of Risk Assessment Conclusions for IR Site 20 ..... T-92
Table 9-2. Summary of Risk Assessment Conclusions for IR Site 24 ..... T-93

ABBREVIATIONS AND ACRONYMS

AB	Alameda Buoy
ADD	average daily dose
AE	Alcatraz Environs / assessment endpoint
AET	apparent effects threshold
AF	adherence factor
Ag	silver
ARRA	Alameda Reuse and Redevelopment Authority
As	arsenic
ASTM	American Society for Testing and Materials
AT	averaging time
AWQC	ambient water quality criteria
BAF	bioaccumulation factor
BERA	baseline ecological risk assessment
BF	Bay Farm
BOD	biological oxygen demand
BPTCP	Bay Protection and Toxic Hot Spot Cleanup Program
BRAC	Base Realignment and Closure
BTAG	Biological Technical Assistance Group
BW	body weight
CA	California
Cd	cadmium
CDFG	California Department of Fish and Game
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm	centimeters
CNO	Chief of Naval Operations
CO	Colorado
COPC	contaminant of potential concern
COPEC	contaminant of potential ecological concern
Cr	chromium
CSF	cancer slope factor
CSM	conceptual site model
CTE	central tendency exposure
CTV	critical tissue value
Cu	copper
CV	coefficient of variation
DAF	dermal absorption factor
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DDx	sum of the pesticides DDT, DDE, and DDD
DFA	United States Department of Food and Agriculture
DL	detection limit
DON	(United States) Department of the Navy
DSM	Data Summary Memorandum
DTSC	Department of Toxic Substance Control
DW	dry weight

EC_{50}	effective concentration to cause 50% mortality
Eco-SSL	ecological soil screening level
ED	exposure duration
EF	exposure frequency
EPC	exposure point concentration
ERED	Environmental Residue and Effects Database
ER-L	effects range-low
ER-M	effects range-median
ERM-Q	effects range median-quotient
ERV	ecotoxicity reference value
FDEP	Florida Department of Environmental Protection
FI	fraction ingested
FMR	field metabolic rate
FS	Feasibility Study
g	gram
GGAS	Golden Gate Audubon Society
GIS	Global Information System
HEAST	Health Effects Assessment Summary Tables
Hg	mercury
HI	hazard index
HPAH	high molecular weight PAH
HRA	Historical Radiological Assessment
HQ	hazard quotient
IR	Installation Restoration / ingestion rate
IRIS	Integrated Risk Information System
kg	kilogram
kJ	kilojoules
km	kilometer
LADD	lifetime average daily dose
LOAEL	low observed adverse effects level
LPAH	low molecular weight PAH
m	meters
ME	measurement endpoint
mg	milligram
MLLW	mean lower low water
MSD	minimum significant difference
MVUE	minimum variance unbiased estimates
NADEP	Naval Aviation Depot
NAS	Naval Air Station
NEC	no effect concentration
NEESA	Naval Energy and Environmental Support Activity
Ni	nickel

NOAA	National Oceanic and Atmospheric Administration
NOAEL	no observed adverse effects level
OEHHA	Office of Environmental Health and Hazard Assessment
OR	Oregon
ORNL	Oak Ridge National Laboratory
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
Pb	lead
PC	Paradise Cove
PCB	polychlorinated biphenyl
pCi	picoCuries
PEA	Preliminary Endangerment Assessment
PEL	probable effect levels
PMO	program management office
ppb	parts per billion
PRC	PRC Environmental Management, Inc.
PRG	preliminary remediation goal
PVC	polyvinyl chloride
QA	quality assurance
RAGS	Risk Assessment Guidance for Superfund
RfD	reference dose
RI	Remedial Investigation
RME	reasonable maximum exposure
RMP	Regional Monitoring Program
ROC	receptor(s) of concern
RR	Red Rock
RWQCB	Regional Water Quality Control Board
SA	surface area (skin)
Sb	antimony
SE	standard error
Se	selenium
SEM/AVS	simultaneously extracted metals/acid volatile sulfide
SFEI	San Francisco Estuary Institute
SLERA	screening-level ecological risk assessment
SPAWAR	Space and Naval Warfare Systems Center
SWRCB	State Water Resources Control Board
SUF	site use factor
SVOC	semi-volatile organic compound
SWI	sediment: water interface
TBT	tributyltin
TEL	threshold effect levels
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TRV	toxicity reference value
TtEMI	Tetra Tech EM, Inc.

µg	microgram
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USS	United States Ship
UTL	upper tolerance limit
WOE	weight of evidence
Zn	zinc
95% UCL	95 percent upper confidence limit on the mean

1.0 INTRODUCTION

This Remedial Investigation (RI) Report was prepared for the Base Realignment and Closure (BRAC) Program Management Office (PMO) West under Contract No. N47408-01-D-8207 in support of the offshore evaluations at Oakland Inner Harbor (Installation Restoration [IR] Site 20) and Pier Area (IR Site 24), at former Naval Air Station (NAS) Alameda, currently called Alameda Point, in Alameda, California (CA). This RI Report was prepared in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidance and takes into account current conditions as well as proposed future uses. This revised RI Report incorporates the nearshore sampling conducted in September 2006 in the northeastern corner of IR Site 24.

1.1 Objectives

The primary objectives of this RI Report are to characterize the quality of sediment at IR Sites 20 and 24, identify any area(s) of unacceptable risk, and delineate the area(s) requiring evaluation in a Feasibility Study (FS) of remedial alternatives. Both historical and recent sediment samples were evaluated in this RI Report to define the nature and extent of sediment-associated chemicals that may pose an unacceptable risk to human and ecological receptors.

This RI Report uses all sediment and biological data available for these sites for the purpose of determining the nature and extent of contamination as well as the potential for human and ecological risks. Specific objectives of this RI Report include the following:

- Describe the physical site conditions and ecological setting;
- Describe the nature and extent of sediment contaminants based on the chemical distributions determined through previous investigations;
- Present the methods and results of the ecological risk assessment;
- Present the methods and results of the human health risk assessment;
- Determine if there are areas that pose unacceptable risks to human health and the environment which require evaluation in a Feasibility Study of remedial alternatives.

1.2 Report Organization

This RI Report is organized as follows:

Section 1.0: Introduction

Section 2.0: Site Characterization. This section presents a summary of the site history for each IR area, physical setting, and historical information from previous investigations.

Section 3.0: Conceptual Site Model (CSM). This section provides information on known sources, possible transport mechanisms, and exposure media that will be used to conduct the ecological and human health risk assessments as part of this RI Report.

Section 4.0: Nature and Extent of Sediment Contamination. This section describes the distribution of chemicals present in sediment based on historical and recent investigations and includes a discussion of the background comparison tests.

Section 5.0: Data Evaluation to Support Risk Assessments. This section summarizes the tissue data available for each site and explains how exposure point concentrations (EPCs) and bioaccumulation factors (BAFs) for both sediment and tissue concentrations were developed. Limitations with respect to data quantity and quality, especially limitations associated with high detection limits (DL) in older historical data sets, are discussed.

Section 6.0: Ecological Risk Assessment. This section presents the results of the Ecological Risk Assessment with weight of evidence (WOE) results summarized in the risk characterization section.

Section 7.0: Human Health Risk Assessment. This section presents the results of the Human Health Risk Assessment.

Section 8.0: Uncertainty Analysis. This section discusses the uncertainties associated with the historical data, analytical data, and the human health and ecological assessments.

Section 9.0: Conclusions and Recommendations.

Section 10.0: References.

Tables and figures are presented in separate tabbed sections at the end of the document. Supporting information is provided in the following Appendices A through G:

A. Summary of Analytical Data
B. PAH Forensics Analysis for IR Site 24
C. Background Comparison Test
D. Development of Bioaccumulation Factors (BAFs)
E. Ecological Risk Assessment
F. Human Health Risk Assessment.
G. Response to Agency Comments.

2.0 SITE CHARACTERIZATION

This section describes the history of Alameda Point and areas under investigation, the physical and ecological setting, and provides a summary of the previous environmental investigations conducted at these sites. A summary of all available data for the sites is provided in Appendix A.

2.1 Site History and Description

Alameda Point is located on the western end of Alameda Island, which lies on the eastern side of San Francisco Bay, adjacent to the City of Oakland (Figure 2-1). The former NAS Alameda is rectangular, with dimensions of 2 miles long from east to west and 1 mile wide from north to south, and occupies 1,734 acres of land. The southwestern tip of the original Alameda peninsula was used as agricultural land prior to development as an industrial, ferry, and transit center in the late 1800s. From the 1850s, Alameda Point was used for whaling oil operations until 1869 when the Alameda Point Ferry was built (Department of Navy [DON], 1998). In the northern section of the point, railroad yards and rights-of-way for Southern Pacific, Central Pacific, and small local railways were built over the land and the sloughs.

The Army acquired the installation property from the City of Alameda in 1930 and began construction activities in 1931. In 1936, the Navy acquired the title to the land from the Army and began building NAS Alameda in response to the military buildup in Europe before World War II. After the United States entered the World War II in 1941, more land was acquired adjacent to the air station. Following the end of the war, Alameda Point returned to its original primary operation: to provide facilities and support for fleet aviation activities. The land use of Alameda Point consisted of a runway area in the extreme western end of the island, an industrial area in the central portion, and residential and personnel support areas on the northeastern and eastern portions. Table 2-1 presents a summary of development and potential historical sources and releases to the offshore sites.

In September 1993, NAS Alameda (including Naval Aviation Depot [NADEP]) was selected for closure by Congress. NADEP ceased operations in September 1996, and NAS Alameda officially closed on April 25, 1997. Navy staff currently at Alameda Point consists of civilian personnel involved with the cleanup and reuse of the former NAS Alameda.

Under the Community Reuse Plan for Alameda Point, prepared for the Alameda Reuse and Redevelopment Authority (ARRA) and dated January 1996 (ARRA, 1996), IR Site 20 will remain a viable shipping channel; therefore, it is likely that regular maintenance dredging will be conducted by the United States Army Corps of Engineers (USACE) and the Port of Oakland. Under the proposed reuse plan, IR Site 24 will be developed as a commercial marina along with the adjacent Seaplane Lagoon, with no plans to tear down the Piers. The area south of Pier 3 (Figure 2-2) is anticipated to be transferred to the California Department of Fish and Game (CDFG) as a marina.

2.1.1 IR Site 20

IR Site 20 is located on the southern side of the Oakland Inner Harbor Channel (Figure 2-2), adjacent to the northern shoreline of Alameda Point, and is managed under the Navy's IR Program.

IR Site 20 is defined as the 1,207-meter (m) portion of the Oakland Estuary adjacent to the northern boundary of former NAS Alameda. The Oakland Inner Harbor Channel is a major industrial waterway serving marine terminals and repair facilities in the cities of Oakland and Alameda. The shipping channel was dredged to a depth of 12 m below mean lower low water (MLLW) in 1993 (PRC Environmental Management, Inc. [PRC], 1994). A harbor deepening project has been funded for 2006 to deepen the inner harbor channel to depths of 15 m below MLLW to accommodate the latest generation of container

vessels. Interim depths of 14 m below MLLW were dredged in 2005 (USACE, 2005; Port of Oakland, 2005).

The shoreline of the area is almost entirely modified by human activity, and a variety of industries are located along its length including port facilities, ship-building and repair facilities, sand and gravel off-loading areas, and marinas (PRC, 1994). IR Site 20 may also have been potentially impacted from the Navy's historical operations through wastewater, stormwater, ship wastewater discharge, fuel transfers, and the dissolution/fragmentation of ship bottom paints and creosote pilings. Stormwater and industrial wastes were discharged from NAS Alameda to IR Site 20 via a series of drains located along the shore (PRC, 1994). The storm sewer system at Alameda Point, designated as IR Site 18, served as a primary transport route for chemicals from industrial operations and for surface water runoff to reach the offshore sites. In 1975, the direct discharge of industrial wastewater through the storm sewer network was terminated and a pollution prevention program was initiated. In 1991, the Navy initiated several removal actions, designed to remove residual contaminated sediments from the sewer lines. Sediments from the upgradient storm-sewer lines leading to outfalls A, B, D, and E along IR Site 20 (Figure 2-3) were removed during a 1997 removal action. In Phase I of the removal action, sediments and debris were vacuumed from the storm-sewer catch basins; Phase II of the removal action included cleaning the system lines (Tetra Tech EM, Inc. [TtEMI], 1997). The effectiveness of these actions was documented through closed circuit television surveys, and the Navy issued a technical memorandum in February 2000 that removed Site 18 as a specific IR site (TtEMI, 2000).

2.1.2 IR Site 24

IR Site 24 is located along the southern edge of Alameda Point (Figure 2-2). The site consists of three piers located within the breakwall of Breakwater Beach which are currently being used to dock naval ships. The Navy began actively using the piers, which are constructed with concrete pilings/footings and walkways, in 1943 (Naval Energy and Environmental Support Activity [NEESA], 1983). A single layer of treated wood pilings spaced every 1.5 m and extending 0.6 m from the piers runs along the perimeter of the piers and quay walls. Piers 2 and 3 were routinely used to berth nuclear-powered surface ships as well as occasional nuclear-powered submarines (DON, 2000). Radioactive repair work was routinely conducted within the nuclear spaces of these ships, and not on the piers.

Three storm-sewer outfalls lead into IR Site 24 (Figure 2-3). System lines J and K discharge into the northeastern end of IR Site 24 between Piers 1 and 2, and line L discharges between Piers 2 and 3. Line J served buildings within Parcel 154 that were used as storage facilities supporting Alameda Point and Mare Island. It is suspected that potentially contaminated surface runoff may have discharged through this storm-sewer system (TtEMI, 2000). Building 167 was an aircraft hangar that stored various acids, alkalis, solvents, resins, and heavy metals in five above-ground dip tanks near the south wall of the building (TtEMI, 2000). Building 72B was used for chemical storage, and Building 555 was an electrical substation that stored minor amounts of oil. Building 340 was a fire protection pump house that had an associated underground storage tank used for diesel that since has been removed. The Storm-Sewer Study Report for Alameda Point, Alameda, California (TtEMI, 2000) identifies these buildings and the IR sites with which they are associated. Open spaces between buildings were used for temporary aircraft parking and chemical and equipment storage, which included hazardous material storage yards and an industrial dust silo. Sewer lines leading to outfall K and L have been replaced with polyvinyl chloride (PVC) piping in 1991, and line J was cleaned and inspected in 1991 (TtEMI, 1996).

The Navy reserve fleet is currently docked at the piers which are leased by the ARRA to Trident Corporation. Pier 1 is the smallest and northernmost of the three piers with a berth of 370 m that is designed to berth replenishment oiler and combat store ships. Pier 2 (the middle pier) has four berthing spaces with a total available space of 738 m. One of these spaces is reserved for fleet operations and is left vacant.

Transient vessels use this berth for loading and offloading small amounts of ordnance. The remaining three berth spaces usually accommodate a combination of destroyers and service ships. Pier 3 (the southernmost) is the largest berthing facility at Alameda with an available berth space of 762 m.

The United States Ship (USS) Hornet is permanently berthed at Pier 3 as a Naval museum. Until 1978, the piers were periodically dredged to allow for ships to be docked and consequently, much of the historical contamination related to shipboard waste and storm drains has been removed (NEESA, 1983). However, a sediment shelf is intact along and underneath the quay wall that was not accessible to the dredging equipment. It has been proposed that future reuse will consist of docking large scale ships such as ferries, cruise ships or historical landmark vessels (ARRA, 1996).

2.2 Physical Setting

Former NAS Alameda was created in the 1930s by filling shallow mudflats, marshlands, and sloughs with material dredged from San Francisco Bay. The land area of the Alameda Peninsula was very different from the current land area of Alameda Island because of the opening of the Inner Harbor and Tidal Canal and subsequent filling of marsh and offshore areas. The eastern portion of NAS Alameda is located on the tip of the original Alameda Peninsula and marshlands; the western portion of NAS Alameda is located on an area formerly covered by open waters of San Francisco Bay.

2.2.1 IR Site 20

Based on field observations, the shoreline along IR Site 20 is characterized as rocky substrate (i.e., riprap) with limited intertidal areas (i.e., sand beaches and mudflats). This area is subjected to the same tidal influences as the remainder of northern and central San Francisco Bay. In addition, the results of a sediment survey conducted in March 2001 indicated that the area of soft sediment along the shoreline is smaller than previously assumed, only averaging approximately 75 m in width of undredged sediment (Battelle et al., 2001a). Beyond this shelf, within the dredged shipping channel, the sediment surface drops off precipitously. Water depths range up to approximately 15 m in the center of the Oakland Inner Harbor Channel, with water depths along the sediment shelf typically ranging from less than 3 to 12 m.

2.2.2 IR Site 24

IR Site 24 is currently used by the Merchant Marines as a berthing area for several large vessels. The area lies southeast of and adjacent to Seaplane Lagoon and receives storm water from three storm-sewer outfalls. Berthing areas at the pier have been dredged to approximately 14 m for navigational purposes; consequently, it is likely that most site-related chemicals transported there by the storm drains and deposited in sediments have been removed. However, it is unlikely that dredging equipment was able to remove all sediments immediately adjacent to the piers; therefore, it is assumed that a "shelf" remains in the front (east side) of both berths.

In addition, based on observations made during a site visit with the regulatory agencies on July 10, 2006, the sediment shelf between Piers 1 and 2 in the northeastern corner of IR Site 24 extends eastward past the quay wall beneath the roadway. The area under the roadway is difficult to access from land, as there are no open walkways or ladders. A few emergency exit ladders are present, but none of them reach solid or intertidal ground; the ladder bottoms have contact with floating or attached large wooden beams. The water depth at the pier face ranges from approximately 12 feet in the northeast corner at Station PA C-20 to approximately 28 feet at the southwestern station PA C-28. Due to the water depth, it is not possible to walk under the roadway from the pier. Access by boat is blocked by pier pilings and cross members. Only one entrance under the pier was available for sampling, near PA C-28, and this entrance could easily be closed. During the 2006 sampling event, movement under the roadway was only possible at low tide.

Sediment observed at low tide under the roadway was primarily sand covering rip-rap; areas of sand covering mud were always submerged.

2.3 Ecological Setting

San Francisco Bay is commonly subdivided into three geographical areas designated as the North Bay, Central Bay, and South Bay, with Alameda Point located in the Central Bay area. For the purpose of this assessment, information presented in previous ecological assessments for Alameda Point (PRC, 1994) was used to describe the composition of the biotic communities in the offshore areas. Additionally, habitat assessments conducted for the Port of Oakland (Golden Gate Audubon Society [GGAS], 1994; ENTRIX, 1997) provided supplementary information. This information is discussed in the ecological risk assessment in Section 6 and in Appendix E (including lists of species observed or likely to be found in each area).

2.4 Previous Investigations

Each of the areas being evaluated in this RI Report has been the subject of previous investigations including, most recently, sediment analyses conducted in June 2005 (Battelle, 2005) at IR Site 20 and 24 and September 2006 (Battelle, 2006) at IR Site 24 only. Samples from historical efforts were not designed to be representative of the overall IR site; rather, they were intentionally biased to represent specific outfalls and other locations of interest. Representativeness is a qualitative data quality indicator comprised of a number of key elements including sample size, spatial coverage (capturing small and large scale variability), temporal coverage, and ability of the sample collection, handling, and analysis approach to accurately reflect what is in the field. The 2005 and 2006 sampling events were designed with many of these elements in mind, to represent the sediment chemistry throughout each area, not just at suspected "hot spots." The design specifically included both areas where previous investigations found elevated concentrations, and areas not previously sampled, by using a modified systematic sampling plan. In addition, sediment cores, rather than grab samples, were collected to ensure that the concentration profile with depth was characterized. When performing a risk assessment, United States Environmental Protection Agency (U.S. EPA) guidance on calculating exposure point concentrations suggests a variety of methods to calculate the 95% upper confidence limit on the average concentration. The assumption is made that data are random, independent samples that fully characterize the nature and extent of contaminant distribution in the area of interest. Use of biased data in the calculation of exposure point concentrations (EPCs) violates these assumptions; however, in many cases the EPC is calculated with the understanding that it is an overestimate of the true EPC, and hence conservative. The 2005/2006 data is considered to be the best representation of the site for the following reasons: 1) good spatial coverage in x, y, and z dimensions; 2) use of sediment cores, rather than grabs, to ensure that each layer of sediment is carefully evaluated; 3) the 2005/2006 timeframe is more indicative of current conditions than samples taken as much as 11-12 years ago; and, 4) the more recent dataset has lower detection limits than historical datasets, thereby reducing uncertainty related to the presence or absence of potential contaminants, and concentration of the full range of potential constituents of interest. A summary of these investigations is provided below.

2.4.1 IR Site 20

Environmental data were collected at IR Site 20 in 1993 and 1994 as part of an ecological assessment of Alameda Point (PRC, 1994). During that investigation, four surface sediment samples were collected near stormwater discharge points in IR Site 20 for chemical and toxicity analyses (Table 2-2; Figure 2-4). In addition, samples were collected to the west of IR Site 20, spanning the entire length of the shoreline. The sediment chemistry indicated that elevated levels of polychlorinated biphenyls (PCBs) and polynuclear aromatic hydrocarbons (PAHs) were present at IR Site 20, with little or no contamination to the

west of IR Site 20. A 28-day laboratory bioaccumulation test using the clam *Macoma nasuta* was also conducted using sediments from each of the four locations. In addition, the following three types of toxicity tests were conducted: a 10-day amphipod bioassay using *Eohaustorius estuarius*; a 28-day polychaete growth and survival test using *Neanthes arenaceodentata*; and a 48-hour sediment elutriate test using mussel (*Mytilus edulis*) larvae (PRC, 1994). Only samples collected within IR Site 20 or just to the immediate west of the western boundary of IR Site 20 were included in this RI.

The available sediment and tissue chemistry data and bioassay results from the previous ecological assessments were summarized and evaluated in the draft *Data Summary Memorandum (DSM) for IR Site 20* (Battelle et al., 2001b). The draft DSM recommended that additional data be collected from IR Site 20 because the nature and extent of sediment toxicity was not well defined and the source of the contaminants could not be identified. The toxicity test data showed greater than ambient toxicity to amphipods exposed to sediments from two stations (stations E07 and E10), indicating potential ecological risk to the benthic community at those locations. However, there was no relationship between toxicity and sediment chemistry observed in the tests. In addition, there was high replicate variability and poor performance (apparent toxicity) in uncontaminated reference sediments.

Based on the recommendations of the draft DSM (Battelle et al., 2001b), a sediment screening study (Battelle et al., 2001a; Figure 2-5) was performed in March 2001 at IR Site 20 to characterize the nature and extent of chemicals in the offshore sediment resulting from historical operations at these locations. An initial sediment screening evaluation was conducted for the purpose of more fully characterizing the nature and extent of indicator contaminants. More than 50 screening surface sediment samples were collected and evaluated (Figure 2-5). In addition, seven of the samples were analyzed for the full suite of potential chemicals of potential concern (COPCs) following National Oceanic and Atmospheric Administration (NOAA) National Status and Trends methods. The results of the survey (Battelle et al., 2001a) indicated that the soft sediment shelf extends to 75 m in width and then drops off precipitously. Concentrations of most chemicals evaluated were consistent with the San Francisco Bay ambient background levels (Battelle et al., 2001a); in general, chemical concentrations above screening criteria (e.g., effects range-low [ER-Ls]) or ambient background levels for San Francisco Bay were associated with very small areas along the shoreline close to known outfall locations. Contaminants found near the outfalls are likely due to historical practices because the upgradient storm-sewer lines have been cleaned and all contaminants found in the pipes have been removed (TtEMI, 1997). Given the water depth, shelf dimensions, and the observation that chemical concentrations above relevant screening levels and ambient background appear to be associated with small, discrete locations, it was concluded that an immediate investigation of these areas was not required (Battelle et al., 2001a).

Concurrent with the March 2001 screening study, the Space and Naval Warfare Systems Center (SPAWAR) collected an additional 13 samples to the west of IR Site 20. These additional samples were intended to determine whether unacceptable concentrations of COPCs extend outside the IR boundaries, and to determine if historical contaminants at the upland IR Site 15 adversely impacted sediments adjacent to this site. Based on the results of SPAWAR's investigation, it appears that the available historical data adequately describes the full extent of contamination west of IR Site 20, and that chemical concentrations posing a potential risk are limited to a few, small exposure areas. However, these data were not collected as part of a Navy- or U.S. EPA-approved Work Plan; therefore, they are considered as a screening tool only. To confirm these results, two additional samples were collected from the area as part of the 2005 sampling effort.

The purpose of the June 2005 sampling was to supplement the historical data by filling existing data gaps and characterizing the horizontal and vertical extent of contaminants along the western boundary of IR Site 20 (Battelle et al., 2005a). Sampling locations included 14 sediment cores distributed throughout the area to ensure adequate coverage to develop a representative EPC (Figure 2-6). To ensure that potential

onshore sources were characterized, several samples were placed in the vicinity of the outfalls. In addition, four samples were proposed west of the IR Site 20 boundary to confirm that COPC concentrations in that area do not pose a concern. The remaining stations were distributed evenly along the shoreline to provide consistent spatial coverage. More detailed information on the data quality objectives and specifics on the sampling design can be found in the Offshore Core Study Workplan (Battelle et al., 2005a). The data collected as part of the 2005 sampling can be found in Appendix A.

2.4.2 IR Site 24

Limited historical data are available for IR Site 24. Most of these data are from three investigations that were performed in 1996, 1997, and 1998 (PRC, 1994; TtEMI, 2000; SPAWAR, 2000) (Figure 2-7; Table 2-3). In the Initial Site Assessment report conducted in March 1976 (NEESA, 1983), sediment chemistry results indicated exceedances for lead, zinc, cadmium, copper, volatile solids, and oil and grease. Very little contamination was found along the piers, and the report recommended that no further investigation was warranted (NEESA, 1983).

As part of the Ecological Assessment for offshore areas at Alameda Point, a sample was collected from each of the three storm-sewer outfalls leading into IR Site 24 (TtEMI, 1996). Further characterization was done at the northern part of the site where five additional stations were sampled in 1998 by TtEMI in areas that were inaccessible to the dredging equipment (TtEMI, 1998). The locations of the 1996 and 1998 sampling stations at IR Site 24 (Figure 2-7) were biased to capture "worst-case" conditions (such as the sediment beneath storm-sewer outfalls and non-dredged areas of sediment near the seawall and piers). The 1996 samples were located at the mouths of the three outfalls, which discharge into the eastern end of IR Site 24. These locations would be expected to contain the highest levels of any contaminants discharged in the storm-sewer system. The Navy's SPAWAR (2000) completed an independent evaluation of IR Site 24, collecting samples from 14 stations in 1997. The 1996 and 1998 sampling locations are clustered at the eastern edge of IR Site 24, with seven of the eight samples collected between Piers 1 and 2. Only one storm-sewer sample was collected from outfall L. The 1997 samples achieved better spatial coverage of IR Site 24 than the samples collected in 1996 and 1998; however, the 1997 inorganic chemical data are not comparable to the 1996 and 1998 data due to the use of a more aggressive extraction procedure.

All of the historical samples from IR Site 24 were collected from the surface sediment (0-5 centimeters [cm]). Based on comparisons to ambient concentrations in San Francisco Bay, several metals (i.e., arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc) and organic constituents (i.e., PAHs and pesticides) were measured at concentrations above ambient levels. Samples collected from Pier 1, near storm-sewer outfall J, generally contained the highest concentrations of metals. The 1997 data indicated decreasing PAH concentrations in sediment from east to west along the piers. The Navy had hypothesized that the creosote from the pier pilings also may have contributed to the PAH contamination found in the sediment; however a forensic investigation conducted with sediments collected in 2005 concluded that the PAH signature was consistent with ambient sources (Appendix B). Total PCBs exceeded its effects range-median (ER-M) in four (SS03, SS04, PA01, and PA02) of eight samples collected in 1996 and 1998, and Total DDx (refers to a combination of the pesticides dichlorodiphenyltrichloroethane [DDT], dichlorodiphenyldichloroethylene [DDE], and dichlorodiphenyldichloroethane [DDD]) exceeded ambient levels (but were below ER-Ms) in two samples (SS03 and SS04) collected in 1996. The findings were consistent with the suspected sources of contamination.

Laboratory bioaccumulation tests using the clam *Macoma nasuta* were conducted in 1998 using surface sediment samples collected at five site stations and three reference stations (TtEMI, 1998; Table 2-3). Field-collected invertebrate tissue samples were not obtained. In addition, three types of toxicity tests were conducted on 1993 sediment samples including a bulk sediment amphipod bioassay (i.e., 10-day

Eohaustorius test), a polychaete survival and growth test (i.e., 28-day *Neanthes* test), and sediment-water interface test using sea urchin larvae (*Strongylocentrotus purpuratus*). Although inorganic chemical concentrations in *M. nasuta* tissue were comparable to reference sediments, PAH concentrations and some pesticides in *M. nasuta* exposed to IR Site 24 sediments were higher than in *M. nasuta* exposed to reference sediments. The highest PAH concentrations were detected in *M. nasuta* tissue exposed to sediment from the two northernmost sampling locations (PA01 and PA02), which likewise had the highest measured PAH concentrations in sediment during the 1998 sampling event.

For IR Site 24, a total of 19 sediment cores were collected as part of the sampling conducted in 2005 (Battelle, 2005) as indicated in Figure 2-7. Sampling stations were selected using both a systematic grid sampling plan and a judgment-based sampling design focused on characterizing the contamination from the outfalls. The sampling characterized the area adjacent to the quay wall, southern side of Pier 3, and the contaminant gradient from the quay wall through the dredged channel. Additionally, the historically observed PAH contamination found along the quay wall was assessed further using PAH fingerprinting techniques to identify whether the source of the PAHs was the creosote used in the pier pilings or other potential PAH sources. One core sample also was collected from a reference location outside of the footprint of IR Site 24 to characterize ambient surficial sediments that have not been influenced by the pilings or outfalls. As reported in the survey report (Battelle, 2005), the locations of some proposed sampling stations were adjusted due to obstructions.

The 2005 sampling event included limited sampling of radionuclides in IR Site 24. The Historical Radiological Assessment (HRA) (DON, 2000) reviewed and assessed 30 years of radiological environmental data collected for NAS Alameda, including correspondence and history files; records related to environmental release of radioactivity, monitoring, and radioactive waste disposal; and interviews with previous employees. Radiological environmental monitoring was conducted at NAS Alameda from 1966 through early 1997, and included the analysis of sediment, water, and marine life (marine plant, mollusk, and crustacean) from IR Site 24 for radioactivity associated with Naval nuclear propulsion plants. Sampling locations were selected based on berthing locations of nuclear-powered ships and at points upstream and downstream of berths, where tidal ebb and flood currents could deposit suspended radioactivity. Six sediment samples were collected quarterly from IR Site 24, with three sampling stations located between Piers 1 and 2, and three sampling stations located between Piers 2 and 3. An additional three sediment sampling stations were located just south of Pier 3. Water samples were collected quarterly from the tip of Pier 1, between Piers 1 and 2, and south of Pier 3. Prior to 1978, gross gamma activity and a limited range of the gamma spectrum, including cobalt-60, were measured in harbor sediments and water. Beginning in 1978, actual cobalt-06 activity and gross gamma and cobalt-60 energy ranges were measured in sediments and water. Marine life samples were collected as early as 1977 from a station south of Pier 3 for gross gamma radioactivity and radionuclide content. The HRA concluded that the berthing of and work on nuclear-powered ships at Alameda Point had no adverse impact on the human population or the ecological environment of the region. An independent study conducted in 1988 by the U.S. EPA (1989a) assessed whether the operation of nuclear-powered warships, during construction, maintenance, overhaul, or refueling, have created elevated levels of radioactivity at Naval facilities located at Mare Island, NAS Alameda, and Hunters Point in the San Francisco Bay region. The U.S. EPA study found only radionuclides of natural origin and trace amounts of Cs-137 from previous nuclear weapons testing in the harbor sediment samples from IR Site 24. No gamma-ray emitters, other than trace amounts of those occurring naturally (i.e., K-40) and trace amounts of Cs-137, were detected in surface water collected at the tip of Pier 3 and between the breakwater, in harbor algae collected just southeast of Pier 3, or in mussels or sea lettuce collected from IR Site 24. Gamma-ray surveys of the harbors failed to detect any exposure rates elevated significantly above background. Consequently, radiological compounds were not identified as COPCs at IR Site 24 (U.S. EPA, 1989a). However, to ensure that all potential radiological issues at the site are addressed, radium (Ra^{226} and Ra^{228}) was

evaluated in three of the 2005 sediment cores from this area to verify that concentrations of these isotopes are not elevated (see Section 4.3.3).

The sampling scheme applied during the 2005 sampling event was intended to collect all additional data required to complete the RI for IR Site 24. However, during Agency review of the Draft RI, an additional data gap was identified. Specifically, during a site visit with the regulatory agencies on July 10, 2006, the location of the sediment shelf between Piers 1 and 2 in the northeastern corner of IR Site 24 was examined. In this area, the shelf extends eastward past the quay wall beneath the roadway. The highest concentrations of several PAHs and metals were detected in 1996 adjacent to the quay wall in the vicinity of outfalls J and K; without further characterization of the sediments extending under the roadway it would be impossible to know if the elevated concentrations measured in 1996 were confined to a small area, as previously believed, or actually represent a larger area of contamination. Therefore, 12 additional sediment cores were collected in September 2006 using the same sampling and analytical methods used in 2005 (Figure 2-8; Battelle et al., 2006). In general, sampling stations were selected using a grid pattern to characterize the whole area rather than just localized hot spots (Figure 2-8). In addition, a few locations were adjusted to re-sample historical sampling locations. As with the 2005 survey, some locations were modified in the field from their originally proposed locations because of obstructions. The data collected from this sampling event are presented in Appendix A.

3.0 CONCEPTUAL SITE MODEL

This section describes the CSM for IR Sites 20 and 24 that serve as the basis for the ecological and human health risk assessments conducted for the RI Report. The CSM is a framework for relating potential receptors to contaminated media and determining the degree of completion and significance of exposure pathways. This section describes the portion of the CSM focused on known sources, possible transport mechanisms, and potential exposure media (see Figures 3-1 and 3-2). Full CSMs, including the exposure pathways and scenarios, are presented in Sections 6 and 7 as part of the ecological and human health risk assessments.

3.1 IR Site 20

3.1.1 Sources of Chemical Contamination

Contaminant sources at IR Site 20 include historical wastewater and storm water discharge, ship waste-water discharge, fuel transfers, and dissolution/fragmentation of ship bottom paints and creosote-treated pilings. Contaminants found near the outfalls are likely due to the historical practices identified in Section 2. Stormwater and onshore industrial areas were likely the most significant of the historical sources of contaminants to IR Site 20. The storm-sewers were cleaned in 1997 and the Navy's activities in the channel have ceased. Sediment samples collected in March 2001 contained concentrations of most chemicals that were consistent with San Francisco Bay ambient background levels. The areas where chemical concentrations were above screening criteria (e.g., ER-Ls) or ambient background levels for San Francisco Bay were associated with small exposure areas along the shoreline close to known outfall locations (i.e., the western end and eastern portion of IR Site 20).

3.1.2 Transport Mechanisms

Surface Runoff

The storm-sewer system at Alameda Point served as a primary transport route for chemicals from industrial operations and for surface water runoff to reach the offshore sites. Although chemicals from the site may have historically been released to surface water as a result of historical discharges, those potential sources have been addressed as part of the on-site storm water investigation (TtEMI, 1999). Numerous engineering controls, wastewater treatment systems, and other waste management improvements have significantly reduced direct and indirect discharges to the offshore areas through the storm-sewer system. Since 1972, wastes from industrial operations have been diverted to waste treatment plants (TtEMI, 2000). However, residual sediments remaining in the sewer system were considered a potential source of contaminants to the offshore areas. As a result, the storm sewer system was listed as IR Site 18. In 1991, the Navy initiated several removal actions, designed to remove residual contaminated sediments from the sewer lines. The effectiveness of these actions was documented through closed circuit television surveys and the Navy issued a technical memorandum in February 2000 that removed Site 18 as a specific IR site (TtEMI, 2000).

Groundwater Discharge

In addition to surface runoff, contaminants may also have been transported to the offshore areas via groundwater discharge. The potential movement of groundwater from on-shore sources has been evaluated and addressed as part of the investigations at those sites.

Other Mechanisms

Other potential sediment transport mechanisms at the site include wave action, harbor activity, and bioturbidity. Each of these can result in the mobilization of sediments by causing them to be resuspended in the water column.

Food Chain Transport

Benthic invertebrates residing in IR Site 20 may be exposed to chemicals of concern through ingestion of and direct contact with sediments resulting in a potentially complete exposure pathway. A review of major exposure pathways to higher trophic levels in IR Site 20 indicates that there are also potentially complete exposure pathways to benthic-feeding and piscivorous fish and birds, as well as humans. Exposure pathways include the ingestion of aquatic species and direct contact and incidental ingestion of sediments in the area. Sections 6.0 and 7.0 describe the specific receptors and exposure pathways evaluated for the ecological and human health risk assessments, respectively.

3.1.3 Exposure Media

Sediments are the primary media of concern for IR Site 20. As previously discussed, prior investigations indicate that a variety of chemical constituents are present in sediments at potentially elevated levels. A more detailed evaluation of the nature and extent of sediment contamination at each of the sites is provided in Section 4. Based on the identification of potential sources of contaminants, sediment associated with the offshore sites could be exposed to heavy metals (primarily from industrial metal-working operations), PAHs (primarily from petroleum releases as well as the use of piers treated with creosote), PCBs (primarily from releases of PCB dielectric fluids and other PCB-contaminated oils), and pesticides (primarily from routine pesticide applications).

Based on their chemical and physical properties, volatile chlorinated and nonchlorinated solvents are not expected to partition to sediment as compared with other potential contaminants such as PCBs, pesticides, and metals. Most volatile solvents subjected to the physicochemical processes of volatilization, dispersion, dilution, and biodegradation would not significantly partition into sediments. However, these chemicals remain a concern in upland soil and groundwater, and are being addressed primarily through the Operable Unit (OU) OU-1 and OU-2 RI/FS process (TtEMI, 1999).

Surface water is not considered a media of concern for the following reasons:

(1) The primary chemicals of concern (metals, pesticides, PAHs, and PCBs, discussed further in Section 4.0) are relatively insoluble, meaning that partitioning from sediment to surface water will be low. Hydrophobic, nonpolar organic contaminants, such as PCBs, DDT, and some species of metals, are primarily associated with sediments and tend to adsorb to fine-grained sediment, which is present at IR Sites 20 and 24. Adsorption onto sediment particles limits the degree to which dissolution and contamination of overlying water occurs. The transport and fate of these contaminants are controlled by the movement of the sediment particles.

(2) Continuing onshore sources of surface water to the offshore areas have been controlled. The storm sewer system at Alameda Point (designated as IR Site 18) served as a primary transport route for chemicals from industrial operations and for surface water runoff to reach the offshore sites. In 1975, the direct discharge of industrial wastewater through the storm-sewer network was terminated and a pollution prevention program was initiated. In 1991, the Navy initiated several removal actions, designed to remove residual contaminated sediments from the sewer lines. Sediments from the upgradient storm-sewer lines leading to outfalls A, B, D, and E along IR Site 20 (Figure 2-3) were removed during a 1997 removal action. In Phase I of the removal action,

sediments and debris were vacuumed from the storm-sewer catch basins; Phase II of the removal action included cleaning the system lines (TtEMI, 2000). The effectiveness of these actions was documented through closed circuit television surveys, and the Navy issued a technical memorandum in February 2000 that removed Site 18 as a specific IR site (DON, 2000).

(3) Tidal action and San Francisco Bay currents result in rapid dilution and/or transport of constituents. Surface water data were collected from three locations (E02, E06, and E10) in IR Site 20 as part of the 1993/1994 ecological assessment of Alameda Point. These data are reported in the Alameda Naval Air Station Operable Unit 4 Ecological Risk Assessment (PRC, 1996a) and are summarized in Table 7-8 of that report. Total metals concentrations were below detection limits, with the exception of chromium, lead, and zinc, which were detected at concentrations less than the chronic and acute marine ambient water quality criteria (AWQC) (Tables C-3.1 and C-3.2 in PCR, 1996a). Dissolved metals were not detected in surface water, except for lead at station E10, which had concentrations below the AWQC. Metals detection limits were adequate for most of the constituents (exceptions included copper, mercury, nickel, and silver) to allow comparison to AWQC. Concentrations of PAHs, pesticides, PCBs, and organotins in surface water collected at IR Site 20 were all not detected (see Tables C-3.2 and 3.3 of PRC, 1996a), although elevated detection limits preclude comparisons of most pesticides to AWQC. Based on available data, surface water is not a significant exposure medium to chemical contaminants.

3.2 IR Site 24

3.2.1 Sources of Chemical Contamination

The primary sources of contamination to IR Site 24 are storm-sewer outfalls, surface runoff, and historical ship activities. Additional potential sources include oil transfers, construction of creosote piers, and non-point source erosion. There are three storm-sewer outfalls that currently lead into IR Site 24.

3.2.2 Transport Mechanisms

Surface Runoff

Similar to IR Site 20 (Section 3.1.2), the storm-sewer system served as a primary transport route for chemicals and for surface water runoff to reach IR Site 24.

Food Chain Transport

This potential exposure scenario evaluates risks to receptors (including humans) that consume fish or shellfish from the vicinity of IR Site 24. Upper-trophic level receptors (including humans) that consume benthic invertebrates such as mussels or clams may be exposed to chemicals of concern through food chain transport. However, because most of IR Site 24 is very deep (having been dredged to a depth of 14 m), the habitat required to support clam beds (i.e., intertidal mudflats) is not present and a resident shellfish population is not likely to occur in the area. A small population of mussels has been noted on the pier structures; however, the limited and difficult access to the area reduces the likelihood that humans could harvest sufficient numbers of these mussels to make shellfish consumption a significant exposure pathway. During the 2005 sampling survey, there was no evidence of any shellfish collection activities in the area (fishing gear, scrape marks on pilings, debris, etc.).

3.2.3 Exposure Media

Similar to IR Site 20, sediment is the primary media of concern which could have historically been exposed to heavy metals, PAHs, PCBs, and pesticides. Based on their chemical and physical properties, volatile

chlorinated and nonchlorinated solvents are not expected to partition to sediment as compared with other potential contaminants such as PCBs, pesticides, and metals. Most volatile solvents subjected to the physicochemical processes of volatilization, dispersion, dilution, and biodegradation would not significantly partition into sediments. Additionally, surface water is not considered a media of concern at IR Site 24, due to similar conditions as outlined in Section 3.1.3 for IR Site 20.

4.0 NATURE AND EXTENT OF SEDIMENT CONTAMINATION

This section describes the nature and extent of sediment contamination potentially associated with Navy activities at IR Site 20 and IR Site 24, and evaluates the spatial distribution of these chemicals. These assessments are based on current and historical sediment chemistry data for IR Site 20 and IR Site 24. Additional supporting tables and graphics are presented in Appendix A.

4.1 Methods

This section describes the methods used to prepare the current and historical data for analysis and graphical display. Data preparation included the calculation of total concentrations for summed chemicals (e.g., DDx, PAHs, and PCBs). Data analysis included the preparation of box plots and bubble plots. Sediment chemistry data collected for the historical investigations were compared to ambient station data for San Francisco Bay; the ambient data set is described in Section 4.1.2.

4.1.1 Data Preparation

Analytical results for sediment samples collected in previous Navy investigations (PRC, 1994; SPAWAR 2000, Battelle et al., 1999a, 2001a) were compiled and loaded into a centralized database prior to data evaluation, along with data collected as part of the 2005 and 2006 field efforts (Battelle, 2005 and 2006 respectively). The data were compiled to estimate total concentrations for summed chemicals (e.g., DDx, PAHs, and PCBs) for sediment as well as to visually present the data in box and bubble plots.

Although the 2005/2006 sampling efforts are believed to adequately represent current conditions, all available data were included in the investigation to ensure that potential hot sports were not overlooked. To evaluate potential temporal and vertical differences in the data, three separate data sets were evaluated for each site, representing different time periods and exposure scenarios. The data sets were as follows:

1. All Years: This data set encompassed all the historical data collected in the surface sediment (0-5 cm) at a particular site.

2. 2005/2006 Surface: This data set includes all the surface data (0-5 cm) collected in 2005 at IR Site 20 and in 2005 and 2006 at IR Site 24.

3. 2005/2006 Subsurface: This data set includes the deeper sediment (5-25 cm) collected in 2005 and 2006 that was requested by the regulatory agencies to be evaluated in the ecological risk assessment. It also includes deeper core intervals (25-50 cm) collected to help bound the extent of any observed chemicals.

Prior to the evaluation, sediment chemistry data sets generated by the Navy were modified using the following guidelines.

- Rejected data qualified with "R" were not used in the analysis.

- All chemical concentrations which were not detected were set to one-half the reported DL). The historical study documentation does not clearly indicate which indicator for method sensitivity was provided by the laboratory; however one-half the reported value was used. Given the nature of the sediment matrix, it is possible (likely) that the matrix-specific DL would vary from that reported; however, given there was no general requirement for laboratories to establish this value, the reported value was used as the best representation of the surrogate value. If the reported value was a reporting limit, using one-half this value

would result in a higher value than if it were the actual method detection limit, and therefore would be conservative. The reported value is referred to throughout this RI report as the DL.

- Three field replicates were collected and analyzed at all stations in the PRC/TtEMI field investigations conducted in 1993/94 in IR Site 20 (PRC, 1994). Given that none of the three replicates were designated as the "original" or "replicate" (as is standard for samples intended for quality assurance [QA] usage) all samples were considered of equal utility, and the mean of the replicates was used to represent a station. The detect status assigned to the mean value was a "U" if all the replicates were non-detect, "D" if all the replicates were detected, and "M" if there was a mix of detects and non-detects.

- Field duplicates were collected at a small percentage of stations in field investigations conducted in 2001, 2005, and 2006. The primary field sample result was used unless that result was rejected ("R" qualified), in which case the field duplicate result was used. In all other cases, the field duplicate data were excluded from the analysis. The impact of sample duplicates and their variability on the risk analyses is discussed in detail in Section 8.1.

- Individual analytes included in groups of compounds (i.e., Total PCBs, total low molecular weight PAHs [LPAHs], total high molecular weight PAHs [HPAHs], and Total DDx) were included at one-half the reported DL in the estimation of total concentration if they were non-detect (qualified with "U" or "UJ"); non-detect values were set equal to one-half the reported DL. Total concentrations also were estimated setting non-detects equal to zero to evaluate the influence of non-detects on the estimated totals.

Chemicals included in the summed groups were as follows:

Total 4,4-DDx (sum of 3 constituents)

4,4′-DDD
4,4′-DDE
4,4′-DDT

Total LPAH(6) (sum of 6 constituents)

Acenaphthene	Anthracene	Naphthalene
Acenaphthylene	Fluorene	Phenanthrene

Total LPAH (7) (sum of 7 constituents)

Total LPAH (6) + 2-methylnaphthalene

Total HPAH (6) (sum of 6 constituents)

Benzo(a)anthracene	Chrysene
Benzo(a)pyrene	Dibenzo(a,h)anthracene
Fluoranthene	Pyrene

Total HPAH (10) (sum of 10 constituents)

Benzo(a)anthracene	Chrysene
Benzo(a)pyrene	Dibenzo(a,h)anthracene
Benzo(b)fluoranthene	Fluoranthene
Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene
Benzo(k)fluoranthene	Pyrene

- Total PCB concentrations in 1993/1994 were estimated by summing the individual Aroclor concentrations (i.e., individual congener concentrations were not measured during these investigations). Total PCB concentrations in 2001, 2005, and 2006 were estimated by multiplying the total summed congener concentrations (i.e., for the regional ambient data and the IR Site 20 data) by two. This approach follows a NOAA procedure (O'Connor, 1997), that looked at the relationship between the NOAA Status and Trends list of 18 congeners and Total PCBs in several data sets, and concluded that a multiplier of 2 is a reasonable estimator for Total PCBs.

4.1.2 Ambient Sediment Data

As part of the data evaluation, chemical concentrations at IR Sites 20 and 24 were compared to background or ambient concentrations from throughout the San Francisco Bay area. The Cal/EPA Regional Water Quality Control Board (RWQCB) established ambient threshold values (ambient background values) for chemicals in San Francisco Bay based on sediments collected from the least impacted portions of the Bay, located away from point and nonpoint sources of chemical contamination (RWQCB, 1998). To acknowledge the influence of physical factors on chemical concentrations, sediment grain size was considered and separate thresholds were listed for coarse (<40% fines) and fine (>40% fines) grain sediments. The guidance noted that it is appropriate that the threshold values for metals, chlorinated hydrocarbons, and pesticides be based upon the value for 100% fines. Based on the data distribution as a function of particle size, one of three models was used to calculate the ambient thresholds. Parametric methods were used for normal (or normal after log transformation) data; non-parametric methods were used if the data could not be shown to be normal. The thresholds serve as estimates of ambient chemical concentrations that can be compared to sediment chemistry results from a potentially contaminated site. A threshold was calculated as the 95% upper confidence limit on the 85th percentile of the ambient chemical concentrations (an upper tolerance limit, UTL). The choice of the percentile, p-value=0.85, was considered a policy decision intended to best "fit" the data clusters; p-values in the range of 0.7 to 0.95 were initially calculated and considered in the original report by the statistical consultants (Smith and Riege, 1998). This screening criterion is considered conservative as the false-positive rate on an 85th percentile UTL is quite high.

The RWQCB values described above represent a point estimate of ambient conditions. However, the Tier 2 screening applied in the ecological risk assessment (Section 6.4.1.2) involves comparison of the concentration distributions observed on site to ambient distributions using distribution shift tests (see Section 6.4 and Appendix C for a discussion of the ERA process and the distribution shift tests, respectively). For the purpose of developing the ambient distribution, sediment chemistry results collected by the Bay Protection and Toxic Cleanup Program (BPTCP), and San Francisco Estuary Institute (SFEI) Regional Monitoring Program (RMP) were considered. Specifically, all available sediment chemistry results from 1993 through 1997 from stations classified as ambient in the Ambient Sediment Chemistry report (RWQCB, 1998) were used. The BPTCP stations were Paradise Cove, San Pablo Bay Island #1, San Pablo Bay Tubbs Island, North South Bay, and South South Bay. The RMP stations were Alameda, Davis Point, Dumbarton Bridge, Grizzly Bay, Honker Bay, Horseshoe Bay, Oyster Point, Pacheco Creek, Petaluma River, Pinole Point, Point Isabel, Red Rock, Richardson Bay, Sacramento River, San Bruno Shoal, San Joaquin River, San Pablo Bay, South Bay, and Yerba Buena Island. All samples included were collected from the top 5 cm of sediment using a van Veen sampler and evaluated using standard analytical methods (BPTCP, 1998; RMP, 1997). Because of observed differences (Smith and Riege, 1998), multiple ambient values for chromium were calculated based on two extraction methods (hydrofluoric acid and acid regia); the ambient chromium results using hydrofluoric acid were not comparable to site data and were excluded from the dataset.

For constituents that were not analyzed by the RMP or BPTCP, reference data collected at 10 San Francisco Bay reference sites during the 1998 Alameda Point field sampling effort (TtEMI, 1998) and the 2001 Hunters Point Shipyards Parcel F Validation Study (Battelle et al., 2005b) were used. Reference data from San Francisco Bay were collected from five 1998 reference sites, and from five 2001 reference sites used in the Hunters Point Shipyards Parcel F Validation Study. The 10 reference sites are as follows:

1998 stations (Figure 4-1):

- RL01–North South Bay (BPTCP station number 20013)
- RL02–Alameda (RMP station number BB70)
- RL03–Oakland Entrance (offshore from Western Bayside [Chapman et al., 1987])
- RL04–Yerba Buena (RMP station number BC11)
- RL05–Paradise Cove (BPTCP station number 20005).

2001 stations (Figure 4-2):

- AB-Alameda Buoy (same general location as RL02)
- PC-Paradise Cove (same general location as RL05)
- AE-Alcatraz Environs
- BF-Bay Farms
- RR-Red Rocks.

Detection limits were reported for the 1998 and 2001 San Francisco Bay reference site results; whereas, the RMP and BPTCP databases have coded values for non-detected results and no reported DLs. For presentation in the box plots, one-half of the smallest detected concentration for a specific analyte in the RMP/BPTCP data set was used as the DL.

For organic compounds, both individual analytes and summed totals of analytes within a group (i.e., Total LPAHs, Total HPAHs, and Total PCBs) are presented. For consistency of presentation, total concentrations at ambient locations were summed from individual congeners following the same methodology applied to the Alameda site sampling results.

4.1.3 Sediment Chemistry Box Plots

Box plots are presented in Appendix A for all compounds that were detected in one or more samples from the 1993, 1994, 1996, 1997, 1998, 2001, 2005, and 2006 field investigations. Box plots summarize information about the shape and spread of the distribution of concentrations from a data set. The Y-axis displays the observed concentrations of the data in the appropriate units. The bottom edge of the box represents the lower quartile (Q1, equivalent to the 25th percentile) of the data; 25% of the data falls below this value. The upper edge of the box represents the third or upper quartile of the data (Q3, equivalent to the 75th percentile); 25% of the data are above this value. The height of the box (i.e., the interquartile range, Q3-Q1) provides a measure of the spread of the concentrations. The horizontal line across the box represents the median (i.e., the 50th percentile or second quartile) of the data, providing a measure of the center of the concentration distribution. In a normal distribution, the median line divides the box into approximately two equal parts, indicating that the shape of the concentration distribution is symmetric. If the median divides the box into unequal parts, it indicates that the distribution is skewed or nonsymmetric.

Extending vertically beyond the box are dashed lines (i.e., "whiskers") defined by upper and lower "fences." The length of each fence is a multiple of the interquartile range as defined by the following equation, where "K" is a constant typically assigned a value of 1.5:

$$\text{Interquartile Range} = K \times (Q3\text{-}Q1) \qquad (4\text{-}1)$$

The fences are not precisely plotted in the box plots, but rather are implied by the length of the "whiskers", which terminate at "adjacent values." Adjacent values are defined as the largest (or smallest) observed concentration within the range defined by the upper (or lower) fence. Therefore, the concentration range enclosed by the fences is the equivalent of a nonparametric confidence interval around the median. When all of the data are plotted as points overlaying the box plot, concentrations falling beyond the "whiskers" (i.e., "outside points") represent data that may be investigated as outliers (i.e., extreme or unusual concentration values). For the data sets considered in this RI report, none of the data lying outside the whiskers were rejected for any reason, and all data were included in the other statistical analyses.

Each site-specific sampling event is plotted separately next to a plot of all ambient data. In every plot, all dates are listed on the X-axis. When no box plot appears above a specific date for a specific analyte, that indicates that no results for that analyte were available for a given year. The total number of samples and the number of samples with detected concentrations are shown in the margin text on the X-axis as "N/D." Open circles are used to plot non-detected concentrations at one-half the reported DL. Closed circles represent detected values, or when replicates were taken, the average of the detected values at that location. The averaging of replicates refers to 1993/94 data only. Three field replicates were collected and analyzed at all stations in the PRC/TtEMI field investigations conducted in 1993/94 at IR Site 20. Given that none of the three replicates were designated as the "original" or "replicate", all samples were considered of equal utility, and the mean of the replicates was used to represent the station. The use of the mean is consistent with the way the data were presented and summarized in the original report. Various comparison values, such as the San Francisco Bay ambient threshold value for less than 100% fines (RWQCB, 1998), also are displayed on each plot as horizontal lines in cases where the comparison value is within the range of site concentrations. Comparison values that exceed the range of site or ambient concentrations are not plotted, but are listed along the top axis.

4.1.4 Sediment Chemistry Bubble Plots

Bubble plots are presented in Appendix A for all chemicals detected during the historical and recent field efforts. A bubble plot is a graphical representation of spatial data that presents the number and location of samples as well as the relative concentration observed at each location. Results can be classified based on detect status and/or sample collection activity and each class can be represented by using different colors or line types. The circles, or bubbles, are different sizes based on concentrations and these bubbles are plotted on a map of the site. The size of the bubble is proportional to the relative concentrations in the data set; in other words, the relatively smaller concentrations are represented by smaller bubbles and the relatively larger concentrations are represented by larger bubbles. Different colored bubbles can be used to allow comparisons of multiple data collection events. Because each data point is represented as a separate bubble, the variability of the results can be estimated qualitatively.

To assist the reader in differentiating between chemical concentrations shown in these figures, several steps were taken. First, the data were transformed (for presentation purposes only) by taking the square root of all the concentrations (noted as square root transformed data in the legend). Concentrations plotted in this manner are proportional to the area of the circle, whereas a plot of untransformed data would be proportional to the diameter of the circle. Square root transformations facilitate presentation of a greater range of concentrations on a map without having some bubbles obscuring others, and allows

better resolution between some of the lower concentrations represented by the smaller circles, which otherwise would appear to be of roughly equal size. Secondly, values exceeding the analyte-specific ER-M were represented by circles with thicker lines. The associated legend for each of these figures presents the original concentrations measured during the sampling event. For a few sampling locations (and a few ER-M legend symbols), a triangle is used to represent values above the maximum value established for the bubbles.

4.2 Distribution of Chemicals at IR Site 20

This section describes the sediment contaminants potentially associated with Navy activities at IR Site 20, and evaluates the spatial distribution of these chemicals. These assessments are based on current and historical sediment chemistry data for IR Site 20 and are supported by graphics (box plots and bubble plots) as shown in Appendix A.

4.2.1 Distribution of Inorganic Constituents at IR Site 20

4.2.1.1 Surface Sediment Spatial Distribution

A summary of the analytical results for inorganic constituents in surface sediment, including the total number of samples collected; number of detections; and minimum and maximum concentrations, is presented in Table 4-1. Data in Table 4-1 are summarized by year for each constituent so that any differences between years are readily discernible. In addition, the table presents several benchmarks for comparison purposes, including the ecological screening value for sediment, ER-Ms, published ambient levels, and U.S. EPA Region 9 PRGs for an industrial exposure scenario (U.S. EPA, 2004a).

Side-by-side box plots of the 11 inorganic constituents that were analyzed in IR Site 20 surface sediment in 1993, 2001, and 2005 are presented in Appendix A. The box plots also contain data from San Francisco Bay ambient stations used by the RWQCB, as well as 10 reference samples as described in Section 4.1.2. Available benchmarks are posted on the plots to facilitate comparisons. Side-by-side box plots facilitate comparisons in observed concentrations between years. Apparent differences in concentrations between years may be attributed to differences between analytical methods (to include sample preparation methods), sample locations, or actual differences in concentrations.

A visual review of the box plots indicates that eight inorganic constituents (antimony, cadmium, chromium, copper, lead, mercury, nickel, and zinc) were elevated in surface sediment in at least one sample in at least one year relative to the ambient and reference data sets. It is important to note that the markedly elevated concentrations of antimony measured in 1993 were not observed in any subsequent sampling event (see Figure 4-3). Antimony was collected in 1993 from three offshore areas at Alameda Point. Elevated concentrations were present at 1993 locations both close to and distant from outfalls. In 1996 and later years, most 1993 areas were sampled at locations closer to the outfalls than those sampled in 1993. Antimony analyzed in subsequent years from all locations at Alameda Point have reported concentrations approximately an order of magnitude smaller than 1993 concentrations [see Figure 4-3A]. The high concentrations in 1993 are believed to be erroneous. A review of 1993 antimony data did not find a definitive discrepancy in the data that would account for a large-scale error. However, discrepancies were noted with respect to the various dilution factors. The logic in the use of some dilution factors was not always apparent from the raw instrument files and bench sheets. It appears that dilutions were taken both at the bench and at the instrument. The final concentration reported was a calculated adjustment based on hand written dilution factors on the bench sheet. The inability to replicate the 1993 antimony concentrations in subsequent years, including in samples collected closer to the outfalls, indicates that antimony is not a COPEC.

Of the remaining seven constituents that appeared elevated compared to ambient and reference, only concentrations of chromium, lead, nickel, and mercury exceeded their respective ER-Ms in at least one location. Chromium, lead, and nickel all had their highest observed concentrations in the 2001 sampling event at locations 28 and 57. However, concentrations of those constituents were not elevated in sediments from C-7, C-8, and C-9, the 2005 sampling locations closest to locations 28 and 57 (~100 feet away), as illustrated in Figures 4-4 through 4-6. Lead slightly exceeded its ER-M value (217 milligrams per kilogram [mg/kg]) in 2001 in surface sediment at station 57 (225.5 mg/kg) but did not exceed it at any other IR Site 20 location. During the 2005 RI sampling event, 14 samples were analyzed for lead and the maximum concentration was 91.5 mg/kg, well below the ER-M. Chromium exceeded its ER-M of 370 mg/kg at Stations 28 and 57 and Station 51 (all collected in 2001) but did not exceed it in any other locations. The maximum chromium concentration during the 2005 sampling event was 86.9 mg/kg. Nickel exceeded the ER-M at a number of IR Site 20 locations collected during 2001, but it must be noted that the San Francisco Bay ambient UTL for nickel is over twice the ER-M for nickel. Only three nickel samples exceeded the ambient UTL for nickel (Stations 28, 51, and 57). Copper, cadmium, and zinc, did not exceed their respective ER-M values, but did exceed ambient UTLs in several samples at IR Site 20.

Mercury did not exceed its ER-M and was consistent with ambient conditions in most IR Site 20 samples, but exceeded ambient and the ER-M at two locations, one collected in 2001 (Station 51) and one collected in 2005 (Station C-2). The closest station to C-2 was Station 10 where mercury values in 2001 were below the ER-M. In addition, no 1993/94 samples exceeded the mercury ER-M. Arsenic, cadmium, copper, selenium, silver, and zinc were all relatively evenly distributed in surface sediment across the site and across years, although copper and zinc did appear to be slightly higher in 2001 samples compared to the other years.

4.2.1.2 Surface Sediment Temporal Distribution

Side-by-side box plots (Appendix A) and Table 4-1 were used to look for patterns in concentration across time. As previously discussed, changes could be a result of gradual decreases in sediment concentrations (perhaps due to mixing with less contaminated subsurface sediment or deposition of cleaner sediment); differences in locations sampled, differences in the grain size of the sediment, or differences in analytical methodology. The 2005 sampling event was designed to provide the most representative and extensive set of measurements, while still sampling near historical outfalls and locations where contaminants were previously detected.

Measurements from the 2005 sampling event revealed consistently lower concentrations of inorganic constituents, except for one high mercury value, at Station C-2. Measurements from the 2001 sampling event included locations that were higher in chromium, copper, lead, nickel, selenium, and zinc than those from either 1993/94 or 2005. This may be due to differences in analytical methodology: NOAA status and trends methods were used in 2001, but SW-846 methods were used in 1993/94 and 2005. However, because most samples were not exactly co-located between years, differences may also reflect the spatial variability of contaminant concentrations across IR Site 20.

4.2.1.3 Subsurface Sediment Spatial Distribution

Subsurface data is presented for 2005 samples only. Subsurface samples were collected at two depth intervals, 5-25 cm below surface, and 25-50 cm below surface. An additional deeper subsurface sample (50-100 cm) was taken, and the cores frozen and archived (Battelle, 2005; U.S. EPA and USACE, 1991; Lauenstein and Cantillo, 1993; U.S. EPA, 2001a). Summaries of 2005 inorganic results for the 0-5 cm, 5-25 cm, and 25-50 cm depth intervals are presented in Table 4-2. A visual examination of the concentrations by depth on the box plots in Appendix A shows that concentrations of chromium, nickel, selenium, and silver are uniform across depth and not different from ambient conditions at any depth. Concentra-

tions of antimony, arsenic, cadmium, copper, lead, mercury, and zinc are also uniform across depth and not different from ambient with the exception of location C-2. Concentrations of these constituents at C-2 are all highest in the 25-50 cm depth interval. At IR Site 20, concentrations across all depths were less than the ER-M for antimony, arsenic, cadmium, chromium, selenium, and silver. Subsurface concentrations for copper, lead, mercury, and zinc were below the ER-M at all locations except one, C-2. Nickel concentrations at IR Site 20 exceeded the ER-M in some samples, but site concentrations were less than ambient levels.

4.2.2 Distribution of Organic Chemicals at IR Site 20

4.2.2.1 Surface Sediment Spatial Distribution

Organic chemicals detected on a consistent basis in IR Site 20 surface sediment were PAHs, PCBs, DDT and its degradation products, *alpha-* and *gamma*-chlordane, and dieldrin. Table 4-3 presents a summary of the organic chemical results for surface sediment, including: the total number of samples collected each year; number of detections; and minimum and maximum of detected concentrations. The data in Table 4-3 is summarized by year for each constituent so that any differences between years are readily discernible. The table also presents benchmarks for comparison purposes, including the ecological screening value for sediment, ER-M, published ambient levels, and U.S. EPA Region 9 PRGs for an industrial exposure scenario (U.S. EPA, 2004a).

A visual examination of the box plots for organic chemicals in surface sediment in Appendix A shows that four low-molecular-weight PAH compounds (acenaphthene, acenaphthylene, fluorene, phenanthrene) and seven high-molecular-weight PAH compounds (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, pyrene) were detected at concentrations above San Francisco Bay ambient UTLs at more than one location. Of these, only phenanthrene (Figure 4-7) and pyrene (Figure 4-8) had concentrations exceeding their respective ER-Ms, both at one location (2005 sampling location C-7). The box plots for Total HPAH and Total LPAH (Figure 4-9) show that although two individual PAH compounds exceed ER-Ms, the totals do not exceed ER-Ms for Total HPAH and Total LPAH at any location.

The distribution for all individual PAH compounds followed the general pattern shown for phenathrene and pyrene in Figures 4-7 and 4-8, which can be an indication that the observed pattern is associated with urban background (Stout et al., 2004). To further investigate this hypothesis, the relative concentrations of the individual PAH compounds were plotted and compared to examples of urban background "signatures" (Figure 4-10). Although the full suite of alkylated PAHs is not available for IR Site 20, the relative composition of the 16 priority pollutant PAHs evaluated is very similar to that attributed to urban background at the other locations.

Concentrations of pesticides were generally low throughout IR Site 20. The only pesticides detected in more than 50% of the 2001 and 2005 samples were *alpha*-Chlordane, dieldrin, and the 4,4-DDx compounds. These constituents were generally not detected in the 1993/94 samples, but the 1993/94 data set is plagued by elevated detection limits for the pesticides. As shown in Figure 4-11, the 4,4-DDx compounds were relatively uniform in concentration across IR Site 20, but appear elevated in sample location 51, and in a sample outside the western boundary of IR Site 20 (2001 Sample Location 60). Locations 51 and 60 are the only samples in which Total 4,4-DDx exceeded the ER-M value of 46.1 micrograms (μg)/kg. The elevated concentration of Total 4,4-DDx at Location 60 in 2001 was driven by a reported 4,4-DDT concentration of 471 μg/kg. However, a 2005 sample located in approximately the same location (Sample C-13) found a 4,4-DDT concentration of only 0.37 μg/kg, and a Total 4,4-DDx concentration of only 1.38 μg/kg. *Alpha*-Chlordane was detected in 16 of 24 samples in 2001 and 2005, with the maximum concentration (3.1 μg/kg) at 2001 sample location 51. All *alpha*-chlordane

concentrations across the site were well below the ER-M (6.0 µg/kg). *Gamma*-Chlordane was detected in nine of 24 samples in 2001 and 2005, with all detected concentrations below the ER-M. Dieldrin, detected in 15 of the 24 samples collected in 2001 and 2005, was relatively uniformly distributed across the site, with the maximum concentration (1.0 µg/kg) lower than the ER-M by a factor of eight. The only other pesticides that were detected in any sediment samples were endosulfan II, detected in two of 24 samples from 2001 and 2005, and endrin aldehyde, detected in three of 24 samples from 2001 and 2005. All detects of these constituents were relatively low, although there are no ambient or ER-M values for comparison.

As shown in the box plot of Total PCBs (Figure 4-12), concentrations of Total PCBs exceeding San Francisco Bay ambient values were found in all three sampling events. The 1993 data is based on Total Aroclors, some of which had extremely elevated detection limits in several samples. When the non-detected Aroclors are included in the sums at one-half the detection limit, the maximum Total PCB concentration in the 1993 samples is over 4300 µg/kg (see bottom box plot in Figure 4-12). When the non-detected Aroclors are considered to be zero in the sums, the maximum is 763 µg/kg (see top box plot in Figure 4-12). Depending on how the non-detects are handled, either two or three samples in 1993, and four samples in 2001 exceed the Total PCB ER-M of 180 µg/kg. None of the samples evaluated in 2005 had concentrations of PCBs that exceeded the Total PCB ER-M. The spatial distribution of Total PCBs is shown in Figure 4-13 (non-detects plotted at one-half the detection limit).

4.2.2.2 Surface Sediment Temporal Distribution

Temporal patterns across years for PAHs were generally consistent, with slightly lower median concentrations of both LPAH and HPAH in 2005 versus 2001. Earlier samples in 1994 were plagued by high DLs; when one-half DLs were plotted side-by-side with measurements from later years, the non-detects were consistently higher than actual detected values in later years. A single station in 2005 (C-7) frequently had the highest PAH value. PCB concentrations appear to have declined over time, but this trend cannot be ascertained with certainty because most sample locations were not co-located from year to year. However, co-located samples at Site 20 also show this declining trend in PCBs. Sample E-10 collected in 1993/94 and sample OIH C-3 collected in 2005 at outfall E are co-located, as are sample OIH 10 collected in 2001 and Sample OIH C-2 collected in 2005. The 1993/94 measurement of Total PCBs reflect the sum of Aroclors, most of which were not detected, while 2001 and 2005 reflect two times the sum of 20 congeners, with much lower DLs, which may also account for some of the observed differences. Median concentrations of DDx were generally flat across years, with two locations in 2001 exhibiting higher concentrations than other years. Tributyltin was not measured in 2001. The median concentration of TBT was lower in 2005 than 1993/94.

4.2.2.3 Subsurface Sediment Spatial Distribution

Subsurface data for organic chemicals is presented for 2005 samples only. Summaries of 2005 results for organic chemicals for the 0-5 cm, 5-25 cm, and 25-50 cm depth intervals are presented in Table 4-4. A visual examination of the concentrations by depth on the box plots in Appendix A shows that concentrations of PAHs are relatively uniform across depths in 11 of the 14 subsurface samples. However, at locations C-2, C-7, and C-9, PAH concentrations are higher at depth than in the surface sediment. All three of those locations had Total HPAH concentrations exceeding the ER-M, with the maximum HPAH concentrations at C-2 and C-7 in the 5-25 cm depth interval, and the maximum concentration at C-9 in the 25-50 cm depth interval. LPAH concentrations exceeded the ER-M at Station C-7 and C-9 in the 5-25 cm depth interval. Box plots of subsurface HPAH and LPAH concentrations that compare concentrations at different depth intervals, as well as to ambient and reference surface concentrations, are shown in Figure 4-14.

Concentrations of Total 4,4-DDx were uniform across depth except at location C-2, where the concentration in the 5-25 cm depth interval (82.7 µg/kg) was approximately seven times greater than surface concentrations, and at location C-8, where the concentration in the 25-50 cm depth interval (25.7 µg/kg) was five to six times greater than in the two shallower intervals. A box plot of Total 4,4-DDx concentrations in subsurface sediment is shown in Figure 4-15.

Alpha-Chlordane and *gamma*-chlordane concentrations appear to be slightly higher at depth in the 2005 data, but the maximum detected concentration of 1.42 µg/kg at location C-9 is well below the ER-M. Location C-9 also had elevated concentrations of dieldrin compared to surface sediment, but again all concentrations were well below the ER-M value for dieldrin. The only other detected pesticides were endosulfan II, detected in four samples in the 5-25 cm depth interval, and endrin aldehyde, detected in the 5-25 cm depth sample. Maximum concentrations of both were observed at location C-2.

There was little difference in mean concentrations of Total PCBs across depth intervals (Figure 4-16), but maximum concentrations occurred in the 5-25 cm depth interval, where two samples (C-2 and C-9) contained Total PCB concentrations exceeding the ER-M.

4.2.3 IR Site 20 Background Comparisons

Statistical background comparisons were conducted using surface sediment data for IR Site 20 and the background data sets described in Section 4.1.2. The background comparisons consist of four statistical tests (t-test, Gehan, quantile, and slippage) that compare the distribution of IR Site 20 concentrations to the distribution of concentrations in the background data sets. A failure ($p<0.05$) for any one of the four tests results in a classification of site sediments different than background. The background testing protocol is described in detail in Appendix C. Because concentrations of inorganic constituents, in particular, are correlated with sediment grain size, comparisons to background were conducted three ways: (1) using the entire available background data set, (2) using the background data set for fine grained sediments only, and (3) using the background data set for coarse grained sediment only. Due to apparent changes over time in the concentration of several constituents, background comparisons were made using IR Site 20 data from All Years (1993/94, 2001 and 2005), and using only the 2005 data.

A summary of the results of IR Site 20 background comparisons are presented in Tables 4-5 and 4-6 for inorganic constituents and organic chemicals, respectively. Complete background comparison tables are provided in Appendix C. As shown in Table 4-5, arsenic, cadmium, nickel, selenium, silver, and zinc were not different from ambient background in either the 2005 data set or the overall combined data set, nor were they different in any of the grain size classifications evaluated (fine, coarse, all). Antimony, chromium, and copper were not different in the 2005 data, but were significantly different when data from all years were combined. Lead and mercury were different from San Francisco Bay ambient background in both the 2005 and All Years data sets.

A summary of the background comparisons for organic chemicals is shown in Table 4-6. Of the pesticides, background comparisons could only be conducted for the DDx compounds, because frequency of detection for the other pesticides was too low for statistical comparisons. Total DDx and Total 4,4′-DDx were statistically different than background in the 2005 and the All Years data sets. Total PCBs and all of the various Total PAH combinations evaluated also were different than background in the 2005 and All Years data sets. The only individual PAH compounds not different than background were acenaphthene, benzo(g,h,i)perylene, 2-methylnaphthalene, and naphthalene.

4.2.4 Summary of IR Site 20 Sediment Data

Concentrations of inorganic constituents through time at IR Site 20 are highest at 2001 sampling locations 27 and 58 in the western portion of IR Site 20, and at Stations 51 and C-2 in the eastern end of the site. Chromium, lead, nickel, and mercury were the only inorganic constituents with concentrations exceeding their respective ER-Ms in surface sediment and concentrations were generally uniform across depth intervals. No elevated concentrations of chromium, lead, and nickel were observed in surface sediment in the 2005 sampling event. Mercury did not exceed its ER-M and was consistent with ambient conditions in most IR Site 20 surface sediment samples, but exceeded ambient and the ER-M at two locations, one collected in 2001 (Station 51) and one collected in 2005 (Station C-2). The closest station to C-2 was Station 10, where mercury values in 2001 were below the ER-M. No 1993/1994 surface sediment samples exceeded the mercury ER-M.

PAH concentrations were not markedly elevated across IR Site 20, with pyrene and phenanthrene being the only two PAH constituent with concentrations exceeding their ER-Ms, and only at one location (C-7). Total PAHs, Total HPAHs, and Total LPAHs did not exceed their ER-Ms at any location in IR Site 20. In addition, the relative distribution of individual PAH compounds appears to be consistent with an urban background source. *Alpha*-Chlordane, dieldrin, and the 4,4′-DDx compounds were the only pesticides detected with any frequency, and only the DDx compounds were found to exceed their ER-M. Total 4,4′-DDx exceeded its ER-M at two locations, Station 51 in the eastern end of the site, and Station 60, which is outside the western boundary of IR Site 20. Concentrations of Total PCBs exceeded their ER-M at six or seven sampling locations; however, none of the samples collected in 2005 exceeded the Total PCB ER-M.

4.3 Distribution of Chemicals at IR Site 24

This section describes the sediment contamination potentially associated with Navy activities at IR Site 24, and evaluates the spatial distribution of these chemicals. These assessments are based on current and historical sediment chemistry data for IR Site 24 and are supported by graphics (box plots and bubble plots) shown in Appendix A.

4.3.1 Distribution of Inorganic Constituents at IR Site 24

4.3.1.1 Surface Sediment Spatial Distribution

A summary of the inorganic chemical results for surface sediment, including the total number of samples collected, number of detections, and minimum and maximum concentrations, is presented in Table 4-7. Data in Table 4-7 are summarized by year for each constituent so that any differences between years are readily discernible. In addition, the tables present several benchmarks for comparison purposes, including the ecological screening value for sediment, ER-M, published ambient levels, and U.S. EPA Region 9 PRGs for an industrial exposure scenario (U.S. EPA, 2004a).

Side-by-side box plots of the 11 inorganic constituents that were analyzed in IR Site 24 surface sediment in 1996, 1997, 1998, 2005, and 2006 are presented in Appendix A. The box plots also contain data from San Francisco Bay ambient stations used by the RWQCB, as well as 10 reference samples as described in Section 4.1.2. Available benchmarks are posted on the plots to facilitate comparisons. Apparent differences in concentrations between years may be attributed to differences between analytical methods (to include sample preparation methods), sample locations, or actual differences in concentrations.

A visual review of the box plots indicate that all 11 inorganic constituents (antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc) were elevated in surface sediment in

at least one sample in at least one year relative to the ambient and/or reference data sets. Nickel and silver were the only inorganic constituents that exceeded the ER-M values in the 2005 data. However, the 2006 sampling showed that concentrations of cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc each exceeded their respective ER-Ms in at least one sample from underneath the roadway.

A review of historical (1996-1998) data shows that six inorganic constituents (cadmium, chromium, copper, mercury, nickel, and silver) had concentrations exceeding their respective ER-M values. With the exception of nickel, all ER-M exceedances were confined to the northeast corner of IR Site 24. Nickel exceeded its ER-M in all but two IR Site 24 samples, but it must be noted that the ambient UTL for nickel in San Francisco Bay is more than twice the nickel ER-M. Elevated levels of inorganic constituents generally occurred only in the northeastern corner of IR Site 24 between Piers 1 and 2, particularly at 1996 sampling locations SS003 and SS004, 1998 sampling locations PA01 and PA02, and 2005 sampling location C-16. Inorganic constituents that were highest in these samples but had uniformly distributed lower concentrations elsewhere in IR Site 24 were antimony, cadmium, copper, lead, mercury, and silver. The 2006 data collected underneath the roadway shows the same pattern, with concentrations of cadmium, chromium, lead, mercury, selenium, and silver highest in the samples closest to Pier 1, with concentrations declining toward Pier 2. Examples of the pattern of distribution for these constituents are shown in Figures 4-17 and 4-18. Arsenic and nickel were not elevated or only slightly elevated in the northeast corner compared to the rest of IR Site 24. Zinc was elevated in one 2006 sample (PA C-25) adjacent to outfall K, but was otherwise rather uniformly distributed over the rest of IR Site 24. Figures 4-19 and 4-20 are provided as examples of the pattern of distribution of these chemicals. Only five of the 11 inorganic constituents (chromium, copper, lead, nickel, and zinc) were reported in the 1997 data. Reported concentrations of inorganic constituents in the offshore areas in 1997 were higher on average than reported in all other years. These differences are due to the fact that a different sample extraction protocol was used in 1997, resulting in a more complete digestion of sample material. The most marked differences between 1997 and other years can be observed when one compares the median value (inside the box) for nickel and chromium (Figure 4-21). Care should be taken when comparing 1997 concentrations to ambient UTLs or ecological benchmarks, since the UTLs and benchmarks are based on studies that used standard SW-846 extraction methods.

4.3.1.2 Surface Sediment Temporal Distribution

The discussion of the temporal distribution of contaminants is limited to the open water areas of IR Site 24 (i.e. 1996 through 2005 data) because no samples were collected in the sediment shelf eastward of the quay wall prior to 2006. Conclusions about temporal patterns across IR Site 24 are somewhat limited because most samples were not exactly co-located from one sampling event to the next, increasing the uncertainty associated with identification of temporal patterns. Concentrations of a number of inorganic constituents (arsenic, copper, and lead) in the open water portion of IR Site 24 have not varied considerably between 1996 and 2005. Antimony, cadmium, chromium, mercury, nickel, silver, and zinc were all lower in 2005 than in 1996. For cadmium, chromium, and mercury, the concentrations measured prior to 2005 exceeded the ER-M in one or more locations in one or more years, but in 2005 all values were below the ER-M. For silver, one station in each of the three years when it was measured exceeds the ER-M; however the overall pattern is a reduction in concentration across IR Site 24.

4.3.1.3 Subsurface Sediment Spatial Distribution

Subsurface data are available for 2005 and 2006 samples only, which were collected at two depth intervals, 5-25 cm below surface and 25-50 cm below surface. Summaries of inorganic results for the 0-5 cm, 5-25 cm, and 25-50 cm depth intervals are presented in Table 4-8. A visual examination of the bubble plots by depth in Appendix A shows that the 2006 samples underneath the road contained higher

concentrations across both depth intervals than the 2005 samples collected in the open water areas of IR Site 24. The boxplots in Appendix A show that arsenic and selenium do not exceed ambient UTLs at any depth in either the 2005 or 2006 samples, and mercury only exceeds ambient UTLs in one 2005 sample at the 25-50 cm depth interval. Concentrations of cadmium, chromium, lead, mercury, and zinc were highest in the subsurface sediment at 2006 sampling locations PA C-21 and PA C-24 adjacent to outfall J, eastward of the quay wall in the extreme northeast corner of IR Site 24 (see Figures 4-22 and 4-23 as examples). Chromium, lead, mercury, and zinc had maximum observed concentrations in the 5-25 cm depth interval, while the maximum concentration of cadmium was at the 25-50 cm depth interval. Copper and antimony both had maximum observed concentrations at the 5-25 cm depth interval at location PA C-25, eastward of the quay wall adjacent to outfall K. Concentrations of selenium were highest in the surface sediment and appeared to decline across depth, while concentrations of arsenic and nickel were rather uniform across depth intervals. As already mentioned, concentrations of chemicals observed in the 2005 subsurface samples in the open water areas of IR Site 24 were less than observed in the samples collected in the sediment shelf eastward of the quay wall, but tended to be highest in the northeast corner, particularly at location C-16. Copper, lead, and silver, which were elevated in surface sediment at location C-16, were also found at similar elevated concentrations across the two depth intervals at that location.

4.3.2 Distribution of Organic Chemicals at IR Site 24

4.3.2.1 Surface Sediment Spatial Distribution

Chemicals detected on a consistent basis in IR Site 24 surface sediment were PAHs, PCBs, DDx compounds, *alpha*- and *gamma*-chlordane, and dieldrin. A summary of the organic chemical results for surface sediment, including the total number of samples collected, number of detections, and minimum and maximum concentrations, is presented in Table 4-9. As was done in the previous section with the inorganic data, the organic data in Table 4-9 is summarized by year for each constituent so that any differences between years are readily discernible. The table also presents benchmarks for comparison purposes, including the ecological screening values for sediment, ER-Ms, published ambient levels, and U.S. EPA Region 9 PRGs for an industrial exposure scenario (U.S. EPA, 2004a).

A visual examination of the box plots for organic chemicals in surface sediment in Appendix A shows that, with the exception of acenaphthylene, historically all PAH compounds for which ER-M values were available exceeded their respective ER-Ms at one or more locations at IR Site 24. However, no samples collected during the 2005 sampling event had PAH concentrations exceeding the ER-M, except for dibenzo(a,h)anthracene in one sample. Ten PAH compounds had concentrations exceeding ER-Ms in at least one 2006 sample collected from the sediment shelf eastward of the quay wall between Piers 1 and 2.

The highest PAH concentrations in the open water areas of IR Site 24 were observed in 1996 and 1997, and the lowest PAH concentrations were observed in 2005, as illustrated in the box plots for Total HPAHs and Total LPAHs (Figure 4-24). Although this would suggest PAH concentrations are declining over time, this conclusion cannot be drawn with certainty because, while 2005 samples were chosen to be most representative of open water areas of IR Site 24 as a whole, they were not co-located with the highest concentrations observed in the 1996 and 1997 sampling events. As expected based on the conclusions of the forensics evaluation (Appendix B), the highest concentrations of individual PAH compounds were co-located with each other. The majority of PAH compounds exceeded their respective ER-Ms at two 1996 sampling locations (SS004, SS005), seven 1997 sampling locations (SS1, SS2, SS13, SS25, SS26, SS27, SS28), and two 1998 sampling locations (PA01, PA02). Locations SS004, SS1, SS2, SS25, SS26, SS27, SS28, PA01, and PA02 are all in the northern portion of IR Site 24 between Piers 1 and 2, while locations SS005 and 13 are in the central portion of the site between Piers 2 and 3. The pattern of distribution for PAH compounds in surface sediment is shown in Figures 4-25 and 4-26 for

LPAHs and HPAHs, respectively. No PAHs exceeded ER-M values in 2005, with the exception of dibenzo(a,h)anthracene, which exceeded the ER-M at one location (C-16) in the northeast corner of IR Site 24. Total HPAH and Total LPAH concentrations in the 2006 surface sediment samples underneath the road exceeded ER-Ms at six locations, with highest concentrations observed at locations PA C-22 and PA C-23 as shown in Figures 4-25 and 4-26.

Concentrations of pesticides were generally low throughout IR Site 24. *Alpha*-Chlordane, *gamma*-chlordane, dieldrin, and the 4,4′-DDx compounds were the only pesticides detected in more than one-third of IR Site 24 samples. Aldrin, heptachlor epoxide, endosulfan I, endosulfan II, endrin, and endrin aldehyde were all detected in three or fewer samples. Pesticides were not analyzed in the 1997 samples. Concentrations of *alpha*-Chlordane and 4,4′-DDT exceeded their respective ER-Ms at two 1996 sampling locations (SS003, SS004), but did not exceed ER-Ms in any 1998 or 2005 samples (Figures 4-27 and 4-28). The pesticide 4,4'-DDT also exceeded its ER-M at one 2006 sampling location eastward of the quay wall (PA C-24). All detected concentrations of *gamma*-chlordane, dieldrin and the other DDx metabolites in the open water portion of IR Site 24 were less than ER-M values, though their pattern of distribution was similar to 4,4′-DDT, with highest concentrations observed in 1996 samples SS003 and SS004, and relatively uniform concentrations observed elsewhere in IR Site 24. Dieldrin was detected at concentrations exceeding its ER-M at two locations eastward of the quay wall in 2006 (PA C-23 and PA C-24), as was *gamma*-chlordane (PA C-20 and PA C-22). In addition, 4,4'-DDD concentrations exceeded the ER-M at four sampling locations in 2006 (PA C-20, PA C-23, PA C-24, and PA C-28). ER-M values were not available for heptachlor epoxide, endosulfan I, endosulfan II, endrin, and endrin aldehyde, which were detected only in 1996 samples. Endrin and endrin aldehyde were only detected at location SS003, heptachlor epoxide was only detected at location SS004, and endosulfan II was detected at both SS003 and SS004. Endosulfan I was detected at location SS005 between Piers 2 and 3. Aldrin was detected in one 1996 sample (SS003) and two 1998 samples (PA02 and PA04). Although samples collected in 1998 and 2005 were not co-located with 1996 sample locations, it appears from the more recent data that the elevated pesticide concentrations observed in the surface sediment in 1996 are not currently present in IR Site 24 surface sediment (e.g. *alpha*-chlordane), or are confined to very small areas in the immediate vicinity of the outfalls and eastward of the quay wall (e.g. dieldrin and 4,4'-DDx).

As shown in the box plot of Total PCBs (Figure 4-29), concentrations of Total PCBs exceeding San Francisco Bay ambient values were found in all sampling events. The 1996 data is based on Total Aroclors, some of which had extremely elevated detection limits in several samples. Two 1996 samples (SS003 and SS004), two 1998 samples (PA01 and PA02), and one 2005 sample (C-13) had Total PCB concentrations exceeding the Total PCB ER-M. Aside from these five samples, concentrations of PCBs in the open water portion of IR Site 24 in all samples collected since 1996 at IR Site 24 are relatively uniform (Figure 4-30) and do not exceed the Total PCB ER-M. In samples collected from the sediment shelf eastward of the quay wall in 2006, Total PCB concentrations in surface sediment exceeded the ER-M at ten of twelve sampling locations.

4.3.2.2 Surface Sediment Temporal Distribution

The discussion of temporal patterns of contaminant distribution is limited to the open water portions of IR Site 24 (1996, 1997, 1998, and 2005 data), because no samples were collected beneath the roadway prior to 2006. Temporal patterns across years for Total PCBs and PAHs in the open water portion of IR Site 24 seem to show a decline in concentration at IR Site 24, even though elevated concentrations remain beneath the roadway. For PCBs, a single 2005 station is above the ER-M, while both LPAH and HPAH values have dropped below their respective ER-Ms in 2005. The pattern for DDx is unclear, with concentrations appearing to have declined and then increased slightly.

Conclusions about temporal patterns are somewhat limited because most samples were not exactly collocated from one sampling event to the next. Data that are not co-located are associated with more uncertainties when drawing temporal conclusions and comparison of temporal differences in constituent distributions have been limited to co-located samples and to those samples that are located the same distance from outfalls and piers. In this report, minimal significance is attributed to temporal differences, since they could be the result of gradual decreases in contaminant concentrations, spatial distributions, or differences in analytical methods. Rather, the current risk as represented by the most recent sampling events, and risk from all years of data is used for decision-making purposes. The 2005 data was collected using the most current, appropriate sampling methods and analytical methods, and a combination of systematic and judgment-based sampling design was used to ensure adequate coverage for developing a representative exposure point concentration from the area most likely to serve as foraging areas for ecological receptors (Section 3.3 of the approved work plan; Battelle et. al., 2005a).

4.3.2.3 Subsurface Sediment Spatial Distribution

Subsurface data for organic chemicals is presented for 2005 and 2006 samples only. Summaries of results for organic chemicals for the 0-5 cm, 5-25 cm, and 25-50 cm depth intervals are presented in Table 4-10. A visual examination of the 2005 data exhibited in the box plots in Appendix A shows that concentrations of PAHs are relatively uniform or decrease across sampling depth. A visual examination of the 2006 box plots and bubble plots in Appendix A shows that beneath the roadway, especially at station C-2 in the northeast corner, concentrations of several PAHs, including acenaphthene, naphthalene, and fluorene, exhibit their highest concentration in the 5 – 25 cm depth level. The highest concentrations of anthracene are in the surface interval. At 18 of the 19 sampling locations in the open water portion of IR Site 24, the surface interval contained the highest concentration of HPAHs. At location C-16, the HPAH concentration in the 5-25 cm depth interval (8,296 µg/kg) was higher than the concentration observed in the 0-5 cm surface interval (7,065 µg/kg). LPAH concentrations were highest in the surface interval of all the 2005 sampling locations. In the 2006 samples from the sediment shelf eastward of the quay wall, HPAH concentrations were highest in the surface interval in eight of the 12 sampling locations, with locations C-21, C-24, C-29, and C-31 having the highest HPAH concentrations in the 5-25 cm depth interval. LPAH concentrations in 2006 were highest in the surface interval at seven of 12 sampling locations, with samples C-21, C-29, C-30, and C-31 having the highest concentrations in the 5-25 cm interval, and C-24 having the highest concentrations in the 25-50 cm depth interval. Box plots of subsurface HPAH and LPAH concentrations are shown in Figure 4-31.

Alpha-Chlordane, *gamma*-chlordane, dieldrin and the DDx compounds were the only pesticides detected in subsurface sediment samples. Box plots illustrating concentrations of *alpha*-chlordane and 4,4′-DDT across depths are shown in Figure 4-32. Maximum concentrations of 4,4,'-DDT occurred in the 5-25 cm subsurface interval at 2006 sampling locations C-21 and C-24, but were uniform or decreased at depth across the remaining 2005 and 2006 samples. Concentrations of *alpha*-chlordane were highest in the 5-25 cm depth interval at 2006 locations C-20, C-21, and C-24, but were uniform or decreased across the remaining locations. The maximum concentration of dieldrin (1.22 µg/kg) in 2005 occurred in the 5-25 cm depth interval at location C-19. This was approximately four times greater than the dieldrin concentration observed in the surface interval at this location (0.32 µg/kg). Though the maximum dieldrin concentration (22.35 µg/kg) in 2006 occurred in the surface interval at location C-23, the second highest concentration was observed in the 5-25 cm depth interval at location C-21.

There was little difference in mean concentrations of Total PCBs across depth intervals (Figure 4-33). Only a single 2005 surface sample (C-13) contained PCB concentrations exceeding the ER-M, and concentrations in both subsurface intervals at that location also exceeded the ER-M. In the 2006 samples, eight subsurface locations had Total PCB concentrations exceeding ER-M values, with maximum observed PCB concentrations occurring in the 5-25 cm interval at locations PA C-21 and PA C-24.

4.3.3 Distribution of Radionuclides at IR Site 24

Radium concentrations were measured at the three 2005 sample locations (C-16, C-13, C-5) closest to the outfalls to determine if there had been any releases of radium from associated onshore activities (e.g., radium dial painting). Ra^{226} was detected in all three surface samples, while Ra^{228} was not detected in any surface sample. Radium-226 concentrations in the three surface samples ranged from 0.28 picoCuries (pCi)/g to 0.32 pCi/g. Concentrations of Ra^{226} were slightly higher at depth in two of the samples, with concentrations in the 25-50 cm interval of 0.42 pCi/g and 0.47 pCi/g at C-5 and C-13, respectively (Figure 4-34). Ra^{228} was detected in two samples at the 5-25 cm depth interval (C-13 and C-16), and one sample in the 25-50 cm depth interval (Figure 4-34). Both Ra^{226} and Ra^{228} are naturally occurring elements. Ra^{226} is part of the uranium-238 decay chain, while the shorter half-lived Ra^{228} is part of the thorium-232 decay chain. The relatively low and uniform concentrations of these elements observed in IR Site 24 sediment samples do not appear to be indicative of a release associated with site activities.

4.3.4 IR Site 24 Background Comparisons

The background comparison protocol used to evaluate IR Site 20 data (Section 4.3.3) also was used to conduct background comparisons for IR Site 24 data. Summaries of the results of IR Site 24 background comparisons are shown in Tables 4-11 and 4-12. Complete results of the background comparisons are provided in Appendix C.

Of the inorganic constituents, antimony, arsenic, nickel, and selenium were not different than San Francisco Bay background concentrations in either the 2005/2006 or the All Years data sets (Table 4-11). Mercury was elevated compared to background in the All Years data set but not in the more recent (2005/2006) data. Cadmium, chromium, copper, lead, silver, and zinc were elevated compared to background in the 2005/2006 data as well as the All Years data set.

Alpha-Chlordane, 4,4′-DDx, Total PCBs, and all PAHs were elevated compared to background in both the 2005/2006 and All Years data sets (Table 4-12). Background comparisons could not be conducted for any pesticides other than *alpha*-chlordane and the DDx compounds due to the infrequency of detection of those compounds.

4.3.5 Summary of IR Site 24 Sediment Data

Concentrations of most inorganic constituents (metals) and organic chemicals in sediment in the open water portions of the Pier Area are low and typically do not exceed ecological screening benchmark values such as the ER-M. Concentrations of inorganics and some organic constituents were higher in the area under the roadway between Piers 1 and 2 than in the open water areas. Additional information on the concentrations and distribution of metals and organic chemicals follows.

The 2006 sampling, which was conducted near the shoreline and under the roadway in an area not previously sampled, showed that concentrations of cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc each exceeded their respective ER-Ms in at least one sample from underneath the roadway. In the open water portions of IR Site 24, all analytical results for metals were below the ER-M values in all surface sediment samples collected during the 2005 remedial investigation, with the exception of nickel and silver. For silver, one sample in each of three open water studies (1996, 1998, and 2005) showed an elevated concentration in the northeast corner adjacent to outfall J, indicating that Navy industrial activities were the likely source. However, silver concentrations drop down to levels indistinguishable from background concentrations throughout the rest of the open water area. Nickel concentrations throughout the open water area were not statistically different from background; however given the highest concentration was found under the roadway at PA C-24, it is likely that Navy operations

did release a small amount of nickel. Historical data included sediment samples collected in 1996 from each of the storm-sewer outfalls, 1997 surface sediment data collected from a wider area, and 1998 surface sediment data collected in non-dredged areas near the seawall and piers. Therefore, the 1996 and 1998 data represent conditions where contamination would be most likely to be found. In the three historical sampling events, nickel was the only metal detected in all three sampling events above the ER-M. Cadmium, chromium, copper, mercury, nickel, and silver were detected at least once in the historical data above their ER-Ms. Mercury was detected once in 1996 at a concentration of 0.76 ppb, which is slightly above the ER-M of 0.71 ppb. In the 2005 subsurface samples collected in open water areas at IR Site 24, metals were generally uniform with depth, and all metals were below the ER-M except for nickel and silver. In the 2006 subsurface samples collected underneath the roadway, concentrations of most metals were highest in the 5-25 cm depth interval, primarily in samples located adjacent to outfalls J and K.

At IR Site 24, PAH concentrations were higher in samples collected in 2006 beneath the roadway than in the 2005 samples collected from the open water portions of IR Site 24. High molecular weight PAH and low molecular weight PAH concentrations in the 2006 surface sediment samples collected underneath the road exceeded ER-Ms at six locations. Total PAHs were not detected at concentrations exceeding the screening benchmark ER-M values in any of the surface sediment samples collected in the open water areas during the 2005 remedial investigation sampling, but PAHs exceeded their ER-Ms in all historical sampling events. During the 1996 sampling event, the majority of the PAHs exceeded their ER-Ms at the two southern outfall locations. PAHs in the 1997 samples collected in offshore areas generally had similar concentrations to the 1996 outfall samples (sometimes higher and sometimes lower for individual PAHs). Concentrations of PAHs in the 1998 samples collected from the undredged areas near the seawall and piers were much lower than the PAH concentrations in the 1996 outfall and 1997 offshore samples, but several PAH ER-Ms were exceeded in these samples.

Dieldrin, *gamma*-chlordane, 4,4'-DDD, and 4,4'-DDT exceeded their respective ER-M values in at least one surface sediment sample beneath the roadway in 2006, but pesticides were not detected at concentrations exceeding the screening benchmark ER-M values in any of the surface sediment samples collected in the open water areas during the 2005 remedial investigation sampling. For the historical data, pesticides were sampled in 1996 and 1998, and were seldom detected. In 1996, 4,4'-DDT was detected in one outfall sample at a concentration over the ER-M (10 ppb with ER-M of 7 ppb). In 1998, no pesticides were detected in the samples collected from the undredged areas near the seawall and piers at concentrations exceeding the ER-Ms.

In samples collected eastward of the quay wall in 2006, Total PCB concentrations in surface sediment exceeded the ER-M at ten of twelve sampling locations. Total PCBs at one open water location at IR Site 24 were detected at concentrations exceeding the screening benchmark ER-M during the 2005 remedial investigation sampling. In addition, two 1996 samples from the two northern outfalls and two 1998 surface sediment samples had Total PCB concentrations exceeding the ER-M.

As evidenced by the 2005 samples at IR Site 24, organic chemicals are generally uniform with depth in the open water areas, and Total PCBs, Total PAHs, and pesticides were not detected at concentrations exceeding the screening benchmark ER-M values in any of the subsurface sediment samples, except for Total PCBs at one location. PAH concentrations in subsurface sediment under the roadway increased with depth at five of the twelve 2006 sampling locations, and exceeded ER-Ms at six locations. *Alpha*-chlordane, *gamma*-chlordane, dieldrin, and the DDx compounds were the only pesticides detected in subsurface sediment samples. Maximum concentrations of 4,4,'-DDx occurred in the 5-25 cm subsurface interval at 2006 sampling locations C-21 and C-24, but were uniform or decreased at depth across the remaining 2005 and 2006 samples. With the exception of dieldrin at one location, the remaining

pesticides were uniform or decreased with depth in sediments under the road. Eight 2006 subsurface locations had Total PCB concentrations exceeding ER-M values.

5.0 DATA EVALUATION TO SUPPORT RISK ASSESSMENTS

This section presents a summary of several data evaluations conducted in support of the ecological and human health risk assessments. Specifically, a summary of the available tissue data is provided, as well as the approach used to calculate EPCs and BAFs for use in both the ecological and human health risk assessment. As discussed in Section 6.0, the ecological risk assessment focused on risks associated with maximum and 95 percent upper confidence limit on the mean (95% UCL) concentrations in surface sediments and near surface sediments (i.e., 5-25 cm), based on the All Years data set and the 2005/2006 only data set. The ecological risk assessment also relied on tissue concentrations for the purpose of dose modeling. Therefore, dry weight EPCs for shellfish and forage fish were required.

For the human health risk assessment (Section 7.0), risks associated with direct contact to surface sediment (from All Years and from 2005 only) were calculated, as well as risks associated with the consumption of shellfish. The EPCs for sediment were the same as those derived for the ecological assessment, however, the human health risk equation requires that tissue data be reported in wet weight; therefore, separate EPCs were developed for that medium.

For individual chemical constituents, estimates were calculated using detected values and half-DLs of non-detects. For total concentrations from groups of compounds, the sums of detected concentrations were used. Limitations associated with the quantity and quality of data are discussed. EPCs were calculated based on site specific sediment and tissue (*M. nasuta*). For constituents that were not detected in *M. nasuta* tissues but were detected in sediment, an alternative approach was used involving modeling from sediment concentrations to tissue concentrations, based on BAFs.

5.1 Summary of Tissue Data

This section summarizes the laboratory bioaccumulation tests conducted with sediments collected at IR Site 20 in 1994 and from IR Site 24 in 1998. At both sites, *M. nasuta* were exposed to site-specific sediments during a 28-day flow-through bioaccumulation test and tissue samples were analyzed for a specific list of analytes.

The tissue data were prepared for analysis following the guidelines discussed in Section 4.1.1. *M. nasuta* tissue data were used in both wet weight and dry weight units. Dry weight results were converted to wet weight units using percent moisture as follows:

$$\text{Wet Weight} = \left[\frac{100 - \%\,\text{moisture}}{100}\right] \times \text{Dry Weight} \qquad (5\text{-}1)$$

Total concentrations were estimated for PCBs, LPAHs, HPAHs, and DDT by summing concentrations from defined compounds within these groups. For all four *M. nasuta* 1994 tissue samples, no organic constituents were detected. Using one-half the reported detection limits for individual constituents can be considered a very conservative estimate of actual concentrations, and if these estimates, when considered in the context of ecological or human health risk screening, show no unacceptable impact, it is safe to assume the actual concentrations present are of no concern. In making this statement, it is important to recognize that detection limits were much higher for tissues measured in IR Site 20 in 1994 than for bioaccumulation studies that were performed in 1998 at other locations at Alameda. In fact, values representing one-half the detection limits for the 1994 data were higher than measured values at the other locations where more sensitive measurement methods were employed.

5.1.1 IR Site 20 Tissue Data

Bioaccumulation tests were conducted using sediments from four IR Site 20 sampling stations (E07, E08, E09, and E10). The results from the 1994 bioaccumulation test reflect the average tissue concentrations from five replicate samples from each station.

Table 5-1 summarizes the *M. nasuta* tissue results in dry weight units for individual chemicals and for the total concentrations within a suite of chemicals. Chemical analyses were performed for a full suite of analytes including trace metals, pesticides, butyltins, PAHs, and PCBs. The summary table presents the total number of samples, the total number of detected concentrations, the minimum and maximum detected concentrations, the standard deviation of the concentration results, and the location of the maximum concentration. For a chemical with no detected results, one-half of the detection limit is listed and is enclosed with brackets. The standard deviation was calculated for the combined set of results, including detected concentrations and one-half detection limits for non-detects. For Total HPAH and Total LPAH concentrations, the table simply illustrates the impact of the high detection limits associated with individual constituents on the calculation of a total result. As stated earlier, the results generated by summing DLs may be considered a conservative estimate for use in risk screening.

Qualitative comparisons were performed between chemical concentrations in *M. nasuta* tissue from both IR Site 20 and from the reference locations. Using the summary statistics provided in Table 5-1, the maximum observed *M. nasuta* tissue concentrations were compared to the tissue threshold values, representing the 90th percentile of the concentrations observed in *M. nasuta* tissue from reference locations (Battelle et al., 2005b). The 90th percentile thresholds were used in the Seaplane Lagoon RI (Battelle et al., 2004b) and were based on a proposed methodology reviewed and approved by the regulators (Appendix G-1 in Battelle et al., 2005b). The conservative 90th percentile was selected because of sample size considerations and their consistent performance in tissues exposed to varied sediment types (fine and coarse grained reference locations). With the exception of copper concentrations (which are essentially equal to the reference stations), none of the inorganic constituents detected in *M. nasuta* tissue exceeded their respective 90th percentile reference tissue value. There was no discernable spatial pattern in relation to where the maximum concentrations for metals occurred.

None of the organic constituents were detected in tissue, but the detection limits achieved while analyzing the 1994 site tissues were often more than an order of magnitude greater than those achieved in 2001 when analyzing tissues from reference locations. Table 5-1 shows that the site values (one-half the DLs) were consistently higher than the 90th percentile reference tissue value (q90). However, given the large disparity between the 1994 and 2001 detection limits, no meaningful comparison of site tissue organics to reference values can be made. All that one can conclude is the old tissue detection limits were high relative to reference values obtained using low detection limits. It does not follow that tissue concentrations in 1994 were elevated.

5.1.2 Summary of IR Site 24 Tissue Data

Bioaccumulation tests were conducted using sediments from five stations at IR Site 24 (Stations PA01 to PA05). The results from the 1998 bioaccumulation test reflect the concentrations from clams exposed to sediment in a single replicate from each station.

Table 5-2 summarizes the *M. nasuta* tissue results in dry weight units for individual chemicals and for the total concentrations within a suite of chemicals. Chemical analyses were performed for a full suite of analytes including trace metals, pesticides, butyltins, PAHs, and PCBs. The summary table presents the total number of samples, the total number of detected concentrations, the minimum and maximum

detected concentrations, the standard deviation of the concentration results, and the location of the maximum concentration. For a chemical with no detected results, one-half of the detection limit is listed and is enclosed in brackets. The standard deviation was calculated for the combined set of results, including detected concentrations and one-half the detection limits for non-detects.

Similar to IR Site 20, qualitative comparisons were performed between chemical concentrations in *M. nasuta* tissue from both IR Site 24 and from the reference locations. Using the summary statistics provided in Table 5-2, the maximum observed *M. nasuta* tissue concentrations were compared to the tissue threshold values, representing the 90th percentile of the concentrations observed in *M. nasuta* tissue from reference locations. The maximum tissue concentrations of arsenic, copper, and silver exceeded their respective 90th percentile reference tissue values at station PA04. The maximum nickel concentration exceeded the 90th percentile at station PA01. There was no discernable spatial pattern in relation to where the maximum concentrations for metals occurred.

At all five stations in IR Site 24, the maximum tissue concentrations of PAHs were consistently higher than the 90th percentile values, with the maximum occurring at PA01 and PA02. In addition, most of the pesticides detected in tissues were present at concentrations exceeding the reference percentiles at all stations, with maximum values consistently exceeding the 90th percentile. The PCB maximum concentration at PA01 exceeded the 90th percentile. TBT concentrations were lower or essentially consistent with reference concentrations.

5.2 Statistical Approach for EPC Calculations

U.S. EPA originally developed their guidance for developing EPCs as a supplement to U.S. EPA's *Risk Assessment Guidance for Superfund (RAGS), Volume 1 – Human Health Evaluation Manual* (U.S. EPA, 1989b). The updated guidance, *Calculating Exposure Point Concentrations at Hazardous Waste Sites* (U.S. EPA, 2002) plus recommendations in the associated software program ProUCL developed for U.S. EPA by Lockheed Martin (U.S. EPA, 2001b), were followed to calculate EPCs for Alameda Point results.

U.S. EPA recommends using the average concentration measured at an exposure area to represent "a reasonable estimate of the concentration likely to be contacted over time" (U.S. EPA, 1989b) and "because of the uncertainty associated with estimating the true average concentration at a site" recommends that the 95% UCL be used. The choice of UCL is based on the distribution of the data with distribution assumptions tested using the Shapiro-Wilk W-test. If the p-value indicates that the untransformed data are not significantly different from normal ($p>0.05$) then the normal distribution is assumed. If the p-value is less than 0.05 then normality is rejected and log normality is considered. If the log transformed data are not significantly different from normal ($p>0.05$), then log normality is assumed. If the p-value is less than 0.05, then log normality is rejected and a nonparametric (distribution free) UCL is used.

For normal data, the UCL is based on the well-known *t*-statistic. For lognormal data, the Land method using the *H*-statistic is typically used (U.S. EPA, 2002, Exhibit 3; Gilbert, 1987). U.S. EPA recommends an alternative to the *H*-statistic for lognormal data depending on the degree of skewness of the data and sample size (U.S. EPA, 2002, Exhibit 7; ProUCL User's Guide Table 1). The alternative is based on the Chebyshev inequality using minimum variance unbiased estimates (MVUE) of the lognormal parameters (U.S. EPA, 2002, Exhibits 5 and 6). If the distribution is neither normal nor lognormal, a nonparametric estimate of the UCL was calculated. This was based on either the Chebyshev inequality, using the sample mean (arithmetic average) and sample standard deviation (U.S. EPA, 2002, Exhibit 12), or more frequently, based on a bootstrap method (U.S. EPA, 2002, Exhibit 10 and 11; ProUCL User's Guide, section 5.9 and 5.10).

The EPC summary tables provide a simple summary of the data including the type of distribution based on the conclusion of the Shapiro-Wilk test (normal, log normal, or nonparametric), and the distribution-dependent estimates of the mean and UCL for the combined results, using one-half DLs for non-detects for individual constituents and using sums of detected concentrations for totals. The 95% UCL was used unless it was larger than the maximum detected concentration, in which case the maximum detected concentration was used.

5.3 Statistical Approach for Calculation of Bioaccumulation Factors

Tissue concentrations of organisms exposed to sediments were used in conjunction with sediment chemistry results to quantify the biotic uptake. A BAF was estimated for analytes accumulating into tissue using the co-located data (*Macoma*) and proximal location data sets (forage fish). A ratio estimate using the sediment chemistry results and tissue results was used to model the bioaccumulation response (see Appendix D for a more complete discussion of the rationale). The following ratios of concentrations were estimated.

$$\text{BAF} = \frac{C_{tissue}}{C_{sed}}\text{, where} \qquad (5\text{-}1)$$

C_{sed} = COPC-specific concentration in surface sediments (mg COPC /kg sediment DW).
C_{tissue} = COPC-specific concentration in tissue (mg COPC /kg tissue, where tissue results are reported in dry weight for use in ecological risk assessment, or in wet weight for use in human health risk assessment)

A ratio estimate (Cochran, 1963) is a statistic used to estimate the rate or ratio between two variables both of which vary from sample to sample. The ratio estimate is simply the ratio of the averages of the two variables. Thus, BAF = average tissue concentration/average sediment concentration, using all paired sediment and tissue results.

5.4 Sediment Exposure Point Concentrations

As discussed in the work plan (Battelle et al., 2005a) EPCs were calculated separately for surface sediments (0-5 cm) to represent exposures to current conditions and for near-surface sediments (5-25 cm). For surface sediments, EPCs were calculated in two ways: (1) using only the most recent 2005/2006 data, and (2) pooling all available data to provide the largest possible data set. To represent all years of data, IR Site 20 EPCs included surface samples from 1993, 2001 and 2005; and for IR Site 24, surface samples from 1996, 1997, 1998, and 2005/2006 were used. Analytes that were never detected in sediment or tissue in any year were eliminated from further consideration.

For IR Site 24, not all analytes were measured in all years, so the sample sizes that went into the calculations varied. Due to the lack of adequate subsurface samples in IR Site 20, and complete lack of subsurface samples in IR Site 24 from sampling collected prior to 2005, EPCs for the subsurface (5-25 cm) layer were based only on the 2005/2006 data.

A summary of the sediment EPCs calculated for each site are presented in Tables 5-3 and 5-4. These tables list the estimates of mean and 95% UCL in side-by-side columns for the three data set alternatives, All Years, 2005/2006 Surface, and 2005/2006 Subsurface. This presentation allows an easy comparison between the EPCs calculated using surface and near-surface samples. Note that the number of samples (N) and number of detects (D) are provided, as well as the maximum value, results of distribution tests,

and the recommended EPCs. Symbols are used to indicate whether EPCs included any measurements that were valid detects. EPCs were calculated using one-half DLs for constituents even when no sample resulted in a valid detect; these EPCs are indicated by enclosing the values in brackets (><). It is anticipated that such an approach would provide conservative estimates, so that risks are less likely to be underestimated.

5.5 *M. nasuta* Tissue Exposure Point Concentrations

Two approaches were used to calculate EPCs for *M. nasuta* tissue. For IR Site 20, analytes that were detected in historical *M. nasuta* tissue data were used to calculate tissue EPCs. However, many of the organic compounds were non-detect, and detection limits were elevated. Therefore, for analytes detected in sediment, but not detected in historical site-specific tissue, EPCs were modeled by multiplying the sediment EPCs by a BAF. For a few analytes in IR Site 20, EPCs were calculated based on one-half the DLs for non-detected constituents for which there is no BAF available; this can be used as an initial screen.

At IR Site 24, detection limits for the historical *M. nasuta* tissue data were adequate. However, sediments collected from the sediment shelf eastward of the quay wall had higher concentrations of many constituents than the sediments used in the 1998 bioaccumulation tests. Therefore, it is possible that higher tissue concentrations would have been obtained if a broader range of sediments had been evaluated. To minimize the possibility that tissue concentrations would be underestimated, tissue EPCs at IR Site 24 were developed by taking the maximum of either the historical *M. nasuta* tissue data collected in 1998, or modeled data using BAFs and sediment EPCs from the different data sets at IR Site 24.

The procedures for calculating EPCs from tissue results are described in Section 5.5.1. The procedures for calculating modeled tissue EPCs are described in Section 5.5.2, and the procedures for calculating the BAFs used in modeling tissue concentrations are described in Section 5.5.3.

5.5.1 Measured *M. nasuta* Tissue Concentrations

A limited number of *M. nasuta* tissue values were available from historical laboratory bioaccumulation studies performed on Alameda sediment. In IR Site 20, results from four locations sampled in 1993 were available, whereas for IR Site 24 the results from five locations sampled in 1998 were used. Each result from the 1993 IR Site 20 samples was an average of five replicate exposures; whereas the 1998 data were single exposure chambers. In both cases standard 28-day exposures protocols were used.

Tissue concentrations (both dry weight and wet weight) for IR Site 20 and IR Site 24 are presented for those constituents that were detected in *M. nasuta* in Tables 5-5 and 5-6. Note that for IR Site 20, with the exception of TBT, no organic analytes were measured above the DLs. As previously mentioned, for most of these organics in IR Site 20, a modeled tissue concentration was generated as discussed in Section 5.5.2. In addition, modeled tissue concentrations were calculated in IR Site 20 for antimony, cadmium, chromium, selenium, and silver because these constituents were not detected in *M. nasuta* tissue. For IR Site 20, three pesticides (endosulfan II, endrin aldehyde, and *gamma*-chlordane) and two PAHs (2-methylnaphthalene and dibenzofuran) were not detected in tissue samples from any years; therefore, no BAF is available to model tissue concentrations from sediment. The same was true in IR Site 24 for endrin and heptachlor epoxide. For these constituents, tissue concentrations were calculated using one-half DLs for the non-detected constituents. It is reasonable to assume, for screening purposes, that the tissue concentrations based on one-half DLs are conservative estimates. If these tissue concentrations do not drive an unacceptable risk to upper trophic levels, no further assessment would be warranted.

For summed constituents, if none of the constituents that went into the sum were detected, no tissue concentration was calculated.

5.5.2 Modeled *M. nasuta* Tissue Concentrations

The BAF estimate of biotic uptake from sediments to tissues can be used as a direct multiplier of sediment results to provide an estimate of expected tissue concentrations for a given chemical constituent. Tables 5-7 and 5-8 present BAF estimates based on dry weight *M. nasuta* tissue concentrations used to model concentrations in invertebrate tissue as an alternative estimate in ecological risk assessment at IR Site 20 (Table 5-7) and IR Site 24 (Table 5-8). The tables present the modeled estimates of tissue concentrations (95% UCLs) for the constituents that were not detected in site tissues for use in risk calculations. The estimates are presented in side-by-side columns for three sediment data set alternatives, including surface sediments and subsurface sediments (5-25 cm depth) from 2005 data and surface sediments from all years.

Table 5-9 presents BAF estimates based on wet weight *M. nasuta* tissue concentrations used to model concentrations in invertebrate tissue for use in the human health risk assessment at IR Site 20. The table presents the modeled estimates of tissue concentrations (95% UCLs) for use in risk calculations.

5.5.3 *M. nasuta* Bioaccumulation Factors

Sediment samples collected at Alameda Point areas in 1993 (IR Site 20, Seaplane Lagoon [IR Site 17], Western Bayside) and in 1998 (Breakwater Beach, IR Site 24, Seaplane Lagoon, and Navy reference locations) were analyzed for sediment chemistry and used in bioassay tests as exposure medium for laboratory reared *M. nasuta*. The data was reviewed for suitability in calculating BAFs. The *M. nasuta* tissues from 1993 exposed to IR Site 20 sediments produced no detected concentrations of organic constituents due to high DLs. The achievement of better DLs in *M. nasuta* tissues in 1998 made the data from that year more suitable for use in BAF calculations. The sediment concentrations collected in 1998 were representative of the range of concentrations observed at Alameda Point areas over time and the *M. nasuta* tissue results were of better quality, hence only the 1998 data were used to calculate BAFs to represent biotic uptake in *M. nasuta* for all areas in Alameda Point.

The bivariate plots in Figure 5-1 illustrate two examples of the data and the BAF calculation process. Each point represents the co-located sediment and tissue results at a single location. The sediment concentration is indicated by the position along the X-axis and the tissue concentration by the position along the Y-axis. The BAF calculation is represented by the line that passes through the origin (where both X and Y are zero) and has a slope equal to the estimated ratio of biotic uptake. The scatter of points around the line provides an indication of the variability of the data and the strength of the relationship, or correlation, between concentrations in sediment and tissues. In Figure 5-1 the plot on the left indicates that chromium exhibits a relatively weak relationship or low correlation (loose scatter of points about the BAF line) and that benzo(a)pyrene exhibits a more consistent pattern or stronger correlation (points closer to BAF line). Appendix D provides plots for all chemicals for which BAFs were derived.

5.6 Development of Fish Tissue EPCs

Because no forage fish were collected at either IR Site 20 or IR Site 24, forage fish BAF estimates based on studies conducted in Seaplane Lagoon were used together with the site-specific sediment EPC results to estimate the maximum forage fish concentrations and EPCs at these sites. The procedures for calculating modeled tissue EPCs are described in Section 5.6.1, and the approach to calculating BAFs for forage fish is described in Section 5.6.2.

5.6.1 Modeled Forage Fish Tissue Concentrations

Tables 5-10 and 5-11 present forage fish tissue concentrations modeled from BAF estimates based on dry weight tissue concentrations for use in the ecological risk assessment at IR Site 20 (Table 5-10) and IR Site 24 (Table 5-11). The tables include both a modeled estimate of maximum fish tissue concentrations for use in screening and a modeled estimate of the tissue concentrations (95% UCL) for use in risk calculations as described in Sections 6.0 and 7.0. The estimates are presented in side-by-side columns for three sediment data set alternatives, including surface sediments and subsurface sediments (5-25 cm depth) from 2005 data and surface sediments from all years.

Table 5-12 presents forage fish tissue concentrations modeled from BAF estimates based on wet weight tissue concentrations for use in the human health risk assessment at IR Site 20. The table presents the modeled estimates of tissue concentrations (95% UCLs) for use in risk calculations in side-by-side columns for surface sediments collected in 2005 and surface sediments from all years.

5.6.2 Forage Fish Bioaccumulation Factors

Forage fish were collected in 2001 from Seaplane Lagoon and from two San Francisco Bay reference areas (Bay Farm [BF] and Paradise Cove [PC]) in support of the Seaplane Lagoon RI. No forage fish have been collected from other Alameda Point offshore areas. Samples were composite forage fish tissue samples collected along a series of trawl lines. The Seaplane Lagoon sediment exposure areas were defined by circumscribing a polygon around the trawl lines used during fish collection (Figure 5-2). During the Seaplane Lagoon RI, the sediments falling inside the trawl polygons collected during 1993/4, 1996, and 1998 were used to represent the forage fish exposure concentrations within the polygon. In the BAF calculations for this report, the sediment data collected during a sediment dynamics study conducted at Seaplane Lagoon (Battelle et al., 2004b) were included for those data points falling within the polygons. The BAF calculations for the Seaplane Lagoon RI were intended to represent the biotic uptake specific to Seaplane Lagoon and were based on fish and sediments from Seaplane Lagoon only. The sediment concentrations in IR Site 20 and IR Site 24 generally fall between those observed in Seaplane Lagoon and the reference areas. Therefore, to model biotic uptake across the expected range of sediment concentrations, the BAFs for this investigation are calculated using the results from both Seaplane Lagoon and the reference areas.

Based on this sampling scenario, sediment and tissue results are proximal rather than co-located and a point-by-point pairing of sediment and tissue results is not possible. Therefore, an approach of pairing average fish concentrations with average sediment concentrations from each collection area was applied. Figure 5-3 illustrates the data pairing and BAF calculation results for Total PCBs. The concentration results in Figure 5-3 are plotted in the same colors as the trawl polygons in Figure 5-2. The reference areas are plotted in red (PC) and light blue (BF). The results are plotted as a crossed vertical line and horizontal line with the intersection point circled. The range of sediment concentrations for a collection area is indicated by the horizontal line and the range of tissue concentrations is indicated by the vertical line. The lines cross at the average or mean concentrations for the tissue and sediment results. The BAF estimate of the uptake rate is presented as the slope of the black line. Note that a measure of the uncertainty associated with this calculation can be summarized by the lengths of the horizontal and vertical lines that show the ranges of sample concentrations. The circled mean concentrations indicate the central trend within each sampling area and their pattern and distance from the BAF line is a measure of the correlation or strength of the overall association.

5.7 Summary of EPC Calculations

This section describes the statistical procedures used to generate exposure point concentrations for ecological and human health risk assessment. Dry weight values were generated for ecological modeling, whereas human health models are based on wet weight values. For sediments, separate EPCs were generated for surface sediment using data from the All Years data set and from the 2005 and 2005/2006 data sets; and a second EPC was generated to represent the layer of sediment immediately below the surface using the 2005 or 2005/2006 cores. At IR Site 20 for *M. nasuta* tissue, EPCs were generated using historical tissue data, for all constituents that were detected in tissue. For constituents that were detected in sediment in any year, but not in tissue, EPCs were calculated by multiplying a bioaccumulation factor times the sediment EPC for each area. The procedures and data sets used to calculate BAFs for Alameda in general are described, but basically involve a ratio estimator, whereby the mean concentration in tissue is divided by the mean concentration in sediment. At IR Site 24, the greater of either the measured concentrations detected in tissue, or the modeled concentrations were used to develop *M. nasuta* EPCs (Table 5-13). Tables 5-14 and 5-15 present a summary of the dry weight EPCs for both *M. nasuta* and forage fish that were used in the evaluation of ecological risk. Table 5-16 presents a summary of wet weight EPCs for both *M. nasuta* and forage fish that were used in the evaluation of human health risk for IR Site 20. The table indicates whether the EPC was based on the site specific tissue or modeled using BAFs.

6.0 ECOLOGICAL RISK ASSESSMENT

This section presents the results of the ecological risk assessment conducted in support of the RI at the offshore sediment sites at IR Site 20 and IR Site 24. This ecological risk assessment evaluated historical (sediment, tissue, and toxicity bioassay) data collected in the offshore areas of Alameda Point and incorporated additional sediment data recently collected by Battelle (2005 and 2006). A full discussion of the site history, description of previous investigations, an evaluation of the newly collected sediment data, and a comprehensive discussion of nature and extent at IR Sites 20 and 24 is provided in previous sections.

6.1 Ecological Risk Assessment Objectives and Approach

The main objectives of the ecological risk assessment are to (1) evaluate the potential for adverse effects to the environment through exposure to sediment contaminants from IR Sites 20 and 24 under current conditions, and (2) provide information for risk management decisions.

To evaluate these potential ecological risks, guidance from U.S. EPA (1992 and 1997a) and the Navy (DON, 2001) was followed. As outlined in these guidance documents, a tiered process was used (Figure 6-1). In the first tier, a screening-level ecological risk assessment (SLERA) was conducted (encompassing Steps 1 and 2 of the U.S. EPA guidance), which consisted of a preliminary problem formulation, and a screening-level dose assessment using conservative assumptions. The second tier, or baseline ecological risk assessment (BERA) (Steps 3 through 7 of the U.S. EPA process), used the output of the SLERA to refine the problem formulation and to further evaluate the potential for adverse effects to receptors of concern (ROC) by using more site-specific data, when available.

Although the existing guidance provides a general framework for ecological risk assessments, it recognizes that approaches and methodologies must be tailored to assessment scenarios at individual sites. U.S. EPA characterizes the assessment of ecological risk as a complex, nonlinear process that involves many parallel activities and emphasizes that the ecological risk assessment framework was designed to be flexible, thereby allowing studies to be scaled in a manner appropriate to the requirements of and conditions at each site (U.S. EPA, 1997a).

The following provides an overview of the proposed approach.

SLERA: The objective of the SLERA is to conservatively screen the offshore sites and to determine whether additional assessment is necessary. It is used as a tool to focus the BERA on only those assessment endpoints (AEs) and contaminants that require further evaluation. The SLERA consisted of:

- **Preliminary Problem Formulation:** In this first step, key factors to be considered in the ecological risk assessment were identified. This included compiling available information and data on the offshore areas of Alameda Point and characterizing the nature and extent of site-specific stressors and the natural resources at risk. In this preliminary analysis, contaminants of potential ecological concern (COPECs) were identified and biological species and endpoints were selected for evaluation. This information was used to formulate a CSM and to identify the scope and goals of the ecological risk assessment.

- **Screening-Level Risk Estimate:** In the SLERA, a preliminary estimate of risk was conducted. The SLERA used conservative assumptions to estimate exposure and effects to potential ecological receptors. This ensured high confidence in any determination of no unacceptable risk. However, findings of potential risk were not definitive indications of risk but, rather, indications of a possibility of risk that required further evaluation. Those

receptors and COPECs identified in the SLERA as posing the potential for risk were evaluated more fully in the BERA.

BERA: In the BERA, the preliminary problem formulation developed in the SLERA was refined, and an assessment of exposure and effects was conducted on the selected AEs. The measurements of exposure and effects were then integrated into a characterization of risk. The specific components of the BERA were:

- **Refined Problem Formulation:** The first step of the BERA was to refine the preliminary problem formulation and CSM developed in the SLERA. The CSM was re-evaluated in light of the outcome of the SLERA and was refined as necessary. The AEs selected in the SLERA also were re-evaluated to ensure that they were applicable and relevant to the BERA. Specific measurement endpoints (MEs) also were selected to maximize the use of existing, historical data collected from the offshore area.

- **Exposure and Effects Assessment:** In this phase, refinements were made to the conservative screening model conducted in the SLERA to better estimate the potential for adverse effects based on site-specific information rather than conservative defaults. The relationship between the degree of exposure and ecological effects was assessed using field measures and available ecotoxicological literature.

- **Risk Characterization:** The risk characterization step of the BERA integrates the exposure and effects assessment to evaluate the potential for unacceptable ecological risk at the site. In the BERA, the risk characterization for each AE included an estimation of potential risks and a determination of the ecological significance of potential risks.

Quantitative data were collected and used to assess exposure and the potential toxic effects of COPECs to selected AEs. The following specific types of data were collected or reviewed during the ecological risk assessment:

- Site-specific ecological surveys to identify ecological receptors;

- Chemical analysis of samples of sediment to evaluate the nature and extent of contamination;

- Measurements of other parameters such as grain size, pH, and organic carbon that aid in estimating the bioavailability of chemical stressors;

- Bioassays to evaluate the direct toxicity of COPECs to benthic invertebrates;

- Chemical analysis of tissue residue from sediment invertebrates and fish to evaluate the potential for bioaccumulation and trophic transfer of chemicals;

- Food-chain modeling to estimate potential doses received by higher-trophic level receptors; and,

- Literature review on a variety of topics to help interpret site-specific data.

6.2 Preliminary Problem Formulation

The primary goal of the preliminary problem formulation is to establish the goals and the focus of the ecological risk assessment based on the site history, physical and ecological setting, and potentially

complete exposure pathways. This information is used to develop a preliminary CSM and preliminary AEs. The site description and history for each of the sites evaluated in this RI is provided in Section 2.

6.2.1 Ecological Setting

San Francisco Bay is commonly subdivided into three geographical areas designated as the North Bay, Central Bay, and South Bay, with Alameda Point located in the Central Bay area. Although a complete habitat evaluation has not been conducted for the offshore areas of Alameda Point, information presented in previous ecological assessments for Alameda Point (PRC, 1994) was used to describe the composition of the biotic communities in the offshore areas. Additionally, habitat assessments conducted for the Port of Oakland (GGAS, 1994; ENTRIX, Inc., 1997) provided supplementary information. This information is summarized below. Full species list tables can be found in Appendix E. A conceptual food web that illustrates the relationships among the species found in the offshore area of Alameda Point can be found in Figure 6-2.

6.2.1.1 Invertebrates

The offshore waters and sediment around Alameda Point support a variety of prey items such as plankton (phytoplankton and zooplankton) and benthic organisms (e.g., polychaete worms, mollusks and crustaceans) (PRC, 1994; PRC, 1996a; ENTRIX, 1997). The benthic community at Oakland Inner Harbor was found to be dominated by annelids and molluscs (PRC, 1994). A number of crustacean species also were identified, the most abundant being *Ampelisca abdita* (PRC, 1994). On the western edge of Alameda Point (at Western Bayside), the benthic fauna are dominated by crustaceans, annelids, and molluscs. The most abundant species include black shrimp (*Crangon nigricauda*), sand shrimp (*Crangon franciscorum*), and dungeness crab (*Cancer magister*). Several species of polychaete worms and bivalves (e.g., *Mytilus edulis*) are also abundant (PRC, 1996b; TtEMI, 2000). In sediment samples collected in the general vicinity of Western Bayside, Chapman et al. (1987) reported an abundance of crustacean species (*Ampelisca abdita, Photis californica,* and *Leptochelia* sp.), as well as the presence of polychaetes (*Euchone analis*) and phoronidae (tube worms; *Phoronis* sp.). Sediment sampling conducted in 2001 (Battelle et al., 2004a) at Western Bayside in support of the Skeet Range RI found shallow sediments in the area containing thick mats of amphipod tubes (*A. abdita*). No specific benthic sampling has been conducted at IR Site 24, but it is likely that benthic organisms found there are similar to those found at the other offshore areas. A list of potentially occurring benthic invertebrate species in the offshore sediment areas of Alameda Point can be found in Appendix E.

6.2.1.2 Fish

The benthic invertebrate species found in offshore sediments represent a food source for predators such as fish and benthic-feeding birds. The varying depths and substrate types found in open water areas of Oakland Inner Harbor create habitat for many fish species including topsmelt (*Atherinops affinis*), three-spine stickleback (*Gasterosteus aculeatus*), and shiner perch (*Cymatogaster aggregata*). Although seasonal variations may occur, fish species such as Pacific tomcod (*Microgadus proximus*), plainfin midshipman (*Porichthys notatus*), and white croaker (*Genyonemus lineatus*) may occur more commonly in deep dredged habitats; species including northern anchovy (*Engraulis mordax*) and Pacific herring (*Clupea harengus*) occur in shallow subtidal habitats (ENTRIX, 1997). The nearshore environment in the vicinity of Western Bayside supports a diverse fish community (ENTRIX, 1997), including estuarine, marine, and anadromous fishes. Among them are various flatfish, surfperch, gobies, sculpin, silversides, pipefish, sharks, and rays. Several species of both pelagic and benthic fish are anticipated to be present, including shiner perch (*Cymatogaster aggregata*), bay pipefish (*Syngnathus leptorhynchus*), walleye surf-perch (*Hyperprosopon urgenteum*), and redtail surfperch (*Amphistichus rhodoterus*). No specific sampling for fish has been conducted at IR Site 24, but it is likely that fish found in other offshore areas of

Alameda would potentially use habitat at IR Site 24. A list of potentially occurring fish species in the offshore areas of Alameda Point can be found in Appendix E.

6.2.1.3 Birds

Field surveys of bird communities in the vicinity of the Port of Oakland and Alameda Point were conducted in the winter (January-April) and summer (June-July) of 1997 (ENTRIX, 1997). Two of the survey areas were located off of the northern side of Alameda Point and encompass the Oakland Inner Harbor and Western Bayside Area. These surveys indicated that the open water habitat of the channel supports a variety of bird species including diving birds such as the double-crested cormorant (*Phalacrocorax auritus*), western and Clark's grebes (*Aechmorphorus* sp.), American wigeon (*Anas americana*) and common and Pacific loons (*Gavia sp.*). Surface diving birds including the federally and state-endangered California least tern (*Sterna antillarum browni*) and California brown pelican (*Pelecanus occidentalis*) are known to forage and rest in areas within and adjacent to the Oakland Inner Harbor, although only one pelican was observed in the ENTRIX (1997) field surveys. Other water-dependent bird species such as American coots (*Fulica americana*), gulls (*Larus* sp.) and wading birds (e.g., egrets) also have been observed in Oakland Inner Harbor (ENTRIX, 1997). No specific bird surveys have been conducted in IR Site 24. A full avian species list, including seasonal information, can be found in Appendix E.

6.2.1.4 Mammals

Based on historical observations and known activity patterns for marine mammals in San Francisco Bay (GGAS, 1994), it is possible that both California sea lions (*Zalophus californianus*) and harbor seals (*Phoca vitulina*) may forage in the vicinity of Alameda Point. Although the presence of either of these species in specific areas of Alameda Point has not been documented, harbor seal foraging activities and haul-outs have been observed along and near the breakwaters on the southern side of Alameda Point. However, available radiotelemetry data for seals in San Francisco Bay suggest that none of the seven discreet feeding stations typically frequented by seals within the bay is in the immediate vicinity of Alameda Point (Harvey and Torok, 1994). Appendix E provides a list of potential marine mammal species observed within or near Alameda, as well as a qualitative exposure assessment for the harbor seal.

6.2.1.5 Special-Status Species

Special status species known to occur in the Central Bay include green sturgeon (*Acipenser medirostris*), winter-run Chinook salmon (*Oncorhynchus tshawytscha*), central California steelhead (*Oncorhynchus mykiss*), Barrow's goldeneye (*Bucephala islandica*), double-crested cormorant, California least tern, California brown pelican (*Pelecanus occidentalis californicus*), western snowy plover (*Charadrius alexandrinus nivosus*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), American peregrine falcon (*Falco peregrinus anatum*), California sea lion, and harbor seal (ENTRIX, 1997). None of these species are known to nest or breed in the offshore areas, although several species are known to use adjacent upland areas for nesting and/or foraging activities (e.g., least tern).

Additional information detailing conservation status, distribution, abundance, seasonality, life history, and occurrence in the vicinity of Alameda Point for each of the special status species is discussed in more detail in Appendix E.

6.2.2 Development of Conceptual Site Model

The CSM is a framework for relating ecological receptors to contaminated media and determining the degree of completion and significance of exposure pathways. In general, an exposure pathway describes

the course a chemical takes from the source to the exposed receptor. An exposure pathway analysis links the source, location, and type of environmental release with population location and activity patterns to determine the primary pathways of exposure. If potentially complete and significant exposure pathways exist between contaminants and receptors, an assessment of potential effects and exposure was conducted. Only those potentially complete exposure pathways likely to contribute significantly to the total exposure were quantitatively evaluated. All other potentially complete exposure pathways which result in minor exposures or for which there are no exposure models or insufficient toxicity data were not quantitatively evaluated in this assessment.

An exposure pathway was considered complete if all four of the following elements were present:

(1) A source and mechanism of chemical release to the environment;

(2) An environmental retention or transport medium (e.g., water or sediment) for the released chemical;

(3) A point of potential physical contact of a receptor with the contaminated medium (exposure point); and,

(4) An exposure route (e.g., ingestion of contaminated prey, incidental ingestion of sediment).

The potentially complete and significant ecological exposure pathways present at the offshore sites were similar except for differences among sites in the potential primary sources and primary release mechanisms. Site-specific CSMs for IR Sites 20 and 24 can be found in Figures 6-3 and 6-4.

For both sites, sediment was considered the primary exposure media. Although it is recognized that sediment-associated porewater can be a potentially important exposure pathway, porewater analyses were not considered necessary at this time because bulk sediment analyses were expected to adequately characterize the site (Battelle et al., 2005a). The other potential exposure medium identified in the CSM was surface water. Although chemicals from the site may have historically been released to surface water as a result of historical discharges, those potential sources have been addressed as part of an upland storm water investigation. Additionally, surface water was not considered a significant exposure medium due to tidal action and San Francisco Bay currents, which result in rapid dilution.

Benthic invertebrates in offshore sediments may be exposed to COPECs through ingestion of and direct contact with surface sediments. An evaluation of major exposure pathways to higher trophic levels indicates that there are potentially complete exposure pathways to benthic feeding and piscivorous fish and birds. Exposure to these secondary and tertiary trophic consumers is through ingestion of prey that has been exposed to COPECs, as well as incidental ingestion of surface sediments in the area.

Tertiary trophic consumers with the highest potential exposure to COPECs are piscivorous birds. While, marine mammals such as the harbor seal may be observed in the areas offshore of Alameda Point, their exposure to contaminants in the offshore sediments is likely to be minimal (see Appendix E for a detailed discussion regarding marine mammal usage of Alameda Point). Therefore, marine mammals will not be evaluated quantitatively in this risk assessment.

6.2.3 Selection of Assessment Endpoints

Based on the ecological resources and complete exposure pathways identified in the CSM, AEs were developed to identify the ecological values at the site that should be protected. In general, AE selection

considered the ecosystem, communities, and species relevant to a specific site. AEs were defined based on technical considerations, including the:

- Chemicals present and their concentration;
- Mechanisms of toxicity of the chemicals to different groups of organisms;
- Ecologically relevant receptor groups that are potentially sensitive or highly exposed to the chemicals; and,
- Potentially complete exposure pathways.

Based on the conceptual food web (Figure 6-2) and the CSMs (Figures 6-3 and 6-4), preliminary AEs were identified for the offshore areas as follows:

AE(1): Sufficient rates of survival, growth, and reproduction to sustain the benthic invertebrate community in the offshore areas of Alameda Point.

AE(2): Sufficient rates of survival, growth, and reproduction to sustain benthic-feeding and piscivorous-feeding fish communities in the offshore areas of Alameda Point.

AE(3): Sufficient rates of survival, growth, and reproduction to sustain the avian community in the offshore areas of Alameda Point. This AE also includes the protection at the level of the individual for special-status species as appropriate.[1]

6.2.4 Selection of Receptors of Concern

Because it is impractical to assess the toxic effects of COPECs to all potentially exposed ecological receptors, a subset of potential receptors was chosen to act as a "surrogate species" for each AE. These ROCs were defined as follows:

- Species that represent a functional group of organisms at the site for the evaluation of AEs; and
- Species that are chosen based primarily on their function in the ecosystem and secondarily on taxonomic relatedness and known or presumed similarities in physiology and life history.

Because they represent a larger group, ROCs were selected so that they maximize exposure, thus producing conservative estimates of risk. For those AEs that are generic in nature [e.g., AE(1) and AE(2)], selection of representative receptors was not necessary. These AEs are evaluated using benchmarks that are not specific to a particular species. For example, the benthic invertebrate sediment benchmarks used to evaluate benthic invertebrates were developed based on observed toxicity to a number of invertebrate species and are considered protective of a variety of species; thus, it is not necessary to select a specific representative species for these AEs. Therefore, the selection of ROCs focused on the upper trophic-level avian receptor groups addressed by AE(3).

[1] This assessment endpoint was modified from those described in the Final Offshore Sediment Study Work Plan (Battelle et al., 2005a) by combining both the non-special and special-status avian species into one assessment endpoint.

Avian ROCs were selected to conservatively represent the avian community that forages in the offshore area of Alameda Point. To provide consistency, ROCs also were chosen that were evaluated in past ecological risk assessments at Alameda Point (e.g., Skeet Range and Seaplane Lagoon). For the offshore areas of Alameda Point, the avian trophic groups with the most significant potential for exposure to sediment-bound contaminants are the benthic-invertebrate eating birds, omnivorous birds and piscivorous birds (Figure 6-2). To bound the range of exposure, benthic-invertebrate eating birds and piscivorous birds were chosen to represent this AE. Additionally, because special-status bird species are regulated at the level of the individual and non-special status species are regulated at the population level, both non-special status and special-status bird species were selected.

6.2.4.1 Selection of the Benthic Invertebrate-Eating ROC

Benthic-feeding birds feed on invertebrates by probing or plucking prey from the substrate in intertidal and subtidal areas. Because these species feed on prey that are in close contact with sediments, they may be exposed to COPECs in sediments through either the prey (which has bioaccumulated COPECs in tissues) or through incidental ingestion of contaminated sediment (via their foraging behavior or sediment found in the guts of their prey). Wading shorebirds, such as the dowitcher, probe in shallow waters to sift small crustacea out of sandy sediments. Diving birds, such as surf scoters and ruddy ducks, dive and pluck prey (such as molluscs) from the substrate. Although wading shorebirds may be the most exposed because of the substantial amount of sediment contacted during feeding, there is no available foraging area for these species along the shorelines of IR Sites 20 and 24 (due to the riprap shoreline, docks, and quays). Because the majority of available habitat is subtidal, diving birds such as benthic-feeding diving ducks were considered the most appropriate ROC for the offshore areas.

A number of species of diving ducks have been observed at Alameda Point including surf scoters, white-winged scoters, black scoters, ruddy ducks, greater scaups, buffleheads, and common goldeneyes. All are present as winter residents that breed in northern Canada and Alaska.

Of these species, the surf scoter was selected as the ROC representative of benthic-feeding birds. The scoter was selected for the following reasons:

- Surf scoters have been observed offshore of Alameda Point (excess of 3,000 surf scoters have been observed on the waters west of Alameda Point).

- Surf scoters can frequently forage in waters up to 10 m deep (Savard et al., 1998). This would allow them to forage in most of the subtidal offshore areas.

- Surf scoters feed primarily on molluscs (Vermeer and Bourne, 1984; Ohlendorf et al., 1986). Bioaccumulation data are available for the clam *M. nasuta* from the offshore sites, so food-chain modeling using *M. nasuta* body burdens is an ecologically relevant scenario.

- There is a substantial body of comparative contaminant literature on the scoter. Trace metal analyses of scoter tissue and scoter prey items have been reported from British Columbia (Vermeer and Peakall, 1979), and trace element and organochlorine residues in scoters have been reported from San Francisco Bay (Ohlendorf et al., 1991).

- Surf scoters have been evaluated in other ecological risk assessments conducted at Alameda Point (Skeet Range and Seaplane Lagoon) and exposure parameters have been agreed upon by the agencies (Battelle et al., 2004a and 2004b).

Surf scoters are a long-lived species with low reproductive output. They breed in Alaska and Canada and winter along the Pacific and Atlantic coasts; they are present in the San Francisco Bay from mid-October/November through late April (Savard et al., 1998). Pairs form at wintering grounds (Morrier et al., 1997 as cited in Savard et al., 1998) and females have single broods and begin laying their clutch in concealed nests constructed in the ground and clutch size ranges from 6 to 9 eggs (Morrier at al. 1997 as cited in Savard et al., 1998). The young are precocial and can fly by 55 days (Lesage et al., 1997 as cited in Savard et al., 1998).

Scoters feed on mollusks at their wintering grounds, herring eggs when available during spring migration, and freshwater invertebrates while breeding (Savard et al., 1998). On their wintering grounds, they dive down and prey on stationary invertebrates such as mussels, barnacles, and clams (Ohlendorf et al., 1986; Savard et al., 1998).

No specific information has been identified regarding scoter home ranges while wintering in San Francisco Bay. However, a radiotelemetry study conducted in Puget Sound found that wintering birds stayed within 9 to 11 kilometers (km) of their capture location. Most birds used between two and seven locations (defined as 1 km diameter areas) 76 to 87% of the time studied (Mahaffy et al., 1995).

6.2.4.2 Selection of the Piscivorous Avian ROC

Piscivorous birds may also be potentially exposed to COPECs from offshore sediments through foraging on prey that have bioaccumulated contaminants. Several species of diving piscivorous birds have been observed near Alameda Point including the double-crested cormorant, the pie-billed grebe, horned grebe, eared grebe, western grebe, Clark's grebe, Pacific loon, common loon, California least tern, California brown pelican, and Caspian and Forster's terns.

Of the piscivorous bird species observed offshore of Alameda, the double-crested cormorant and the California least tern were selected as ROCs. The double-crested cormorant was selected for the following reasons:

- The species is widespread in San Francisco Bay with nesting colonies potentially within foraging distance of the offshore areas of Alameda Point (located on the Bay Bridge; Ainley, 2000); as such, they are found year round in San Francisco Bay;

- Double-crested cormorants have been observed offshore of Alameda Point;

- Because double-crested cormorants forage in shallow waters overlying bottoms of flat relief (<8 m deep) (Hatch and Weseloh, 1999; Ainley, 2000), they could be exposed to most of the offshore areas. This is contrasted with piscivorous wading birds [e.g., the great blue heron (*Ardea herodias*) or the snowy egret (*Egretta thula*)] that are restricted to the shallow inter-tidal zone, which makes up only a small proportion of the area off of Western Bayside.

- Double-crested cormorants have been evaluated in other ecological risk assessments conducted at Alameda Point (Seaplane Lagoon) and exposure parameters have been agreed upon by the agencies (Battelle et al., 2004b).

Double-crested cormorants are a California species of special concern. In the San Francisco Bay Area, they are most prevalent in the winter; however, there is a large breeding population in the summer (Ainley, 2000). They breed April through August. Twelve colonies are located in the San Francisco Bay area, with the largest colonies on the Oakland-San Francisco Bay Bridge and the Richmond-San Rafael Bridge (Ainley, 2000). Clutch size is usually three to four eggs (Zeiner et al., 1990).

Double-crested cormorants usually forage in water less than 8 m deep (Hatch and Weseloh, 1999). Around the Richmond-San Rafael Bridge, their diet consisted mainly of midshipman (*Porichthys notatus*), various species of smelt (*Osmeridae*), and yellowfin gobies (*Acanthogobius flavimanus*) (Stenzel et al., 1995). Other studies on the West Coast found that atherinids (topsmelt), embiotocids (surfperch), engraulids (herring), scaenids (rockfish), and midshipman are commonly eaten by the double-crested cormorant (Ainley et al., 1981). Prey fish are generally less than 15 cm in length (Hatch and Weseloh, 1999). Ainley et al. (1981) also found that the double-crested cormorant preferred to forage on schooling prey from the surface to near flat bottoms.

In San Francisco Bay, double-crested cormorants were found to forage within 5 km of the Richmond-San Rafael Bridge (Stenzel et al., 1995). Birds from the Farallon Islands frequently travel to mainland estuaries to feed (over 70 km). In Wisconsin, birds flew less than 3 km on average (maximum distance 40 km) from the breeding colony to the first foraging site (Custer and Bunck, 1992). In Mississippi, the average distance flown was 15.7 km (in King et al., 1995 as cited in Cal/U.S. EPA, 1999).

The California least tern was selected as an ROC for the following reasons:

- The California least tern is a federally listed endangered species that breeds on Alameda Point and has been recorded to feed predominantly in waters close to the shore (Collins, 1994). Because it has been observed breeding at Alameda Point, it is present during a sensitive life stage (egg laying and rearing of nestlings).

- The nesting success of least tern colonies at Alameda Point and elsewhere is closely monitored; therefore if needed, additional site-specific data are available for this species. The number of pairs nesting, the number of eggs laid per nest, and the number of young fledged per nest have all been used as measures of reproductive success in the least tern and other seabirds. It is a convenient measure and one that has already accumulated several years of data (since 1993) as well as adequate reference data (the statewide average young-per-nest is approximately 0.7) (Collins, 1994).

- Least terns have been evaluated in other ecological risk assessments conducted at Alameda Point (Seaplane Lagoon) and exposure parameters have been agreed upon by the agencies (Battelle et al., 2004b).

Least terns winter south of California and are absent from San Francisco Bay from mid-October through late April. Least terns are present at their nesting colony from April through August. Nesting starts in mid-May, with most nests completed by mid-June (Bent, 1929; Davis, 1968; Massey, 1974; Elliot and Sydeman, 2002). Late-season nests may be renested by late-arriving second-year individuals (Wilbur, 1974; Collins and Bailey, 1980; Massey and Atwood, 1981; Elliot and Sydeman, 2002). Clutch size is usually two-three and a single brood is raised yearly. Incubation, by both parents, lasts 17-28 days, usually 20-25 days. The semiprecocial young are tended by both parents. Young become strong and mobile at three days, and can fly by 28 days (Terres, 1980; United States Fish and Wildlife Service [USFWS], 1980). The young continue to be fed by parents for about two weeks after leaving the colony.

Terns nesting at Alameda Point forage around the Point and all along the entire south shore of Alameda, from the breakwater west of Seaplane Lagoon to the Elsie B. Roemer Sanctuary and beyond to Tidal Pond at the northwest end of the Oakland Airport (Collins and Feeney, 1993). However, the area adjacent to Alameda Point had the highest usage by terns. Least terns feed primarily in shallow estuaries or lagoons where small fish are abundant. They hover and then plunge for fish near the surface, without submerging completely. Prey in CA includes anchovy (*Engraulis* sp.), silversides (*Atherinops* sp.), and

shiner surfperch (*Cymatogaster aggregata*). Considerable feeding also takes place near shore in the open ocean (Cogswell, 1977), especially where lagoons are nearby, or at mouths of bays.

Human disturbance at former coastal nesting areas has reduced the breeding population in California (Garrett and Dunn, 1981). At Alameda Point, however, the least tern colony has grown in size (over 10% per yr) and is now the largest in northern California. In the 2001 breeding study (Elliot and Sydeman, 2002), 267 breeding pairs of terns were estimated at the Alameda Point colony and the estimated number of fledglings was 320, with an estimated 1.2 fledglings/pair. This exceeds the state-wide average of 0.7 young-per-nest (Collins, 1994).

6.2.5 Selection of SLERA Measurement Endpoints

A measurement endpoint (ME) is defined as a "measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint" and is a measure of biological effects (e.g., mortality, reproduction, growth) (U.S. EPA, 1997a). The AEs and their associated MEs selected for the SLERA are summarized below.

AE(1): Sufficient rates of survival, growth, and reproduction to sustain the benthic invertebrate community in offshore areas.

- ME(1): Compare bulk sediment chemistry results to conservative screening benchmarks from the literature.

AE(2): Sufficient rates of survival, growth, and reproduction to sustain benthic feeding and piscivorous fish communities in offshore areas.

- ME(1): Compare conservative bulk sediment chemistry results (maximum concentrations) to conservative screening benchmarks from the literature.

AE(3): Sufficient rates of survival, growth, and reproduction to sustain the avian community in the area. This assessment endpoint also includes the protection at the level of the individual for special-status species as appropriate.

- ME(1): Compare conservative exposure doses (i.e., derived from maximum sediment and tissue concentrations and conservative exposure parameters) for benthic feeding birds to toxicity reference values (TRVs).
- ME(2): Compare conservative exposure doses for piscivorous birds represented by the least tern (a special status species) to TRVs.
- ME(3): Compare conservative exposure doses for piscivorous birds represented by the double-crested cormorant to TRVs.

6.2.6 Data To Be Considered

Based on the potentially complete exposure pathways identified in the CSM and the preliminary AEs identified above, the available data for the offshore areas that are relevant to assessing ecological receptors were identified. Data to be considered included historical and newly-collected sediment chemistry data, historical biological tissue chemistry (*M. nasuta*) data, and historical site-specific toxicity bioassay data.

6.2.7 Selection of Preliminary COPECs

All chemicals detected in sediment were selected as COPECs for the SLERA. A detailed discussion of the nature and extent of sediment constituents at IR Sites 20 and 24 can be found in Section 4 of the RI Report.

6.3 Tier 1 Screening-Level Risk Estimate

The objective of the screening-level risk estimate is to use conservative screening methodologies to screen the offshore sites and to determine whether additional ecological assessment is necessary. It is used as a tool to focus the baseline evaluation only on those AEs and contaminants that require further evaluation. In the absence of site-specific data, a screening-level assessment uses conservative assumptions to estimate exposure and effects to potential ecological receptors. This ensures high confidence in any determinations of no unacceptable risk. However, findings of potential risk are not definitive indications of risk but, rather, indications of a possibility of risk that requires further evaluation. Those receptors and COPECs identified in the SLERA as posing the potential for risk will be evaluated more fully in the BERA.

This section presents the screening-level assessment and includes a discussion of approaches used to assess exposure and ecological effects. Results are presented in the form of hazard quotients (HQ) or risk estimates. A characterization of risk is not included in the assessment because screening-level exceedances do not provide evidence of risk. Instead, the results of the assessment are used to focus the BERA on those compound-receptor pairs that fail the conservative screen. Based on the preliminary CSM and AEs identified, exposures via direct contact (to benthic invertebrates and fish) and indirectly through the food chain (to birds) were evaluated in the SLERA.

6.3.1 Screening-Level Exposure Assessment

This section presents the approaches used to develop screening-level exposure estimates for the offshore sediment areas. The general approach was to incorporate considerable conservatism into the development of exposure estimates in order to minimize the potential for falsely screening a COPEC from further evaluation based on the screening-level assessment. Two types of exposure estimates were included in this screening-level evaluation:

- Exposure to COPECs in abiotic media via direct contact;
- Exposure to COPECs via uptake through the food web.

Three separate sediment data sets were evaluated for each site, representing different time periods and exposure scenarios. The data sets for IR Site 20 were:

- All Years: This data set encompassed all the historical data collected in the surface sediment (0-5 cm) at each site.
- 2005 Surface: This data set includes all the surface data (0-5 cm) collected in 2005.
- 2005 Subsurface: This data set includes the deeper sediment (5-25 cm) collected in 2005 that was requested by the regulatory agencies to be evaluated in the ecological risk assessment.

The data sets for IR Site 24 were:

- All Years: This data set encompassed all the historical data collected in the surface sediment (0-5 cm) at each site.
- 2005/2006 Surface: This data set includes all the surface data (0-5 cm) collected in 2005 and 2006.
- 2005/2006 Subsurface: This data set includes the deeper sediment (5-25 cm) collected in 2005 and 2006 that was requested by the regulatory agencies to be evaluated in the ecological risk assessment.

The most relevant data set to the ecological risk assessment are the 2005 Surface data set for IR Site 20 and the 2005/2006 Surface data set for IR Site 24 as they are (1) representative of current conditions, (2) the sediment horizon that results in the most significant portion of exposure to receptors, and (3) consistent with the sediment horizon evaluated in ongoing monitoring programs in San Francisco Bay (SFEI, 2001).

6.3.1.1 Calculation of EPCs for Screening-Level Direct Contact Evaluation

A potentially complete exposure route based on direct contact of sediment to receptors (benthic invertebrates and fish) exists (see Figures 6-3 and 6-4); therefore, a screening-level assessment of potential direct contact risks was conducted by comparing the maximum sediment concentrations measured in each of the sediment data sets (e.g., All Years, 2005 or 2005/2006 Surface, and 2005 or 2005/2006 Subsurface) to conservative sediment screening benchmark values. A description of the methods used to calculate sediment EPCs is provided in Section 5.4.

6.3.1.2 Calculation of EPCs for Screening-Level Dose Assessment

To evaluate potential risks from the potentially completed exposure pathways to higher trophic level organisms at the offshore sites, a screening-level dose assessment was performed using a food-chain model. Dose estimates were calculated for all constituents detected in the three sediment data sets for each IR site (All Years, 2005 or 2005/2006 Surface and 2005 or 2005/2006 Subsurface) using the maximum sediment concentration and an exposure model that incorporated natural history information and species characteristics including diet composition, ingestion rates (IRs), body weights (BWs), and foraging ranges for each receptor.

The basic dose equation that was used to characterize exposure is as follows:

$$\text{Dose} = \{[(C_{sed} \times IR_{sed}) + (C_{prey} \times IR_{prey})] \times SUF\}/BW \qquad (6\text{-}1)$$

where Dose = daily dose resulting from ingestion of sediment and prey (mg COPEC per kg BW per day)
C_{sed} = COPEC-specific concentration in surface sediments datasets (mg COPEC per kg sediment)
C_{prey} = COPEC-specific concentration in prey (mg COPEC per kg prey)
IR_{sed} = estimate of receptor's daily incidental ingestion rate of surface sediments (kg sediment per day)
IR_{prey} = estimate of daily ingestion rate of prey (kg prey per day)
SUF = site use factor (unitless)
BW = body weight (kg).

For the SLERA, U.S. EPA and Navy guidance (U.S. EPA, 1997a; Chief of Naval Operations [CNO], 1999) was followed by biasing the exposure toward conservatism (i.e., an overestimation) of exposure and therefore, an overestimation of risk. This included using maximum surface sediment and tissue concentrations as the EPCs, and assuming 100% site use, assimilation efficiency, and bioavailability of the COPEC. Thus, if the screen concluded that negligible risk exists, then there was strong support for a no further action recommendation. It should be noted that any exceedances observed during the screening process were an indication that further evaluation may be necessary before a definitive decision can be made.

The exposure parameters that were used in the screening assessment for the scoter, double-crested cormorant, and the least tern were the same as those used at the other Alameda Point ecological risk assessments (Battelle et al., 2004a and 2004b) and were based on site-specific data, where available, or from natural history information from the literature. The rationale for the selected exposure parameters for the scoter, cormorant, and least tern are provided in detail below and summarized in Table 6-1.

6.3.1.3 Exposure Parameters for the Surf Scoter

A detailed description of the rationale used to develop each exposure parameter for the surf scoter can be found in the following sections.

Exposure Point Concentrations in Sediment (C_{sed}): For the screening-level evaluation, the maximum dry weight concentrations of COPECs detected in each of the three sediment data sets for each IR site (All Years, 2005 or 2005/2006 Surface and 2005 or 2005/2006 Subsurface) was used as the EPC in sediment.

Exposure Point Concentrations in Prey (C_{prey}): The dry weight concentrations of COPECs in *Macoma nasuta* tissue were conservatively estimated by combining both empirical tissue data from bioaccumulation assays conducted with site sediment and modeled tissue data using bioaccumulation factors. For the screening-level dose assessment, the maximum concentration in tissue was used as the EPC for prey. A detailed description of how exposure point concentrations for scoter prey can be found in Section 5.5 and Tables 5-5 and 5-6.

Incidental Sediment Ingestion Rate (IR_{sed}): Scoters may incidentally ingest sediment while foraging for molluscs in sediment or through the small quantities of sediment that may be in the guts of prey on which they feed. Additionally, many scoter species ingest gravel to use as grit in their muscular gizzard to help crush the shells of the bivalves they eat. Where gravel is not present, they may substitute barnacle and mollusc shells for grit (Vermeer and Bourne, 1984).

Species-specific information on the rate of incidental sediment ingestion was lacking for the surf scoter. However, a field study on the closely related white-winged scoter (*Melanitta fusca deglandi*) measured grit in the stomach contents of birds from four locations in British Columbia (Vermeer and Bourne, 1984). In this study, birds in three of the four stations had between 1.5 and 3.2 g of grit in their guts, with a mean of 2.3 g. A fourth station measured 20.8 g of grit composed mostly of gravel. The station with scoters with the most grit (Cumshewa Inlet) also was the station which had a gravel substrate.

An incidental sediment ingestion rate for the scoter of 2.3 g/day was used in the exposure model. This value is assumed to be a conservative and appropriate value for the surf scoter for the following reasons:

- White-winged scoters and surf scoters forage in similar manners, thus their exposure is likely to be similar (Vermeer and Bourne, 1984);

- The substrate at the stations where grit was measured in scoter guts between 1.5 and 3.2 g (mean = 2.3 g) are likely to be more similar to Alameda Point than the station with 20.8 g of gravel, because the sand-gravel-mud-shell hash substrate of those stations is more like the substrate off of Alameda Point than the cobble and gravel substrate of Cumshewa Inlet;

- The assumption that the mean value of 2.3 g of grit is composed solely of sediment rather than shells is a conservative assumption of sediment exposure; and,

- The assumption that the scoters eat 2.3 g of sediment every day (the daily sediment ingestion rate) is a conservative assumption because grit is likely to stay in the gizzard for more than a day before it needs to be replenished.

Prey Ingestion Rate (IR_{prey}): No empirical data were found that measured prey ingestion rates in scoters. Although field studies have been conducted that looked at stomach contents in birds (Vermeer, 1981; Vermeer and Bourne, 1984), stomach content data are unreliable indicators of a bird's daily intake (Vermeer, 1981). Therefore, the following allometric equation was used to model a daily prey ingestion rate for the scoter (Nagy et al., 1999):

$$\text{Field Metabolic Rate (FMR) kJ/day} = a(g)^b \qquad (6\text{-}2)$$

where: a = 14.25 (marine birds)
b = 0.659 (marine birds)
g = body mass for the scoter, 1100 g.

This resulted in a field metabolic rate of 1,439.11 kJ/day. The FMR was then converted into a daily intake rate by dividing the FMR by a conversion factor that converts kJ/day into a g/day dry weight ration of food. No benthic-invertebrate eating avian conversion factors were listed in Nagy et al. (1999). Therefore, the mean of the insectivore (18.0 kJ/g DW) and the piscivore (16.2 kJ/g DW) avian conversion factors was used for the scoter: 17.1 kJ/g DW. This resulted in a modeled IR_{prey} of 84.16 g/day DW or 0.084 kg/day dry weight.

Foraging Range: No San Francisco Bay-specific home range studies have been conducted for the scoter (Takekawa, personal communication, 2001). However, a two-year radiotelemetry study conducted in the Commencement Bay Area of Puget Sound found that wintering birds stayed within 9 to 11 km of their capture location. Most birds used between two to seven locations (defined as 1 km in diameter areas) 76 to 87% of the time studied (Mahaffy et al., 1995). If one assumes that on average, 3 locations are visited the majority of the time by scoters (the mean number of locations visited during the first tracking season was 2.5 and for the second year, 3.9), the average diameter for a foraging area would be 3 km. This would result in a foraging area (assuming that it is round) of 7 km^2. This assumes that the foraging area within this 7 km^2 area is similar to habitat near Alameda Point.

SUF: For the screening-level assessment, it will be assumed that the scoter's foraging range equals the size of the site; thus, the SUF was set at 1.

Body Weight: Male scoters are generally slightly heavier than females (Savard et al., 1998). To develop a reasonable average body weight, data from wintering birds measured between 1986 and 1990 were evaluated (White et al., 1987, 1988, 1989; and Urquhart and Regalado, 1991, as cited in Savard et al., 1998). The average body weight of adult males was 1,148 g ± 7 standard error (SE) (n = 22) and adult females 1,047 g ± 22 SE (n = 21), resulting in an average body weight of 1.1 kg. This is the same as the average body weight measured in scoters from British Columbia (Vermeer, 1981).

6.3.1.4 Exposure Parameters for the Least Tern

Both adult and juvenile least terns were evaluated as part of the ecological risk assessment conducted for the Seaplane Lagoon RI (Battelle et al., 2004b). In that evaluation, the models used resulted in the adult least tern having higher exposure and being a more sensitive receptor than juvenile least terns. Therefore, to provide a simpler and more conservative evaluation of the least tern, only the adult least tern will be evaluated in this ecological risk assessment, and it will be assumed to be a conservative surrogate for other life stages. A detailed description of the rationale used to develop each exposure parameter for the adult least tern can be found in the following sections.

C_{sed}: For the screening-level evaluation, the maximum dry weight concentrations of COPECs detected in each of the three sediment data sets for each IR site (All Years, 2005 or 2005/2006 Surface and 2005 or 2005/2006 Subsurface) was used as the EPC in sediment.

C_{prey}: Least terns feed on planktivorous fish which have minimal exposure to site-specific sediments at Alameda Point. Planktivorous fish were not sampled in the offshore areas of Alameda Point, but benthic forage fish were sampled within Seaplane Lagoon. BAFs developed from the forage fish data collected in Seaplane Lagoon were used to model prey concentrations for the least tern. The methodology used to develop forage fish BAFs and the EPCs generated from these BAFs can be found in Section 5.6 (Tables 5-10 and 5-11).

IR_{sed}: Least terns feed primarily on fish in the family of silversides (Atherinae). Based on a study of dropped fish at the Alameda Point least tern colony in 2001 (Elliot and Sydeman, 2002), terns at Alameda were found to forage mainly on topsmelt (*Atherinops affinis*) and jacksmelt (*Atherinopsis californiensis*) (82% of the fish identified). Silversides tend to group in large schools and swim near the surface. Least terns, diving from above, penetrate the water surface to a depth of approximately 8 inches, rarely going deep enough to cover their wings. The tern emerges in flight, rarely alighting on the water, generally shaking a minnow held crosswise in their bill. This feeding mechanism results in the tern eating prey with virtually no contamination from suspended sediment. Therefore, the amount of sediment in the tern diet is negligible.

Prey Ingestion Rate: No empirical data were found that measured prey ingestion rates in least terns. Therefore, an allometric equation based on piscivorous birds with nestlings was used to model a daily prey ingestion rate for the least tern (Nagy et al., 1999):

$$\text{FMR (kJ/day)} = 7.76(g)^{0.75} \qquad (6\text{-}3)$$

where: g = body mass for the least tern, 45 g.

This resulted in a field metabolic rate of 134.82 kJ/day. The FMR was then converted into a daily intake rate by dividing the FMR by a conversion factor that converts kJ/day into a g/day DW ration of food. For the least tern, the piscivore (16.2 kJ/g DW) avian conversion factor was used. This resulted in a modeled IR_{prey} of 8.3 g/day DW or 0.0083 kg/day DW.

Foraging Range: Foraging data compiled from 10 years of foraging studies at Alameda Point were used to develop an estimate of the foraging range of the least tern (Bailey, 1984, 1985, 1986, 1988, 1990a, 1990b, 1992; Collins and Feeney, 1993, 1995) at each of the IR Sites. Terns nesting at Alameda Point forage around the Point and all along the entire south shore of Alameda, from the breakwater west of Seaplane Lagoon to the Elsie B. Roemer Sanctuary and beyond to Tidal Pond at the northwest end of the Oakland Airport (Collins and Feeney, 1993). However, the area adjacent to Alameda Point had the highest usage by terns, and the focus of all studies was on the foraging distribution around the Point.

Figure 6-5 delineates the main study areas around Alameda Point. Table 6-2 summarizes 10 years of foraging data regarding where the terns feed around Alameda Point. As can be seen from Table 6-2 and Figure 6-5, the majority of the time the terns feed off the south-western side of Alameda Point.

Areas 13/15 (on Figure 6-5) encompass IR Site 20 in Oakland Inner Harbor. Based on a 10 year mean, least terns were observed to spend approximately 1% of the year's total foraging time in the area around IR Site 20 (Table 6-2). Area 14 (on Figure 6-5) includes Seaplane Lagoon and IR Site 24, approximately 9.4% of the time least terns are seen foraging at Area 14 (Table 6-2). Since Area 14 includes a larger area than just IR Site 24, the percentage of the total area that is IR Site 24 was used to estimate the amount of time least tern might forage at IR Site 24, assuming equal habitat use in Seaplane Lagoon and IR Site 24. IR Site 24 is approximately 30% of the total area of Area 14. Thus, 30% of 9.14% is approximately 3% of the total foraging time spent in the area around IR Site 24.

SUF: For the screening-level assessment, it was assumed that the least tern's foraging range equals the size of the site resulting in a SUF of one.

Body Weight: Average body weight reported for eight least terns in the Museum of Vertebrate Zoology, University of California Berkeley (Cicero, 1998) was used to calculate the average body weight. Weights were 43.1, 43.5, 43.6, 44.1, 44.4, 45.2, 48.6, and 50.5 g. Thus, the average was 45 g.

6.3.1.5 Exposure Parameters for the Double-Crested Cormorant

A detailed description of the rationale used to develop each exposure parameter for the double-crested cormorant can be found in the following sections.

C_{sed}: For the screening-level evaluation, the maximum dry weight concentrations of COPECs detected in each of the three sediment data sets for each IR site (All Years, 2005 or 2005/2006 Surface and 2005 or 2005/2006 Subsurface) was used as the EPC in sediment.

C_{prey}: As with the least tern, BAFs developed from the forage fish data collected in Seaplane Lagoon were used to model prey concentrations for the double-crested cormorant. The methodology used to develop forage fish BAFs and the EPCs generated from these BAFs can be found in Section 5.6 (Tables 5-10 and 5-11).

IR_{sed}: No species-specific information on incidental sediment ingestion was found. Based on the work conducted by Ainley et al. (1981), double-crested cormorants observed in California are likely to feed on schooling prey located from the surface to near the bottom, but not on the bottom. Therefore, their potential for exposure is likely to be limited. Based on this information, an incidental sediment ingestion rate of 2% (a value commonly used for birds unlikely to ingest significant sediment; see U.S. EPA, 1993) was used. This would correspond to 0.0018 kg/day dry weight sediment ingestion.

IR_{prey}: Prey ingestion rate is affected by numerous factors including foraging effort, reproductive state of the bird, palatability, and the nutrient content of the prey species (Brugger, 1993). A variety of studies have estimated double-crested cormorant ingestion rates in the field (e.g., Schramm et al., 1984; Brugger, 1993). Hatch and Weseloh (1999) report a range of ingestion rates from 208 to 537 g/day wet weight with an average of about 320 g/day wet weight for adult birds. Brugger (1993) measured an average intake of 283 g/day wet weight when adult birds (approximately weighing 1.6 kg) were fed *ad libitum*. Brugger found that this was nearly identical to the modeled prediction derived from Nagy's (1987) allometric model for 1.5 kg seabirds. Thus, Brugger's empirical estimate of 283 g/day wet weight was selected. This can be converted into a dry weight IR_{prey} of 0.091 kg/day DW by assuming 68% water in pacific herring (U.S. EPA, 1993).

Foraging Range: Double-crested cormorant breeding at the Richmond-San Rafael Bridge foraged within 5 km of the bridge (Stenzel et al., 1995); however, there is no known rookery within 5 km of Alameda Point. No information on foraging range was found for birds that nest at the San Francisco-Oakland Bay Bridge. To develop a foraging range estimate, it was assumed that birds from the closest rookery will be visiting Alameda Point and that the foraging range should be based on the distance from the rookery to Alameda Point. The foraging distance covered by double-crested cormorant nesting at the San Francisco-Oakland Bay Bridge was calculated as the distance from the mid-point of the bridge (Yerba Buena Island) to the northwest corner of Seaplane Lagoon (foraging distance of approximately 3.3 miles or 5.3 km). Therefore, it was assumed that double-crested cormorant nesting at the San Francisco-Oakland Bay Bridge will forage 5.3 km in either direction. The total water surface area in the Bay within a circle of a radius of 5.3 km (89 km^2) was then estimated using Global Information System (GIS) and found to be 40% resulting in a foraging range of about 53 km^2.

SUF: For the screening-level assessment, it was assumed that the double-crested cormorant's foraging range equals the size of the site, resulting in a SUF of one.

Body Weight: Hatch and Weseloh (1999) state that regional differences in double-crested cormorants' body mass are large (range of 1 to 3 kg), and that the mean mass of southeastern birds are half that of northern and western birds. Double-crested cormorants are also sexually dimorphic with males being slightly heavier than females. Dunning (1993) lists a mean body weight (for both males and females) of approximately 1.67 kg. The mean body weight given by Dunning (1.67 kg) was chosen for the following reasons: (1) no San Francisco Bay specific studies were found, (2) the study used to develop the prey ingestion rate was based on a body weight of 1.6 kg, and (3) this is consistent with the body weight used at other Navy sites such as Mare Island.

6.3.2 Screening-Level Effects Assessment

For the purpose of the screening-level risk estimate, conservative toxicity values were chosen that represented protective concentrations. Toxicity values for direct contact and food chain exposure were developed as discussed in the following sections.

6.3.2.1 Benthic Invertebrate Direct Contact Benchmarks

The potential effects associated with direct contact to impacted sediment were evaluated via direct contact toxicity benchmarks. Receptors at the offshore sediment sites that are potentially exposed to COPECs via direct contact pathways include sediment-associated biota (invertebrates and fish). The screening-level benchmarks, which represent conservative (i.e., protective) concentrations below which it is unlikely that adverse ecological effects will occur, are presented as the "low" benchmarks in Table 6-3. The "high" benchmarks shown in Table 6-3 represent concentrations above which risk may be probable or further evaluation is needed. The "high" values provide additional context to the conservative screening "low" benchmarks.

Screening-level benchmarks for benthic invertebrates in marine sediments were selected in the following order of priority from the following references:

1. Long, E.R., D.D. MacDonald, S.L. Smith, and F.D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. *Env. Management*, 19:81-97.

2. Long, E.R., and L.G. Morgan. 1991. The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 52, National Oceanic and Atmospheric Administration.

3. MacDonald, DD, BL Charlish, ML Haines, and K Brydges. 1994. Approach to the Assessment of Sediment Quality in Florida Coastal Waters: Volume 3-Supporting Documentation: Biological Effects Database for Sediment, Florida Department of Environmental Protection, Tallahassee, Fla. In: Jones, Suter, and Hull. *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Sediment-Associated Biota: 1997 Revision*, Prepared for the U.S. Department of Energy.

4. U.S. EPA. 1989c. Evaluation of the Apparent Effects Threshold (AET) Approach for Assessing Sediment Quality, Report of the Sediment Criteria Subcommittee. Science Advisory Board. SAB-EETFC-89-027 *IN* NOAA, National Sediment Quality Survey, Appendix D, Screening Values for Chemicals Evaluated.

Long and Morgan, 1991; and Long et al., 1995

The NOAA ER-L values for estuarine and marine sediments were selected as screening-level benchmarks to evaluate potential risk to sediment-associated biota. NOAA collected sediment data from a variety of approaches and then ranked chemical concentrations associated with biological effects. ER-Ls represent the low end of the range (lower 10th percentile) of concentrations in marine sediments in which effects were observed or predicted, and are used by NOAA as the concentration below which effects would rarely be observed (Long et al., 1995; Long and Morgan, 1991).

MacDonald et al., 1994

The Florida Department of Environmental Protection (MacDonald et al., 1994) developed marine threshold effect levels (TELs) and probable effect levels (PELs) using the same updated and revised data set used by Long et al. (1995). However, the TELs and PELs also incorporate chemical concentrations observed or predicted to be associated with no adverse biological effects data (no effects data). Specifically, the TEL is the geometric mean of the 15th percentile in the effects data set and the 50th percentile in the no effects data set. As a result, the TEL represents the upper limit of the range of sediment contaminant concentrations dominated by no effects data. The TEL was used as the screening-level benchmark in cases where an ER-L was not available.

U.S. EPA Apparent Effect Thresholds (AETs)

AETs were used as benchmarks in situations where neither a NOAA ER-L nor a Florida Department of Environmental Protection (FDEP) TEL was available. The AET approach uses data from matched sediment chemistry and biological effects measures and reports sediment concentrations above which statistically significant biological effects always occur. This concentration is identified as a high no effect concentration (NEC). AETs are used for preliminary comparisons to give an indication of the magnitude of contamination, but are only used in cases where other benchmarks are not available.

6.3.2.2 Food Web Toxicity Reference Values

For the purpose of evaluating the potential effects associated with the doses calculated in the exposure assessment, chemical- and receptor-specific TRVs will be compared to the calculated doses. In general, a TRV is defined as a dose level at which a particular biological effect may occur in an organism, based on laboratory toxicological investigations.

The Navy, in consultation with the U.S. EPA Region 9 Biological Technical Assistance Group (BTAG), developed effects-based TRVs. Each of these values represents a critical exposure level from a toxicological study and is supported by a published data set of toxicological exposures and effects (DON, 1998). Rather than derive a single point estimate associated with specific adverse biological effects, high and low TRVs were derived for each receptor and COPEC to reflect the variability of parameters within an ecological risk context. The low TRV is a conservative value consistent with a chronic, no observed adverse effects level (NOAEL). The NOAEL represents a concentration that is not likely to be associated with adverse effects and is used to identify sites posing little or no risk. Conversely, the high TRV is a less conservative estimator of potential adverse effects, falling approximately mid-range of all of the reported adverse effects. The high TRV represents a level at which adverse effects are highly likely to occur, helping to identify sites posing immediate risks.

In some cases, the high and low TRV were derived using a NOAEL and lowest observed adverse effects level (LOAEL) from the same study; in other cases, independent NOAELs and LOAELs were selected as the low and high TRVs, respectively. For those COPECs that did not have a Navy/BTAG TRV, the U.S. EPA's Ecological Soil Screening Levels (Eco-SSLs) (U.S. EPA, 2005a) or the Oak Ridge National Laboratory (ORNL) toxicity benchmarks (Sample et al., 1996) were used to evaluate potential toxicity with priority given to the Ecological Soil Screening Levels.

Surrogate toxicity data were used for some related compounds where COPEC-specific TRVs were lacking. In this assessment, the low- and high-chlordane TRVs were used for evaluation of the following components of chlordane: *alpha*-chlordane, *gamma*-chlordane, *trans*-nonachlor, and *cis*-nonachlor. The BTAG avian low TRV for DDT and metabolites was used as a surrogate, and the high TRV for DDE was used for evaluation of 2,4′-DDE, 4,4′-DDE, for the sum of 2,4′- and 4,4′-DDE (Total DDEs) and for the sum of DDT and metabolites (all six 2,4′- and 4,4′-DDT, DDD, and DDE compounds). The low and high TRVs for DDT and metabolites were used for evaluation of 2,4′-DDD, 4,4′-DDD, Total DDDs (the sum of 2,4′- and 4,4′-DDD), 2,4′-DDT, 4,4′-DDT, and Total DDTs (the sum of 2,4′- and 4,4′-DDT). Avian TRVs for Total PCBs were derived from studies that exposed birds to Aroclor 1254 and Aroclor 1242. These TRVs were used to evaluate risk from Total PCB values that were calculated by summing individual PCB congener values.

In the screening-level risk estimate, only low TRVs were used. Table 6-4 summarizes the TRVs used in the ecological risk assessment and identifies the sources.

TRVs were scaled to account for differences in body weights between the organism used to establish the TRVs (high and low) and the ecological receptor chosen for evaluation. This was accomplished by using the following equation (Sample and Arenal, 1999):

$$TRV_w = TRV_l * (BW_s/BW_r)^{1-1.2} \qquad (6\text{-}4)$$

where: TRV_w = weight-adjusted TRV (mg/kg-day)
TRV_l = literature-based TRV (mg/kg-day)
BW_s = body weight of toxicity study receptor (kg)
BW_r = body weight of ecological receptor (kg).

Weight-adjusted TRVs for each ROC (surf scoter, least tern, and double-crested cormorant) are presented in Appendix E.

6.3.3 Screening-Level Risk Estimate

In the screening-level risk estimate, the exposure and effects assessments are combined to provide a quantitative estimate of the potential risks to the receptor. As described in Sections 6.3.1.1 and 6.3.1.2, estimated exposure will be calculated for each COPEC using the maximum site sediment concentrations for the direct contact exposure route and the maximum site sediment concentrations and tissue concentrations for the food-chain exposure and compared to the low toxicity benchmarks (according to the following equations:

$$HQ_{direct\ contact} = EPC_{sed}/Benchmark_{direct\ contact} \quad (6\text{-}5)$$

$$HQ_{food\ chain} = dose/TRV \quad (6\text{-}6)$$

As noted previously, conservative exposure parameters and toxicity values will be used to calculate doses for the screening-level risk estimate. When the dose is lower than the low TRV (i.e., $HQ_{low} < 1$), it is likely that the specific COPEC presents acceptable risk. When the dose exceeds the low TRV (i.e., $HQ_{low} \geq 1$) in a screening-level ecological risk assessment, it does not necessarily indicate that there is potential risk; rather, it indicates that further evaluation is warranted in the baseline ecological risk assessment.

6.3.3.1 Direct Contact Screening-Level Risk Estimate

Screening-level risk estimates were developed for direct contact pathways for both IR Sites 20 and 24. The results of this screen are described in detail below.

Direct Contact Screening-Level Risk Estimate for IR Site 20

Table 6-5 summarizes the direct contact screening-level risk estimates for IR Site 20. As described previously, three sediment data sets were evaluated: All Years, 2005 Surface, and 2005 Subsurface. All detected compounds in sediment were screened; direct contact toxicity benchmarks exist for about half of the detected compounds. In all cases (All Years, 2005 Surface, and 2005 Subsurface), the majority of the constituents did not pass the conservative screen against the low toxicity value. The highest magnitude, low benchmark HQs were from the All Years data set. The lowest magnitude, low benchmark HQs were from the 2005 Surface data set. In general, the 2005 Subsurface data set yielded higher magnitude, low benchmark HQs than the 2005 Surface data set, indicating that surface sediments pose less of a potential risk to direct contact receptors than the deeper sediments.

Direct Contact Screening-Level Risk Estimate for IR Site 24

Table 6-6 summarizes the direct contact screening-level risk estimates for IR Site 24. As with IR Site 20, all detected compounds in sediment were screened; direct contact toxicity benchmarks exist for about half of the detected compounds. Additionally, in all cases (All Years, 2005 or 2005/2006 Surface, and 2005 or 2005/2006 Subsurface), the majority of the constituents did not pass the conservative screen against the low toxicity value. The highest magnitude, low benchmark HQs for inorganic constituents were from the 2005/2006 Subsurface data set, while the highest magnitude, low benchmark HQs for organic constituents were from the All Years data set.

Summary of Direct Contact Screening-Level Risk Estimate

At both IR Site 20 and 24, a majority of the compounds for all three data sets (All Years, 2005 or 2005/2006 Surface, and 2005 or 2005/2006 Subsurface) with direct contact benchmarks failed the screen. Additionally, there were numerous analytes that were detected in sediment but had no benchmarks for

comparison. These results indicate that the benthic invertebrate and fish AEs [AE(1) and AE(2)] should be evaluated further in the BERA.

6.3.3.2 Food Chain Screening-Level Risk Estimate

A screening-level risk estimate for indirect exposure through the food chain was developed by comparing the modeled dose based on maximum sediment exposure to the low TRV. Three receptors were evaluated (the scoter, double-crested cormorant, and the California least tern) for all three data sets (All Years, 2005 or 2005/2006 Surface, and 2005 or 2005/2006 Subsurface) at both IR Sites. The results of the screen are described in the following subsections.

Food Chain Screening-Level Risk Estimate for IR Site 20

A summary of the HQ results for IR Site 20 can be found in Table 6-7. Supporting tables that contain the full set of HQ calculations can be found in Appendix E. The surf scoter was generally the least sensitive avian receptor evaluated and the California least tern was the most sensitive receptor evaluated. The only constituent that failed the screen for the surf scoter in all three data sets was lead. For the least tern, eight constituents failed the screen for the All Years data set, five for the 2005 Surface data set, and six for the 2005 Subsurface data set. For the double-crested cormorant, four constituents failed in the All Years data set, two in the 2005 Surface, and three in the 2005 Subsurface.

As with the direct contact screen, the All Years sediment data set resulted in the highest magnitude HQs. In general, most HQ exceedances were less than 50. The highest magnitude screening-level HQ was for the least tern exposed to Total DDx in the sediment from the All Years data set (HQ_{low} = 107). Total DDx concentrations in the 2005 Surface data set resulted in significantly lower magnitude HQ exceedances for Total DDx (HQ_{low} = 3) than the other data sets.

Seven of the detected constituents in sediment that had TRVs passed the screen in all three data sets. Eight of the detected constituents did not have TRVs and while they can not be evaluated quantitatively, they will be carried forward into the BERA and discussed in Section 8.0. Eight of the detected constituents had low TRV HQs greater than one for at least one receptor and sediment data set and will be carried forward into the BERA. These compounds include chromium, copper, lead, mercury, selenium, zinc, Total PCB, and Total DDx.

Food Chain Screening-Level Risk Estimate for IR Site 24

A summary of the HQ results for IR Site 24 can be found in Table 6-8. Supporting tables that contain the full set of HQ calculations can be found in Appendix E. The double-crested cormorant was the least sensitive avian receptor evaluated and the California least tern was the most sensitive receptor evaluated. Cadmium, lead, Total PCB, and Total DDx failed the screen for the double-crested cormorant in all three data sets. For both the surf scoter and the least tern, nine constituents failed the screen for the All Years data set. For the surf scoter, nine constituents failed the screen for the 2005/2006 Surface data set and eight failed for the 2005/2006 Subsurface data set. Eight constituents failed the screen for the 2005/2006 Surface data set for the least tern, and nine failed for the 2005/2006 Subsurface data set.

In general, the 2005/2006 Subsurface sediment data set resulted in the highest magnitude HQs. The majority of the low TRV HQs were less than 50; however, there were some higher magnitude exceedances. The highest magnitude screening-level HQs were for lead, with the highest HQ from the 2005/2006 Subsurface data set for the surf scoter (HQlow = 599). Low TRV HQs for organic compounds were generally less than 50.

Six of the detected constituents in sediment that had TRVs passed the screen in all data sets for all receptors. Eleven of the detected constituents did not have TRVs and while they can not be evaluated quantitatively, they will be carried forward into the BERA and discussed in Section 8: Uncertainty. Eleven of the detected constituents had low TRV HQs greater than one for at least one receptor and sediment data set and will be carried forward into the BERA. These compounds include cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, tributyltin, Total PCB, and Total DDx.

6.3.3.3 Summary of Screening-Level Risk Estimate

Based on the direct contact toxicity screen, at both IR Site 20 and 24, a majority of the compounds for all three data sets (All Years, 2005 or 2005/2006 Surface, and 2005 or 2005/2006 Subsurface) with direct contact benchmarks failed the screen. Additionally, there were numerous analytes that were detected in sediment and had no benchmarks for comparison. These results indicate that the benthic invertebrate and fish AEs [AE(1) and AE(2)] should be evaluated further in the BERA.

The food-chain screening-level risk estimate also indicated that a number of constituents at both IR Sites 20 and 24 should be evaluated further in the BERA because they either (1) did not have TRVs and could not be evaluated quantitatively, or (2) had low TRV HQs that exceeded one for at least one avian receptor and sediment data set.

6.4 Baseline Ecological Risk Assessment

In the screening-level risk estimate, potentially complete and significant exposure pathways were defined from sediment to benthic invertebrates, fish, and birds foraging at the offshore sediment sites. The results of the screen indicated that all three AEs should be evaluated further in the BERA.

In the BERA, the preliminary problem formulation was refined (Step 3A, Figure 6-1). Then measurements of exposure and effects were refined and integrated into a characterization of risk that included a comprehensive discussion of the potential uncertainties associated with the assessment. The following sections present the results of these evaluations. After defining the refined problem formulation, the BERA is organized by AE.

6.4.1 Refined Problem Formulation

The first step of the BERA was to refine the preliminary problem formulation and CSM developed in Section 3.0. The CSMs (Figures 6-3 and 6-4) were re-evaluated in light of the outcome of the screening-level evaluation and were found to require no additional revisions. The AEs and their associated ROCs selected in the SLERA also were found to be applicable and relevant to the BERA. The only issues that required further refinement in the BERA were (1) the selection of specific measurement endpoints for the baseline assessment, and (2) a Tier 2 COPEC screen.

6.4.1.1 Selection of BERA Measurement Endpoints

While the SLERA conducted generic screens to identify what AEs might require further evaluation in the BERA, more specific MEs are required in the BERA to evaluate potential impacts to selected assessment endpoints. MEs are defined as a "measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint" and are a measure of biological effects (e.g., mortality, reproduction, growth) (U.S. EPA, 1997a). The AEs and their associated MEs selected for the BERA are summarized below.

AE(1): Sufficient rates of survival, growth, and reproduction to sustain the benthic invertebrate community in offshore areas.

- ME(1): Toxicity to benthic invertebrates in acute and chronic sediment bioassays.

AE(2): Sufficient rates of survival, growth, and reproduction to sustain benthic feeding and piscivorous fish communities in offshore areas.

- ME(1): Model forage fish tissue concentrations and compare to literature-based effects thresholds.

AE(3): Sufficient rates of survival, growth, and reproduction to sustain the avian community in the area. This assessment endpoint also includes the protection at the level of the individual for special-status species as appropriate.[2]

- ME(1): Estimate site-specific doses (based on measured or modeled *M. nasuta* body burdens) to benthic-invertebrate eating birds (such as the scoter) and compare to TRVs.
- ME(2): Estimate site-specific doses (based on modeled fish tissue body burdens) to the least tern and compare to TRVs.
- ME(3): Estimate site-specific doses (based on modeled fish tissue body burdens) to piscivorous birds (such as the double-crested cormorant) and compare to TRVs.

6.4.1.2 Tier 2 COPEC Selection

In the BERA, a COPEC screen was conducted to help focus the list of COPECs requiring additional evaluation by comparing site constituent sediment concentrations with ambient background concentrations to identify those constituents that are above ambient concentrations, and whose presence in offshore sediments could be attributed to Navy operations. To identify those constituents that were within the range of ambient concentrations, or were elevated as compared to ambient, statistical tests were conducted. Distribution shift tests (e.g., the t-test, Gehan test, quantile test, and slippage test) were performed to compare the concentration distributions from the site with ambient background data sets, following Navy guidance (DON, 2001). If one or more tests failed, then that chemical was retained for full evaluation in the BERA. For constituents where all tests passed, the chemical concentrations were found to be consistent with ambient background conditions and no further evaluation in the BERA was necessary. However, to provide a comprehensive evaluation of potential risk, calculations for all chemicals (within or above background) are presented and discussed in the risk characterization step.

Appendix C provides a detailed description of the statistical tests that were conducted on the data. Summary tables of the statistical comparisons to ambient can be found in Section 4 (Tables 4-5 and 4-6 for IR Site 20 and Tables 4-11 and 4-12 for IR Site 24). The ambient comparison was done separately for the All Years data set and the 2005 Surface (for IR Site 20) and 2005/2006 Surface (for IR Site 24) data sets. Because there are no ambient data sets for deeper sediments (greater than 5 cm deep), the 2005 Subsurface data set could not be statistically evaluated. Therefore, for the purposes of the ecological risk assessment, the output of the 2005 and 2005/2006 Surface background comparisons was applied to the 2005 and 2005/2006 Subsurface data sets as a surrogate. Additionally, any constituent that had

[2] This assessment endpoint was modified from those described in the Final Offshore Sediment Study Work Plan (Battelle et al., 2005a) by combining both the non-special and special-status avian species into one assessment endpoint.

insufficient data to conduct a statistical background comparison was conservatively included in the Tier 2 COPEC list.

At both IR Site 20 and 24 (Tables 4-5, 4-6, 4-11 and 4-12), the majority of the inorganic constituents were greater than ambient concentrations. A few more of the inorganic constituents were greater than ambient concentrations in the All Years data set than the 2005 and 2005/2006 Surface data sets. Most of the pesticides were not evaluated statistically due to the high frequency of non-detects; therefore, they were conservatively carried forward as Tier 2 COPECs.

6.4.2 Assessment of AE(1): Benthic Invertebrate Community

In the SLERA, maximum sediment concentrations were compared to direct contact toxicity benchmarks and a number of compounds exceeded the low benchmarks, indicating the need for further evaluation. In the BERA, the benthic invertebrate community assessment endpoint was evaluated further through sediment toxicity bioassay results. The assessment of AE(1) for each IR site is provided in the following sections.

6.4.2.1 IR Site 20

At IR Site 20, a number of constituents failed the direct contact screen. Because the direct contact screen uses non-site specific, conservative, screening values to screen compounds, an exceedance of the low direct contact toxicity benchmark does not necessarily indicate that sediments are toxic to benthic invertebrates. Therefore, historical bioassays conducted in IR Site 20 were used to further evaluate this endpoint.

6.4.2.1.1 Exposure and Effects Assessment

Toxicity tests were performed on sediment collected at four stations (EO7, EO8, EO9, and EO10) from IR Site 20 in 1993/1994. Bulk sediment chemistry data for IR Site 20 bioassay locations are presented in Appendix A, Table A-1. Sediment composites were obtained from the upper 5 cm of van Veen grab samples, and the following acute and chronic toxicity tests were performed:

- 10-day bulk sediment toxicity tests with the amphipod, *Eohaustorius estuarius*;
- 20-day bulk sediment toxicity (survival and growth) tests with 14- to 21-day-old polychaetes, *Neanthes arenaceodentata*; and,
- 48-hour suspended particulate phase embryo development tests using sediment elutriates and the mussel, *Mytilus edulis*.

These three bioassays were used as MEs to assess effects to the benthic invertebrate community. Amphipods and polychaetes are important members of the benthic ecosystem. The amphipod and polychaete bioassays measure a response to direct sediment exposure and are highly relevant to assessing the risk to the overall benthic and benthic-supported community. The larval development bioassay provides a sensitive endpoint associated with a water-column species; the sediment-water interface exposure is particularly important for linking this response to sediment exposure.

The three bioassays have a large body of San Francisco Bay data associated with them. The State Water Resources Control Board (SWRCB) has developed "reference envelope" thresholds for the amphipod survival and larval development endpoints and has published minimum significant difference (MSD) values for the polychaete survival and growth endpoints (Table 6-9) (SWRCB, 1998a and 1998b). The

MSD is the percentage of control response at which a significant difference from control was observed 90% of the time. A sample would be considered toxic if its result was lower than the MSD *and* significantly lower than its concurrently tested control (Student t-test, $\alpha = 0.05$). These thresholds allow identification of sites or stations that are more toxic than most San Francisco Bay reference sites. Comparison of toxicity test results relative to SWRCB threshold levels is the basis for the toxicity assessment conclusions for IR Site 20.

Bioassay tests followed standard procedures recommended for amphipod (Puget Sound Estuary Program [PSEP], 1989 and 1995), polychaete (Johns and Ginn, 1990), and mussel larvae (PSEP, 1989 and 1995) tests. Inchcape Testing Services (Aquatec Biological Sciences) performed the laboratory tests. Test organisms were supplied by the following organizations: Northwest Aquatics, Yaquina Bay, Oregon (OR) (amphipods); Dr. Donald J. Reish, California State University at Long Beach (juvenile polychaetes); and Sea Farms West, Carlsbad, CA (adult mussels). Sediment collected at IR Site 20 was tested during four separate solid-phase testing events, with concurrently tested control sediments for each testing event. Data on bulk porewater salinity and grain size of sediment for IR Site 20 samples are presented in Table 6-10.

Amphipod Test Results

Adequate control survival and response to the reference toxicant validated the *Eohaustorius estuarius* 10-day sediment test events. Mean survival of test organisms at IR Site 20 stations ranged from 57 to 73% (Table 6-11). Four stations (E07, E08, E09, and E10) were reported to have statistically significant reductions in survival relative to concurrently tested controls. Two IR Site 20 stations (E07 and E10) had survival levels less than the reference envelope tolerance limits established by the State Water Resources Control Board (SWRCB, 1998a) of 69.5% of control survival.

Polychaete Tests

The 20-day bulk sediment toxicity (survival and growth) tests using 14-21 day old polychaetes, *Neanthes arenaceodentata,* demonstrated appropriate control survival and response to the reference toxicant. Mean survival of test organisms at IR Site 20 was 96 to 100% (Table 6-12). Unlike tests performed for other locations at Alameda Point, these tests used five test organisms per replicate with five replicates per treatment.

Polychaete growth was reported to be statistically significantly lower than the concurrently tested control at two stations, E07 and E08 (Table 6-13). Growth was never lower than the MSD of 44% of the highest control growth (MSD = 44% of 21.4 mg/worm = 9.42 mg/worm). Therefore, the observed statistically significant decreases in growth are not considered to be biologically significant.

Mussel Larval Tests

Mussel larval tests were conducted at just two stations, E07 and E08. Control survival in the 48-hour mussel (*Mytilus edulis*) embryo development test of sediment elutriates was 84.2%. In the percent normal developmental control, 98.6% of larvae were normally developed. The reference toxicant median effective concentrations (EC_{50} values) for these tests were 7.8 to 10.9 µg/L of copper sulfate, all within the laboratory's reported control chart limits of approximately 3 to 12 µg/L. *M. edulis* larval survival exposed to sediment elutriates from two stations (E07, E08) was 95.7% and >100%, with >90% normal development in all treatments (Table 6-14). No treatments were identified as having significantly different normal development from the concurrently tested control. The combined endpoint of normal development of stocked larvae to the D-cell stage was greater than 94% in all test containers and, when normalized to control normal development, the lowest combined survival/normality endpoint was greater

than 114%. None of the IR Site 20 treatments fell below the SWRCB reference envelope tolerance limit of 60% of control larval development. Though the SWRCB limit was developed using an echinoderm species and different exposure, the *M. edulis* results do not indicate biologically significant effects as a result of exposure to IR Site 20 sediment elutriates.

6.4.2.1.2 Risk Characterization

The three toxicity tests (with five different endpoints) conducted on sediments from IR Site 20 (i.e., amphipod, polychaetes, and mussel larval) were all validated by acceptable control survival rates. There is no evidence that confounding factors influenced the outcomes of these tests. The variability associated with the polychaete growth data does not influence the utility of the data or the acceptability of the test. Toxicity data for the two easternmost IR Site 20 stations (E09 and E10) were limited to two of the three toxicity tests; the mussel larval tests were not available for these stations which limits the conclusions that can be drawn about the eastern portion of the channel from the available toxicity data. Although the broader comparability of the mussel larvae data is limited by the use of a different method and species than those used to establish SWRCB tolerance levels, the available data are still useful in characterizing IR Site 20 sediments; they represent a sensitive endpoint that did not demonstrate any adverse effect. Based on the historical toxicity tests for IR Site 20 (conducted in sediment from 1993/1994), sediment was generally not significantly toxic to the test species evaluated. Only two samples (from Stations E07 and E10) had statistically significant differences from the control and exceeded SWRCB reference envelope tolerance limits for one of the five endpoints (Table 6-15). It is believed that the 1993/1994 bioassay results are a conservative estimator of potential toxicity because the 1993/1994 study design was focused on characterizing potential sources, and these bioassay samples were biased toward the higher end of the sediment concentration range (as can be seen by the box plots of the sediment data in Appendix A). The 2005 sample design was meant to be more representative of the general sediment condition throughout the IR site, and for most contaminants, this data set has lower concentrations than the earlier data set. In the 2005 Surface data set, only one constituent (mercury) exceeded the benthic high direct contact toxicity benchmark (ER-M) and ambient concentrations, and that exceedance was only at one station (OIH C-2). The rest of the stations had no exceedances of ER-Ms and ambient concentrations, reinforcing the conclusion that the slight sediment toxicity seen in 1993 is unlikely to be present under current conditions.

6.4.2.2 IR Site 24

At IR Site 24, a number of constituents failed the direct contact screen. Because the direct contact screen uses non-site specific, conservative, screening values to screen compounds, an exceedance of the low direct contact toxicity benchmark does not necessarily indicate that sediments are toxic to benthic invertebrates. Therefore, historical bioassays conducted in IR Site 24 were used to further evaluate this endpoint.

6.4.2.2.1 Exposure and Effects Assessment

Toxicity tests were conducted on five sediment stations at IR Site 24 in 1998 (PA-1, PA-2, PA-3, PA-4, PA-5) and three reference samples (RL-1, RL-2, RL-3). Bulk sediment chemistry data for IR Site 24 bioassay locations are presented in Appendix A, Table A-2. The following tests were performed:

- 10-day bulk sediment toxicity tests with the amphipod, *Eohaustorius estuarius*;
- 28-day bulk sediment toxicity tests with the polychaete, *Neanthes arenaceodentata*; and,
- 72-hr sea urchin (*Strongylocentrotus purpuratus*) embryo development tests at the sediment: water interface (SWI).

As with IR Site 20, the three bioassays were used as MEs to assess effects to the benthic invertebrate community. Each toxicological test included a control sample and a reference toxicant exposure to assess test organism sensitivity. The results of each test were statistically evaluated to determine the significance of the response to control exposures at $p \leq 0.05$. Test sediment responses were not statistically compared to reference samples, as response in reference exposures was variable and in some cases lower than that observed in test sediments. Results also were compared to SWRCB thresholds when available (SWRCB, 1998a and 1998b) (Table 6-9). These thresholds allow identification of sites or stations that are more toxic than most San Francisco Bay reference sites. Comparison of toxicity test results relative to SWRCB threshold levels is the basis for the toxicity assessment conclusions for IR Site 24.

Tests followed standard procedures recommended for the amphipod (American Society for Testing and Materials [ASTM], 1992), for the polychaete (ASTM, 1994), and sea urchin larva (Anderson et al., 1996). Pacific Eco-Risk in Martinez, CA performed the toxicity tests and the porewater determinations; Advanced Biological Testing in Rohnert Park, California, performed the bioaccumulation tests. The amphipods were supplied by Northwest Aquatics (Yaquina Bay, OR), the polychaetes by both Dr. Donald J. Reish (California State University at Long Beach) and Dr. Todd Bridges (USACE Waterways Experiment Station), the fish by Aquatic Biosystems (Fort Collins, Colorado [CO]), the sea urchins by Ken Sievers (Santa Cruz, CA), and the clams by Brezina and Associates (Dillon Beach, CA). Data on bulk sediment porewater characteristics can be found in Table 6-16.

Amphipod Test Results

The amphipod tests were conducted in the second test series using test organisms collected from Yaquina Bay, OR. An average of 98% survival in "native" control sediment validated the test. The reference toxicant exposure to nominal cadmium concentrations of 4.4 mg/L was within the laboratories control chart limits of 1.1-7.4 mg/L. Reference survival ranged from 8 to 83% for the three reference sites and 15-62% for IR Site 24 samples (Table 6-17). Percent reburial of the surviving amphipods were >98.3%.

For the *E. estuarius* bioassays, there was a statistically significant decrease in all reference and test samples relative to control survival (Table 6-17). Additionally, all of the reference and test samples (except one reference sample) had survival levels less than the reference envelope tolerance limits (69.5% of control survival) established by the SWRCB (1998a). Initial test sediment porewater samples suggest that at least one IR Site 24 station, PA-3, contained ammonia in sufficient quantities to influence amphipod survival (Table 6-16). This confounding factor could have contributed to the 32% survival observed at station PA-3 during the *E. estuarius* test.

Polychaete Tests

The 20-day bulk sediment toxicity (survival and growth) tests using 14-21 day old polychaetes, *Neanthes arenaceodentata,* demonstrated appropriate control survival and response to the reference toxicant. Polychaete survival was high, exceeding 90% in most samples (Table 6-18). The exception to this was a 50% survival observed in IR Site 24 sample PA-3. Survival of *N. arenaceodentata* in the 10 replicates comprising the PA-3 sample was variable: in five replicates, 100% survival was observed; in the other five replicates, all animals were dead at the end of the test. This "all or nothing" response also occurred in single replicates for samples RL-1, RL-2, and RL-3, producing the 90% mean survival reported in Table 6-18. When compared to the SWRCB reference threshold, only PA-3 was less than the survival threshold.

Polychaete growth was statistically significantly lower than control for all samples except reference site RL-1, which actually exceeded the control growth. At IR Site 24, only station PA-3 had growth that was less than the SWRCB thresholds.

Sea Urchin Larval Tests

In the sea urchin SWI test, the percentage of surviving larvae that were normal exceeded 80% in all but two sediment samples. In IR Site 24 samples PA-1 and PA-2, percentage normal were 79.4 and 63.2, respectively; this was statistically lower than the control response, but within the SWRCB reference tolerance limit (see Table 6-19).

6.4.2.2.2 Risk Characterization

Table 6-20 summarizes the results of all the MEs evaluated at IR Site 24. A review of the bioassay data set from IR Site 24 identified the following:

- **Bioassay testing results were inconsistent**. The strongest conclusion regarding impact to AE(1) can be made if consistent results are seen across ME for a given location. The bioassay test results were not consistent by location. For instance, the test producing the lowest amphipod survival (8% at RL-1) produced the highest polychaete growth (11.75 mg) and non-significant response relative to control in the urchin test. Conversely, the station producing the highest amphipod survival (83% at RL-3), produced polychaete growth that was similar to impacted sites (Table 6-17). Many factors likely influence the response of the three species, including species sensitivity to different chemicals, exposure media, exposure duration, and endpoints measured. Each test can be considered an individual line of evidence, but taken collectively, impact to AE(1) is not consistently predicted at a given location.

- **Variability was high among replicates for a given sediment test.** In all three toxicological tests, high variability was often observed among replicates comprising a sediment sample. In all three toxicological tests, high variability expressed as coefficient of variation (CV) was observed.

- **Interlaboratory calibration and/or multiple testing of sediment samples suggested variable responses in bioassays.** Historical and intercalibration data suggested variation in test organism response to a given station among laboratories or over time. This variation produces uncertainty that makes decision-making difficult using these data.

- **Bioassays conducted over limited range of site conditions**. Bioassays from IR Site 24 were conducted in 1998 and represented the range of conditions sampled in that field effort. However, later sediment collection activities, specifically 2006, sampled sediments that included areas with higher concentrations. Therefore, the relevance of the 1998 sediment bioassays to the 2006 sediment data is limited, and it is not known what the potential toxicity of the sediments in the sediment shelf might be.

Significant toxicity was observed at all IR Site 24 stations in 1998 including the reference stations for the amphipod bioassays. However, the fact that the reference stations also exhibited significant toxicity makes it difficult to interpret the amphipod results. Detailed evaluation of the amphipod bioassays conducted at Alameda Point and Hunter's Point Shipyards in 1998 identified insufficient acclimation time as a potential confounding factor in the bioassays (Battelle et al., 1999b). For the other bioassay test species, only station PA-3 showed significant toxicity which may be attributable to ammonia or other confounding factors, as previously discussed.

Based on this evaluation, it is concluded that there may have been inconsistencies in the overall conduct of the tests, non-random placement of test organisms in exposure containers, or some other laboratory deviation that contributed to the high variation observed in this data. Thus, given the unusual responses observed and the uncertainties associated with the conduct of the tests, it is difficult to confidently interpret the results of the toxicological data associated with IR Site 24.

Although it is difficult to interpret the 1998 sediment bioassays, other lines of evidence support the conclusion that current conditions are unlikely to result in toxicity to benthic organisms over the majority of the area of IR Site 24. Surface sediment from 2005 and 2006 is the best estimate of current conditions to which invertebrates are exposed. As seen in the bubble plots and box plots of the surface sediment (Appendix A) the highest concentrations of COPECs are generally restricted to the northeast corner of the site and the sediment shelf that extends eastward past the quay wall beneath the roadway in the vicinity of outfalls J and K. Current surface sediment concentrations of COPECs in the rest of IR Site 24 are typically lower, reinforcing the conclusion that the sediment toxicity seen in 1998 is unlikely to be present under current conditions over the majority of the site. It is unknown whether the sediments in the shelf that extends eastward past the quay wall pose an unacceptable risk to benthic invertebrates.

6.4.3 Assessment of AE(2): Fish Community

In the SLERA, maximum sediment concentrations were compared to direct contact toxicity benchmarks and a number of compounds exceeded the low benchmarks, indicating the need for further evaluation. In the BERA, the fish community assessment endpoint was evaluated further by comparing modeled fish tissue concentrations to protective tissue benchmarks. Results of this comparison are discussed in the following sections.

6.4.3.1 IR Site 20

The exposure and effects assessment and the risk characterization for the fish community AEs are provided below for IR Site 20.

6.4.3.1.1 Exposure and Effects Assessment

Forage fish tissue concentrations at IR Site 20 were modeled from 95% UCL sediment concentrations developed for each of the three data sets at IR Site 20 from BAFs that were developed from whole-body fish tissue and sediment concentrations from Seaplane Lagoon, as described in Section 5.6. Forage fish BAFs were developed from species collected from Seaplane Lagoon including Pacific staghorn sculpin, yellowfin goby, chameleon goby, English sole, speckled sanddab, starry flounder, plainfin midshipman, white croaker, and several varieties of surfperch. These species are considered conservative estimators of exposure to the fish community because they have a high affinity with sediment and small home ranges. The concentrations of constituents detected in the forage fish were assumed to be dependent on site-specific bioavailability from Seaplane Lagoon sediments and to represent uptake under equilibrium conditions. BAFs developed from these data are considered a relevant way to estimate fish tissue concentrations using sediment data gathered from other areas offshore of Alameda Point. Table 5-10 summarizes the 95% UCL sediment concentrations, BAFs, and modeled fish tissue concentrations for constituents detected at IR Site 20 in the All Years sediment data set, the 2005 Surface Data set, and the 2005 Subsurface data set.

To evaluate effects, ecotoxicity reference values (ERVs) based on effects-based critical body residues (i.e., critical tissue values [CTV]) developed for the U.S. Navy for the BERA at Pearl Harbor were used (DON, 2002). Although the fish ERVs are draft values currently under review by U.S. EPA Region 9 and the Navy, they are not expected to change significantly (Yoshioka, 2005). However, updates may be

incorporated as the Pearl Harbor ERVs are finalized. It is assumed that the ERVs, although developed for comparison to Pearl Harbor's tropical species, can be considered as surrogates for general bottom fish in the BERA for Alameda Point. This is a reasonable assumption because the ERVs are based on a review of available studies from commonly recognized databases such as the Environmental Residue and Effects Database (ERED) (USACE/U.S. EPA, 2003) or U.S. EPA's ECOTOX (Jarvinen and Ankley, 1999) and included species in temperate as well as tropical systems.

Both bounded NOAEL and LOAEL ERVs were developed and are summarized in Table 6-21. Modeled tissue concentrations below the bounded NOAEL ERV were considered acceptable. Modeled tissue concentrations above the LOAEL ERVs were of concern because they indicated the potential for adverse effects to the fish community. ERVs were not available for nickel, aldrin, or dibenzofuran. A bounded NOAEL ERV was available for silver, but a LOAEL was not.

6.4.3.1.2 Risk Characterization

The modeled 95% UCL concentrations of constituents in fish tissue from IR Site 20 were compared to the fish ERV values, and HQs were developed. These results are presented in Table 6-22. None of the modeled fish tissue concentrations exceeded the NOAEL or LOAEL ERV for any constituent. PAHs were conservatively evaluated by comparing summed high (HPAH), low (LPAH), and Total PAHs to the most conservative benchmark for an individual compound within each sum (e.g., the benchmark for benzo(a)pyrene compared to Total PAH concentration). Based on these results, it is concluded that unacceptable risk is not posed to the fish community at IR Site 20.

6.4.3.2 IR Site 24

The exposure and effects assessment and the risk characterization for the fish community AEs are provided below for IR Site 24.

6.4.3.2.1 Exposure and Effects Assessment

The exposure and effects assessment for IR Site 24 was conducted as described for IR Site 20. The 95% UCL sediment concentrations for the All Years, 2005/2006 Surface, and 2005/2006 Subsurface sediment data sets used to model fish tissue concentrations are summarized in Table 5-11, and the ERVs are listed in Table 6-21.

6.4.3.2.2 Risk Characterization

The modeled 95% UCL concentrations of constituents in fish tissue from IR Site 24 were compared to the fish ERV values, and HQs were developed. These results are presented in Table 6-23. To summarize:

- Fish tissue concentrations modeled using the 95% UCL sediment concentrations from the All Years sediment data set did not exceed the LOAEL or NOAEL ERV for any constituent.

- Fish tissue concentrations modeled using the 95% UCL sediment concentrations from the 2005/2006 Surface data set also did not exceed the LOAEL or NOAEL ERV for any constituent.

- Fish tissue concentrations modeled using the 95% UCL sediment concentrations from the 2005/2006 Subsurface data set exceeded the NOAEL ERV for cadmium and silver, and both

HQs were less than three. Fish tissue concentrations only exceeded the LOAEL ERV for cadmium, and the HQ was less than two. There is no LOAEL ERV for silver.

The only COPECs that were identified as potentially posing a threat to the fish community at IR Site 24 were cadmium and silver; however, elevated concentrations of these COPECs are restricted to the deeper sediments in the shelf that extends eastward past the quay wall beneath the roadway in the vicinity of outfalls J and K. Outside of this small area, concentrations of cadmium and silver are much lower (Appendix A). Based on this evaluation it was concluded that, in general, sediment concentrations at IR Site 24 do not pose an unacceptable risk to the fish community over the majority of the site, and any indications of potential adverse effects to fish under current conditions are associated with the deeper sediments in a small restricted area in the northeast corner of the site and the sediment shelf that extends eastward past the quay wall.

6.4.4 Assessment of AE(3): Avian Community

In the screening-level risk estimate, a number of constituents were above the low TRV requiring further evaluation for the surf scoter, least tern, and the double-crested cormorant. In the BERA, the exposure and effects assessment was further refined and risk characterized for the three receptors at IR Sites 20 and 24. The baseline evaluation for the avian community AE is discussed in more detail in the following sections.

6.4.4.1 IR Site 20

The screening-level risk estimate at IR Site 20 identified that eight of the detected constituents had low TRV HQs greater than one for at least one receptor and sediment data set. These compounds include chromium, copper, lead, mercury, selenium, zinc, Total PCB, and Total DDx. Additionally, eight of the detected constituents did not have TRVs and, while they can not be evaluated quantitatively, they were carried forward into the BERA.

6.4.4.1.1 Exposure and Effects Assessment

As in the SLERA, exposure to the three avian receptors was conducted using a dose model. Refinements were made to the conservative screening model conducted in the SLERA to better estimate the potential for adverse effects based on site-specific information rather than conservative defaults. The specific refinements conducted are discussed in more detail below.

Exposure Point Concentrations

EPCs in the BERA were refined using an estimate of the central tendency of the sediment and tissue concentrations for each offshore area. The central tendency was estimated as the 95% UCL of the mean. The BERA EPC chosen was either the 95% UCL or the maximum sediment or tissue concentration (*M. nasuta*), whichever was lower (in accordance with U.S. EPA, 2002). A detailed description of the development of 95% UCLs can be found in Section 5.0. At IR Site 20, sediment and *M. nasuta* EPCs are summarized in Tables 5-3 and 5-5, respectively.

In the SLERA, all dose calculations were conducted using a SUF of 1.0, assuming that a receptor feeds within each offshore area 100% of the time. It is unlikely that any of the identified bird species forage 100% of their time at each area given the diverse environmental setting of the Bay Area. Therefore, estimates were made to characterize avian exposure in each area based on their known or expected foraging range in San Francisco Bay as follows.

Surf Scoter

As discussed in Section 6.3.1.3, data are not available to define the foraging area for the scoter in San Francisco Bay. Data from a two-year study of wintering birds in the Commencement Bay area of Puget Sound estimated the foraging range of the scoter at about 7 km^2 (Mahaffy et al., 1995). For the BERA, the area of IR Site 20 was divided into the foraging area of the scoter to develop a SUF. IR Site 20 is about 25.98 acres or 0.105 km^2. Thus, the SUF is 0.105 km2/7 km2 or 0.015 (or 1.5%) as defined spatially.

Least Tern

Based on an average of over 10 years of study at Alameda Point (see Table 6-2), least terns are seen foraging at IR Site 20 approximately 1.19% of the time. Thus, an SUF of 0.012 was used.

Double-Crested Cormorant

As described in Section 6.3.1.3, studies conducted in San Francisco Bay were used to estimate a foraging range for the double-crested cormorant of 53 km^2, or about 13,132 acres. The area of IR Site 20 is 25.98 acres or 0.105 km^2. The SUF for the double-crested cormorant foraging at IR Site 20 is estimated to be 0.002 or 0.2%.

Estimated foraging ranges and SUFs for IR Site 20 are summarized in Table 6-1. The SUF estimates for IR Site 20 suggest that the ROCs are likely to be using the IR site for only a small fraction of their dietary needs. However, because of the uncertainty inherent in these estimates, a range of SUFs was evaluated. The SUF was reduced incrementally: 1, 0.5, 0.25, and the estimated SUF for the ROC based on the literature or site-specific studies. To calculate a comprehensive evaluation of risk, as the SUF was reduced, the remaining (i.e., non-IR site) exposure was assumed to be at reference concentrations. This scenario assumes that each ROC's entire exposure occurs within San Francisco Bay, and does not account for seasonal migration. For comparison, an SUF of 0 (100% reference exposure) also is presented. To represent reference exposure, the following data sets were used to develop reference exposure point concentrations for sediment, invertebrate, and forage fish tissue.

Sediment

To characterize exposure to ambient background concentrations of San Francisco Bay sediment, reference station sediment data collected from five 1998 reference sites (Alameda Point field sampling effort [TtEMI, 1998]), and from five 2001 reference sites used in the Hunters Point Shipyards Parcel F validation study (Battelle et al., 2005b) were used. These 10 reference sites are as follows:

1998 stations:

- RL01–North South Bay (BPTCP station number 20013)
- RL02–Alameda (RMP station number BB70)
- RL03–Oakland Entrance (offshore from Western Bayside [Chapman et al., 1987])
- RL04–Yerba Buena (RMP station number BC11)
- RL05–Paradise Cove (BPTCP station number 20005).

2001 stations:

- AB-Alameda Buoy (same general location as RL02)
- PC-Paradise Cove (same general location as RL05)
- AE-Alcatraz Environs
- BF-Bay Farms
- RR-Red Rocks.

Invertebrate Tissue

Tissue concentrations from *M. nasuta* exposed in the laboratory for 28 days to sediment from ten reference station locations in San Francisco Bay were used to characterize ambient concentrations of invertebrate prey. Five of the reference bioaccumulation assays were conducted in 1998 as part of the Seaplane Lagoon field sampling effort (TtEMI, 1998) and the remaining five stations were collected as part of the Hunters Point Shipyards validation study (Battelle et al., 2005b). The 1998 bioaccumulation results are based on a single tissue sample exposed to sediment from that station. This resulted in five *M. nasuta* ambient samples from 1998. In 2001, five replicate test chambers containing *M. nasuta* were exposed to sediments from five stations, which resulted in 25 reference site tissue results. Between the two studies there are 30 ambient *M. nasuta* samples.

Forage Fish

While reference forage fish tissue were collected at two reference locations in support of the Seaplane Lagoon RI (Battelle et al., 2004b), reference fish tissue concentrations used in the dose equation were modeled to be consistent with the site estimates. Forage fish tissue concentrations were modeled similarly to site data by multiplying the fish BAF by the reference sediment EPC for each constituent. The refined dose was calculated using the following equation:

$$\text{Dose} = \frac{\{[(C_{sed\text{-}site} * IR_{sed}) + (C_{prey\text{-}site} * IR_{prey})] \times SUF_{site}\} + \{[(C_{sed\text{-}ref} * IR_{sed}) + (C_{prey\text{-}ref} * IR_{prey})] * SUF_{ref}\}}{BW} \quad (6\text{-}7)$$

where $C_{sed\text{-}site}$ = COPEC-specific EPC[3] in surface sediments (milligrams COPEC per kilograms sediment) for the site.

$C_{sed\text{-}ref}$ = COPEC-specific EPC in surface sediments (milligrams COPEC per kilograms sediment) for all reference values.

$C_{prey\text{-}site}$ = COPEC-specific EPC in prey tissue (milligrams COPEC per kilograms tissue) for the site.

$C_{prey\text{-}ref}$ = COPEC-specific EPC in prey tissue (milligrams COPEC per kilograms tissue) for all reference values.

SUF_{site} = site use factor (unitless) for the site.

SUF_{ref} = 1 - site use factor for the site.

Toxicological effects to the ROCs were assessed using the same weight-adjusted avian TRVs developed for the SLERA (see Appendix E). In the BERA, both comparisons to low and high TRVS were conducted.

6.4.4.1.2 Risk Characterization

Potential risk to the avian assessment endpoint at IR Site 20 will be discussed by receptor.

Surf Scoter

A summary of the HQs calculated for the surf scoter based on a range of SUFs and the refined EPCs for the All Years, 2005 Surface, and 2005 Subsurface data sets are presented in Tables 6-24 through 6-26.

[3] The EPC is the lesser of the 95% UCL on the mean or the maximum detected concentration in each media.

Supporting tables can be found in Appendix E. At 100% site use, only lead had a HQ that exceeded one and was greater than ambient concentrations when compared to the low TRV for all three data sets. At 100% site use, Total DDx had a HQ that exceeded one and ambient concentrations in the All Years and in the 2005 Subsurface data sets. Additionally, the All Years data set had a HQ for chromium that exceeded one and ambient concentrations. At a SUF of 0.015, only lead had a low HQ that exceeded one and was greater than ambient concentrations. No HQs based on the high TRV exceeded one.

Least Tern

A summary of the HQs calculated for the least tern based on a range of SUFs and the refined EPCs for the All Years, 2005 Surface, and 2005 Subsurface data sets are presented in Tables 6-27 through 6-29. Supporting tables can be found in Appendix E. For the least tern at 100% site use, the HQ exceedances of the low TRV and of ambient concentrations were similar among the three data sets: lead, mercury, Total PCBs, and DDx. The All Years and the 2005 Subsurface data sets tended to have the highest magnitude low TRV exceedances. However, the low TRV HQ exceedance for mercury was greatest in the 2005 Surface data set. Mercury also was the only COPEC that had a high TRV HQ that exceeded one (in all three data sets).

At a SUF of 0.012, two constituents were greater than ambient concentrations and had low TRV HQs that exceeded one. For the All years and the 2005 Subsurface data sets, these constituents were lead and Total PCBs, and for the 2005 Surface data set the constituents were lead and mercury.

Double-Crested-Cormorant

A summary of the HQs calculated for the double-crested cormorant based on a range of SUFs and the refined EPCs for the All Years, 2005 Surface, and 2005 Subsurface data sets are presented in Tables 6-30 through 6-32. Supporting tables can be found in Appendix E. For the double-crested cormorant at 100% site use, three constituents were greater than ambient concentrations and had low TRV HQs that exceeded one (lead, mercury, and DDx) in at least one of the data sets. The magnitudes of the low TRV HQs were low, all below 5. No high TRV benchmarks were greater than one. At a SUF of 0.002, only lead had a low TRV HQ greater than one.

6.4.4.2 IR Site 24

The screening-level risk estimate at IR Site 24 identified 11 of the detected constituents with low TRV HQs greater than one for at least one receptor and sediment data set. These compounds include cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, tributyltin, Total PCB, and Total DDx. Additionally, 11 of the detected constituents did not have TRVs. Although they cannot be evaluated quantitatively, they were qualitatively evaluated in the BERA.

6.4.4.2.1 Exposure and Effects Assessment

As previously described, sediment concentrations in the BERA were refined by using an estimate of the central tendency of the sediment and tissue concentrations for each offshore area. The BERA EPC chosen was either the 95% UCL or the maximum, whichever was lower (in accordance with U.S. EPA, 2002). A detailed description of the development of 95% UCLs can be found in Section 5.2. At IR Site 24, sediment and *M. nasuta* EPCs are summarized in Tables 5-4 and 5-6.

In the SLERA, all dose calculations were conducted using a SUF of one, assuming that a receptor feeds within each offshore area 100% of the time. It is unlikely that any of the bird species identified forage 100% of their time at each area given the diverse environmental setting of the Bay Area. Therefore,

estimates were made to characterize avian exposure in each area based on their known or expected foraging range in San Francisco Bay.

Surf Scoter

As discussed in Section 6.3.1.3, data are not available to define the foraging area for the scoter in San Francisco Bay. Data from a two-year study of wintering birds in the Commencement Bay area of Puget Sound estimated the foraging range of the scoter at about 7 km^2 (Mahaffy et al., 1995). For the BERA, the area of IR Site 24 was divided into the foraging area of the scoter to develop an SUF. IR Site 24 is about 49.91 acres or 0.202 km^2. Thus, the SUF is 0.202 km^2/7 km^2 or 0.029 (or 2.9%) based on a spatial definition.

Least Tern

Based on an average of over 10 years of study at Alameda Point (see Section 6.3.1.4), least tern are seen foraging at IR Site 24 approximately 2.9% of the time. Thus, a SUF of 0.029 was used.

Double-Crested Cormorant

As described in Section 6.3.1.4, studies conducted in San Francisco Bay were used to estimate a foraging range for the double-crested cormorant of 53 km^2, or about 13,132 acres. The area of IR Site 24 is 49.91 acres or 0.202 km^2. The SUF for the double-crested cormorant foraging at IR Site 24 is estimated to be 0.004 or 0.4%.

Estimated foraging ranges and SUFs for IR Site 24 are summarized in Table 6-1. The SUF estimates for IR Site 24 suggest that the ROCs are likely to be using the IR site for only a small fraction of their dietary needs. This also assumes that individuals use the different areas of the offshore habitat at Alameda Point in an equal way. However at IR Site 24 this is a conservative assumption since the site is an active berthing area with limited open water. Additionally, some of the sediments sampled are located beneath the roadway and would not be readily accessible to diving birds. This may make IR Site 24 less attractive to wildlife than other areas without disturbed habitat and ongoing human activity.

As with the evaluation IR Site 20, a range of SUFs was evaluated. The SUF was reduced incrementally: 1, 0.5, 0.25, and the estimated actual SUF for the ROC based on the literature or site-specific information. To calculate a comprehensive evaluation of risk, the remaining (i.e., non-IR site) exposure was assumed to be at reference concentrations as the SUF was reduced. This scenario assumes that each ROC's entire exposure occurs within San Francisco Bay, and does not account for seasonal migration. For comparison, an SUF of 0 (100% reference exposure) is also presented and is based on the same reference data set used in the Site 20 evaluation.

6.4.4.2.2 Risk Characterization

Potential risk to the avian assessment endpoint at IR Site 24 will be discussed by receptor.

Surf Scoter

A summary of the HQs calculated for the surf scoter based on a range of SUFs and the refined EPCs for the All Years, 2005/2006 Surface, and 2005/2006 Subsurface data sets are presented in Tables 6-33 through 6-35. Supporting tables can be found in Appendix E.

At 100% site use, cadmium, chromium, and lead have a low TRV benchmark that exceeded one and were greater than ambient concentrations in all the sediment data sets. Total DDx also had a low TRV

benchmark that exceeded one and was greater than ambient concentrations in the 2005/2006 Surface data sets. Only lead had a low TRV HQ that exceeded one and ambient concentrations at a SUF of 0.029. At a SUF of 0.029, the low TRV HQ for lead only slightly exceeded one and was similar to the HQ at reference concentrations. No HQs based on the high TRV exceeded one.

Least Tern

A summary of the HQs calculated for the least tern based on a range of SUFs and the refined EPCs for the All Years, 2005/2006 Surface, and 2005/2006 Subsurface data sets are presented in Tables 6-36 through 6-38. Supporting tables can be found in Appendix E.

For the All Years data set, copper, lead, zinc, Total PCBs, and Total DDx exceeded the low TRV and exceeded ambient concentrations at a SUF of one. With the exception of lead, all the exceedances were of low magnitude (HQ of three or less). No constituent had a high TRV HQ that exceeded one.

For the 2005/2006 Surface data set at a SUF of one, only copper lead, Total PCBs and Total DDx were greater than ambient concentrations and also exceeded the low TRV. As with the All Years data set, all the exceedances except for lead were of low magnitude (HQ of six or less), and no constituent had a high TRV HQ that exceeded one.

The highest magnitude HQs were from the 2005/2006 Subsurface data set. Cadmium, copper, lead, Total PCBs, and Total DDx exceeded the low TRV and ambient concentrations. Similar to other data sets, the low TRV HQs for all COPECs except lead were of low magnitude (HQ of eight or less), and no constituent had a high TRV HQ greater than one.

For all data sets, at a SUF of 0.029, only lead and Total DDx had a low TRV HQ that exceeded one and was greater than ambient. At a SUF of 0.029, HQs for both lead and Total DDx were similar in magnitude as those modeled from reference concentrations.

Double-Crested Cormorant

A summary of the HQs calculated for the double-crested cormorant based on a range of SUFs and the refined EPCs for the All Years, 2005/2006 Surface, and 2005/2006 Subsurface data sets are presented in Tables 6-39 through 6-41. Supporting tables can be found in Appendix E.

For the double-crested cormorant, only lead had a low TRV HQ greater than one at all SUFs and all data sets. Additionally, in the 2005/2006 Subsurface data sets, Total PCBs had a low TRV HQ, slightly greater than one assuming 100% site use and less than one at all other SUFs. All other analytes had HQs less than one. No high TRV HQ exceeded one.

6.5 Summary

To evaluate potential risks to ecological receptors, a tiered process was used that encompasses the eight steps identified in the U.S. EPA and Navy guidelines. In the first tier, the problem formulation was developed which included a development of the CSM and identification of COPECs, then a screening-level risk estimate was conducted using conservative screening parameters. If AEs failed the screen, then the exposure assumptions and COPEC selection were refined further in the BERA. Risks were then characterized for each of the endpoints.

In the screening-level risk estimate for IR Sites 20 and 24, both a direct contact toxicity screen and a screening-level risk estimate were conducted. Based on the direct contact toxicity screen at both IR

Sites 20 and 24, a majority of the compounds for all three data sets (All Years, 2005/2006 Surface, and 2005/2006 Subsurface) with direct contact benchmarks failed the screen. Additionally, there were numerous analytes that were detected in sediment but had no benchmarks for comparison. Thus, the benthic invertebrate and fish AEs [AE(1) and AE(2)] were recommended for further evaluation in the BERA.

The food-chain screening-level risk estimate also indicated that a number of constituents at both IR Sites 20 and 24 should be evaluated further in the BERA because they either (1) did not have TRVs and could not be evaluated quantitatively, or (2) had low TRV HQs that exceeded one for at least one avian receptor and sediment data set.

In the BERA, the preliminary problem formulation was refined, and then measurements of exposure and effects were refined and integrated into a characterization of risk that included a comprehensive discussion of the potential uncertainties associated with the assessment. The AEs and their associated MEs selected for the BERA are summarized below.

AE(1): Sufficient rates of survival, growth, and reproduction to sustain the benthic invertebrate community in offshore areas.

- ME(1): Toxicity to benthic invertebrates in acute and chronic sediment bioassays.

AE(2): Sufficient rates of survival, growth, and reproduction to sustain benthic feeding and piscivorous fish communities in offshore areas.

- ME(1): Model forage fish tissue concentrations and compare to literature-based effects thresholds.

AE(3): Sufficient rates of survival, growth, and reproduction to sustain the avian community in the area. This assessment endpoint also includes the protection at the level of the individual for special-status species as appropriate.[4]

- ME(1): Estimate site-specific doses (based on modeled and measured *M. nasuta* body burdens) to benthic-invertebrate eating birds (such as the scoter) and compare to TRVs.
- ME(2): Estimate site-specific doses (based on modeled fish tissue body burdens) to the least tern and compare to TRVs.
- ME(3): Estimate site-specific doses (based on modeled fish tissue body burdens) to piscivorous birds (such as the double-crested cormorant) and compare to TRVs.

In the BERA, a COPEC screen was conducted that was used to help focus the list of COPECs requiring additional evaluation by comparing site constituent sediment concentrations with ambient background concentrations to identify those constituents that are above ambient concentrations, and whose presence in offshore sediments could be attributed to Navy operations. At both IR Site 20 and 24, the majority of the inorganic constituents were greater than ambient concentrations, with a larger number of the inorganic constituents being greater than ambient concentrations in the All Years data set than the 2005 Surface

[4] This assessment endpoint was modified from those described in the Final Offshore Sediment Study Work Plan (Battelle et al., 2005a) by combining both the non-special and special-status avian species into one assessment endpoint.

data set. Most of the pesticides were not evaluated statistically due to the high frequency of non-detects; therefore, they were conservatively carried forward as Tier 2 COPECs.

Assessment of the Benthic Invertebrate Community AE(1)

Based on the historical toxicity tests for IR Site 20 (conducted in sediment from 1993/1994), sediment was generally not significantly toxic to the test species evaluated. Only two samples had statistically significant differences from the control and exceeded SWRCB reference envelope tolerance limits for one of the five endpoints. In the 2005 Surface data set, only one constituent (mercury) at one location (OIH C-2) exceeded the high direct contact toxicity benchmark (ER-M) and was greater than ambient. The rest of the stations had no exceedances of ER-Ms and ambient, reinforcing the conclusion that the sediment toxicity seen in 1993 was likely to have been associated with ammonia or other confounding factors. Based on these results, it is concluded that IR Site 24 poses acceptable risk to the benthic invertebrate community.

IR Site 24 had significant toxicity (as compared to the SWRCB tolerance limits) at a number of stations in 1998. Significant toxicity was observed at all IR Site 24 stations, including the reference stations, for the amphipod bioassays. However, the fact that the reference stations also exhibited significant toxicity makes it difficult to interpret the amphipod results. For the other bioassays, only station PA-3 showed significant toxicity. It was concluded that there may have been inconsistencies in the overall conduct of the tests, non-random placement of test organisms in exposure containers, high concentrations of ammonia, or some other laboratory deviation that contributed to the high variation observed in these data. Similar confounding issues have been identified at other locations at Alameda Point (Battelle et al., 1999b; Battelle et al., 2004b).

Although it is difficult to interpret the 1998 sediment bioassays, other lines of evidence support the conclusion that current conditions are unlikely to result in toxicity to benthic organisms over the majority of the area of IR Site 24. Surface sediment from 2005 and 2006 is the best estimate of current conditions to which invertebrates are exposed. The highest concentrations of COPECs are generally restricted to the northeast corner of the site and the sediment shelf that extends eastward past the quay wall beneath the roadway in the vicinity of outfalls J and K. Current sediment concentrations of COPECs in the rest of IR Site 24 do not exceed ER-Ms or ambient sediment concentrations, reinforcing the conclusion that the sediment toxicity seen in 1998 is unlikely to be present under current conditions, or associated with a small restricted area in the northeast corner of the site and the sediment shelf that extends eastward past the quay wall. Based on these results, it is concluded that IR Site 24 poses acceptable risk to the benthic invertebrate community over the majority of the site. Any potential for adverse effects to the benthic community are likely to be restricted to the small area in the northeast corner and the sediment shelf that extends eastward past the quay wall and under the roadway. However, due to the lack of bioassay data in that area, it is unknown whether these sediments would result in toxicity to benthic invertebrates.

Assessment of the Fish Community AE(2)

The modeled 95% UCL concentrations of constituents in fish tissue from IR Site 20 and 24 were compared to the fish ERV values to calculate HQs. For IR Site 20, none of the modeled fish tissue concentrations exceeded the NOAEL or LOAEL ERV for any constituent. Based on these results, it is concluded that IR Site 20 poses acceptable risk to the fish community.

At IR Site 24, the only COPECs that were identified as potentially posing a threat to the fish community were cadmium and silver; however, elevated concentrations of these COPECs are restricted to the sediment shelf that extends eastward past the quay wall beneath the roadway in the vicinity of outfalls J and K. Outside of this small area, concentrations of cadmium and silver are much lower. Based on this

evaluation it was concluded that, in general, sediment concentrations at IR Site 24 do not pose an unacceptable risk to the fish community over the majority of the site, and any potential for adverse effects to fish under current conditions are associated with a small restricted area in the northeast corner of the site and the sediment shelf that extends eastward past the quay wall.

Assessment of the Avian Community AE(3)

Potential risks to the surf scoter, the double-crested cormorant, and the least tern were evaluated at both IR Site 20 and 24. A summary of the results are described below.

IR Site 20

Surf Scoter: Chromium, lead, and Total DDx had low TRV HQs that exceeded one and had concentrations greater than ambient in at least one data set for the surf scoter. Risks to the surf scoter were deemed acceptable for the following reasons:

Lead

- While the lead HQ based on the low TRV exceeded one at all SUFs, the magnitude of the low TRV exceedance was moderate (<15) and there was no exceedance of the high TRV.

- The HQs based on the low TRV for lead for all the data sets were comparable (between 10 and 14). Thus, while lead concentrations at IR Site 20 were found to be statistically greater than ambient concentrations, the potential risk from ambient exposure is similar to site risk. This is because the EPCs calculated for the site and the reference area were similar.

Chromium and Total DDx

- The low TRV HQ exceedances of chromium and Total DDx were of low magnitude (HQ<3) at SUFs of 1 and 0.5. At lower SUFs (which are more representative of potential exposure), low TRV HQs are not greater than 1.

- The low TRV HQs greater than 1 for chromium and Total DDx are associated only with the All Years data set. HQs for these compounds from 2005, which is more representative of current conditions, are less than one.

- Neither chromium nor Total DDx has a high TRV HQ greater than one.

Least Tern: Lead, mercury, Total PCBs, and Total DDx had HQs that exceeded one and had concentrations greater than ambient in at least one data set for the least tern. Risks to the least tern were deemed acceptable for the following reasons:

Lead

- The lead HQ based on the low TRV exceeded one at all SUFs; however, the magnitude of the low TRV exceedance was moderate (<20) and there was no exceedance of the high TRV.

- The HQs based on the low TRV for lead for all the data sets were comparable. This is because the EPCs calculated for the site and the reference area were similar. Thus, while lead concentrations at IR Site 20 are statistically greater than ambient concentrations, the potential risk from ambient exposure is similar to site risk.

Mercury

- The low TRV HQ for mercury exceeds one in all three data sets. Additionally, the high TRV HQ exceeds one for a SUF of one in the All Years and the 2005 Surface data set, and for a SUF of 0.5 in the 2005 Surface data set. However, at SUFs more representative of least tern usage of IR Site 20, the low TRV HQ is at or below one, and the high TRV HQ is much less than one.

- Mercury in the sediments at IR Site 20 is only above ambient concentrations (0.48 mg/kg) at a few stations, located within the small backwater on the eastern edge of the site that is separated from the main portion of the channel by a small pier. Because of the small area associated with these concentrations, and the small amount of time that the least tern spends foraging in Oakland Inner Harbor, it was not considered necessary to evaluate further.

Total PCBs

- Although the low TRV HQ for PCBs is greater than one in all three data sets, the magnitude of the exceedance is low (HQ<6), and the high TRV HQ does not exceed one in any of the data sets. Additionally, at SUFs representative of tern usage of IR Site 20, both the low and high TRV HQ is below one.

- The distribution of PCBs at IR Site 20 can be seen in Figures 4-12 and 4-13. In general, higher concentrations of PCBs were detected in the historical data. Sampling conducted in 2005 near these locations was at much lower concentrations. Thus, sediment concentrations of PCBs do not appear to pose a risk under current conditions.

Total DDx

- The low TRV HQ for DDx is greater than one in all three data sets; however, the magnitude of the exceedance is low (HQ<8). The high TRV HQ does not exceed one in any of the data sets.

- At a SUF more representative of least tern usage of the site, the HQ exceedances in the All Years and the 2005 Subsurface data sets are barely above one, and much lower than one when compared to the high TRV. Current conditions in the sediment layer to which receptors are most exposed (2005 Surface data set) does not demonstrate a risk to the least tern for exposure to DDx.

- As can be seen from the bubble plots for Total DDx (see Figure 4-11), the highest concentrations of DDx were limited to the historical data, and sampling conducted in 2005 near these locations were at much lower concentrations. Thus, sediment concentrations of DDx do not appear to pose a risk under current conditions.

Double-Crested Cormorant: Lead, mercury and Total DDx had HQs that exceeded one and had concentrations greater than ambient in at least one data set for the double-crested cormorant. Risks to the double-crested cormorant were deemed acceptable for the following reasons:

Lead

- The lead HQ based on the low TRV exceeded one at all SUFs; however, the magnitude of the low TRV exceedance was low (<5) and there was no exceedance of the high TRV.

- The HQs based on the low TRV for lead for all the data sets were comparable. This is because the EPCs calculated for the site and the reference area were similar. Thus, while lead concentrations at IR Site 20 may be statistically greater than ambient concentrations, the potential risk from ambient exposure is similar to site risk.

Mercury

- The low TRV HQ for mercury exceeds one in only one data set (2005 Surface) at a SUF of one. In the other data sets and at SUFs more representative of least tern usage of IR Site 20, the low TRV HQ is at or below one, and the high TRV HQ is much less than one.

- Mercury in the sediments at IR Site 20 is only above ambient concentrations (0.48 mg/kg) at a few stations, located within the small backwater on the eastern edge of the site that is separated from the main portion of the channel by a small pier. Because of the small area associated with these concentrations, and the small amount of time that the cormorant spends foraging in Oakland Inner Harbor, it was not considered necessary to evaluate further.

Total DDx

- The low TRV HQ for DDx is only greater than one for the All Years and 2005 Subsurface data set. The magnitude is very low (just above one) and the high TRV benchmark is below one. The data set most representative of current conditions (the 2005 Surface sediment data set) does not indicate risk to the cormorant.

- As discussed above, the bubble plots for Total DDx (see Figure 4-11) indicate that the highest surface concentrations of DDx were limited to the historical data, and sampling conducted in 2005 near these locations were at much lower concentrations. Thus, sediment concentrations of DDx do not appear to pose a risk under current conditions.

Based on the above evaluation, while some constituents did have low TRV HQs that exceeded one, risks to the three receptors were deemed acceptable at IR Site 20.

IR Site 24

Surf Scoter: Cadmium, chromium, lead, and Total DDx are the only COPECs that had low TRV HQs that exceeded one and had concentrations greater than ambient in at least one data set at a SUF of one for the surf scoter.

Cadmium and Chromium

- In all three data sets, the low TRV HQs for cadmium and chromium are just slightly elevated above one at a SUF of one. At lower SUFs (which are more representative of potential exposure), low TRV HQs are not greater than one.

- The high TRV HQ for cadmium and chromium do not exceed one for any data set of SUF.

- Elevated concentrations of cadmium and chromium are limited to the northeastern corner of the site.

Lead

- The HQ based on the low TRV for lead for all data is between 20 and 70 when the SUF is one. At SUFs more representative of scoter usage of IR Site 24, the low TRV HQ is similar to that of reference conditions.

- The high TRV HQ for lead did not exceed one for any data set of SUF.

- Elevated concentrations of lead are limited to the northeastern corner of the site.

Total DDx

- At a SUF of one, the low TRV HQ for DDx is only greater than one for the 2005/2006 Surface data set. The magnitude is very low (just above one) and the high TRV benchmark is below one. At all lower SUFs and for all other data sets, the low TRV HQ does not exceed one.

- The highest concentrations of DDx were limited to the sediment shelf that extends eastward past the quay wall beneath the roadway.

Least Tern: Cadmium, copper, lead, zinc, Total PCBs, and Total DDx have low TRV HQs that exceeded one and had concentrations greater than ambient in at least one data set for the least tern.

Cadmium and Copper

- Cadmium had low TRV HQs that exceeded one only in the 2005/2006 Subsurface data set using 100% and 50% SUFs. Copper had low TRV HQs that exceeded one only at 100% site use (in all three data sets). Considering a more representative site use factor, these HQs are all less than one.

- Elevated concentrations of cadmium and copper are limited to the northeastern corner of the site and the sediment shelf that extends eastward of the quay wall.

Lead

- The HQ based on the low TRV for lead for all the data sets is between 6 and 70 when the SUF is one. At SUFs more representative of least tern usage of IR Site 24, the low TRV HQ is similar to that of reference conditions.

- The high TRV HQ for lead did not exceed one for any data set of SUF.

- Elevated concentrations of lead are limited to the northeastern corner of the site.

Zinc

- Zinc had low TRV HQs that exceeded one and concentrations greater than ambient only in the All Years data set (using 100% and 50% SUFs). Zinc also had low TRV HQs that exceeded one but did not exceed the ambient concentration in the 2005/2006 Surface and Subsurface data sets only at 100% site use. Considering a more representative site use factor, these HQs are all less than one.

- As with other compounds, the highest zinc concentrations are limited to the northeastern corner of the site.

Total PCBs

- Total PCBs had a low TRV HQ of 10 or less in all three data sets. No high TRV HQ exceeded one.
- At a SUF more representative of least tern usage, no HQ exceeded one.
- The highest concentrations of Total PCBs were limited to the northeast shelf that extends eastward of the quay wall.

Total DDx

- DDx had a low TRV HQ with a low magnitude exceedances (HQ<5) in all three data sets. No high TRV HQ exceeded one.
- At a SUF more representative of least tern usage, only the All Years data set has a low TRV HQ that slightly exceeds one. The 2005 data sets that are more representative of current condition do not have HQs greater than one at these SUFs.
- The highest concentrations of Total DDx were limited to the northeast shelf that extends eastward of the quay wall.

Double-Crested Cormorant: Lead and Total PCBs are the only COPEC that had a low TRV HQs that exceeded one and had concentrations greater than ambient in at least one data set for the double-crested cormorant.

Lead

- The HQ based on the low TRV for lead for all the data sets varied about an order of magnitude between 100% site use and 100% reference exposure (between 20 and 2).
- The high TRV HQ for lead did not exceed one for any data set or SUF.
- At SUF more representative of double-crested cormorant usage of IR Site 24, the low TRV HQ is similar to that of reference conditions.
- Elevated concentrations of lead are limited to the northeastern corner of the site.

Total PCBs

- Total PCBs had a low TRV HQ with a low magnitude exceedance (HQ<2) in only one data set (2005/2006 Subsurface data set). No high TRV HQ exceeded one.
- At a SUF more representative of double-crested cormorant usage, no HQ exceeded one.
- The highest concentrations of Total PCBs were limited to the northeast shelf that extends eastward of the quay wall.

Based on these results, it is concluded that for IR Site 24 poses acceptable risk to the avian bird community over the majority of the site. Because IR Site 24 is an active berthing area, with limited open

water and ongoing human activity, this may make IR Site 24 less attractive to wildlife than other areas without ongoing human activity. Areas of elevated sediment concentrations are restricted to the small area in the northeast corner and the area that extends eastward of the quay wall. While birds may be able to contact sediment in this area, due to its small size and the roadway which acts as an overhang, access is likely to be restricted and exposure minimized, especially for diving birds like the least tern and the double-crested cormorant.

6.6 Conclusion

Based on the baseline evaluations conducted for IR Sites 20, it is recommended that no further action is required based on ecological risk considerations. For all of the assessment endpoints evaluated at IR Site 24, the majority of the area in the site poses acceptable ecological risks. The only area that shows any indication of a limited potential for adverse effects is restricted to a small nearshore area in the northeast corner and the sediment shelf that extends eastward past the quay wall between outfalls J and K. The potential for risk in this area is expected to be limited in scope due to the small size of the area and the location of the sediment shelf under the roadway, where exposure to receptors is likely to be minimal. Due to the uncertainties inherent in the risk assessment, it is not possible to conclude definitively whether this area presents an unacceptable risk to the three assessment endpoints evaluated. Uncertainties associated with the ecological risk assessment are presented in detail in Section 8.2. If this part of the site is examined separately, using conservative assumptions about the area over which an organism would be exposed, then concentrations in this small area may be of concern. Therefore, based on the ecological risk assessment conclusions, a Feasibility Study is recommended for a small area of elevated sediment concentrations. This area is located in the sediment shelf east of the quay wall and beneath the roadway between outfalls J and K, as represented by samples C-21, C-23, C-24, C-26, and C-27 (Figure 2-8).

7.0 HUMAN HEALTH RISK ASSESSMENT

This section presents the results of the human health risk assessment conducted in support of the RI Report for IR Sites 20 and 24 at Alameda Point. This assessment evaluated historical sediment and tissue data collected in the offshore areas of Alameda Point and incorporated additional sediment data recently collected by Battelle in 2005 (Battelle, 2005). A full discussion of the site history, description of previous investigations, an evaluation of the newly collected sediment data, and a comprehensive discussion of nature and extent at IR Sites 20 and 24 is provided in previous sections.

The human health risk assessment was conducted following methodology in U.S. EPA and Department of Toxic Substances Control guidance documents (U.S. EPA, 1989b and 2002; Department of Toxic Substances Control [DTSC], 2002) as outlined in the Offshore Sediment Study Work Plan (Battelle et al., 2005a). Standard regulatory dose relationships were incorporated, and cumulative risks as well as comparisons to reference conditions were evaluated. The risk assessment was performed in four essential steps that constitute the basic framework for all risk assessments:

- Data Review and Evaluation: A review of available data to characterize the site; and to define the nature and extent of environmental contamination identified at the site.
- Exposure Assessment: An assessment of the magnitude, frequency, duration, and routes of theoretical exposure to site-related waste.
- Toxicity Assessment: A review of available information to identify the nature and degree of toxicity and to characterize the dose-response relationship for each chemical.
- Risk Characterization: A synthesis of exposure and toxicity information to yield quantitative estimates of cancer and non-cancer risks to defined receptor populations.

Appendix F provides summary tables, formatted according to U.S. EPA guidance (RAGS, Part D) for the risk assessment calculations.

7.1 Data Evaluation and Identification of Chemicals of Concern

The first step of the human health risk assessment process is an evaluation of the available data to: (1) characterize the site, (2) develop a data set for use in the risk assessment, and (3) identify COPCs. For the human health risk assessment, the All Years sediment data set described in Section 4.1.1 and the 28-day *M. nasuta* bioaccumulation data were evaluated to identify COPCs. Analytes that were detected at least once in sediment in any year (1993/94, 2001, and 2005) or in *M. nasuta* tissue (1993) were selected as COPCs; only those analytes that were never detected in both media were eliminated from consideration. As a result of this COPC screen, *alpha*-BHC, endosulfan I, endosulfan sulfate, endrin, *gamma*-BHC, and heptachlor were eliminated as COPCs. The non-detect sediment results for these contaminants were reviewed to verify that the associated detection limits were sufficiently sensitive. They were compared to U.S. EPA preliminary remediation goals (PRG) (U.S. EPA, 2004a) to ascertain whether or not these contaminants were present at concentrations capable of eliciting an adverse human health effect. The maximum sediment detection limits reported for these six pesticides were all well below U.S. EPA's industrial PRGs (Table 4-3). In addition, human health risks and hazards for these six pesticides that were not detected were evaluated, and all cancer risks and hazard quotients for these contaminants were well below the target cancer risk of 1×10^{-6} and hazard quotient of 1.

As described in Section 5.5, two approaches were used to calculate EPCs for *M. nasuta* tissue. Analytes that were detected in historical *M. nasuta* tissue data were used to calculate tissue EPCs. However, many

of the organic compounds were non-detects, and detection limits were elevated. Therefore, for analytes detected in sediment, but not detected in historical site-specific tissue, EPCs were modeled by multiplying the sediment EPCs by a BAF. A list of the COPCs evaluated is provided in Table 7-1.

7.2 Exposure Assessment

The exposure assessment includes an assessment of the magnitude, frequency, duration, and routes of theoretical human exposure to site-related COPCs. In this step, both current and hypothetical future site uses are considered, and complete exposure pathways to actual or probable human receptors that would come in contact with site-related COPCs are identified and evaluated.

7.2.1 Exposure Pathways and Receptors

In general, an exposure pathway describes the course a chemical takes from the source to the exposed receptor. An exposure pathway analysis links the source, location, and type of environmental release with population location and activity patterns to determine the primary pathways of exposure. If potentially complete and significant exposure pathways exist between contaminants and receptors, an assessment of potential effects and exposure is conducted. Only those potentially complete exposure pathways likely to contribute significantly to the total exposure have been quantitatively evaluated. All other potentially complete exposure pathways which result in minor exposures or for which there are no exposure models or insufficient toxicity data were not quantitatively evaluated in this assessment.

An exposure pathway is considered complete if all four of the following elements are present:

- A source and mechanism of chemical release;
- A retention or transport medium;
- A point of contact between the human receptor and the medium; and
- A route of exposure for the potential human receptor at the contact point.

A complete exposure pathway from the source of chemicals in the environment (i.e., from sediment) to human receptors must exist in order for chemical intake to occur. If all exposure pathways are incomplete for human receptors, no chemical intake occurs and, hence, no human health effects are associated with site-related COPCs. Section 3 discussed the sources and transport mechanisms for each site; a summary of the exposure pathways for each site is presented below. In accordance with U.S. EPA guidance (U.S. EPA, 1989b), both current and anticipated future conditions are considered.

7.2.1.1 IR Site 20

IR Site 20 is a waterway in a highly industrialized area, serving as a major transit route for ships moving in and out of docks and repair facilities. The majority of the waterway is lined with riprap and a seawall, is continuously submerged up to a depth of 42 feet, and is subjected to significant tidal currents. Shellfish have been observed along the shoreline areas and could be accessible to individuals wishing to harvest them. Currently no actual or anecdotal evidence indicates that individuals are actually harvesting and consuming shellfish from this area; however, due to the accessibility of shellfish, indirect exposures of chemicals associated with the consumption of shellfish located along the riprap and seawall were conservatively considered in this evaluation (Figure 7-1). In addition, it was assumed that individuals harvesting shellfish would also be exposed to chemicals in sediments through dermal contact and incidental ingestion. Direct contact with surface water was identified as a complete pathway, but as discussed in Section 3, water is not considered a primary exposure medium due to the rapid dilution of chemicals resulting from tidal action and San Francisco Bay currents. In addition, activities associated with shellfish collection would

occur at low tide, further limiting contact with surface water. Consequently, exposures via surface water were not proposed for quantitative evaluation.

Indirect exposure via fishing was considered a complete exposure pathway at IR Site 20; however, risk associated with ingestion of local catch is a bay-wide issue that has resulted in health advisories on all major waterways in the San Francisco Bay Area (SFEI, 1999). Most of the sport fish targeted by recreational anglers have extensive foraging ranges; therefore, it is difficult to distinguish the risk attributable to the site from risk associated with other point sources along IR Site 20 or bay-wide conditions. Thus, risks associated with ingestion of fish were not considered a primary pathway. As a conservative estimate of potential risks, forage fish tissue concentrations modeled for the ecological risk assessment were evaluated.

Under the proposed reuse plan (ARRA, 1996), IR Site 20 will remain a viable shipping channel. Therefore, it is assumed that the future use of IR Site 20 will be similar to current conditions and that the area will continue to be a major shipping channel, with the potential for an additional ferry terminal or other docking facilities. Based on these assumed future uses, the receptors and exposure scenarios outlined in Figure 7-1 should apply to both current and future conditions, with the exception that direct exposures to sediments may decrease slightly at IR Site 20 as a result of potential future dock construction. In addition, it is likely that regular maintenance dredging will be conducted by the USACE and the Port of Oakland. Future dredging may reduce concentrations in surface sediment.

Risks to children associated with consumption of shellfish were not calculated because as observed by SFEI (2002), children under the age of 6 years are unlikely to consume shellfish. Only 13% of the SFEI study (2002) participants reported that children under the age of six eat locally caught fish and only 2% reported that pregnant or breastfeeding woman eat a portion of their catch. Given that only 5% of the overall seafood consumption among San Francisco anglers is comprised of shellfish (Wong, 1997), it can be assumed that less than 1% of Bay-area children under the age of six (0.65%) may be consuming shellfish from San Francisco Bay. Overall, there is a low probability of child exposure (with respect to intake amounts and frequency of exposure); as such, this pathway is considered a potentially complete but insignificant route. However, risks to children associated with direct contact to sediment during collection of shellfish and with sport fish ingestion were estimated to ensure that evaluation of the adult receptor was adequately protective.

7.2.1.2 IR Site 24

Similar to IR Site 20, sediments are the primary exposure medium at IR Site 24. However, the current and potential future land uses are very different. Whereas the physical setting at IR Site 20 makes it possible for individuals to access the shoreline areas to harvest shellfish, similar activities at IR Site 24 are unlikely. The area is dominated by three piers consisting of concrete platforms supported by concrete columns, with water depths of up to 40 feet. The area under the roadway is difficult to access from land, as there are no open walkways or ladders. A few emergency exit ladders are present, but none of them reach solid or intertidal ground; the ladder bottoms have contact with floating or attached large wooden beams. The water depth at the pier face ranges from approximately 12 feet in the northeast corner at Station PA C-20 to approximately 28 feet at the southwestern station PA C-28. Due to the water depth, it is not possible to walk under the roadway from the pier. Access by boat is blocked by pier pilings and cross members. Only one entrance under the pier was available for sampling, near PA C-28, and this entrance could easily be closed. During the 2006 sampling event, movement under the roadway was only possible at low tide.

Sediment observed at low tide under the roadway was primarily sand covering rip-rap; areas of sand covering mud were always submerged. As a result, the habitat required to support clam beds (i.e.,

intertidal mudflats) is not present and, therefore, a resident shellfish population is not likely. A small population of mussels has been noted on the pier structures; however, the limited and difficult access to water and shoreline reduces the likelihood that humans could harvest sufficient numbers of these mussels to make shellfish consumption a significant exposure pathway. During the 2006 sampling survey, there was no evidence of any shellfish collection activities in the area (fishing gear, scrape marks on pilings, debris, etc.). In addition, IR Site 24 is fully operational under its proposed reuse as a commercial marina to berth cruise ships and historical landmark vessels. Both of these activities further limit the ability of individuals to access the area for recreational purposes. The Community Reuse Plan for Alameda Point (ARRA, 1996) does not include any plans to tear down the piers. Based on this information, no complete human health exposure pathways were identified for IR Site 24, and this area was not evaluated further.

With respect to consumption of sport fish, individuals have been reported to fish from the piers. The limited shallow habitat makes it unlikely that there are a significant number of resident fish species; therefore, fish targeted by anglers at the site are likely to be sport fish with relatively large foraging ranges, making it difficult to apportion site-specific risks. To evaluate the potential risks, fish tissue concentrations were modeled based on the sediment EPCs and the BAFs developed in Section 5 (see Section 5.6.1) and compared to tissue concentrations reported at reference locations (Table 7-2). In general, tissue concentrations are lower than or similar to those reported for reference. The risks associated with those reference concentrations are presented in Table 7-3. Based on this information, the potential risks to human health were determined to be low and comparable to reference and no further evaluation is recommended.

7.2.2 Exposure Point Concentrations

Estimates of chemical concentrations at points of potential human exposure are necessary for evaluating chemical intakes by potentially-exposed individuals. For the human health risk assessment, EPCs were developed for sediment and shellfish. In addition, EPCs for forage fish calculated for use in the ecological risk assessment were considered as a conservative estimate of potential risks associated with consuming sport fish.

As discussed in Section 5.0, exposure point concentrations for sediment were developed based on three data sets: All Years, 2005 Surface, and 2005 Subsurface. For the human health assessment, sediment EPCs (in dry weight) developed for the All Years and the 2005 Surface data sets were considered. The 95% UCL or the maximum concentration, whichever was less, was used as the EPC for all exposure scenarios. For *M. nasuta* tissue, wet weight EPCs were generated using historical tissue data for all constituents that were detected in tissue. For constituents that were detected in sediment in any year, but not in tissue, EPCs were calculated by multiplying a bioaccumulation factor times the sediment EPC for each area. Wet weight concentrations also were modeled for forage fish, as described in Section 5.6.

Exposure point concentrations also were developed to reflect reference conditions, for the purpose of comparison. As described in Section 4.1.2, ambient background concentrations of San Francisco Bay sediment were based on reference station sediment data collected from five 1998 reference sites (Alameda Point field sampling effort, TtEMI, 1998) and from five 2001 reference sites used in the Hunters Point Shipyards Parcel F validation study (Battelle et al., 2005b). To characterize exposure to ambient background concentrations of invertebrate prey, *M. nasuta* exposed in the laboratory for 28 days to sediment from ten reference station locations in San Francisco Bay was used. Five of the reference bioaccumulation assays were conducted in 1998 as part of the Seaplane Lagoon field sampling effort (TtEMI, 1998), and the remaining five stations were collected as part of the Hunters Point Shipyards validation study (Battelle et al., 2005b).

7.2.3 Exposure Parameters

Intake is estimated by combining exposure point concentrations with the variables that describe exposure:

- Rate of contact with the medium containing the constituent;
- Frequency of contact;
- Duration of contact; and
- Body weight of the exposure individual

Intake of individual chemicals as a result of exposure was estimated following U.S. EPA (1989b) guidance and using U.S. EPA standard default parameters (U.S. EPA, 1991) and literature-derived values regarding conservative exposure conditions. An intake factor is the concentration of a chemical in a quantity of a medium (e.g., seafood tissue) taken into the body through an exposure route (e.g., ingestion) and available for absorption. It is expressed in units of milligram (mg) of chemical per kilogram (kg) body weight per day (mg/kg-day). For the purpose of this assessment, parameters were selected to model exposures under both a Reasonable Maximum Exposure (RME) and a Central Tendency Exposure (CTE) scenario. The RME relies on conservative exposure factors to estimate the reasonable maximum exposures anticipated for the site, whereas the CTE describes a more typical or average exposure to an individual.

Table 7-4 summarizes the specific exposure factors used to derive the dose calculated for each exposure scenario using Equations 7-1 and 7-2 described below. The doses derived in this manner for each scenario were then summed to estimate a lifetime average daily dose (LADD) and average daily dose (ADD) for each constituent by sampling area based on the adult and child RME and CTE exposure scenarios, respectively. A summary of each of the key exposure parameters and the rationale for their selection is provided below.

Fish Ingestion Rate (IR_{tissue}): The SFEI recently completed an extensive survey of consumption of fish from San Francisco Bay (SFEI, 2002). Based on the data provided in this report, the median fish consumption rate for all participants was 16 g/day (0.016 kg/day) and the 95th percentile was 108 g/day (0.108 kg/day). Based on data presented in Table 10-61 of the U.S. EPA Exposure Factors Handbook (1997b), the mean total fish consumption rate for children 1 to 5 years of age who reside in households with recreational fish consumption is 11 g/day (RME). The mean consumption rate of recreational fish by children from the same study is 5.6 g/day (CTE).

Shellfish Ingestion Rate (IR_{tissue}): Data are not available to describe the consumption rate of shellfish in the San Francisco Bay area. However, it has been reported that shellfish typically comprise less than five percent of total seafood consumption among San Francisco anglers (Wong, 1997). Therefore, in the absence of information specific to shellfish, it was conservatively assumed that the shellfish consumption rate was 5 percent of the fish consumption rate reported by SFEI (2002). This equates to an assumption of 0.8 g/day (0.0008 kg/day) for the CTE and 5.4 g/day (0.0054 kg/day) for the RME.

Risks to children associated with consumption of shellfish were not calculated because as observed by SFEI (2002), children under the age of 6 years are unlikely to consume shellfish. Only 13% of the SFEI study (2002) participants reported that children under the age of six eat locally caught fish, and only 2% reported that pregnant or breastfeeding women eat a portion of their catch. Given that only 5% of the overall seafood consumption among San Francisco anglers is comprised of shellfish (Wong, 1997), it can be assumed that less than 1% of Bay-area children under the age of six (0.65%) may be consuming shellfish from San Francisco Bay. However, risks to children associated with direct contact to sediment during collection of shellfish and consumption of sport fish were estimated to ensure that evaluation of the adult receptor was adequately protective.

Sediment Ingestion (IR_{sed}): To estimate incidental ingestion of sediment as a result of clamming activities, the daily soil ingestion rates for adults (100 mg/day) and children (200 mg/day) from U.S. EPA PRG Table (U.S. EPA, 2004a) were used for the RME scenario. One half the daily ingestion rates for adults (50 mg/day) and children (100 mg/day) were assumed for the CTE.

Fraction Ingested (FI): To account for the fact that the ingestion rates and dermal contact rates applied include exposures to sediments from other sources, the FI was included to distinguish that portion assumed to be specific to exposures at IR Site 20. The FI accounts for the potential exposures of contaminants from other anthropogenic and natural sources which are not associated with IR Site 20. For the CTE, it was assumed that one-half of the total exposure to chemicals was from the site based on professional judgment, whereas for the RME, it was conservatively assumed that 100% of the exposures that occurred were associated with IR Site 20.

Exposure Frequency (EF): The shellfish ingestion rates are annualized and presented on a daily basis. Therefore, the exposure frequency for the shellfish ingestion pathway is assumed to be 365 days per year (U.S. EPA, 1989b).

It was assumed that individuals harvesting shellfish from the site would engage in this activity one day per week for six months of the year (RME) or one day every two weeks for six months of the year (CTE). Therefore, for the purpose of calculating risks associated with direct sediment exposures (i.e., dermal contact and incidental ingestion), the exposure frequency was assumed to be 13 days per year for the CTE and 26 days per year for the RME.

Exposure Duration (ED): An assumed exposure duration of 9 years was used for typical individuals. For the RME, an exposure duration of 30 years was assumed. These assumptions were based on recommendations by U.S. EPA (1989b) and represent median and 90th percentile estimates of residential tenure at a single location, respectively. For the child scenario, an exposure duration of 6 years was used (U.S. EPA, 1989b).

Body Weight (BW): Based on information presented by U.S. EPA (2004a), a body weight of 70 kg for adult and 15 kg for child was assumed for both the typical exposure and the RME.

Skin Surface Area (SA): To evaluate dermal exposures, it was assumed that individuals would wear a short-sleeve shirt and shorts, exposing hands, forearms, lower legs, and feet (i.e., 5,700 cm^2/day for adult and 2,800 cm^2/day for child) (U.S. EPA, 2004a).

Adherence Factor (AF): An adherence factor of 0.07 mg/cm^2 for adult and 0.20 mg/cm^2 for child was assumed for both the CTE and RME (U.S. EPA, 2004a).

Dermal Absorption Factor (DAF): Dermal absorption factors were based on data reported by DTSC's Preliminary Endangerment Assessment (PEA) Manual for Inorganic and Organic Compounds (DTSC, 1994). For those COPCs with no available information, a DAF of 0.01 was assumed for metals, and 0.1 for organics.

Averaging Time (AT): Averaging time is equal to the lifetime of the individual (70 years × 365 days per year) when evaluating risks to carcinogens. For noncarcinogens, the averaging time is equal to the exposure duration (U.S. EPA, 2004a).

7.2.4 Exposure to Lead

Exposure to lead in environmental media cannot be evaluated by calculating a chemical intake or dermal dose. Lead presents an exception to the paradigm that noncarcinogenic effects of chemicals occur only at

exposure levels exceeding some physiological threshold at which natural defense mechanisms are overwhelmed. Some of the effects of lead exposures, particularly changes in the levels of certain blood enzymes, appear to occur at blood lead levels so low as to be essentially without a threshold. Studies have shown that the absorption of lead through food ingestion by infants up to six months old is known to be very high, and is much lower in adults. Less information is available regarding the potential absorption of lead through ingestion of affected food for older infants, toddlers, and children. As a result, the U.S. EPA has deemed it inappropriate to estimate toxicity-based dose levels. Instead, potential risk associated with lead exposure is assessed by means of blood lead levels.

The U.S. EPA (1994) and DTSC (2002) have established a target blood lead level for children less than eight years of age, who are particularly susceptible to lead toxicity, of no more than 10 µg/dL (micrograms of lead per deciliter of blood) for both short- and long-term exposures. However, the models proposed by these agencies are designed to estimate blood-lead level in children based on lead contamination of soil, drinking water, homegrown vegetables, respirable dust, and air. Because these models are not designed to predict lead levels associated with seafood uptake from sediment, estimates of risk associated with lead ingestion were not quantified. The maximum concentrations for lead in surface sediment at IR Site 20 sampling locations were 225.5 mg/kg at OIH 57 in 2001 and 186 mg/kg at OIH 28 in 2001. All other surface sediment lead values were less than 106 mg/kg for the All Years dataset, and the 95% UCL for lead for the site was 61.4 mg/kg. For comparison purposes, U.S. EPA Region 9 recommends a PRG of 400 mg/kg of lead in soil based on acceptable blood-lead levels in children less than six years of age. In the State of California, a Cal-Modified lead PRG (150 mg/kg), which has been calculated using California EPA toxicity values and EPA Region 9 exposure methodology, should be used as a screening level because it is more stringent than the Federal value (U.S. EPA, 2004a). Assuming a bioaccumulation factor of 1, the lead concentrations at IR Site 20 are two times lower than the U.S. EPA Region 9 PRG, and most individual sample concentrations, as well as the site-wide 95% UCL, are well below the Cal-Modified lead PRG determined to be health-protective for children. Consequently, further modeling of lead uptake by children was not warranted.

7.2.5 Dose Estimates

Using the EPCs for each media and the parameters described above, doses associated with each scenario were calculated using the following standard risk equations:

Sediment exposures:

$$\text{Dose (mg/kg/day)} = \frac{(C_{sed} \times IR_{sed} \times FI \times EF \times ED) + (C_{sed} \times SA \times AF \times DAF \times FI \times EF \times ED)}{BW \times AT} \quad (7\text{-}1)$$

Consumption of fish and shellfish:

$$\text{Dose (mg/kg/day)} = \frac{C_{tissue} \times IR_{tissue} \times EF \times ED \times FI}{BW \times AT} \quad (7\text{-}2)$$

where: Dose = rate of chemical intake across the body (mg/kg-day)
C = chemical concentration in contaminated media or EPC (mg/kg)
IR = contact or ingestion rate (mg/day)
EF = exposure frequency (days/year)
ED = exposure duration (years)
FI = fraction ingestion (unitless)

SA = skin surface area exposed (cm^2/day)
AF = skin adherence factor (mg/cm^2)
DAF = dermal absorption factor (unitless)
BW = body weight (kg)
AT = averaging time (days).

Calculating doses based on carcinogenic effects for a combined 30-year recreational receptor requires mathematical adjustment of exposure parameters so that both childhood and adult exposures are considered. Generally, U.S. EPA recommends that, for the RME scenario, a standard exposure duration of 30 years is used to evaluate exposures to residents (i.e., children and adult). Because children, as well as adults, may have access to site-related contamination through direct contact, this evaluation used age-adjusted intake rates for the estimates of cancer risk for the RME scenario. This approach takes into account the difference in daily intake rate, body weight, and exposure durations for children from 1 to 6 years old and adults from 7 to 31 years old. The lower intake rate and body weight produces a more conservative risk estimate than if adult-only exposures were assumed. The derivation of the age-adjusted intake rates for the RME is provided in Appendix F. Age-adjusted rates were not used for the shellfish ingestion scenario because it was assumed that there was no childhood exposure.

7.3 Toxicity Assessment

The toxicity assessment determines the relationship between the magnitude of exposure to a COPC and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of risk assessment, COPCs are classified into two broad categories: carcinogens and noncarcinogens.

Carcinogens are agents that induce cancer. Numerical estimates of cancer potency are presented as cancer slope factors (CSFs). The CSF defines the cancer risk due to constant lifetime exposure (24 hours a day for 365 days per year) to one unit of carcinogen (in units of risk per mg/kg/day). CSFs are derived by calculating the 95% UCL on the slope of the linearized portion of the dose-response curve obtained from a multistage (nonlinear) cancer model. Use of the 95% UCL of the slope means that there is only a 5% chance that the probability of a response could be greater than the estimated value for the experimental data used. This is a conservative approach and is likely to overestimate the actual risk given that the actual risk is expected to be between zero and the calculated value. Carcinogenic slope factors assume no threshold for effects such that exposure to any level of concentration is likely to produce a carcinogenic effect.

EPA's guidance for evaluating the potential carcinogenicity of chemicals have been updated over the years to reflect increased understanding of the processes of cancer development and the modes of actions of disease at the cellular level. U.S. EPA issued the first set of final risk assessment guidelines in 1986, including *Guidelines for Carcinogen Risk Assessment* (51 FR 33992, September 24, 1986). These guidelines detailed a WOE approach for classifying the carcinogenic potential of chemicals. The five general classifications used under the U.S. EPA 1986 guidance are listed below:

Group A - Human Carcinogen. Sufficient evidence from human epidemiological studies exists to support a causal association between exposure and cancer.

Group B - Probable Human Carcinogen. This group consists of (1) compounds for which limited evidence of carcinogenicity in humans exists based on epidemiological studies (B1 carcinogens), and (2) compounds for which sufficient evidence of carcinogenicity in animals exists; however, adequate evidence of carcinogenicity in humans is not available (B2 carcinogens).

Group C - Possible Human Carcinogen. This includes those compounds for which there is limited evidence of carcinogenicity in animals.

Group D - Not Classifiable as a Human Carcinogen. This includes those compounds for which there is inadequate animal evidence of carcinogenicity.

Group E - Evidence of Noncarcinogenicity in Humans. This includes compounds for which there is no evidence for carcinogenicity in at least two adequate animal tests in difference species, or in both adequate epidemiological and animal studies.

In 1996, U.S. EPA released *Proposed Guidelines for Carcinogen Risk Assessment* (61 FR 17960 [April 23, 1996]), which used descriptive phrases rather than the alphanumeric classification to classify carcinogenic potential:

"Known/Likely". This category of descriptors is appropriate when the available tumor effects and other key data are adequate to convincingly demonstrate carcinogenic potential for humans.

"Cannot Be Determined". This category of descriptors is appropriate when available tumor effects or other key data are suggestive or conflicting or limited in quantity and, thus, are not adequate to convincingly demonstrate carcinogenic potential for humans. In general, further agent specific and generic research and testing are needed to be able to describe human carcinogenic potential.

"Not Likely". This is the appropriate descriptor when experimental evidence is satisfactory for deciding that there is no basis for human hazard concern, as follows (in the absence of human data suggesting a potential for cancer effects):

The proposed guidelines underwent several peer reviews and revisions, including interim final guidelines released in 1999, leading to the publication of the final revision to the *Guidelines for Carcinogen Risk Assessment* in March 2005 (70 FR 17765 [April 7, 2005]). Under these guidelines, a weight of evidence narrative summarizes the results of the hazard assessment and provides a conclusion with regard to human carcinogenic potential, which is in contrast to the step-wise approach in the 1986 cancer guidelines. The narrative summarizes the full range of available evidence and describes any conditions associated with conclusions about an agent's hazard potential. To provide additional clarity and consistency in weight-of-evidence narratives, standard descriptors are utilized as part of the hazard assessment narrative to summarize the biological evidence. The five descriptors currently used by the U.S. EPA are listed below:

Carcinogenic To Humans: This descriptor is appropriate when there is convincing epidemiologic evidence demonstrating causality between human exposure and cancer, or exceptionally when there is strong epidemiological evidence, extensive animal evidence, knowledge of the mode of action, and information that the mode of action is anticipated to occur in humans and progress to tumors.

Likely to be Carcinogenic to Humans: This descriptor is appropriate when the available tumor effects and other key data are adequate to demonstrate carcinogenic potential to humans, but does not reach the weight-of-evidence for the descriptor "carcinogenic to humans."

Suggestive Evidence of Carcinogenic Potential: This descriptor is appropriate when the evidence from human or animal data is suggestive of carcinogenicity, which raises a concern for carcinogenic effects but is judged not sufficient for a stronger conclusion.

Inadequate Information to Assess Carcinogenic Potential: This descriptor is used when available data are judged inadequate to perform an assessment.

Not likely to Be Carcinogenic to Humans: This descriptor is used when the available data are considered robust for deciding that there is no basis for human hazard concern.

Noncarcinogenic effects were evaluated using reference doses (RfDs) developed by the U.S. EPA. RfDs are expressed as acceptable daily doses in milligrams of compound per kilogram of body weight per day (mg/kg-day). The RfD is a health-based criterion based on the assumption that thresholds exist for non-carcinogenic toxic effects (e.g., liver or kidney damage) based on a length of time of exposure (chronic and subchronic). In general, the chronic RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime of exposure (U.S. EPA, 1989b). Chronic RfDs are specifically developed to be protective for long-term exposure between 7 years and a lifetime to a compound. Chronic RfDs were used in this assessment to evaluate the noncarcinogenic effects associated with exposure to site-related COPCs.

The toxicity for most of the COPCs at IR Site 20 is relatively well-known and their toxicity criteria have been well established. If available, toxicity criteria were selected (in order of preference) from the following sources: (1) California DTSC Office of Environmental Health Hazard Assessment (OEHHA) Criteria for Carcinogens (DTSC, 2002); (2) U.S. EPA's Integrated Risk Information System (IRIS) (U.S. EPA, 2005b); and (3) U.S. EPA's Health Effects Assessment Summary Tables (HEAST) (U.S. EPA, 2001c). This is the same hierarchy used to derive toxicity values in the Seaplane Lagoon RI Report (Battelle et al., 2004b). Table 7-5 presents the cancer slope factors (CSFs) and noncarcinogenic chronic RfDs for all of the IR Site 20 COPCs. The majority of the COPCs at IR Site 20 were classified as Class B2 carcinogen based on animal studies (Table 7-5).

Compounds that did not have DTSC or U.S. EPA-approved toxicity criteria were not evaluated quantitatively. There are a variety of reasons why a chemical may not have a toxicity criterion. U.S. EPA may withdraw values due to lack of consensus among their scientists regarding the toxicity of particular compounds. This is not an indication by U.S. EPA that the compounds were nontoxic, but that the degree of toxicity is questionable. Other compounds (including organotins) have no U.S. EPA-accepted toxicity assigned to them and consequently, dose and risks estimates were not evaluated for these compounds.

However, because toxicity criteria are available for most of the chemicals with known or documented effects, it is assumed that the majority of the potential risk at the site is captured in this evaluation. Potential risks associated with exposure to any chemicals lacking U.S. EPA- or DTSC-approved toxicity criteria are discussed qualitatively in the uncertainty section.

7.4 Risk Characterization

Risk characterization involves estimating the magnitude of the potential adverse health effects of the hazardous chemicals under investigation and making summary judgments about the nature of the human health threat to the defined receptor populations. It combines the results of the dose-response (toxicity) and exposure assessment. During the risk characterization, estimates of cancer risk and the potential for noncarcinogenic effects are determined. Site-specific risks and hazards were compared to the risks and hazards associated with the reference locations in order to provide a perspective of the relative risk asso-

ciated with IR Site 20. In addition, cumulative risks were determined by summing the risks associated with each COPC.

7.4.1 Estimating Cancer Risks

The cancer risk was estimated using the following linear dose-response relation where risk is directly related to intake (U.S. EPA, 1989b):

$$\text{Risk} = \text{CSF} \times \text{LADD} \tag{7-3}$$

where: Risk = Excess lifetime cancer risk (probability)
CSF = Cancer Slope Factor $(\text{mg/kg-day})^{-1}$
LADD = Lifetime average daily dose (mg/kg-day).

LADDs are used in conjunction with cancer slope factors to obtain excess lifetime cancer risk estimates as slope factors are based on average lifetime exposures. Slope factors are derived for specific routes of exposure, so only oral toxicity values were applied in this assessment. Cancer risks from exposure to multiple carcinogens were assumed to be additive (U.S. EPA, 1989b). Risks are estimated as probabilities for constituents, which elicit a carcinogenic response. The excess lifetime cancer risk is the incremental increase in the probability of getting cancer compared to the reference probability or that with no exposure to site COPCs. A risk of 1×10^{-6}, for example, represents the probability that for every one million people exposed during their lifetime (70 years) to a particular carcinogen at the specified level, one addition cancer case may occur.

7.4.2 Estimating Noncarcinogenic Hazard Quotients

The potential for noncarcinogenic health effects is estimated by comparing ADD of a compound with the chronic RfD based on the oral route of exposure. The ratio of the intake to reference dose (ADD/RfD) for an individual chemical is termed the hazard quotient (HQ). A HQ greater than benchmark of 1 indicates the potential for adverse health effects, as the RfD is exceeded by the intake (U.S. EPA, 1989b). These ratios are calculated for each chemical that elicits a noncarcinogenic health effect when an oral RfD is available for the chemical. HQs less than the benchmark hazard level indicate that no adverse health effects are predicted from exposure to COPCs at IR Site 20 for future residents and current recreational users. HQs greater than one indicate that exposure to that contaminant may cause adverse health effects in exposed populations. It is important to note, however, that the level of concern associated with exposure to noncarcinogenic compounds does not increase linearly as the HQ exceeds one.

Typically, chemical-specific HQs are summed to calculate pathway hazard index (HI) values. The HI is calculated by summing all HQs for all noncarcinogenic constituents through an exposure pathway:

$$\begin{aligned} \text{HI} &= \text{HQ}_1 + \text{HQ}_2 + \ldots + \text{HQ}_j \\ &= \left(\text{ADD}_1 / \text{RfD}_1 \right) + \left(\text{ADD}_2 / \text{RfD}_2 \right) + \ldots + \left(\text{ADD}_j / \text{RfD}_j \right) \end{aligned} \tag{7-4}$$

where: HQ_j = Hazard quotient of the jth chemical
ADD_j = Average daily dose of the jth chemical
RfD_j = Reference dose for the jth chemical.

This approach can result in the situation where HI values exceed one even when no chemical-specific HQ exceeds one (i.e., adverse systemic health effects would be expected to occur only if the receptor were exposed to several contaminants simultaneously). In this case, chemicals are segregated by similar effect on a target organ, and a separate HI value for each effect/target organ is calculated (U.S. EPA, 1989b). If any of the separate HI values exceed one, adverse, noncarcinogenic health effects are possible.

7.4.3 Risk Characterization Results

A summary of the individual risk values and hazard quotients calculated for all chemicals evaluated within each exposure scenario are presented in Tables 7-6 through 7-15. Cancer risks derived in this assessment can be compared to U.S. EPA's risk management range (i.e., 10^{-6} to 10^{-4}) for health protectiveness at Superfund sites. In addition to the calculation of individual risk values and hazard quotients, cumulative risks and hazard indices were calculated for each scenario, and for the site overall. To calculate cumulative risks and hazard indices, individual risks and hazard quotients estimated for individual chemicals were summed.

In general, risks and hazards associated with the site were comparable to, and sometimes less than, those associated with reference conditions. The lowest cancer risks and hazard quotients were associated with the direct contact pathway; those associated with consumption of fish and shellfish were relatively similar for both the site and reference conditions. Cancer risks and hazard quotients associated with each of the exposure pathways are described below.

Hazard quotients were below one for all chemicals of concern under the RME and CTE scenarios for the shellfish consumption pathway (Table 7-6). The hazard index for shellfish consumption was greater than the one for the RME scenario (1.39) but was similar to reference conditions (1.25) (Table 7-6). The hazard index for the shellfish CTE scenario was well below one (0.10). Arsenic (45.67%), Total PCBs (28.42%), and chromium (19.52%) were the main contributors to the shellfish consumption hazard index. Individual cancer risks for arsenic, chromium, benzo(a)pyrene, Total PCBs, benzo(b)fluoranthene, benzo(a)anthracene, and benzo(k)fluoranthene were greater than 1×10^{-6} under the RME scenario, but the risk values for these chemicals of concern were similar to or lower than the reference risks (Table 7-7). Under the CTE scenario, only arsenic and chromium had individual cancer risks greater than 1×10^{-6} but similar to reference. Cumulative site cancer risks associated with shellfish consumption (9.0×10^{-4}) were less than those associated with reference conditions (1.3×10^{-3}) under the RME scenario. Arsenic (85.9%) and chromium (7.4%) were the main contributors to potential cancer risk associated with shellfish consumption.

The lowest cancer risks and hazard quotients were associated with the direct contact pathway with sediments at IR Site 20. The RME cumulative hazard index for adults (0.02) and children (0.22) were well below the benchmark hazard level of one and were similar to reference values (0.008 and 0.07, respectively) (Tables 7-8 and 7-9). Chromium, Total PCBs, antimony, arsenic, and mercury were the main (i.e., greater than 5% each) contributors to the sediment exposure hazard index, although the individual hazard quotients for these chemicals of concern were below one. Arsenic, chromium, and benzo(a)pyrene all had individual cancer risks greater than 1×10^{-6} and were the main contributors to cancer risk through the direct contact pathway (Tables 7-10 and 7-11). However, these individual risk values were similar to reference risk values. Cumulative cancer risks for adults (1.8×10^{-5}) and children (1.3×10^{-5}) associated with the RME sediment exposure pathway were within EPA's risk management range (i.e., 10^{-6} to $10^{-}4$) and were similar to reference risks (1.4×10^{-5} and 9.4×10^{-6}, respectively). The cancer risks under the CTE scenario were 2.9×10^{-7} for adults and 1.7×10^{-6} for children.

For the fish consumption pathway, Total PCBs (23.48) and mercury (1.68) had hazard quotients greater than one for the adult RME scenario and were the main contributors to the RME non-cancer hazard to adults (Table 7-12). Only Total PCBs exceeded the benchmark hazard level of one for the child RME non-cancer hazard (11.16) and the adult (1.74) and child (2.84) CTE non-cancer hazards (Tables 7-12 and 7-13). The

hazard quotients for all these chemicals of concern were lower than or similar to reference values. The cumulative hazard index for adults and children under both the RME and CTE scenarios were greater than one but similar to reference values. Arsenic, Total PCBs, and chromium all had individual cancer risks greater than 1×10^{-6} for the RME and CTE scenarios for adults and children, with arsenic (53.51%) and Total PCBs (41.07%) being the main contributors to cancer risk through the fish consumption pathway (Tables 7-14 and 7-15). In addition, benzo(a)pyrene had a cancer risk slightly greater than 1×10^{-6} (i.e., 7.24×10^{-6}) for the adult RME scenario. However, these individual risk values were similar to or lower than reference risk values. The cumulative RME cancer risks for adults (2.2×10^{-3}) and children (2.3×10^{-4}) were very similar to reference risks (2.3×10^{-3} and 2.4×10^{-4}, respectively). In addition, the cancer risks under the CTE scenario were within U.S. EPA's risk management range (i.e., 5.4×10^{-5} for adults and 5.9×10^{-5} for children) and were similar to reference (i.e., 5.6×10^{-5} for adults and 6.1×10^{-5} for children).

7.5 Summary of Human Health Evaluation

Based on the results of the human health evaluation, risks and hazards to humans from chemicals in IR Site 20 sediments appear to be similar to risks and hazards from ambient conditions. Total cumulative risks and hazard indices for all scenarios were comparable to or even less than those reported for reference conditions. In addition, with the exception of benzo(a)pyrene, risks and hazards associated with those contaminants contributing most to the total risk or hazard index also were comparable to reference. However, the distribution of benzo(a)pyrene appears to be consistent with an urban background distribution of PAHs (see Section 4.2.2.1); therefore, risks associated with this chemical are not considered site-related. Given that the majority of assumptions regarding EPCs and exposure parameters made in the human health risk assessment are conservative and tend to overestimate exposure and risk/hazard (see Section 8.3), the incremental risks and hazards to the defined receptor populations from exposure to chemicals of concern at IR Site 20 are likely to be overestimated. For example, the calculated risk and hazard from arsenic in fish and shellfish tissue likely overestimates the actual risk and hazard by 90% because of the conservative assumption that all of the arsenic present is the more toxic inorganic form. In addition, the human health risk assessment conservatively assumed that 100% of the fish and shellfish consumption exposures were associated with IR Site 20. Based on the conservative results of the human health risk assessment, and the present and future use of the site as a viable shipping channel, it is concluded that there are no unacceptable risks to human health at IR Site 20, and it is recommended that no further action is required.

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8.0 UNCERTAINTY ANALYSIS

This section discusses the uncertainty associated with the data and methods used in this RI. Uncertainty can be introduced through the use of assumptions in the absence of scientific data or through interpretation of the data itself. This analysis will focus on uncertainty associated with analytical data collected to support the RI, and the ecological and human health risk assessment. This ecological risk assessment is designed to assess potential ecological risk associated with current conditions and the planned and future land use, which is the same as the current usage. Therefore, uncertainty associated with significant physical alteration and/or a change in the use of the site is outside of the scope of this assessment.

8.1 Uncertainty Associated with Sediment and Tissue Chemistry Results

As previously discussed, data from multiple years of sampling were combined to help understand the nature and extent of contaminants at both IR Site 20 and IR Site 24. For each data set, uncertainties associated with both the sampling and measurement components of the overall study can be identified. Examples of types of uncertainty include: how well the sampling design in a given year captured both small and large scale variability; how well the sampling methods capture physical specimens that retain the properties of the sediment in the field; and, how much variability and bias is introduced through the laboratory sample preparation and analysis. Any time data sets from multiple sampling events are combined, additional questions arise related to comparability of the samples taken, how well each individual data set represents the area of interest, and the significance of sources of interlaboratory error and temporal variability.

Based on the systematic sampling design that was used in 2005 and 2006 and the number of samples taken, there are good reasons to believe the 2005 and 2005/2006 data set are representative of the areas of interest. In addition, based on a review of the analytical results, the 2005 and 2006 analytical results have better (i.e., lower) detection limits, better coverage of sediments at depth, and given they were collected more recently, are more representative of existing conditions than historical data. Adding historical data to the 2005 and 2006 data changes the systematic representation by adding stations that were placed near outfalls in both IR Site 20 and IR Site 24. In IR Site 24 in particular, the All Years data set is biased by inclusion of the historical samples taken by SPAWAR, and the three outfalls sampled by the Navy. Therefore, the EPCs and other statistics generated using All Years data are likely to be biased high (conservative) compared to looking at a more systematic representation of the area.

To help evaluate differences across multiple years, the side-by-side box plots and color coded bubble plots are extremely useful tools (Appendix A). For the most part the largest differences are in IR Site 20, where 1993/94 data are plotted next to 2001 and 2005 data. Many analytes appear at first glance to be higher in the older data sets. Upon closer inspection, it becomes evident that the higher values are often non-detects, depicted as open circles denoting one-half the reported detection limit in the box plots; therefore it is not possible to know if the analyte was actually higher or lower in historical data. For the area sampled in 2006, no box-plots were generated because it had not been previously sampled.

PCBs are a good example of how elevated detection limits affect understanding of historical concentrations. In IR Site 20, the 1993 samples were analyzed for seven Aroclors. Total PCBs can be estimated by summing the individual values; however, given many individual Aroclors were not detected, questions arise as to how best to represent Total PCBs. This is not really an issue for the more recent data set where congeners were measured and the detection limits were quite low; however, if the Total PCB value calculated using one-half the reported DL for non-detected Aroclors is compared to the Total PCB value calculated by summing the detected Aroclors only, the values vary by approximately a factor of five. Even using zeros for non-detected values, older Aroclor data were much higher than totals in more recent years.

It is difficult to determine what the primary causes of the differences are and whether the older data are representative of historical concentrations.

As discussed in Section 4.1.1, field duplicate data collected in 2001 and 2005 were excluded from the data analysis unless the primary field sample was rejected ("R" qualified), in which case the field duplicate result was used. Field duplicates provide a measure of variability associated with sample collection, handling, small scale variability, and measurement error. These components of total study error are typically small, relative to the overall heterogeneity of constituents in the environment. Incorporating all field duplicates in the calculation of EPCs for the risk assessment results in the locations where the duplicates were taken being weighed heavier than other locations, and the assumption of a representative random sample would be violated. For example, if duplicates were collected at locations where very low concentrations were present, the estimate of the EPC would be reduced, and vice-versa. To evaluate the potential impact of the field duplicates on the analysis, a review was performed to compare the results of field samples and field duplicates. In general, very few field duplicates were collected. In 1993/94, when triplicates were collected, no one sample was identified as a primary vs. duplicate sample, and therefore the average of the three observations was used. No duplicates were collected in 1996; and in 1998, the only duplicate sample collected at IR Sites 20 or 24 was at PA02. In 2001, the only duplicate was at station 60, and given that the duplicate was actually offset, we included both samples 60 and 60 D in the analyses. In 2005, duplicate cores were collected at three locations (OIH C-5, PA C-11, and PA C-5). A further analysis of duplicates collected in 2005 was performed to evaluate whether the small scale and/or measurement error represented by the duplicate measurements warranted further consideration in the ecological risk assessment. The analysis confirmed that duplicate variability would have minimal impact on subsequent risk analyses.

Tissue data in OIH were severely limited, with *M. nasuta* bioaccumulations studies being performed on sediment from only four locations. At IR Site 20, these measurements were made in 1993/94, using methods with higher detection limits than in subsequent studies. None of the organic constituents were detected in IR Site 20 *M. nasuta* data. As discussed in Section 5.0 of this RI Report, attempts were made to model tissue values using BAFs based on 1998 tissue and sediment data collected around Alameda and current sediment chemistry values. Although this approach is preferable to trying to make inferences from the reported detection limits in 1993/94, it introduces other uncertainties. For example, for some constituents the BAFs themselves were highly uncertain due to non-detected tissue results, and there was a lack of a strong pattern between sediment and tissue values. In addition, the BAFs represent sediments in multiple regions of Alameda, and site-specific conditions may be such that constituents are more or less bioavailable then elsewhere in Alameda. It is unknown whether the resulting modeled tissue values are under- or over-estimates of the true concentration.

Forage fish BAFs were generated using data from Seaplane Lagoon. As discussed for the *M. nasuta* tissue, this raises similar questions about site-specific differences, lack of fidelity to a location, etc. In addition, the forage fish data set spans across multiple years, adding uncertainty associated with temporal variability.

8.2 Uncertainty Associated with the Ecological Risk Assessment

The sources of uncertainty associated with the ecological risk assessment and the potential biases in the results are presented in this section.

The screening-level risk evaluation was designed to be conservative, addressing uncertainty by over-estimating risk. This approach results in increased confidence that contaminated sites will not be removed from further assessment when, in fact, unacceptable risk actually exists.

Results of the screening-level risk evaluation were used to focus the baseline risk evaluation, which more accurately reflects exposure of receptors to site contaminants. As with all ecological assessments, there are inherent uncertainties. These uncertainties are directly relevant to the utility of the conclusions of this ecological risk assessment in a risk-management decision-making context. The uncertainties identified should therefore be considered prior to, and during, the risk management phase. The discussion of identified uncertainties, as they apply to the baseline risk evaluations, is discussed in more detail in the following sections.

8.2.1 Uncertainty Associated with the Problem Formulation

A number of areas of uncertainty were identified in the problem formulation portion of the ecological risk assessment. The most significant sources of uncertainty are discussed in more detail below.

8.2.1.1 Development of Conceptual Site Model

This ecological risk assessment focused on exposure related to direct contact to contaminated sediments and indirectly through the food chain. These were found to be the most significant, potentially complete pathways. Exposure via contact with surface water was determined to be insignificant. If contaminated sediment at the site acts as a source to surface water and significant exposure does exist via ingestion or direct contact with contaminated bay waters, then the exposure modeled in the ecological risk assessment was underestimated. This is unlikely to be a significant source of uncertainty as tidal flushing and currents in the bay would act to quickly dilute these concentrations.

The ERAs were conducted on a site-specific basis. However, ecological receptors with large home ranges, such as the least tern, may be exposed to chemicals originating at more than one offshore site at Alameda, as well as other areas of greater or lesser concentrations. This may result in an over- or underestimate of exposure and, therefore, risk.

8.2.1.2 Use of 95% UCLs to Develop Exposure Estimates

95% UCLs were used to estimate exposure to sediment and prey in the baseline risk assessment. While there were generally sufficient sample sizes in the sediment data to develop a 95% UCL, the prey data sets based on *M. nasuta* bioaccumulation data had very small sample sizes. With small sample sizes, it is difficult to accurately develop EPCs. Therefore in many instances, the maximum concentration was used. It is unknown whether the maximum concentration over- or underestimated the EPC.

8.2.1.3 Estimation of Prey Concentrations

Each species absorbs, metabolizes, and excretes COPECs in a different manner, affecting the transfer of COPECs to higher-level receptors. In the screening-level and baseline ecological risk assessments, either laboratory-exposed and depurated *M. nasuta* data or modeled shellfish data were used as a surrogate for prey for the surf scoter; fish tissue concentrations were modeled for the least tern and double-crested cormorant. The uncertainties associated with prey concentrations used in these calculations are discussed below.

Benthic Invertebrate Prey

A number of uncertainties exist with the estimation of benthic prey tissue concentrations. The laboratory *M. nasuta* data were historical data collected during the 1990s. While they generally covered the range of detected concentrations at IR Site 20, many compounds were detected in higher concentrations in the 2005/2006 data sets at IR Site 24. For both IR Sites 20 and 24, the data sets were small and, for the IR

Site 20 data, there were detection limit issues with many of the organic compounds. To address these issues, BAFs were used to estimate *M. nasuta* tissue concentrations based on measured sediment data. Because these BAFs are not site-specific, their accuracy in predicting tissue concentrations for the sites is uncertain. The relative ability of the BAFs to predict tissue concentrations from measured sediment data can be evaluated by examining the plots presented in Appendix D. To minimize the impact of this uncertainty on invertebrate prey exposure estimates, empirical data for inorganic compounds and modeled data were used to estimate organic concentrations of *M. nasuta* tissue at IR Site 20. At IR Site 24, the maximum of either the detected or modeled tissue concentrations for IR Site 24 were used.

Another source of uncertainty associated with the benthic invertebrate prey exposure estimates relates to the type of prey evaluated. For this ecological risk assessment, bivalve prey was used as a surrogate for invertebrate prey. However, bivalves are just one type of invertebrate prey consumed by diving ducks. It is unknown how representative bivalve tissue concentrations are to invertebrate prey in general. This could result in an over- or underestimation of prey body burdens.

Fish Tissue Concentrations

No fish were collected in support of this ecological risk assessment. Fish tissue concentrations that were used to evaluate risk to fish and to evaluate risk to fish-eating birds were modeled using BAFs. BAFs were developed from forage fish collected in support of the Seaplane Lagoon RI. There are a number of ways that BAFs for forage fish can be developed. To ensure a conservative estimate of uptake into fish tissue, conservative BAFs were chosen.

8.2.1.4 Selection of Assessment and Measurement Endpoints

Assessment endpoints were chosen to protect the major ecological components of the offshore food web. Marine mammals were not selected as AEs based on their minimal exposure to contaminated sediments and prey at the site. However, if marine mammals are exposed more significantly to site contaminants, then this ecological risk assessment would have underestimated the potential risk to these species. This is unlikely to be a significant source of uncertainty, since bioaccumulative compounds that are more likely to impact higher trophic-level species, such as the harbor seal are not present in significant quantities at IR Sites 20 and 24. Additionally, other piscivorous species, such as the least tern and the double-crested cormorant, were evaluated and were not found to be at risk over the majority of the site.

There was also uncertainty associated with the measurement endpoints used in the ecological risk assessment. This source of uncertainty was due to the spatial and temporal gaps in data collection activities. For example, toxicity bioassays and bioaccumulation assays were only conducted on a subset of the sampling locations and sampling events. In some cases, the range of concentrations measured in sediment was greater than the range captured by the bioassays. The impact of this uncertainty in the interpretation of toxicity bioassay data is discussed in more detail in Section 8.2.3.1. For the bioaccumulation assays, conservatism was ensured by supplementing this data with modeled tissue data using the full range of sediment data and by choosing the higher of either the modeled or measured concentration (see 8.2.1.3).

8.2.1.5 Comparison of Site Sediment Concentrations to Ambient Concentrations

Site sediment concentrations were statistically compared to ambient sediment concentrations within San Francisco Bay. Many of the pesticides did not have enough detects in the ambient data set to perform statistical comparison. This uncertainty was addressed conservatively by identifying these pesticides as Tier 2 COPECs.

Ambient concentrations in San Francisco Bay are limited to the surface sediment layer (0-5 cm) only. Because there was no subsurface ambient data set with which to compare the 2005 and 2005/2006 Subsurface data set, it was assumed that the ambient comparison to the 2005 and 2005/2006 Surface data set was relevant to deeper sediment data. This is likely to be a conservative comparison since ambient concentrations of many contaminants at depth in San Francisco Bay are likely to be higher than at the surface.

8.2.2 Uncertainty Associated with the Exposure Assessment

A number of areas of uncertainty were identified in the exposure assessment of the ecological risk assessment. The most significant sources of uncertainty are discussed in more detail below.

8.2.2.1 Treatment of Non-Detected Individual Constituents for Summed Parameters

Some constituents (PAHs, PCBs, and DDx) were evaluated only as summed parameters. For the PCBs, when an individual constituent was not detected, it was not incorporated into the sum (i.e., the value assigned to the individual constituent was 0). Treating non-detected constituents of sums as zero may result in an underestimate of exposure. PCBs were summed in this manner because of detection limit issues associated with the Aroclor data collected in 1993/1994 at Site 20. For all later data sets, the summing of Total PCBs using 0 for non-detected concentrations had an insignificant impact on the estimated total concentration, as the detection limits in the most recent data sets are very low. Therefore, while the 1993/1994 Total PCB concentrations from IR Site 20 may be underestimated, in general and for the more relevant current data set, the use of zero in the sums does not have an impact on the estimation.

For all other summed constituents (PAHs and DDx), non-detected values were treated as one-half the DL. Thus, the total concentration estimated for these summed parameters was not likely to significantly over- or underestimate the total concentration.

8.2.2.2 Species-Specific Exposure Parameters

Several species-specific exposure parameters were considered when calculating dose estimates for receptors of concern. For example, the relationship between a receptor's size and the magnitude of its dietary intake is a critical determinant of exposure. Although literature data exist from which information such as body weight, daily ingestion rate, and dietary composition can be estimated, there is a natural level of variability in these parameters within a population of receptors that cannot be expressed through the selection of a single representative value. In addition, uncertainty is inherent in the use of literature-derived values to calculate potential risks to ROCs specific to Alameda Point rather than relying on more site- or region-specific data. Although literature-derived exposure parameters are based on the most relevant scientific data available, using these parameters will add an unknown degree of uncertainty that may over- or underestimate exposure at IR Sites 20 and 24.

To evaluate the potential impact of this variability in exposure parameters, a sensitivity analysis was performed that determined that the three most sensitive parameters influencing the magnitude of the HQs are: (1) TRVs, (2) bioaccumulation factors, and (3) SUFs (Battelle et al., 1999a). Although body weights, ingestion rates, and diet are components of the dose assessment, it was determined that the range of these values found within the literature would not significantly impact the dose to the receptors. Therefore, it was determined that uncertainties associated with body weights, ingestion rates, and diet are minor, and that further investigations to refine them would not make major contributions to refining the dose assessment.

A simple model was used to estimate the amount of time birds might spend foraging at IR Site 24. This model assumed that birds would use all areas equally based on surface area of open water. However, IR Site 24 is an active berthing area, with large ships present at the piers and human activity in the area. Additionally, areas at IR Site 24 with the highest sediment concentrations are covered by a roadway and would be inaccessible to diving birds. Assuming that birds have equal access to all of IR Site 24 likely overestimates the potential exposure.

Another source of uncertainty associated with estimating exposure to avian receptors is the use of models when empirical data are lacking. To estimate prey ingestion rates for birds, species-specific data were lacking from literature, therefore ingestion rates were estimated based on regression models developed by Nagy et al. (1999). It is recognized that Nagy has published an updated series of models (Nagy, 2001). While, the 2001 regression equations predict slightly higher ingestion rates, these differences do not result in significantly different conclusions. For example, a comparison of HQs using Nagy 1999 and 2001 (Table 8-1) demonstrates that, in general, conclusions drawn from the dose modeling for the least tern and the scoter would be the same whether Nagy 1999 or 2001 was used. Additionally, it should be noted that empirically derived species-specific intake rates, have higher coefficients of variance when compared to the rates predicted by Nagy's regression equations than the coefficients of variance between the different models themselves. Therefore, using the more, recent regression equations to directly predict the dry matter intake would not be expected to significantly increase the certainty in the ecological risk assessment.

8.2.3 Uncertainty Associated with the Effects Assessment

A number of areas of uncertainty were identified in the effects assessment of the ecological risk assessment. The most significant sources of uncertainty are discussed in more detail below.

8.2.3.1 Invertebrate Bioassays

The three toxicity tests conducted on sediments from IR Site 20 (i.e., amphipod, polychaetes, and mussel larval) were all validated by acceptable control survival rates. There is no evidence that confounding factors influenced the outcomes of these tests. The variability associated with the polychaete growth data does not influence the utility of the data or the acceptability of the tests.

A review of the bioassay data set from IR Site 24 identified the following:

- **Bioassay testing results were inconsistent**. For instance, the test producing the lowest amphipod survival (8% at RL-1) produced the highest polychaete growth (11.75 mg) and non-significant response relative to control in the urchin test. Conversely, the station producing the highest amphipod survival (83% at RL-3) produced polychaete growth that was similar to impacted sites. Comparison of biological results showed only a general correlation to contaminant concentrations.

- **Variability was high among replicates for a given sediment test.** In all three toxicological tests, high variability was often observed among replicates comprising a sediment sample. In all three toxicological tests, high variability expressed as CV was observed. The experimental design associated with the polychaete test explained the majority of the variation in test organism survival (one polychaete per replicate; eight replicates). This does not explain the variability observed in amphipod, polychaete growth, or urchin tests.

- **Interlaboratory calibration and/or multiple testing of sediment samples suggested variable responses in bioassays.** Historical and intercalibration data suggested variation in

test organism response to a given station among laboratories or over time. This variation produces uncertainty that make decision-making difficult using these data.

- **Bioassays conducted over limited range of site conditions.** Bioassays from Site 24 were conducted in 1998 and represented the range of conditions sampled in that field effort. However, later sediment collection activities, specifically 2006, sampled sediments with higher concentrations. Therefore, the relevance of the 1998 sediment bioassays to the 2006 sediment data is limited and it is unknown what the potential toxicity of these sediments might be.

Taken together, the uncertainties associated with the bioassays at IR Site 24 make it difficult to know whether potential risks to the benthic invertebrate community are under or over-estimated.

8.2.3.2 Fish Ecotoxicity Reference Values

Potential bioaccumulation risk to fish at the site was assessed by comparing modeled COPEC concentrations based on BAFs to ERVs for bottom-feeding fish developed by the Navy for Pearl Harbor (DON, 2002). These ERVs are currently under review by U.S. EPA Region 9. ERVs were applied as CTVs for effects-based whole-body concentrations of COPECs in fish. This "critical body residue" approach is a method for assessing exposure estimates for COPECs in aquatic receptors in complex and/or multistep food web systems (e.g., McCarty and Mackay, 1993; Jarvinen and Ankley, 1999; Jarvinen et al., 1998; Field, 1998, as cited in DON, 2002). As noted by U.S. EPA (1998): "Biomarkers and tissue residues are particularly useful when exposures across many pathways must be integrated and when site-specific factors influence bioavailability."

Jarvinen and Ankley (1999, cited in DON, 2002) note that applying a tissue-residue-based approach to assess risk includes an implicit consideration of system-specific differences in contaminant bioavailability, assimilation, and metabolism differences among species or life stages, and multiple routes of exposure. This, in turn, reduces the uncertainty that would result from extrapolation among systems and species and from laboratory-based toxicology studies to the field. Also, as discussed by McCarty and Mackay (1993, cited in DON, 2002), an approach based on tissue residues aids in integrating uncertainties associated with contaminant accumulation kinetics because it reduces the confounding effect of different exposure durations (e.g., between laboratory and field studies).

Sources of uncertainty in this approach may over or underestimate risk and include:

- Appropriate tissues may not be sampled or analyzed to relate the COPEC concentration to its mechanisms or modes of action (e.g., evaluation of the effects of cationic metals may require analysis of tissues or sites of action [e.g., gill] that are not routinely sampled) (Wood et al., 1997, cited in DON, 2002). Some chemicals are metabolized to more active forms, such that measured concentrations of the parent compound might not provide a direct indicator of toxicity. Even in these cases, although the parent chemical may not be mechanistically related to toxicity, there may be consistent, correlative relationships between concentration of the parent compound and observed adverse effects.

- The kinetics of uptake and depuration influence biological responses. For example, in several of the selected case studies cited in DON (2002), short-term exposure of animals to relatively high chemical concentrations that elicited toxicity resulted in lower tissue chemical concentrations than those observed in longer-term exposures to lower chemical concentrations that did not result in adverse effects. Hence, the use of effects/tissue-residue relationships in an ecological risk assessment must incorporate consideration of contaminant toxicokinetics.

8.2.3.3 Avian Toxicity Reference Values

Quantity and Quality of Toxicity Data Used to Derive the Avian Toxicity Reference Values

Uncertainties are associated with the quantity and variable quality of literature-derived toxicity data. In order to reduce the uncertainties in the toxicity data set, most TRVs were generated from three widely accepted sources: Biological Technical Assistance Group (BTAG) (DTSC, 2001), U.S. EPA's Ecological Soil Screening (Eco-SSL) documents (U.S. EPA, 2005a), and Oak Ridge National Laboratory (ORNL) (Sample et al., 1996). It is recognized, however, that new toxicity data are generated every year, and not all of the relevant information may be included in the sources used for this risk assessment. In addition, TRVs for the same chemical can vary significantly among these sources. For example, the avian NOAEL for lead in the Eco-SSL is 1.63 mg/kg/d, whereas the BTAG avian NOAEL (used in this risk assessment) is 0.014 mg/kg/d. The BTAG avian TRV is based on studies that employed lead acetate, a form of lead not commonly found in nature. Lead acetate is highly soluble and more bioavailable than inorganic lead or other lead salts, making it more toxic than other forms of lead that are commonly found in the environment. The Eco-SSL TRVs were developed using only studies of the effects of inorganic lead compounds, which are more relevant at most sites. As a result, the risk to birds from exposure to lead may be overestimated.

It should be noted that the methods used in the three main sources to develop the TRVs vary, and this variation may have an effect on the quality of the TRVs. Each source conducted a literature review for each chemical, but BTAG and ORNL TRVs are based on one study considered the most appropriate by the reviewers. TRVs presented in U.S. EPA Eco-SSL documents (a separate document is published for each chemical) are based on a rigorous review of literature obtained from an extensive literature search. Derivation of the NOAELs on which the Eco-SSLs are based was a collaborative effort of a multi-stakeholder team consisting of federal, state, consulting, industry, and academic participants led by U.S. EPA's Office of Solid Waste and Emergency Response. A weight-of-evidence process was used to derive the TRVs, which is described in Attachment 4-5 to the Eco-SSL guidance (U.S. EPA, 2003).

Exposure Conditions of Literature-Derived Toxicity Reference Values

The majority of the evaluated toxicity data were derived from laboratory studies that were conducted in settings that do not mimic true field conditions. Laboratory studies typically control various factors in order to isolate one parameter in particular. Although such controlled experiments result in a more valid interpretation of the isolated parameters or relationship, uncertainty is associated with assuming laboratory exposure conditions are equivalent to in-field exposure conditions. As discussed in the following paragraphs, exposure duration and toxicity characterization are two parameters that exemplify the difficulty in translating literature-derived data to data representing the exposure conditions for receptors in this ecological risk assessment. In development of TRVs, the use of chronic data is preferred. Available toxicological data were not always associated with chronic exposure durations. Therefore, uncertainties were introduced in extrapolating non-chronic test results to chronic receptor toxicity values. These uncertainties were partially handled through the application of uncertainty factors in the derivation of low TRVs.

Uncertainty is associated with the extrapolation of literature-derived toxicity endpoints (especially laboratory-based studies) to equivalent endpoints for receptors due to discrepancies in exposure conditions. For example, the stressors affecting a receptor exposed to COPECs in the wild can be very different than those affecting an organism exposed in a laboratory setting. However, the direction, magnitude, and effect of this uncertainty are not known.

Magnitude of Difference between Low TRV and High TRV

Low TRVs derived by the BTAG, U.S. EPA Eco-SSL, and ORNL represent a no effect level, whereas the high TRVs represent the mid-range of effects levels found in the literature. There is a critical point on the dose-response curve at which effects will first be seen, but that dose is not known. The difference between the low and high TRVs is typically an order of magnitude, and HQs between 1 and 10 give an indication of how close the dose may be to the no effect or low effects levels represented by the TRVs. When the difference between the low and high TRV for a COPEC is very great, there is a high degree of uncertainty regarding where effects may first be seen.

The difference between the low and high TRVs is greater than two orders of magnitude for some COPECs, such as avian TRVs for cadmium and lead. A large difference in the high and low TRV for a COPEC increases the uncertainty of risk conclusions based on the magnitude of the low benchmark HQ, because it is unknown whether the dose estimated is approaching where first-effects may be found. An extreme case is lead, for which the avian high TRV is 625 times the avian low TRV. Even reference exposure results in a high magnitude, low TRV HQ. However, it is unlikely that there would be wide-spread effects on birds in San Francisco Bay. Such a large difference between the low and high BTAG avian TRVs for lead and concerns about lead bioavailability and toxicity make it almost impossible to accurately assess risk from lead in San Francisco Bay.

Use of Surrogate Species Data

In the absence of toxicity data specific to the selected representative receptors used in this ecological risk assessment, it is preferable to develop TRVs based on data from species phylogenetically similar to a particular representative receptor. The representative receptors from the various avian and mammalian guilds have different feeding behaviors and diets. For several COPECs, avian TRVs were developed using data for species that are not similar to one or another of the representative receptors in terms of diet or feeding activity. This represents a primary source of uncertainty associated with applying the TRVs to dissimilar species. Without species-specific data, it is impossible to determine whether the data from surrogate species appropriately reflect the sensitivity of a particular representative receptor.

Use of Surrogate TRVs for Individual and Summed COPECs

The low- and high-chlordane TRVs were used for evaluation of the following components of chlordane: *alpha*-chlordane, *gamma*-chlordane, *trans*-nonachlor, and *cis*-nonachlor. The BTAG avian low TRV for DDT and metabolites was used as a surrogate and the high TRV for DDE was used for evaluation of 2,4′-DDE, 4,4′-DDE, for the sum of 2,4′- and 4,4′-DDE (Total DDEs) and for the sum of DDT and metabolites (all six 2,4′- and 4,4′-DDT, DDD, and DDE compounds). The low and high TRVs for DDT and metabolites were used for evaluation of 2,4′-DDD, 4,4′-DDD, Total DDDs (the sum of 2,4′- and 4,4′-DDD), 2,4′-DDT, 4,4′-DDT, and Total DDTs (the sum of 2,4′- and 4,4′-DDT). Avian TRVs for Total PCBs were derived from studies that exposed birds to Aroclor 1254 and Aroclor 1242. These TRVs were used to evaluate risk from Total PCB values that were calculated by summing individual PCB congener values. Risk from individual components or sums that was estimated using a TRV for a surrogate chemical or mixture may be over- or underestimated, depending on how the toxicity of the individual component relates to the mixture. In the case of PCBs, uncertainty in the risk estimates arises from the relationship of the toxicity of the congener mixture (the particular Aroclor) used in the toxicological study to the toxicity of the mixture present at the site.

Compounds without TRVs

Many compounds did not have TRVs. Thus the potential risk from exposure to these compounds is not known.

8.2.4 Uncertainty Associated with the Risk Characterization

Risk associated with a number of COPECs could not be quantitatively evaluated for one or more receptors due to a lack of exposure inputs and/or effects data. For most of these COPECs little is known about environmental fate and transport and/or toxicity. Consequently, these compounds are rarely the focus of ecological risk assessments. The overall impact of not recommending these compounds as potential risk drivers is not considered to be significant, as this ecological risk assessment addressed all compounds commonly evaluated in an ecological risk assessment, and commonly identified as risk management drivers on contaminated sites. However, the exclusion of COPECs that could not be quantitatively evaluated as risk drivers imparts uncertainty to the conclusions of this ecological risk assessment, and may contribute to conclusions that overall provide an underestimation of risk to ecological receptors.

8.3 Uncertainty Associated with the Human Health Risk Assessment

The sources of uncertainty associated with the human health risk assessment and the potential biases in the results are presented in this section. Quantitative risk estimates derived in this assessment are conditional (contingent estimates), and include a number of assumptions about local fishing practice, land use, exposure, and toxicity. None of the risk estimates can be separated from these assumptions of the uncertainties inherent in the numerical values of the parameters used to calculate them. The calculated cancer risks and non-cancer hazards are contingent on the assumptions and parameter assignments made in deriving them and should not be interpreted as "true" risk.

8.3.1 Data Evaluation

With respect to the data evaluation, the major uncertainties include:

- The use of *M. nasuta* as surrogates to simulate tissue concentrations representative of other shellfish species is conservative because *M. nasuta* are aggressive filter feeders, particularly in comparison to the mussels typically found at IR Site 20 that passively filter the water rather than the sediment to obtain their food. As a result, it is probable that measured or estimated *M. nasuta* tissue concentrations would overestimate concentrations in the mussels for many chemicals.

- The measured *M. nasuta* data are from a limited sample set (n = 4) that is more than 10 years old. Most chemicals were not detected in the *M. nasuta* tissue; therefore, EPCs for these chemicals were modeled from sediment concentrations using estimated BAFs. These BAFs are not based on site-specific data and, therefore, it is uncertain whether they accurately portray the relationship between sediment and tissue concentrations.

- PCB congener data was not available during all sampling years at IR Site 20. In 1993 and 1996, Aroclors were analyzed instead of PCB congeners. Therefore, Total Aroclors data was used to calculate Total PCB risk at IR Site 20.

- One-half the method detection limit was used for chemicals not detected in tissue, except for Total Aroclors, where zero was used for non-detects because of high detections limits.

- Estimates of exposure point concentrations were based on either the maximum measured tissue concentrations or 95% UCL of the mean, whichever was lower, and were assumed to stay constant indefinitely without allowing for decreasing concentrations over time. For environmental media with time-varying chemical concentrations, the current levels found in sediment may not accurately characterize long-term exposure conditions.

8.3.2 Exposure Assessment

Quantitative estimates of dose were derived to estimate the RME and CTE exposures and are conditional estimates that include numerous assumptions on the type of exposures that may occur, the frequency and duration of those exposures, and the concentration of constituents at the point of exposure. Hypothetical future residential exposures were evaluated to comply with regulatory policy, but it is unclear if they will actually occur with any regularity at the site. Relatively conservative assumptions are used for many of the exposure parameters, resulting in a compounding effect. No attempt is made in this assessment to quantify this compounding effect on the cumulative risk estimates. The overall approach was intended to provide a conservative estimate of dose to avoid underestimating the risk. The following discussion provides a list of uncertainties associated with the exposure assessment.

- This evaluation assumes that the consumption rate of shellfish is five percent the rate of consumption of finfish as defined by SFEI (2002). Due to the lack of data about shellfish consumption rates for San Francisco Bay, the accuracy of this assumption is unknown. However, based on data indicating that shellfish consumption comprises less than five percent of total seafood consumption among San Francisco anglers (Wong, 1997), it is likely to overestimate actual consumption rates.

- The RME and CTE exposure scenarios assumed that a majority of shellfish consumers are adults. However, the recent study performed by SFEI (2002) reported that about 13% of the participants stated that children under the age of six eat the locally caught fish and 2% reported that pregnant or breastfeeding women eat a portion of their catch. Given that only 5% of the overall seafood consumption among San Francisco Bay anglers is comprised of shellfish (Wong, 1997), it can be assumed that less than 1% of Bay-area children under the age of six (0.65%) and of pregnant or breastfeeding women (0.1%) may be consuming shellfish from San Francisco Bay. Overall, there is a low probability of child exposure (with respect to intake amounts and frequency of exposure); as such, this pathway is considered a potentially complete but insignificant route. Risks to children associated with direct contact to sediment during collection of shellfish and consumption of forage fish were estimated to ensure that evaluation of the adult receptor was adequately protective. Comparison of adult and child hazards (Tables 7-12 and 7-14) and risks (Tables 7-13 and 7-15) associated with consumption of forage fish shows that the adult RME scenario is indeed protective of children.

- Children can be exposed to contaminants both *in utero* and during nursing. These contaminants are stored in the mother's body and can be released during pregnancy through transplacental transfer. Due to its high fat content, human milk can accumulate a large amount of lipophilic contaminants, such as PCBs, pesticides, and mercury, which can then be transferred to children through breastfeeding. There are several sources of uncertainty associated with the maternal transfer of contaminants to nursing infants, including (1) the metabolism of contaminants from food in humans and the types and concentrations of contaminants present in breast milk, (2) the levels of contaminant exposure in nursing women from consumption of fish and of those in the general population, and (3) the susceptibility of nursing infants to the health effects of these contaminants. This exposure pathway was not considered in the human health risk assessment, and therefore, risks to nursing infants may be underestimated.

- Currently, no data are available for quantifying incidental ingestion of sediment associated with typical recreational exposures. Data available for residential soil exposures include exposures associated with indoor dust, as well as those associated with outdoor activities; therefore, values calculated for occupation exposures were applied (U.S. EPA, 2002).

Although less conservative than the residential values, it is likely that these values overestimate actual incidental ingestion exposures to sediments because they include exposure to soil particles in airborne dust which is assumed to be a very minimal pathway for sediments.

- The assumption that shellfish are harvested and consumed was based only on the presence of these species at the site rather than on any evidence that such activities actually occur.

- It is assumed that the future use of IR Site 20 will be similar to current conditions and that the area will continue to be a major shipping channel, with the potential for an additional ferry terminal or other docking facilities. Direct exposures to sediments may decrease slightly at IR Site 20 as a result of potential future dock construction.

- Indirect exposures via fishing may occur at IR Site 20; however, risk associated with ingestion of local catch is a bay-wide issue that has resulted in health advisories on all major waterways in the San Francisco Bay Area (SFEI, 1999). Most of the sport fish targeted by recreational anglers have extensive foraging ranges; therefore, it is difficult to distinguish the risk attributable to the site from risk associated with other point sources along IR Site 20 or bay-wide conditions.

- The RME was estimated for all pathways quantified. Parameters were selected to estimate the reasonable maximum; however, the use of multiple conservative parameters in this scenario can result in an estimate of intake above the 95% UCL. The average or central tendency exposure was presented as well, which likely represents a more typical level of risk to future residents.

- An exposure duration of 9 years was assumed for the CTE. Because children, as well as adults, may have access to site-related contamination through direct contact, an age-adjusted exposure duration of 30 years was assumed for the RME. The approach used age-adjusted intake rates that took into account the difference in daily intake rate, body weight, and exposure durations for children from 1 to 6 years old and adults from 7 to 31 years old. The lower intake rate and body weight produces a more conservative risk estimate than if adult-only exposures were assumed. These assumptions were based on recommendations by U.S. EPA (1989b) and represent upper bound and average residential tenure at a single location.

8.3.3 Toxicity Assessment

Use of RfDs and carcinogenic slope factors in the toxicity assessment is subject to several types of uncertainties. The studies from which these values are derived typically involve conditions that are not identical to the type of exposures of interest involving chemicals in the environment. Extrapolations from animal experiments are frequently required to derive toxicity values for use in risk assessments. Uncertainty can be associated with extrapolations involving:

- High experimental doses to low environmental exposure doses.

- Animals used in experimental studies to humans.

- Short-term exposure to long-term exposure.

- Homogenous animal populations to heterogeneous human populations, which can vary substantially in their individual dose-response actions.

- Continuous experimental doses to intermittent human exposures.

The methods used to derive slope factors and RfDs are intended to be conservative in recognition of these types of uncertainties. For noncarcinogens, uncertainty factors are applied to either the NOAEL or LOAEL; for carcinogens, a slope factor at the estimated 95% UCL is used. The resulting toxicity values used in quantitative risk assessment calculations are likely to overestimate the true risk. Carcinogenic slope factors assume no threshold for effects; if thresholds for carcinogenicity exist, the true risks could be zero at sufficiently low doses.

The overall quality of the toxicology database also contains numerous uncertainties resulting from:

- Lack of consistency between different experimental studies.
- Limited numbers of studies.
- Lack of available information on multiple species and multiple exposure routes.
- Lack of demonstrable dose-response relationships.
- Lack of plausible biological mechanisms of action.
- Lack of direct evidence of effects in humans.

For ingestion exposures, the bioavailability of chemicals in the human body is assumed to be the same as that in the study organism from which toxicity factors were developed. Most toxicity parameter values are calculated to be used with administered rather than absorbed doses; however, these values still reflect the bioavailability of the as-administered form. Risks are likely to be overestimated if chemical bioavailability from environmental media is less than that from the experimentally administered doses in toxicological studies.

- For this assessment, the more conservative toxicity criteria from either U.S. EPA's IRIS or California EPA's BEHHA Cancer Potency Values were applied.

- The toxicity of each chemical was assumed to be additive. Interactions between chemicals, synergism or antagonisms, were not accounted for due to the limited toxicity information on these types of interactions. Interactions could result in overestimates or underestimates of risk.

- The calculation of risk and hazard from arsenic in fish and shellfish tissue assumes that all of the arsenic present is the more toxic inorganic form because the toxicity information used is for the more toxic form. However, the United States Department of Food and Agriculture (DFA, 1993) and the Agency for Toxic Substances and Disease Registry (ATSDR, 2005) both specify that most of the arsenic present in fish and shellfish tissue is the less toxic, organic form, and that inorganic arsenic accounts for only about 10% of the arsenic in these tissues. Therefore, the conservative assumptions of the human health risk assessment likely overestimate the actual risk and hazard of arsenic by 90%.

8.3.4 Risk Characterization

Uncertainties associated with estimating cancer risk and non-cancer hazard are primarily those that have been built into the process of deriving the estimates, as previously discussed.

- Multiple constituent, multiple pathway risks were evaluated assuming additivity of risks. Possible interactions (antagonistic or synergistic) that could occur among the various constituents present are not included in this assessment. Interactions could result in over- or

underestimates of the risks. The risks for individual constituents also were not segregated by mode of action, type of outcome, or severity.

- Risks associated with exposure to lead were not quantified in this assessment due to the lack of specific algorithms in U.S. EPA and DTSC lead uptake models to adequately model this exposure pathway. Lead concentrations at IR Site 20 were found to be below those measured at the reference stations. In addition, the lead concentrations were significantly below U.S. EPA Region 9 PRGs for soil, which are based on exposure to children through ingestion, dermal contact, and inhalation of lead from soil, groundwater, and air. Based on these comparisons, levels of lead at IR Site 20 do not appear to be significant. Uncertainties associated with estimating cancer risk and non-cancer hazard are primarily those that have been built into the process of deriving the estimates, as previously discussed.

In summary, because the majority of assumptions regarding EPCs and contact rates made in this assessment are conservative, and tend to overestimate exposure and risk, the incremental risks to the defined receptor populations from exposure to chemicals of concern at IR Site 20 are likely to be overestimated.

9.0 CONCLUSIONS AND RECOMMENDATIONS

This section summarizes the major findings of the IR Site 20 and IR Site 24 RI and provides conclusions regarding the need for additional evaluation. This RI Report presents the current understanding of the potential sources of contamination, the nature and extent of sediment contaminants based on previous investigations and the June 2005 and September 2006 sampling conducted for the RI, and the methods and results of the ecological and human health risk assessments conducted for IR Sites 20 and 24. All of these elements were combined to identify areas that potentially pose an unacceptable risk to human health and the environment, requiring evaluation in a FS of remedial alternatives. A summary of the results and conclusions for each site is provided below.

9.1 IR Site 20

As described in Section 2, IR Site 20 is defined as the 1,207-m portion of the Oakland Estuary adjacent to the former NAS Alameda. Potential sources of contamination are related to stormwater discharge and historical shipping activities. The stormwater sewers were cleaned in 1997, and the Navy's shipping activities in the area have ceased.

9.1.1 Nature and Extent of Sediment Contamination

Sediments from this area were evaluated in 1993 and 1994, 2001, and most recently in 2005 and 2006. Bioaccumulation and toxicity tests were also conducted during the 1993/1994 investigation. Based on these data, concentrations of most inorganic constituents (metals) and organic chemicals in sediment are relatively uniform across the site, both horizontally and vertically, and typically do not exceed ecological screening benchmark values such as the ER-Ms. Additional information on the concentrations and distribution of metals and organic chemicals follows.

At IR Site 20, all metals analytical results were below the ER-M and/or ambient values in all surface sediment samples collected during the 2005 remedial investigation, with the exception of mercury at one location. Chromium, lead, nickel, and mercury were the only metals with historical concentrations exceeding their respective ER-Ms in surface sediment. Only nickel showed an ER-M exceedance in the 1993/1994 samples, which were collected near stormwater discharge points. The historical surface sediment data with concentrations exceeding the ER-M for the other metals were from the 2001 sampling event. Concentrations of these metals exceeded the ER-M in 2001 surface sediment samples at only a few locations.

In the subsurface samples collected at IR Site 20, metals are generally uniform with depth and all metals are consistent with background reference concentrations except at one location, where copper, lead, mercury, and zinc exceeded the ER-M. However, copper, lead, and zinc did not exceed the ER-M in the surface sample collected at this location in 2005. In 2001, a surface sediment sample was collected at this location, and background and ER-M values were not exceeded for any metals.

At IR Site 20, Total PCBs, Total PAHs, and pesticides were not detected at concentrations exceeding the screening benchmark ER-M values in any of the surface sediment samples collected during the 2005 remedial investigation. Two PAHs, pyrene and phenanthrene, exceeded their ER-Ms at one location. In the historical surface sediment data set, no PAHs exceeded the ER-M values, and most pesticides were either not detected or below the ER-M. In the 1993/1994 data set, only 4,4'-DDD was detected in each sample collected from the outfall areas, with a maximum concentration near the ER-M (detected maximum of 22.37 parts per billion (ppb) and ER-M of 20 ppb). In 1993/1994, most other pesticides were not detected, and no other pesticides exceeded the ER-M. Concentrations of Total PCBs in the historical data exceeded the ER-M at a few stations, but the ER-M for PCBs was not exceeded in the 2005

sampling event. The detection limits for the PCBs in the historical data were high, so use of one half the detection limit for the non-detects resulted in anomalously high PCB concentrations in the historical data.

In the subsurface samples collected at IR Site 20, organic chemicals are generally uniform with depth, except at a few locations, where concentrations are higher. For Total PCBs, Total PAHs, and total pesticides, between one and three of the 27 subsurface samples exceeded the ER-M.

9.1.2 Ecological Risk Assessment

To evaluate potential risks to ecological receptors, a tiered process was used that encompasses the eight steps consistent with U.S. EPA and Navy guidelines. In the first tier, the problem formulation was developed, including the development of the CSM, identification of COPECs, and a SLERA using conservative screening parameters. The SLERA for IR Site 20 included both a direct contact toxicity to evaluate AE(1) (benthic invertebrates) and AE(2) (fish) and a screening-level risk estimate to evaluate AE(3) (avian receptors). Based on the direct contact toxicity screen, a majority of the compounds for all three data sets (All Years, 2005 Surface, and 2005 Subsurface) with direct contact benchmarks failed the screening. Additionally, there were numerous analytes that were detected in sediment that have no benchmarks for comparison. Thus, AE(1) and AE(2) were recommended for further evaluation in the BERA. The screening-level risk estimate for AE(3) also indicated that a number of constituents at IR Site 20 should be evaluated further in the BERA because they (1) either did not have toxicity reference values and could be evaluated quantitatively, or (2) had low TRV HQs that exceeded one for at least one avian receptor and sediment data set.

In the BERA, the preliminary problem formulation and measurements of exposure and effects were refined and integrated. The list of COPECs was refined by comparing site sediment concentrations with ambient background concentrations to identify those constituents that are above ambient concentrations, and whose presence in offshore sediments could be attributed to Navy operations. Based on this refined evaluation, risks to all three assessment endpoints were determined to be insignificant for both the All Years and 2005 data sets.

Based on the results of the SLERA and the BERA, it was concluded that there are no unacceptable risks to ecological receptors at IR Site 20. No further action is required.

9.1.3 Human Health Risk Assessment

The human health risk assessment for IR Site 20 focused on activities associated with the collection and consumption of shellfish. Specifically the assessment evaluated both direct (i.e., consumption of shellfish) exposures as well as indirect exposures, such as direct contact and incidental ingestion of sediment associated with the collection and consumption of shellfish. Potential risks associated with consumption of fish were also evaluated, using forage fish tissue concentrations modeled from sediments. The results indicate that risks to humans from chemicals in IR Site 20 sediments appear to be similar to risks from ambient conditions. The primary chemicals contributing to risk (arsenic, chromium, PCBs and benzo(a)pyrene) were similar to reference in all media evaluated or, in the case of benzo(a)pyrene, apparently attributable to background sources. Modeled forage fish concentrations resulted in similar results to those based on the shellfish data, with risks generally low or comparable to reference. Little difference was observed between risks based on all data versus that based on the 2005 surface samples only.

It should be noted that the majority of assumptions regarding EPCs and exposure parameters made in the human health risk assessment are conservative, and tend to overestimate exposure and risk; therefore, the incremental risks to the defined receptor populations from exposure to chemicals of concern at IR Site 20

are likely to be overestimated. For example, the calculation of risk and hazard from arsenic in fish and shellfish tissue assumes that all of the arsenic present is the more toxic inorganic form because the toxicity information used is for the more toxic form. However, the United States Department of Food and Agriculture (DFA, 1993) and the Agency for Toxic Substances and Disease Registry (ATSDR, 2005) both specify that most of the arsenic present in fish and shellfish tissue is the less toxic, organic form, and that inorganic arsenic accounts for only about 10% of the arsenic in these tissues. Therefore, the conservative assumptions of the HHRA likely overestimate the actual risk and hazard of arsenic by 90%.

Furthermore, risk associated with ingestion of local sport fish catch is a bay-wide issue that has resulted in health advisories on all major waterways in the San Francisco Bay Area (SFEI, 1999). Most of the sport fish targeted by recreational anglers have extensive foraging ranges; therefore, it is difficult to distinguish the risk attributed to the site from risk associated with other point sources along IR Site 20 or bay-wide conditions. In addition, the human health risk assessment conservatively assumed that 100% of the fish and shellfish consumption exposures were associated with IR Site 20.

Under the proposed reuse plan (ARRA, 1996), IR Site 20 will remain a viable shipping channel; therefore it is likely that regular maintenance dredging will be conducted by the USACE and the Port of Oakland. Future dredging may reduce concentrations in surface sediment. In addition, direct exposures to sediments may decrease slightly at IR Site 20 as a result of potential future dock construction.

Based on the results of the human health risk assessment and the present and future use of the site, it was concluded that there are no unacceptable risks to human health at IR Site 20, and no further action is required.

9.2 IR Site 24

IR Site 24 is located along the southern edge of Alameda Point and consists of three piers located within the breakwall of Breakwater Beach. It is currently being used to dock naval ships including the *USS Hornet*, which is permanently docked at Pier 3 as a naval museum. Potential sources of contamination are related to stormwater sewers and historical shipping, refueling and maintenance activities. Sewer lines leading to outfall K and L have been replaced with PVC piping in 1991, and line J was cleaned and inspected in 1991 (TtEMI, 1996).

9.2.1 Nature and Extent of Sediment Contamination

Concentrations of most inorganic constituents (metals) and organic chemicals in sediment in the open water portions of IR Site 24 are low and typically do not exceed ecological benchmark values such as the ER-M. Concentrations of inorganic and some organic constituents are higher in the sediment shelf near shore and under the roadway between Piers 1 and 2.

The 2006 sampling, which was conducted near the shoreline and under the roadway in an area not previously sampled, showed that concentrations of cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc each exceeded their respective ER-Ms in at least one sample from underneath the roadway. In the open water portions of IR Site 24, all metals analytical results were below the ER-M values in all surface sediment samples collected during the 2005 remedial investigation, with the exception of nickel and silver. For silver, one sample in each of three open water studies (1996, 1998, and 2005) showed an elevated concentration in the northeast corner adjacent to outfall J, indicating that Navy industrial activities were the likely source. However, silver concentrations drop down to levels indistinguishable from background concentrations throughout the rest of the open water area. Nickel concentrations throughout the open water area were not statistically different from background; however given the highest concentration was found under the roadway at PA C-24, Navy operations may have

released a small amount of nickel. Historical data included sediment samples collected in 1996 from each of the storm-sewer outfalls, 1997 surface sediment data collected from a wider area, and 1998 surface sediment data collected in non-dredged areas near the seawall and piers. Therefore, the 1996 and 1998 data represent conditions where contamination would be most likely to be found. In the three historical sampling events, nickel was the only metal detected in all three sampling events above the ER-M. Cadmium, chromium, copper, mercury, nickel, and silver were detected at least once in the historical data above their ER-Ms. Mercury was detected once in 1996 at a concentration of 0.76 ppb, which is slightly above the ER-M of 0.71 ppb. In the 2005 subsurface samples collected in open water areas at IR Site 24, metals were generally uniform with depth, and all metals were below the ER-M except for nickel and silver. In the 2006 subsurface samples collected underneath the roadway, concentrations of most metals were highest in the 5-25 cm depth interval, primarily in samples located adjacent to outfalls J and K.

At IR Site 24, PAH concentrations were higher in samples collected in 2006 beneath the roadway than in the 2005 samples collected from the open water portions of IR Site 24. High molecular weight PAH and low molecular weight PAH concentrations in the 2006 surface sediment samples collected underneath the road exceeded ER-Ms at six locations. Total PAHs were not detected at concentrations exceeding the screening benchmark ER-M values in any of the surface sediment samples collected in the open water areas during the 2005 remedial investigation sampling, but PAHs exceeded their ER-Ms in all historical sampling events. During the 1996 sampling event, the majority of the PAHs exceeded their ER-Ms at the two southern outfall locations. PAHs in the 1997 samples collected in offshore areas generally had similar concentrations to the 1996 outfall samples (sometimes higher and sometimes lower for individual PAHs). Concentrations of PAHs in the 1998 samples collected from the undredged areas near the seawall and piers were much lower than the PAH concentrations in the 1996 outfall and 1997 offshore samples, but several PAH ER-Ms were exceeded in these samples.

Dieldrin, *gamma*-chlordane, 4,4'-DDD, and 4,4'-DDT exceeded their respective ER-M values in at least one surface sediment sample beneath the roadway in 2006, but pesticides were not detected at concentrations exceeding the screening benchmark ER-M values in any of the surface sediment samples collected in the open water areas during the 2005 remedial investigation sampling. For the historical data, pesticides were sampled in 1996 and 1998, and were seldom detected. In 1996, 4,4'-DDT was detected in one outfall sample at a concentration over the ER-M (10 ppb with ER-M of 7 ppb). In 1998, no pesticides were detected in the samples collected from the undredged areas near the seawall and piers at concentrations exceeding the ER-Ms.

In samples collected eastward of the quay wall in 2006, Total PCB concentrations in surface sediment exceeded the ER-M at ten of twelve sampling locations. Total PCBs at one open water location at IR Site 24 were detected at concentrations exceeding the screening benchmark ER-M during the 2005 remedial investigation sampling. In addition, two 1996 samples from the two northern outfalls and two 1998 surface sediment samples had Total PCB concentrations exceeding the ER-M.

As evidenced by the 2005 samples at IR Site 24, organic chemicals are generally uniform with depth in the open water areas, and Total PCBs, Total PAHs, and pesticides were not detected at concentrations exceeding the screening benchmark ER-M values in any of the subsurface sediment samples, except for Total PCBs at one location. PAH concentrations in subsurface sediment under the roadway increased with depth at five of the twelve 2006 sampling locations, and exceeded ER-Ms at six locations. *Alpha*-chlordane, *gamma*-chlordane, dieldrin, and the DDx compounds were the only pesticides detected in subsurface sediment samples. Maximum concentrations of 4,4,'-DDx occurred in the 5-25 cm subsurface interval at 2006 sampling locations C-21 and C-24, but were uniform or decreased at depth across the remaining 2005 and 2006 samples. With the exception of dieldrin at one location, the remaining pesticides were uniform or decreased with depth in sediments under the road. Eight 2006 subsurface locations had Total PCB concentrations exceeding ER-M values.

Bivalve tissue concentrations (*M. nasuta*) from samples collected in 1998 were compared to 90th percentile reference station tissue values. The maximum tissue concentrations of arsenic, copper, and silver exceeded their respective 90th percentile reference tissue values at one station, station PA04. The maximum nickel concentration exceeded the 90th percentile at station PA01. There was no discernable spatial pattern in relation to where the maximum concentrations for metals occurred. At all five stations in IR Site 24, the maximum tissue concentrations of PAHs were higher than the 90th percentile values, with the maximum occurring at PA01 and PA02. In addition, most of the pesticides detected in tissues were present at concentrations exceeding the reference percentiles at all stations. For PCBs, the tissue concentration exceeded the 90th percentile reference station value at one location. The PCB maximum concentration at PA01 exceeded the 90th percentile. TBT concentrations were lower or consistent with reference.

9.2.2 Ecological Risk Assessment

The same tiered process used for IR Site 20 was applied to sediments at IR Site 24 for the purpose of evaluating potential ecological risks. As described for IR Site 20, the SLERA for IR Site 24 included both a direct contact toxicity to evaluate AE(1) (benthic invertebrates) and AE(2) (fish) and a screening-level risk estimate to evaluate AE(3) (avian receptors). Similar to IR Site 20, the results of the SLERA for IR Site 24 indicated that further evaluation in a BERA was required.

In the BERA, the preliminary problem formulation was refined and then measurements of exposure and effects were refined and integrated into a characterization of risk that included a comprehensive discussion of the potential uncertainties associated with the assessment. Based on this refined evaluation, risks to all three assessment endpoints were determined to be acceptable over the majority of the site. The only area where there was an indication of the potential for adverse effects to the ecological receptors assessed was the small nearshore area in the northeast corner and the sediment shelf that extends eastward past the quay wall and under the roadway between outfalls J and K.

A comprehensive uncertainties analysis was conducted for the BERA, and a number of uncertainties were identified. The most significant uncertainties at IR Site 24 were associated with the exposure and effects assessment. From an exposure perspective, site-specific tissue data were limited (bivalves) or lacking (fish). To address this uncertainty and to provide a conservative estimate of exposure, the higher of either measured or modeled concentrations were used. Additionally, it was assumed that all receptors had equal access to all areas of the site. However, due to the large ships berthed at the site, and the fact that the highest sediment concentrations were limited in area and generally restricted to the area under the roadway, an assumption of equal access overestimates actual exposure. From a toxicity perspective, the most significant source of uncertainty at IR Site 24 relates to benthic invertebrate assessment endpoint. Due to confounding factors associated with the historical bioassays, and the lack of bioassay data from the area of highest sediment concentrations, it is unknown whether these sediments are actually toxic to benthic invertebrates.

In conclusion, risks to all three assessment endpoints were determined to be acceptable over the majority of the site. The only area where there was an indication of the potential for adverse effects was a small area in the northeastern corner of IR Site 24, specifically the sediment shelf eastward of the quay wall and beneath the roadway between outfalls J and K, which are located between Piers 1 and 2. If this part of the site is examined separately, using conservative assumptions about the area over which an organism would be exposed, then concentrations in this small area may be of concern. Due to the uncertainties inherent in the risk assessment, it is not possible to conclude definitively whether this small area in the northeast corner of the site presents an unacceptable risk to the three assessment endpoints evaluated.

9.2.3 Human Health Risk Assessment

Similar to IR Site 20, sediments are the primary exposure medium at IR Site 24. However, the area under the roadway is difficult to access from land, as there are no open walkways or ladders. A few emergency exit ladders are present, but none of them reach solid or intertidal ground; the ladder bottoms have contact with floating or attached large wooden beams. The water depth at the pier face ranges from approximately 12 feet in the northeast corner at Station PA C-20 to approximately 28 feet at the southwestern station PA C-28. Due to the water depth, it is not possible to walk under the roadway from the pier. Access by boat is blocked by pier pilings and cross members. Only one entrance to the area under the pier was available for sampling, near PA C-28, and this entrance could easily be closed. During the 2006 sampling event, movement under the roadway was only possible at low tide. The current and proposed uses of the site to berth cruise ships and historical landmark vessels further limit the ability of individuals to access the area for recreational purposes. In addition, the habitat required to support clam beds (i.e., intertidal mudflats) is not present at IR Site 24 and, therefore, a resident shellfish population is not likely. Based on this information, no complete human health exposure pathways were identified for IR Site 24, and this area was not evaluated further.

9.3 Recommendations

The ecological and human health risk assessments for IR Site 20 indicate that no unacceptable risks to human health or the environment exist at this site. Multiple lines of evidence support the no unacceptable risk conclusion, including comparison to screening benchmarks, toxicity bioassays, dose modeling, current sediment concentrations, and a conservative comparison to background values (see Table 9-1). Calculated risks are low for most COPC or COPECs and typically are consistent with ambient conditions or attributable to background sources. Based on this information, no further action is recommended for this site.

For IR Site 24, Total PAH, pesticide, Total PCB, and several metal concentrations exceeded ER-Ms in 2006 sediment samples collected in the sediment shelf located nearshore and under the roadway in the northeastern corner of the site. While sediments from samples collected from the sediment shelf in 2006 between outfall locations J and K have the highest concentrations of chemicals, there is no evidence that these sediments are acting as a secondary source to sediment in the open water portion of IR Site 24. Because of the limited habitat for shellfish at the site, as well as the limited and difficult access to the water and shoreline, no complete exposure pathways for human receptors were identified at IR Site 24. The ecological risk assessment concluded that risks are acceptable over the majority of IR Site 24 and that the only area where there was an indication of the potential for adverse impacts was associated with the sediment shelf in the northeast corner that extends eastward past the quay wall between outfalls J and K (see Table 9-2). The potential for risk in this area is expected to be limited due to the small size of the area and the location of the sediment shelf, where exposure to receptors is likely to be minimal. Due to the uncertainties inherent in the risk assessment, it is not possible to conclude definitively whether this area presents an unacceptable risk to the three assessment endpoints evaluated. If this part of the site is examined separately, using conservative assumptions about the area over which an organism would be exposed, then concentrations in this small area may be of concern. Therefore, based on the ecological risk assessment conclusions, a Feasibility Study is recommended for a small area of elevated sediment concentrations. This area is located in the sediment shelf east of the quay wall and beneath the roadway between outfalls J and K, as represented by samples C-21, C-23, C-24, C-26, and C-27 (Figure 2-8).

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FIGURES

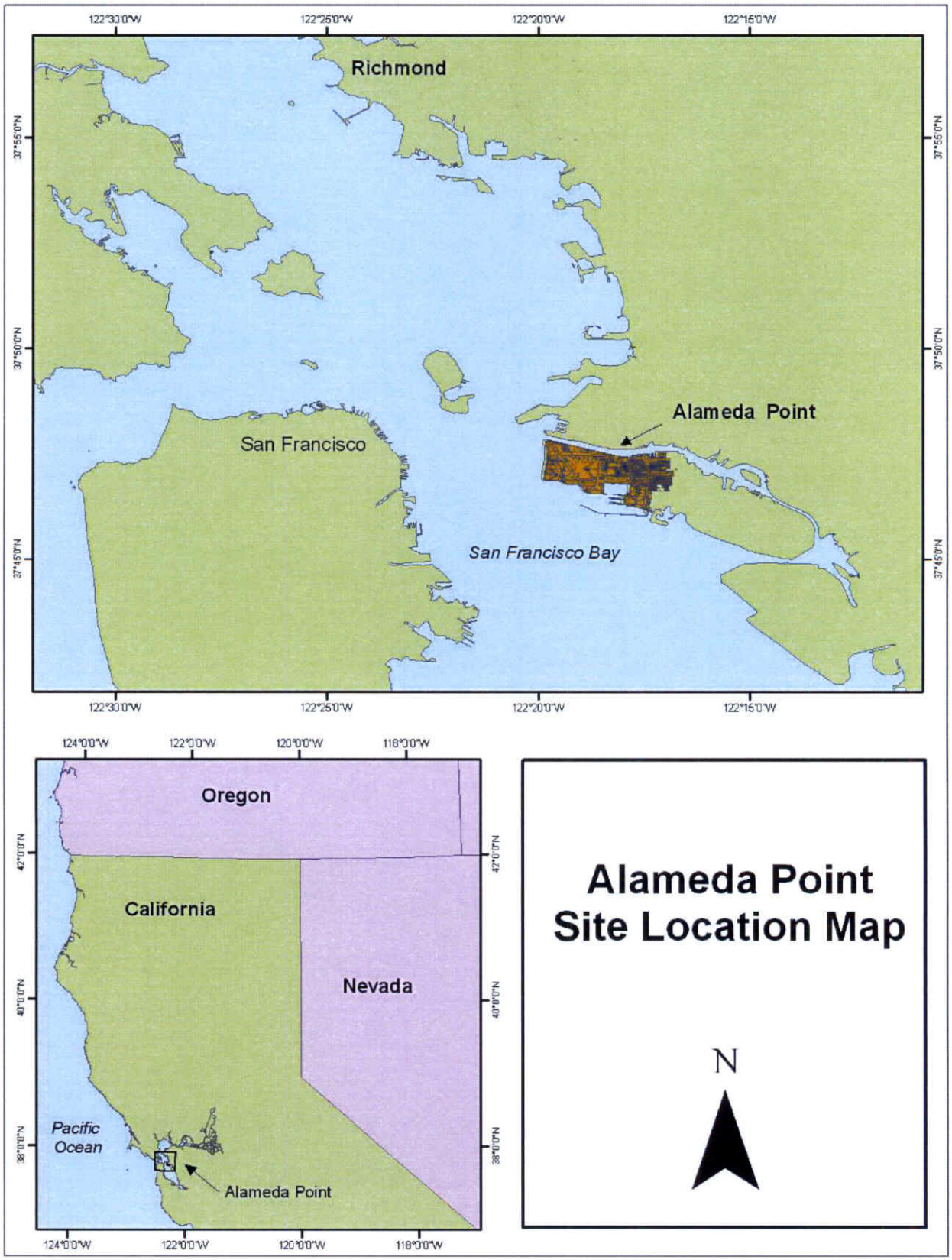


Figure 2-1. Alameda Point Site Location Map

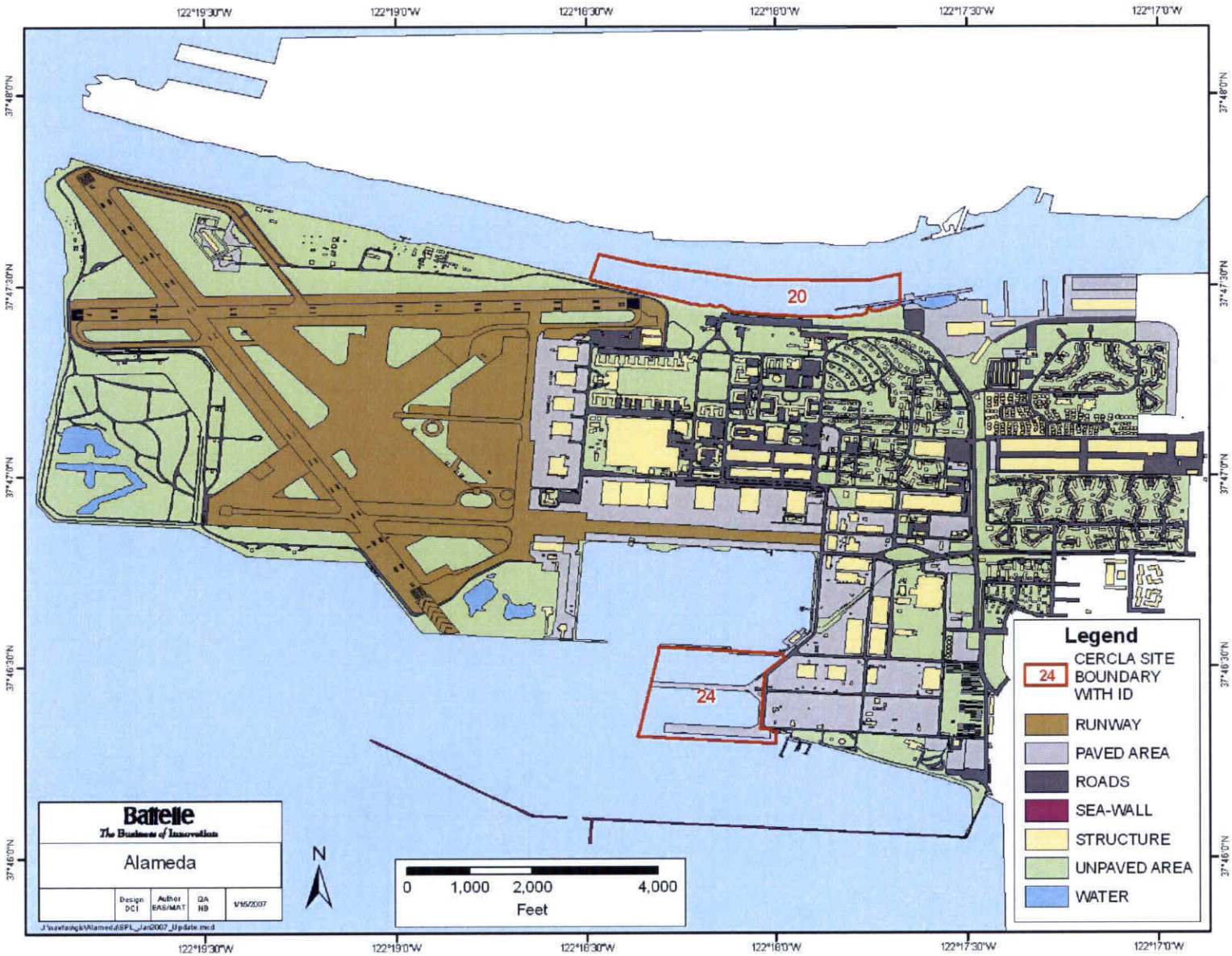


Figure 2-2. Alameda Point

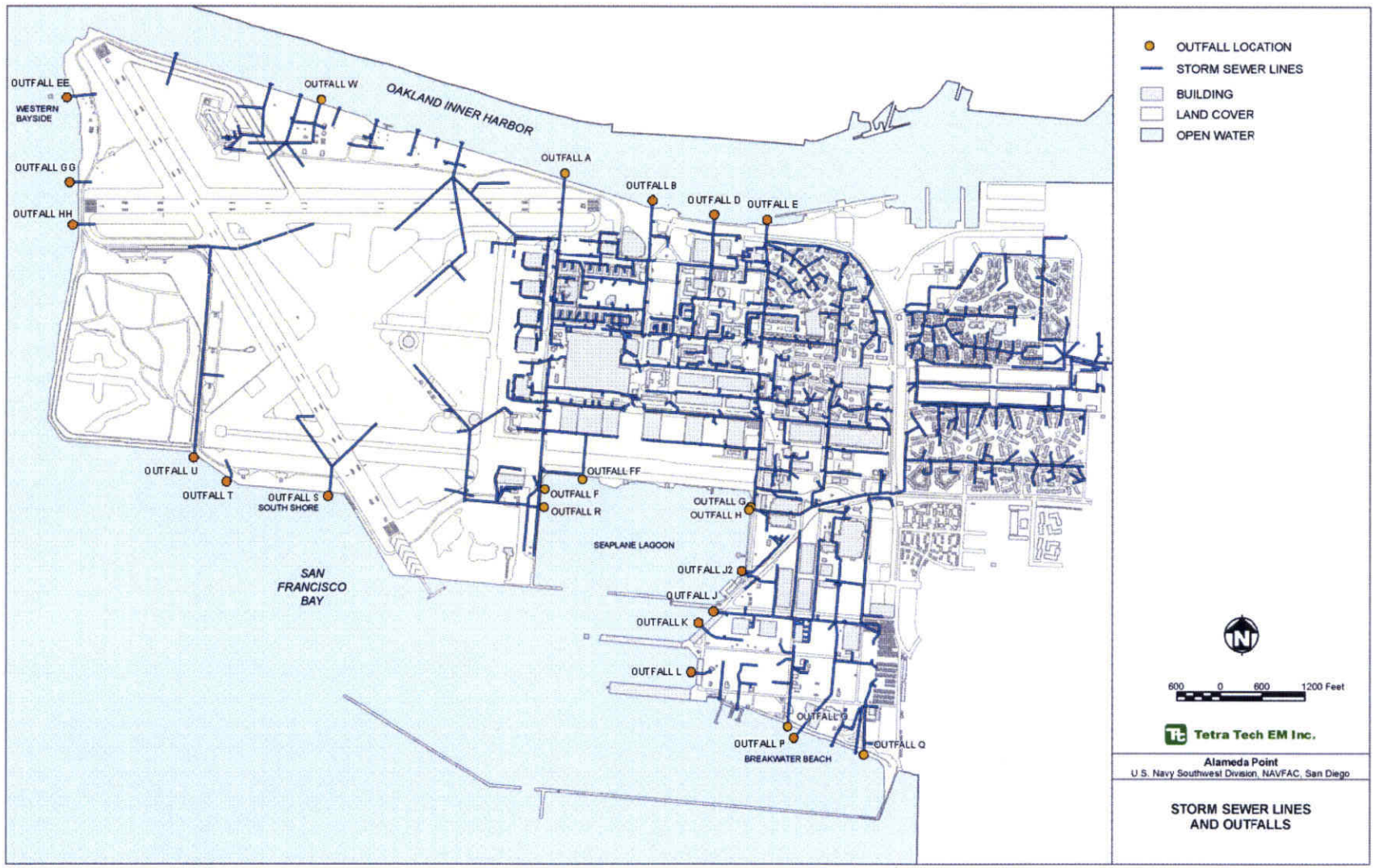


Figure 2-3. Storm-Sewer Lines and Outfalls at Alameda Point

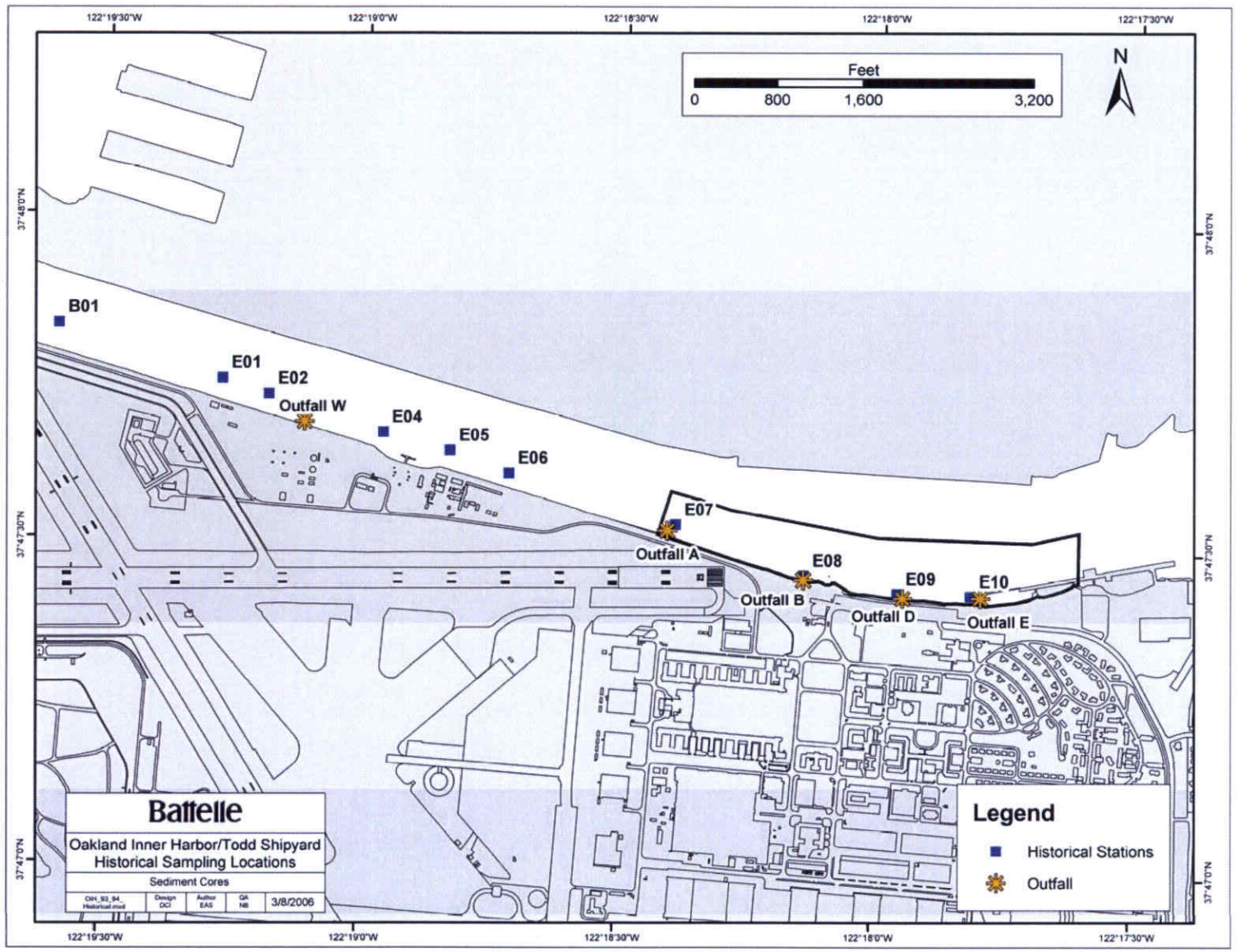


Figure 2-4. 1993/1994 Historical Sampling Locations along IR Site 20

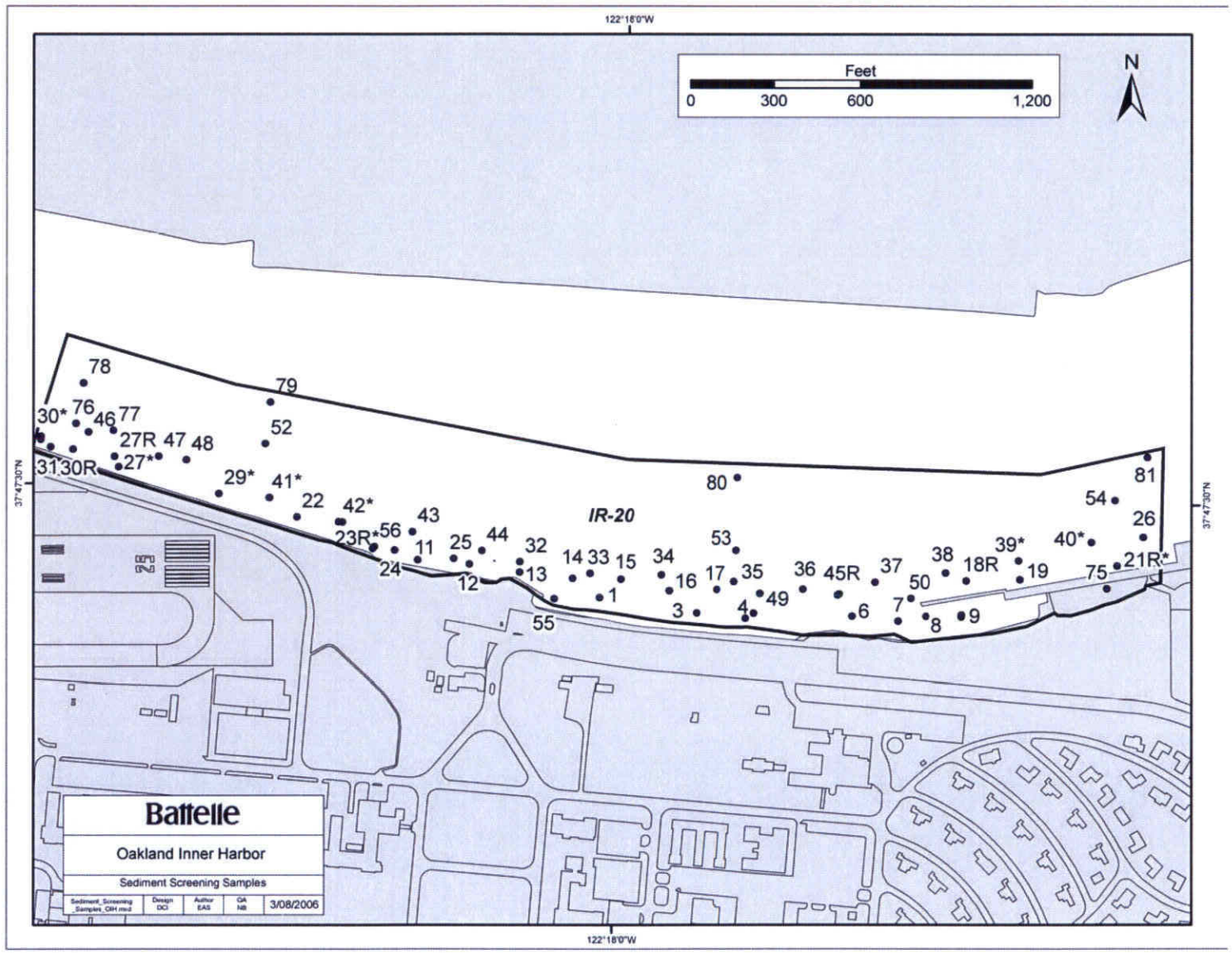


Figure 2-5. Sediment Screening Samples from IR Site 20

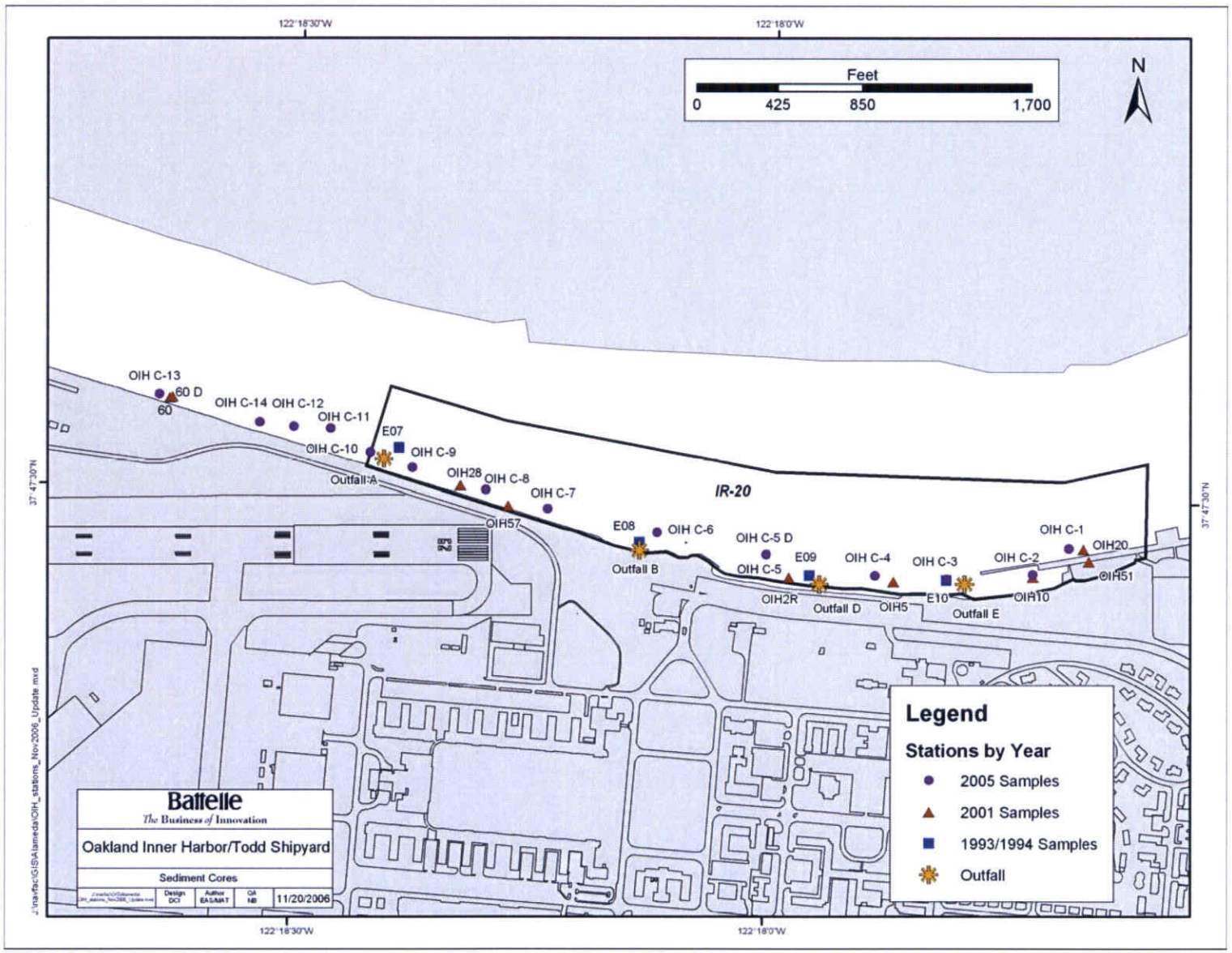


Figure 2-6. Sampling Stations in IR Site 20

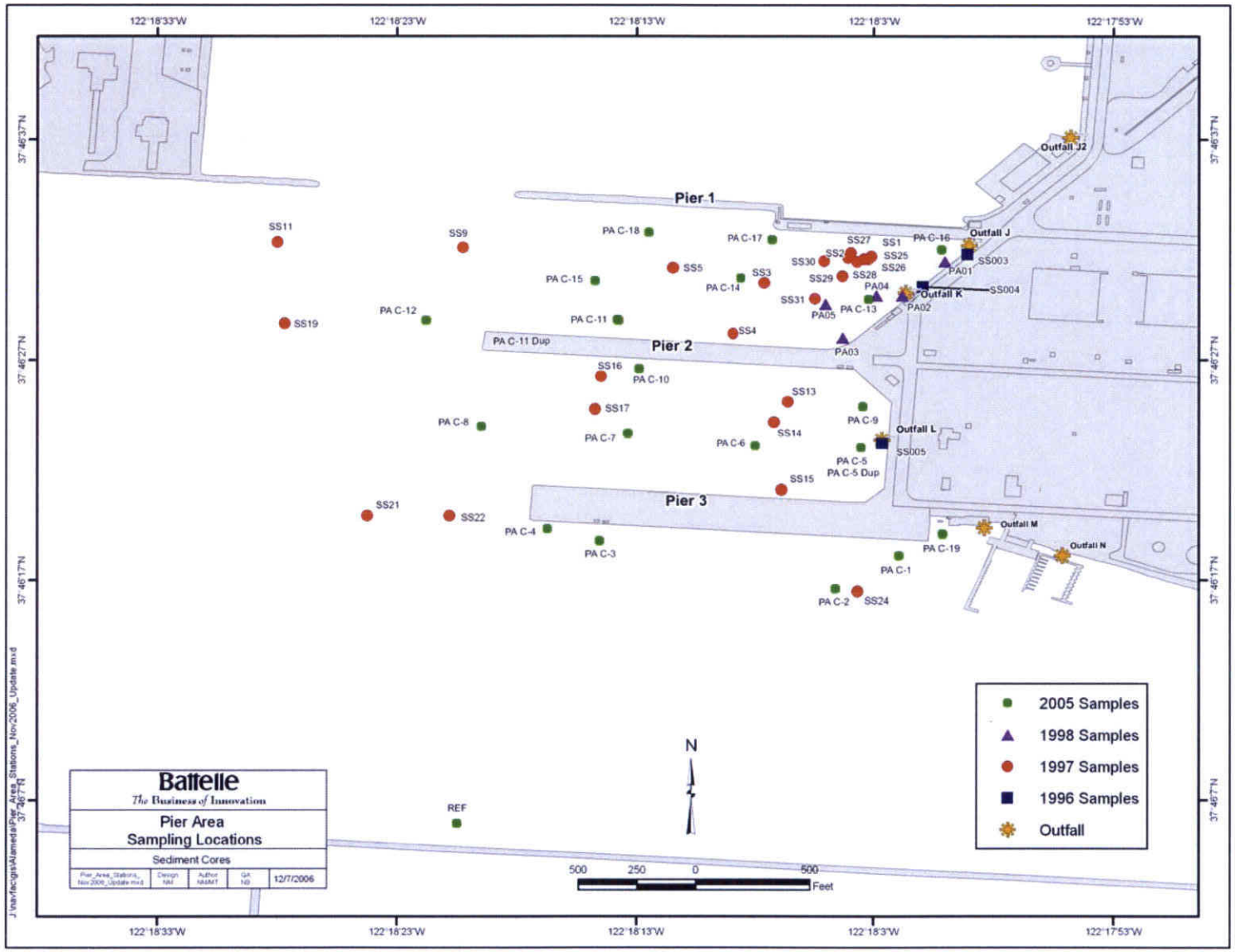


Figure 2-7. IR Site 24 Sampling Stations

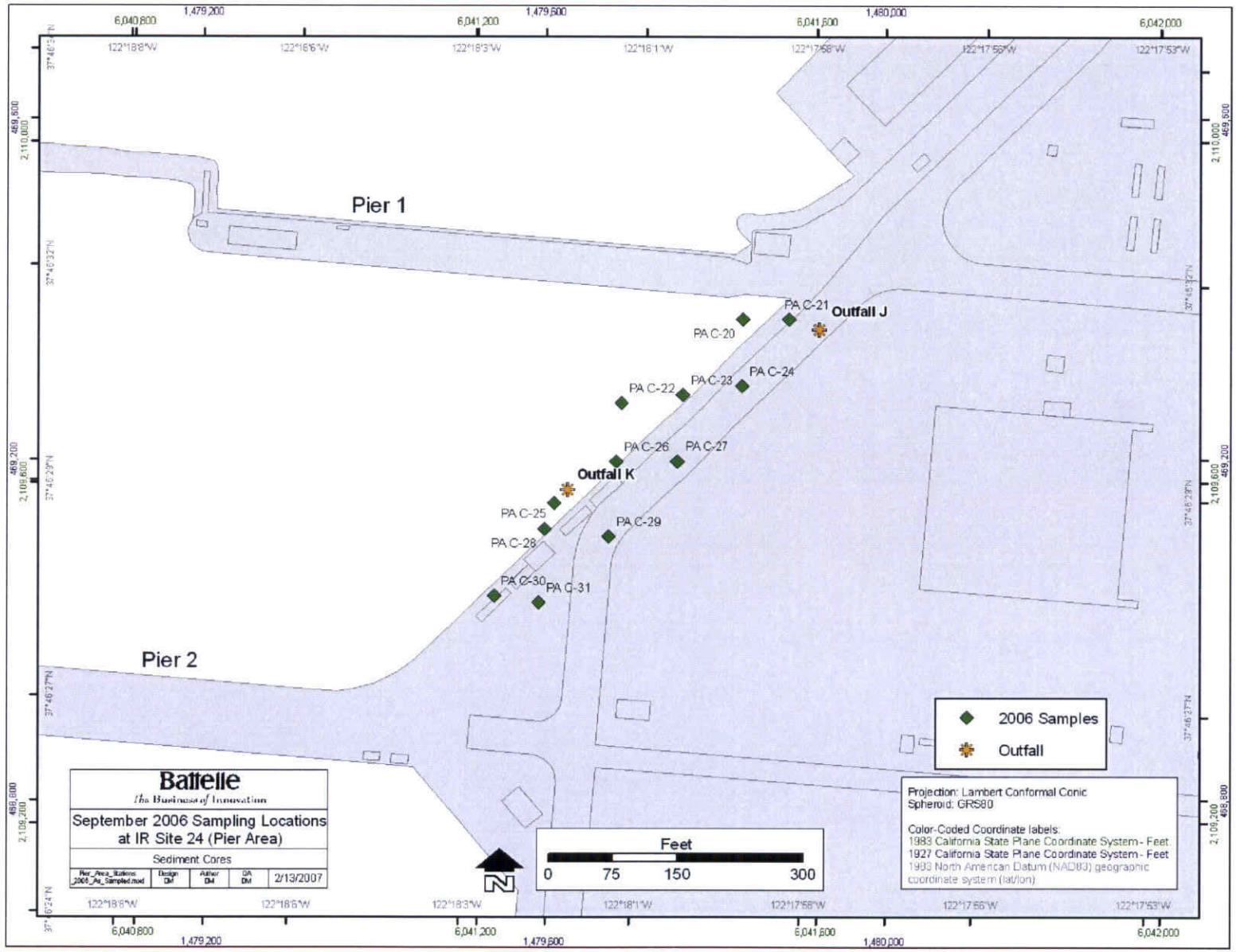


Figure 2-8. IR Site 24 Supplemental Sampling Stations, September 2006

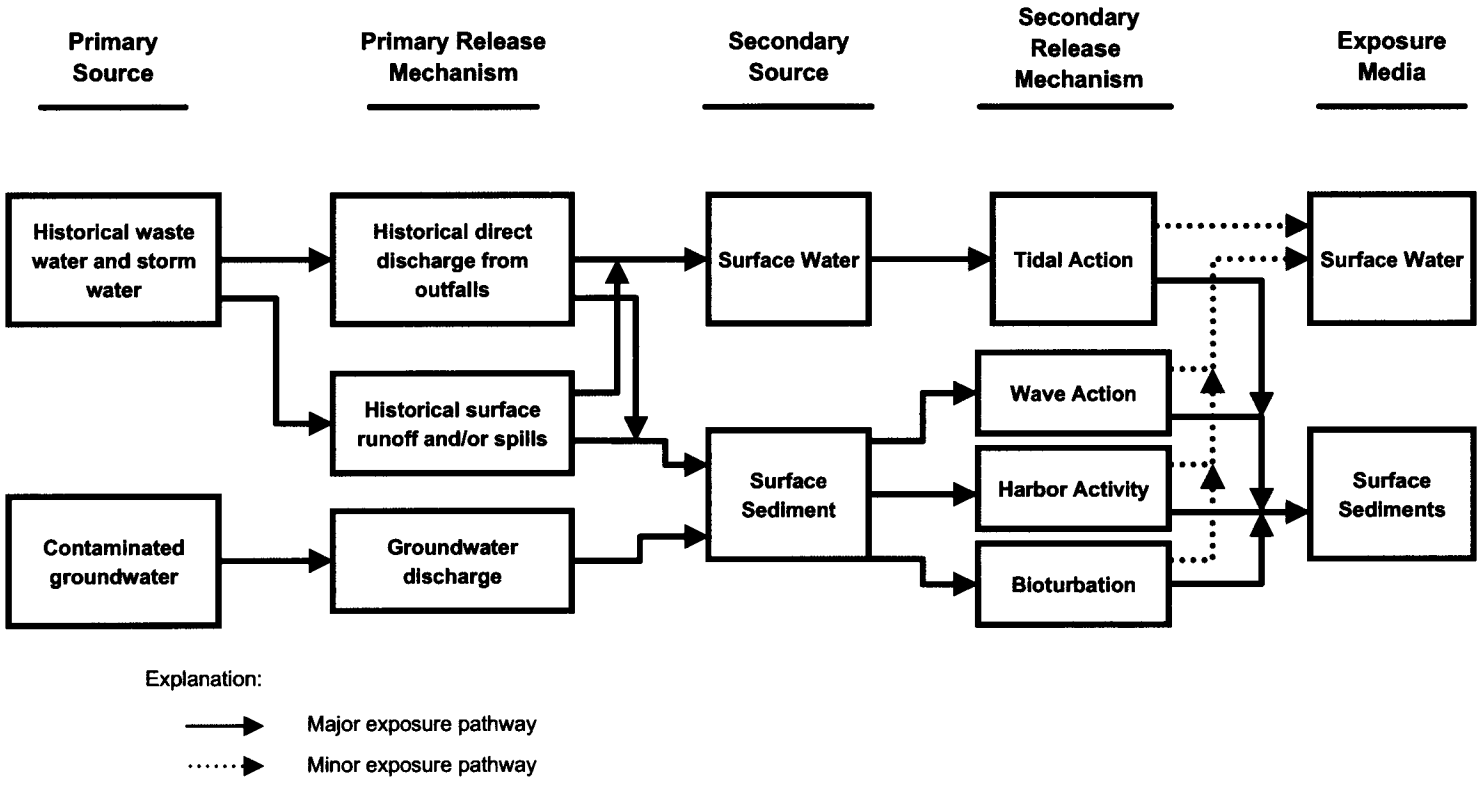


Figure 3-1. Conceptual Site Model for Offshore Sites at IR Site 20

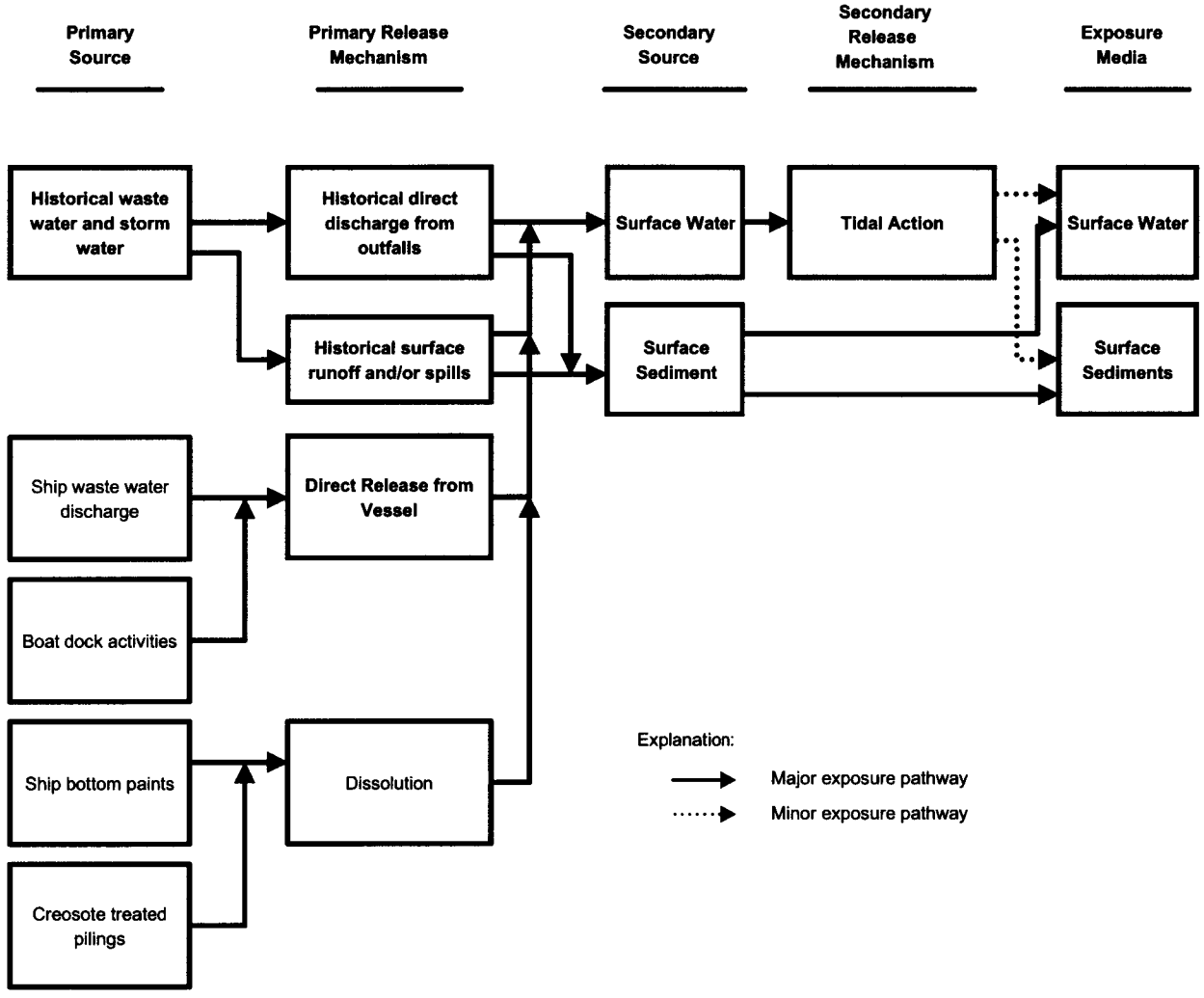


Figure 3-2. Conceptual Site Model for Offshore Sites at IR Site 24

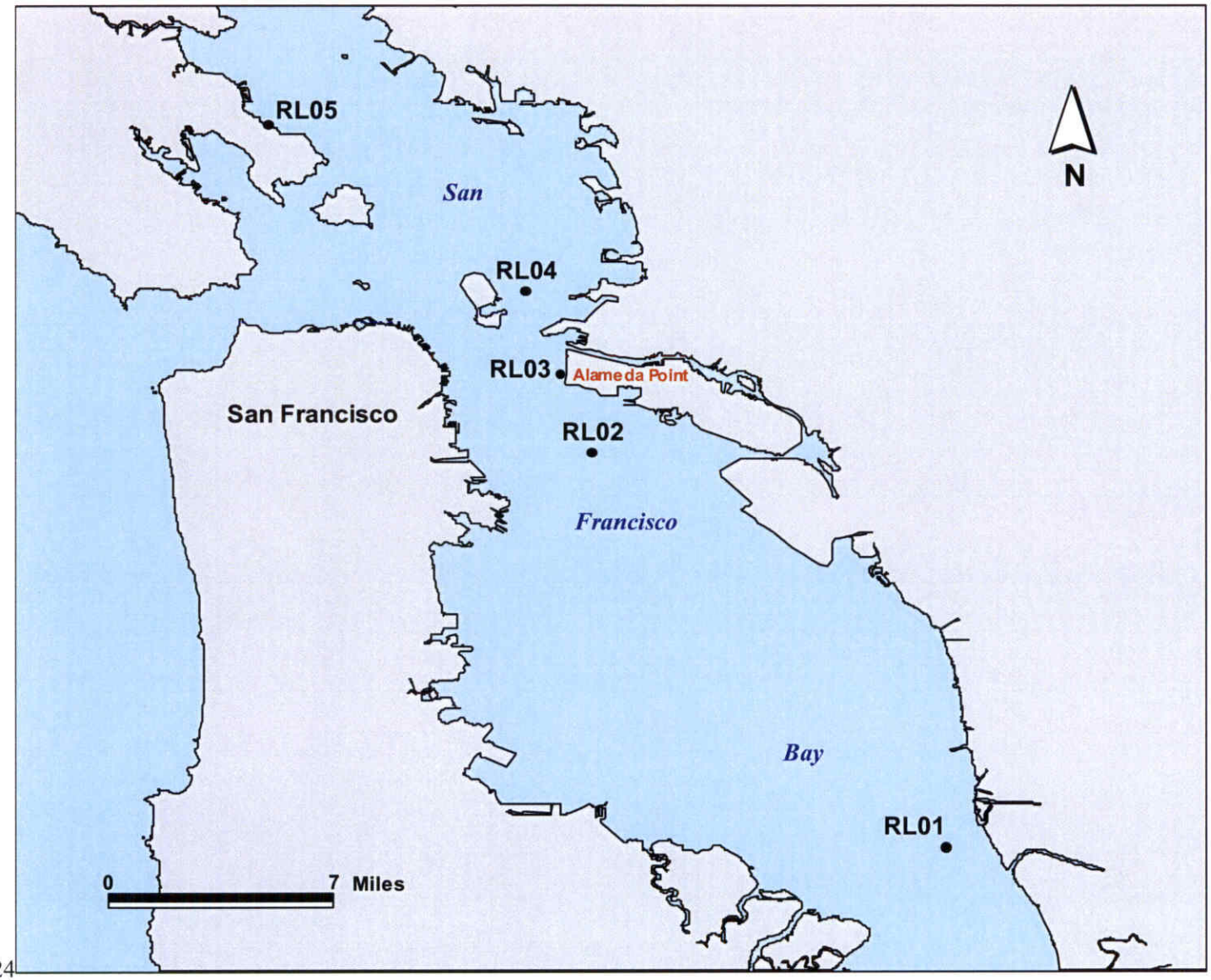
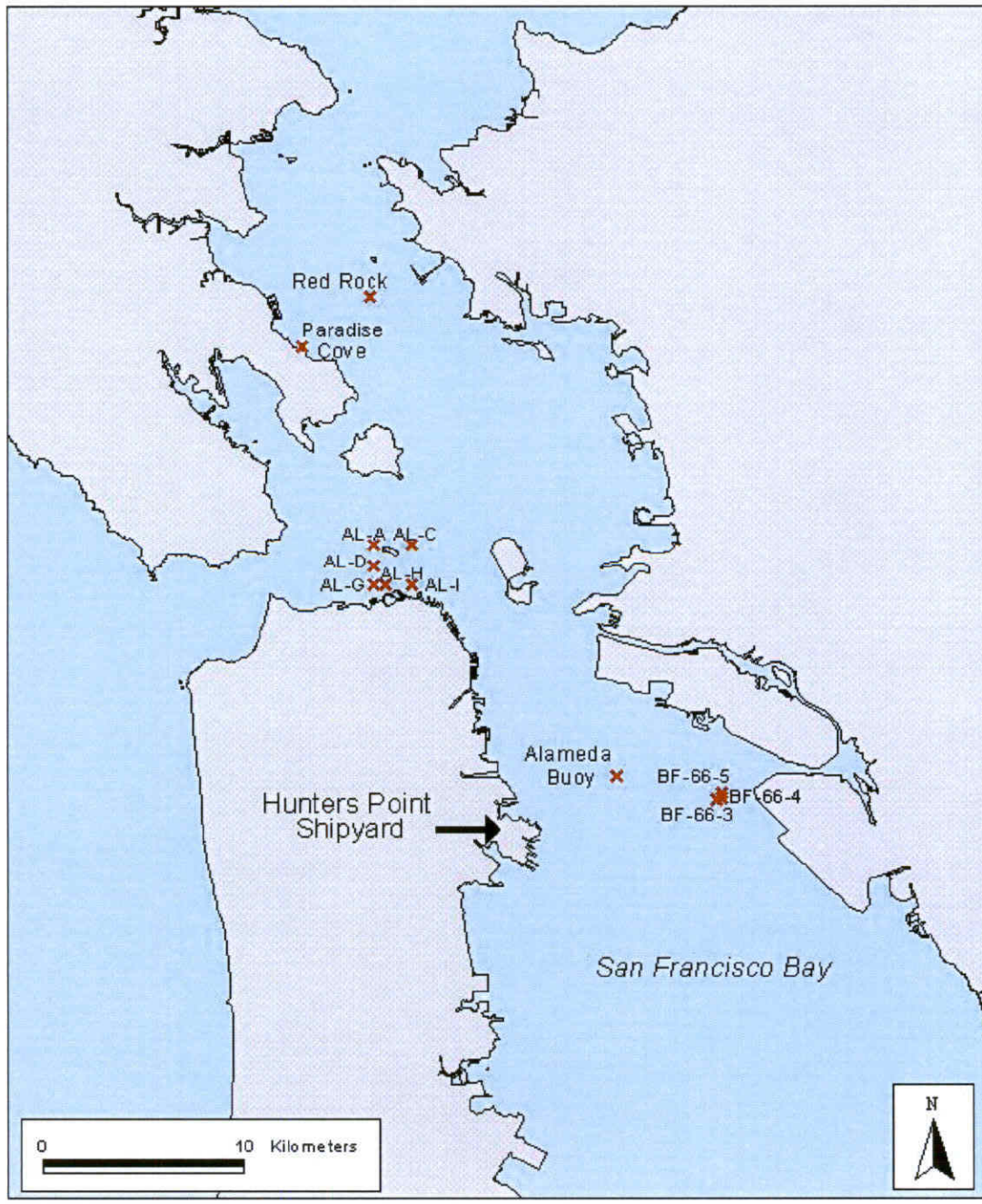


Figure 4-1. 1998 Reference Sampling Locations



Note: AL = Alcatraz Environs, BF = Bay Farm

Figure 4-2. 2001 Reference Site Sampling Locations

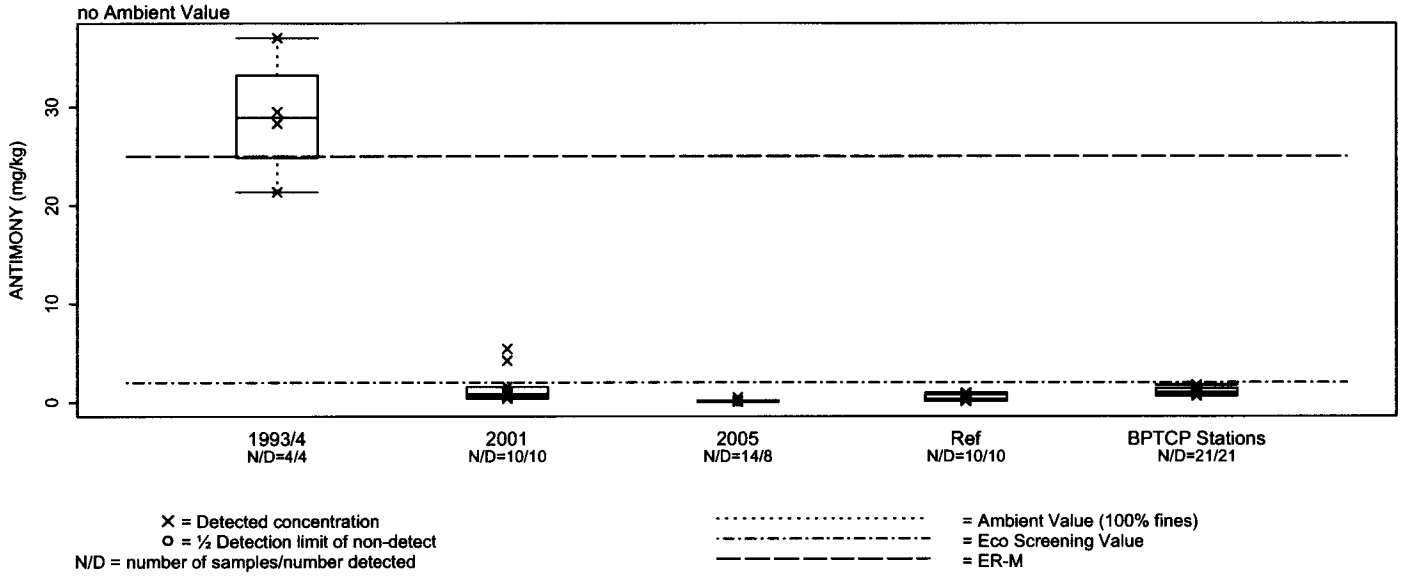
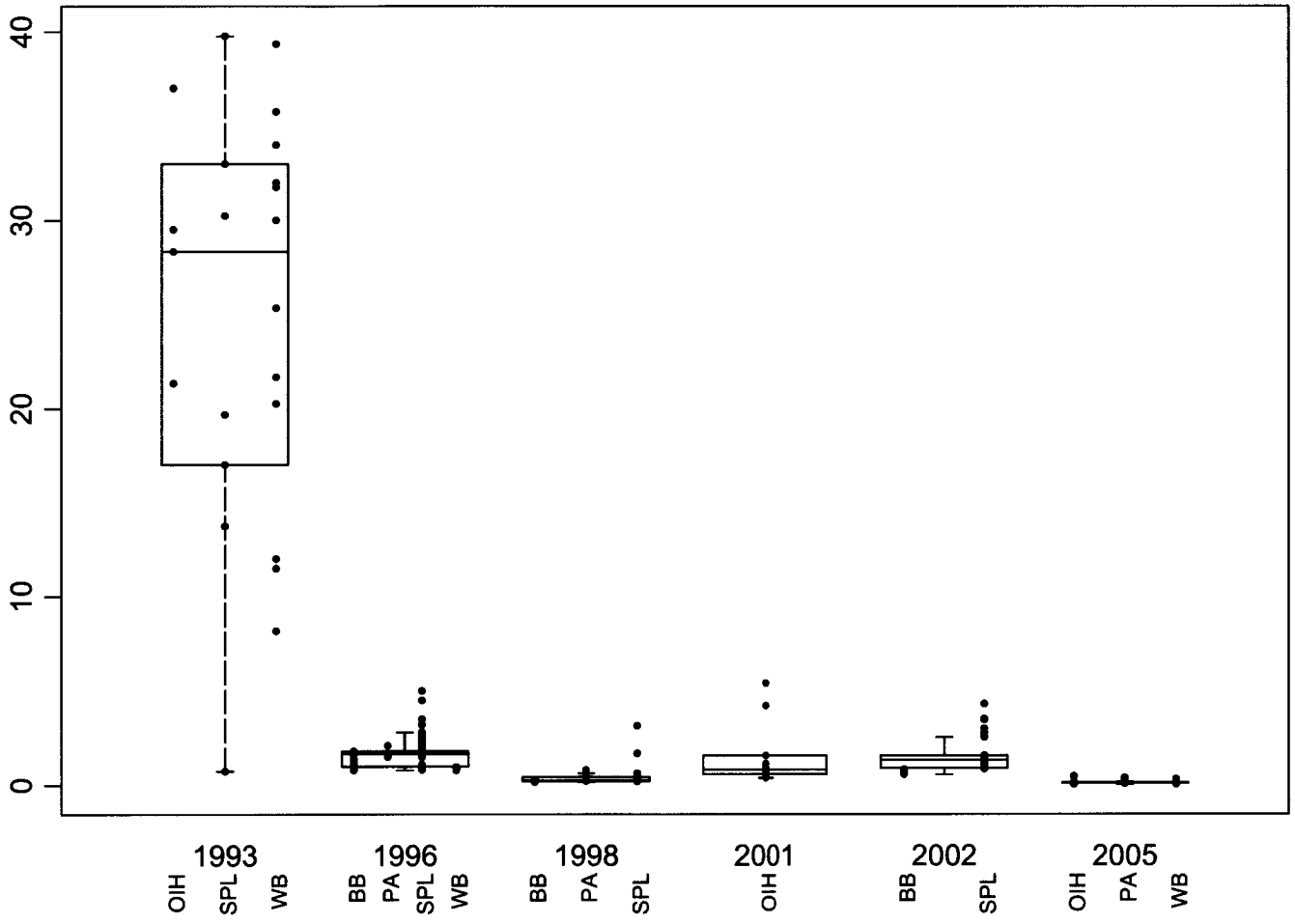


Figure 4-3. Box Plot of Antimony Showing Elevated 1993 Concentrations at IR Site 20



Offshore Areas are indicated within boxplots: BB=Breakwater Beach, OIH=Oakland Inner Harbor (IR Site 20), PA=Pier Area (IR Site 24), SPL=Seaplane Lagoon (IR Site 17), WB=Western Bayside

Figure 4-3A. Antimony Concentrations by Year at Alameda Point

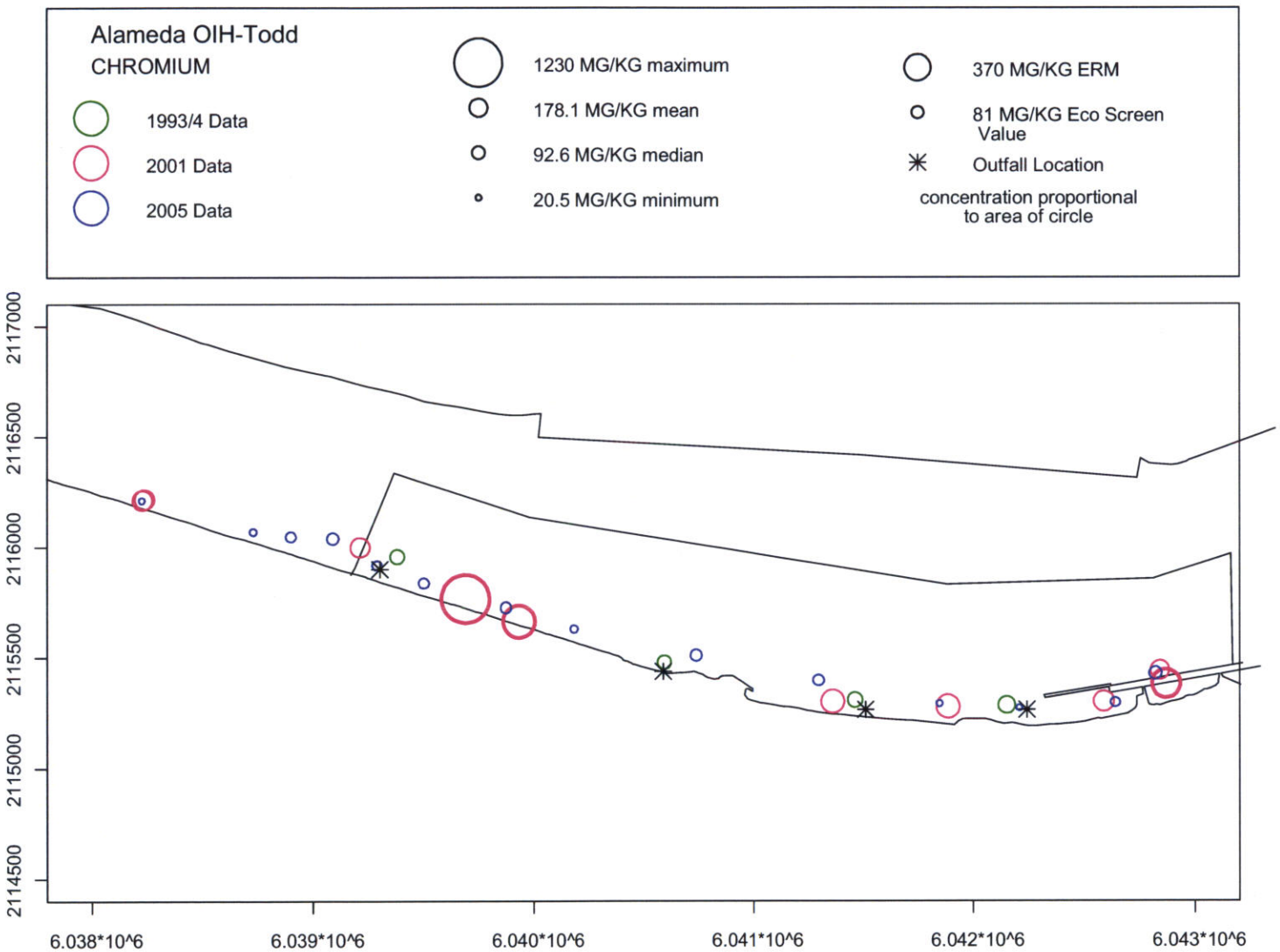


Figure 4-4. Bubble Plot of Chromium Concentrations in IR Site 20

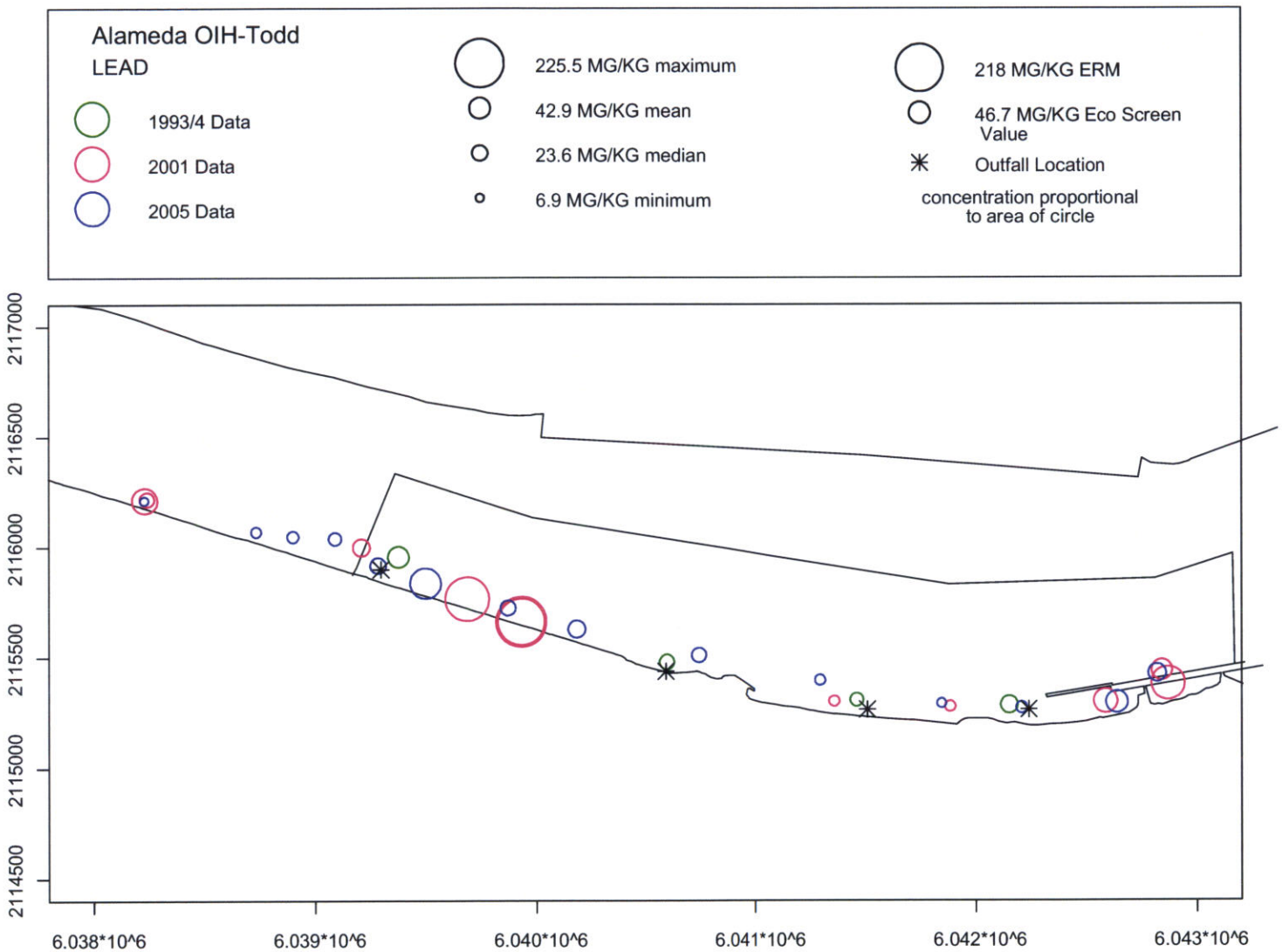


Figure 4-5. Bubble Plot of Lead Concentrations in IR Site 20

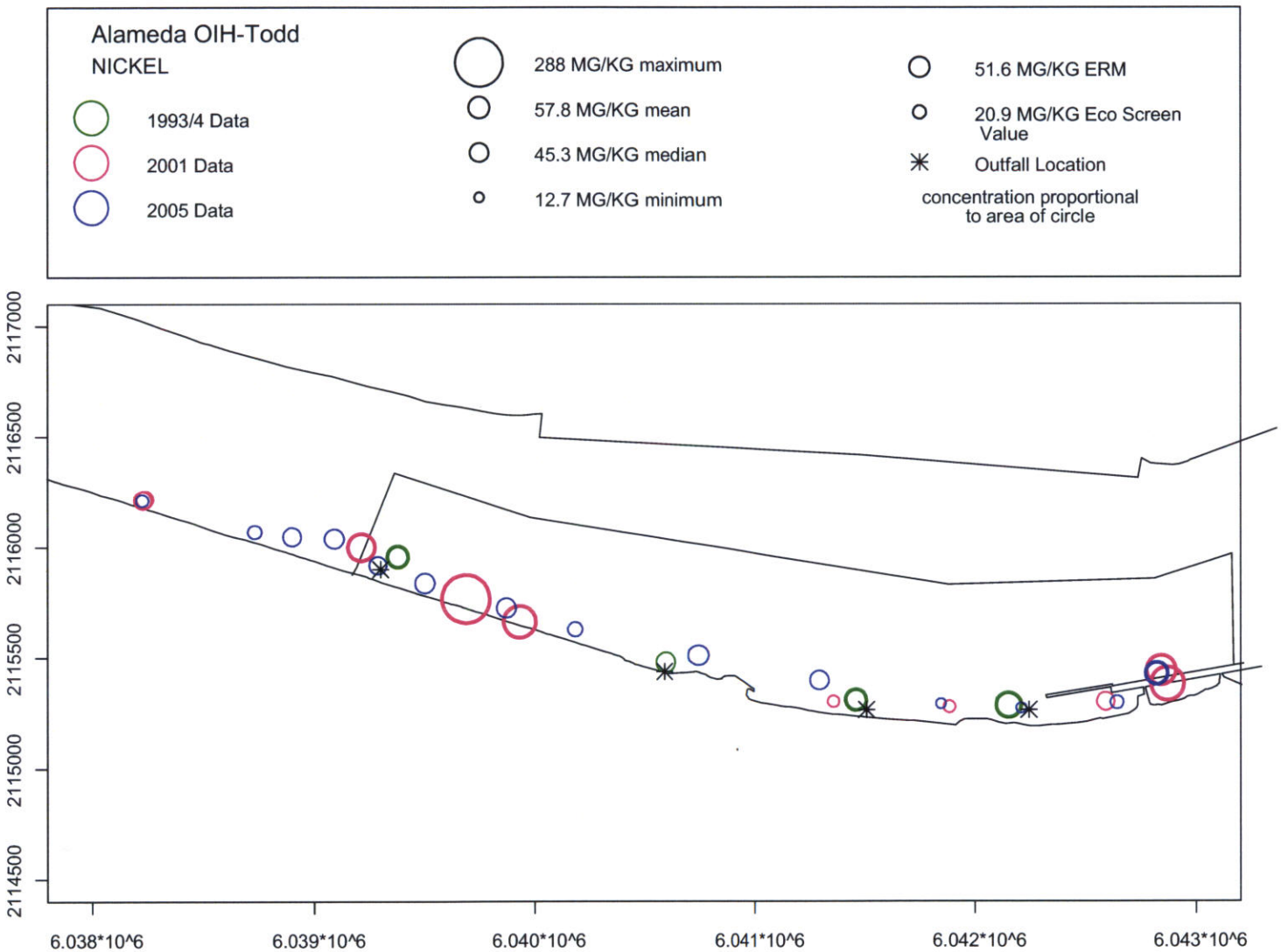


Figure 4-6. Bubble Plot of Nickel Concentrations in IR Site 20

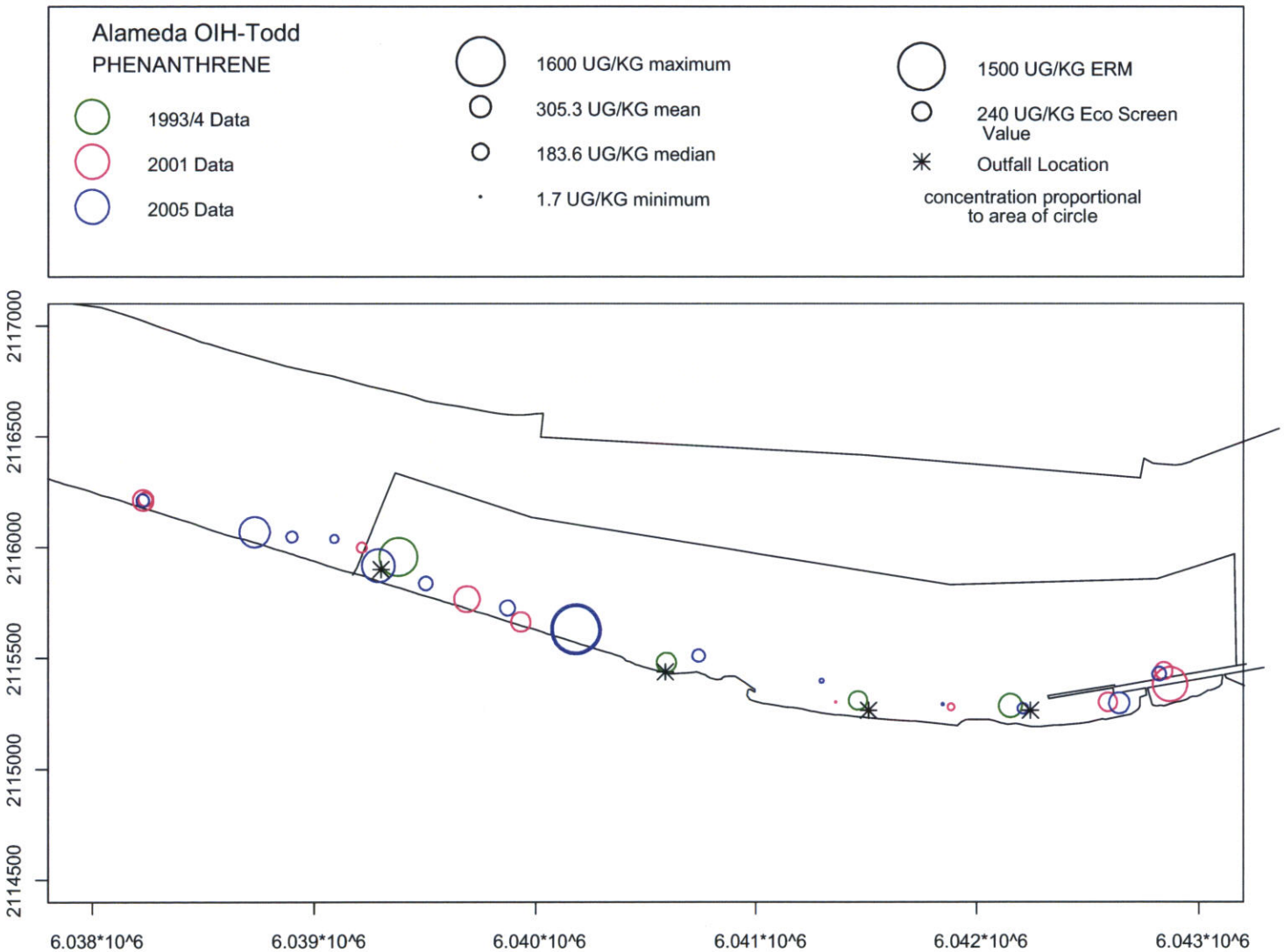


Figure 4-7. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment

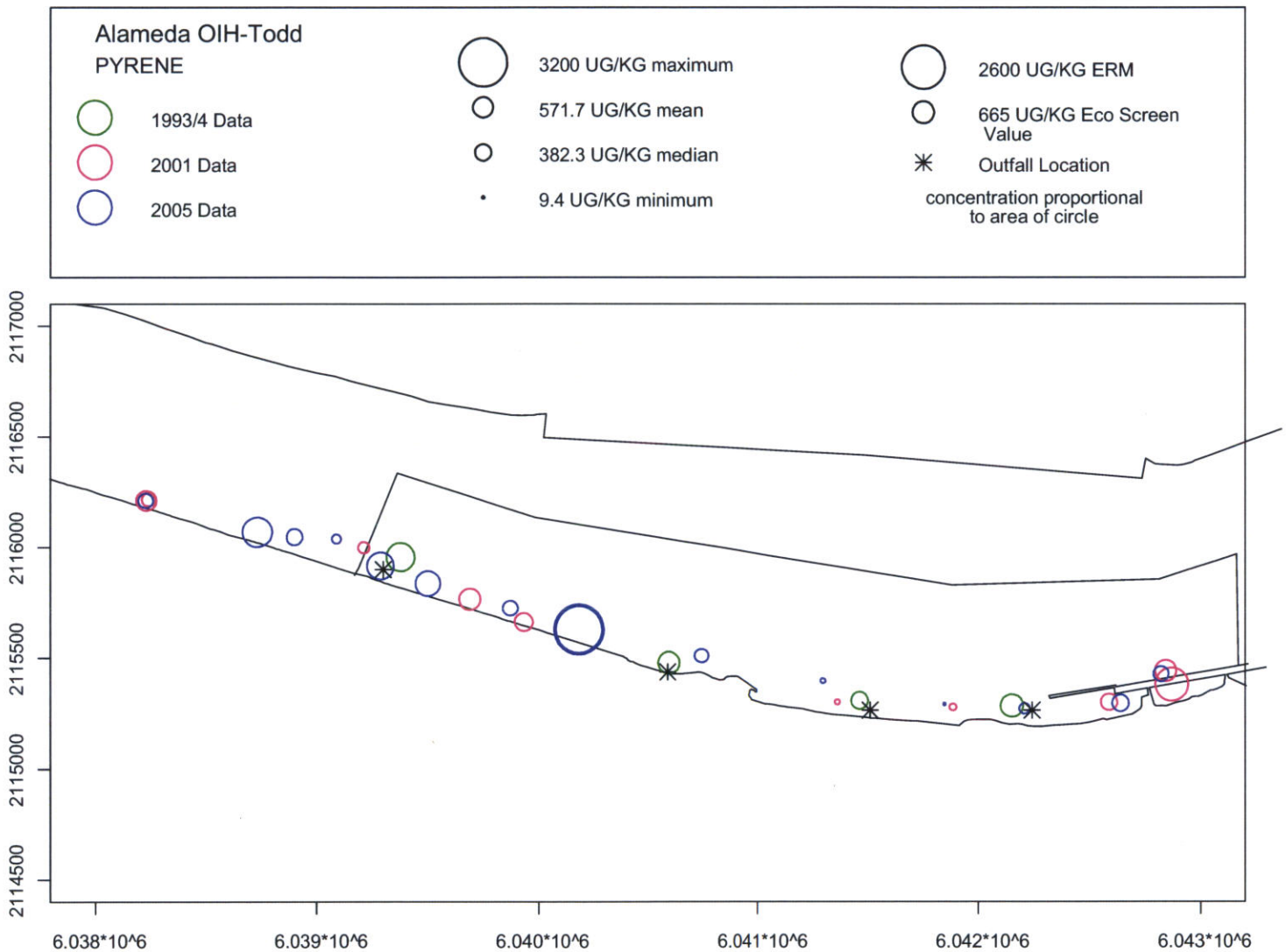


Figure 4-8. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment

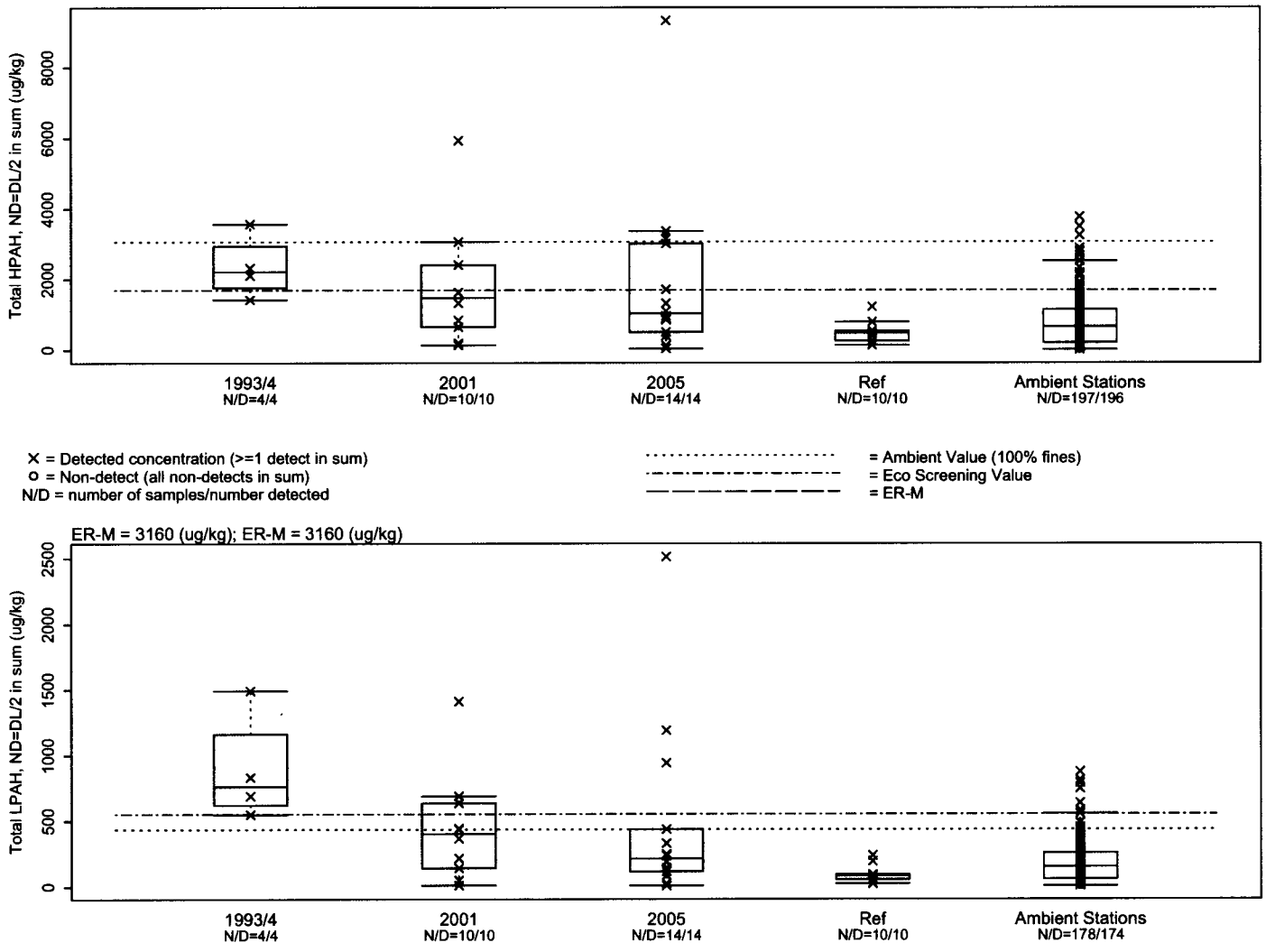
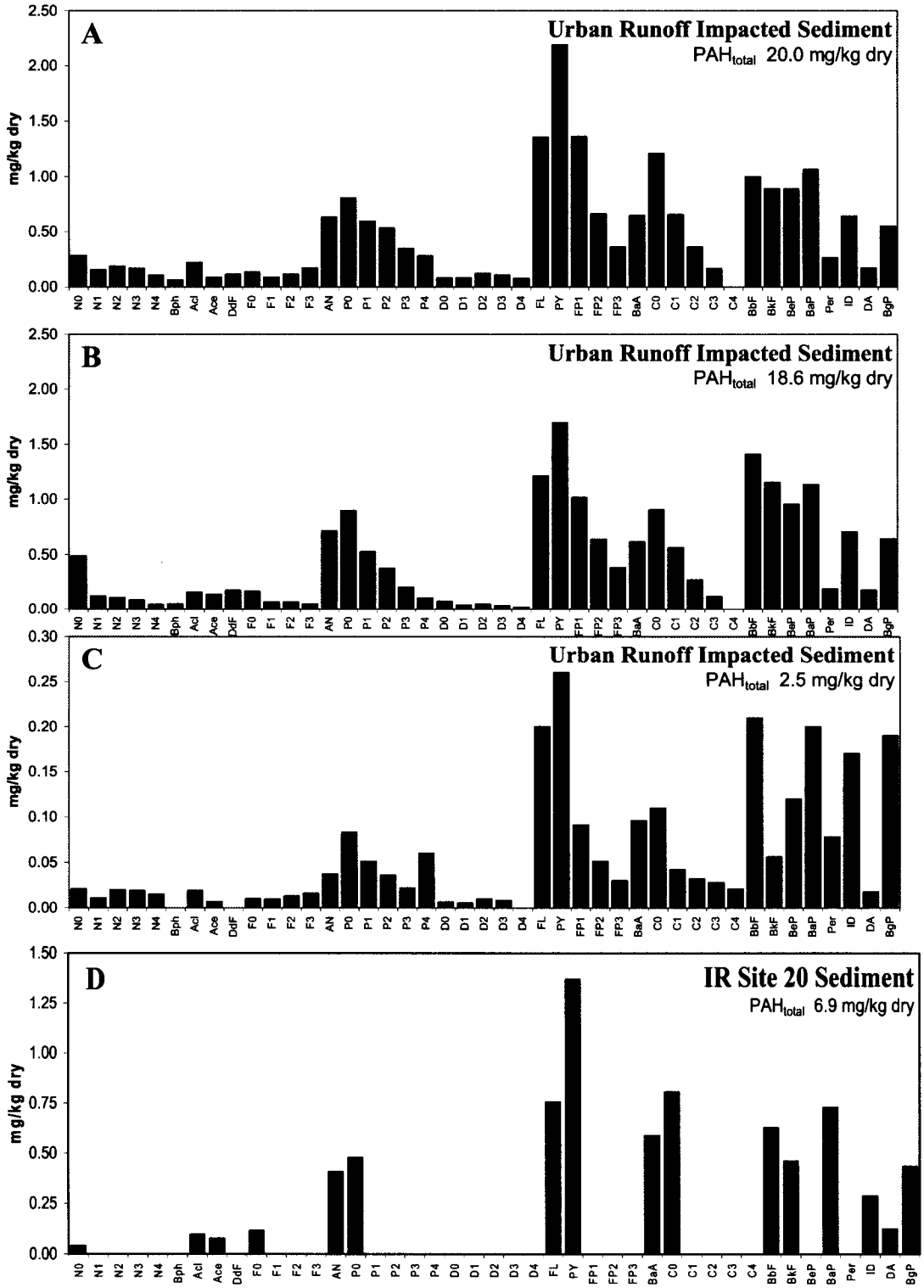


Figure 4-9. Box Plots of Total HPAH and LPAH Concentrations in IR Site 20 Surface Sediment



(A) Tacoma, WA (Stout et al., 2003); (B) Eagle Harbor, WA (Stout et al., 2001); (C) SF Bay Paradise Cove Reference Site (ADL, 1998); (D) IR Site 20.

Figure 4-10. Histograms Showing the PAH Distributions and Concentrations for Three Urban Sediments Impacted by Urban Runoff and for IR Site 20

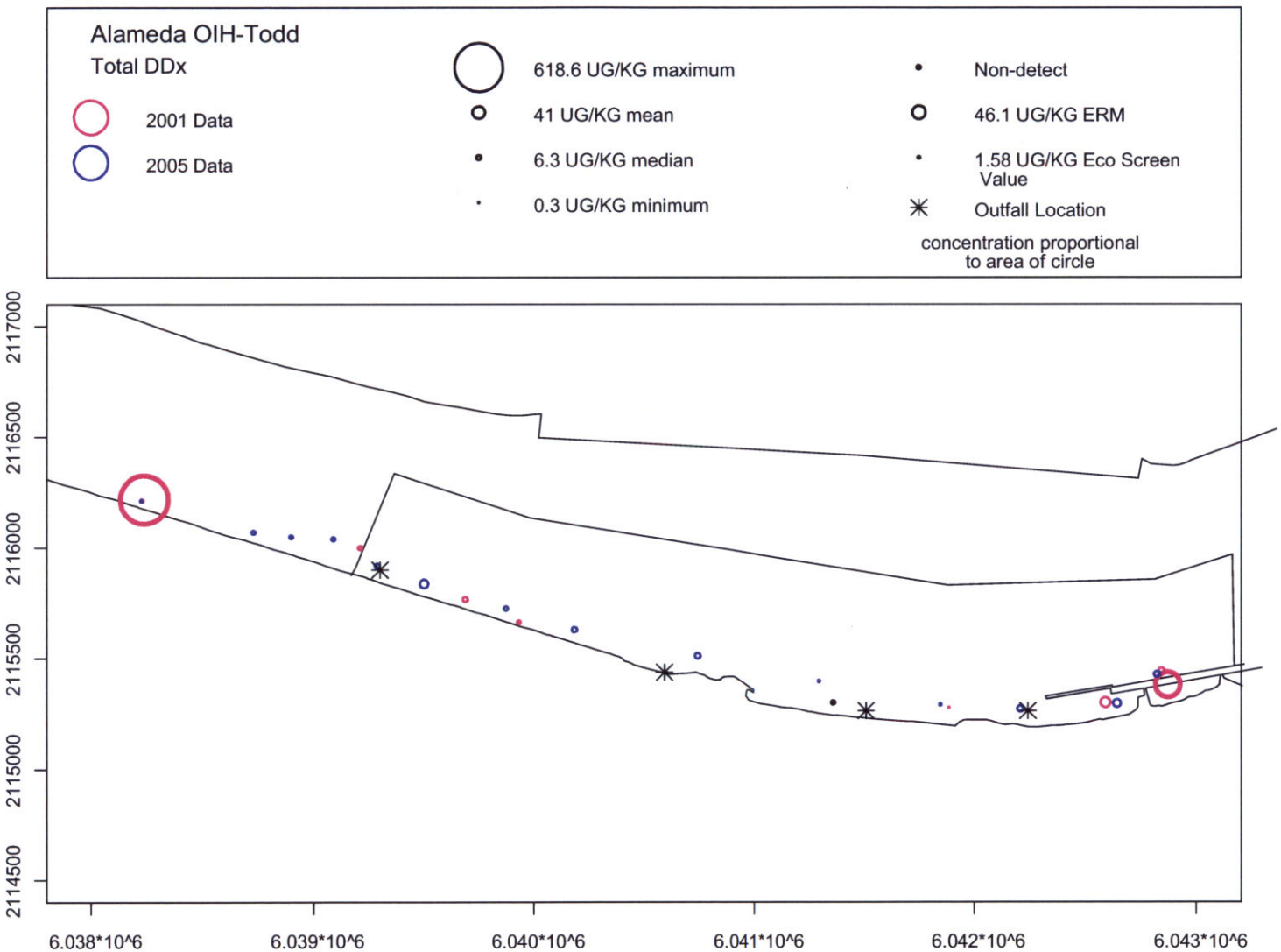


Figure 4-11. Bubble Plot of Total DDx Concentrations in Surface Sediment in IR Site 20

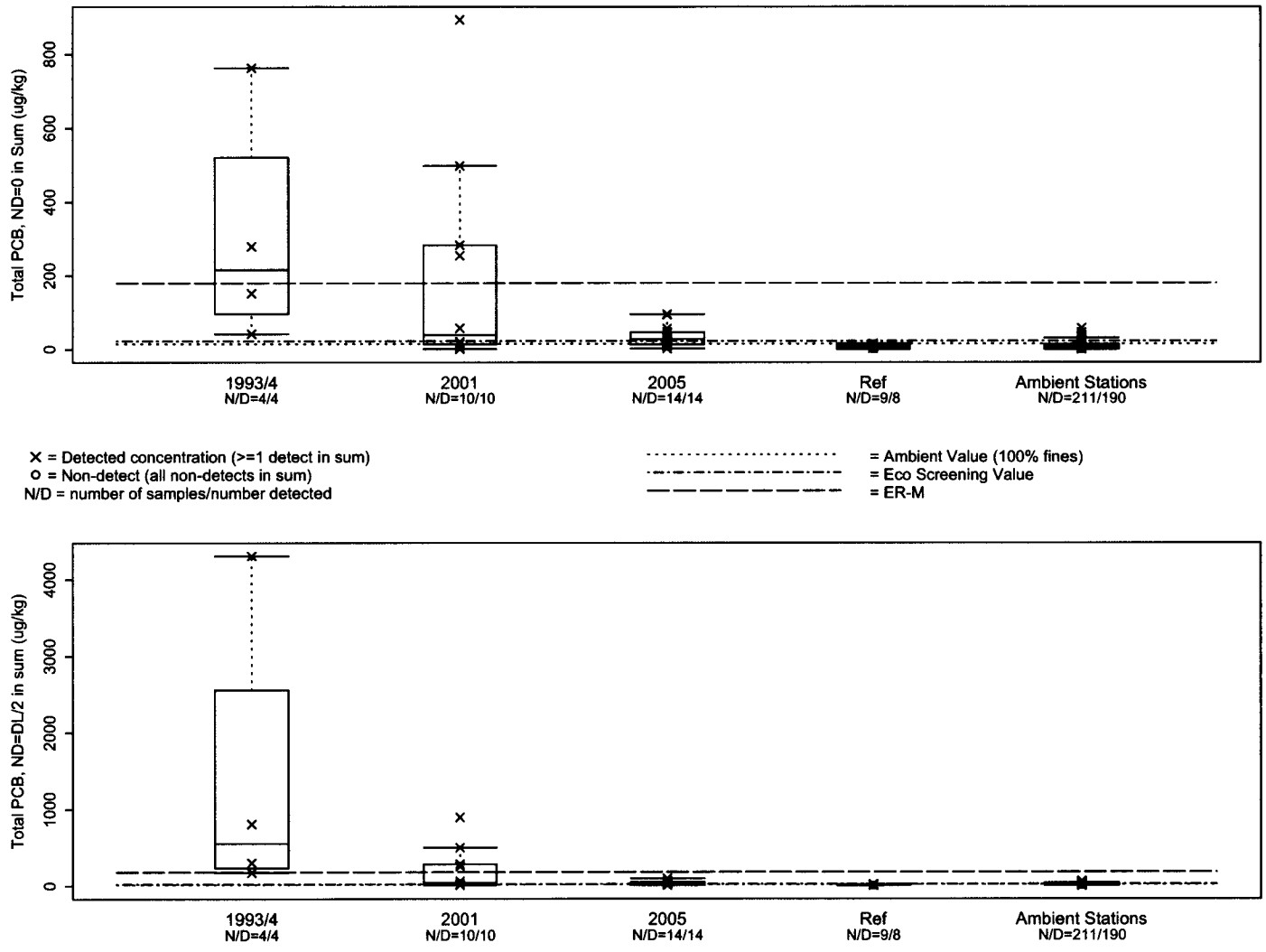


Figure 4-12. Box Plot of Total PCB Concentrations in IR Site 20 Surface Sediment with Non-Detects = 0 (Top) and Non-Detects = One-Half Detection Limit (Bottom)

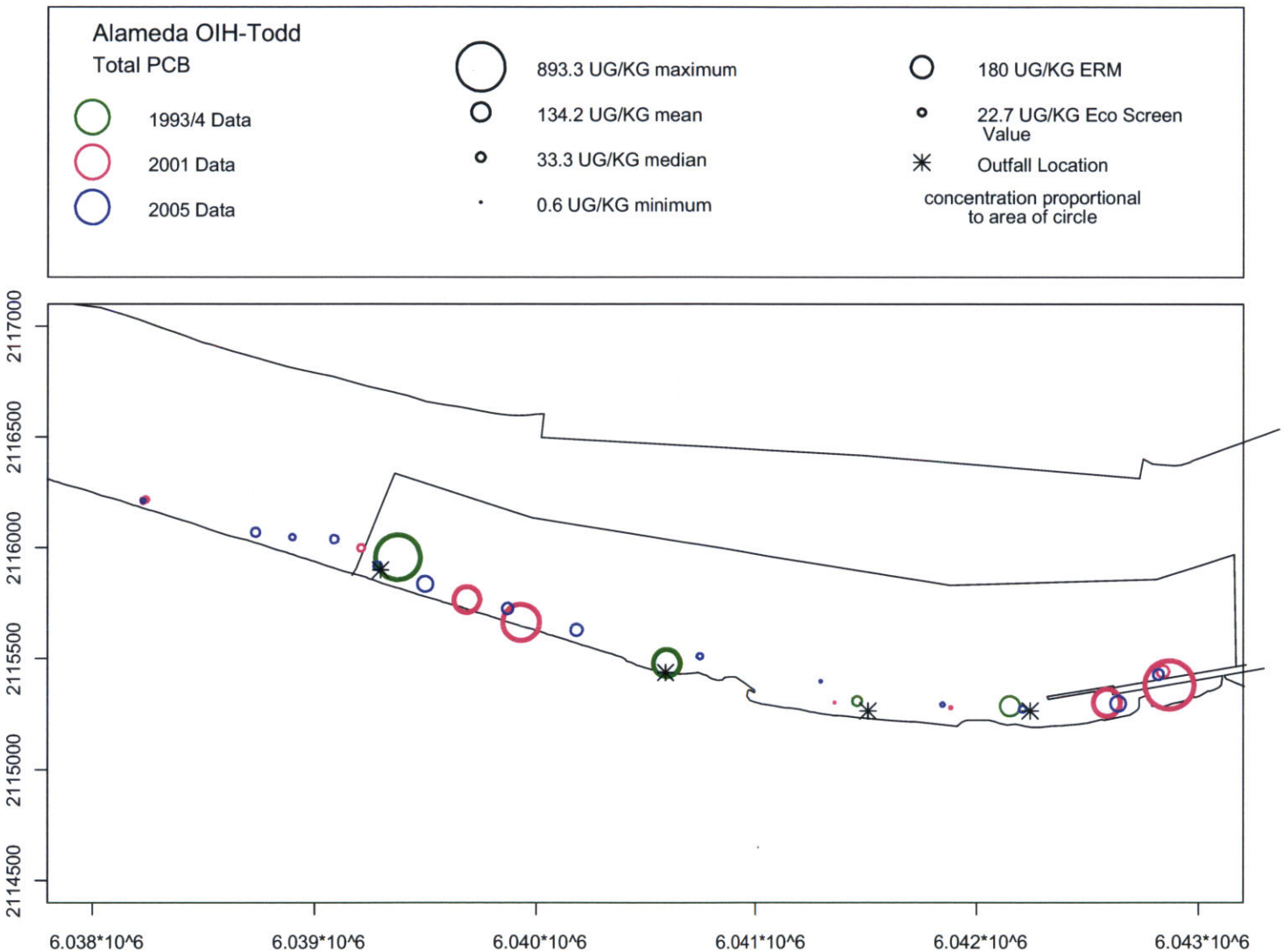


Figure 4-13. Bubble Plot of Total PCB Concentrations in Surface Sediment in IR Site 20 (Non-Detects = One-Half Detection Limit)

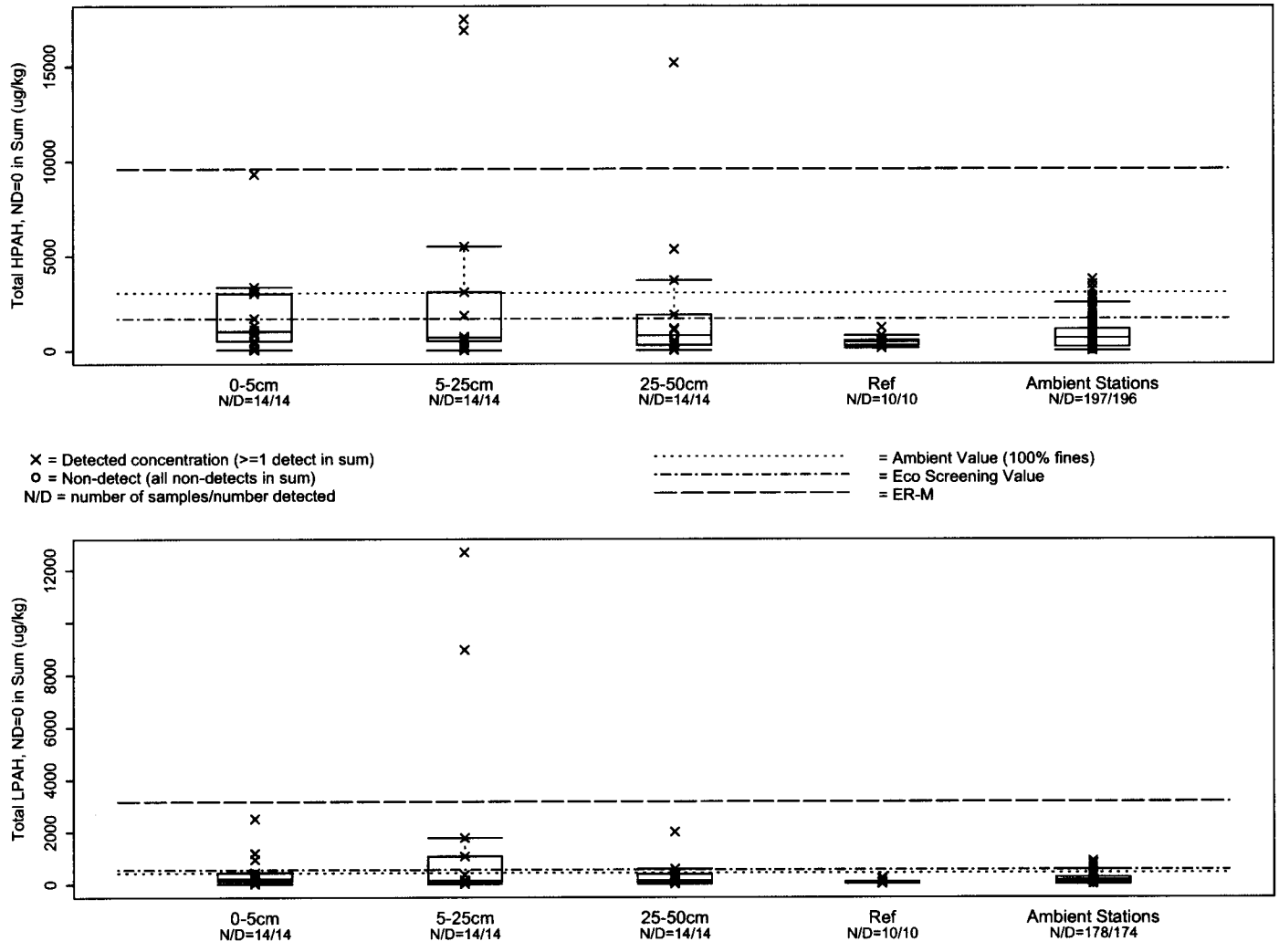


Figure 4-14. Box Plot of HPAH and LPAH Concentrations in Subsurface Sediment at IR Site 20

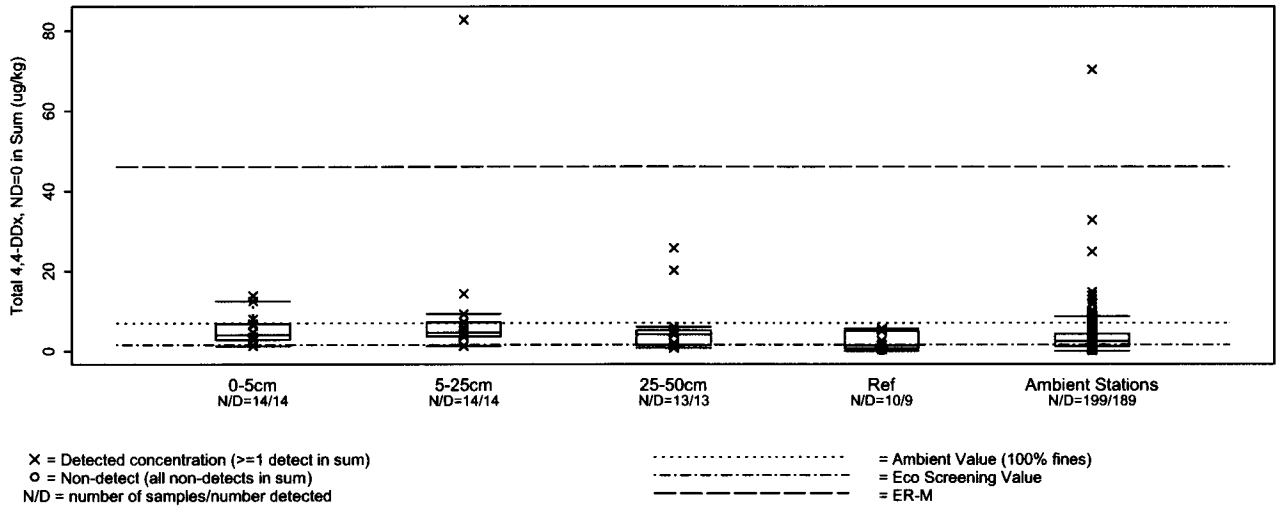


Figure 4-15. Box Plot of Total 4,4′-DDx Concentrations in Subsurface Sediment at IR Site 20

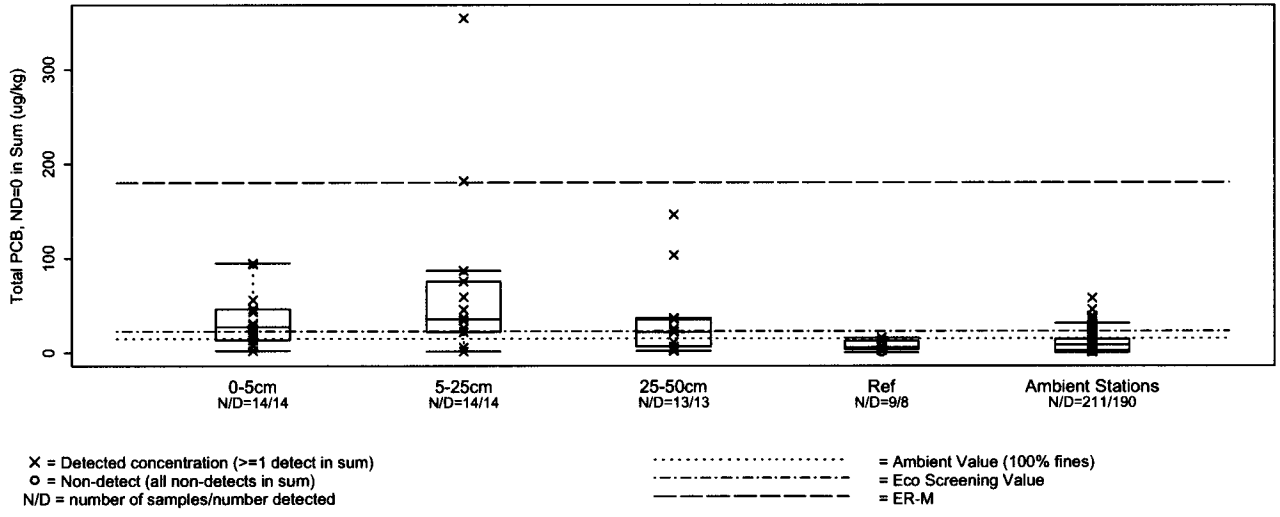


Figure 4-16. Box Plot of Total PCB Concentrations in Subsurface Sediment at IR Site 20

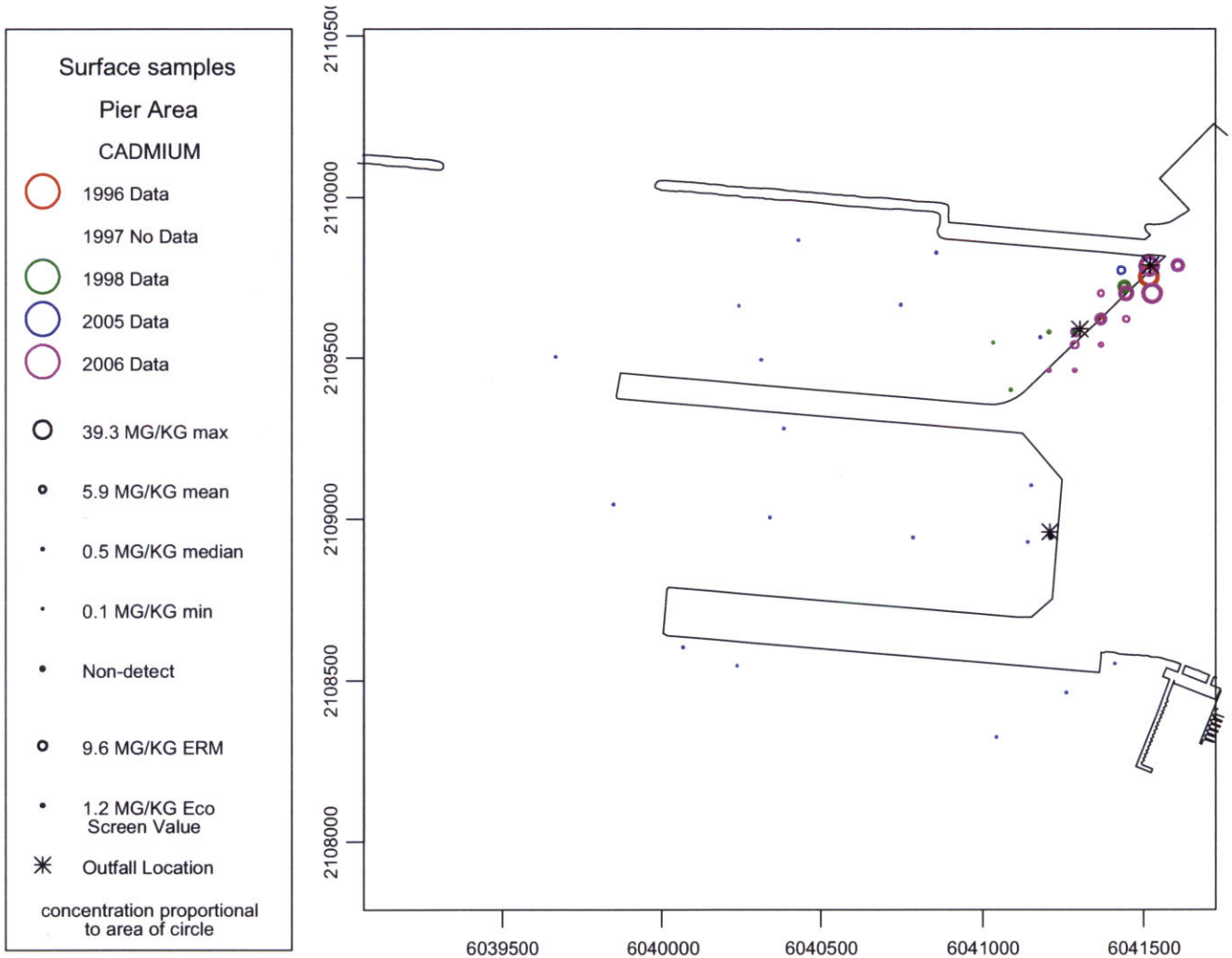


Figure 4-17. Spatial Distribution of Cadmium Concentrations in Surface Sediment at IR Site 24

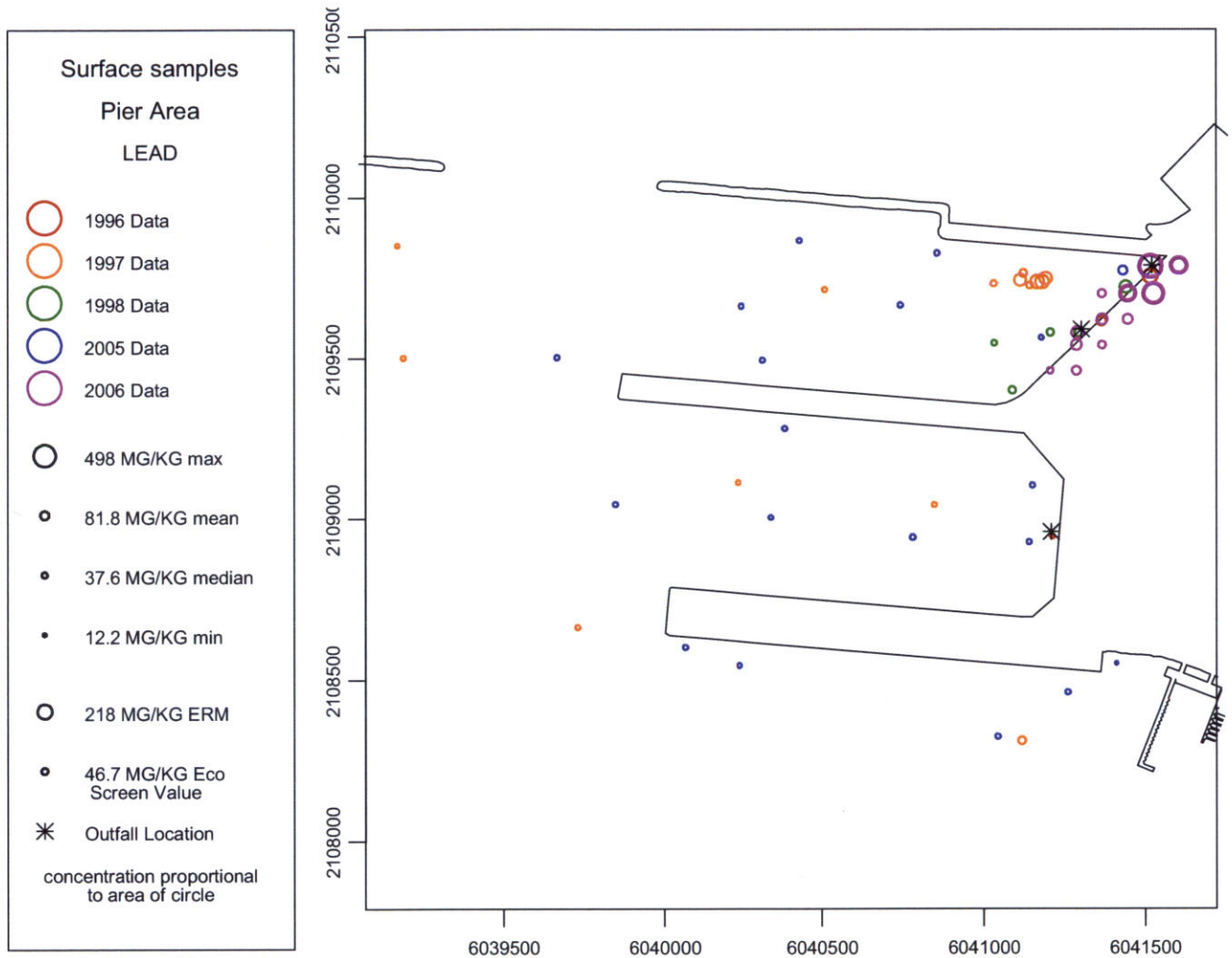


Figure 4-18. Spatial Distribution of Lead Concentrations in Surface Sediment at IR Site 24

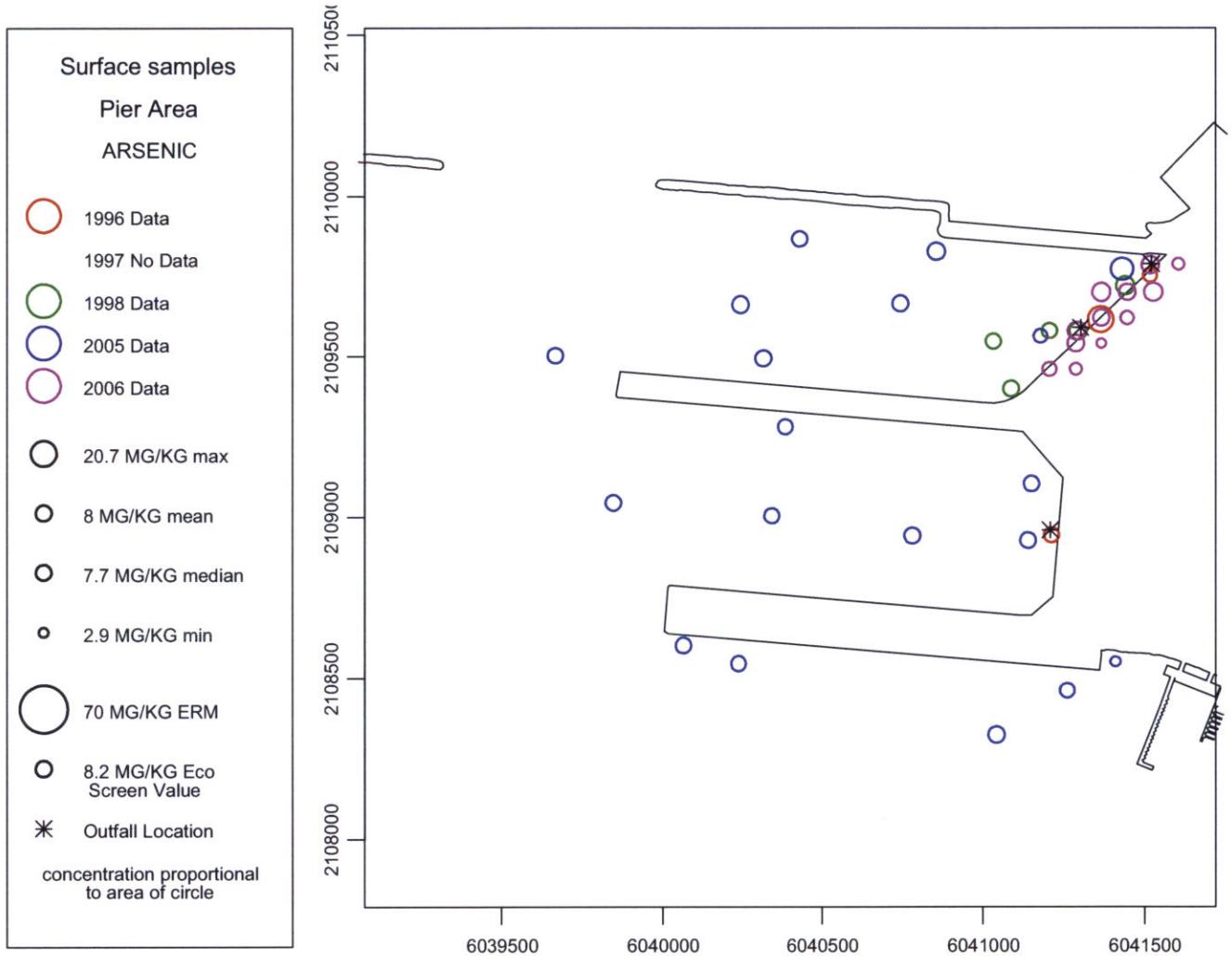


Figure 4-19. Spatial Distribution of Arsenic Concentrations in Surface Sediment at IR Site 24

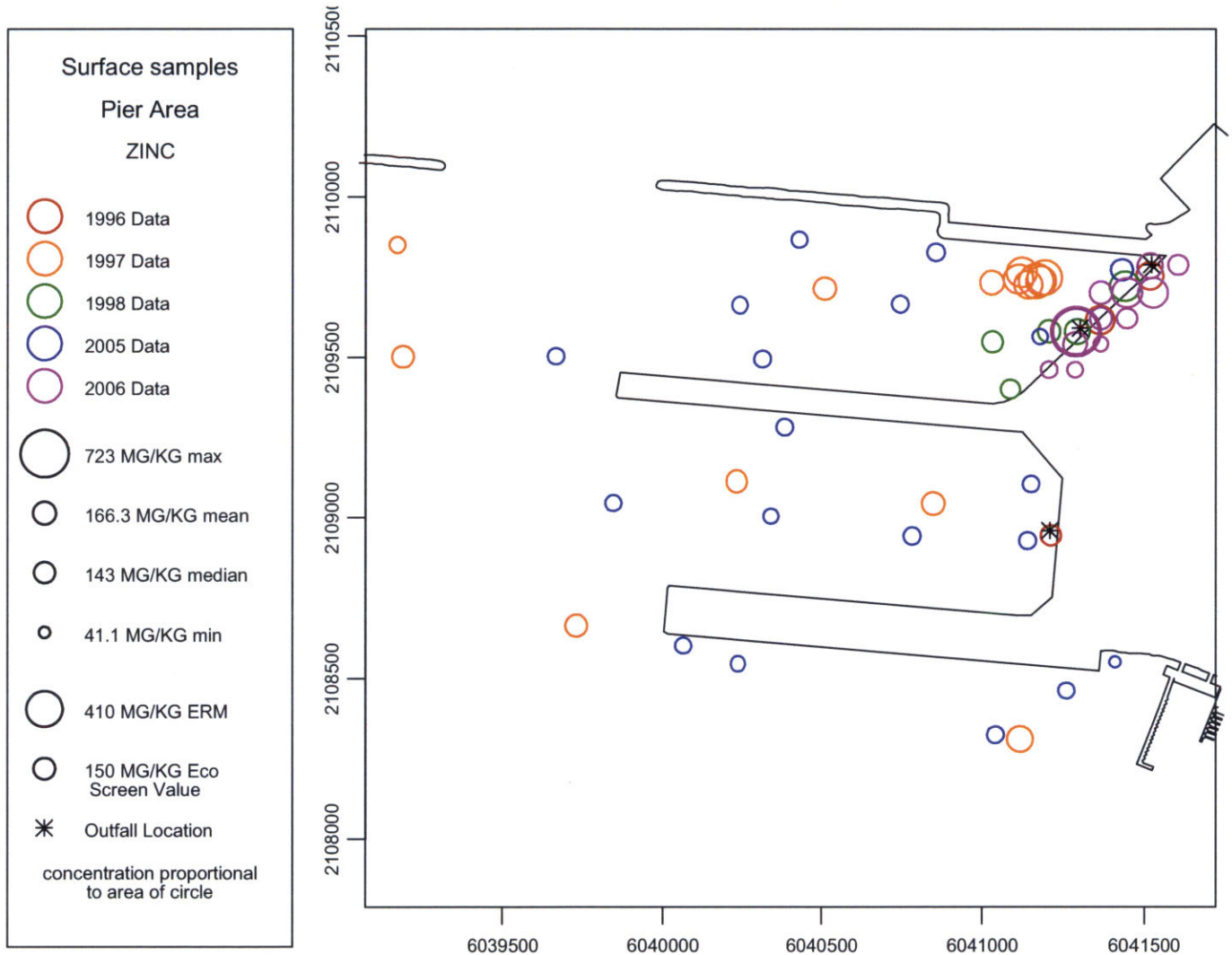


Figure 4-20. Spatial Distribution of Zinc Concentrations in Surface Sediment at IR Site 24

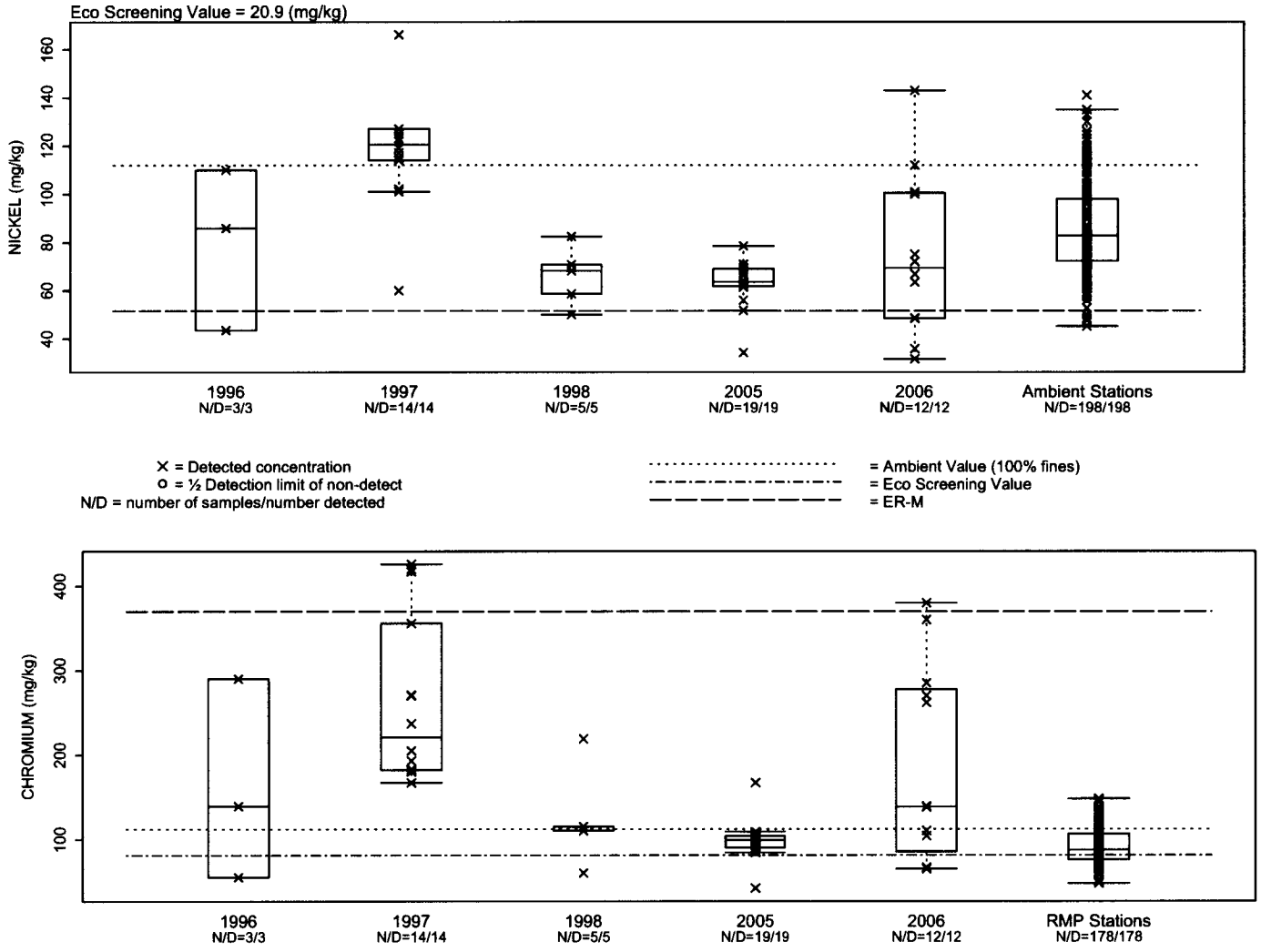


Figure 4-21. Box Plots of Nickel and Chromium Concentrations Showing Elevated 1997 Concentrations Due to Different Sample Extraction Methodologies

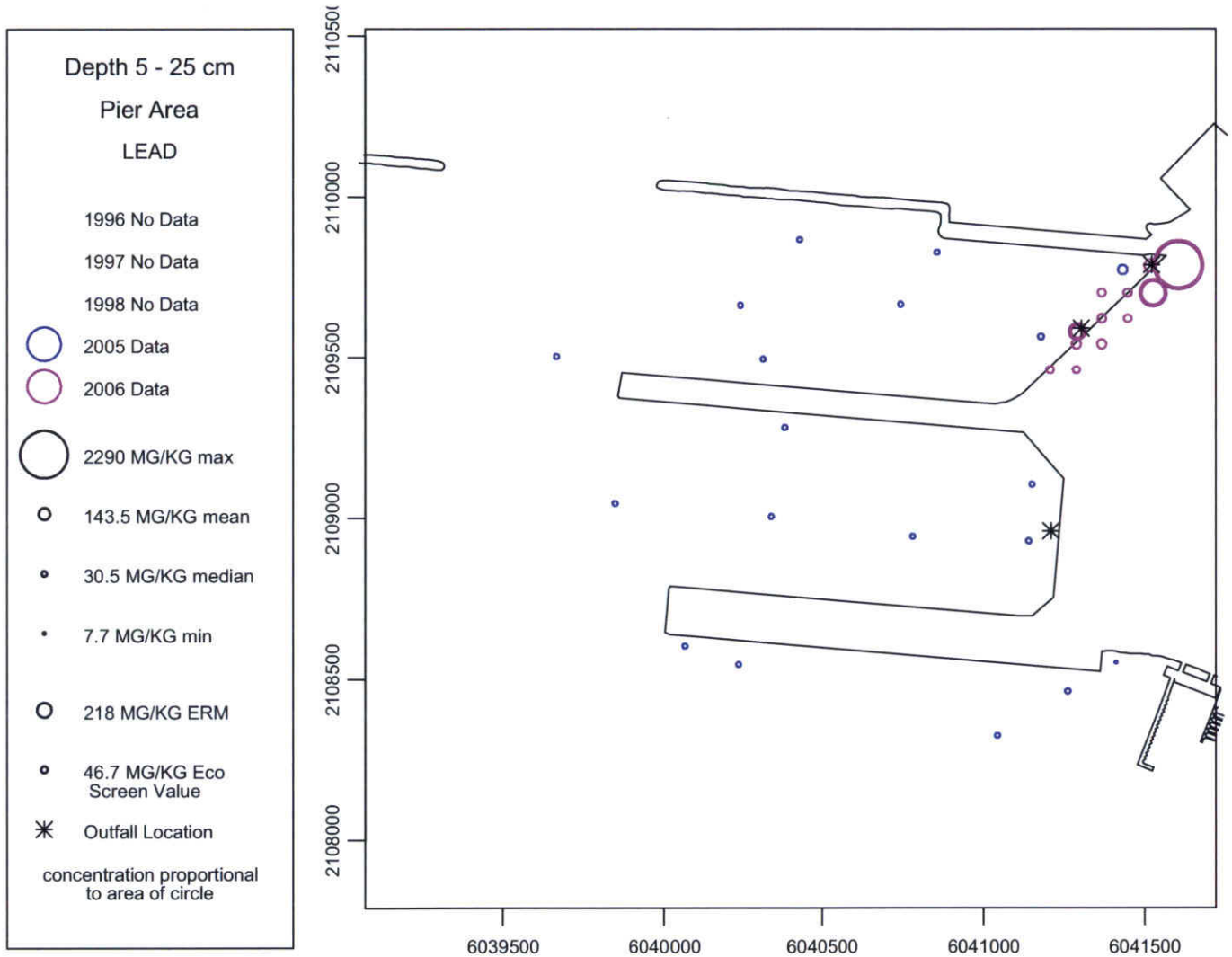


Figure 4-22. Bubble Plots of Lead Concentrations in the 5-25 cm Depth Interval at IR Site 24

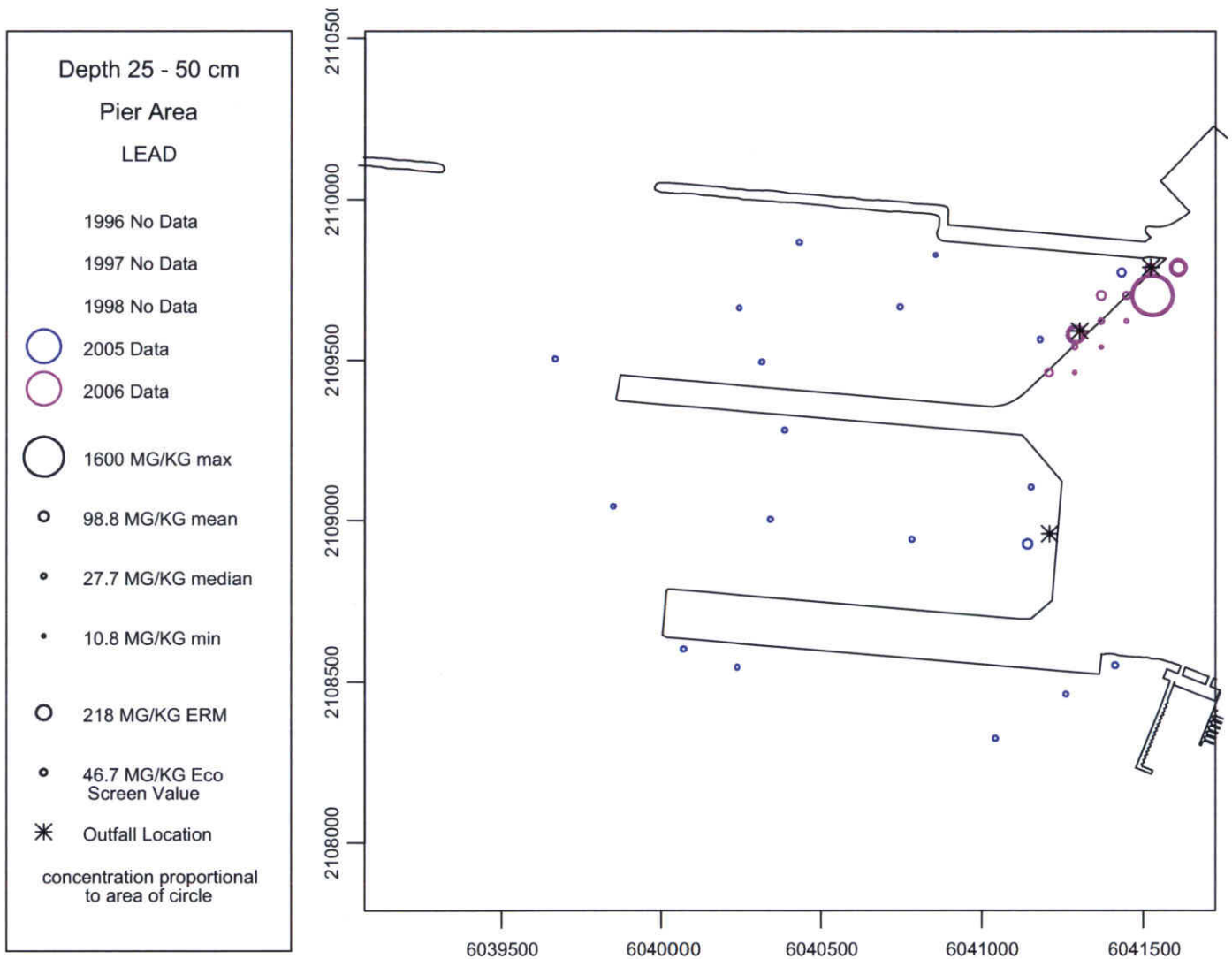


Figure 4-23. Bubble Plots of Lead Concentrations in the 25-40 cm Depth Interval at IR Site 24

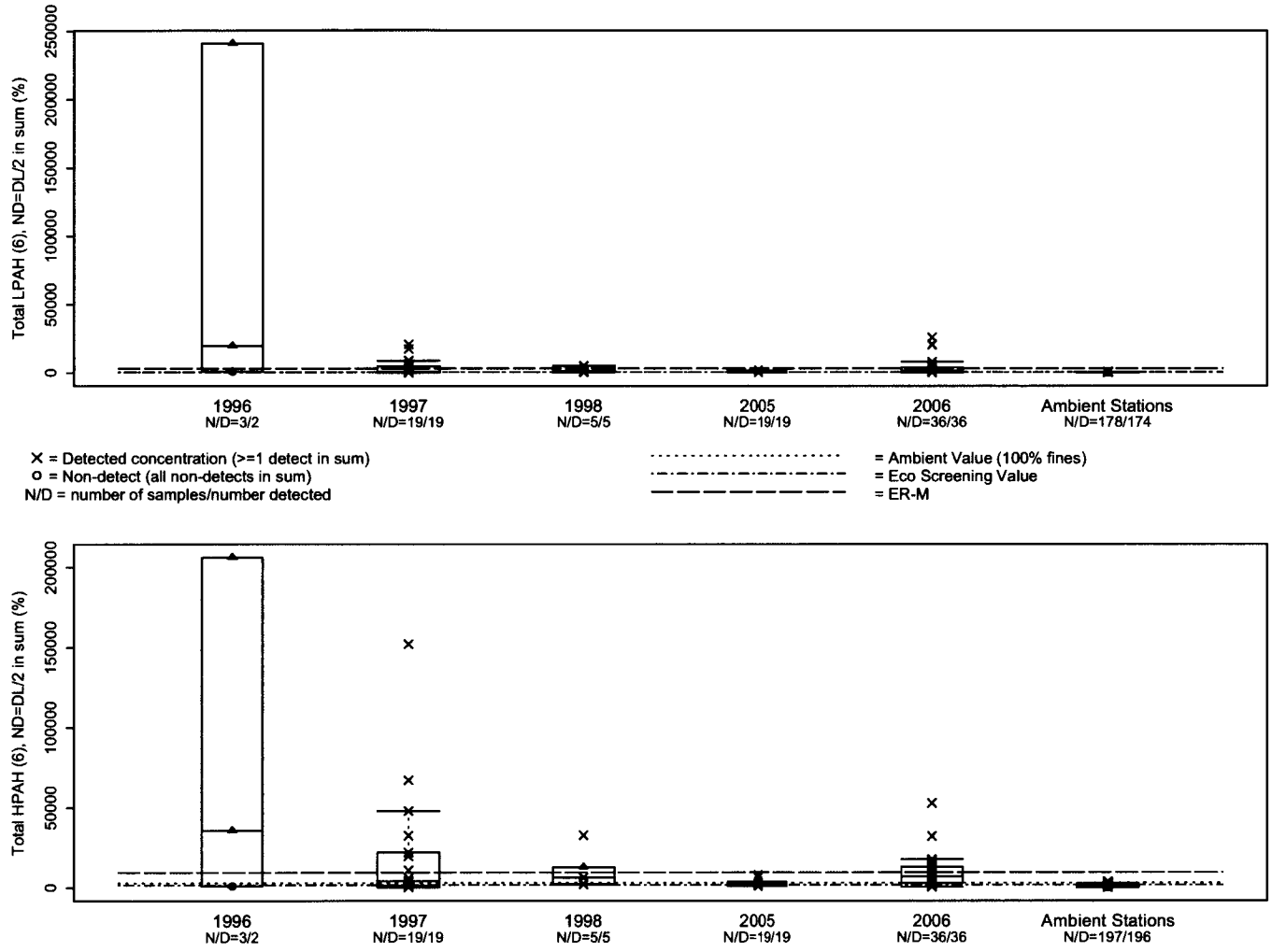


Figure 4-24. Box Plots of Total LPAH and HPAH Concentrations in IR Site 24 Surface Sediment (Non-Detects = One-Half Detection Limit)

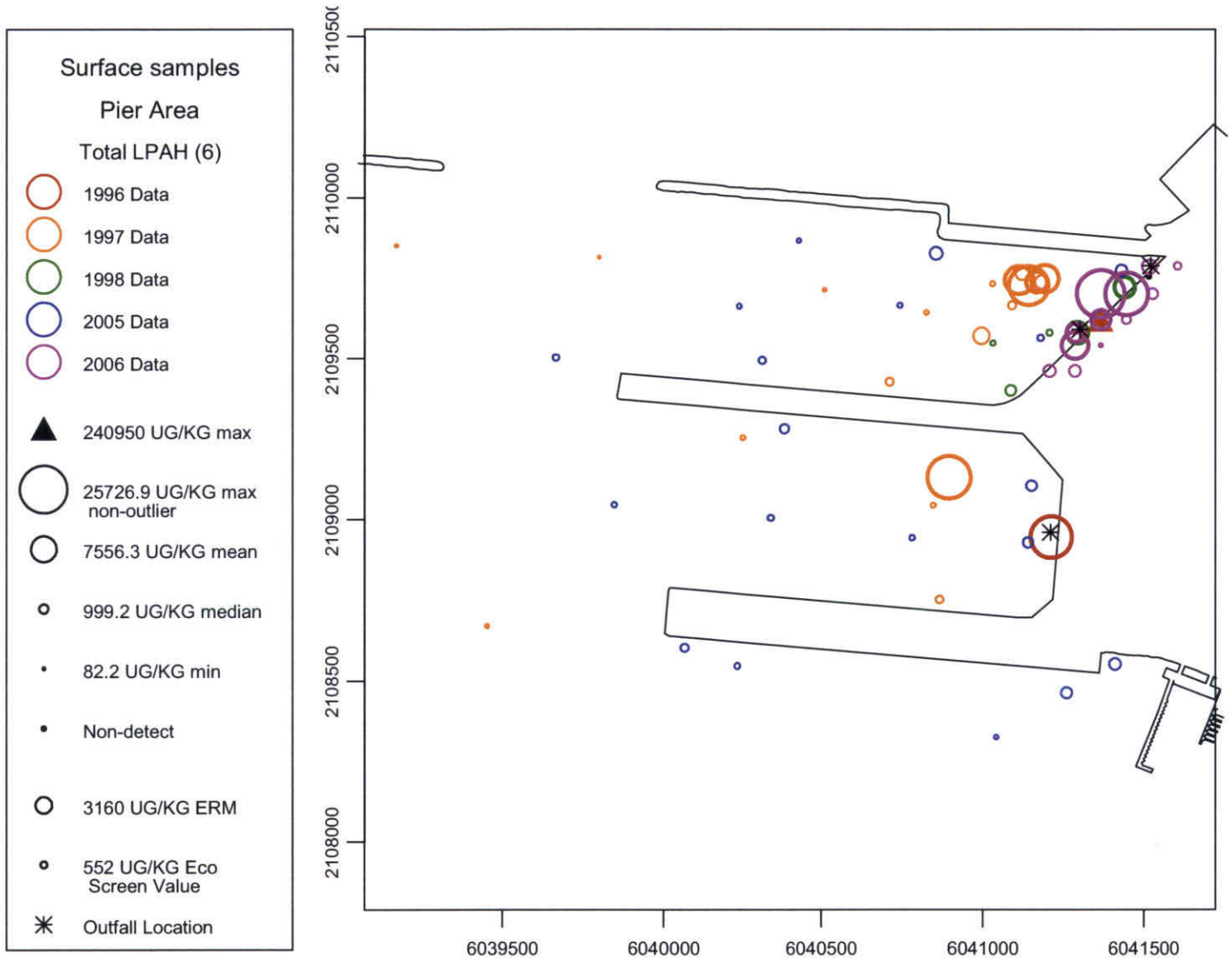


Figure 4-25. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment by Year

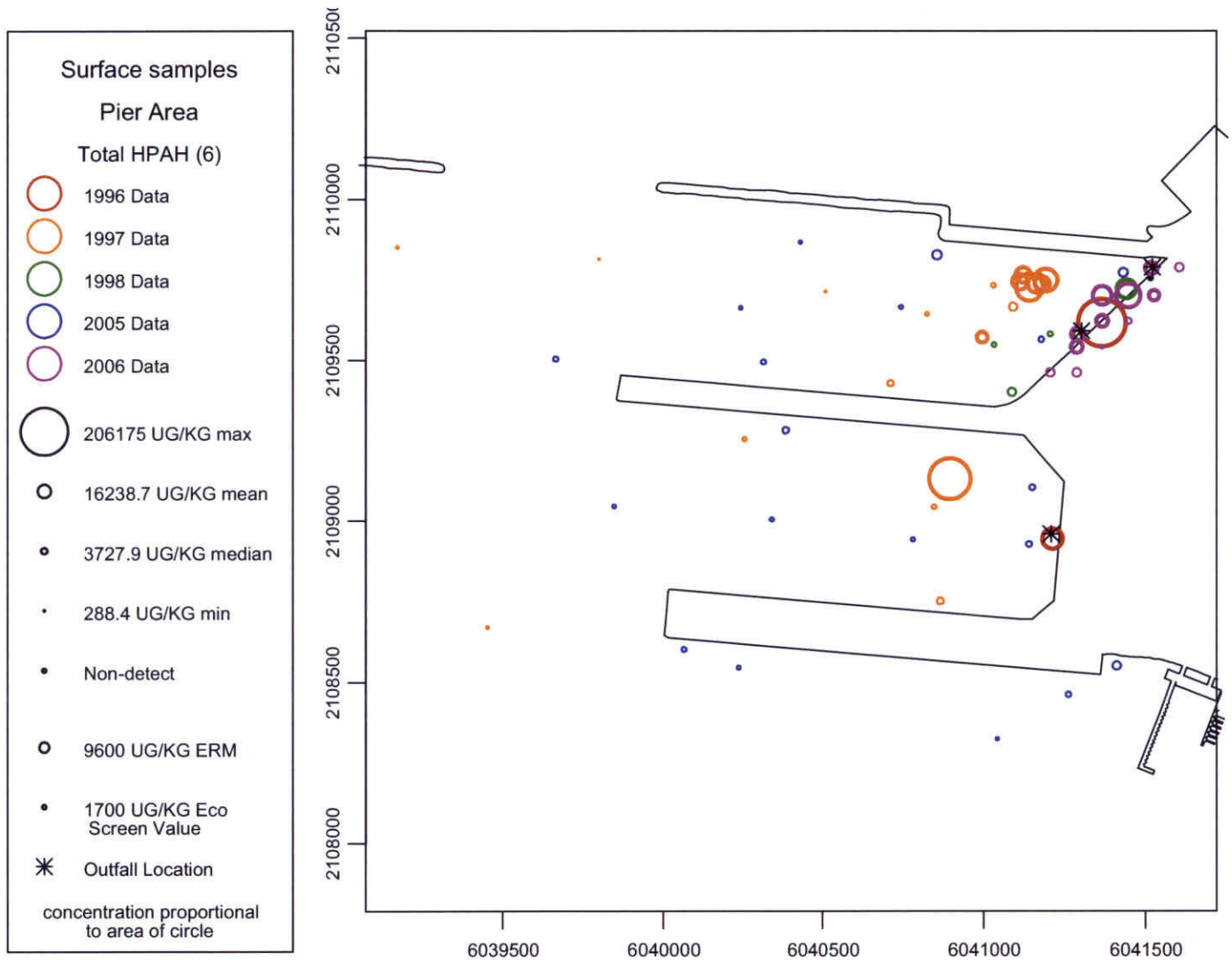


Figure 4-26. Bubble Plot of Total HPAH (6) Concentrations in the IR Site 24 Surface Sediment by Year

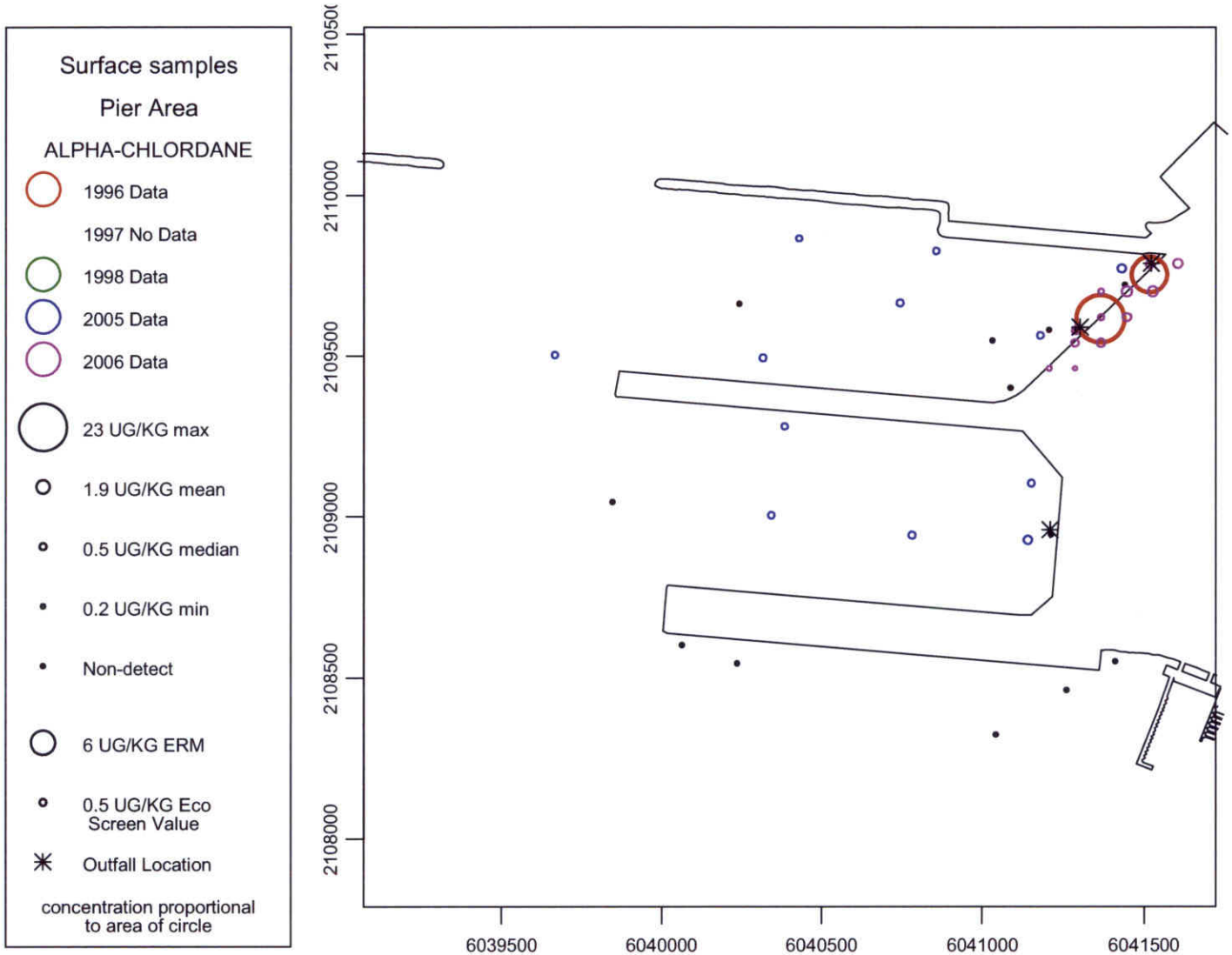


Figure 4-27. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 24 Surface Sediment by Year

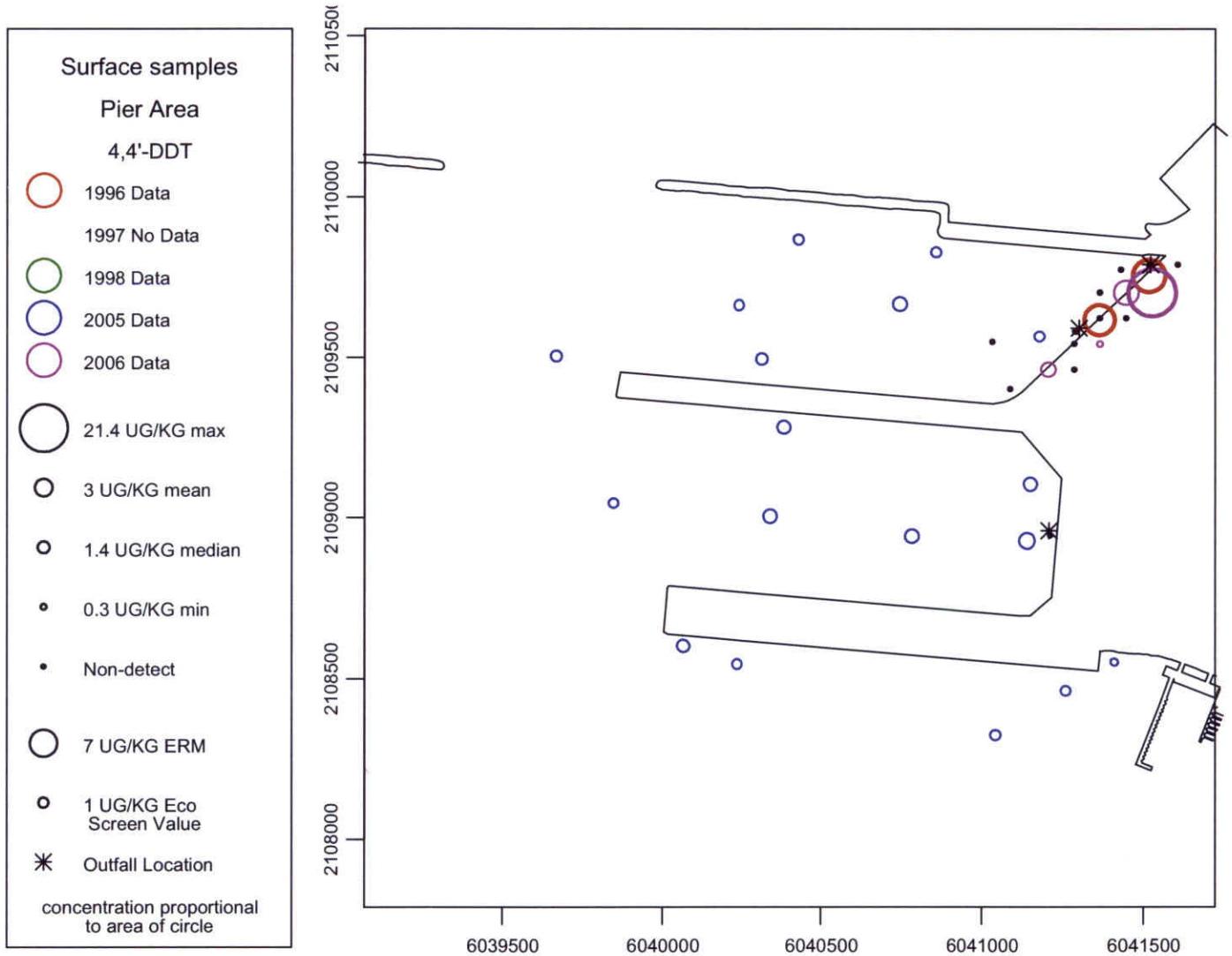


Figure 4-28. Bubble Plot of 4,4′-DDT Concentrations in IR Site 24 Surface Sediment by Year

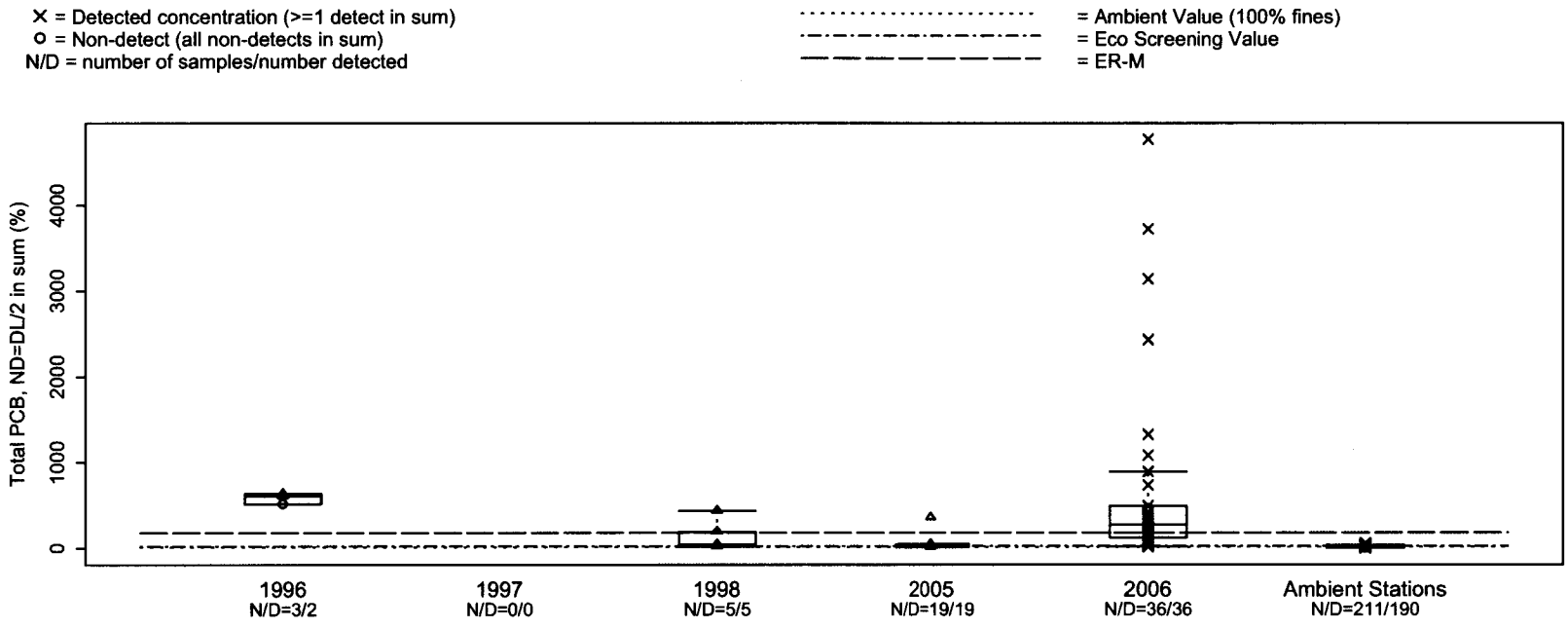


Figure 4-29. Box Plot of Total PCB Concentrations in IR Site 24 Surface Sediment by Year

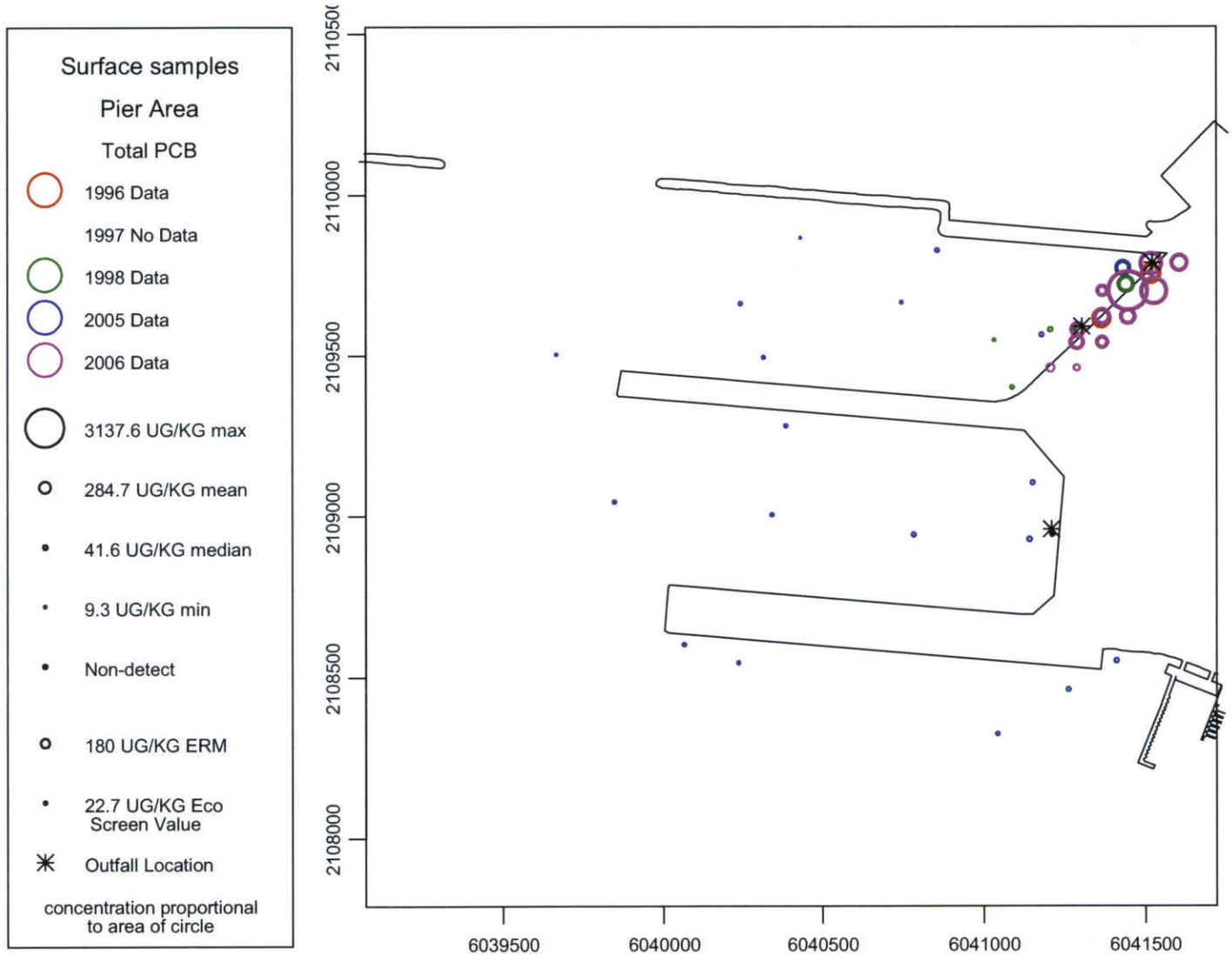


Figure 4-30. Bubble Plot Total PCB Concentrations in IR Site 24 Surface Sediment by Year

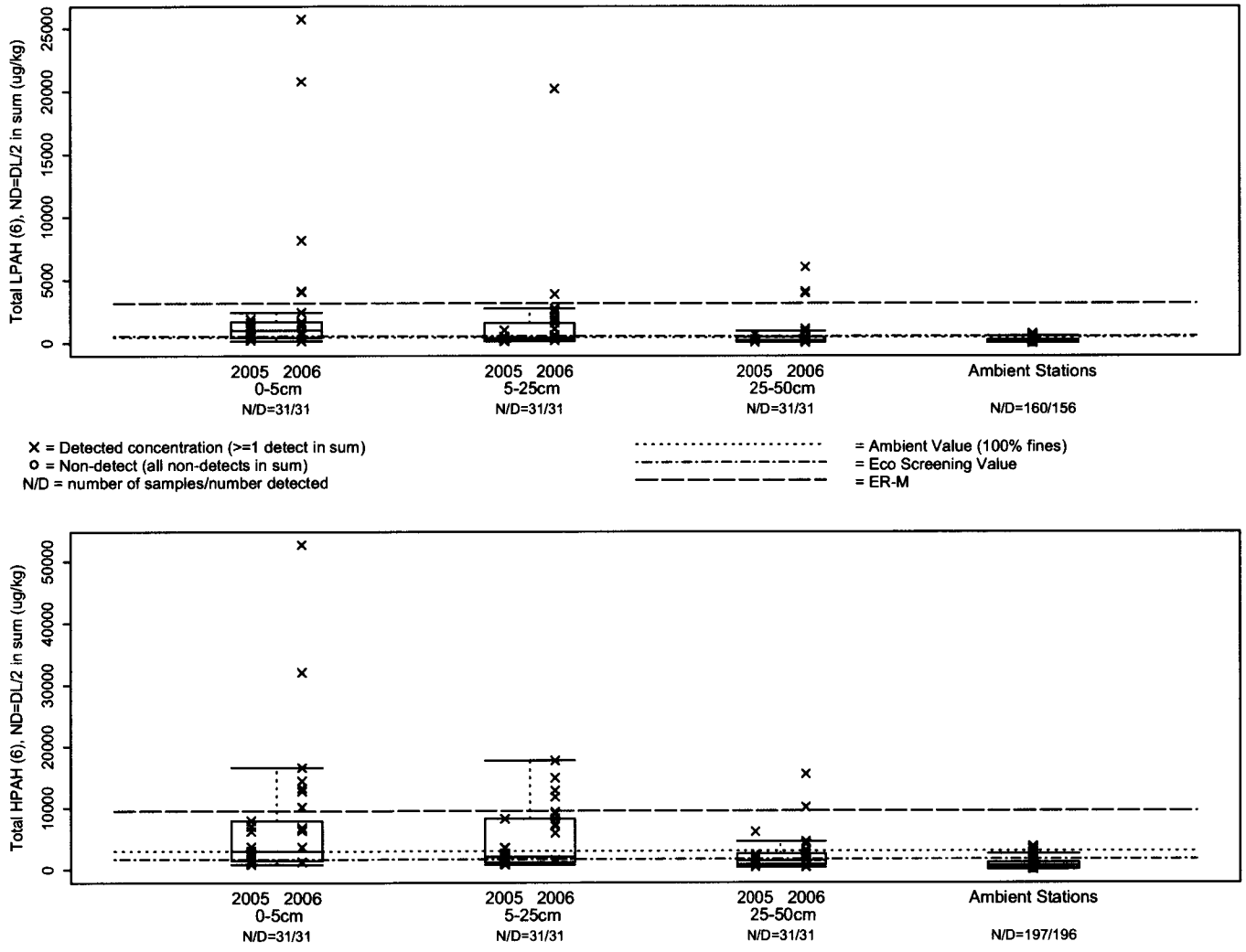


Figure 4-31. Box Plots of Total LPAH and Total HPAH Concentrations in IR Site 24 Sediment by Depth

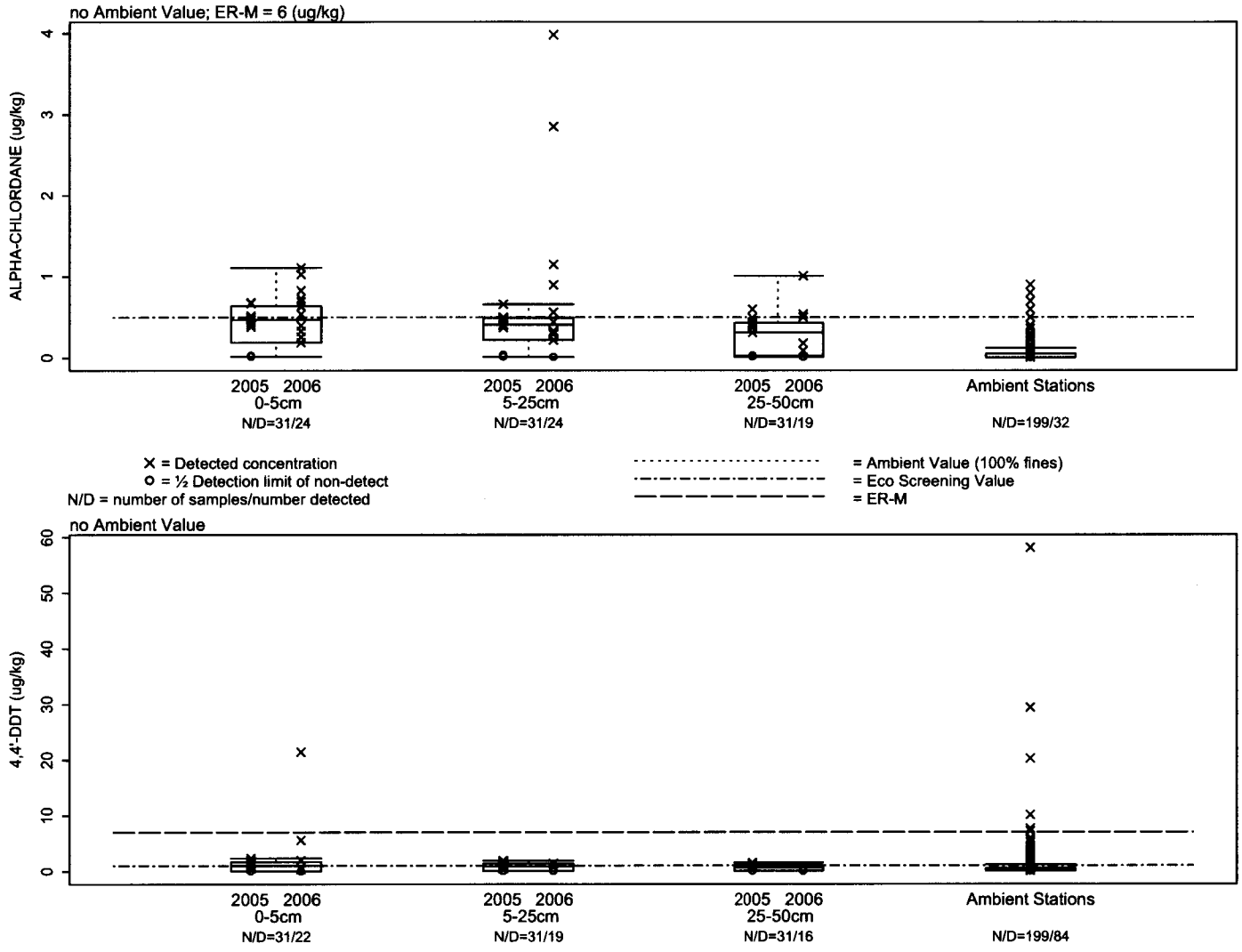


Figure 4-32. Box Plot of *alpha*-Chlordane and 4,4′-DDT Concentrations in IR Site 24 Sediment by Depth

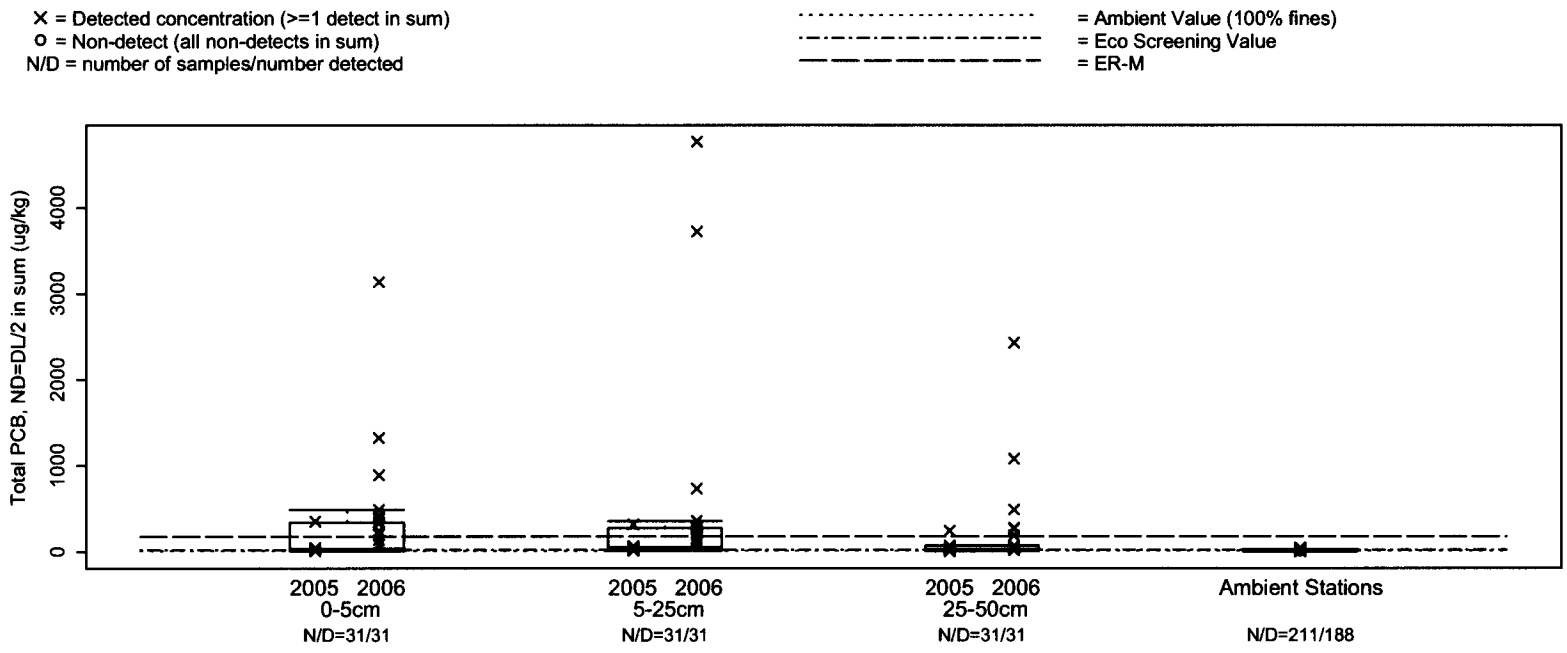


Figure 4-33. Box Plot of Total PCB Concentrations in IR Site 24 Sediment by Depth

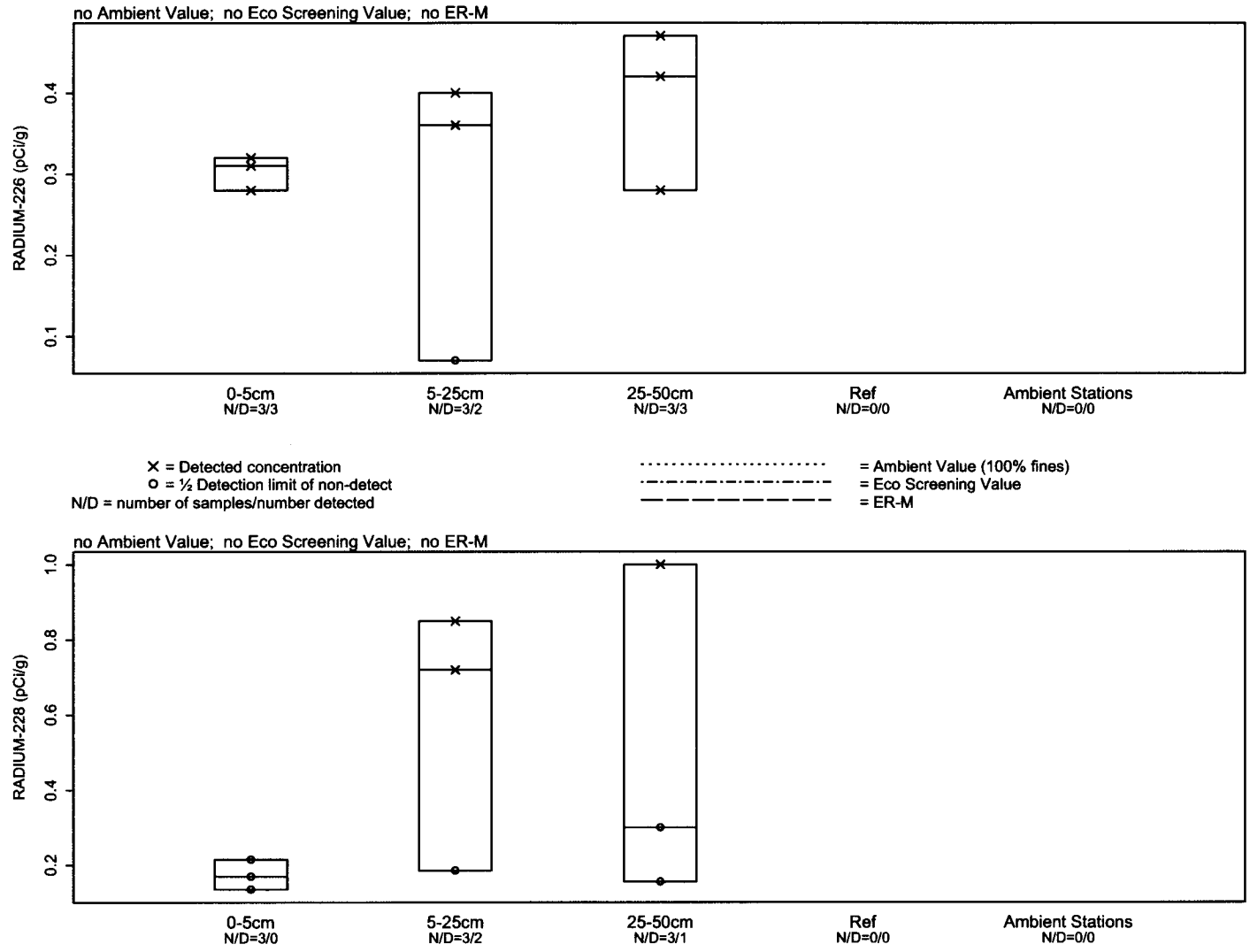


Figure 4-34. Box Plots of Radium-226 and Radium-228 Concentrations in Surface and Subsurface Sediment at IR Site 24

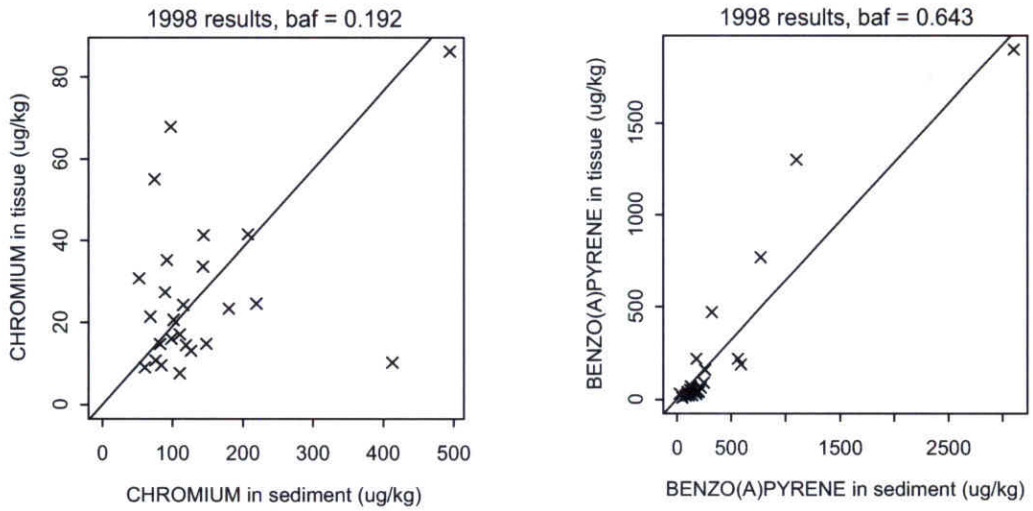


Figure 5-1. Bivariate Plots of Chromium and Benzo(a)pyrene Concentrations from Sediment and Shellfish Tissue Exposures at Alameda Point Stations. The slope of the line is the BAF ratio.

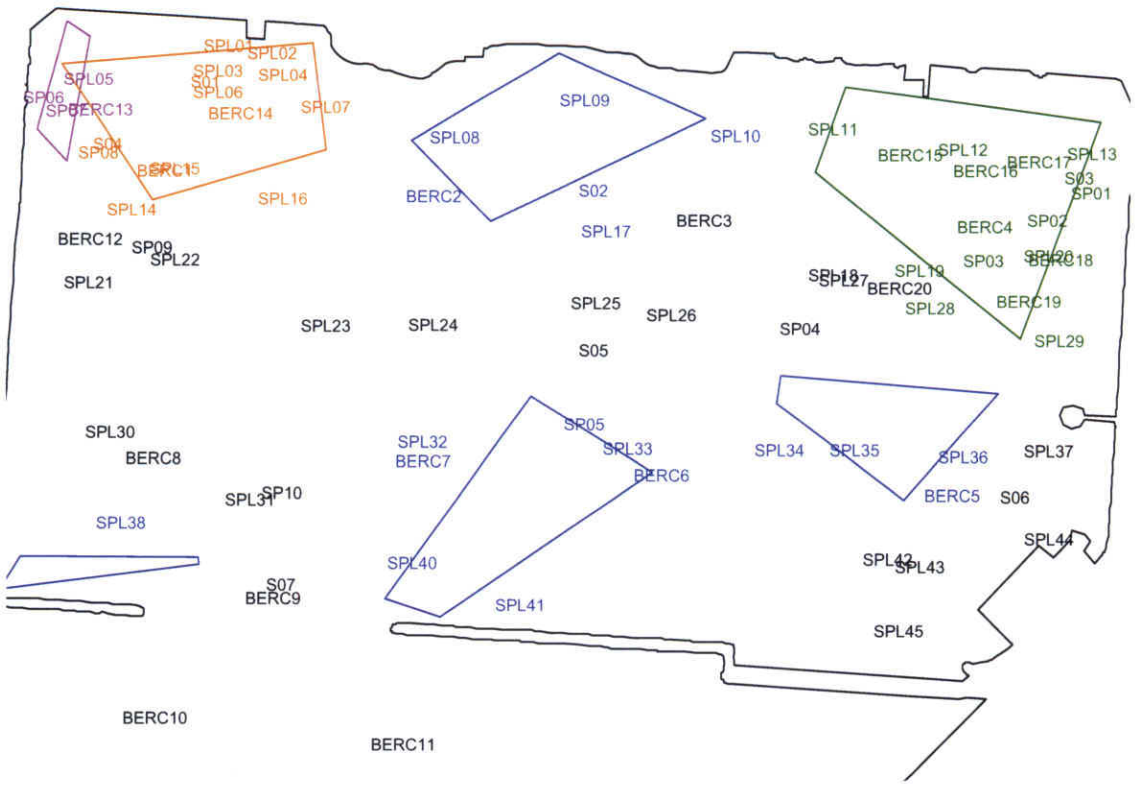


Figure 5-2. Trawl Polygons Defining Forage Fish Collection Areas within Seaplane Lagoon. Polygons in blue collectively define collection area distant from outfalls. Sediment stations used to characterize a trawl polygon are labeled in the same color as the trawl line.

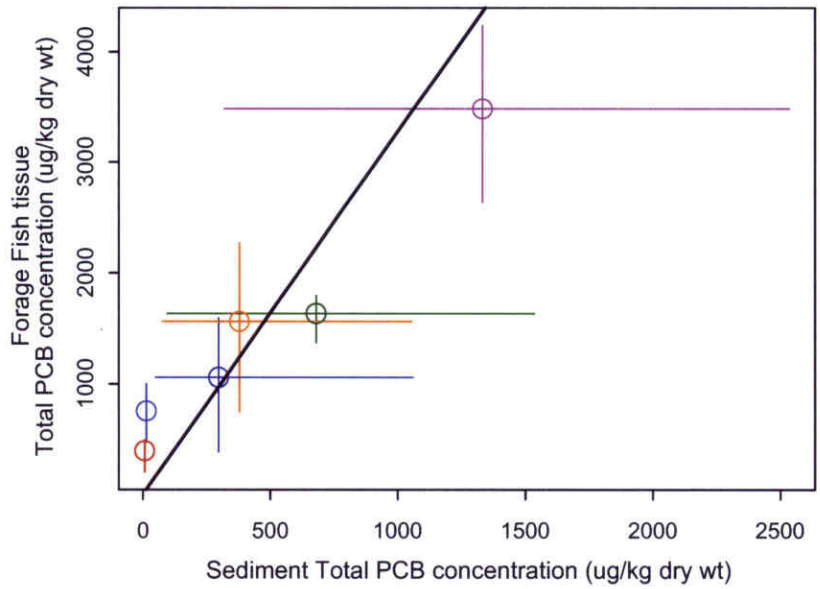
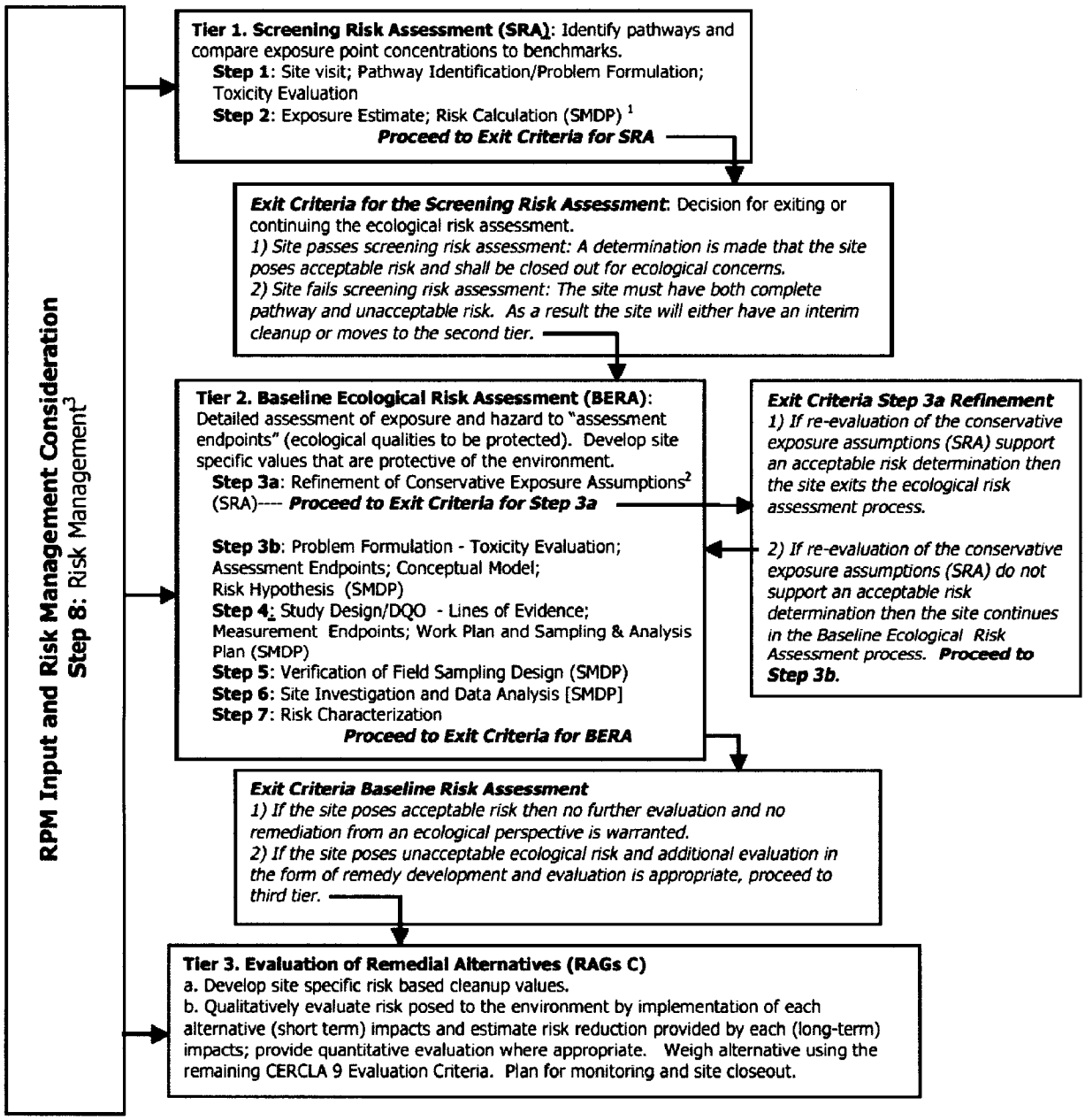


Figure 5-3. Bivariate Plot of Sediment versus Tissue Concentrations of Total PCBs. The BAF ratio is presented as the slope of the diagonal black line.



Notes: 1) See EPA's 8 Step ERA Process for requirements for each Scientific Management Decision Point (SMDP).
2) Refinement includes but is not limited to background, bioavailability, detection frequency, etc.
3) Risk Management is incorporated throughout the tiered approach.

Figure 6-1. Overview of Ecological Risk Assessment Process (from CNO, 1999)

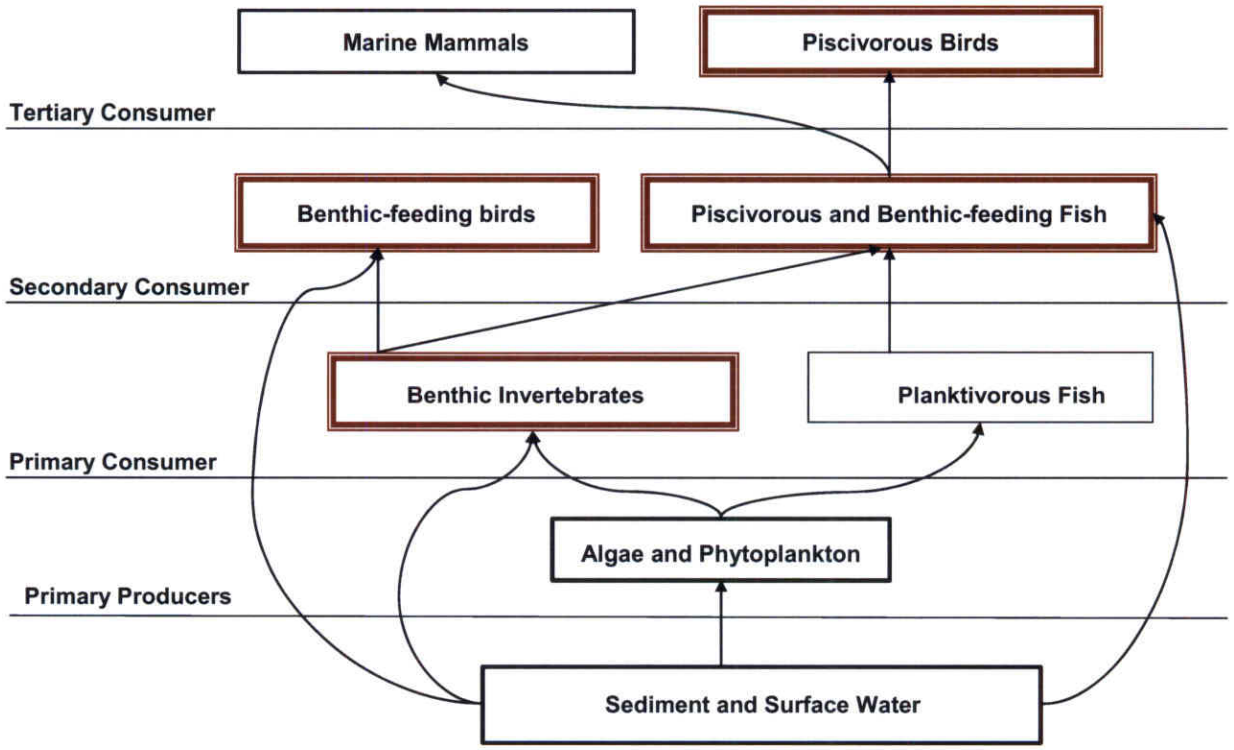
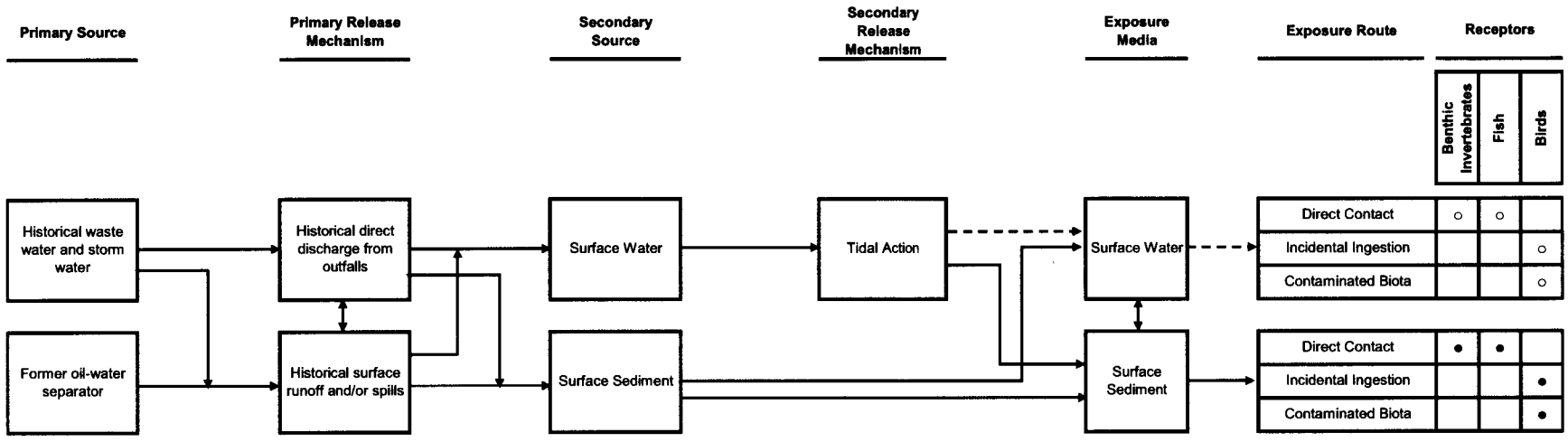


Figure 6-2. Conceptual Food Web for the Offshore Areas of Alameda Point. Bold boxes are the trophic groups evaluated quantitatively in the ecological risk assessment.

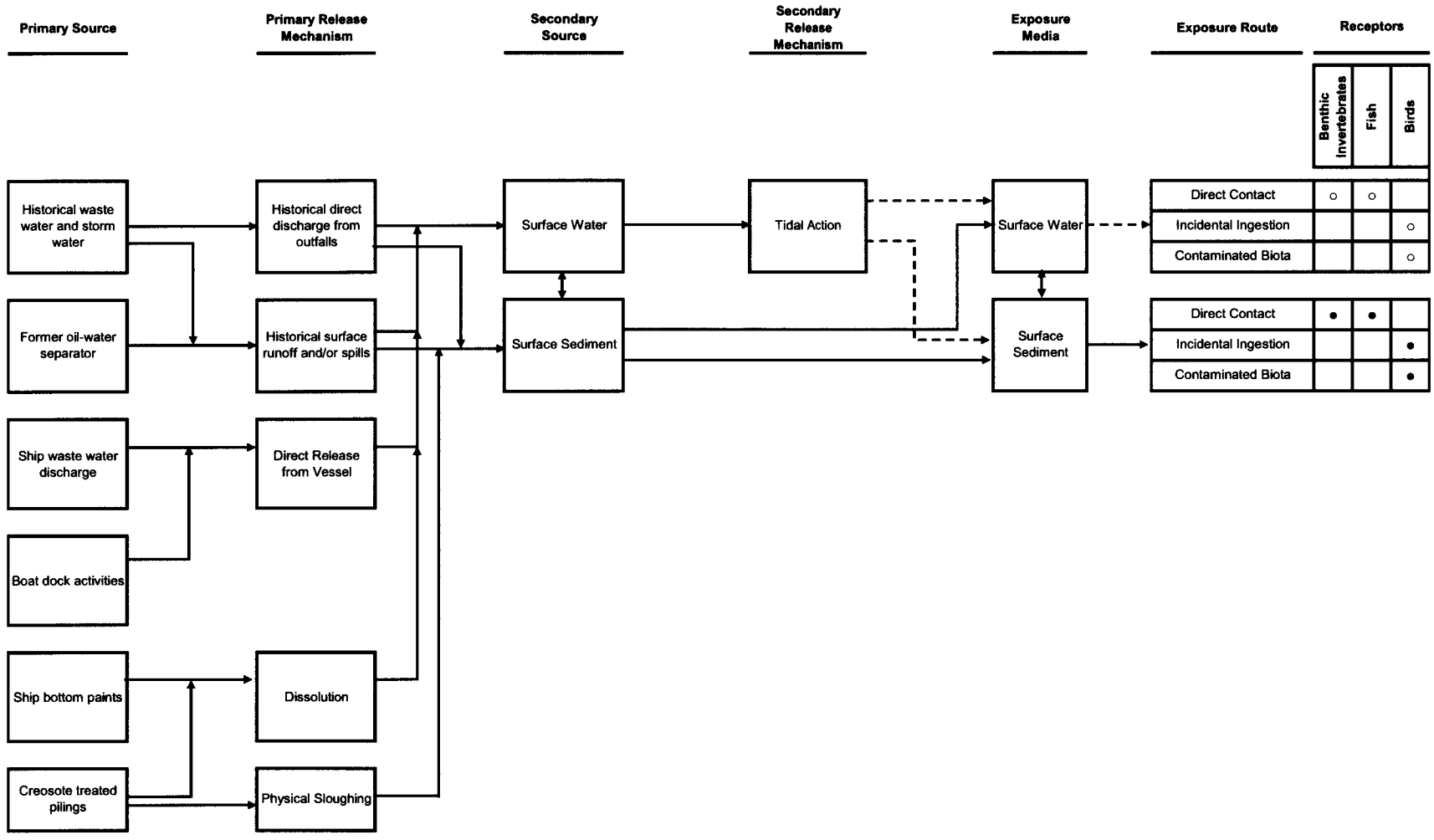


Explanation:

- ○ Potentially complete exposure pathway, but exposure is insignificant.
- ● Potentially complete exposure pathway, evaluated quantitatively.
- ⟶ Major exposure pathway
- - -→ Minor exposure pathway

Note: Incomplete exposure pathway is indicated by a blank receptor cell.

Figure 6-3. General Ecological Conceptual Site Model for Offshore Sites at IR Site 20



Explanation:

- ○ Potentially complete exposure pathway, but exposure is insignificant.
- ● Potentially complete exposure pathway, evaluated quantitatively.
- → Major exposure pathway
- - → Minor exposure pathway

Note: Incomplete exposure pathway is indicated by a blank receptor cell.

Figure 6-4. General Ecological Conceptual Site Model for Offshore Sites at IR Site 24

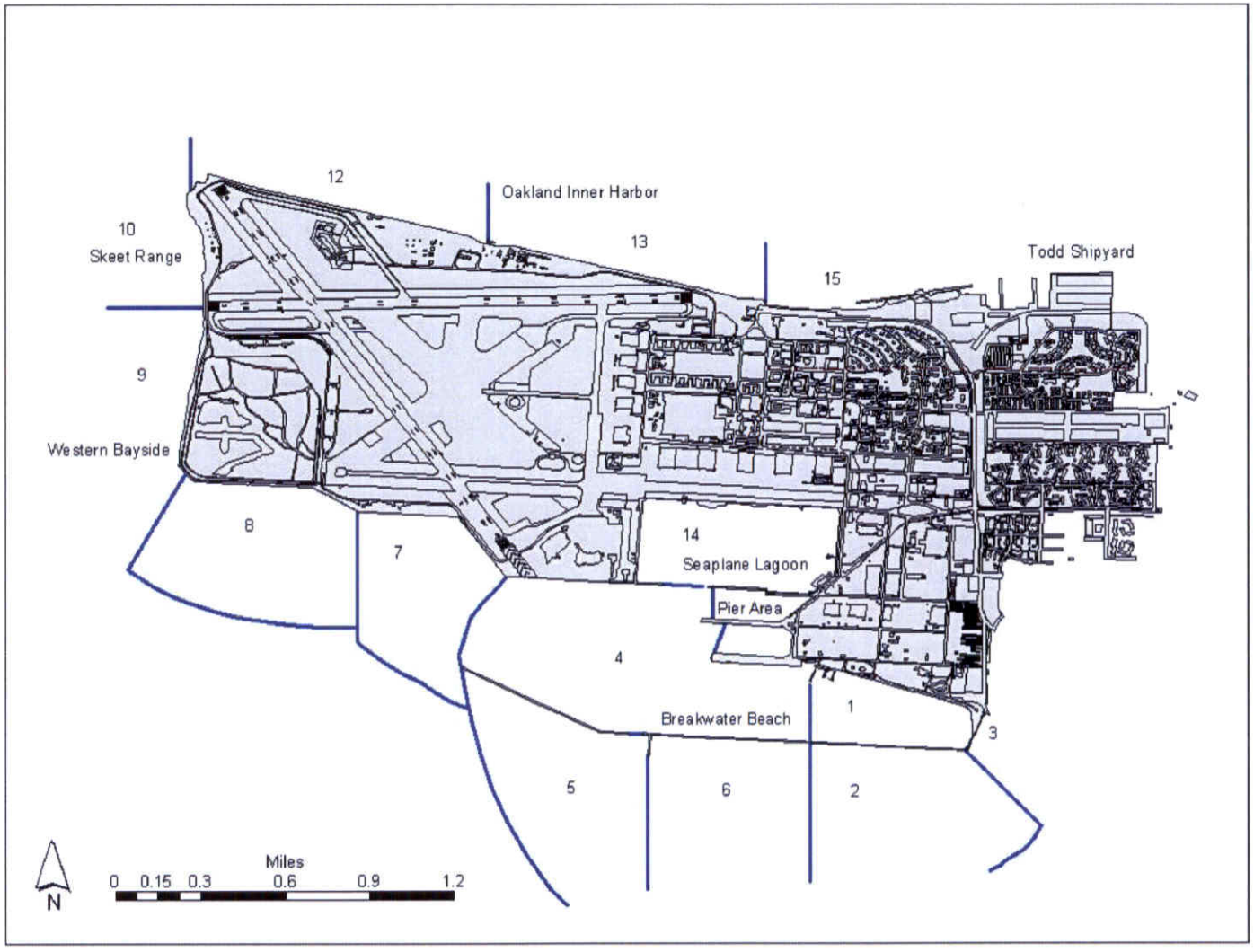
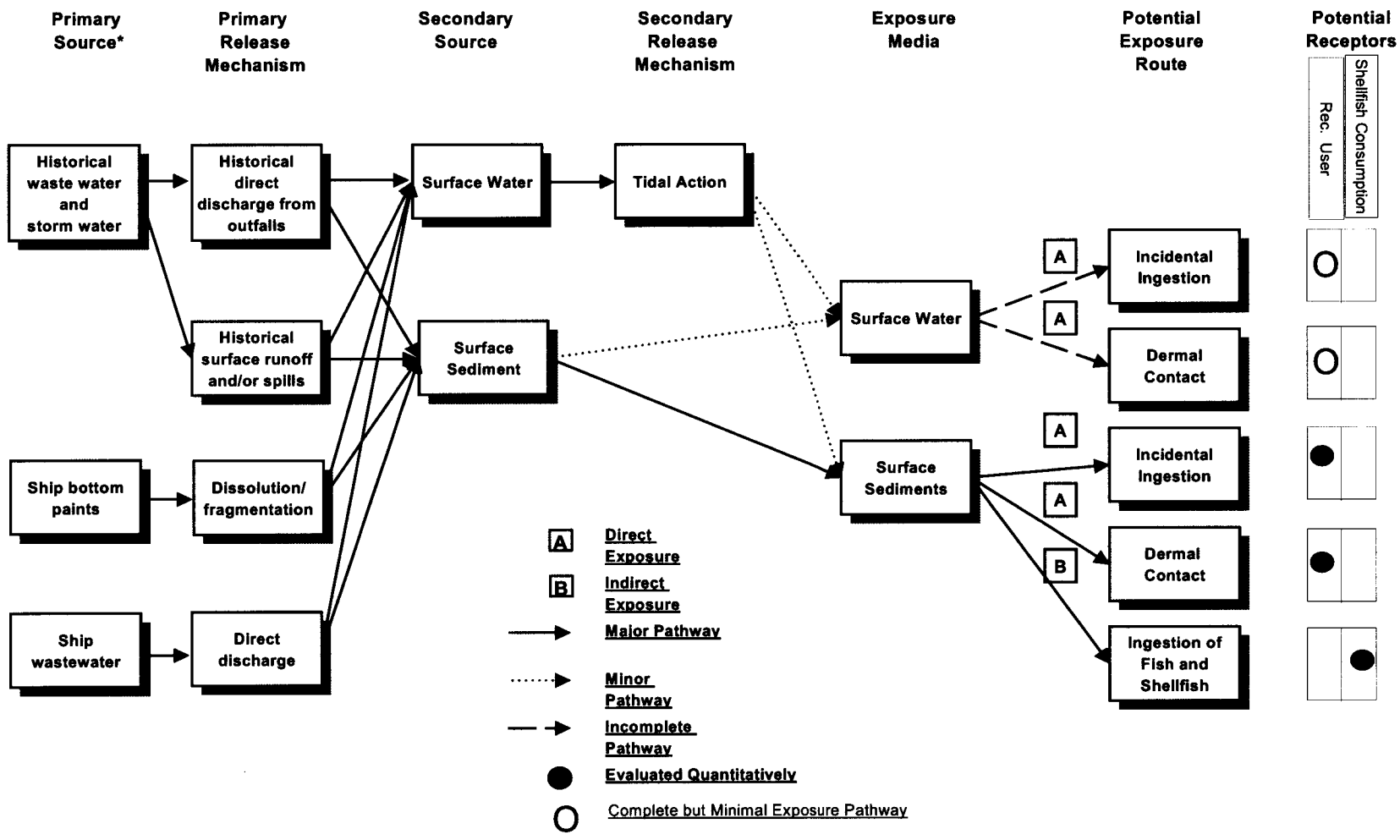


Figure 6-5. Least Tern Study Areas Around Alameda Point (Adapted from: Collins and Feeney, 1995)



Note: Incomplete exposure pathway is indicated by a blank receptor cell.

Figure 7-1. Human Health Conceptual Site Model

TABLES

Table 2-1. Historical Summary of the Offshore Areas at Alameda Point, Including Potential Sources and Releases

Dates	Events
1890s to 1902	• Wetlands were filled on the western half of Alameda Island with marine sediment dredged from San Francisco Bay. • San Antonio Channel (currently Oakland Inner Harbor) was constructed, and Alameda Point peninsula was developed.
Early 1900s	• Pacific Coast Oil Works refinery operated at IR Site 13 in southeastern portion of Alameda Point. • Petroleum wastes were discharged directly to San Francisco Bay.
1920s to 1930	• Borax plant operated in the southeastern portion of Alameda Point.
1930 through 1960s	• Development of Alameda Point continued by the U.S. Army (1930) and the DON (beginning in 1936). • Industrial facilities and infrastructure were constructed, including storm-sewer system. • Pipelines were placed directly on fill with no bedding material and industrial discharges plumbed directly to storm-sewer system, including metal fabrication and plating, parts painting, and engine rebuilding. • Natural subsidence and seismic events led to pipeline cracks, leaks, displacement, and groundwater infiltration. • Sediment and debris (such as rocks and roots) accumulated in storm-sewer system.
1970s	• Natural subsidence and seismic events continued leading to storm-sewer pipeline cracks, leaks, and displacement. • Releases continued to storm-sewer system through floor drains, spills, and nonpoint sources. • Accumulation of sediment and debris continued in storm-sewer system.
1980s	• Releases continued to storm-sewer system through floor drains, spills, and nonpoint sources. • Accumulation of sediment and debris continued in storm-sewer system. • Natural subsidence and seismic events continued leading to pipeline cracks, leaks, and displacement.

Table 2-2. Summary of Available Data from IR Site 20 Sampling Locations

Station	Year	Sample Type		Toxicity Tests[a]	Bioaccumulation Tests	Sediment Chemistry Parameters															Tissue Chemistry Parameters									
		Grab	Core			Grain Size	TOC	Oil and Grease	TPH	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	Metals	Radionuclides	Butyltins	Percent Moisture	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	Metals	Percent Moisture	Butyltins
E07	1993/ 1994	X	-	E, N, Me	Laboratory tests with *Macoma*	X	X	X	-	X	X	X	-	-	X	X	X	X	X	X	X	X	X	-	-	X	X	X	X	X
E08	1993/ 1994	X	-	E, N, Me	Laboratory tests with *Macoma*	X	X	X	-	X	X	X	-	-	X	X	X	X	X	X	X	X	X	-	-	X	X	X	X	X
E09	1993/ 1994	X	-	E, N	Laboratory tests with *Macoma*	X	X	X	-	X	X	X	-	-	X	X	X	X	X	X	X	X	X	-	-	X	X	X	X	X
E10	1993/ 1994	X	X	E, N	Laboratory tests with *Macoma*	X	X	X	-	X	X	X	-	-	X	X	X	X	X	X	X	X	X	-	-	X	X	X	X	X
OIH2R	2001	X	-	-	-	X	X	-	X	X	-	-	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH5	2001	X	-	-	-	X	X	-	X	X	-	-	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH10	2001	X	-	-	-	X	X	-	X	X	-	-	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH20	2001	X	-	-	-	X	X	-	X	X	-	-	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH28	2001	X	-	-	-	X	X	-	X	X	-	-	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH51	2001	X	-	-	-	X	X	-	X	X	-	-	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH57	2001	X	-	-	-	X	X	-	X	X	-	-	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C1	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C2	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C3	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C4	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C5	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C6	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C7	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C8	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C9	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C10	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C11	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C12	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C13	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
OIH C14	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-

(a) E = *Eohaustorius estuarius* 10-day bulk sediment bioassay to evaluate percent survival
N = *Neanthes arenaceodentata* 28-day bulk sediment bioassay to evaluate percent survival and percent growth
Me = *Mytilus edulis* embryo development test to evaluate percent survival and percent normal of larvae development
- = sample not collected or parameter not analyzed
X = sample collected and parameter analyzed.

PAH = polynuclear aromatic hydrocarbon
SVOC = semivolatile organic compound
TOC = total organic carbon
TPH = total petroleum hydrocarbons

Table 2-3. Summary of Available Data from IR Site 24 Sampling Locations

Station	Year	Sample Type		Toxicity Tests[a]	Bioaccumulation Tests	Sediment Chemistry Parameters																				Tissue Chemistry Parameters									
		Grab	Core			Grain Size	TOC	SEM/AVS	TPH	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	BOD	Ammonia	Metals	pH	Salinity	Sulfides	Radionuclides	Butyltins	Percent Moisture	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	Metals	Percent Moisture	Butyltins
SS003	1996	X	-	-	-	X	X	X	X	X	X	X	-	-	-	X	X	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
SS004	1996	X	-	-	-	X	X	X	X	X	X	X	-	-	-	X	X	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
SS005	1996	X	-	-	-	X	X	X	X	X	X	X	-	-	-	X	X	X	X	X	X	X	-	X	X	-	-	-	-	-	-	-	-	-	-
SS1	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS2	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS3	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS4	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS5	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS9	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS11	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS13	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS14	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS15	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS16	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS17	1997	X	-			-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS19	1997	X	-			-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS21	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS22	1997	X	-			-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS24	1997	X	-			-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS25	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS26	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS27	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS28	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS29	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS30	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
SS31	1997	X	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
PA-1	1998	X	-	E, N, S	Laboratory tests with *Macoma*	X	X	-	-	X	X	-	X	X	X	X	-	-	X	-	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X
PA-2	1998	X	-	E, N, S	Laboratory tests with *Macoma*	X	X	-	-	X	X	-	X	X	X	X	-	-	X	-	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X
PA-3	1998	X	-	E, N, S	Laboratory tests with *Macoma*	X	X	-	-	X	X	-	X	X	X	X	-	-	X	-	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X

Table 2-3. Summary of Available Data from IR Site 24 Sampling Locations (continued)

Station	Year	Sample Type		Toxicity Tests[a]	Bioaccumulation Tests	Sediment Chemistry Parameters																				Tissue Chemistry Parameters									
		Grab	Core			Grain Size	TOC	SEM/AVS	TPH	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	BOD	Ammonia	Total Metals	pH	Salinity	Sulfides	Radionuclides	Butyltins	Percent Moisture	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	Total Metals	Percent Moisture	Butyltins
PA-4	1998	X	-	E, N, S	Laboratory tests with *Macoma*	X	X	-	-	X	X	-	X	X	X	X	-	-	X	-	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X
PA-5	1998	X	-	E, N, S	Laboratory tests with *Macoma*	X	X	-	-	X	X	-	X	X	X	X	-	-	X	-	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X
PA C-1	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-2	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-3	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-4	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-5	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-
PA C-6	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-7	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-8	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-9	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-10	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-11	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-12	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-13	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-
PA C-14	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-15	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-16	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-
PA C-17	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-18	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-19	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
REF	2005	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-20	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-21	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-22	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-23	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-

Table 2-3. Summary of Available Data from IR Site 24 Sampling Locations (continued)

Station	Year	Sample Type		Toxicity Tests[a]	Bioaccumulation Tests	Sediment Chemistry Parameters																				Tissue Chemistry Parameters									
		Grab	Core			Grain Size	TOC	SEM/AVS	TPH	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	BOD	Ammonia	Total Metals	pH	Salinity	Sulfides	Radionuclides	Butyltins	Percent Moisture	PAHs	SVOCs	PCB Aroclors	PCB Congeners	2,4'-DDx	4,4'-DDx	Pesticides	Total Metals	Percent Moisture	Butyltins
PA C-24	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-25	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-26	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-27	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-28	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-29	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-30	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-
PA C-31	2006	-	X	-	-	X	X	-	-	X	-	X	X	-	-	X	-	-	X	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-

(a) E = *Eohaustorius estuarius* 10-day bulk sediment bioassay to evaluate percent survival
N = *Neanthes arenaceodentata* 28-day bulk sediment bioassay to evaluate percent survival and percent growth
S = *Strongylocentrotus purpuratus* sediment water interface test to evaluate percent survival and percent normal of larvae development

- = sample not collected or parameter not analyzed
X = sample collected and parameter analyzed
BOD = biological ogxygen demand
PAH = polynuclear aromatic hydrocarbon
SVOC = semivolatile organic compound
TOC = total organic carbon
SEM/AVS = simultaneously extracted metals/acid volatile sulfide test
TPH = total petroleum hydrocarbons

Table 4-1. Summary of Inorganic Constituent Results for Surface Sediment at IR Site 20

IR Site 20	1993/4			2001			2005			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Inorganic Constituents (mg/kg)													
ANTIMONY	4/4	21.33	37	10/10	0.363	5.41	8/14	[0.03]	0.47	2[f]	NA	25	410
ARSENIC	4/4	6.933	9.375	10/10	2.89	13.7	14/14	2.32	6.56	8.2	15.3	70	0.25
CADMIUM	3/4	[0.125]	0.9033	7/10	[0.0368]	0.3745	14/14	0.032	0.37	1.2	0.33	9.6	450
CHROMIUM	4/4	98.25	150	10/10	189	1230	14/14	20.5	86.9	81	112	370	450
COPPER	4/4	30.33	56	10/10	5.18	141	14/14	6.34	115	34	68.1	270	41000
LEAD	4/4	17	43	10/10	10.7	225.5	14/14	6.93	91.5	46.7	43.2	218	800
MERCURY	4/4	0.21	0.3825	10/10	0.0066	0.89	14/14	0.0419	8.83	0.15	0.43	0.71	310
NICKEL	4/4	48.75	74	10/10	17.2	288	14/14	12.7	61.4	20.9	112	51.6	20000
SELENIUM	0/4	[0.125]	[0.125]	9/10	[0.023]	0.471	0/14	[0.025]	[0.21]	0.7[f]	0.64	1.4	5100
SILVER	0/4	[0.25]	[0.25]	10/10	0.038	0.288	14/14	0.03	0.263	1	0.58	3.7	5100
ZINC	4/4	101.7	166.7	10/10	32.2	258	14/14	21.3	99.6	150	158	410	100000

NA = not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N - Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M – Effects range-median from Long et al., 1995
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.

Table 4-2. Summary of Inorganic Constituent Results for Subsurface Sediment at IR Site 20

IR Site 20	0-5 cm			5-25 cm			25-50 cm			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Inorganic Constituents (mg/kg)													
ANTIMONY	8/14	[0.03]	0.47	8/14	[0.025]	5.18	9/14	[0.025]	20.9	2[f]	NA	25	410
ARSENIC	14/14	2.32	6.56	14/14	2.49	9.37	14/14	4.06	30.7	8.2	15.3	70	0.25
CADMIUM	14/14	0.032	0.37	14/14	0.058	0.898	14/14	0.149	1	1.2	0.33	9.6	450
CHROMIUM	14/14	20.5	86.9	14/14	24.1	91.1	14/14	33.3	105	81	112	370	450
COPPER	14/14	6.34	115	14/14	9.25	179	14/14	12.1	1290	34	68.1	270	41000
LEAD	14/14	6.93	91.5	14/14	7.67	109	14/14	5.37	1480	46.7	43.2	218	800
MERCURY	14/14	0.0419	8.83	14/14	0.0356	3.84	14/14	0.0095	12.3	0.15	0.43	0.71	310
NICKEL	14/14	12.7	61.4	14/14	15.7	65.3	14/14	25.3	72.4	20.9	112	51.6	20000
SELENIUM	0/14	[0.025]	[0.21]	0/14	[0.02]	[0.21]	2/14	[0.035]	0.54	0.7[f]	0.64	1.4	5100
SILVER	14/14	0.03	0.263	14/14	0.05	0.302	14/14	0.051	0.431	1	0.58	3.7	5100
ZINC	14/14	21.3	99.6	14/14	27.6	490	14/14	31.8	1800	150	158	410	100000

NA = not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N - Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M - Effects range-median from Long et al., 1995.
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.

Table 4-3. Summary of Organic Chemical Results for Surface Sediment at IR Site 20

IR Site 20	1993/4			2001			2005			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Pesticides and PCBs (µg/kg)													
Total PCB[g]	4/4	172.5	4306	10/10	8.85	894.5	14/14	3.3	95.44	22.7	200[h]	180	NA
Total 4,4-DDx[i]	4/4	7.8	40.63	9/10	0.21	482	14/14	1.3	13.92	1.58	7	46.1	NA
Total DDx	NA	NA	NA	9/10	0.81	618.9	14/14	1.695	19.37	1.58[f]	7	46.1	NA
2,4'-DDD	NA	NA	NA	9/10	0.06	15.01	14/14	0.19	3.92	NA	NA	NA	10000
2,4'-DDE	NA	NA	NA	0/10	[0.27]	[0.53]	3/14	[0.015]	0.46	NA	NA	NA	7000
2,4'-DDT	NA	NA	NA	6/10	0.07	134.9	9/14	[0.025]	1.34	NA	NA	NA	7000
4,4'-DDD	4/4	4.067	22.37	9/10	0.1	45.29	14/14	0.57	9.54	2[f]	NA	20	10000
4,4'-DDE	3/4	[1.867]	16.2	9/10	0.05	11.8	14/14	0.37	3.55	2.2	NA	27	7000
4,4'-DDT	0/4	[1.867]	[2.988]	8/10	0.06	471.1	12/14	[0.02]	3.73	1	NA	7	7000
ALDRIN	0/4	[0.4683]	[0.6125]	0/10	[0.27]	[0.53]	0/14	[0.01]	[0.02]	0.2[j]	NA	NA	100
ALPHA-BHC	0/4	[0.4683]	[14.87]	0/10	[0.27]	[0.53]	0/14	[0.02]	[0.03]	0.6[j]	NA	NA	360
ALPHA-CHLORDANE	0/4	[0.4683]	[4.236]	9/10	0.04	3.14	6/14	[0.015]	0.66	0.5[f]	NA	6	6500
DIELDRIN	0/4	[9.333]	[43.67]	5/10	[0.27]	0.78	10/14	[0.015]	0.98	0.02[f]	0.44	8	110
ENDOSULFAN I	0/4	[0.9333]	[1.212]	0/10	[0.27]	[0.53]	0/14	[0.015]	[0.025]	0.93[k]	NA	NA	3700000
ENDOSULFAN II	0/4	[0.9333]	[1.212]	0/10	[0.27]	[0.53]	2/14	[0.055]	0.65	0.93[k]	NA	NA	3700000
ENDOSULFAN SULFATE	0/4	[0.9333]	[1.212]	0/10	[0.27]	[0.53]	0/14	[0.125]	[0.215]	NA	NA	NA	3700000
ENDRIN	0/4	[9.333]	[43.67]	0/10	[0.27]	[0.53]	0/14	[0.015]	[0.025]	0.02[f]	NA	45	180000
ENDRIN ALDEHYDE	0/4	[18.67]	[87.33]	3/10	0.23	13.43	0/14	[0.025]	[0.04]	NA	NA	NA	180000
GAMMA-BHC	0/4	[0.4683]	[16.11]	0/10	[0.27]	[0.53]	0/14	[0.015]	[0.025]	0.32[l]	NA	NA	1700
GAMMA-CHLORDANE	0/4	[0.4683]	[20.17]	2/10	[0.27]	2.15	7/14	[0.015]	0.95	0.5	NA	6	6500
HEPTACHLOR	0/4	[0.4683]	[0.6125]	0/10	[0.27]	[0.53]	0/14	[0.01]	[0.02]	NA	NA	NA	380
HEPTACHLOR EPOXIDE	0/4	[0.4683]	[0.6125]	0/10	[0.27]	[0.53]	0/14	[0.015]	[0.025]	NA	NA	NA	190
PAHs (µg/kg)													
2-METHYLNAPHTHALENE	0/4	[46.38]	[88.75]	10/10	0.32	22.12	14/14	0.27	15	70	19.4	670	NA
ACENAPHTHENE	1/4	[61.67]	113.9	10/10	0.11	62.82	14/14	0.26	20	16	26.6	500	29000000
ACENAPHTHYLENE	1/4	[61.67]	88.88	10/10	2.63	58.16	14/14	0.51	140	44	31.7	640	NA
ANTHRACENE	4/4	93.33	167.5	10/10	0.99	363.5	14/14	1.5	600	85.3	88	1100	100000000
BENZO(A)ANTHRACENE	4/4	140	300	10/10	13.6	797.5	14/14	3.5	1000	261	244	1600	2100
BENZO(A)PYRENE	4/4	228.3	548.5	10/10	20.34	1022	14/14	6.2	1200	430	412	1600	210
BENZO(B)FLUORANTHENE	4/4	283.3	677.5	10/10	14.1	837.6	14/14	6.6	650	NA	371	NA	2100
BENZO(G,H,I)PERYLENE	4/4	142.5	445	10/10	17.99	692.6	14/14	6	650	290[m]	310	NA	NA
BENZO(K)FLUORANTHENE	2/4	[61.67]	248.2	10/10	12.32	891.8	14/14	5	640	24[j]	258	NA	1300

Table 4-3. Summary of Organic Chemical Results for Surface Sediment at IR Site 20 (continued)

IR Site 20	1993/4			2001			2005			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
CHRYSENE	4/4	191.7	622.5	10/10	15.73	1009	14/14	5.9	1300	384	289	2800	13000
DIBENZO(A,H)ANTHRACENE	1/4	[61.67]	96.88	10/10	1.52	175.8	14/14	0.75	120	63.4	32.7	260	210
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	14/14	0.18	13	2290[n]	NA	NA	1600000
FLUORANTHENE	4/4	366.2	908.9	10/10	24.28	1426	14/14	7.4	2500	600	514	5100	22000000
FLUORENE	1/4	[31.33]	110.1	10/10	0.19	80.04	14/14	0.39	130	19	25.3	540	26000000
INDENO(1,2,3-CD)PYRENE	4/4	140	379.4	10/10	15.39	686.7	14/14	5.3	680	78[n]	382	—	2100
NAPHTHALENE	0/4	[46.38]	[88.75]	10/10	1.74	43.61	14/14	0.64	28	160	55.8	2100	4200
PERYLENE	NA	NA	NA	10/10	6.18	276.4	NA	NA	NA	NA	145	NA	NA
PHENANTHRENE	4/4	238.3	986	10/10	1.73	802.2	14/14	3.9	1600	240	237	1500	NA
PYRENE	4/4	406.7	1098	10/10	40.66	1504	14/14	9.4	3200	665	665	2600	29000000
Total LPAH (6)[o]	4/4	548	1492	10/10	8.18	1410	14/14	7.2	2513	NA	NA	NA	NA
Total HPAH (6)[p]	4/4	1425	3569	10/10	133.3	5934	14/14	33.15	9320	1700	3060	9600	NA
Organotins (µg/kg)													
TRIBUTYLTIN	4/4	25.5	37.5	NA	NA	NA	14/14	1.4	59	25.1[q]	NA	NA	180000

NA = Not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N - Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M - Effects range-median from Long et al., 1995.
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.
(g) Total PCB is based on the sum of detected concentrations. The sum is based on 7 Aroclors prior to 1998 when PCBs were quantified using an Aroclor method, and is based on 2 times the sum of 20 congeners beginning in 1998 when PCBs analyses were quantified using a congener method. See Section 4.1.1 for lists of analytes in the sums.
(h) Upper-bound estimate of nearshore ambient as recommended by U.S. EPA, 2004b.
(i) Total DDx is based on the sum of detected concentrations of 3 isomers (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT). The 2,4'DDx isomers were not measured prior to 1998, so the sum based on 4,4-DDx isomers is used as a surrogate to measure Total DDx.
(j) Freshwater LEL (Persaud et al., 1993). One-tenth of the LEL was used as the screening value.
(k) EqP-derived TRV based on 1% OC, 4.1 Kow (U.S. EPA, 1995), and marine AWQC.
(l) TEL (MacDonald et al., 1996).
(m) Freshwater ERL based on 14-day *C. riparius* test (U.S. EPA, 1996).
(n) EqP-derived TRV based on 1% OC, 4.12 Kow (Jones et al., 1997), and freshwater toxicity data.
(o) Total LPAH (6) is based on the sum of the detected concentrations of 6 low-molecular-weight PAHs (Acenapthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, Phenanthrene). These are 6 of the 7 constituents used by Long to calculate the LPAH ER-L and ER-M. The seventh constituent, 2-Methylnaphthalene, was not measured in IR Site 24 in 2005, so the sum based on 6 constituents was chosen to provide consistency across all sampling locations.
(p) Total HPAH (6) is based on the sum of the detected concentrations of 6 high-molecular-weight PAHs (Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Pyrene). These were the 6 constituents used by Long to calculate the HPAH ER-L and ER-M.
(q) Value reported by Weston, 1996.

Table 4-4. Summary of Organic Chemical Results for Subsurface Sediment at IR Site 20

IR Site 20	0-5 cm			5-25 cm			25-50 cm			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Pesticides and PCBs (µg/kg)													
Total PCB[g]	14/14	3.3	95.44	14/14	1.19	354.2	13/13	0.97	146.6	22.7	200[h]	180	NA
Total 4,4-DDx[i]	14/14	1.3	13.92	14/14	1.285	82.75	13/13	0.85	25.73	1.58	7	46.1	NA
Total DDx[i]	14/14	1.695	19.37	14/14	1.37	109.3	13/13	0.92	28.57	1.58[f]	7	46.1	10000
2,4'-DDD	14/14	0.19	3.92	10/14	[0.02]	23.98	11/13	[0.025]	5.51	NA	NA	NA	7000
2,4'-DDE	3/14	[0.015]	0.46	4/14	[0.015]	0.49	3/13	[0.015]	0.47	NA	NA	NA	7000
2,4'-DDT	9/14	[0.025]	1.34	7/14	[0.025]	2.56	4/13	[0.025]	1.15	NA	NA	NA	10000
4,4'-DDD	14/14	0.57	9.54	14/14	0.49	58.48	13/13	0.48	15.93	2[f]	NA	20	7000
4,4'-DDE	14/14	0.37	3.55	14/14	0.39	10.19	13/13	0.35	4.3	2.2	NA	27	7000
4,4'-DDT	12/14	[0.02]	3.73	9/14	[0.015]	14.08	7/13	[0.015]	20.32	1	NA	7	NA
ALDRIN	0/14	[0.01]	[0.02]	0/14	[0.01]	[0.02]	0/13	[0.01]	[0.02]	0.2[j]	NA	NA	100
ALPHA-BHC	0/14	[0.02]	[0.03]	0/14	[0.02]	[0.03]	0/13	[0.02]	[0.035]	0.6[j]	NA	NA	360
ALPHA-CHLORDANE	6/14	[0.015]	0.66	5/14	[0.015]	0.88	5/13	[0.02]	1.12	0.5[f]	NA	6	6500
DIELDRIN	10/14	[0.015]	0.98	10/14	[0.015]	3.34	7/13	[0.015]	1.49	0.02[f]	0.44	8	110
ENDOSULFAN I	0/14	[0.015]	[0.025]	0/14	[0.015]	[0.02]	0/13	[0.015]	[0.025]	0.93[k]	NA	NA	3700000
ENDOSULFAN II	2/14	[0.055]	0.65	4/14	[0.06]	1.36	0/13	[0.055]	[0.1]	0.93[k]	NA	NA	3700000
ENDOSULFAN SULFATE	0/14	[0.125]	[0.215]	0/14	[0.13]	[0.205]	0/13	[0.13]	[0.23]	NA	NA	NA	3700000
ENDRIN	0/14	[0.015]	[0.025]	0/14	[0.015]	[0.025]	0/13	[0.015]	[0.025]	0.02[f]	NA	45	180000
ENDRIN ALDEHYDE	0/14	[0.025]	[0.04]	1/14	[0.025]	2.54	0/13	[0.025]	[0.045]	NA	NA	NA	180000
GAMMA-BHC	0/14	[0.015]	[0.025]	0/14	[0.015]	[0.02]	0/13	[0.015]	[0.025]	0.32[j]	NA	NA	1700
GAMMA-CHLORDANE	7/14	[0.015]	0.95	6/14	[0.015]	1.03	4/13	[0.015]	1.42	0.5	NA	6	6500
HEPTACHLOR	0/14	[0.01]	[0.02]	0/14	[0.01]	[0.02]	0/13	[0.01]	[0.02]	NA	NA	NA	380
HEPTACHLOR EPOXIDE	0/14	[0.015]	[0.025]	0/14	[0.015]	[0.02]	0/13	[0.015]	[0.025]	NA	NA	NA	190
PAHs (µg/kg)													
2-METHYLNAPHTHALENE	14/14	0.27	15	14/14	0.24	270	14/14	0.45	26	70	19.4	670	NA
ACENAPHTHENE	14/14	0.26	20	13/14	[0.09]	130	14/14	0.18	100	16	26.6	500	29000000
ACENAPHTHYLENE	14/14	0.51	140	14/14	0.41	870	14/14	0.2	280	44	31.7	640	NA
ANTHRACENE	14/14	1.5	600	14/14	0.67	2900	14/14	0.75	450	85.3	88	1100	100000000
BENZO(A)ANTHRACENE	14/14	3.5	1000	14/14	1.6	2200	14/14	1.3	2000	261	244	1600	2100
BENZO(A)PYRENE	14/14	6.2	1200	14/14	2.5	2100	14/14	3.1	3500	430	412	1600	210
BENZO(B)FLUORANTHENE	14/14	6.6	650	14/14	2	1200	14/14	3.6	3500	NA	371	NA	2100
BENZO(G,H,I)PERYLENE	14/14	6	650	14/14	2.4	1500	14/14	2.9	2100	290[m]	310	NA	NA
BENZO(K)FLUORANTHENE	14/14	5	640	14/14	1.8	1700	14/14	2.8	2400	24[j]	258	NA	1300

Table 4-4. Summary of Organic Chemical Results for Subsurface Sediment at IR Site 20 (continued)

IR Site 20	0-5 cm			5-25 cm			25-50 cm			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
CHRYSENE	14/14	5.9	1300	14/14	2.4	2800	14/14	3.9	2100	384	289	2800	13000
DIBENZO(A,H)ANTHRACENE	14/14	0.75	120	14/14	0.22	270	14/14	0.42	580	63.4	32.7	260	210
DIBENZOFURAN	14/14	0.18	13	13/14	[0.115]	98	14/14	0.3	58	2290[n]	NA	NA	1600000
FLUORANTHENE	14/14	7.4	2500	14/14	4.4	5200	14/14	3.2	2300	600	514	5100	22000000
FLUORENE	14/14	0.39	130	14/14	0.44	1400	14/14	0.59	130	19	25.3	540	26000000
INDENO(1,2,3-CD)PYRENE	14/14	5.3	680	14/14	2.1	1500	14/14	2.3	2300	78[n]	382	—	2100
NAPHTHALENE	14/14	0.64	28	14/14	0.46	170	14/14	0.55	46	160	55.8	2100	4200
PHENANTHRENE	14/14	3.9	1600	14/14	2.9	7300	14/14	2.2	1000	240	237	1500	NA
PYRENE	14/14	9.4	3200	14/14	5.6	5900	14/14	3.8	4700	665	665	2600	NA
Total LPAH (6)[o]	14/14	7.2	2513	14/14	4.97	12680	14/14	4.47	1999	NA	NA	NA	29000000
Total HPAH (6)[p]	14/14	33.15	9320	14/14	16.72	17470	14/14	15.72	15180	1700	3060	9600	NA
Organotins (µg/kg)													
TRIBUTYLTIN	14/14	1.4	59	14/14	0.65	76	11/14	[0.0445]	31	25.1[q]	NA	NA	180000

NA = not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N - Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M - Effects range-median from Long et al., 1995.
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.
(g) Total PCB is based on the sum of detected concentrations. The sum is based on 7 Aroclors prior to 1998 when PCBs were quantified using an Aroclor method, and is based on 2 times the sum of 20 congeners beginning in 1998 when PCBs analyses were quantified using a congener method. See Section 4.1.1 for lists of analytes in the sums.
(h) Upper-bound estimate of nearshore ambient as recommended by U.S. EPA, 2004b.
(i) Total DDx is based on the sum of detected concentrations of 6 isomers (2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT). Total 4,4-DDx is based on the sum of detected concentrations of 3 isomers (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT). The 2,4'DDx isomers were not measured prior to 1998, so the sum based on 4,4-DDx isomers is used as a surrogate to measure Total DDx.
(j) Freshwater LEL (Persaud et al., 1993). One-tenth the LEL was used as the screening value.
(k) EqP-derived TRV based on 1% OC, 4.1 Kow (U.S. EPA, 1995), and marine AWQC.
(l) TEL (MacDonald et al., 1996).
(m) Freshwater ERL based on 14-day *C. riparius* test (U.S. EPA, 1996).
(n) EqP-derived TRV based on 1% OC, 4.12 Kow (Jones et al., 1997), and freshwater toxicity data.
(o) Total LPAH (6) is based on the sum of the detected concentrations of 6 low-molecular-weight PAHs (Acenapthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, Phenanthrene). These are 6 of the 7 constituents used by Long to calculate the LPAH ER-L and ER-M. The seventh constituent, 2-Methylnaphthalene, was not measured in IR Site 24 in 2005, so the sum based on 6 constituents was chosen to provide consistency across all sampling locations.
(p) Total HPAH (6) is based on the sum of the detected concentrations of 6 high-molecular-weight PAHs (Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Pyrene). These were the 6 constituents used by Long to calculate the HPAH ER-L and ER-M.
(q) Value reported by Weston, 1996.

Table 4-5. Summary of Background Comparison Test Results for Inorganic Constituents at IR Site 20

IR Site 20 Background Comparison Analyte	Ambient Data Set[a]	No. of Ambient Samples	Test Results[b] All/Fine/Coarse	Test Results All/Fine/Coarse	Carry Forward?
			All Years	2005 only	
ANTIMONY[c]	BPTCP	21	F/F/P	P/P/P	Yes
ARSENIC	RMP, BPTCP	199	P/P/P	P/P/P	No
CADMIUM	RMP, BPTCP	199	P/P/P	P/P/P	No
CHROMIUM[d]	RMP	178	F/P/P	P/P/P	Yes
COPPER	RMP, BPTCP	194	F/P/P	P/P/P	Yes
LEAD	RMP, BPTCP	199	F/P/F	P/P/F	Yes
MERCURY	RMP, BPTCP	211	F/P/F	P/P/F	Yes
NICKEL	RMP, BPTCP	198	P/P/P	P/P/P	No
SELENIUM	RMP, BPTCP	199	P/P/P	P/P/P	No
SILVER	RMP, BPTCP	180	P/P/P	P/P/P	No
ZINC	RMP, BPTCP	199	F/P/P	P/P/P	No

(a) BPTCP = Bay Protection and Toxic Cleanup Program; RMP = (San Francisco Estuary Institute) Regional Monitory Program
(b) Test results are presented for all samples (including 2001 locations with no grain size analyses), for fine stations (>40% fines), and for coarse stations (<40% fines).
P = pass. No statistically significant results for any of the distribution shift tests.
F = fail. One or more statistical tests indicate a shifted site distribution.
NA = not applicable; too few samples or too few detects to run statistical tests.
(c) Antimony was not analyzed in RMP samples.
(d) Chromium results from RMP are used for reference set. The BPTCP analytical method was not considered comparable.

Table 4-6. Summary of Background Comparison Test Results for Organic Chemicals at IR Site 20

IR Site 20 Background Comparison	Ambient Data Set[a]	No. of Ambient Samples	Test Results[b] All/2005	Carry Forward?
Pesticides and Tributyltin				
ALDRIN	RMP, BPTCP	185	NA/NA	Yes
ALPHA-BHC	RMP, BPTCP	199	NA/NA	Yes
ALPHA-CHLORDANE	RMP, BPTCP	199	NA/NA	Yes
DIELDRIN	RMP, BPTCP	199	NA/NA	Yes
ENDOSULFAN I	BPTCP	21	NA/NA	Yes
ENDOSULFAN II	BPTCP	21	NA/NA	Yes
ENDOSULFAN SULFATE	BPTCP	21	NA/NA	Yes
ENDRIN	RMP, BPTCP	185	NA/NA	Yes
ENDRIN ALDEHYDE	none	0	NA/NA	Yes
GAMMA-BHC (LINDANE)	RMP, BPTCP	199	NA/NA	Yes
GAMMA-CHLORDANE	RMP	178	NA/NA	Yes
HEPTACHLOR	RMP, BPTCP	185	NA/NA	Yes
HEPTACHLOR EPOXIDE	RMP, BPTCP	199	NA/NA	Yes
TRIBUTYLTIN	BPTCP	19	F/F	Yes
Sums of Analytes				
Total 4,4-DDx	RMP, BPTCP	199	F/F	Yes
Total DDx	Navy Ref	10	F/F	Yes
Total PCB	RMP, BPTCP	211	F/F	Yes
Total LPAH (6)	RMP, BPTCP	178	F/F	Yes
Total HPAH (6)	RMP, BPTCP	197	F/F	Yes
Total HPAH (10)	RMP, BPTCP	197	F/F	Yes
Total PAH (12)	Navy Ref	10	F/F	Yes
PAHs and DDxs				
2-METHYLNAPHTHALENE	RMP, BPTCP	185	P/P	No
ACENAPHTHENE	RMP, BPTCP	185	P/P	No
ACENAPHTHYLENE	RMP, BPTCP	185	F/F	Yes
ANTHRACENE	RMP, BPTCP	199	F/F	Yes
FLUORENE	RMP, BPTCP	185	F/P	Yes
NAPHTHALENE	RMP, BPTCP	160	P/P	No
PHENANTHRENE	RMP, BPTCP	192	F/F	Yes
BENZO(A)ANTHRACENE	RMP, BPTCP	199	F/F	Yes
BENZO(A)PYRENE	RMP, BPTCP	199	F/F	Yes
BENZO(B)FLUORANTHENE	RMP, BPTCP	199	F/P	Yes
BENZO(G,H,I)PERYLENE	RMP, BPTCP	199	P/P	No
BENZO(K)FLUORANTHENE	RMP, BPTCP	199	F/F	Yes
CHRYSENE	RMP, BPTCP	199	F/F	Yes
DIBENZO(A,H)ANTHRACENE	RMP, BPTCP	199	F/F	Yes
FLUORANTHENE	RMP, BPTCP	197	F/F	Yes
INDENO(1,2,3-CD)PYRENE	RMP, BPTCP	199	F/P	Yes
PYRENE	RMP, BPTCP	197	F/F	Yes
2,4'-DDD	RMP, BPTCP	199	NA/NA	Yes
2,4'-DDE	RMP, BPTCP	199	NA/NA	Yes
2,4'-DDT	RMP, BPTCP	185	NA/NA	Yes
4,4'-DDD	RMP, BPTCP	199	F/F	Yes
4,4'-DDE	RMP, BPTCP	199	F/P	Yes
4,4'-DDT	RMP, BPTCP	199	NA/NA	Yes

(a) BPTCP = Bay Protection and Toxic Cleanup Program; RMP = (San Francisco Estuary Institute) Regional Monitory Program.

(b) Test results are presented for all samples (including 2001 locations with no grain size analyses), for fine stations (>40% fines), and for coarse stations (<40% fines).

P = pass. No statistically significant results for any of the distribution shift tests.

F = fail. One or more statistical tests indicate a shifted site distribution.

NA = not applicable; too few samples or too few detects to run statistical tests.

Table 4-7. Summary of Inorganic Constituent Results for Surface Sediment at IR Site 24

IR Site 24	1996			1997			1998			2005/2006			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Inorganics (mg/kg)																
ANTIMONY	1/2	[1.05]	1.5	—	—	—	5/5	0.2	0.78	31/31	0.07	2.86	2[f]	NA	25	410
ARSENIC	3/3	6	20.7	—	—	—	5/5	7.2	10	31/31	2.88	15.1	8.2	15.3	70	0.25
CADMIUM	2/3	[0.125]	39.3	—	—	—	5/5	0.28	12.7	31/31	0.142	37.8	1.2	0.33	9.6	450
CHROMIUM	3/3	54.9	290	14/14	167	426	5/5	60	219	31/31	41.7	380	81	112	370	450
COPPER	3/3	79.8	206	14/14	31.1	294	5/5	76	184	31/31	18.5	247	34	68.1	270	41000
LEAD	3/3	19.1	200	14/14	19.2	191	5/5	28.7	155	31/31	12.2	498	46.7	43.2	218	800
MERCURY	3/3	0.16	0.76	—	—	—	5/5	0.2	0.4	31/31	0.055	0.358	0.15	0.43	0.71	310
NICKEL	3/3	43.5	110	14/14	59.9	166	5/5	50	82.4	31/31	31.5	143	20.9	112	51.6	20000
SELENIUM	0/3	[0.49]	[1.05]	—	—	—	5/5	0.7	1	15/31	[0.065]	1.69	0.7[f]	0.64	1.4	5100
SILVER	2/3	[0.19]	12.9	—	—	—	5/5	0.29	8.77	31/31	0.11	47	1	0.58	3.7	5100
ZINC	3/3	130	258	14/14	84.1	383	5/5	115	277	31/31	41.1	723	150	158	410	100000

NA = not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N - Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M - Effects range-median from Long et al., 1995.
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.

Table 4-8. Summary of Inorganic Constituent Results for Subsurface Sediment at IR Site 24

IR Site 24	0-5 cm			5-25 cm			25-50 cm			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Inorganics (mg/kg)													
ANTIMONY	31/31	0.07	2.86	31/31	0.07	3.46	31/31	0.07	2.16	2[f]	NA	25	410
ARSENIC	31/31	2.88	15.1	31/31	2.41	11.8	31/31	2.34	12.6	8.2	15.3	70	0.25
CADMIUM	31/31	0.142	37.8	31/31	0.129	188	31/31	0.282	282	1.2	0.33	9.6	450
CHROMIUM	31/31	41.7	380	31/31	34.3	799	31/31	33.1	753	81	112	370	450
COPPER	31/31	18.5	247	31/31	13.8	372	31/31	10.3	131	34	68.1	270	41000
LEAD	31/31	12.2	498	31/31	7.73	2290	31/31	10.8	1600	46.7	43.2	218	800
MERCURY	31/31	0.055	0.358	31/31	0.066	0.742	31/31	0.0023	0.32	0.15	0.43	0.71	310
NICKEL	31/31	31.5	143	31/31	26.8	180	31/31	25.6	127	20.9	112	51.6	20000
SELENIUM	15/31	[0.065]	1.69	11/31	[0.04]	0.51	7/31	[0.03]	0.46	0.7[f]	0.64	1.4	5100
SILVER	31/31	0.11	47	31/31	0.099	70.6	31/31	0.09	35.2	1	0.58	3.7	5100
ZINC	31/31	41.1	723	31/31	31.3	632	31/31	26.2	233	150	158	410	100000

NA = not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N - Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M - Effects range-median from Long et al., 1995.
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.

Table 4-9. Summary of Organic Chemical Results for Surface Sediment at IR Site 24

IR Site 24	1996			1997			1998			2005/2006			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Pesticides and PCBs (µg/kg)																
Total PCB[g]	2/3	[520]	635.5	NA	NA	NA	5/5	17.37	434.5	31/31	9.27	3140	22.7	200[h]	180	NA
Total 4,4-DDx[i]	2/3	[19.5]	32.6	NA	NA	NA	5/5	2.009	7.405	31/31	1.86	119	1.58[f]	7	46.1	NA
Total DDx[i]	NA	NA	NA	NA	NA	NA	5/5	2.738	18.89	31/31	1.92	166	1.58[f]	7	46.1	NA
2,4'-DDD	NA	NA	NA	NA	NA	NA	2/5	[0.17]	1.6	12/31	[0.02]	47.73	NA	NA	NA	10000
2,4'-DDE	NA	NA	NA	NA	NA	NA	2/5	[0.245]	11	0/31	[0.015]	[0.045]	NA	NA	NA	7000
2,4'-DDT	NA	NA	NA	NA	NA	NA	0/5	[0.245]	[0.31]	1/31	[0.025]	2.9	NA	NA	NA	7000
4,4'-DDD	2/3	[6.5]	15	NA	NA	NA	4/5	[0.395]	6.1	31/31	0.93	99.9	2[f]	NA	20	10000
4,4'-DDE	2/3	[6.5]	9.6	NA	NA	NA	3/5	[0.3]	1.4	31/31	0.41	13.1	2.2	NA	27	7000
4,4'-DDT	2/3	[6.5]	10	NA	NA	NA	0/3	[0.34]	[0.55]	22/31	[0.01]	21.4	1	NA	7	7000
ALDRIN	1/3	[1.4]	3.5	NA	NA	NA	2/5	[0.155]	0.39	0/31	[0.01]	[0.04]	0.2[j]	NA	NA	100
ALPHA-BHC	0/3	[0.9]	[3.35]	NA	NA	NA	NA	NA	NA	0/31	[0.02]	[0.065]	0.6[j]	NA	NA	360
ALPHA-CHLORDANE	2/3	[3.35]	23	NA	NA	NA	0/5	[0.145]	[0.19]	24/31	[0.015]	1.11	0.5[f]	NA	6	6500
DIELDRIN	2/3	4.1	6.3	NA	NA	NA	1/5	[0.165]	0.38	19/31	[0.025]	22.4	0.02[f]	0.44	8	110
ENDOSULFAN I	1/3	[0.9]	35	NA	NA	NA	NA	NA	NA	0/31	[0.01]	[0.045]	0.93[k]	NA	NA	3700000
ENDOSULFAN II	2/3	3.2	4.2	NA	NA	NA	NA	NA	NA	0/31	[0.01]	[0.19]	0.93[k]	NA	NA	3700000
ENDOSULFAN SULFATE	0/3	[1.75]	[6.5]	NA	NA	NA	NA	NA	NA	0/31	[0.145]	[0.435]	NA	NA	NA	3700000
ENDRIN	1/3	[2.75]	4.2	NA	NA	NA	0/5	[0.145]	[0.19]	0/31	[0.01]	[0.05]	0.02[f]	NA	45	180000
ENDRIN ALDEHYDE	1/3	[2.75]	4	NA	NA	NA	NA	NA	NA	0/31	[0.015]	[0.085]	NA	NA	NA	180000
GAMMA-BHC	0/3	[0.9]	[3.35]	NA	NA	NA	0/3	[0.12]	[0.13]	0/31	[0.01]	[0.045]	0.32[j]	NA	NA	1700
GAMMA-CHLORDANE	1/3	[1.4]	3.1	NA	NA	NA	NA	NA	NA	12/31	[0.01]	7.02	0.5	NA	6	6500
HEPTACHLOR	0/3	[0.9]	[3.35]	NA	NA	NA	0/5	[0.145]	[0.19]	0/31	[0.015]	[0.04]	NA	NA	NA	380
HEPTACHLOR EPOXIDE	1/3	[0.9]	1.4	NA	NA	NA	0/5	[0.145]	[0.19]	0/31	[0.02]	[0.045]	NA	NA	NA	190
PAHs (µg/kg)																
2-METHYLNAPHTHALENE	1/3	[175]	6000	NA	NA	NA	NA	NA	NA	12/12	7.01	483	70	19.4	670	NA
ACENAPHTHENE	2/3	[175]	34000	19/19	7.3	2000	5/5	9.6	600	31/31	5.86	1480	16	26.6	500	29000000
ACENAPHTHYLENE	0/3	[175]	[650]	19/19	1.7	260	5/5	17	450	31/31	7.71	309	44	31.7	640	NA

Table 4-9. Summary of Organic Chemical Results for Surface Sediment at IR Site 24 (continued)

IR Site 24	1996			1997			1998			2005/2006			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
ANTHRACENE	1/3	[175]	2900	19/19	14	10000	5/5	100	2400	31/31	55.1	11900	85.3	88	1100	100000000
BENZO(A)ANTHRACENE	2/3	[175]	20000	19/19	35	24000	5/5	280	4500	31/31	58.0	5090	261	244	1600	2100
BENZO(A)PYRENE	2/3	[175]	8900	19/19	45	11000	5/5	180	3100	31/31	152	4190	430	412	1600	210
BENZO(B)FLUORANTHENE	2/3	[175]	13000	19/19	39	20000	5/5	280	5000	31/31	123	4100	NA	371	NA	2100
BENZO(E)PYRENE	NA	NA	NA	19/19	36	7800	5/5	120	2400	19/19	111	877	NA	294	NA	—
BENZO(G,H,I)PERYLENE	2/3	[175]	1300	19/19	32	3400	5/5	85	750	31/31	104	1250	290[m]	310	NA	NA
BENZO(K)FLUORANTHENE	1/3	[175]	1400	19/19	16	5400	5/5	82	1900	31/31	61.1	2620	24[l]	258	NA	1300
BIPHENYL	NA	NA	NA	19/19	3.2	91	5/5	3.7	57	19/19	7.3	40.2	NA	12.9	NA	23000000
CHRYSENE	2/3	[175]	23000	19/19	42	23000	5/5	230	5100	31/31	108.9	6550	384	289	2800	13000
DIBENZO(A,H)ANTHRACENE	0/3	[175]	[650]	19/19	2.4	1200	5/5	12	200	31/31	15.01	394	63.4	32.7	260	210
DIBENZOFURAN	NA	NA	NA	19/19	4	790	NA	NA	NA	19/19	10.38	164	2290[n]	NA	NA	1600000
DIBENZOTHIOPHENE	NA	NA	NA	19/19	3.5	590	5/5	10	160	19/19	7.76	65.1	NA	NA	NA	NA
FLUORANTHENE	2/3	[175]	78000	19/19	77	45000	4/5	550	10000	31/31	234.4	18500	600	514	5100	22000000
FLUORENE	2/3	[175]	42000	19/19	7.8	1800	5/5	17	510	31/31	8.56	2221	19	25.3	540	26000000
INDENO(1,2,3-CD)PYRENE	2/3	[175]	1500	19/19	28	4700	5/5	98	880	31/31	100	2080	78[n]	382	NA	2100
NAPHTHALENE	1/3	[175]	4400	19/19	15	290	5/5	6.1	38	28/31	9.22	378	160	55.8	2100	4200
PERYLENE	NA	NA	NA	19/19	16	2500	5/5	58	590	19/19	61.18	807	NA	145	NA	NA
PHENANTHRENE	2/3	[175]	160000	19/19	35	10000	5/5	150	2200	31/31	56.24	10950	240	237	1500	NA
PYRENE	2/3	[175]	76000	19/19	87	48000	4/5	570	9900	31/31	246.2	17900	665	665	2600	29000000
Total LPAH (6)[o]	2/3	[1050]	241000	19/19	82.2	20750	5/5	306	5288	31/31	157	25700	552	434	3160	NA
Total HPAH (6)[p]	2/3	[1050]	206200	19/19	288.4	152200	5/5	2012	32800	31/31	857	52700	1700	3060	9600	NA
Organotins (µg/kg)																
TRIBUTYLTIN	1/3	[1.5]	6.5	NA	NA	NA	5/5	9	76	31/31	0.78	890	25.1[q]	NA	NA	180000
Sediment Quality Parameters (%)																
TOTAL ORGANIC CARBON	3/3	0.205	4.36	NA	NA	NA	5/5	1.72	3.67	31/31	0.41	3.04	NA	NA	NA	NA
FINES	3/3	22.5	72.9	NA	NA	NA	5/5	53.2	93.7	19/19	24.39	99.81	NA	NA	NA	NA
Petroleum Hydrocarbons (mg/kg)																
DRO	2/3	[8.5]	1500	NA	NA	NA	NA	NA	NA	19/19	16.85	608.2	NA	NA	NA	NA

Table 4-9. Summary of Organic Chemical Results for Surface Sediment at IR Site 24 (continued)

IR Site 24	1996			1997			1998			2005/2006			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Radionuclides (pCi/g)																
RADIUM-226	NA	NA	NA	NA	NA	NA	NA	NA	NA	3/3	0.28	0.32	NA	NA	NA	NA
RADIUM-228	NA	NA	NA	NA	NA	NA	NA	NA	NA	0/3	[0.135]	[0.215]	NA	NA	NA	NA

NA = not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N - Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M - Effects range-median from Long et al., 1995.
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.
(g) Total PCB is based on the sum of detected concentrations. The sum is based on 7 Aroclors prior to 1998 when PCBs were quantified using an Aroclor method, and is based on 2 times the sum of 20 congeners beginning in 1998 when PCBs analyses were quantified using a congener method. See Section 4.1.1 for lists of analytes in the sums.
(h) Upper-bound estimate of nearshore ambient as recommended by U.S. EPA, 2004b.
(i) Total DDx is based on the sum of detected concentrations of 6 isomers (2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT). Total 4,4-DDx is based on the sum of detected concentrations of 3 isomers (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT). The 2,4'DDx isomers were not measured prior to 1998, so the sum based on 4,4-DDx isomers is used as a surrogate to measure Total DDx.
(j) Freshwater LEL (Persaud et al. 1993). One-tenth the LEL was used as the screening value.
(k) EqP-derived TRV based on 1% OC, 4.1 Kow (U.S. EPA, 1995), and marine AWQC.
(l) TEL (MacDonald et al., 1996).
(m) Freshwater ERL based on 14-day *C. riparius* test (U.S. EPA, 1996).
(n) EqP-derived TRV based on 1% OC, 4.12 Kow (Jones et al., 1997), and freshwater toxicity data.
(o) Total LPAH (6) is based on the sum of the detected concentrations of 6 low-molecular-weight PAHs (Acenapthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, Phenanthrene). These are 6 of the 7 constituents used by Long to calculate the LPAH ER-L and ER-M. The seventh constituent, 2-Methylnaphthalene, was not measured in IR Site 24 in 2005, so the sum based on 6 constituents was chosen to provide consistency across all sampling locations.
(p) Total HPAH (6) is based on the sum of the detected concentrations of 6 high-molecular-weight PAHs (Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Pyrene). These were the 6 constituents used by Long to calculate the HPAH ER-L and ER-M.
(q) Value reported by Weston, 1996.

Table 4-10. Summary of Organic Chemical Results for Subsurface Sediment at IR Site 24

IR Site 24	0-5 cm			5-25 cm			25-50 cm			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
Pesticides and PCBs (µg/kg)													
Total PCB[g]	31/31	9.27	3140	31/31	12.4	4770	31/31	6.57	2430	22.7	200[h]	180	NA
Total 4,4-DDx[i]	31/31	1.86	119	31/31	1.53	96.1	31/31	0.23	64.2	1.58[f]	7	46.1	NA
Total DDx[i]	31/31	1.92	166	31/31	1.59	132	31/31	0.45	85.5	1.58[f]	7	46.1	NA
2,4'-DDD	12/31	[0.02]	47.7	12/31	[0.015]	35.4	12/31	[0.015]	21.3	NA	NA	NA	10000
2,4'-DDE	0/31	[0.015]	[0.045]	0/31	[0.015]	[0.03]	0/31	[0.015]	[0.03]	NA	NA	NA	7000
2,4'-DDT	1/31	[0.025]	2.9	0/31	[0.025]	[0.055]	0/31	[0.025]	[0.05]	NA	NA	NA	7000
4,4'-DDD	31/31	0.93	99.9	31/31	0.55	80.3	31/31	0.16	53.8	2[f]	NA	20	10000
4,4'-DDE	31/31	0.41	13.1	31/31	0.54	18.0	29/31	[0.1]	10.4	2.2	NA	27	7000
4,4'-DDT	22/31	[0.01]	21.4	19/31	[0.01]	1.9	16/31	[0.01]	1.52	1	NA	7	7000
ALDRIN	0/31	[0.01]	[0.04]	0/31	[0.01]	[0.025]	0/31	[0.01]	[0.025]	0.2[j]	NA	NA	100
ALPHA-BHC	0/31	[0.02]	[0.065]	0/31	[0.02]	[0.045]	0/31	[0.02]	[0.04]	0.6[j]	NA	NA	360
ALPHA-CHLORDANE	24/31	[0.015]	1.11	24/31	[0.01]	3.98	19/31	[0.01]	1.01	0.5[f]	NA	6	6500
DIELDRIN	19/31	[0.025]	22.4	18/31	[0.025]	10.6	14/31	[0.01]	3.41	0.02[f]	0.44	8	110
ENDOSULFAN I	0/31	[0.01]	[0.045]	0/31	[0.01]	[0.03]	0/31	[0.01]	[0.03]	0.93[k]	NA	NA	3700000
ENDOSULFAN II	0/31	[0.01]	[0.19]	0/31	[0.01]	[0.13]	0/31	[0.01]	[0.125]	0.93[k]	NA	NA	3700000
ENDOSULFAN SULFATE	0/31	[0.145]	[0.435]	0/31	[0.015]	[0.305]	0/31	[0.13]	[0.285]	—	NA	NA	3700000
ENDRIN	0/31	[0.01]	[0.05]	0/31	[0.01]	[0.035]	0/31	[0.01]	[0.035]	0.02[f]	NA	45	180000
ENDRIN ALDEHYDE	0/31	[0.015]	[0.085]	0/31	[0.015]	[0.06]	0/31	[0.015]	[0.055]	NA	NA	NA	180000
GAMMA-BHC	0/31	[0.01]	[0.045]	0/31	[0.01]	[0.03]	0/31	[0.01]	[0.03]	0.32[f]	NA	NA	1700
GAMMA-CHLORDANE	12/31	[0.01]	7.02	15/31	[0.01]	4.34	14/31	[0.01]	5.53	0.5	NA	6	6500
HEPTACHLOR	0/31	[0.015]	[0.04]	0/31	[0.01]	[0.025]	0/31	[0.01]	[0.025]	NA	NA	NA	380
HEPTACHLOR EPOXIDE	0/31	[0.02]	[0.045]	0/31	[0.015]	[0.03]	0/31	[0.015]	[0.03]	NA	NA	NA	190
PAHs (µg/kg)													
BENZO(E)PYRENE	19/19	110.6	877.4	19/19	113	1742	19/19	65.0	1103	NA	294	NA	NA
BIPHENYL	19/19	7.28	40.22	18/19	[3.53]	14.65	17/19	2.16	13.9	NA	12.9	NA	350000
DIBENZOFURAN	19/19	10.38	163.6	19/19	6.03	23.96	19/19	4.02	22.8	2290[n]	NA	NA	1600000
DIBENZOTHIOPHENE	19/19	7.76	65.07	19/19	2.84	17.0	19/19	2.99	13.1	NA	NA	NA	NA
PERYLENE	19/19	61.2	807	19/19	62.9	598	19/19	41.0	361	NA	145	NA	NA
BENZO(A)ANTHRACENE	31/31	58.0	5090	31/31	90.4	1460	31/31	31.6	1050	261	244	1600	2100
BENZO(A)PYRENE	31/31	152	4190	31/31	161	2351	31/31	85.5	1440	430	412	1600	210
BENZO(B)FLUORANTHENE	31/31	123	4100	31/31	121	1390	31/31	64.2	2010	NA	371	NA	2100
BENZO(G,H,I)PERYLENE	31/31	104	1250	31/31	110	912	31/31	75.0	795	290[m]	310	NA	NA

Table 4-10. Summary of Organic Chemical Results for Subsurface Sediment at IR Site 24 (continued)

IR Site 24	0-5 cm			5-25 cm			25-50 cm			Threshold Values			
Analyte	D/N[a]	Min	Max	D/N	Min	Max	D/N	Min	Max	Eco Screen[b]	Ambient[c]	ER-M[d]	PRG Industrial[e]
BENZO(K)FLUORANTHENE	31/31	61.1	2620	31/31	60.4	1420	31/31	33	1240	24[j]	258	NA	1300
CHRYSENE	31/31	109	6550	31/31	95.9	1770	31/31	44.9	1650	384	289	2800	13000
DIBENZO(A,H)ANTHRACENE	31/31	15.0	394	31/31	15.3	269	31/31	7.98	171	63.4	32.7	260	210
FLUORANTHENE	19/19	234	1550	31/31	104	7970	31/31	71	3830	600	514	5100	22000000
INDENO(1,2,3-CD)PYRENE	31/31	100	2080	31/31	109	1070	31/31	69.3	7620	78[n]	382	NA	2100
PYRENE	31/31	246	17900	31/31	239	6950	19/19	168	2299	665	665	2600	29000000
2-METHYLNAPHTHALENE	12/12	7.01	483	12/12	5.88	7325	12/12	1.21	1320	70	19.4	670	NA
ACENAPHTHENE	31/31	5.86	1480	31/31	2.29	2040	31/31	0.78	846	16	26.6	500	29000000
ACENAPHTHYLENE	31/31	7.71	309	30/31	[0.01]	124	29/31	[0.01]	121	44	31.7	640	NA
ANTHRACENE	31/31	55.1	11900	31/31	28.67	2620	31/31	13.7	1010	85.3	88	1100	100000000
FLUORENE	31/31	8.56	2220	31/31	8.73	3320	31/31	1.9	823	19	25.3	540	26000000
NAPHTHALENE	28/31	9.22	378	27/31	6.44	4980	27/31	2.58	1110	160	55.8	2100	4200
PHENANTHRENE	31/31	56.2	10950	31/31	58.23	7280	31/31	21.2	3440	240	237	1500	NA
Total LPAH (6)[o]	31/31	157	25700	31/31	132	20240	31/31	62.2	6055	552	434	3160	NA
Total HPAH (6)[p]	31/31	857	52700	31/31	765.8	17720	31/31	397	15510	1700	3060	9600	NA
Organotins (µg/kg)													
TRIBUTYLTIN	19/19	0.78	40	30/31	[0.039]	370	28/31	[0.055]	18	25.1[q]	NA	NA	180000

NA = not applicable
Brackets indicate non-detected concentration at half the reported detection limit.
(a) D/N – Number of detected samples/total number of samples analyzed.
(b) Conservative ecological sediment screening benchmarks protective of benthic invertebrates and fish. Values represent the Effects Range-Low (ER-L) from Long et al., 1995, unless otherwise noted.
(c) Ambient values reflect data from the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP), the SFEI RMP, and data from reference locations collected by Tetra Tech during the 1998 field sampling and by Battelle during 2001 sampling conducted for Hunters Point, unless otherwise noted.
(d) ER-M – Effects range-median from Long et al., 1995.
(e) Preliminary remediation goals (PRG) reported by U.S. EPA (2004a), based on human health exposures to soil under an industrial exposure scenario. California-modified PRGs were listed when available.
(f) ER-L reported by Long and Morgan, 1991.
(g) Total PCB is based on the sum of detected concentrations. The sum is based on 7 Aroclors prior to 1998 when PCBs were quantified using an Aroclor method, and is based on 2 times the sum of 20 congeners beginning in 1998 when PCBs analyses were quantified using a congener method. See Section 4.1.1 for lists of analytes in the sums.
(h) Upper-bound estimate of nearshore ambient as recommended by U.S. EPA, 2004b.
(i) Total DDx is based on the sum of detected concentrations of 6 isomers (2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT). Total 4,4-DDx is based on the sum of detected concentrations of 3 isomers (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT). The 2,4'DDx isomers were not measured prior to 1998, so the sum based on 4,4-DDx isomers is used as a surrogate to measure Total DDx.
(j) Freshwater LEL (Persaud et al., 1993). One-tenth the LEL was used as the screening value.
(k) EqP-derived TRV based on 1% OC, 4.1 Kow (U.S. EPA 1995), and marine AWQC.
(l) TEL (MacDonald et al., 1996).
(m) Freshwater ERL based on 14-day C. riparius test (U.S. EPA, 1996).
(n) EqP-derived TRV based on 1% OC, 4.12 Kow (Jones et al., 1997), and freshwater toxicity data.
(o) Total LPAH (6) is based on the sum of the detected concentrations of 6 low-molecular-weight PAHs (Acenapthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, Phenanthrene). These are 6 of the 7 constituents used by Long to calculate the LPAH ER-L and ER-M. The seventh constituent, 2-Methylnaphthalene, was not measured in IR Site 24 in 2005, so the sum based on 6 constituents was chosen to provide consistency across all sampling locations.
(p) Total HPAH (6) is based on the sum of the detected concentrations of 6 high-molecular-weight PAHs (Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Pyrene). These were the 6 constituents used by Long to calculate the HPAH ER-L and ER-M.
(q) Value reported by Weston, 1996.

Table 4-11. Summary of Background Comparison Test Results for Inorganic Constituents at IR Site 24

Analyte	Ambient Data Set[a]	No. of Ambient Samples	Test Results[b] All/Fine/Coarse	Test Results All/Fine/Coarse	Carry Forward?
			All Years	2005/2006 only	
ANTIMONY	BPTCP[c]	21	P/P/NA	P/P/NA	No
ARSENIC	RMP, BPTCP	199	P/P/P	P/P/P	No
CADMIUM	RMP, BPTCP	199	F/F/F	F/F/F	Yes
CHROMIUM	RMP[d]	178	F/F/F	F/F/F	Yes
COPPER	RMP, BPTCP	194	F/F/F	F/F/F	Yes
LEAD	RMP, BPTCP	199	F/F/F	F/F/F	Yes
MERCURY	RMP, BPTCP	211	P/P/F	P/P/P	Yes
NICKEL	RMP, BPTCP	198	P/P/P	P/P/P	No
SELENIUM	RMP, BPTCP	199	P/P/P	P/P/P	No
SILVER	RMP, BPTCP	180	F/F/F	F/F/F	Yes
ZINC	RMP, BPTCP	199	F/F/F	F/F/F	Yes

(a) BPTCP = Bay Protection and Toxic Cleanup Program; RMP = (San Francisco Estuary Institute) Regional Monitory Program

(b) Test results are presented for all samples, for fine stations (>40% fines), and for coarse stations (<40% fines). The numbers of IR Site 24 results at coarse stations are limited to 2 locations.

P = pass. No statistically significant results for any of the distribution shift tests.
F = fail. One or more statistical tests indicate a shifted site distribution.
NA = not applicable; too few samples or too few detects to run statistical tests.

(c) Antimony was not analyzed in RMP samples.

(d) Chromium results from RMP are used for reference set. The BPTCP analytical method was not considered comparable.

Table 4-12. Summary of Background Comparison Test Results for Organic Chemicals at IR Site 24

Analyte	Ambient Data Set[a]	No. of Ambient Samples	Test Results[b] All/(2005/2006)	Carry Forward?
Pesticides and Tributyltin				
ALDRIN	RMP, BPTCP	185	NA/NA	Yes
ALPHA-BHC	RMP, BPTCP	199	NA/NA	Yes
ALPHA-CHLORDANE	RMP, BPTCP	199	NA/NA	Yes
DIELDRIN	RMP, BPTCP	199	NA/NA	Yes
ENDOSULFAN I	BPTCP	21	NA/NA	Yes
ENDOSULFAN II	BPTCP	21	NA/NA	Yes
ENDOSULFAN SULFATE	BPTCP	21	NA/NA	Yes
ENDRIN	RMP, BPTCP	185	NA/NA	Yes
ENDRIN ALDEHYDE	none	0	NA/NA	Yes
GAMMA-BHC (LINDANE)	RMP, BPTCP	199	NA/NA	Yes
GAMMA-CHLORDANE	RMP	178	NA/NA	Yes
HEPTACHLOR	RMP, BPTCP	185	NA/NA	Yes
HEPTACHLOR EPOXIDE	RMP, BPTCP	199	NA/NA	Yes
TRIBUTYLTIN	BPTCP	19	F/F	Yes
PAHs and DDx				
2-METHYLNAPHTHALENE	RMP, BPTCP	185	F/F	Yes
ACENAPHTHENE	RMP, BPTCP	185	F/F	Yes
ACENAPHTHYLENE	RMP, BPTCP	185	F/F	Yes
ANTHRACENE	RMP, BPTCP	199	F/F	Yes
FLUORENE	RMP, BPTCP	185	F/F	Yes
NAPHTHALENE	RMP, BPTCP	160	F/F	Yes
PHENANTHRENE	RMP, BPTCP	192	F/F	Yes
BENZO(A)ANTHRACENE	RMP, BPTCP	199	F/F	Yes
BENZO(A)PYRENE	RMP, BPTCP	199	F/F	Yes
BENZO(B)FLUORANTHENE	RMP, BPTCP	199	F/F	Yes
BENZO(G,H,I)PERYLENE	RMP, BPTCP	199	F/F	Yes
BENZO(K)FLUORANTHENE	RMP, BPTCP	199	F/F	Yes
CHRYSENE	RMP, BPTCP	199	F/F	Yes
DIBENZO(A,H)ANTHRACENE	RMP, BPTCP	199	F/F	Yes
FLUORANTHENE	RMP, BPTCP	197	F/F	Yes
INDENO(1,2,3-CD)PYRENE	RMP, BPTCP	199	F/F	Yes
PYRENE	RMP, BPTCP	197	F/F	Yes
2,4'-DDD	RMP, BPTCP	199	NA/NA	Yes
2,4'-DDE	RMP, BPTCP	199	NA/NA	Yes
2,4'-DDT	RMP, BPTCP	185	NA/NA	Yes
4,4'-DDD	RMP, BPTCP	199	F/F	Yes
4,4'-DDE	RMP, BPTCP	199	F/F	Yes
4,4'-DDT	RMP, BPTCP	199	NA/NA	Yes
Sums of Analytes				
Total 4,4-DDx	RMP, BPTCP	199	F/F	Yes
Total DDx	Navy Ref	10	F/F	Yes
Total PCB	RMP, BPTCP	211	F/F	Yes
Total LPAH (6)	RMP, BPTCP	178	F/F	Yes
Total HPAH (6)	RMP, BPTCP	197	F/F	Yes
Total HPAH (10)	RMP, BPTCP	197	F/F	Yes
Total PAH (12)	Navy Ref	10	F/F	Yes

(a) BPTCP = Bay Protection and Toxic Cleanup Program; RMP = (San Francisco Estuary Institute) Regional Monitory Program. Navy Ref = SF Bay Reference Locations sampled by the Navy in 1998 and 2001.

(b) Test results are presented for all years (combined results) and for 2005 results.
P = pass. No statistically significant results for any of the distribution shift tests.
F = fail. One or more statistical tests indicate a shifted site distribution.
NA = not applicable; too few samples or too few detects to run statistical tests.

Table 5-1. Summary of *M. nasuta* Tissue Concentrations for IR Site 20

Chemical of Concern	No. of Detects/No. of Samples	Minimum Concentration	Maximum Concentration	Standard Deviation	Location of Maximum	q90
Inorganics (mg/kg DW)						
ANTIMONY	0/4	[0.5]	[0.5]	0	[E07]	0.1804
ARSENIC	4/4	19	22	1.269	E08	23.2
CADMIUM	0/4	[0.125]	[0.125]	0	[E07]	0.3588
CHROMIUM	0/4	[0.25]	[0.25]	0	[E07]	28.91
COPPER	4/4	14.4	15.6	0.526	E07	15.12
LEAD	4/4	1.76	2.54	0.3612	E07	3.577
MERCURY	1/4	0.045	0.045	0.02	E07	0.1385
NICKEL	1/4	1.25	1.25	0.5	E09	13.397
SELENIUM	0/4	[0.125]	[0.125]	0	[E07]	5.331
SILVER	0/4	[0.25]	[0.25]	0	[E07]	0.2329
ZINC	4/4	68.4	87.2	8.808	E08	125.1
PAHs (µg/kg DW)						
BENZO(A)ANTHRACENE	0/4	[273]	[301]	12.19	[E10]	21.131
BENZO(A)PYRENE	0/4	[273]	[301]	12.19	[E10]	30.803
BENZO(B)FLUORANTHENE	0/4	[273]	[301]	12.19	[E10]	30.74
BENZO(G,H,I)PERYLENE	0/4	[273]	[301]	12.19	[E10]	27.013
BENZO(K)FLUORANTHENE	0/4	[273]	[301]	12.19	[E10]	31.594
CHRYSENE	0/4	[273]	[301]	12.19	[E10]	39.294
DIBENZO(A,H)ANTHRACENE	0/4	[273]	[301]	12.19	[E10]	1.442
FLUORANTHENE	0/4	[273]	[301]	12.19	[E10]	91.566
INDENO(1,2,3-CD)PYRENE	0/4	[273]	[301]	12.19	[E10]	16.666
PYRENE	0/4	[273]	[301]	12.19	[E10]	116.703
Total HPAH (10)	0/4	[2730]	[3010]	121.9	[E10]	365.7
Total HPAH (6)	0/4	[1638]	[1806]	73.16	[E10]	365.7
2-METHYLNAPHTHALENE	0/4	[273]	[301]	12.19	[E10]	1.168
ACENAPHTHENE	0/4	[273]	[301]	12.19	[E10]	3.25
ACENAPHTHYLENE	0/4	[273]	[301]	12.19	[E10]	2.615
ANTHRACENE	0/4	[273]	[301]	12.19	[E10]	11.636
FLUORENE	0/4	[142]	[157]	6.652	[E10]	21
NAPHTHALENE	0/4	[273]	[301]	12.19	[E10]	21
PHENANTHRENE	0/4	[273]	[301]	12.19	[E10]	22.631
Total LPAH (6)	0/4	[1507]	[1662]	67.61	[E10]	70.72
Total LPAH (7)	0/4	[1780]	[1963]	79.8	[E10]	70.72
PCBs/Pesticides (µg/kg DW)						
Total PCB (Aroclors)	0/4	[720]	[743]	10.85	[E08]	154.18
4,4'-DDD	0/4	[9]	[9.3]	0.1414	[E08]	5.022
4,4'-DDE	0/4	[9]	[9.3]	0.1414	[E08]	7.803
4,4'-DDT	0/4	[9]	[9.3]	0.1414	[E08]	0.267
Total 4,4-DDx	0/4	[27]	[27.9]	0.4243	[E08]	11.944
ALDRIN	0/4	[2.25]	[2.32]	0.03304	[E08]	0.417
ALPHA-BHC	0/4	[2.25]	[2.32]	0.03304	[E08]	none
ALPHA-CHLORDANE	0/4	[2.25]	[2.32]	0.03304	[E08]	0.964
DIELDRIN	0/4	[4.55]	[4.65]	0.04856	[E08]	1.855
ENDOSULFAN I	0/4	[4.55]	[4.65]	0.04856	[E08]	none
ENDOSULFAN II	0/4	[4.55]	[4.65]	0.04856	[E08]	0.293
ENDOSULFAN SULFATE	0/4	[4.55]	[4.65]	0.04856	[E08]	none
ENDRIN	0/4	[4.55]	[4.65]	0.04856	[E08]	0.258
ENDRIN ALDEHYDE	0/4	[9]	[9.3]	0.1414	[E08]	none
GAMMA-BHC (LINDANE)	0/4	[2.25]	[2.32]	0.03304	[E08]	0.487
GAMMA-CHLORDANE	0/4	[2.25]	[2.32]	0.03304	[E08]	0.856
HEPTACHLOR	0/4	[2.25]	[2.32]	0.03304	[E08]	0.55
HEPTACHLOR EPOXIDE	0/4	[2.25]	[2.32]	0.03304	[E08]	0.487
Organotins (µg/kg DW)						
TRIBUTYLTIN	4/4	11	37.4	11.49	E09	42.378

Table 5-2. Summary of *M. nasuta* Tissue Concentrations for IR Site 24

Chemical of Concern	No. of Detects/No. of Samples	Minimum Concentration	Maximum Concentration	Standard Deviation	Location of Maximum	q90
Inorganics (mg/kg DW)						
ANTIMONY	5/5	0.03	0.05	0.009737	PA04	0.1804
ARSENIC	5/5	16.24	24.38	3.216	PA04	23.2
CADMIUM	5/5	0.172	0.293	0.04851	PA01	0.3588
CHROMIUM	5/5	7.6	24.5	8.025	PA01	28.91
COPPER	5/5	10.13	18.81	3.734	PA04	15.12
LEAD	5/5	1.29	2.082	0.346	PA04	3.577
MERCURY	2/5	0.05	0.12	0.04168	PA05	0.1385
NICKEL	5/5	7.37	26.1	8.035	PA01	13.397
SELENIUM	1/5	2.3	2.3	0.3209	PA04	5.331
SILVER	5/5	0.166	0.297	0.04792	PA04	0.2329
ZINC	5/5	66.7	100	11.86	PA04	125.1
PAHs (µg/kg DW)						
BENZO(A)ANTHRACENE	5/5	560	1800	571.1	PA02	21.131
BENZO(A)PYRENE	5/5	220	1900	674.4	PA01	30.803
BENZO(B)FLUORANTHENE	5/5	370	3300	1189	PA01	30.74
BENZO(G,H,I)PERYLENE	5/5	53	240	77.04	PA01	27.013
BENZO(K)FLUORANTHENE	5/5	140	690	227.9	PA01	31.594
CHRYSENE	5/5	400	1800	620.5	PA01	39.294
DIBENZO(A,H)ANTHRACENE	5/5	6	41	14.05	PA01	1.442
FLUORANTHENE	5/5	1300	10000	3854	PA02	91.566
INDENO(1,2,3-CD)PYRENE	5/5	45	200	67	PA01	16.666
PYRENE	5/5	1500	17000	6469	PA02	116.7
Total HPAH (10)	5/5	4594	34940	13360	PA02	365.7
Total HPAH (6)	5/5	3986	31730	11980	PA02	365.7
ACENAPHTHENE	5/5	3.9	200	84.98	PA02	3.25
ACENAPHTHYLENE	5/5	58	280	92.98	PA01	2.615
ANTHRACENE	5/5	180	810	259.2	PA01	11.636
FLUORENE	5/5	6.4	54	19.55	PA02	21
NAPHTHALENE	0/5	[20]	[25]	1.884	[PA03]	21

Table 5-2. Summary of *M. nasuta* Tissue Concentrations for IR Site 24 (continued)

Chemical of Concern	No. of Detects/No. of Samples	Minimum Concentration	Maximum Concentration	Standard Deviation	Location of Maximum	q90
PHENANTHRENE	4/5	51	140	64.32	PA01	22.631
Total LPAH (6)	5/5	322.3	1281	455.4	PA01	70.72
PCBs/Pesticides (µg/kg DW)						
Total PCB (Congeners)	5/5	93.1	422.8	128.5	PA01	154.18
2,4'-DDD	2/5	2.7	3.2	1.427	PA04	1.6
2,4'-DDE	2/5	3.2	5.9	2.517	PA02	0.655
2,4'-DDT	0/5	[0.175]	[0.8]	0.2242	[PA02]	0.75
4,4'-DDD	4/5	6.1	13	4.824	PA05	5.022
4,4'-DDE	4/5	9.4	30	11.08	PA05	7.803
4,4'-DDT	0/5	[0.2]	[0.9]	0.251	[PA02]	0.267
Total 4,4-DDx	4/5	16	43.46	15.75	PA05	11.944
Total DDx	4/5	20	46.93	16.78	PA05	12.597
ALDRIN	0/5	[0.095]	[0.435]	0.1219	[PA02]	0.417
ALPHA-CHLORDANE	0/5	[0.13]	[0.6]	0.1694	[PA02]	0.964
DIELDRIN	4/5	1.6	2.4	0.8913	PA05	1.855
ENDRIN	0/5	[0.11]	[0.5]	0.1398	[PA02]	0.258
GAMMA-BHC (LINDANE)	4/5	1.7	2.1	0.7754	PA03	0.487
HEPTACHLOR	0/5	[0.13]	[0.6]	0.1694	[PA02]	0.55
HEPTACHLOR EPOXIDE	0/5	[0.11]	[0.5]	0.1398	[PA02]	0.487
Organotins (µg/kg DW)						
TRIBUTYLTIN	4/5	14	43	12.28	PA05	42.378

Table 5-3. EPCs for Sediment at IR Site 20

IR Site 20 Constituent	Surface sediment from all years						Surface sediment (0-5 cm) from 2005						Subsurface sediment (5-25 cm) from 2005					
	N[a]	D[b]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]	N	D	Max	Mean	95% UCL	Dist	N	D	Max	Mean	95% UCL	Dist
Inorganics (mg/kg)																		
Antimony	28	22	37	4.77	10.3	NP	14	8	0.47	0.094	0.16	LN	14	8	5.18	0.44	2.72	NP
Arsenic	28	28	13.7	5.93	7.04	LN	14	14	6.56	4.42	5.03	N	14	14	9.37	5.1	5.98	LN
Cadmium	28	24	0.9033	0.182	0.256	LN	14	14	0.37	0.155	0.199	N	14	14	0.898	0.253	0.386	LN
Chromium	28	28	1230	170	337	LN	14	14	86.9	49.9	60.3	N	14	14	91.1	53.6	63.7	N
Copper	28	28	141	44.2	68.5	LN	14	14	115	29.6	49.6	LN	14	14	179	35.1	61.5	LN
Lead	28	28	225.5	40.1	61.4	LN	14	14	91.5	23.8	38.3	LN	14	14	109	32.6	61.5	LN
Mercury	28	28	8.83	0.522	2.45	NP	14	14	8.83	0.8	4.66	NP	14	14	3.84	0.431	2.08	NP
Nickel	28	28	288	56.2	77.1	LN	14	14	61.4	35.2	42.5	N	14	14	65.3	40.1	46.8	N
Selenium	28	9	0.471	0.149	0.208	LN	14	0	[0.21]	>0.11<	>0.14<	N	14	0	[0.21]	>0.123<	>0.153<	N
Silver	28	24	0.288	0.145	0.172	NP	14	14	0.263	0.135	0.168	N	14	14	0.302	0.165	0.206	N
Zinc	28	28	258	91.2	121	LN	14	14	99.6	54.3	65	N	14	14	490	88.6	226	NP
Pesticides and PCBs (µg/kg)																		
Total PCB	28	28	893.3	157	451	LN	14	14	94.96	38.1	<95>	LN	14	13	353.9	77.5	<354>	LN
PCB110	24	21	86.23	4.24	12.3	LN	14	14	5.85	2.4	<5.85>	LN	14	13	21.5	6.95	<21.5>	LN
PCB129	14	8	0.48	0.145	0.236	NP	14	8	0.48	0.145	0.24	NP	14	9	0.97	0.26	0.47	NP
Total 4,4-DDx	28	27	482	28.9	143	NP	14	14	13.92	5.36	9.2	LN	14	14	82.75	8.62	35.7	LN
4,4'-DDD	28	27	45.29	5.74	12.6	LN	14	14	9.54	2.93	5.77	LN	14	14	58.48	5.97	20.6	LN
4,4'-DDE	28	26	16.2	2.5	4.78	LN	14	14	3.55	1.28	1.83	LN	14	14	10.19	1.87	3.43	LN
4,4'-DDT	28	20	471.1	21.3	190	NP	14	12	3.73	1.08	2.11	NP	14	9	14.08	1.43	11.2	NP
2,4'-DDD	24	23	15.01	1.92	3.84	LN	14	14	3.92	1.31	1.79	N	14	10	23.98	4.16	<24>	LN
2,4'-DDE	24	3	[0.53]	0.193	0.257	NP	14	3	0.46	0.093	0.211	NP	14	4	0.49	0.129	0.261	NP
2,4'-DDT	24	15	134.9	6.45	41.4	NP	14	9	1.34	0.536	0.781	NP	14	7	2.56	0.55	1.08	NP
Aldrin[g]	28	0	[0.6125]	>0.201<	>0.272<	NP	14	0	[0.02]	>0.014<	>0.015<	NP	14	0	[0.02]	>0.014<	>0.016<	NP
alpha-BHC[g]	28	0	[14.87]	>0.763<	>4.05<	NP	14	0	[0.03]	>0.024<	>0.026<	NP	14	0	[0.03]	>0.024<	>0.026<	NP
alpha-Chlordane	28	15	[4.236]	0.641	1.25	NP	14	6	0.66	0.174	0.304	NP	14	5	0.88	0.211	0.403	NP
Dieldrin	28	15	[43.67]	3.05	<0.98>	NP	14	10	0.98	0.406	0.557	N	14	10	3.34	0.705	1.9	NP
Endosulfan I[g]	28	0	[1.212]	>0.278<	>0.43<	NP	14	0	[0.025]	>0.016<	>0.019<	NP	14	0	[0.02]	>0.017<	>0.018<	NP
Endosulfan II	28	2	[1.212]	0.333	0.467	NP	14	2	0.65	0.127	0.321	NP	14	4	1.36	0.248	0.863	NP
Endosulfan Sulfate[g]	28	0	[1.212]	>0.347<	>0.493<	NP	14	0	[0.215]	>0.155<	>0.167<	N	14	0	[0.205]	>0.16<	>0.174<	NP
Endrin[g]	28	0	[43.67]	>2.82<	>11.5<	NP	14	0	[0.025]	>0.018<	>0.02<	NP	14	0	[0.025]	>0.019<	>0.021<	NP
Endrin Aldehyde	28	3	[87.33]	6.01	<13.4>	NP	14	0	[0.04]	>0.029<	>0.032<	NP	14	1	2.54	0.21	1.33	NP
gamma-BHC[g]	28	0	[16.11]	>0.805<	>4.37<	NP	14	0	[0.025]	>0.016<	>0.019<	NP	14	0	[0.02]	>0.017<	>0.018<	NP
gamma-Chlordane	28	9	[20.17]	1.4	<2.15>	NP	14	7	0.95	0.208	0.419	NP	14	6	1.03	0.261	0.497	NP
Heptachlor[g]	28	0	[0.6125]	>0.201<	>0.274<	NP	14	0	[0.02]	>0.014<	>0.015<	NP	14	0	[0.02]	>0.014<	>0.016<	NP
Heptachlor Epoxide[g]	28	0	[0.6125]	>0.202<	>0.275<	NP	14	0	[0.025]	>0.016<	>0.019<	NP	14	0	[0.02]	>0.017<	>0.018<	NP

Table 5-3. EPCs for Sediment at IR Site 20 (continued)

IR Site 20 Constituent	Surface sediment from all years						Surface sediment (0-5 cm) from 2005						Subsurface sediment (5-25 cm) from 2005					
	N[a]	D[b]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]	N	D	Max	Mean	95% UCL	Dist	N	D	Max	Mean	95% UCL	Dist
PAHs (µg/kg)																		
Total LPAH (6)	28	28	2513	628	1536	LN	14	14	2513	548	<2513>	LN	14	14	12680	1652	12314	LN
Total HPAH (6)	28	28	9320	2332	5226	LN	14	14	9320	2320	<9320>	LN	14	14	17470	3961	<17470>	LN
2-Methylnaphthalene	28	24	[88.75]	15.6	<22.1>	LN	14	14	15	4.81	12	LN	14	14	270	23.5	163	LN
Acenaphthene	28	25	113.9	26.8	76.2	LN	14	14	20	6.44	9.1	N	14	13	130	26.2	<130>	LN
Acenaphthylene	28	25	140	41.9	95.6	LN	14	14	140	33.7	<140>	LN	14	14	870	107	787	LN
Anthracene	28	28	600	156	407	LN	14	14	600	123	<600>	LN	14	14	2900	344	2580	LN
Benzo(a)anthracene	28	28	1000	269	587	LN	14	14	1000	246	<1000>	LN	14	14	2200	414	<2200>	LN
Benzo(a)pyrene	28	28	1200	364	728	LN	14	14	1200	350	<1200>	LN	14	14	2100	596	<2100>	LN
Benzo(b)fluoranthene	28	28	837.6	302	624	LN	14	14	650	214	<650>	LN	14	14	1200	401	<1200>	LN
Benzo(g,h,i)perylene	28	28	692.6	238	434	LN	14	14	650	232	<650>	LN	14	14	1500	365	<1500>	LN
Benzo(k)fluoranthene	28	26	891.8	231	461	LN	14	14	640	220	<640>	LN	14	14	1700	430	<1700>	LN
Chrysene	28	28	1300	370	805	LN	14	14	1300	331	<1300>	LN	14	14	2800	576	<2800>	LN
Dibenzo(a,h)anthracene	28	25	175.8	52.6	123	LN	14	14	120	34.2	<120>	LN	14	14	270	71.8	<270>	LN
Dibenzofuran	14	14	13	4.38	<13>	LN	14	14	13	4.38	<13>	LN	14	13	98	16.7	<98>	LN
Fluoranthene	28	28	2500	492	754	NP	14	14	2500	627	<2500>	LN	14	14	5200	1031	<5200>	LN
Fluorene	28	25	130	42.7	114	LN	14	14	130	27.7	<130>	LN	14	14	1400	115	906	LN
Indeno(1,2,3-cd)pyrene	28	28	686.7	211	286	NP	14	14	680	239	<680>	LN	14	14	1500	389	<1500>	LN
Naphthalene	28	24	[88.75]	20.6	39.6	LN	14	14	28	10.2	13.9	N	14	14	170	31.3	<170>	LN
Perylene	10	10	276.4	92.9	<276>	LN	0						0					
Phenanthrene	28	28	1600	305	477	NP	14	14	1600	345	<1600>	LN	14	14	7300	999	<7300>	LN
Pyrene	28	28	3200	676	1370	LN	14	14	3200	723	<3200>	LN	14	14	5900	1240	<5900>	LN
Organotins (µg/kg)																		
Tributyltin	18	18	59	22.7	31.6	NP	14	14	59	21.1	<59>	LN	14	14	76	16.8	<76>	LN

[a] N = Number of samples analyzed. Caution, if N<5 the EPCs have limited utility.
[b] D = number of detected results. Caution: If D/N<25%, EPCs have limited utility.
[c] Max = maximum result; [ ] indicates that the maximum result was a non-detect reported at the half-detection limit.
[d] The Mean is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects.
[e] 95% UCL = 95% Upper Confidence Limit. This EPC is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects; values enclosed in "<>" indicate that the calculated UCL value exceeded the maximum detect and the maximum detect is used as the estimate of the EPC (maximum half-detection limit is used if no detects).
[f] Dist = distribution that the data conform to based on the Shapiro Wilk goodness of fit test. N = Normal, LN = Lognormal, NP = nonparametric; none = too few samples to run a distribution test OR all samples reported at same value.
[g] This constituent will be eliminated because it was not detected in sediment nor tissue at the site.

Table 5-4. EPCs for Sediment at IR Site 24

IR Site 24 Constituent	Surface sediment from all years						Surface sediment (0-5 cm) from 2005/2006						Subsurface sediment (5-25 cm) from 2005/2006					
	N[a]	D[b]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]	N	D	Max	Mean	95% UCL	Dist	N	D	Max	Mean	95% UCL	Dist
Inorganics (mg/kg)																		
Antimony	38	37	2.86	0.439	0.593	NP	31	31	2.86	0.396	0.570	NP	31	31	3.46	0.461	0.716	NP
Arsenic	39	39	20.7	8.033	8.80	NP	31	31	15.1	7.68	8.36	NP	31	31	11.8	7.16	7.74	N
Cadmium	39	38	39.3	5.736	8.42	NP	31	31	37.8	5.11	7.93	NP	31	31	188	11.1	21.5	NP
Chromium	53	53	426	167.845	191	NP	31	31	380	133	157	NP	31	31	799	147	196	NP
Copper	53	53	294	94.476	111	LN	31	31	247	77.0	91.6	NP	31	31	372	82.8	103	NP
Lead	53	53	498	81.768	103	NP	31	31	498	84.7	119	NP	31	31	2290	143	262	NP
Mercury	39	39	0.76	0.242	0.276	NP	31	31	0.358	0.215	0.243	NP	31	31	0.742	0.256	0.294	NP
Nickel	53	53	166	81.531	89.8	LN	31	31	143	67.8	74.4	NP	31	31	180	73.6	82.5	NP
Selenium	39	20	1.69	0.402	0.525	LN	31	15	1.69	0.306	0.390	NP	31	11	0.51	0.214	0.240	NP
Silver	39	38	47	3.803	6.04	NP	31	31	47	3.88	6.52	NP	31	31	70.6	5.43	9.76	NP
Zinc	53	53	723	166.294	192	NP	31	31	723	134	169	NP	31	31	632	144	183	NP
Pesticides and PCBs (µg/kg)																		
Total PCB	39	38	3137	269.779	411	NP	31	31	3137	286	453	NP	31	31	4770	389	703	NP
PCB110	31	31	320	26.281	44.0	NP	31	31	320	26.3	44.0	NP	31	31	485.2	36.7	66.5	NP
PCB129	31	21	10.82	1.507	2.21	NP	31	21	10.82	1.51	2.20	NP	31	24	15.13	2.03	6.34	LN
Total 4,4-DDx	39	39	118.5	13.727	19.1	NP	31	31	118.5	14.2	20.8	NP	31	31	96.13	13.2	19.7	NP
4,4'-DDD	39	37	99.89	8.347	12.7	NP	31	31	99.89	9.21	14.7	NP	31	31	80.34	9.10	14.8	NP
4,4'-DDE	39	36	13.05	3.332	4.51	LN	31	31	13.05	3.25	4.06	NP	31	31	18.05	3.33	4.39	NP
4,4'-DDT	37	24	21.43	2.146	3.22	NP	31	22	21.43	1.71	2.86	NP	31	19	1.9	0.734	0.918	NP
2,4'-DDD	36	14	47.73	3.955	6.28	NP	31	12	47.73	4.50	7.27	NP	31	12	35.4	3.89	6.34	NP
2,4'-DDE	36	2	11	0.486	1.01	NP	31	0	[0.045]	>0.025<	>0.027<	NP	31	0	[0.03]	>0.025<	>0.026<	NP
2,4'-DDT[g]	36	1	2.9	0.153	0.283	NP	31	1	2.9	0.132	0.282	NP	31	0	[0.055]	>0.038<	>0.041<	NP
Aldrin	39	3	3.5	0.260	0.461	NP	31	0	[0.04]	>0.019<	>0.022<	NP	31	0	[0.025]	>0.018<	>0.020<	NP
alpha-BHC[g]	34	0	[3.35]	>0.196<	>0.364<	NP	31	0	[0.065]	>0.033<	>0.037<	NP	31	0	[0.045]	>0.031<	>0.034<	NP
alpha-Chlordane	39	26	23	1.378	2.47	NP	31	24	1.11	0.437	0.527	N	31	24	3.98	0.561	0.798	NP
Dieldrin	39	22	22.35	2.113	3.13	NP	31	19	22.35	2.08	3.30	NP	31	18	10.65	1.55	2.33	NP
Endosulfan I	34	1	35	1.116	2.79	NP	31	0	[0.045]	>0.021<	>0.024<	NP	31	0	[0.03]	>0.021<	>0.023<	NP
Endosulfan II	34	2	4.2	0.479	0.860	NP	31	0	[0.19]	>0.077<	>0.093<	NP	31	0	[0.13]	>0.072<	>0.086<	NP
Endosulfan Sulfate[g]	34	0	[6.5]	>0.481<	>0.816<	NP	31	0	[0.435]	>0.173<	>0.212<	NP	31	0	[0.305]	>0.165<	>0.197<	NP
Endrin	39	1	4.2	0.385	0.716	NP	31	0	[0.05]	>0.023<	>0.027<	NP	31	0	[0.035]	>0.023<	>0.026<	NP
Endrin Aldehyde	34	1	4	0.425	0.801	NP	31	0	[0.085]	>0.039<	>0.044<	NP	31	0	[0.06]	>0.036<	>0.042<	NP
gamma-BHC[g]	37	0	[3.35]	>0.180<	>0.343<	NP	31	0	[0.045]	>0.021<	>0.024<	NP	31	0	[0.03]	>0.021<	>0.023<	NP
gamma-Chlordane	34	13	7.02	0.938	1.46	NP	31	12	7.02	0.776	1.21	NP	31	15	4.34	0.618	0.950	NP
Heptachlor[g]	39	0	[3.35]	>0.183<	>0.330<	NP	31	0	[0.04]	>0.021<	>0.023<	NP	31	0	[0.025]	>0.020<	>0.022<	NP
Heptachlor Epoxide	39	1	1.4	0.186	0.337	NP	31	0	[0.045]	>0.025<	>0.027<	NP	31	0	[0.03]	>0.025<	>0.026<	NP

Table 5-4. EPCs for Sediment at IR Site 24 (continued)

IR Site 24	Surface sediment from all years						Surface sediment (0-5 cm) from 2005/2006						Subsurface sediment (5-25 cm) from 2005/2006					
Constituent	N[a]	D[b]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]	N	D	Max	Mean	95% UCL	Dist	N	D	Max	Mean	95% UCL	Dist
PAHs (µg/kg)																		
Total LPAH (6)	58	58	241000	7444	14047	NP	31	31	25730	2213	4303	LN	31	31	20240	1465	2521	NP
Total HPAH (6)	58	58	206200	14181	25478	LN	31	31	52710	6915	11494	LN	31	31	17720	4700	6101	NP
2-Methylnaphthalene	15	13	6000	326	1928	LN	0						0					
Acenaphthene	58	57	34000	821	1770	NP	31	31	1476	169	405	LN	31	31	2042	154	268	NP
Acenaphthylene	58	55	450	86	148.8	LN	31	31	308.7	60.3	80.3	NP	31	30	123.7	36.5	46.3	NP
Anthracene	58	56	11940	1128	2110	LN	31	31	11940	751	1456	LN	31	31	2622	310	539	LN
Benzo(a)anthracene	58	57	24000	1788	3233	LN	31	31	5093	757	1253	LN	31	31	1456	471	587	NP
Benzo(a)pyrene	58	57	11000	1214	1907	LN	31	31	4192	749	1097	LN	31	31	2351	602	748	NP
Benzo(b)fluoranthene	58	57	20000	1702	2891	LN	31	31	4098	809	1230	LN	31	31	1394	616	743	NP
Benzo(g,h,i)perylene	58	57	3400	477	666	LN	31	31	1250	388	476	NP	31	31	911.8	312	394	LN
Benzo(k)fluoranthene	58	56	5400	770	1297	LN	31	31	2622	617	814	NP	31	31	1421	488	628	NP
Chrysene	58	57	23000	2321	4196	LN	31	31	6549	1072	1820	LN	31	31	1770	689	868	NP
Dibenzo(a,h)anthracene	58	55	1200	154	262	LN	31	31	393.9	95.9	124	NP	31	31	268.6	73.4	108	LN
Dibenzofuran	38	38	790	87.7	158	LN	19	19	163.6	50.9	84.3	LN	19	19	23.86	13.1	15.1	N
Fluoranthene	58	56	78000	4360	8229	LN	31	31	18540	2060	3597	LN	31	31	7973	1214	1710	NP
Fluorene	58	57	42000	1019	2199	NP	31	31	2221	197	401	LN	31	31	3318	176	353	NP
Indeno(1,2,3-cd)pyrene	58	57	4700	574	844	LN	31	31	2083	449	576	NP	31	31	1071	344	418	NP
Naphthalene	58	53	4400	137	258	NP	31	28	378	44.8	63.7	LN	31	27	4979	220	477	NP
Phenanthrene	58	57	160000	4228	8779	NP	31	31	10940	1256	1995	NP	31	31	7279	552	938	NP
Pyrene	58	56	76000	4349	8154	LN	31	31	17940	2178	3841	LN	31	31	6951	1651	2185	NP
Organotins (µg/kg)																		
Tributyltin	39	37	890	72.8	123	NP	31	31	890	86.6	148	NP	31	30	370	31.7	97.4	LN

[a] N = Number of samples analyzed. Caution, if N<5 the EPCs have limited utility.
[b] D = number of detected results. Caution: If D/N<25%, EPCs have limited utility.
[c] Max = maximum result; [ ] indicates that the maximum result was a non-detect reported at the half-detection limit
[d] The Mean is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects.
[e] 95% UCL = 95% Upper Confidence Limit. This EPC is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects; values enclosed in "<>" indicate that the calculated UCL value exceeded the maximum detect and the maximum detect is used as the estimate of the EPC (maximum half-detection limit is used if no detects).
[f] Dist = distribution that the data conform to based on the Shapiro Wilk goodness of fit test. N = Normal, LN = Lognormal, NP = nonparametric; none = too few samples to run a distribution test OR all samples reported at same value.
[g] This constituent will be eliminated because it was not detected in sediment nor tissue at the site.

Table 5-5. Statistical Summary of *M. nasuta* Data at IR Site 20

IR Site 20 Constituent	*Macoma nasuta* Tissue (1993)									
	N[a]	D[b]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]
Inorganics (mg/kg)			**dry wt summary**				**wet wt summary**			
Arsenic	4	4	22	20.8	<22>	N	2.47	2.3	<2.47>	N
Copper	4	4	15.6	15.2	<15.6>	N	1.72	1.67	<1.72>	N
Lead	4	4	2.54	2.08	2.5	N	0.279	0.229	0.276	N
Mercury	4	1	0.045	0.015	<0.045>	NP	0.005	0.002	<0.005>	NP
Nickel	4	1	1.25	0.5	<1.25>	NP	0.138	0.055	<0.138>	NP
Zinc	4	4	87.2	78.5	<87.2>	N	9.75	8.66	<9.75>	N
Pesticides and PCBs (µg/kg)			**dry wt summary**				**wet wt summary**			
Endosulfan II	4	0	[4.65]	>4.58<	<4.65>	NP	[0.52]	>0.505<	<0.52>	NP
Endrin Aldehyde	4	0	[9.3]	>9.1<	>9.27<	N	[1.04]	>1<	<1.04>	NP
gamma-Chlordane	4	0	[2.32]	>2.27<	>2.31<	N	[0.259]	>0.251<	<0.259>	NP
PAHs (µg/kg)			**dry wt summary**				**wet wt summary**			
2-Methylnaphthalene	4	0	[301]	>286<	>301<	N	[33.6]	>33.6<	>33.6<	N
Dibenzofuran	4	0	[301]	>286<	>300<	N	[33.6]	>33.6<	>33.6<	N
Organotins (µg/kg)			**dry wt summary**				**wet wt summary**			
Tributyltin	4	4	37.4	21	34.5	N	4.11	2.27	3.79	N

This table contains the constituents that were detected in site tissue, or if never detected in tissue, that were detected in site sediment and for which there is no BAF. There is no BAF for constituents that were not measured, or were never detected in both sediment and tissue, in paired sediment and tissue results.

[a] N = Number of samples analyzed. Caution, if N<5 the EPCs have limited utility.

[b] D = number of detected results. Caution: If D/N<25%, EPCs have limited utility.

[c] Max = maximum result; [ ] indicates that the maximum result was a non-detect reported at the half-detection limit.

[d] The Mean is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects.

[e] 95% UCL = 95% Upper Confidence Limit. This EPC is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects; values enclosed in "<>" indicate that the calculated UCL value exceeded the maximum detect and the maximum detect is used as the estimate of the EPC (maximum half-detection limit is used if no detects).

[f] Dist = distribution that the data conform to based on the Shapiro Wilk goodness of fit test. N = Normal, LN = Lognormal, NP = nonparametric; none = too few samples to run a distribution test OR all samples reported at same value.

[g] This constituent will be eliminated because it was not detected in sediment nor tissue at the site.

Table 5-6. Statistical Summary of *M. nasuta* Data at IR Site 24

IR Site 24 Constituent	*Macoma nasuta* Tissue (1998)									
	N[a]	D[b]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]
Inorganics (mg/kg)			dry wt summary				wet wt summary			
Antimony	5	5	0.05	0.041	<0.05>	N	0.009	0.008	<0.009>	N
Arsenic	5	5	24.38	19.2	22.3	N	4.46	3.51	4.07	N
Cadmium	5	5	0.293	0.245	0.291	N	0.054	0.045	0.053	N
Chromium	5	5	24.5	16.5	24.2	N	4.48	3.02	4.41	N
Copper	5	5	18.81	12.8	16.4	N	3.44	2.34	2.99	N
Lead	5	5	2.082	1.74	2.07	N	0.381	0.318	0.379	N
Mercury	5	2	[0.16]	0.12	<0.12>	N	[0.029]	0.022	<0.022>	N
Nickel	5	5	26.1	15.1	22.7	N	4.77	2.75	4.15	N
Selenium	5	1	[3]	2.66	<2.3>	N	0.42	0.486	<0.42>	N
Silver	5	5	0.297	0.225	0.271	N	0.054	0.041	0.05	N
Zinc	5	5	100	83.4	94.7	N	18.3	15.2	17.3	N
Pesticides and PCBs (µg/kg)			dry wt summary				wet wt summary			
Total PCB	5	5	414.8	159	303	N	75.8	29	55.5	N
Total 4,4-DDx	5	4	43	20.8	40.5	N	7.86	3.8	7.41	N
2,4'-DDD	5	2	3.2	1.41	2.77	N	0.585	0.258	0.507	N
2,4'-DDE	5	2	5.9	2	4.4	N	1.08	0.366	0.804	N
4,4'-DDD	5	4	13	7.56	12.2	N	2.38	1.38	2.22	N
4,4'-DDE	5	4	30	13.3	23.9	N	5.48	2.43	4.36	N
Dieldrin	5	4	2.4	1.62	<2.4>	N	0.439	0.297	<0.439>	N
Endrin	5	0	[0.5]	>0.282<	>0.415<	N	[0.091]	>0.052<	>0.076<	N
Heptachlor Epoxide	5	0	[0.5]	>0.282<	>0.415<	N	[0.091]	>0.052<	>0.076<	N

Table 5-6. Statistical Summary of *M. nasuta* Data at IR Site 24 (continued)

IR Site 24 Constituent	*Macoma nasuta* Tissue (1998)									
	N[a]	D[b]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]	Max[c]	Mean[d]	95% UCL[e]	Dist[f]
PAHs (µg/kg)			dry wt summary				wet wt summary			
Acenaphthene	5	5	200	37	<200>	LN	36.6	6.77	<36.6>	LN
Acenaphthylene	5	5	280	135	224	N	51.2	24.8	41	N
Anthracene	5	5	810	430	677	N	148	78.6	124	N
Benzo(a)anthracene	5	5	1800	1232	1776	N	329	225	325	N
Benzo(a)pyrene	5	5	1900	932	1575	N	347	170	288	N
Benzo(b)fluoranthene	5	5	3300	1610	2744	N	603	294	502	N
Benzo(g,h,i)perylene	5	5	240	127	201	N	43.9	23.3	36.7	N
Benzo(k)fluoranthene	5	5	690	400	617	N	126	73.1	113	N
Chrysene	5	5	1800	1054	1646	N	329	193	301	N
Dibenzo(a,h)anthracene	5	5	41	21.6	35	N	7.49	3.95	6.4	N
Fluoranthene	5	5	10000	5080	8754	N	1828	929	1600	N
Fluorene	5	5	54	19	<54>	LN	9.87	3.47	<9.87>	LN
Indeno(1,2,3-cd)pyrene	5	5	200	117	181	N	36.6	21.5	33.1	N
Phenanthrene	5	4	[200]	104	<140>	N	[36.6]	19.1	<25.6>	N
Pyrene	5	5	17000	7540	13707	N	3108	1378	2506	N
Total LPAH (6)	5	5	1261	698	1091	N	231	128	199	N
Total HPAH (6)	5	5	31730	15860	27282	N	5800	2899	4987	N
Organotins (µg/kg)			dry wt summary				wet wt summary			
Tributyltin	5	4	43	23.3	35	N	7.86	4.26	6.4	N

This table contains the constituents that were detected in site tissue, or if never detected in tissue, that were detected in site sediment and for which there is no BAF. There is no BAF for constituents that were not measured, or were never detected in both sediment and tissue, in paired sediment and tissue results.

[a] N = Number of samples analyzed. Caution, if N<5 the EPCs have limited utility.

[b] D = number of detected results. Caution: If D/N<25%, EPCs have limited utility.

[c] Max = maximum result; [ ] indicates that the maximum result was a non-detect reported at half the reported detection limit

[d] The Mean is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects

[e] 95% UCL = 95% Upper Confidence Limit. This EPC is calculated based on a distribution assumption, where distributions are normal, lognormal, or neither (nonparametric); values enclosed in "><" indicate an estimate based solely on non-detects; values enclosed in "<>" indicate that the calculated UCL value exceeded the maximum detect and the maximum detect is used as the estimate of the EPC (maximum half-detection limit is used if no detects).

[f] Dist = distribution that the data conform to based on the Shapiro Wilk goodness of fit test. N = Normal, LN = Lognormal, NP = nonparametric; none = too few samples to run a distribution test OR all samples reported at same value.

[g] This constituent will be eliminated because it was not detected in sediment nor tissue at the site.

Table 5-7. Modeled Dry Weight *M. nasuta* Tissue Concentrations for IR Site 20

IR Site 20				All Years		2005 Surface		2005 Subsurface	
Constituent	*Macoma* BAF (DW)[a]	N[b]	D[c]	Sediment 95% UCL[d] (mg/kg DW)	*Macoma* 95% UCL[e] (mg/kg DW)	Sediment 95% UCL (mg/kg DW)	*Macoma* 95% UCL (mg/kg DW)	Sediment 95% UCL (mg/kg DW)	*Macoma* 95% UCL (mg/kg DW)
Antimony	1.97E-01	25	25	1.03E+01	2.04E+00	1.60E-01	3.16E-02	2.72E+00	5.37E-01
Cadmium	1.22E-01	25	25	2.56E-01	3.12E-02	1.99E-01	2.42E-02	3.86E-01	4.70E-02
Chromium	1.92E-01	25	25	3.37E+02	6.46E+01	6.03E+01	1.16E+01	6.37E+01	1.22E+01
Selenium	3.82E+00	25	9	2.08E-01	7.94E-01	1.40E-01	5.35E-01	1.53E-01	5.84E-01
Silver	1.71E-01	25	25	1.72E-01	2.95E-02	1.68E-01	2.88E-02	2.06E-01	3.53E-02
Total PCB	1.41E+00	25	21	4.51E-01	6.35E-01	9.50E-02	1.34E-01	3.54E-01	4.98E-01
Total 4,4-DDx	4.63E+00	10	9	4.68E-02	2.17E-01	9.17E-03	4.25E-02	3.56E-02	1.65E-01
alpha-Chlordane	6.55E-01	25	7	1.25E-03	8.17E-04	3.04E-04	1.99E-04	4.03E-04	2.64E-04
Dieldrin	6.52E+00	25	21	9.80E-04	6.39E-03	5.57E-04	3.63E-03	1.90E-03	1.24E-02
Total HPAH (6)	1.17E+00	25	25	5.22E+00	6.10E+00	9.32E+00	1.09E+01	1.75E+01	2.04E+01
Total LPAH (6)	3.58E-01	25	25	7.82E-01	2.80E-01	2.51E+00	8.99E-01	1.22E+01	4.36E+00

This table includes those constituents that were detected in sediment but not detected in site tissue and for which there is a BAF. There is no BAF for constituents that were not measured, or were never detected in both sediment and tissue, in paired sediment and tissue results.

[a] *Macoma* BAF (bioaccumulation factor) calculation (described in Section 5.1) calculated using dry wt concentrations of tissue.

[b] N = number of samples analyzed in *Macoma* tissue and used in calculation of the BAF.

[c] D = number of detected concentrations in *Macoma* tissue (out of N) used in calculation of the BAF. Zero means all non-detects (using half the reported detection limits). Small numbers lead to greater uncertainty (see plots in Appendix D).

[d] Sediment EPC from listed site data set: All Years Surface samples, 2005 Surface samples, or 2005 (5-25 cm) samples.

[e] Modeled fish EPC based on model from sediment to tissue using BAF.

Table 5-8. Modeled Dry Weight *M. nasuta* Tissue Concentrations for IR Site 24

IR Site 24				All Years		2005/2006 Surface		2005/2006 Subsurface	
Constituent	*Macoma* BAF (DW)[a]	N[b]	D[c]	Sediment 95% UCL[d] (mg/kg DW)	*Macoma* 95% UCL[e] (mg/kg DW)	Sediment 95% UCL (mg/kg DW)	*Macoma* 95% UCL (mg/kg DW)	Sediment 95% UCL) (mg/kg DW)	*Macoma* 95% UCL (mg/kg DW)
Antimony	1.97E-01	25	25	5.93E-01	1.17E-01	5.70E-01	1.13E-01	7.16E-01	1.41E-01
Arsenic	3.01E+00			8.80E+00	2.65E+01	8.36E+00	2.52E+01	7.74E+00	2.33E+01
Cadmium	1.22E-01	25	25	8.42E+00	1.03E+00	7.93E+00	9.66E-01	2.15E+01	2.62E+00
Chromium	1.92E-01	25	25	1.91E+02	3.67E+01	1.57E+02	3.01E+01	1.96E+02	3.76E+01
Copper	1.68E-01			1.11E+02	1.87E+01	9.16E+01	1.64E+01	1.03E+02	1.73E+01
Lead	5.28E-02			1.03E+02	5.46E+00	1.19E+02	6.27E+00	2.62E+02	1.39E+01
Nickel	3.07E-01			8.98E+01	2.76E+01	7.44E+01	2.28E+01	8.25E+01	2.53E+01
Silver	1.71E-01	25	25	6.04E+00	1.03E+00	6.52E+00	1.12E+00	9.76E+00	1.67E+00
Zinc	5.60E-01			1.92E+02	1.07E+02	1.69E+02	9.47E+01	1.83E+02	1.02E+02
Aldrin	9.36E+00	25	7	4.61E-04	4.31E-03	2.16E-05	3.60E-04	2.03E-05	3.60E-04
Alpha-Chlordane	6.55E-01	25	7	2.47E-03	1.62E-03	5.27E-04	4.92E-04	7.98E-04	5.22E-04
Dieldrin	6.52E+00	25	21	3.13E-03	2.04E-02	3.30E-03	2.15E-02	2.33E-03	1.52E-02
Endrin	1.61E+00			7.16E-04	1.16E-03	2.69E-05	4.15E-04	2.56E-05	4.15E-04
Heptachlor	3.85E+00			3.30E-04	1.27E-03	2.29E-05	4.92E-04	2.15E-05	4.92E-04
Heptachlor Epoxide	3.39E+00			3.37E-04	1.14E-03	2.66E-05	4.15E-04	2.59E-05	4.15E-04
Tributyltin	8.88E-01			1.23E-01	1.09E-01	1.48E-01	1.32E-01	9.74E-02	8.64E-02
Total PCB	1.41E+00	25	21	4.11E-01	5.78E-01	4.53E-01	6.37E-01	7.03E-01	9.89E-01
Total 4,4-DDx ND/2	4.63E+00	10	9	1.91E-02	8.86E-02	2.08E-02	9.66E-02	1.97E-02	9.15E-02
Total HPAH (6) ND/2	1.17E+00	25	25	2.55E+01	2.98E+01	1.15E+01	2.73E+01	6.10E+00	2.73E+01
Total LPAH (6) ND/2	3.58E-01	25	25	1.40E+01	5.03E+00	4.30E+00	1.54E+00	2.52E+00	1.20E+00

This table includes those constituents that were detected in sediment but not detected in site tissue and for which there is a BAF. There is no BAF for constituents that were not measured, or were never detected in both sediment and tissue, in paired sediment and tissue results.

[a] *Macoma* BAF (bioaccumulation factor) calculation (described in Section 5.1) calculated using dry wt concentrations of tissue.

[b] N = number of samples analyzed in *Macoma* tissue and used in calculation of the BAF.

[c] D = number of detected concentrations in *Macoma* tissue (out of N) used in calculation of the BAF. Zero means all non-detects (using half the reported detection limits). Small numbers lead to greater uncertainty (see plots in Appendix D).

[d] Sediment EPC from listed site data set: All Years Surface samples, 2005/2006 Surface samples, or 2005/2006 (2-25 cm) samples.

[e] Modeled fish EPC based on model from sediment to tissue using BAF.

Table 5-9. Modeled Wet Weight *M. nasuta* Tissue Concentrations for IR Site 20

IR Site 20				All Years		2005 Surface	
Constituent	*Macoma* BAF (wet wt)[a]	N[b]	D[c]	Sediment 95% UCL[d] (mg/kg wet wt)	*Macoma* 95% UCL[e] (mg/kg wet wt)	Sediment 95% UCL (mg/kg wet wt)	*Macoma* 95% UCL (mg/kg wet wt)
Antimony	3.17E-02	25	25	1.03E+01	3.28E-01	1.60E-01	5.07E-03
Cadmium	1.93E-02	25	25	2.56E-01	4.94E-03	1.99E-01	3.84E-03
Chromium	3.14E-02	25	25	3.37E+02	1.06E+01	6.03E+01	1.89E+00
Selenium	6.19E-01	25	9	2.08E-01	1.29E-01	1.40E-01	8.67E-02
Silver	2.83E-02	25	25	1.72E-01	4.87E-03	1.68E-01	4.76E-03
Total PCB	2.27E-01	25	21	4.51E-01	1.03E-01	9.50E-02	2.16E-02
2,4'-DDD	2.25E-01	25	17	3.84E-03	8.64E-04	1.79E-03	4.03E-04
2,4'-DDE	1.91E-01	25	2	2.57E-04	4.91E-05	2.11E-04	4.03E-05
2,4'-DDT	4.65E-01	25	0	4.14E-02	1.93E-02	7.81E-04	3.63E-04
4,4'-DDD	2.62E-01	25	23	1.26E-02	3.30E-03	5.77E-03	1.51E-03
4,4'-DDE	5.03E-01	25	24	4.78E-03	2.41E-03	1.83E-03	9.21E-04
4,4'-DDT	1.81E-01	8	1	1.90E-01	3.43E-02	2.11E-03	3.82E-04
alpha-Chlordane	1.05E-01	25	7	1.25E-03	1.31E-04	3.04E-04	3.18E-05
Dieldrin	1.08E+00	25	21	9.80E-04	1.06E-03	5.57E-04	6.03E-04
Acenaphthene	5.96E-02	25	18	7.62E-02	4.54E-03	9.10E-03	5.42E-04
Acenaphthylene	1.07E-01	25	22	9.56E-02	1.02E-02	1.40E-01	1.50E-02
Anthracene	7.58E-02	25	24	4.07E-01	3.08E-02	6.00E-01	4.55E-02
Benzo(a)anthracene	1.26E-01	25	25	5.87E-01	7.40E-02	1.00E+00	1.26E-01
Benzo(a)pyrene	1.15E-01	25	25	7.28E-01	8.33E-02	1.20E+00	1.37E-01
Benzo(b)fluoranthene	1.27E-01	25	25	6.24E-01	7.91E-02	6.50E-01	8.24E-02
Benzo(g,h,i)perylene	4.24E-02	25	20	4.34E-01	1.84E-02	6.50E-01	2.76E-02
Benzo(k)fluoranthene	1.08E-01	25	25	4.61E-01	4.97E-02	6.40E-01	6.89E-02
Chrysene	9.98E-02	25	25	8.05E-01	8.03E-02	1.30E+00	1.30E-01
Dibenzo(a,h)anthracene	2.91E-02	25	16	1.23E-01	3.58E-03	1.20E-01	3.49E-03
Fluoranthene	2.31E-01	25	25	7.54E-01	1.74E-01	2.50E+00	5.78E-01
Fluorene	4.57E-02	25	11	1.14E-01	5.21E-03	1.30E-01	5.94E-03
Indeno(1,2,3-cd)pyrene	3.07E-02	25	25	2.86E-01	8.77E-03	6.80E-01	2.09E-02
Naphthalene	3.20E-01	25	1	3.96E-02	1.27E-02	1.39E-02	4.46E-03
Phenanthrene	3.04E-02	25	6	4.77E-01	1.45E-02	1.60E+00	4.86E-02
Pyrene	3.34E-01	25	25	1.37E+00	4.58E-01	3.20E+00	1.07E+00

This table includes those constituents that were detected in sediment but not detected in site tissue and for which there is a BAF. There is no BAF for constituents that were not measured, or were never detected in both sediment and tissue, in paired sediment and tissue results.

[a] *Macoma* BAF (bioaccumulation factor) calculation (described in Section 5.1) calculated using wet wt concentrations of tissue.

[b] N = number of samples analyzed in *Macoma* tissue and used in calculation of the BAF.

[c] D = number of detected concentrations in *Macoma* tissue (out of N) used in calculation of the BAF. Zero means all non-detects (using half the reported detection limits). Small numbers lead to greater uncertainty (see plots in Appendix D).

[d] Sediment EPC from listed site data set: All Years Surface samples, 2005 Surface samples, or 2005 (2-25 cm) samples.

[e] Modeled fish EPC based on model from sediment to tissue using BAF

Table 5-10. Modeled Dry Weight Forage Fish Tissue Concentrations for IR Site 20

			IR Site 20 All Years				IR Site 20 2005 Surface				IR Site 20 2005 Subsurface			
Constituent	Fish BAF (unitless DW)[a]	D[b]	Max Sed Conc[c] (mg/kg)	Fish Conc[d] (mg/kg)	Sediment 95% UCL[e] (mg/kg DW)	Fish 95% UCL[f] (mg/kg DW)	Max Sed Conc (mg/kg)	Fish Conc (mg/kg)	Sediment 95% UCL (mg/kg) DW	Fish 95% UCL (mg/kg) DW	Max Sed Conc (mg/kg)	Fish Conc (mg/kg)	Sediment 95% UCL (mg/kg) DW	Fish 95% UCL (mg/kg) DW
Antimony	8.10E-03	0	3.70E+01	3.00E-01	1.03E+01	8.38E-02	4.70E-01	3.81E-03	1.60E-01	1.30E-03	5.18E+00	4.20E-02	2.72E+00	2.20E-02
Arsenic	1.28E-01	1	1.37E+01	1.75E+00	7.04E+00	8.98E-01	6.56E+00	8.36E-01	5.03E+00	6.42E-01	9.37E+00	1.19E+00	5.98E+00	7.62E-01
Cadmium	2.74E-02	34	9.03E-01	2.48E-02	2.56E-01	7.02E-03	3.70E-01	1.01E-02	1.99E-01	5.44E-03	8.98E-01	2.46E-02	3.86E-01	1.06E-02
Chromium	1.54E-02	13	1.23E+03	1.89E+01	3.37E+02	5.19E+00	8.69E+01	1.34E+00	6.03E+01	9.29E-01	9.11E+01	1.40E+00	6.37E+01	9.82E-01
Copper	8.07E-02	34	1.41E+02	1.14E+01	6.85E+01	5.52E+00	1.15E+02	9.28E+00	4.96E+01	4.00E+00	1.79E+02	1.44E+01	6.15E+01	4.96E+00
Lead	1.73E-02	34	2.26E+02	3.90E+00	6.14E+01	1.06E+00	9.15E+01	1.58E+00	3.83E+01	6.63E-01	1.09E+02	1.89E+00	6.15E+01	1.06E+00
Mercury	2.53E-01	34	8.83E+00	2.23E+00	2.45E+00	6.20E-01	8.83E+00	2.23E+00	4.66E+00	1.18E+00	3.84E+00	9.71E-01	2.08E+00	5.26E-01
Nickel	5.20E-03	4	2.88E+02	1.50E+00	7.71E+01	4.01E-01	6.14E+01	3.19E-01	4.25E+01	2.21E-01	6.53E+01	3.40E-01	4.68E+01	2.43E-01
Selenium	1.76E+00	0	4.71E-01	8.27E-01	2.08E-01	3.65E-01	2.10E-01	3.69E-01	1.40E-01	2.46E-01	2.10E-01	3.69E-01	1.53E-01	2.69E-01
Silver	3.16E-02	10	2.88E-01	9.10E-03	1.72E-01	5.43E-03	2.63E-01	8.31E-03	1.68E-01	5.31E-03	3.02E-01	9.54E-03	2.06E-01	6.51E-03
Zinc	3.43E-01	30	2.58E+02	8.85E+01	1.21E+02	4.15E+01	9.96E+01	3.42E+01	6.50E+01	2.23E+01	4.90E+02	1.68E+02	2.26E+02	7.74E+01
alpha-Chlordane	2.38E+00	34	3.14E-03	7.47E-03	1.25E-03	2.97E-03	6.60E-04	1.57E-03	3.04E-04	7.23E-04	8.80E-04	2.09E-03	4.03E-04	9.60E-04
Dieldrin	1.48E+00	34	9.80E-04	1.45E-03	9.80E-04	1.45E-03	9.80E-04	1.45E-03	5.57E-04	8.22E-04	3.34E-03	4.93E-03	1.90E-03	2.81E-03
Endosulfan II	6.09E-02	0	6.50E-04	3.96E-05	4.67E-04	2.85E-05	6.50E-04	3.96E-05	3.21E-04	1.95E-05	1.36E-03	8.28E-05	8.63E-04	5.25E-05
Endrin Aldehyde	2.70E-02	0	1.34E-02	3.63E-04	1.34E-02	3.63E-04	4.00E-05	1.08E-06	3.17E-05	8.56E-07	2.54E-03	6.86E-05	1.33E-03	3.59E-05
gamma-Chlordane	7.96E-01	34	2.15E-03	1.71E-03	2.15E-03	1.71E-03	9.50E-04	7.56E-04	4.19E-04	3.33E-04	1.03E-03	8.20E-04	4.97E-04	3.96E-04
Tributyltin	8.58E+00	16	5.90E-02	5.06E-01	3.16E-02	2.71E-01	5.90E-02	5.06E-01	5.90E-02	5.06E-01	7.60E-02	6.52E-01	7.60E-02	6.52E-01
Total PCB	3.12E+00	34	8.93E-01	2.79E+00	4.51E-01	1.41E+00	9.50E-02	2.97E-01	9.50E-02	2.97E-01	3.54E-01	1.11E+00	3.15E-01	9.83E-01
Total 4,4-DDx	4.55E+00	34	4.82E-01	2.20E+00	4.68E-02	2.13E-01	1.39E-02	6.34E-02	9.17E-03	4.18E-02	8.28E-02	3.77E-01	2.19E-02	9.98E-02
Total HPAH (6)	2.18E-02	33	9.32E+00	2.03E-01	4.79E+00	1.04E-01	9.32E+00	2.03E-01	9.32E+00	2.03E-01	1.75E+01	3.81E-01	1.75E+01	3.81E-01
Total LPAH (6)	7.93E-02	34	2.51E+00	1.99E-01	7.82E-01	6.20E-02	2.51E+00	1.99E-01	2.51E+00	1.99E-01	1.27E+01	1.01E+00	1.22E+01	9.66E-01

[a] Fish BAF (bioaccumulation factor) calculation (described in Section 5.1) calculated using dry wt concentrations of tissue.
[b] D = number of detected concentrations in forage fish tissue (out of 34 total) used in calculation of the BAF. Zero means all non-detects (using half the reported detection limits). Small numbers lead to greater uncertainty (see plots in Appendix D).
[c] Maximum sediment concentration for the listed site data set: All Years Surface samples, 2005 Surface samples, or 2005 (5-25 cm) samples.
[d] Modeled maximum fish concentration based on model from sediment to tissue using BAF.
[e] Sediment EPC from listed site data set.
[f] Modeled fish EPC based on model from sediment to tissue using BAF.

Table 5-11. Modeled Dry Weight Forage Fish Tissue Concentrations for IR Site 24

Constituent	Fish BAF (unitless DW)[a]	D[b]	IR Site 24 All Years				IR Site 24 2005/2006 Surface				IR Site 24 2005/2006 Subsurface			
			Max Sed Conc[c] (mg/kg)	Fish Conc[d] (mg/kg)	Sediment 95% UCL[e] (mg/kg DW)	Fish (95% UCL)[f] (mg/kg DW)	Max Sed Conc (mg/kg)	Fish Conc (mg/kg)	Sediment 95% UCL (mg/kg DW)	Fish 95% UCL (mg/kg DW)	Max Sed Conc (mg/kg)	Fish Conc (mg/kg)	Sediment 95% UCL (mg/kg DW)	Fish 95% UCL (mg/kg DW)
Antimony	8.10E-03	0	2.86E+00	2.32E-02	5.93E-01	4.80E-03	2.86E+00	2.32E-02	5.70E-01	4.62E-03	3.46E+00	2.80E-02	7.16E-01	5.80E-03
Arsenic	1.28E-01	1	2.07E+01	2.64E+00	8.80E+00	1.12E+00	1.51E+01	1.93E+00	8.36E+00	1.07E+00	1.18E+01	1.50E+00	7.74E+00	9.87E-01
Cadmium	2.74E-02	34	3.93E+01	1.08E+00	8.42E+00	2.31E-01	3.78E+01	1.04E+00	7.93E+00	2.17E-01	1.88E+02	5.15E+00	2.15E+01	5.90E-01
Chromium	1.54E-02	13	4.26E+02	6.56E+00	1.91E+02	2.94E+00	3.80E+02	5.85E+00	1.57E+02	2.42E+00	7.99E+02	1.23E+01	1.96E+02	3.02E+00
Copper	8.07E-02	34	2.94E+02	2.37E+01	1.11E+02	8.99E+00	2.47E+02	1.99E+01	9.16E+01	7.39E+00	3.72E+02	3.00E+01	1.03E+02	8.32E+00
Lead	1.73E-02	34	4.98E+02	8.62E+00	1.03E+02	1.79E+00	4.98E+02	8.62E+00	1.19E+02	2.05E+00	2.29E+03	3.96E+01	2.62E+02	4.54E+00
Mercury	2.53E-01	34	7.60E-01	1.92E-01	2.76E-01	6.98E-02	3.58E-01	9.05E-02	2.43E-01	6.13E-02	7.42E-01	1.88E-01	2.94E-01	7.43E-02
Nickel	5.20E-03	4	1.66E+02	8.63E-01	8.98E+01	4.67E-01	1.43E+02	7.44E-01	7.44E+01	3.87E-01	1.80E+02	9.36E-01	8.25E+01	4.29E-01
Selenium	1.76E+00	0	1.69E+00	2.97E+00	5.25E-01	9.22E-01	1.69E+00	2.97E+00	3.90E-01	6.84E-01	5.10E-01	8.96E-01	2.40E-01	4.22E-01
Silver	3.16E-02	10	4.70E+01	1.49E+00	6.04E+00	1.91E-01	4.70E+01	1.49E+00	6.52E+00	2.06E-01	7.06E+01	2.23E+00	9.76E+00	3.08E-01
Zinc	3.43E-01	30	7.23E+02	2.48E+02	1.92E+02	6.57E+01	7.23E+02	2.48E+02	1.69E+02	5.80E+01	6.32E+02	2.17E+02	1.83E+02	6.26E+01
Aldrin	6.00E-02	0	3.50E-03	2.10E-04	4.61E-04	2.77E-05	4.00E-05	2.40E-06	2.16E-05	1.29E-06	2.50E-05	1.50E-06	2.03E-05	1.22E-06
alpha-Chlordane	2.38E+00	34	2.30E-02	5.47E-02	2.47E-03	5.89E-03	1.11E-03	2.64E-03	5.27E-04	1.25E-03	3.98E-03	9.47E-03	7.98E-04	1.90E-03
Dieldrin	1.48E+00	34	2.24E-02	3.30E-02	3.13E-03	4.62E-03	2.24E-02	3.30E-02	3.30E-03	4.87E-03	1.07E-02	1.57E-02	2.33E-03	3.44E-03
Endosulfan I	5.52E-02	0	3.50E-02	1.93E-03	2.79E-03	1.54E-04	4.50E-05	2.48E-06	2.38E-05	1.31E-06	3.00E-05	1.66E-06	2.31E-05	1.28E-06
Endosulfan II	6.09E-02	0	4.20E-03	2.56E-04	8.60E-04	5.24E-05	1.90E-04	1.16E-05	9.33E-05	5.68E-06	1.30E-04	7.92E-06	8.57E-05	5.22E-06
Endrin	1.36E-02	0	4.20E-03	5.71E-05	7.16E-04	9.73E-06	5.00E-05	6.80E-07	2.69E-05	3.65E-07	3.50E-05	4.76E-07	2.56E-05	3.48E-07
Endrin Aldehyde	2.70E-02	0	4.00E-03	1.08E-04	8.01E-04	2.16E-05	8.50E-05	2.30E-06	4.45E-05	1.20E-06	6.00E-05	1.62E-06	4.16E-05	1.12E-06
gamma-Chlordane	7.96E-01	34	7.02E-03	5.59E-03	1.46E-03	1.16E-03	7.02E-03	5.59E-03	1.21E-03	9.61E-04	4.34E-03	3.46E-03	9.50E-04	7.56E-04
Heptachlor Epoxide	5.53E-02	0	1.40E-03	7.74E-05	3.37E-04	1.86E-05	4.50E-05	2.49E-06	2.66E-05	1.47E-06	3.00E-05	1.66E-06	2.59E-05	1.43E-06
Tributyltin	8.58E+00	16	8.90E-01	7.64E+00	1.23E-01	1.05E+00	8.90E-01	7.64E+00	1.48E-01	1.27E+00	3.70E-01	3.18E+00	9.74E-02	8.36E-01
Total PCB	3.12E+00	34	3.14E+00	9.80E+00	4.11E-01	1.28E+00	3.14E+00	9.80E+00	4.53E-01	1.41E+00	4.77E+00	1.49E+01	7.03E-01	2.20E+00
Total 4,4-DDx	4.55E+00	34	1.19E-01	5.40E-01	1.91E-02	8.71E-02	1.19E-01	5.40E-01	2.08E-02	9.49E-02	9.61E-02	4.38E-01	1.97E-02	8.99E-02
Total HPAH (6)	2.18E-02	33	2.06E+02	4.50E+00	2.55E+01	5.55E-01	5.27E+01	1.15E+00	1.15E+01	2.51E-01	1.77E+01	3.86E-01	6.10E+00	1.33E-01
Total LPAH (6)	7.93E-02	34	2.41E+02	1.91E+01	1.40E+01	1.11E+00	2.57E+01	2.04E+00	4.30E+00	3.41E-01	2.02E+01	1.61E+00	2.52E+00	2.00E-01

[a] Fish BAF (bioaccumulation factor) calculation (described in Section 5.1) calculated using dry wt concentrations of tissue.
[b] D = number of detected concentrations in forage fish tissue (out of 34 total) used in calculation of the BAF. Zero means all non-detects (using half the reporteddetection limits). Small numbers lead to greater uncertainty (see plots in Appendix D).
[c] Maximum sediment concentration for the listed site data set: All Years Surface samples, 2005/2006 Surface samples, or 2005/2006 (5-25 cm) samples.
[d] Modeled maximum fish concentration based on model from sediment to tissue using BAF.
[e] Sediment EPC from listed site data set.
[f] Modeled fish EPC based on model from sediment to tissue using BAF.

Table 5-12. Modeled Wet Weight Forage Fish Tissue Concentrations for IR Site 20

IR Site 20			All Years		2005 Surface	
Constituent	Fish BAF (wet wt)[a]	D[b]	Sediment 95% UCL[e] (mg/kg wet wt)	Fish 95% UCL[f] (mg/kg wet wt)	Sediment 95% UCL (mg/kg wet wt)	Fish 95% UCL (mg/kg wet wt)
Antimony	1.00E-03	0	1.03E+01	1.03E-02	1.60E-01	1.60E-04
Arsenic	2.98E-02	1	7.04E+00	2.10E-01	5.03E+00	1.50E-01
Cadmium	3.90E-03	34	2.56E-01	9.99E-04	1.99E-01	7.75E-04
Chromium	2.60E-03	13	3.37E+02	8.76E-01	6.03E+01	1.57E-01
Copper	1.45E-02	34	6.85E+01	9.93E-01	4.96E+01	7.20E-01
Lead	2.70E-03	34	6.14E+01	1.66E-01	3.83E+01	1.03E-01
Mercury	4.44E-02	34	2.45E+00	1.09E-01	4.66E+00	2.07E-01
Nickel	1.10E-03	4	7.71E+01	8.48E-02	4.25E+01	4.68E-02
Selenium	3.45E-01	0	2.08E-01	7.16E-02	1.40E-01	4.83E-02
Silver	4.50E-03	10	1.72E-01	7.74E-04	1.68E-01	7.57E-04
Zinc	6.45E-02	30	1.21E+02	7.81E+00	6.50E+01	4.19E+00
Total PCB	6.74E-01	34	4.51E-01	3.04E-01	9.50E-02	6.40E-02
2,4'-DDD	4.10E-03	0	3.84E-03	1.57E-05	1.79E-03	7.33E-06
2,4'-DDE	2.59E-01	0	2.57E-04	6.67E-05	2.11E-04	5.48E-05
2,4'-DDT	6.91E-02	0	4.14E-02	2.86E-03	7.81E-04	5.40E-05
4,4'-DDD	5.15E-01	34	1.26E-02	6.49E-03	5.77E-03	2.97E-03
4,4'-DDE	1.27E+00	34	4.78E-03	6.06E-03	1.83E-03	2.32E-03
4,4'-DDT	1.21E-01	30	1.90E-01	2.29E-02	2.11E-03	2.55E-04
alpha-Chlordane	3.53E-01	34	1.25E-03	4.41E-04	3.04E-04	1.07E-04
Dieldrin	2.29E-01	34	9.80E-04	2.25E-04	5.57E-04	1.28E-04
Endosulfan II	9.10E-03	0	4.67E-04	4.25E-06	3.21E-04	2.92E-06
Endrin Aldehyde	5.80E-03	0	1.34E-02	7.79E-05	3.17E-05	1.84E-07
gamma-Chlordane	1.18E-01	34	2.15E-03	2.54E-04	4.19E-04	4.95E-05
2-Methylnaphthalene	4.40E-03	14	2.21E-02	9.73E-05	1.20E-02	5.28E-05
Acenaphthene	2.65E-02	34	7.62E-02	2.02E-03	9.10E-03	2.41E-04
Acenaphthylene	1.40E-03	19	9.56E-02	1.34E-04	1.40E-01	1.96E-04
Anthracene	4.80E-03	33	4.07E-01	1.95E-03	6.00E-01	2.88E-03
Benzo(a)anthracene	1.90E-03	28	5.87E-01	1.11E-03	1.00E+00	1.90E-03
Benzo(a)pyrene	1.40E-03	10	7.28E-01	1.02E-03	1.20E+00	1.68E-03
Benzo(b)fluoranthene	1.50E-03	11	6.24E-01	9.36E-04	6.50E-01	9.75E-04
Benzo(g,h,i)perylene	1.70E-03	22	4.34E-01	7.38E-04	6.50E-01	1.11E-03
Benzo(k)fluoranthene	2.60E-03	10	4.61E-01	1.20E-03	6.40E-01	1.66E-03
Chrysene	3.90E-03	31	8.05E-01	3.14E-03	1.30E+00	5.07E-03
Dibenzo(a,h)anthracene	6.00E-04	2	1.23E-01	7.38E-05	1.20E-01	7.20E-05
Fluoranthene	6.90E-03	33	7.54E-01	5.20E-03	2.50E+00	1.73E-02
Fluorene	1.45E-02	34	1.14E-01	1.65E-03	1.30E-01	1.89E-03
Indeno(1,2,3-cd)pyrene	1.30E-03	14	2.86E-01	3.71E-04	6.80E-01	8.84E-04
Naphthalene	7.30E-03	3	3.96E-02	2.89E-04	1.39E-02	1.02E-04
Phenanthrene	1.88E-02	22	4.77E-01	8.96E-03	1.60E+00	3.01E-02
Pyrene	3.40E-03	31	1.37E+00	4.66E-03	3.20E+00	1.09E-02
Tributyltin	1.26E+00	16	3.16E-02	3.97E-02	5.90E-02	7.42E-02

[a] Fish BAF (bioaccumulation factor) calculation (described in Section 5.1) calculated using wet wt concentrations of tissue.
[b] D = number of detected concentrations in forage fish tissue (out of 34 total) used in calculation of the BAF. Zero means all non-detects (using half the reported detection limits). Small numbers lead to greater uncertainty (see plots in Appendix D).
[c] Maximum sediment concentration for the listed site data set: All Years Surface samples, 2005 Surface samples, or 2005 (5-25 cm) samples.
[d] Modeled maximum fish concentration based on model from sediment to tissue using BAF.
[e] Sediment EPC from listed site data set.
[f] Modeled fish EPC based on model from sediment to tissue using BAF.

Table 5-13. Comparison of Measured and Modeled *M. nasuta* Tissue Concentrations for IR Site 24

	All Years			2005/2006 Surface			2005/2006 Subsurface		
Constituent	Modeled Concentration (mg/kg)	Measured Concentration (mg/kg)	Maximum Concentration (mg/kg)	Modeled Concentration (mg/kg)	Measured Concentration (mg/kg)	Maximum Concentration (mg/kg)	Modeled Concentration (mg/kg)	Measured Concentration (mg/kg)	Maximum Concentration (mg/kg)
ANTIMONY	1.17E-01	5.00E-02	1.17E-01	1.13E-01	5.00E-02	1.13E-01	1.41E-01	5.00E-02	1.41E-01
ARSENIC	2.65E+01	2.23E+01	2.65E+01	2.52E+01	2.23E+01	2.52E+01	2.33E+01	2.23E+01	2.33E+01
CADMIUM	1.03E+00	2.91E-01	1.03E+00	9.66E-01	2.91E-01	9.66E-01	2.62E+00	2.91E-01	2.62E+00
CHROMIUM	3.67E+01	2.42E+01	3.67E+01	3.01E+01	2.42E+01	3.01E+01	3.76E+01	2.42E+01	3.76E+01
COPPER	1.87E+01	1.64E+01	1.87E+01	1.54E+01	1.64E+01	1.64E+01	1.73E+01	1.64E+01	1.73E+01
LEAD	5.46E+00	2.07E+00	5.46E+00	6.27E+00	2.07E+00	6.27E+00	1.39E+01	2.07E+00	1.39E+01
MERCURY	5.98E-02	1.20E-01	1.20E-01	5.25E-02	1.20E-01	1.20E-01	6.36E-02	1.20E-01	1.20E-01
NICKEL	2.76E+01	2.27E+01	2.76E+01	2.28E+01	2.27E+01	2.28E+01	2.53E+01	2.27E+01	2.53E+01
SELENIUM	2.00E+00	2.30E+00	2.30E+00	1.49E+00	2.30E+00	2.30E+00	9.17E-01	2.30E+00	2.30E+00
SILVER	1.03E+00	2.71E-01	1.03E+00	1.12E+00	2.71E-01	1.12E+00	1.67E+00	2.71E-01	1.67E+00
ZINC	1.07E+02	9.47E+01	1.07E+02	9.47E+01	9.47E+01	9.47E+01	1.02E+02	9.47E+01	1.02E+02
ALDRIN	4.31E-03	3.60E-04	4.31E-03	2.02E-04	3.60E-04	3.60E-04	1.90E-04	3.60E-04	3.60E-04
ALPHA-CHLORDANE	1.62E-03	4.92E-04	1.62E-03	3.45E-04	4.92E-04	4.92E-04	5.22E-04	4.92E-04	5.22E-04
DIELDRIN	2.04E-02	2.40E-03	2.04E-02	2.15E-02	2.40E-03	2.15E-02	1.52E-02	2.40E-03	1.52E-02
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	1.16E-03	4.15E-04	1.16E-03	4.34E-05	4.15E-04	4.15E-04	4.13E-05	4.15E-04	4.15E-04
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	1.14E-03	4.15E-04	1.14E-03	9.01E-05	4.15E-04	4.15E-04	8.78E-05	4.15E-04	4.15E-04
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	1.09E-01	3.50E-02	1.09E-01	1.32E-01	3.50E-02	1.32E-01	8.64E-02	3.50E-02	8.64E-02
Total PCB	5.78E-01	3.03E-01	5.78E-01	6.37E-01	3.03E-01	6.37E-01	9.89E-01	3.03E-01	9.89E-01
Total 4,4-DDx ND/2	8.86E-02	3.64E-02	8.86E-02	9.66E-02	3.64E-02	9.66E-02	9.15E-02	3.64E-02	9.15E-02
Total HPAH (6) ND/2	2.98E+01	2.73E+01	2.98E+01	1.34E+01	2.73E+01	2.73E+01	7.13E+00	2.73E+01	2.73E+01
Total LPAH (6) ND/2	5.03E+00	1.20E+00	5.03E+00	1.54E+00	1.20E+00	1.54E+00	9.02E-01	1.20E+00	1.20E+00
Total PAH (12) ND/2	NA	2.85E+01	2.85E+01	NA	2.85E+01	2.85E+01	NA	2.85E+01	2.85E+01

Table 5-14. Summary of EPCs for IR Site 20 Dry Weight Tissues

IR Site 20 BERA EPCs	*Macoma* EPCs (95% UCL)				Forage Fish EPCs (95% UCL)			
Constituent	All Years	2005 (0-5 cm)	2005 (5-25 cm)	Type	All Years	2005 (0-5 cm)	2005 (5-25 cm)	Type
Inorganics (mg/kg dry wt)								
Antimony	2.04	0.0316	0.537	model	>0.0838<	>0.0013<	>0.022<	model
Arsenic	22			tissue	0.898	0.642	0.762	model
Cadmium	0.0312	0.0242	0.047	model	0.00702	0.00544	0.0106	model
Chromium	64.6	11.6	12.2	model	5.19	0.929	0.982	model
Copper	15.6			tissue	5.52	4	4.96	model
Lead	2.5			tissue	1.06	0.663	1.06	model
Mercury	0.045			tissue	0.62	1.18	0.526	model
Nickel	1.25			tissue	0.401	0.221	0.243	model
Selenium	0.794	0.535	0.584	model	>0.365<	>0.246<	>0.269<	model
Silver	0.0295	0.0288	0.0353	model	0.00543	0.00531	0.00651	model
Zinc	87.2			tissue	41.5	22.3	77.4	model
Pesticides and PCBs (mg/kg dry wt)								
Total PCB	0.635	0.134	0.498	model	1.41	0.297	1.11	model
Total 4,4-DDx	0.664	0.0426	0.166	model	0.213	0.0418	0.162	model
alpha-Chlordane	0.000817	0.000199	0.000264	model	0.00297	0.000723	0.00096	model
Dieldrin	0.00639	0.00363	0.0124	model	0.00145	0.000822	0.00281	model
Endosulfan II	>0.00465<			tissue	>0.0000285<	>0.0000195<	>0.0000525<	model
Endrin Aldehyde	>0.00927<			tissue	>0.000363<	>0.00000086<	>0.0000359<	model
gamma-Chlordane	>0.00231<			tissue	0.00171	0.000333	0.000396	model
PAHs (mg/kg dry wt)								
Total LPAH (6)	0.549	0.899	4.41	model	0.122	0.199	0.976	model
Total HPAH (6)	6.1	10.9	20.4	model	0.114	0.203	0.381	model
Organotins (mg/kg dry wt)								
Tributyltin	0.0345			tissue	0.271	0.506	0.652	model

[a] Type refers to the method used to calculate the EPC for a constituent, including model and tissue (depending on whether or not it was ever detected in site tissue).

Type = model when a BAF was used to model tissue EPCs from sediment EPCs for each of the listed sediment data sets: All Years surface samples, 2005 surface samples or 2005 subsurface (5-25 cm) samples (more details in Table 5-5 and Table 5-9).

Type = tissue produces only one EPC value calculated directly from site-specific tissue samples (more details in Table 5-3).

Table 5-15. Summary of EPCs for IR Site 24 Dry Weight Tissues

IR Site 24 BERA EPCs	*Macoma* EPCs (95% UCL)			Forage Fish EPCs (95% UCL)			
Constituent	All Years	2005/2006 (0-5 cm)	2005/2006 (5-25 cm)	All Years	2005/2006 (0-5 cm)	2005/2006 (5-25 cm)	Type
Inorganics (mg/kg dry wt)							
Antimony	0.117	0.113	0.141	0.00480	0.00462	0.00580	model
Arsenic	26.48	25.15	23.30	1.12	1.07	0.987	model
Cadmium	1.03	0.97	2.62	0.231	0.21736	0.590	model
Chromium	36.66	30.08	37.57	2.94	2.42	3.02	model
Copper	18.73	16.36	17.34	8.99	7.39	8.32	model
Lead	5.46	6.27	13.85	1.79	2.05	4.54	model
Mercury	0.12	0.12	0.12	0.0698	0.0613	0.0743	model
Nickel	27.59	22.85	25.34	0.467	0.387	0.429	model
Selenium	2.30	2.30	2.30	0.922	0.684	0.422	model
Silver	1.03	1.12	1.67	0.191	0.206	0.308	model
Zinc	107.24	94.71	102.21	65.71	58.02	62.63	model
Pesticides and PCBs (mg/kg dry wt)							
Total PCB	0.578	0.637	0.989	1.28	1.41	2.20	model
Total 4,4-DDx	0.0886	0.0966	0.0915	0.0871	0.0949	0.0899	model
Aldrin	0.00431	0.000360	0.000360	0.0000277	0.00000129	0.00000122	model
alpha-Chlordane	0.00162	0.000492	0.000522	0.00589	0.00125	0.00190	model
Dieldrin	0.0204	0.0215	0.0152	0.00462	0.00487	0.00344	model
Endosulfan I	—	—	—	0.000154	0.00000131	0.00000128	model
Endosulfan II	—	—	—	0.0000524	0.00000568	0.00000522	model
Endrin	0.00116	0.000415	0.000415	0.00000973	0.000000365	0.000000348	model
Endrin Aldehyde	—	—	—	0.0000216	0.00000120	0.00000112	model
gamma-Chlordane	—	—	—	0.00116	0.000961	0.000756	model
Heptachlor Epoxide	0.00114	0.000415	0.000415	0.0000186	0.00000147	0.00000143	model
PAHs (mg/kg dry wt)							
Total LPAH (6)	5.03	1.54	1.20	1.11	0.341	0.200	model
Total HPAH (6)	29.8	27.3	27.3	0.555	0.251	0.133	model
Organotins (mg/kg dry wt)							
Tributyltin	0.1088	0.1316	0.0864	1.05	1.27	0.836	model

[a] Type refers to the method used to calculate the EPC for a constituent, including model and tissue (depending on whether or not it was ever detected in site tissue).

Type = model when a BAF was used to model tissue EPCs from sediment EPCs for each of the listed sediment data sets: All Years surface samples, 2005/2006 surface samples or 2005/2006 subsurface (5-25 cm) samples (more details in Table 5-6 and Table 5-10)

Type = tissue produces only one EPC value calculated directly from site-specific tissue samples (more details in Table 5-4).

Table 5-16. Summary of EPCs for IR Site 20 Wet Weight Tissues

IR Site 20 HH EPCs	*Macoma* EPCs (95% UCL)			Forage Fish EPCs (95% UCL)		
Constituent	**All Years**	**2005 (0-5 cm)**	**Type[a]**	**All Years**	**2005 (0-5 cm)**	**Type**
Inorganics (mg/kg wet wt)						
Antimony	0.328	0.00507	model	>0.0103<	>0.00016<	model
Arsenic	2.47		tissue	0.21	0.15	model
Cadmium	0.00494	0.00384	model	0.000999	0.000775	model
Chromium	10.6	1.89	model	0.876	0.157	model
Copper	1.72		tissue	0.993	0.72	model
Lead	0.276		tissue	0.166	0.103	model
Mercury	0.005		tissue	0.109	0.207	model
Nickel	0.138		tissue	0.0848	0.0468	model
Selenium	0.129	0.0867	model	>0.0716<	>0.0483<	model
Silver	0.00487	0.00476	model	0.000774	0.000757	model
Zinc	9.75		tissue	7.81	4.19	model
Pesticides and PCBs (mg/kg wet wt)						
Total PCB	0.103	0.0216	model	0.304	0.064	model
4,4'-DDD	0.0033	0.00151	model	0.00649	0.00297	model
4,4'-DDE	0.00241	0.000921	model	0.00606	0.00232	model
4,4'-DDT	0.0343	0.000382	model	0.0229	0.000255	model
2,4'-DDD	0.000864	0.000403	model	>0.0000157<	>0.00000733<	model
2,4'-DDE	0.0000491	0.0000403	model	>0.0000667<	>0.0000548<	model
2,4'-DDT	>0.0193<	>0.000363<	model	>0.00286<	>0.000054<	model
alpha-Chlordane	0.000131	0.0000318	model	0.000441	0.000107	model
Dieldrin	0.00106	0.000603	model	0.000225	0.000128	model
Endosulfan II	>0.00052<		tissue	>0.00000425<	>0.00000292<	model
Endrin Aldehyde	>0.00104<		tissue	>0.0000779<	>0.00000018<	model
gamma-Chlordane	>0.000259<		tissue	0.000254	0.0000495	model
PAHs (mg/kg wet wt)						
2-Methylnaphthalene	>0.0336<		tissue	0.0000973	0.0000528	model
Acenaphthene	0.00454	0.000542	model	0.00202	0.000241	model
Acenaphthylene	0.0102	0.015	model	0.000134	0.000196	model
Anthracene	0.0308	0.0455	model	0.00195	0.00288	model
Benzo(a)anthracene	0.074	0.126	model	0.00111	0.0019	model
Benzo(a)pyrene	0.0833	0.137	model	0.00102	0.00168	model
Benzo(b)fluoranthene	0.0791	0.0824	model	0.000936	0.000975	model
Benzo(g,h,i)perylene	0.0184	0.0276	model	0.000738	0.00111	model
Benzo(k)fluoranthene	0.0497	0.0689	model	0.0012	0.00166	model
Chrysene	0.0803	0.13	model	0.00314	0.00507	model
Dibenzo(a,h)anthracene	0.00358	0.00349	model	0.0000738	0.000072	model
Dibenzofuran	>0.0336<		tissue	—	—	no data
Fluoranthene	0.174	0.578	model	0.0052	0.0173	model
Fluorene	0.00521	0.00594	model	0.00165	0.00189	model
Indeno(1,2,3-cd)pyrene	0.00877	0.0209	model	0.000371	0.000884	model
Naphthalene	0.0127	0.00446	model	0.000289	0.000102	model
Phenanthrene	0.0145	0.0486	model	0.00896	0.0301	model
Pyrene	0.458	1.07	model	0.00466	0.0109	model
Organotins (mg/kg wet wt)						
Tributyltin	0.00379		tissue	0.0397	0.0742	model

[a] Type refers to the method used to calculate the EPC for a constituent, including model and tissue (depending on whether or not it was ever detected in site tissue).

Type = model when a BAF was used to model tissue EPCs from sediment EPCs for each of the listed sediment data sets: All Years surface samples or 2005 surface samples (more details in Table 5-7 and Table 5-11).

Type = tissue produces only one EPC value calculated directly from site-specific tissue samples (more details in Table 5-3).

Table 6-1. Dose Assessment Exposure Parameters for Receptors of Concern at Offshore Sediment Sites

Parameter	Surf Scoter	Least Tern (Adult)	Double-Crested Cormorant	Units
IR_{prey}	0.084	0.0083	0.091	kg/day dry wt
C_{prey}				
SLERA	Maximum *Macoma* tissue COPC concentration	Maximum *Macoma* and forage fish tissue COPC concentration	Maximum forage fish tissue COPC concentration	mg/kg dry wt
BERA	95% UCL of *Macoma* tissue COPC concentration	95% UCL of *Macoma* and forage fish tissue COPC concentration	95% UCL of forage fish tissue COPC concentration	mg/kg dry wt
IR_{sed}	0.0023	0	0.0018	kg/day dry wt
C_{sed}				
SLERA	Maximum sediment COPC concentration	NA	Maximum sediment COPC concentration	mg/kg dry wt
BERA	95% UCL or mean of sediment COPC concentration	NA	95% UCL or mean of sediment COPC concentration	mg/kg dry wt
Foraging Range	7	Offshore areas of Alameda Point down to Oakland Airport	89	km^2
SUF				
SLERA	1	1	1	unitless
BERA				unitless
IR Site 20	0.015	0.012	0.002	
IR Site 24	0.029	0.029	0.004	
Body weight	1.1	0.045	1.67	kg

Table 6-2. Least Tern Foraging Distribution Patterns around Alameda Point

Study Areas	Foraging Distribution (Percentage of the Year's Total)										
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	Mean
1	7	6.7	5.4	7.3	0.0	1.7	1.9	3.7	0.2	3.7	3.77
2	2.9	2.4	4.5	1.7	0.4	2.7	3.5	5.2	3.8	7.5	3.01
3	0.3	4.3	2.4	0.7	2.1	1.7	0.2	1.1	0.2	0.6	1.44
4	7.1	0.9	7.1	1.4	2.9	4.6	3.7	8.4	2.4	3.7	4.28
5	1.7	24.4	8.1	0.7	1.2	1.0	1.4	4.3	6.1	8.6	5.43
6	41.6	16.6	16.3	1.4	0.0	6.3	5.8	7.2	5.4	6.6	11.18
7	8.8	10.6	11.3	11.5	22.4	16.4	17.0	18.6	24.6	19.1	15.69
8	7.1	11.2	24	39.4	53.1	29.5	29.2	25.2	33.2	32.8	27.99
9	3.0	6.7	0.2	27.9	10.8	20.3	23.4	5.8	18.6	10.1	12.97
10	1.7	2.4	0.0	0.3	0.4	0.0	0.0	1.6	0.7	2.5	0.79
12	0.3	1.5	0.4	1.7	4.1	3.4	0.2	1.6	0.0	1.0	1.47
13/15	0.3	1.5	2.8	1.7	0.0	1.2	0.0	2.1	0.2	2.1	1.08
14	18.1	9.1	12.6	3.5	0.0	9.2	13.7	13.9	4.6	1.7	9.41
51	-	1.5	4.7	0.7	2.5	1.9	0.2	1.2	-	-	1.81
52	-	0.0	0.2	0.0	0.0	0.2	0.0	0.1	-	-	0.07

From: Bailey 1984, 1985, 1986, 1988, 1990a, b, and 1992; Collins and Feeney, 1993, 1995.

Table 6-3. Direct Contact Toxicity Benchmarks

Constituent	Low Benchmark	High Benchmark	Reference
	(mg/kg) DW	(mg/kg) DW	
ANTIMONY	2.00E+00	2.50E+01	Long and Morgan, 1991
ARSENIC	8.20E+00	7.00E+01	Long and Morgan, 1995
CADMIUM	1.20E+00	9.60E+00	Long and Morgan, 1995
CHROMIUM	8.10E+01	3.70E+02	Long and Morgan, 1995
COPPER	3.40E+01	2.70E+02	Long and Morgan, 1995
LEAD	4.67E+01	2.18E+02	Long and Morgan, 1995
MERCURY	1.50E-01	7.10E-01	Long and Morgan, 1995
NICKEL	2.09E+01	5.16E+01	Long and Morgan, 1995
SELENIUM	NA	NA	NA
SILVER	1.00E+00	3.70E+00	Long and Morgan, 1995
ZINC	1.50E+02	4.10E+02	Long and Morgan, 1995
ALDRIN	NA	NA	NA
ALPHA-CHLORDANE	5.00E-04	6.00E-03	Long and Morgan, 1991
DIELDRIN	2.00E-05	8.00E-03	Long and Morgan, 1991
ENDOSULFAN I	NA	NA	NA
ENDOSULFAN II	NA	NA	NA
ENDRIN	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA
GAMMA-BHC	3.20E-04	9.90E-04	MacDonald et al., 1994
GAMMA-CHLORDANE	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA
DIBENZOFURAN	NA	NA	NA
TRIBUTYLTIN	2.51E-05	NA	U.S. EPA 1996b
Total PCB	2.27E-02	1.80E-01	Long and Morgan, 1995
Total DDx	1.58E-03	4.61E-02	Long and Morgan, 1991
Total HPAH	1.70E+00	9.60E+00	Long and Morgan, 1995
Total LPAH	5.52E-01	3.16E+00	Long and Morgan, 1995
Total PAH	4.02E-03	4.48E-02	Long and Morgan, 1995

Table 6-4. Toxicity Reference Values

Constituent	NOAEL Study Receptor Body Weight (kg)	Literature-Based Low Avian TRV (mg/kg/day)	Reference	LOAEL Study Receptor Body Weight (kg)	Literature-Based High Avian TRV (mg/kg/day)	Reference
ANTIMONY	NA	NA	NA	NA	NA	NA
ARSENIC	1.17E+00	5.50E+00	DON, 1998	1.17E+00	2.20E+01	DON, 1998
CADMIUM	7.99E-01	8.00E-02	DON, 1998	8.40E-02	1.04E+01	DON, 1998
CHROMIUM	1.25E+00	2.66E+00	U.S. EPA, 2005	1.25E+00	1.56E+01	U.S. EPA, 2005a
COPPER	6.39E-01	2.30E+00	DON, 1998	4.09E-01	5.23E+01	DON, 1998
LEAD	8.40E-02	1.40E-02	DON, 1998	8.00E-01	8.75E+00	DON, 1998
MERCURY	1.00E+00	3.90E-02	DON, 1998	1.00E+00	1.80E-01	DON, 1998
NICKEL	6.14E-01	1.38E+00	DON, 1998	5.80E-01	5.63E+01	DON, 1998
SELENIUM	1.11E+00	2.30E-01	DON, 1998	1.11E+00	9.30E-01	DON, 1998
SILVER	NA	NA	NA	NA	NA	NA
ZINC	9.55E-01	1.72E+01	DON, 1998	9.55E-01	1.72E+02	DON, 1998
ALDRIN	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	6.40E-02	2.14E+00	Sample et al., 1996	6.40E-02	1.07E+01	Sample et al., 1996
DIELDRIN	4.66E-01	7.09E-02	U.S. EPA, 2005	4.66E-01	8.01E-01	U.S. EPA, 2005a
ENDOSULFAN I	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA
ENDRIN	1.81E-01	1.00E-02	Sample et al., 1996	1.81E-01	1.00E-01	Sample et al., 1996
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	
GAMMA-BHC	1.00E+00	2.00E+00	Sample et al., 1996	1.00E+00	2.00E+01	Sample et al., 1996
GAMMA-CHLORDANE	6.40E-02	2.14E+00	Sample et al., 1996	6.40E-02	1.07E+01	Sample et al., 1996
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	9.65E-02	7.30E-01	DON, 1998	9.65E-02	4.59E+01	DON, 1998
Total PCB	8.00E-01	9.00E-02	DON, 1998	1.72E+00	1.27E+00	DON, 1998
Total DDx	3.50E+00	9.00E-03	DON, 1998	1.00E+00	6.00E-01	DON, 1998
Total HPAH	NA	NA	NA	NA	NA	NA
Total LPAH	NA	NA	NA	NA	NA	NA
Total PAH	NA	NA	NA	NA	NA	NA

Table 6-5. Screening-Level Direct Contact Toxicity Evaluation for IR Site 20

Constituent	Surface All Years (mg/kg)	2005 Surface (mg/kg)	2005 Subsurface (mg/kg)	Benthic NOAEL (mg/kg)	Benthic LOAEL (mg/kg)	NOAEL HQ (unitless)	LOAEL HQ (unitless)	NOAEL HQ (unitless)	LOAEL HQ (unitless)	NOAEL HQ (unitless)	LOAEL HQ (unitless)
ANTIMONY	2.86E+00	2.86E+00	3.46E+00	2.00E+00	2.50E+01	1.43E+00	1.14E-01	1.43E+00	1.14E-01	1.73E+00	1.38E-01
ARSENIC	2.07E+01	1.51E+01	1.18E+01	8.20E+00	7.00E+01	2.52E+00	2.96E-01	1.84E+00	2.16E-01	1.44E+00	1.69E-01
CADMIUM	3.93E+01	3.78E+01	1.88E+02	1.20E+00	9.60E+00	3.28E+01	4.09E+00	3.15E+01	3.94E+00	1.57E+02	1.96E+01
CHROMIUM	4.26E+02	3.80E+02	7.99E+02	8.10E+01	3.70E+02	5.26E+00	1.15E+00	4.69E+00	1.03E+00	9.86E+00	2.16E+00
COPPER	2.94E+02	2.47E+02	3.72E+02	3.40E+01	2.70E+02	8.65E+00	1.09E+00	7.26E+00	9.15E-01	1.09E+01	1.38E+00
LEAD	4.98E+02	4.98E+02	2.29E+03	4.67E+01	2.18E+02	1.07E+01	2.28E+00	1.07E+01	2.28E+00	4.90E+01	1.05E+01
MERCURY	7.60E-01	3.58E-01	7.42E-01	1.50E-01	7.10E-01	5.07E+00	1.07E+00	2.39E+00	5.04E-01	4.95E+00	1.05E+00
NICKEL	1.66E+02	1.43E+02	1.80E+02	2.09E+01	5.16E+01	7.94E+00	3.22E+00	6.84E+00	2.77E+00	8.61E+00	3.49E+00
SELENIUM	1.69E+00	1.69E+00	5.10E-01	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	4.70E+01	4.70E+01	7.06E+01	1.00E+00	3.70E+00	4.70E+01	1.27E+01	4.70E+01	1.27E+01	7.06E+01	1.91E+01
ZINC	7.23E+02	7.23E+02	6.32E+02	1.50E+02	4.10E+02	4.82E+00	1.76E+00	4.82E+00	1.76E+00	4.21E+00	1.54E+00
ALDRIN	3.50E-03	4.00E-05	2.50E-05	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	2.30E-02	1.11E-03	3.98E-03	5.00E-04	6.00E-03	4.60E+01	3.83E+00	2.22E+00	1.85E-01	7.96E+00	6.63E-01
DIELDRIN	2.24E-02	2.24E-02	1.07E-02	2.00E-05	8.00E-03	1.12E+03	2.79E+00	1.12E+03	2.79E+00	5.33E+02	1.33E+00
ENDOSULFAN I	3.50E-02	4.50E-05	3.00E-05	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	4.20E-03	1.90E-04	1.30E-04	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	6.50E-03	4.35E-04	3.05E-04	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	4.20E-03	5.00E-05	3.50E-05	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	4.00E-03	8.50E-05	6.00E-05	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC	3.35E-03	4.50E-05	3.00E-05	3.20E-04	9.90E-04	1.05E+01	3.38E+00	1.41E-01	4.55E-02	9.38E-02	3.03E-02
GAMMA-CHLORDANE	7.02E-03	7.02E-03	4.34E-03	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	1.40E-03	4.50E-05	3.00E-05	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	7.90E-01	1.64E-01	2.39E-02	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	8.90E-01	8.90E-01	3.70E-01	2.51E-02	NA	3.55E+01	NA	3.55E+01	NA	1.47E+01	NA
Total PCB	3.14E+00	3.14E+00	4.77E+00	2.27E-02	1.80E-01	1.38E+02	1.74E+01	1.38E+02	1.74E+01	2.10E+02	2.65E+01
Total 4,4-DDx	1.19E-01	1.19E-01	9.61E-02	1.58E-03	4.61E-02	7.50E+01	2.57E+00	7.50E+01	2.57E+00	6.08E+01	2.09E+00
Total HPAH	2.06E+02	5.27E+01	1.77E+01	1.70E+00	9.60E+00	1.21E+02	2.15E+01	3.10E+01	5.49E+00	1.04E+01	1.85E+00
Total LPAH	2.41E+02	2.57E+01	2.02E+01	5.52E-01	3.16E+00	4.37E+02	7.63E+01	4.66E+01	8.14E+00	3.67E+01	6.41E+00
Total PAH	4.47E+02	7.35E+01	3.80E+01	4.02E+00	4.48E+01	1.11E+02	9.98E+00	1.83E+01	1.64E+00	9.44E+00	8.47E-01

Highlighted Cell = HQ > 1.

Table 6-6. Screening-Level Direct Contact Toxicity Evaluation for IR Site 24

Constituent	Maximum Sediment Concentration			Direct Contact Toxicity Benchmark		Surface All Years		2005/2006 Surface		2005/2006 Subsurface	
	Surface All Years (mg/kg)	2005/2006 Surface (mg/kg)	2005/2006 Subsurface (mg/kg)	Benthic NOAEL (mg/kg)	Benthic LOAEL (mg/kg)	NOAEL HQ (unitless)	LOAEL HQ (unitless)	NOAEL HQ (unitless)	LOAEL HQ (unitless)	NOAEL HQ (unitless)	LOAEL HQ (unitless)
ANTIMONY	2.86E+00	2.86E+00	3.46E+00	2.00E+00	2.50E+01	1.43E+00	1.14E-01	1.43E+00	1.14E-01	1.73E+00	1.38E-01
ARSENIC	2.07E+01	1.51E+01	1.18E+01	8.20E+00	7.00E+01	2.52E+00	2.96E-01	1.84E+00	2.16E-01	1.44E+00	1.69E-01
CADMIUM	3.93E+01	3.78E+01	1.88E+02	1.20E+00	9.60E+00	3.28E+01	4.09E+00	3.15E+01	3.94E+00	1.57E+02	1.96E+01
CHROMIUM	4.26E+02	3.80E+02	7.99E+02	8.10E+01	3.70E+02	5.26E+00	1.15E+00	4.69E+00	1.03E+00	9.86E+00	2.16E+00
COPPER	2.94E+02	2.47E+02	3.72E+02	3.40E+01	2.70E+02	8.65E+00	1.09E+00	7.26E+00	9.15E-01	1.09E+01	1.38E+00
LEAD	4.98E+02	4.98E+02	2.29E+03	4.67E+01	2.18E+02	1.07E+01	2.28E+00	1.07E+01	2.28E+00	4.90E+01	1.05E+01
MERCURY	7.60E-01	3.58E-01	7.42E-01	1.50E-01	7.10E-01	5.07E+00	1.07E+00	2.39E+00	5.04E-01	4.95E+00	1.05E+00
NICKEL	1.66E+02	1.43E+02	1.80E+02	2.09E+01	5.16E+01	7.94E+00	3.22E+00	6.84E+00	2.77E+00	8.61E+00	3.49E+00
SELENIUM	1.69E+00	1.69E+00	5.10E-01	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	4.70E+01	4.70E+01	7.06E+01	1.00E+00	3.70E+00	4.70E+01	1.27E+01	4.70E+01	1.27E+01	7.06E+01	1.91E+01
ZINC	7.23E+02	7.23E+02	6.32E+02	1.50E+02	4.10E+02	4.82E+00	1.76E+00	4.82E+00	1.76E+00	4.21E+00	1.54E+00
ALDRIN	3.50E-03	4.00E-05	2.50E-05	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	2.30E-02	1.11E-03	3.98E-03	5.00E-04	6.00E-03	4.60E+01	3.83E+00	2.22E+00	1.85E-01	7.96E+00	6.63E-01
DIELDRIN	2.24E-02	2.24E-02	1.07E-02	2.00E-05	8.00E-03	1.12E+03	2.79E+00	1.12E+03	2.79E+00	5.33E+02	1.33E+00
ENDOSULFAN I	3.50E-02	4.50E-05	3.00E-05	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	4.20E-03	1.90E-04	1.30E-04	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	6.50E-03	4.35E-04	3.05E-04	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	4.20E-03	5.00E-05	3.50E-05	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	4.00E-03	8.50E-05	6.00E-05	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC	3.35E-03	4.50E-05	3.00E-05	3.20E-04	9.90E-04	1.05E+01	3.38E+00	1.41E-01	4.55E-02	9.38E-02	3.03E-02
GAMMA-CHLORDANE	7.02E-03	7.02E-03	4.34E-03	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	1.40E-03	4.50E-05	3.00E-05	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	7.90E-01	1.64E-01	2.39E-02	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	8.90E-01	8.90E-01	3.70E-01	2.51E-02	NA	3.55E+01	NA	3.55E+01	NA	1.47E+01	NA
Total PCB	3.14E+00	3.14E+00	4.77E+00	2.27E-02	1.80E-01	1.38E+02	1.74E+01	1.38E+02	1.74E+01	2.10E+02	2.65E+01
Total 4,4-DDx	1.19E-01	1.19E-01	9.61E-02	1.58E-03	4.61E-02	7.50E+01	2.57E+00	7.50E+01	2.57E+00	6.08E+01	2.09E+00
Total HPAH	2.06E+02	5.27E+01	1.77E+01	1.70E+00	9.60E+00	1.21E+02	2.15E+01	3.10E+01	5.49E+00	1.04E+01	1.85E+00
Total LPAH	2.41E+02	2.57E+01	2.02E+01	5.52E-01	3.16E+00	4.37E+02	7.63E+01	4.66E+01	8.14E+00	3.67E+01	6.41E+00
Total PAH	4.47E+02	7.35E+01	3.80E+01	4.02E+00	4.48E+01	1.11E+02	9.98E+00	1.83E+01	1.64E+00	9.44E+00	8.47E-01

Highlighted Cell = HQ > 1.

Table 6-7. Summary of Screening-Level Hazard Quotients for IR Site 20

Constituent	All Years			2005 Surface			2005 Subsurface			BERA COPEC?
	Surf Scoter	Least Tern	Double-Crested Cormorant	Surf Scoter	Least Tern	Double-Crested Cormorant	Surf Scoter	Least Tern	Double-Crested Cormorant	
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ARSENIC	3.15E-01	1.12E-01	1.86E-02	3.12E-01	5.38E-02	8.91E-03	3.13E-01	7.69E-02	1.27E-02	No
CADMIUM	1.21E-01	1.01E-01	2.50E-02	4.94E-02	4.16E-02	1.03E-02	1.20E-01	1.01E-01	2.49E-02	No
CHROMIUM	7.94E+00	2.55E+00	8.37E-01	5.61E-01	1.80E-01	5.91E-02	5.88E-01	1.89E-01	6.20E-02	**Yes**
COPPER	5.80E-01	1.55E+00	2.77E-01	5.58E-01	1.27E+00	2.26E-01	6.11E-01	1.97E+00	3.52E-01	**Yes**
LEAD	2.84E+01	5.82E+01	1.79E+01	1.65E+01	2.36E+01	7.26E+00	1.80E+01	2.81E+01	8.65E+00	**Yes**
MERCURY	5.51E-01	1.96E+01	3.04E+00	5.51E-01	1.96E+01	3.04E+00	2.88E-01	8.54E+00	1.32E+00	**Yes**
NICKEL	4.50E-01	3.38E-01	2.33E-01	1.44E-01	7.20E-02	4.96E-02	1.50E-01	7.65E-02	5.27E-02	No
SELENIUM	6.03E-01	1.26E+00	1.83E-01	2.69E-01	5.62E-01	8.14E-02	2.69E-01	5.62E-01	8.14E-02	**Yes**
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ZINC	4.07E-01	1.75E+00	2.65E-01	3.88E-01	6.75E-01	1.02E-01	4.34E-01	3.32E+00	5.03E-01	**Yes**
ALPHA-CHLORDANE	4.33E-05	6.91E-04	9.99E-05	9.10E-06	1.45E-04	2.10E-05	1.21E-05	1.94E-04	2.80E-05	No
DIELDRIN	5.82E-03	6.00E-03	8.72E-04	5.82E-03	6.00E-03	8.72E-04	1.98E-02	2.05E-02	2.97E-03	No
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
GAMMA-CHLORDANE	4.81E-05	1.58E-04	2.33E-05	4.74E-05	6.99E-05	1.03E-05	4.74E-05	7.58E-05	1.11E-05	No
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
TRIBUTYLTIN	3.47E-03	1.49E-01	2.14E-02	3.47E-03	1.49E-01	2.14E-02	4.47E-03	1.92E-01	2.76E-02	No
Total PCB	1.02E+00	1.02E+01	1.47E+00	1.08E-01	1.08E+00	1.56E-01	4.04E-01	4.03E+00	5.81E-01	**Yes**
Total 4,4-DDx	2.40E+01	1.07E+02	1.55E+01	6.94E-01	3.10E+00	4.47E-01	4.13E+00	1.85E+01	2.66E+00	**Yes**
Total HPAH	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
Total LPAH	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
Total PAH	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**

Highlighted Cell = HQ > 1.

Table 6-8. Summary of Screening-Level Hazard Quotients for IR Site 24

	All Years			2005/2006 Surface			2005/2006 Subsurface			
Constituent	**Surf Scoter**	**Least Tern**	**Double-Crested Cormorant**	**Surf Scoter**	**Least Tern**	**Double-Crested Cormorant**	**Surf Scoter**	**Least Tern**	**Double-Crested Cormorant**	**BERA COPEC?**
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ARSENIC	8.84E-01	1.70E-01	2.81E-02	6.44E-01	1.24E-01	2.05E-02	5.04E-01	9.68E-02	1.60E-02	No
CADMIUM	5.25E+00	4.41E+00	1.09E+00	5.05E+00	4.25E+00	1.05E+00	2.51E+01	2.11E+01	5.21E+00	**Yes**
CHROMIUM	2.75E+00	8.84E-01	2.90E-01	2.45E+00	7.89E-01	2.58E-01	5.16E+00	1.66E+00	5.43E-01	**Yes**
COPPER	1.71E+00	3.23E+00	5.78E-01	1.44E+00	2.72E+00	4.85E-01	2.17E+00	4.09E+00	7.31E-01	**Yes**
LEAD	1.30E+02	1.29E+02	3.95E+01	1.30E+02	1.29E+02	3.95E+01	5.99E+02	5.91E+02	1.82E+02	**Yes**
MERCURY	3.56E-01	1.69E+00	2.61E-01	2.49E-01	7.96E-01	1.23E-01	3.48E-01	1.65E+00	2.55E-01	**Yes**
NICKEL	2.74E+00	1.95E-01	1.34E-01	2.36E+00	1.68E-01	1.15E-01	2.97E+00	2.11E-01	1.45E-01	**Yes**
SELENIUM	2.16E+00	4.52E+00	6.55E-01	2.16E+00	4.52E+00	6.55E-01	7.70E-01	1.36E+00	1.98E-01	**Yes**
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ZINC	1.83E+00	4.90E+00	7.43E-01	1.83E+00	4.90E+00	7.43E-01	1.60E+00	4.28E+00	6.49E-01	**Yes**
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ALPHA-CHLORDANE	3.17E-04	5.06E-03	7.32E-04	1.53E-05	2.44E-04	3.53E-05	5.49E-05	8.76E-04	1.27E-04	No
DIELDRIN	1.33E-01	1.37E-01	1.99E-02	1.33E-01	1.37E-01	1.99E-02	6.32E-02	6.52E-02	9.48E-03	No
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
ENDRIN	3.67E-02	1.39E-03	4.90E-04	2.67E-03	1.66E-05	5.83E-06	2.67E-03	1.16E-05	4.08E-06	No
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
GAMMA-BHC	NA	4.31E-05	7.82E-06	NA	5.79E-07	1.05E-07	NA	3.86E-07	7.00E-08	No*
GAMMA-CHLORDANE	NA	5.17E-04	7.60E-05	NA	5.17E-04	7.60E-05	NA	3.20E-04	4.70E-05	No*
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
TRIBUTYLTIN	5.24E-02	2.25E+00	3.23E-01	5.24E-02	2.25E+00	3.23E-01	2.18E-02	9.35E-01	1.34E-01	No
Total PCB	3.58E+00	3.57E+01	5.15E+00	3.58E+00	3.57E+01	5.15E+00	5.45E+00	5.43E+01	7.84E+00	**Yes**
Total 4,4-DDx	5.91E+00	2.64E+01	3.81E+00	5.91E+00	2.64E+01	3.81E+00	4.79E+00	2.14E+01	3.09E+00	**Yes**
Total HPAH	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
Total LPAH	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**
Total PAH	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**

Highlighted Cell = HQ > 1.
* - This COPEC was not analyzed in *Macoma* tissue, thus it could not be evaluated for the Surf Scoter. However, forage fish BAFs could be developed and concentrations did not pose a risk to piscivorous birds.

Table 6-9. Evaluation Criteria for Toxicity Tests

Test	Endpoint	SWRCB Threshold[a]
10-d Amphipod *Eohaustorius estuaries*	Survival	69.5% of control survival
28-d Polychaete *Neanthes arenaceodentata*	Survival and growth	Survival: 64% of control Growth: 44% of control response
~72-h *Strongylocentrotus purpuratus*	Normal Development	60% of control response

(a) Source: SWRCB (1998a and 1998b)

Table 6-10. Bulk Porewater Salinity and Sediment Grain Size at IR Site 20

Station	Salinity (‰)	Percent Fine Grained (<0.075 mm)
E07	24.6-25.0	27.2
E08	24.6-25.0	23.2
E09	24.4-24.7	23.1
E10	24.2-24.6	39.4

Table 6-11. Survival of *E. estuarius* in IR Site 20 and Native Control Sediment

Station	Survival (%)					
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean
Control (E05-E10)	100	100	100	95	100	99
E07	55	60	65	55	50	57[a,b]
E08	60 60 (dup)	75	80	80	80	72.5[a]
E09	90	65	80	70	60	73[a]
E10	55 60 (dup)	60	65	65	75	63.3[a,b]

(a) Statistically significant difference from control reported ($p<0.05$).
(b) Survival was lower than the tolerance limit of 69.5% of control.

Table 6-12. Survival Data for *N. arenaceodentata* Test in IR Site 20 and Native Control Sediment

Station	Number Surviving					Mean Survival[a]
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
Control (E05-E10)	5	5	5	5	5	100%
E07	5	5	5	5	5	100%
E08	5 5 (dup)	5	5	5	5	100%
E09	5	4	5	5	5	96%
E10	5 5 (dup)	5	5	5	5	100%

(a) Replicate assumed to be double-stocked with 10 organisms instead of 5; mean survival is based on this assumption.

Table 6-13. Growth Data for *N. arenaceodentata* Test in IR Site 20 and Native Control Sediment

Station	Growth (mg dry weight/worm)					Mean Growth (mg dry weight/worm)
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
Control (E05-E10)	12.42	19.52	19.28	17.30	16.36	17.0
E07	10.26	12.20	11.42	10.18	14.48	11.7 [(a)]
E08	11.18 8.48 (dup)	12.22	12.58	10.98	15.22	11.8 [(a)]
E09	16.60	18.68	15.60	12.44	11.36	14.9
E10	12.08 12.54 (dup)	17.32	14.34	12.26	15.70	14.0

(a) Statistically significant differences from control reported ($p<0.05$).

Table 6-14. Survival and Normal Development of Mussel Larvae Exposed to Sediment from IR Site 20

Station	% Survival	% Normal	Combined % Normal and Survival[(a)]	Combined Normal and Survival as % of Control
E07	95.7	99.0	94.7	114
E08	110.6	98.4	98.4	119
E09	NA	NA	NA	NA
E10	NA	NA	NA	NA

(a) (Percent normal × percent survival)/100, assuming 100% survival for stations with >100% survival reported.
NA = not applicable.

Table 6-15. Summary of Biological Effects in Toxicity Tests at IR Site 20

Station	Biological Toxicity Measurements					
	Amphipod Survival (%)	Polychaete Survival (%)	Polychaete Growth (mg)	Mussel Larvae Elutriate Survival (%)	Mussel Larvae Elutriate Normal (%)	Sediment ERM-Q[(a)]
SWRCB Tolerance Limit[(b)]	68.8	64	7.48	NA	59.2	0.3 (UTL)
Control (E05-E10)	99	100	17.0	84.2	98.6	No data
E07	**57** [(c)]	100	11.7 [(c)]	95.7	99	0.802
E08	72.5[(c)]	100	11.8 [(c)]	110.6	98.4	0.385
E09	73[(c)]	96	14.9	No data	No data	0.278
E10	**63.3**[(c)]	100	14.0	No data	No data	0.439

(a) Effects Range Medium – Quotients (ERM-Qs) calculated using 19 COPCs.
(b) SWRCB tolerance limit is calculated using concurrently tested control response.
(c) Statistically significant difference from control reported ($p<0.05$)
NA = Not applicable.
Bold Type indicates station response falls below SWRCB tolerance limit

Table 6-16. Bulk Porewater Quality Values of Bioassay Samples at Time of Setup at IR Site 24

Station	pH	Salinity (‰)	Total Ammonia (mg/L)	Sulfide (mg/L)
RL-1	7.54	23.7	3.12	0.017
RL-2	7.37	26.6	1.95	0.024
RL-3	7.16	28.1	3.56	0.054
PA-1	7.42	26.5	4.92	0.034
PA-2	7.26	29.3	7.39	0.019
PA-3	7.31	27.9	41.1	0.044
PA-4	7.36	27.5	4.36	0.016
PA-5	7.21	27.0	5.18	0.02

Table 6-17. Survival and Reburial of Amphipods after Exposure to IR Site 24, Control, and Reference Stations

Station	%Survival/Reburial					
	Rep A	Rep B	Rep C	Rep D	Rep E	Mean
Control	100/ 100	90/ 100	100/ 100	100/ 100	100/ 00	98/ 100
RL-1	0/ -	0/ -	5/ 100	10/ 100	25/ 100	8[a,b]/ 100
RL-2	70/ 100	75/ 93.3	**0**/ -	**40**/ 100	**20**/ 100	***41***[a,b]/ 98.3
RL-3	90/ 100	80/ 100	75/ 100	90/ 100	80/ 93.8	83[a]/ 98.8
PA-1	20/ 100	5/ 100	0/ -	30/ 100	20/ 100	15[a,b]/ 100
PA-2	45/ 100	40/ 100	**0**/ -	**0**/ -	**10**/ 100	***19***[a,b]/ 100
PA-3	65/ 100	50/ 100	40/ 100	**0**/ -	**5**/ 100	***32***[a,b]/ 100
PA-4	60/ 100	50/ 100	65/ 100	75/ 100	60/ 100	62[a,b]/ 100
PA-5	70/ 100	55/ 100	**30**/ 100	55/ 100	55/ 100	***53***[a,b]/ 100

Bold values are outlier values in excess of 30% from the maximum survival.
Bold and italicized values are means that include outlier values.
(a) Statistically significant difference ($p<0.05$) from the control.
(b) Survival was lower than the tolerance limit of 69.5 % of control.

Table 6-18. Survival and Growth of Polychaetes after Exposure to Sediment from IR Site 24, Native Control, and Reference Areas

Station	Survival/Growth										
	Rep A	Rep B	Rep C	Rep D	Rep E	Rep F	Rep G	Rep H	Rep I	Rep J	Mean
Control	100/ 6.18	100/ 9.78	100/ 8.19	100/ 9.26	100/ 5.84	100/ 6.74	100/ 6.45	100/ 11.01	100/ 9.17	100/ 4.96	100/ 7.76
RL-1	100/ 5.45	100/ 8.01	100/ 18.23	100/ 14.80	100/ 12.96	100/ 19.19	100/ 5.85	100/ 5.11	**0**/ -	100/ 16.14	90/ 11.75
RL-2	100/ 1.36	100/ 2.00	100/ 3.34	100/ 1.02	**0**/ -	100/ 2.10	100/ 5.03	100/ 3.58	100/ 2.31	100/ 2.25	90/ 2.55[a,b]
RL-3	100/ 2.14	100/ 10.08	100/ 6.80	100/ 6.56	**0**/ -	100/ 5.30	100/ 7.02	100/ 2.59	100/ 6.87	100/ 5.20	90/ 5.84[b]
PA-1	100/ 5.03	**	100/ 5.22	100/ 8.72	100/ 5.25	100/ 4.94	100/ 5.04	100/ 6.04	100/ 2.34	100/ 5.88	100/ 5.38[b]
PA-2	100/ 8.36	100/ 5.46	100/ 5.35	**	100/ 3.57	100/ 5.29	100/ 4.46	100/ 5.99	100/ 5.40	100/ 8.68	100/ 5.84[b]
PA-3	100/ 3.65	100/ 3.02	**0**/ -	**0**/ -	100/ 1.71	100/ 2.41	**0**/ -	100/ 4.13	**0**/ -	**0**/ -	50[a,b]/ 2.98[a,b]
PA-4	100/ 5.75	100/ 7.03	100/ 10.27	100/ 6.61	100/ 5.03	100/ 5.54	100/ 7.72	100/ 6.44	100/ 2.59	***	100/ 6.33
PA-5	100/ 7.62	100/ 6.05	100/ 6.42	100/ 7.70	100/ 6.70	100/ 6.84	100/ 6.86	100/ 5.64	100/ 7.40	100/ 4.79	100/ 6.60

Bold values are outlier values in excess of 30% from the maximum survival.
Bold and italicized values are means that include outlier values.
(a) Statistically significant difference ($p<0.05$) from the control.
(b) Survival was lower than the tolerance limit of 64 % of control or growth of 44% of control.

Table 6-19. Percentage of Surviving Larvae that Developed Normally after Exposure to SWI at IR Site 24

Station	Percentage of Surviving Larvae that Developed Normally					
	Rep A	Rep B	Rep C	Rep D	Rep E	Mean
Control	85	82	95	93	90	89
RL-1	85	90	89	94	**	89.5
RL-2	91	89	87	75	86	85.6
RL-3	89	88	95	93	91	91.2
PA-1	74	81	65	90	87	79.4[a]
PA-2	71	**0**	81	84	80	***63.2***[a]
PA-3	80	88	90	94	88	88
PA-4	82	86	80	85	87	84
PA-5	84	97	88	93	82	88.8

Bold values are outlier values in excess of 30% from the maximum survival.
Bold and italicized values are means that include outlier values.
(a) Statistically significant difference from the control ($p<0.05$)

Table 6-20. Summary of Biological Test Results for IR Site 24

Station	Amphipod Test		Polychaete Test		Polychaete Test		Larval SWI Test	
	Percent Survival	% CV	Percent Survival	% CV	Growth (mg)	% CV	Percent Normal	% CV
SWRCB Tolerance Limit[a]	67.4	NA	64	NA	3.4	NA	52.6	NA
Control	98.0	4.6	100.0	0.0	7.76	25.7	89.0	6.1
RL-1	**8.0**[b]	129.6	90.0	35.1	11.75	48.5	89.5	4.1
RL-2	**41.0**[b]	78.3	90.0	35.1	**2.55**[b]	48.4	85.6	7.3
RL-3	83.0	8.1	90.0	35.1	5.84[b]	41.4	91.2	3.1
PA-1	**15.0**[b]	81.7	100.0	0.0	5.38[b]	30.5	79.4[b]	12.7
PA-2	**19.0**[b]	115.3	100.0	0.0	5.84[b]	28.6	63.2[b]	56.4
PA-3	**32.0**[b]	88.8	**50.0**[b]	105.4	**2.98**[b]	32.3	88.0	5.8
PA-4	**62.0**[b]	14.7	100.0	0.0	6.33	32.9	84.0	3.5
PA-5	**53.0**[b]	27.2	100.0	0.0	6.60	13.9	88.8	7.0

(a) SWRCB tolerance limit is calculated using concurrently tested control response (see Table 4-3).
(b) Statistically significant difference from control reported ($p<0.05$).
NA = Not applicable.
Bold Type indicates station response falls below SWRCB tolerance limit.

Table 6-21. Fish Ecotoxicity Reference Values

Constituent	NOAEL ERV (mg/kg) DW in tissue	LOAEL ERV (mg/kg) DW in tissue
ANTIMONY	2.50E+01	4.50E+01
ARSENIC	7.55E+00	8.60E+00
CADMIUM	2.50E-01	5.00E-01
CHROMIUM	1.15E+01	4.45E+01
COPPER	1.96E+01	2.24E+01
LEAD	1.27E+01	2.01E+01
MERCURY	4.00E+00	6.55E+00
NICKEL	NA	NA
SELENIUM	5.40E+00	6.58E+00
SILVER	3.00E-01	NA
ZINC	9.65E+01	1.13E+02
ALDRIN	NA	NA
ALPHA-CHLORDANE	3.00E+00	8.30E+01
DIELDRIN	6.00E-01	1.00E+00
ENDOSULFAN I	1.55E-02	1.55E-01
ENDOSULFAN II	1.55E-02	1.55E-01
ENDRIN	6.00E-01	1.05E+00
ENDRIN ALDEHYDE	6.00E-01	1.05E+00
GAMMA-BHC	3.07E+01	4.77E+01
GAMMA-CHLORDANE	3.00E+00	8.30E+01
HEPTACHLOR EPOXIDE	3.00E+00	8.30E+01
DIBENZOFURAN	NA	NA
TRIBUTYLTIN	1.30E+00	1.35E+00
Total PCB	3.80E+00	7.65E+00
Total DDx	9.60E+00	1.00E+01
Total HPAH	1.05E+00	1.05E+01
Total LPAH	1.15E+01	1.15E+02
Total PAH	1.05E+00	1.05E+01

Table 6-22. Summary of Forage Fish HQs for IR Site 20

Constituent	Modeled Fish Concentrations			ERVs		HQs					
	All Year (mg/kg) DW Tissue	2005 Surface (mg/kg) DW Tissue	2005 Subsurface (mg/kg) DW Tissue	NOAEL (mg/kg) DW Tissue	LOAEL (mg/kg) DW Tissue	All Years NOAEL (unitless)	All Years LOAEL (unitless)	2005 Surface NOAEL (unitless)	2005 Surface LOAEL (unitless)	2005 Subsurface NOAEL (unitless)	2005 Subsurface LOAEL (unitless)
ANTIMONY	8.38E-02	1.30E-03	2.20E-02	2.50E+01	4.50E+01	3.35E-03	1.86E-03	5.18E-05	2.88E-05	8.81E-04	4.89E-04
ARSENIC	8.98E-01	6.42E-01	7.62E-01	7.55E+00	8.60E+00	1.19E-01	1.04E-01	8.50E-02	7.46E-02	1.01E-01	8.86E-02
CADMIUM	7.02E-03	5.44E-03	1.06E-02	2.50E-01	5.00E-01	2.81E-02	1.40E-02	2.18E-02	1.09E-02	4.23E-02	2.11E-02
CHROMIUM	5.19E+00	9.29E-01	9.82E-01	1.15E+01	4.45E+01	4.51E-01	1.17E-01	8.07E-02	2.09E-02	8.54E-02	2.21E-02
COPPER	5.52E+00	4.00E+00	4.96E+00	1.96E+01	2.24E+01	2.82E-01	2.47E-01	2.04E-01	1.79E-01	2.53E-01	2.21E-01
LEAD	1.06E+00	6.63E-01	1.06E+00	1.27E+01	2.01E+01	8.36E-02	5.28E-02	5.22E-02	3.30E-02	8.38E-02	5.29E-02
MERCURY	6.20E-01	1.18E+00	5.26E-01	4.00E+00	6.55E+00	1.55E-01	9.47E-02	2.95E-01	1.80E-01	1.31E-01	8.03E-02
NICKEL	4.01E-01	2.21E-01	2.43E-01	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	3.65E-01	2.46E-01	2.69E-01	5.40E+00	6.58E+00	6.76E-02	5.55E-02	4.55E-02	3.74E-02	4.97E-02	4.08E-02
SILVER	5.43E-03	5.31E-03	6.51E-03	3.00E-01	NA	1.81E-02	NA	1.77E-02	NA	2.17E-02	NA
ZINC	4.15E+01	2.23E+01	7.74E+01	9.65E+01	1.13E+02	4.30E-01	3.68E-01	2.31E-01	1.97E-01	8.02E-01	6.85E-01
ALPHA-CHLORDANE	2.97E-03	7.23E-04	9.60E-04	3.00E+00	8.30E+01	9.90E-04	3.58E-05	2.41E-04	8.71E-06	3.20E-04	1.16E-05
DIELDRIN	1.45E-03	8.22E-04	2.81E-03	6.00E-01	1.00E+00	2.41E-03	1.45E-03	1.37E-03	8.22E-04	4.68E-03	2.81E-03
ENDOSULFAN II	2.85E-05	1.95E-05	5.25E-05	1.55E-02	1.55E-01	1.84E-03	1.84E-04	1.26E-03	1.26E-04	3.39E-03	3.39E-04
ENDRIN ALDEHYDE	3.63E-04	8.56E-07	3.59E-05	6.00E-01	1.05E+00	6.04E-04	3.45E-04	1.43E-06	8.15E-07	5.98E-05	3.42E-05
GAMMA-CHLORDANE	1.71E-03	3.33E-04	3.96E-04	3.00E+00	8.30E+01	5.71E-04	2.06E-05	1.11E-04	4.02E-06	1.32E-04	4.77E-06
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	2.71E-01	5.06E-01	6.52E-01	1.30E+00	1.35E+00	2.08E-01	2.01E-01	3.90E-01	3.75E-01	5.02E-01	4.83E-01
Total PCB	1.41E+00	2.97E-01	1.11E+00	3.80E+00	7.65E+00	3.71E-01	1.84E-01	7.81E-02	3.88E-02	2.91E-01	1.45E-01
Total 4,4-DDx ND/2	2.13E-01	4.18E-02	1.62E-01	9.60E+00	1.00E+01	2.22E-02	2.13E-02	4.35E-03	4.18E-03	1.69E-02	1.62E-02
Total HPAH (6) ND/2	1.14E-01	2.03E-01	3.81E-01	1.05E+00	1.05E+01	1.08E-01	1.08E-02	1.94E-01	1.94E-02	3.63E-01	3.63E-02
Total LPAH (6) ND/2	6.20E-02	1.99E-01	9.66E-01	1.15E+01	1.15E+02	5.39E-03	5.39E-04	1.73E-02	1.73E-03	8.40E-02	8.40E-03
Total PAH (12) ND/2	1.49E-01	2.58E-01	6.57E-01	1.05E+00	1.05E+01	1.42E-01	1.42E-02	2.46E-01	2.46E-02	6.26E-01	6.26E-02

Table 6-23. Summary of Forage Fish HQs for IR Site 24

Constituent	Modeled Fish Concentrations			ERVs		HQs					
	All Year (mg/kg) DW Tissue	2005/2006 Surface (mg/kg) DW Tissue	2005/2006 Subsurface (mg/kg) DW Tissue	NOAEL ERV (mg/kg) DW Tissue	LOAEL ERV (mg/kg) DW Tissue	All Years NOAEL (unitless)	All Years LOAEL (unitless)	2005/2006 Surface NOAEL (unitless)	2005/2006 Surface LOAEL (unitless)	2005/2006 Subsurface NOAEL (unitless)	2005/2006 Subsurface LOAEL (unitless)
ANTIMONY	4.80E-03	4.62E-03	5.80E-03	2.50E+01	4.50E+01	1.92E-04	1.07E-04	1.85E-04	1.03E-04	2.32E-04	1.29E-04
ARSENIC	1.12E+00	1.07E+00	9.87E-01	7.55E+00	8.60E+00	1.49E-01	1.30E-01	1.41E-01	1.24E-01	1.31E-01	1.15E-01
CADMIUM	2.31E-01	2.17E-01	5.90E-01	2.50E-01	5.00E-01	9.23E-01	4.61E-01	8.69E-01	4.35E-01	2.36E+00	1.18E+00
CHROMIUM	2.94E+00	2.42E+00	3.02E+00	1.15E+01	4.45E+01	2.56E-01	6.62E-02	2.10E-01	5.43E-02	2.62E-01	6.78E-02
COPPER	8.99E+00	7.39E+00	8.32E+00	1.96E+01	2.24E+01	4.59E-01	4.01E-01	3.77E-01	3.30E-01	4.25E-01	3.72E-01
LEAD	1.79E+00	2.05E+00	4.54E+00	1.27E+01	2.01E+01	1.41E-01	8.90E-02	1.62E-01	1.02E-01	3.57E-01	2.26E-01
MERCURY	6.98E-02	6.13E-02	7.43E-02	4.00E+00	6.55E+00	1.75E-02	1.07E-02	1.53E-02	9.36E-03	1.86E-02	1.13E-02
NICKEL	4.67E-01	3.87E-01	4.29E-01	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	9.22E-01	6.84E-01	4.22E-01	5.40E+00	6.58E+00	1.71E-01	1.40E-01	1.27E-01	1.04E-01	7.81E-02	6.41E-02
SILVER	1.91E-01	2.06E-01	3.08E-01	3.00E-01	NA	6.36E-01	NA	6.87E-01	NA	1.03E+00	NA
ZINC	6.57E+01	5.80E+01	6.26E+01	9.65E+01	1.13E+02	6.81E-01	5.82E-01	6.01E-01	5.13E-01	6.49E-01	5.54E-01
ALDRIN	2.77E-05	1.29E-06	1.22E-06	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	1.84E-05	1.86E-06	1.73E-06	3.07E+01	4.77E+01	6.01E-07	3.87E-07	6.05E-08	3.89E-08	5.65E-08	3.64E-08
ALPHA-CHLORDANE	5.89E-03	1.25E-03	1.90E-03	3.00E+00	8.30E+01	1.96E-03	7.09E-05	4.18E-04	1.51E-05	6.33E-04	2.29E-05
DIELDRIN	4.62E-03	4.87E-03	3.44E-03	6.00E-01	1.00E+00	7.69E-03	4.62E-03	8.12E-03	4.87E-03	5.74E-03	3.44E-03
ENDOSULFAN I	1.54E-04	1.31E-06	1.28E-06	1.55E-02	1.55E-01	9.94E-03	9.94E-04	8.48E-05	8.48E-06	8.24E-05	8.24E-06
ENDOSULFAN II	5.24E-05	5.68E-06	5.22E-06	1.55E-02	1.55E-01	3.38E-03	3.38E-04	3.67E-04	3.67E-05	3.37E-04	3.37E-05
ENDOSULFAN SULFATE	3.74E-05	9.71E-06	9.04E-06	1.55E-02	1.55E-01	2.41E-03	2.41E-04	6.26E-04	6.26E-05	5.84E-04	5.84E-05
ENDRIN	9.73E-06	3.65E-07	3.48E-07	6.00E-01	1.05E+00	1.62E-05	9.27E-06	6.09E-07	3.48E-07	5.80E-07	3.31E-07
ENDRIN ALDEHYDE	2.16E-05	1.20E-06	1.12E-06	6.00E-01	1.05E+00	3.61E-05	2.06E-05	2.00E-06	1.14E-06	1.87E-06	1.07E-06
GAMMA-BHC	2.58E-05	1.80E-06	1.75E-06	3.07E+01	4.77E+01	8.40E-07	5.41E-07	5.85E-08	3.77E-08	5.69E-08	3.66E-08
GAMMA-CHLORDANE	1.16E-03	9.61E-04	7.56E-04	3.00E+00	8.30E+01	3.86E-04	1.40E-05	3.20E-04	1.16E-05	2.52E-04	9.11E-06
HEPTACHLOR	1.56E-05	1.08E-06	1.01E-06	3.00E+00	8.30E+01	5.19E-06	1.87E-07	3.60E-07	1.30E-08	3.38E-07	1.22E-08
HEPTACHLOR EPOXIDE	1.86E-05	1.47E-06	1.43E-06	3.00E+00	8.30E+01	6.21E-06	2.24E-07	4.90E-07	1.77E-08	4.77E-07	1.73E-08
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RADIUM-226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RADIUM-228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	1.05E+00	1.27E+00	8.36E-01	1.30E+00	1.35E+00	8.09E-01	7.79E-01	9.79E-01	9.42E-01	6.43E-01	6.19E-01
Total PCB	1.28E+00	1.41E+00	2.20E+00	3.80E+00	7.65E+00	3.38E-01	1.68E-01	3.72E-01	1.85E-01	5.78E-01	2.87E-01
Total 4,4-DDx	8.71E-02	9.49E-02	8.99E-02	9.60E+00	1.00E+01	9.07E-03	8.71E-03	9.89E-03	9.49E-03	9.37E-03	8.99E-03
Total HPAH	5.55E-01	2.51E-01	1.33E-01	1.05E+00	1.05E+01	5.29E-01	5.29E-02	2.39E-01	2.39E-02	1.27E-01	1.27E-02
Total LPAH	1.11E+00	3.41E-01	2.00E-01	1.15E+01	1.15E+02	9.69E-02	9.69E-03	2.97E-02	2.97E-03	1.74E-02	1.74E-03
Total PAH	7.57E-01	3.45E-01	1.84E-01	1.05E+00	1.05E+01	7.21E-01	7.21E-02	3.28E-01	3.28E-02	1.75E-01	1.75E-02

Highlighted cells indicate HQs>1.

Table 6-24. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 20 (All Years Data Set)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.015 Ref 0.985			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	**1.78E-01**	**NA**	**NA**	**9.68E-02**	**NA**	**NA**	**5.64E-02**	**NA**	**NA**	**1.84E-02**	**NA**	**NA**	**1.60E-02**	**NA**	**NA**
ARSENIC	1.69E+00	3.12E-01	7.80E-02	1.66E+00	3.05E-01	7.64E-02	1.64E+00	3.02E-01	7.55E-02	1.62E+00	2.99E-01	7.48E-02	1.62E+00	2.99E-01	7.47E-02
CADMIUM	2.92E-03	3.42E-02	1.68E-04	3.34E-03	3.91E-02	1.92E-04	3.55E-03	4.16E-02	2.04E-04	3.75E-03	4.39E-02	2.15E-04	3.76E-03	4.41E-02	2.16E-04
CHROMIUM	**5.63E+00**	**2.17E+00**	**3.70E-01**	**3.49E+00**	**1.35E+00**	**2.30E-01**	**2.42E+00**	**9.35E-01**	**1.59E-01**	**1.42E+00**	**5.47E-01**	**9.33E-02**	**1.36E+00**	**5.23E-01**	**8.91E-02**
COPPER	**1.33E+00**	**5.20E-01**	**2.09E-02**	**1.24E+00**	**4.85E-01**	**1.95E-02**	**1.20E+00**	**4.68E-01**	**1.88E-02**	**1.16E+00**	**4.51E-01**	**1.82E-02**	**1.15E+00**	**4.50E-01**	**1.81E-02**
LEAD	**3.19E-01**	**1.36E+01**	**3.42E-02**	**2.84E-01**	**1.21E+01**	**3.05E-02**	**2.66E-01**	**1.14E+01**	**2.86E-02**	**2.50E-01**	**1.07E+01**	**2.68E-02**	**2.49E-01**	**1.06E+01**	**2.67E-02**
MERCURY	**8.57E-03**	**2.16E-01**	**4.67E-02**	**9.28E-03**	**2.34E-01**	**5.06E-02**	**9.64E-03**	**2.43E-01**	**5.26E-02**	**9.98E-03**	**2.51E-01**	**5.44E-02**	**1.00E-02**	**2.52E-01**	**5.45E-02**
NICKEL	2.57E-01	1.66E-01	4.01E-03	8.98E-01	5.79E-01	1.40E-02	1.22E+00	7.86E-01	1.90E-02	1.52E+00	9.81E-01	2.38E-02	1.54E+00	9.93E-01	2.41E-02
SELENIUM	6.10E-02	2.66E-01	6.57E-02	1.01E-01	4.40E-01	1.09E-01	1.21E-01	5.27E-01	1.30E-01	1.40E-01	6.09E-01	1.51E-01	1.41E-01	6.14E-01	1.52E-01
SILVER	2.61E-03	NA	NA	3.58E-03	NA	NA	4.07E-03	NA	NA	4.52E-03	NA	NA	4.55E-03	NA	NA
ZINC	**6.91E+00**	**3.91E-01**	**3.91E-02**	**7.46E+00**	**4.22E-01**	**4.22E-02**	**7.74E+00**	**4.37E-01**	**4.37E-02**	**8.00E+00**	**4.52E-01**	**4.52E-02**	**8.01E+00**	**4.53E-01**	**4.53E-02**
ALPHA-CHLORDANE*	6.50E-05	1.72E-05	3.44E-06	3.59E-05	9.50E-06	1.90E-06	2.13E-05	5.64E-06	1.13E-06	7.65E-06	2.02E-06	4.05E-07	6.77E-06	1.79E-06	3.58E-07
DIELDRIN*	4.90E-04	5.82E-03	5.15E-04	2.77E-04	3.29E-03	2.92E-04	1.71E-04	2.03E-03	1.80E-04	7.13E-05	8.47E-04	7.50E-05	6.50E-05	7.72E-04	6.83E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	1.81E-04	4.79E-05	9.58E-06	1.13E-04	3.00E-05	6.00E-06	7.97E-05	2.11E-05	4.22E-06	4.79E-05	1.27E-05	2.54E-06	4.59E-05	1.21E-05	2.43E-06
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**2.70E-03**	**2.27E-03**	**3.62E-05**	**2.69E-03**	**2.27E-03**	**3.60E-05**	**2.69E-03**	**2.26E-03**	**3.60E-05**	**2.68E-03**	**2.26E-03**	**3.59E-05**	**2.68E-03**	**2.26E-03**	**3.59E-05**
Total PCB	**4.94E-02**	**5.15E-01**	**4.26E-02**	**2.53E-02**	**2.64E-01**	**2.18E-02**	**1.33E-02**	**1.38E-01**	**1.14E-02**	**1.93E-03**	**2.01E-02**	**1.66E-03**	**1.20E-03**	**1.26E-02**	**1.04E-03**
Total 4,4-DDx	**1.67E-02**	**2.33E+00**	**2.72E-02**	**9.09E-03**	**1.27E+00**	**1.49E-02**	**5.31E-03**	**7.44E-01**	**8.68E-03**	**1.76E-03**	**2.46E-01**	**2.87E-03**	**1.53E-03**	**2.14E-01**	**2.50E-03**
Total HPAH	**4.77E-01**	**NA**	**NA**	**2.87E-01**	**NA**	**NA**	**1.93E-01**	**NA**	**NA**	**1.04E-01**	**NA**	**NA**	**9.79E-02**	**NA**	**NA**
Total LPAH	**2.30E-02**	**NA**	**NA**	**1.44E-02**	**NA**	**NA**	**1.00E-02**	**NA**	**NA**	**5.97E-03**	**NA**	**NA**	**5.71E-03**	**NA**	**NA**
Total PAH	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-25. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 20 (2005 Surface Data Set)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.015 Ref 0.985			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	2.75E-03	NA	NA	9.35E-03	NA	NA	1.27E-02	NA	NA	1.58E-02	NA	NA	1.60E-02	NA	NA
ARSENIC	1.69E+00	3.11E-01	7.78E-02	1.66E+00	3.05E-01	7.63E-02	1.64E+00	3.02E-01	7.55E-02	1.62E+00	2.99E-01	7.48E-02	1.62E+00	2.99E-01	7.47E-02
CADMIUM	2.26E-03	2.65E-02	1.30E-04	3.01E-03	3.53E-02	1.73E-04	3.39E-03	3.97E-02	1.95E-04	3.74E-03	4.38E-02	2.15E-04	3.76E-03	4.41E-02	2.16E-04
CHROMIUM	1.01E+00	3.89E-01	6.63E-02	1.18E+00	4.56E-01	7.77E-02	1.27E+00	4.89E-01	8.34E-02	1.35E+00	5.21E-01	8.88E-02	1.36E+00	5.23E-01	8.91E-02
COPPER	1.30E+00	5.05E-01	2.03E-02	1.22E+00	4.78E-01	1.92E-02	1.19E+00	4.64E-01	1.87E-02	1.16E+00	4.51E-01	1.81E-02	1.15E+00	4.50E-01	1.81E-02
LEAD	**2.71E-01**	**1.16E+01**	**2.91E-02**	**2.60E-01**	**1.11E+01**	**2.79E-02**	**2.54E-01**	**1.09E+01**	**2.73E-02**	**2.49E-01**	**1.06E+01**	**2.67E-02**	**2.49E-01**	**1.06E+01**	**2.67E-02**
MERCURY	**1.32E-02**	**3.32E-01**	**7.19E-02**	**1.16E-02**	**2.92E-01**	**6.32E-02**	**1.08E-02**	**2.72E-01**	**5.88E-02**	**1.00E-02**	**2.53E-01**	**5.48E-02**	**1.00E-02**	**2.52E-01**	**5.45E-02**
NICKEL	1.84E-01	1.19E-01	2.88E-03	8.62E-01	5.56E-01	1.35E-02	1.20E+00	7.74E-01	1.88E-02	1.52E+00	9.80E-01	2.37E-02	1.54E+00	9.93E-01	2.41E-02
SELENIUM	4.11E-02	1.79E-01	4.43E-02	9.11E-02	3.97E-01	9.81E-02	1.16E-01	5.05E-01	1.25E-01	1.39E-01	6.08E-01	1.50E-01	1.41E-01	6.14E-01	1.52E-01
SILVER	2.55E-03	NA	NA	3.55E-03	NA	NA	4.05E-03	NA	NA	4.52E-03	NA	NA	4.55E-03	NA	NA
ZINC	6.79E+00	3.84E-01	3.84E-02	7.40E+00	4.18E-01	4.18E-02	7.71E+00	4.36E-01	4.36E-02	7.99E+00	4.52E-01	4.52E-02	8.01E+00	4.53E-01	4.53E-02
ALPHA-CHLORDANE*	1.58E-05	4.19E-06	8.38E-07	1.13E-05	2.99E-06	5.98E-07	9.04E-06	2.39E-06	4.78E-07	6.91E-06	1.83E-06	3.66E-07	6.77E-06	1.79E-06	3.58E-07
DIELDRIN*	2.78E-04	3.31E-03	2.93E-04	1.72E-04	2.04E-03	1.80E-04	1.18E-04	1.41E-03	1.24E-04	6.82E-05	8.10E-04	7.17E-05	6.50E-05	7.72E-04	6.83E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	1.77E-04	4.69E-05	9.39E-06	1.12E-04	2.95E-05	5.91E-06	7.88E-05	2.08E-05	4.17E-06	4.79E-05	1.27E-05	2.53E-06	4.59E-05	1.21E-05	2.43E-06
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**2.76E-03**	**2.32E-03**	**3.69E-05**	**2.72E-03**	**2.29E-03**	**3.64E-05**	**2.70E-03**	**2.27E-03**	**3.62E-05**	**2.68E-03**	**2.26E-03**	**3.59E-05**	**2.68E-03**	**2.26E-03**	**3.59E-05**
Total PCB	**1.04E-02**	**1.08E-01**	**8.96E-03**	**5.80E-03**	**6.05E-02**	**5.00E-03**	**3.50E-03**	**3.65E-02**	**3.02E-03**	**1.34E-03**	**1.40E-02**	**1.16E-03**	**1.20E-03**	**1.26E-02**	**1.04E-03**
Total 4,4-DDx	**3.26E-03**	**4.57E-01**	**5.34E-03**	**2.40E-03**	**3.36E-01**	**3.92E-03**	**1.96E-03**	**2.75E-01**	**3.21E-03**	**1.56E-03**	**2.18E-01**	**2.55E-03**	**1.53E-03**	**2.14E-01**	**2.50E-03**
Total HPAH	**8.51E-01**	**NA**	**NA**	**4.74E-01**	**NA**	**NA**	**2.86E-01**	**NA**	**NA**	**1.09E-01**	**NA**	**NA**	**9.79E-02**	**NA**	**NA**
Total LPAH	**7.39E-02**	**NA**	**NA**	**3.98E-02**	**NA**	**NA**	**2.28E-02**	**NA**	**NA**	**6.73E-03**	**NA**	**NA**	**5.71E-03**	**NA**	**NA**
Total PAH	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-26. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 20 (2005 Subsurface Data Set)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.015 Ref 0.985			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	4.67E-02	NA	NA	3.13E-02	NA	NA	2.36E-02	NA	NA	1.64E-02	NA	NA	1.60E-02	NA	NA
ARSENIC	1.69E+00	3.12E-01	7.79E-02	1.66E+00	3.05E-01	7.63E-02	1.64E+00	3.02E-01	7.55E-02	1.62E+00	2.99E-01	7.48E-02	1.62E+00	2.99E-01	7.47E-02
CADMIUM	4.40E-03	5.15E-02	2.53E-04	4.08E-03	4.78E-02	2.34E-04	3.92E-03	4.59E-02	2.25E-04	3.77E-03	4.42E-02	2.17E-04	3.76E-03	4.41E-02	2.16E-04
CHROMIUM	1.07E+00	4.11E-01	7.01E-02	1.21E+00	4.67E-01	7.96E-02	1.28E+00	4.95E-01	8.44E-02	1.35E+00	5.21E-01	8.88E-02	1.36E+00	5.23E-01	8.91E-02
COPPER	1.32E+00	5.15E-01	2.07E-02	1.24E+00	4.83E-01	1.94E-02	1.20E+00	4.66E-01	1.88E-02	1.16E+00	4.51E-01	1.82E-02	1.15E+00	4.50E-01	1.81E-02
LEAD	**3.19E-01**	**1.36E+01**	**3.43E-02**	**2.84E-01**	**1.21E+01**	**3.05E-02**	**2.66E-01**	**1.14E+01**	**2.86E-02**	**2.50E-01**	**1.07E+01**	**2.68E-02**	**2.49E-01**	**1.06E+01**	**2.67E-02**
MERCURY	**7.79E-03**	**1.96E-01**	**4.24E-02**	**8.89E-03**	**2.24E-01**	**4.85E-02**	**9.45E-03**	**2.38E-01**	**5.15E-02**	**9.97E-03**	**2.51E-01**	**5.43E-02**	**1.00E-02**	**2.52E-01**	**5.45E-02**
NICKEL	1.93E-01	1.25E-01	3.02E-03	8.66E-01	5.59E-01	1.35E-02	1.20E+00	7.76E-01	1.88E-02	1.52E+00	9.80E-01	2.37E-02	1.54E+00	9.93E-01	2.41E-02
SELENIUM	4.49E-02	1.96E-01	4.84E-02	9.29E-02	4.05E-01	1.00E-01	1.17E-01	5.09E-01	1.26E-01	1.40E-01	6.08E-01	1.50E-01	1.41E-01	6.14E-01	1.52E-01
SILVER	3.12E-03	NA	NA	3.84E-03	NA	NA	4.19E-03	NA	NA	4.53E-03	NA	NA	4.55E-03	NA	NA
ZINC	7.13E+00	4.03E-01	4.03E-02	7.57E+00	4.28E-01	4.28E-02	7.79E+00	4.40E-01	4.40E-02	8.00E+00	4.52E-01	4.52E-02	8.01E+00	4.53E-01	4.53E-02
ALPHA-CHLORDANE*	2.10E-05	5.56E-06	1.11E-06	1.39E-05	3.67E-06	7.35E-07	1.03E-05	2.73E-06	5.47E-07	6.99E-06	1.85E-06	3.70E-07	6.77E-06	1.79E-06	3.58E-07
DIELDRIN*	9.51E-04	1.13E-02	1.00E-03	5.08E-04	6.04E-03	5.34E-04	2.87E-04	3.40E-03	3.01E-04	7.83E-05	9.30E-04	8.23E-05	6.50E-05	7.72E-04	6.83E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	1.78E-04	4.70E-05	9.39E-06	1.12E-04	2.96E-05	5.91E-06	7.88E-05	2.09E-05	4.17E-06	4.79E-05	1.27E-05	2.53E-06	4.59E-05	1.21E-05	2.43E-06
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**2.79E-03**	**2.35E-03**	**3.74E-05**	**2.74E-03**	**2.30E-03**	**3.67E-05**	**2.71E-03**	**2.28E-03**	**3.63E-05**	**2.68E-03**	**2.26E-03**	**3.59E-05**	**2.68E-03**	**2.26E-03**	**3.59E-05**
Total PCB	**3.88E-02**	**4.04E-01**	**3.34E-02**	**2.00E-02**	**2.08E-01**	**1.72E-02**	**1.06E-02**	**1.10E-01**	**9.12E-03**	**1.77E-03**	**1.84E-02**	**1.52E-03**	**1.20E-03**	**1.26E-02**	**1.04E-03**
Total 4,4-DDx	**1.27E-02**	**1.77E+00**	**2.07E-02**	**7.10E-03**	**9.95E-01**	**1.16E-02**	**4.32E-03**	**6.04E-01**	**7.06E-03**	**1.70E-03**	**2.38E-01**	**2.78E-03**	**1.53E-03**	**2.14E-01**	**2.50E-03**
Total HPAH	**1.59E+00**	**NA**	**NA**	**8.46E-01**	**NA**	**NA**	**4.72E-01**	**NA**	**NA**	**1.20E-01**	**NA**	**NA**	**9.79E-02**	**NA**	**NA**
Total LPAH	**3.58E-01**	**NA**	**NA**	**1.82E-01**	**NA**	**NA**	**9.38E-02**	**NA**	**NA**	**1.10E-02**	**NA**	**NA**	**5.71E-03**	**NA**	**NA**
Total PAH	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-27. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 20 (All Years Data Set)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.012 Ref 0.988			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	**1.55E-02**	**NA**	**NA**	**8.42E-03**	**NA**	**NA**	**4.91E-03**	**NA**	**NA**	**1.56E-03**	**NA**	**NA**	**1.39E-03**	**NA**	**NA**
ARSENIC	1.66E-01	5.78E-02	1.44E-02	1.94E-01	6.78E-02	1.70E-02	2.09E-01	7.29E-02	1.82E-02	2.23E-01	7.77E-02	1.94E-02	2.23E-01	7.79E-02	1.95E-02
CADMIUM	1.29E-03	2.88E-02	1.41E-04	1.48E-03	3.29E-02	1.61E-04	1.57E-03	3.50E-02	1.72E-04	1.66E-03	3.70E-02	1.81E-04	1.67E-03	3.71E-02	1.82E-04
CHROMIUM	**9.56E-01**	**6.99E-01**	**1.19E-01**	**5.93E-01**	**4.34E-01**	**7.39E-02**	**4.12E-01**	**3.01E-01**	**5.13E-02**	**2.39E-01**	**1.74E-01**	**2.98E-02**	**2.30E-01**	**1.68E-01**	**2.87E-02**
COPPER	**1.02E+00**	**7.53E-01**	**3.03E-02**	**8.15E-01**	**6.02E-01**	**2.42E-02**	**7.12E-01**	**5.27E-01**	**2.12E-02**	**6.15E-01**	**4.55E-01**	**1.83E-02**	**6.10E-01**	**4.51E-01**	**1.81E-02**
LEAD	**1.96E-01**	**1.58E+01**	**3.98E-02**	**1.36E-01**	**1.10E+01**	**2.77E-02**	**1.06E-01**	**8.61E+00**	**2.16E-02**	**7.80E-02**	**6.31E+00**	**1.59E-02**	**7.66E-02**	**6.20E+00**	**1.56E-02**
MERCURY	**1.14E-01**	**5.46E+00**	**1.18E+00**	**6.65E-02**	**3.17E+00**	**6.87E-01**	**4.26E-02**	**2.03E+00**	**4.40E-01**	**1.98E-02**	**9.44E-01**	**2.04E-01**	**1.87E-02**	**8.89E-01**	**1.93E-01**
NICKEL	7.40E-02	9.04E-02	2.19E-03	7.49E-02	9.15E-02	2.22E-03	7.53E-02	9.20E-02	2.23E-03	7.57E-02	9.26E-02	2.24E-03	7.58E-02	9.26E-02	2.24E-03
SELENIUM	6.73E-02	5.56E-01	1.37E-01	1.11E-01	9.20E-01	2.27E-01	1.33E-01	1.10E+00	2.72E-01	1.54E-01	1.27E+00	3.15E-01	1.56E-01	1.28E+00	3.17E-01
SILVER	1.00E-03	NA	NA	1.38E-03	NA	NA	1.56E-03	NA	NA	1.74E-03	NA	NA	1.75E-03	NA	NA
ZINC	**7.66E+00**	**8.20E-01**	**8.20E-02**	**7.21E+00**	**7.73E-01**	**7.73E-02**	**6.99E+00**	**7.49E-01**	**7.49E-02**	**6.78E+00**	**7.26E-01**	**7.26E-02**	**6.77E+00**	**7.25E-01**	**7.25E-02**
ALPHA-CHLORDANE*	5.48E-04	2.75E-04	5.50E-05	3.03E-04	1.52E-04	3.03E-05	1.80E-04	9.02E-05	1.80E-05	6.29E-05	3.15E-05	6.31E-06	5.71E-05	2.86E-05	5.72E-06
DIELDRIN*	2.67E-04	6.00E-03	5.31E-04	1.51E-04	3.40E-03	3.01E-04	9.32E-05	2.10E-03	1.86E-04	3.81E-05	8.58E-04	7.60E-05	3.54E-05	7.96E-04	7.05E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	3.16E-04	1.58E-04	3.17E-05	1.62E-04	8.10E-05	1.62E-05	8.44E-05	4.23E-05	8.47E-06	1.10E-05	5.52E-06	1.10E-06	7.34E-06	3.68E-06	7.36E-07
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**5.00E-02**	**7.97E-02**	**1.27E-03**	**2.80E-02**	**4.47E-02**	**7.10E-04**	**1.70E-02**	**2.71E-02**	**4.31E-04**	**6.54E-03**	**1.04E-02**	**1.66E-04**	**6.02E-03**	**9.60E-03**	**1.53E-04**
Total PCB	**2.60E-01**	**5.14E+00**	**4.24E-01**	**1.33E-01**	**2.63E+00**	**2.17E-01**	**6.98E-02**	**1.38E+00**	**1.14E-01**	**9.36E-03**	**1.85E-01**	**1.53E-02**	**6.34E-03**	**1.25E-01**	**1.03E-02**
Total 4,4-DDx	**3.93E-02**	**1.04E+01**	**1.22E-01**	**2.15E-02**	**5.69E+00**	**6.65E-02**	**1.25E-02**	**3.33E+00**	**3.88E-02**	**4.04E-03**	**1.07E+00**	**1.25E-02**	**3.61E-03**	**9.59E-01**	**1.12E-02**
Total HPAH	**2.10E-02**	**NA**	**NA**	**1.27E-02**	**NA**	**NA**	**8.49E-03**	**NA**	**NA**	**4.51E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**
Total LPAH	**1.14E-02**	**NA**	**NA**	**7.14E-03**	**NA**	**NA**	**4.99E-03**	**NA**	**NA**	**2.94E-03**	**NA**	**NA**	**2.84E-03**	**NA**	**NA**
Total PAH	**2.74E-02**	**NA**	**NA**	**1.59E-02**	**NA**	**NA**	**1.01E-02**	**NA**	**NA**	**4.59E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-28. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 20 (2005 Surface)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.012 Ref 0.988			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	2.39E-04	NA	NA	8.14E-04	NA	NA	1.10E-03	NA	NA	1.38E-03	NA	NA	1.39E-03	NA	NA
ARSENIC	1.18E-01	4.13E-02	1.03E-02	1.71E-01	5.96E-02	1.49E-02	1.97E-01	6.88E-02	1.72E-02	2.22E-01	7.75E-02	1.94E-02	2.23E-01	7.79E-02	1.95E-02
CADMIUM	1.00E-03	2.23E-02	1.09E-04	1.34E-03	2.97E-02	1.46E-04	1.50E-03	3.34E-02	1.64E-04	1.66E-03	3.69E-02	1.81E-04	1.67E-03	3.71E-02	1.82E-04
CHROMIUM	1.71E-01	1.25E-01	2.13E-02	2.01E-01	1.47E-01	2.50E-02	2.15E-01	1.57E-01	2.68E-02	2.29E-01	1.68E-01	2.86E-02	2.30E-01	1.68E-01	2.87E-02
COPPER	7.39E-01	5.46E-01	2.20E-02	6.74E-01	4.99E-01	2.01E-02	6.42E-01	4.75E-01	1.91E-02	6.12E-01	4.52E-01	1.82E-02	6.10E-01	4.51E-01	1.81E-02
LEAD	**1.22E-01**	**9.89E+00**	**2.48E-02**	**9.94E-02**	**8.05E+00**	**2.02E-02**	**8.80E-02**	**7.12E+00**	**1.79E-02**	**7.71E-02**	**6.24E+00**	**1.57E-02**	**7.66E-02**	**6.20E+00**	**1.56E-02**
MERCURY	**2.17E-01**	**1.04E+01**	**2.25E+00**	**1.18E-01**	**5.63E+00**	**1.22E+00**	**6.83E-02**	**3.26E+00**	**7.06E-01**	**2.10E-02**	**1.00E+00**	**2.17E-01**	**1.87E-02**	**8.89E-01**	**1.93E-01**
NICKEL	4.08E-02	4.99E-02	1.21E-03	5.83E-02	7.12E-02	1.73E-03	6.70E-02	8.19E-02	1.99E-03	7.54E-02	9.21E-02	2.23E-03	7.58E-02	9.26E-02	2.24E-03
SELENIUM	4.54E-02	3.74E-01	9.26E-02	1.00E-01	8.29E-01	2.05E-01	1.28E-01	1.06E+00	2.61E-01	1.54E-01	1.27E+00	3.15E-01	1.56E-01	1.28E+00	3.17E-01
SILVER	9.80E-04	NA	NA	1.36E-03	NA	NA	1.56E-03	NA	NA	1.74E-03	NA	NA	1.75E-03	NA	NA
ZINC	4.11E+00	4.41E-01	4.41E-02	5.44E+00	5.83E-01	5.83E-02	6.10E+00	6.54E-01	6.54E-02	6.74E+00	7.21E-01	7.21E-02	6.77E+00	7.25E-01	7.25E-02
ALPHA-CHLORDANE*	1.33E-04	6.69E-05	1.34E-05	9.52E-05	4.77E-05	9.55E-06	7.62E-05	3.82E-05	7.64E-06	5.80E-05	2.91E-05	5.81E-06	5.71E-05	2.86E-05	5.72E-06
DIELDRIN*	1.52E-04	3.41E-03	3.02E-04	9.35E-05	2.10E-03	1.86E-04	6.44E-05	1.45E-03	1.28E-04	3.67E-05	8.27E-04	7.32E-05	3.54E-05	7.96E-04	7.05E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	6.15E-05	3.08E-05	6.17E-06	3.44E-05	1.73E-05	3.45E-06	2.09E-05	1.05E-05	2.09E-06	7.99E-06	4.00E-06	8.01E-07	7.34E-06	3.68E-06	7.36E-07
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**9.34E-02**	**1.49E-01**	**2.37E-03**	**4.97E-02**	**7.93E-02**	**1.26E-03**	**2.79E-02**	**4.45E-02**	**7.07E-04**	**7.06E-03**	**1.13E-02**	**1.79E-04**	**6.02E-03**	**9.60E-03**	**1.53E-04**
Total PCB	**5.47E-02**	**1.08E+00**	**8.93E-02**	**3.05E-02**	**6.03E-01**	**4.98E-02**	**1.84E-02**	**3.64E-01**	**3.01E-02**	**6.91E-03**	**1.37E-01**	**1.13E-02**	**6.34E-03**	**1.25E-01**	**1.03E-02**
Total 4,4-DDx	**7.70E-03**	**2.04E+00**	**2.39E-02**	**5.66E-03**	**1.50E+00**	**1.75E-02**	**4.64E-03**	**1.23E+00**	**1.44E-02**	**3.66E-03**	**9.72E-01**	**1.13E-02**	**3.61E-03**	**9.59E-01**	**1.12E-02**
Total HPAH	**3.75E-02**	**NA**	**NA**	**2.09E-02**	**NA**	**NA**	**1.26E-02**	**NA**	**NA**	**4.71E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**
Total LPAH	**3.68E-02**	**NA**	**NA**	**1.98E-02**	**NA**	**NA**	**1.13E-02**	**NA**	**NA**	**3.24E-03**	**NA**	**NA**	**2.84E-03**	**NA**	**NA**
Total PAH	**4.76E-02**	**NA**	**NA**	**2.59E-02**	**NA**	**NA**	**1.51E-02**	**NA**	**NA**	**4.83E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-29. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 20 (2005 Subsurface)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.012 Ref 0.988			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	4.06E-03	NA	NA	2.73E-03	NA	NA	2.06E-03	NA	NA	1.42E-03	NA	NA	1.39E-03	NA	NA
ARSENIC	1.41E-01	4.90E-02	1.23E-02	1.82E-01	6.35E-02	1.59E-02	2.03E-01	7.07E-02	1.77E-02	2.22E-01	7.76E-02	1.94E-02	2.23E-01	7.79E-02	1.95E-02
CADMIUM	1.95E-03	4.33E-02	2.12E-04	1.81E-03	4.02E-02	1.97E-04	1.74E-03	3.86E-02	1.89E-04	1.67E-03	3.71E-02	1.82E-04	1.67E-03	3.71E-02	1.82E-04
CHROMIUM	1.81E-01	1.32E-01	2.26E-02	2.06E-01	1.50E-01	2.56E-02	2.18E-01	1.59E-01	2.71E-02	2.29E-01	1.68E-01	2.86E-02	2.30E-01	1.68E-01	2.87E-02
COPPER	9.15E-01	6.76E-01	2.72E-02	7.63E-01	5.64E-01	2.27E-02	6.86E-01	5.07E-01	2.04E-02	6.14E-01	4.54E-01	1.83E-02	6.10E-01	4.51E-01	1.81E-02
LEAD	**1.96E-01**	**1.59E+01**	**3.99E-02**	**1.36E-01**	**1.10E+01**	**2.77E-02**	**1.06E-01**	**8.62E+00**	**2.16E-02**	**7.80E-02**	**6.31E+00**	**1.59E-02**	**7.66E-02**	**6.20E+00**	**1.56E-02**
MERCURY	**9.70E-02**	**4.62E+00**	**1.00E+00**	**5.78E-02**	**2.76E+00**	**5.97E-01**	**3.82E-02**	**1.82E+00**	**3.95E-01**	**1.96E-02**	**9.34E-01**	**2.02E-01**	**1.87E-02**	**8.89E-01**	**1.93E-01**
NICKEL	4.49E-02	5.48E-02	1.33E-03	6.03E-02	7.37E-02	1.79E-03	6.80E-02	8.32E-02	2.02E-03	7.54E-02	9.21E-02	2.23E-03	7.58E-02	9.26E-02	2.24E-03
SELENIUM	4.95E-02	4.09E-01	1.01E-01	1.03E-01	8.46E-01	2.09E-01	1.29E-01	1.06E+00	2.63E-01	1.54E-01	1.27E+00	3.15E-01	1.56E-01	1.28E+00	3.17E-01
SILVER	1.20E-03	NA	NA	1.47E-03	NA	NA	1.61E-03	NA	NA	1.74E-03	NA	NA	1.75E-03	NA	NA
ZINC	1.43E+01	1.53E+00	1.53E-01	1.05E+01	1.13E+00	1.13E-01	8.64E+00	9.26E-01	9.26E-02	6.86E+00	7.34E-01	7.34E-02	6.77E+00	7.25E-01	7.25E-02
ALPHA-CHLORDANE*	1.77E-04	8.88E-05	1.78E-05	1.17E-04	5.87E-05	1.17E-05	8.71E-05	4.37E-05	8.73E-06	5.85E-05	2.93E-05	5.87E-06	5.71E-05	2.86E-05	5.72E-06
DIELDRIN*	5.18E-04	1.17E-02	1.03E-03	2.77E-04	6.23E-03	5.51E-04	1.56E-04	3.51E-03	3.11E-04	4.11E-05	9.25E-04	8.19E-05	3.54E-05	7.96E-04	7.05E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	7.30E-05	3.66E-05	7.32E-06	4.02E-05	2.01E-05	4.03E-06	2.37E-05	1.19E-05	2.38E-06	8.12E-06	4.07E-06	8.15E-07	7.34E-06	3.68E-06	7.36E-07
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**1.20E-01**	**1.92E-01**	**3.05E-03**	**6.32E-02**	**1.01E-01**	**1.60E-03**	**3.46E-02**	**5.52E-02**	**8.78E-04**	**7.38E-03**	**1.18E-02**	**1.87E-04**	**6.02E-03**	**9.60E-03**	**1.53E-04**
Total PCB	**2.04E-01**	**4.03E+00**	**3.33E-01**	**1.05E-01**	**2.08E+00**	**1.72E-01**	**5.57E-02**	**1.10E+00**	**9.09E-02**	**8.69E-03**	**1.72E-01**	**1.42E-02**	**6.34E-03**	**1.25E-01**	**1.03E-02**
Total 4,4-DDx	**2.99E-02**	**7.94E+00**	**9.27E-02**	**1.68E-02**	**4.45E+00**	**5.19E-02**	**1.02E-02**	**2.70E+00**	**3.16E-02**	**3.93E-03**	**1.04E+00**	**1.22E-02**	**3.61E-03**	**9.59E-01**	**1.12E-02**
Total HPAH	**7.02E-02**	**NA**	**NA**	**3.73E-02**	**NA**	**NA**	**2.08E-02**	**NA**	**NA**	**5.10E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**
Total LPAH	**1.78E-01**	**NA**	**NA**	**9.05E-02**	**NA**	**NA**	**4.66E-02**	**NA**	**NA**	**4.92E-03**	**NA**	**NA**	**2.84E-03**	**NA**	**NA**
Total PAH	**1.21E-01**	**NA**	**NA**	**6.28E-02**	**NA**	**NA**	**3.35E-02**	**NA**	**NA**	**5.71E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-30. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 20 (All Years Data Set)

	SUF= 1 Ref= 0			SUF= 0.5 Ref= 0.5			SUF= 0.25 Ref= 0.75			SUF= 0.002 Ref= 0.998			SUF= 0 Ref= 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	**1.57E-02**	**NA**	**NA**	**8.57E-03**	**NA**	**NA**	**4.99E-03**	**NA**	**NA**	**1.44E-03**	**NA**	**NA**	**1.41E-03**	**NA**	**NA**
ARSENIC	5.65E-02	9.57E-03	2.39E-03	6.64E-02	1.12E-02	2.81E-03	7.13E-02	1.21E-02	3.02E-03	7.62E-02	1.29E-02	3.23E-03	7.62E-02	1.29E-02	3.23E-03
CADMIUM	6.58E-04	7.10E-03	3.48E-05	7.53E-04	8.13E-03	3.98E-05	8.01E-04	8.64E-03	4.24E-05	8.48E-04	9.15E-03	4.48E-05	8.48E-04	9.15E-03	4.49E-05
CHROMIUM	**6.46E-01**	**2.29E-01**	**3.91E-02**	**4.00E-01**	**1.42E-01**	**2.42E-02**	**2.78E-01**	**9.86E-02**	**1.68E-02**	**1.56E-01**	**5.54E-02**	**9.45E-03**	**1.55E-01**	**5.51E-02**	**9.39E-03**
COPPER	**3.75E-01**	**1.34E-01**	**5.41E-03**	**3.00E-01**	**1.08E-01**	**4.32E-03**	**2.62E-01**	**9.40E-02**	**3.78E-03**	**2.25E-01**	**8.06E-02**	**3.24E-03**	**2.24E-01**	**8.05E-02**	**3.24E-03**
LEAD	**1.24E-01**	**4.87E+00**	**1.22E-02**	**8.62E-02**	**3.39E+00**	**8.51E-03**	**6.74E-02**	**2.65E+00**	**6.65E-03**	**4.86E-02**	**1.91E+00**	**4.80E-03**	**4.85E-02**	**1.90E+00**	**4.78E-03**
MERCURY	**3.65E-02**	**8.44E-01**	**1.83E-01**	**2.12E-02**	**4.91E-01**	**1.06E-01**	**1.36E-02**	**3.14E-01**	**6.80E-02**	**6.00E-03**	**1.39E-01**	**3.01E-02**	**5.94E-03**	**1.37E-01**	**2.98E-02**
NICKEL	1.05E-01	6.23E-02	1.51E-03	1.06E-01	6.30E-02	1.53E-03	1.07E-01	6.34E-02	1.54E-03	1.08E-01	6.38E-02	1.55E-03	1.08E-01	6.38E-02	1.55E-03
SELENIUM	2.01E-02	8.06E-02	1.99E-02	3.33E-02	1.33E-01	3.30E-02	3.99E-02	1.60E-01	3.95E-02	4.64E-02	1.86E-01	4.60E-02	4.65E-02	1.86E-01	4.60E-02
SILVER	4.81E-04	NA	NA	6.61E-04	NA	NA	7.50E-04	NA	NA	8.39E-04	NA	NA	8.40E-04	NA	NA
ZINC	**2.39E+00**	**1.24E-01**	**1.24E-02**	**2.25E+00**	**1.17E-01**	**1.17E-02**	**2.18E+00**	**1.14E-01**	**1.14E-02**	**2.12E+00**	**1.10E-01**	**1.10E-02**	**2.11E+00**	**1.10E-01**	**1.10E-02**
ALPHA-CHLORDANE*	1.63E-04	3.97E-05	7.95E-06	9.01E-05	2.19E-05	4.39E-06	5.36E-05	1.30E-05	2.61E-06	1.73E-05	4.21E-06	8.42E-07	1.70E-05	4.14E-06	8.28E-07
DIELDRIN*	7.98E-05	8.72E-04	7.72E-05	4.52E-05	4.94E-04	4.37E-05	2.79E-05	3.05E-04	2.70E-05	1.07E-05	1.17E-04	1.04E-05	1.06E-05	1.16E-04	1.02E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	9.56E-05	2.33E-05	4.65E-06	4.89E-05	1.19E-05	2.38E-06	2.56E-05	6.22E-06	1.24E-06	2.41E-06	5.86E-07	1.17E-07	2.22E-06	5.41E-07	1.08E-07
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**1.48E-02**	**1.15E-02**	**1.82E-04**	**8.29E-03**	**6.42E-03**	**1.02E-04**	**5.03E-03**	**3.90E-03**	**6.20E-05**	**1.81E-03**	**1.40E-03**	**2.23E-05**	**1.78E-03**	**1.38E-03**	**2.19E-05**
Total PCB	**7.73E-02**	**7.41E-01**	**6.12E-02**	**3.96E-02**	**3.80E-01**	**3.14E-02**	**2.07E-02**	**1.99E-01**	**1.64E-02**	**2.03E-03**	**1.95E-02**	**1.61E-03**	**1.88E-03**	**1.81E-02**	**1.49E-03**
Total 4,4-DDx	**1.17E-02**	**1.50E+00**	**1.75E-02**	**6.37E-03**	**8.20E-01**	**9.58E-03**	**3.72E-03**	**4.79E-01**	**5.59E-03**	**1.09E-03**	**1.41E-01**	**1.64E-03**	**1.07E-03**	**1.38E-01**	**1.61E-03**
Total HPAH	**1.18E-02**	**NA**	**NA**	**7.13E-03**	**NA**	**NA**	**4.78E-03**	**NA**	**NA**	**2.45E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**
Total LPAH	**4.22E-03**	**NA**	**NA**	**2.63E-03**	**NA**	**NA**	**1.84E-03**	**NA**	**NA**	**1.05E-03**	**NA**	**NA**	**1.05E-03**	**NA**	**NA**
Total PAH	**1.55E-02**	**NA**	**NA**	**8.95E-03**	**NA**	**NA**	**5.69E-03**	**NA**	**NA**	**2.46E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-31. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 20 (2005 Surface Data Set)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.002 Ref 0.998			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	2.43E-04	NA	NA	8.28E-04	NA	NA	1.12E-03	NA	NA	1.41E-03	NA	NA	1.41E-03	NA	NA
ARSENIC	4.04E-02	6.84E-03	1.71E-03	5.83E-02	9.87E-03	2.47E-03	6.73E-02	1.14E-02	2.85E-03	7.62E-02	1.29E-02	3.22E-03	7.62E-02	1.29E-02	3.23E-03
CADMIUM	5.11E-04	5.51E-03	2.70E-05	6.80E-04	7.33E-03	3.59E-05	7.64E-04	8.24E-03	4.04E-05	8.48E-04	9.14E-03	4.48E-05	8.48E-04	9.15E-03	4.49E-05
CHROMIUM	1.16E-01	4.10E-02	6.99E-03	1.35E-01	4.80E-02	8.19E-03	1.45E-01	5.16E-02	8.79E-03	1.55E-01	5.51E-02	9.39E-03	1.55E-01	5.51E-02	9.39E-03
COPPER	2.72E-01	9.75E-02	3.92E-03	2.48E-01	8.90E-02	3.58E-03	2.36E-01	8.48E-02	3.41E-03	2.25E-01	8.06E-02	3.24E-03	2.24E-01	8.05E-02	3.24E-03
LEAD	**7.74E-02**	**3.04E+00**	**7.64E-03**	**6.30E-02**	**2.47E+00**	**6.21E-03**	**5.57E-02**	**2.19E+00**	**5.50E-03**	**4.86E-02**	**1.91E+00**	**4.79E-03**	**4.85E-02**	**1.90E+00**	**4.78E-03**
MERCURY	**6.93E-02**	**1.60E+00**	**3.47E-01**	**3.76E-02**	**8.70E-01**	**1.89E-01**	**2.18E-02**	**5.04E-01**	**1.09E-01**	**6.07E-03**	**1.40E-01**	**3.04E-02**	**5.94E-03**	**1.37E-01**	**2.98E-02**
NICKEL	5.79E-02	3.43E-02	8.32E-04	8.27E-02	4.91E-02	1.19E-03	9.51E-02	5.64E-02	1.37E-03	1.07E-01	6.37E-02	1.54E-03	1.08E-01	6.38E-02	1.55E-03
SELENIUM	1.36E-02	5.43E-02	1.34E-02	3.00E-02	1.20E-01	2.97E-02	3.82E-02	1.53E-01	3.79E-02	4.64E-02	1.86E-01	4.60E-02	4.65E-02	1.86E-01	4.60E-02
SILVER	4.71E-04	NA	NA	6.55E-04	NA	NA	7.48E-04	NA	NA	8.39E-04	NA	NA	8.40E-04	NA	NA
ZINC	1.29E+00	6.68E-02	6.68E-03	1.70E+00	8.84E-02	8.84E-03	1.91E+00	9.92E-02	9.92E-03	2.11E+00	1.10E-01	1.10E-02	2.11E+00	1.10E-01	1.10E-02
ALPHA-CHLORDANE*	3.97E-05	9.67E-06	1.93E-06	2.84E-05	6.90E-06	1.38E-06	2.27E-05	5.52E-06	1.10E-06	1.70E-05	4.15E-06	8.30E-07	1.70E-05	4.14E-06	8.28E-07
DIELDRIN*	4.54E-05	4.96E-04	4.39E-05	2.80E-05	3.06E-04	2.71E-05	1.93E-05	2.11E-04	1.87E-05	1.07E-05	1.16E-04	1.03E-05	1.06E-05	1.16E-04	1.02E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	1.86E-05	4.53E-06	9.06E-07	1.04E-05	2.54E-06	5.07E-07	6.32E-06	1.54E-06	3.08E-07	2.26E-06	5.49E-07	1.10E-07	2.22E-06	5.41E-07	1.08E-07
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**2.77E-02**	**2.14E-02**	**3.41E-04**	**1.47E-02**	**1.14E-02**	**1.81E-04**	**8.25E-03**	**6.39E-03**	**1.02E-04**	**1.83E-03**	**1.42E-03**	**2.26E-05**	**1.78E-03**	**1.38E-03**	**2.19E-05**
Total PCB	**1.63E-02**	**1.56E-01**	**1.29E-02**	**9.08E-03**	**8.70E-02**	**7.19E-03**	**5.48E-03**	**5.26E-02**	**4.34E-03**	**1.91E-03**	**1.83E-02**	**1.52E-03**	**1.88E-03**	**1.81E-02**	**1.49E-03**
Total 4,4-DDx	**2.29E-03**	**2.94E-01**	**3.44E-03**	**1.68E-03**	**2.16E-01**	**2.53E-03**	**1.38E-03**	**1.77E-01**	**2.07E-03**	**1.07E-03**	**1.38E-01**	**1.62E-03**	**1.07E-03**	**1.38E-01**	**1.61E-03**
Total HPAH	**2.11E-02**	**NA**	**NA**	**1.18E-02**	**NA**	**NA**	**7.10E-03**	**NA**	**NA**	**2.47E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**
Total LPAH	**1.36E-02**	**NA**	**NA**	**7.31E-03**	**NA**	**NA**	**4.18E-03**	**NA**	**NA**	**1.07E-03**	**NA**	**NA**	**1.05E-03**	**NA**	**NA**
Total PAH	**2.68E-02**	**NA**	**NA**	**1.46E-02**	**NA**	**NA**	**8.52E-03**	**NA**	**NA**	**2.48E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-32. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 20 (2005 Subsurface)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.002 Ref 0.998			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	4.13E-03	NA	NA	2.77E-03	NA	NA	2.09E-03	NA	NA	1.42E-03	NA	NA	1.41E-03	NA	NA
ARSENIC	4.80E-02	8.12E-03	2.03E-03	6.21E-02	1.05E-02	2.63E-03	6.92E-02	1.17E-02	2.93E-03	7.62E-02	1.29E-02	3.23E-03	7.62E-02	1.29E-02	3.23E-03
CADMIUM	9.92E-04	1.07E-02	5.25E-05	9.20E-04	9.93E-03	4.87E-05	8.84E-04	9.54E-03	4.68E-05	8.49E-04	9.15E-03	4.49E-05	8.48E-04	9.15E-03	4.49E-05
CHROMIUM	1.22E-01	4.34E-02	7.39E-03	1.39E-01	4.92E-02	8.39E-03	1.47E-01	5.22E-02	8.89E-03	1.55E-01	5.51E-02	9.39E-03	1.55E-01	5.51E-02	9.39E-03
COPPER	3.37E-01	1.21E-01	4.86E-03	2.81E-01	1.01E-01	4.05E-03	2.53E-01	9.06E-02	3.64E-03	2.25E-01	8.06E-02	3.24E-03	2.24E-01	8.05E-02	3.24E-03
LEAD	**1.24E-01**	**4.88E+00**	**1.23E-02**	**8.64E-02**	**3.39E+00**	**8.52E-03**	**6.74E-02**	**2.65E+00**	**6.65E-03**	**4.86E-02**	**1.91E+00**	**4.80E-03**	**4.85E-02**	**1.90E+00**	**4.78E-03**
MERCURY	**3.09E-02**	**7.15E-01**	**1.55E-01**	**1.84E-02**	**4.26E-01**	**9.23E-02**	**1.22E-02**	**2.82E-01**	**6.11E-02**	**5.99E-03**	**1.39E-01**	**3.00E-02**	**5.94E-03**	**1.37E-01**	**2.98E-02**
NICKEL	6.37E-02	3.78E-02	9.15E-04	8.56E-02	5.08E-02	1.23E-03	9.66E-02	5.73E-02	1.39E-03	1.07E-01	6.37E-02	1.54E-03	1.08E-01	6.38E-02	1.55E-03
SELENIUM	1.48E-02	5.93E-02	1.47E-02	3.06E-02	1.23E-01	3.04E-02	3.85E-02	1.54E-01	3.82E-02	4.64E-02	1.86E-01	4.60E-02	4.65E-02	1.86E-01	4.60E-02
SILVER	5.76E-04	NA	NA	7.08E-04	NA	NA	7.74E-04	NA	NA	8.39E-04	NA	NA	8.40E-04	NA	NA
ZINC	4.46E+00	2.32E-01	2.32E-02	3.29E+00	1.71E-01	1.71E-02	2.70E+00	1.40E-01	1.40E-02	2.12E+00	1.10E-01	1.10E-02	2.11E+00	1.10E-01	1.10E-02
ALPHA-CHLORDANE*	5.27E-05	1.28E-05	2.57E-06	3.49E-05	8.49E-06	1.70E-06	2.59E-05	6.31E-06	1.26E-06	1.71E-05	4.15E-06	8.31E-07	1.70E-05	4.14E-06	8.28E-07
DIELDRIN*	1.55E-04	1.69E-03	1.50E-04	8.28E-05	9.05E-04	8.01E-05	4.67E-05	5.10E-04	4.52E-05	1.09E-05	1.19E-04	1.05E-05	1.06E-05	1.16E-04	1.02E-05
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	2.21E-05	5.38E-06	1.08E-06	1.22E-05	2.96E-06	5.92E-07	7.19E-06	1.75E-06	3.50E-07	2.26E-06	5.51E-07	1.10E-07	2.22E-06	5.41E-07	1.08E-07
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**3.56E-02**	**2.76E-02**	**4.39E-04**	**1.87E-02**	**1.45E-02**	**2.30E-04**	**1.02E-02**	**7.93E-03**	**1.26E-04**	**1.85E-03**	**1.43E-03**	**2.28E-05**	**1.78E-03**	**1.38E-03**	**2.19E-05**
Total PCB	**6.06E-02**	**5.81E-01**	**4.80E-02**	**3.13E-02**	**3.00E-01**	**2.48E-02**	**1.66E-02**	**1.59E-01**	**1.31E-02**	**2.00E-03**	**1.92E-02**	**1.58E-03**	**1.88E-03**	**1.81E-02**	**1.49E-03**
Total 4,4-DDx	**8.87E-03**	**1.14E+00**	**1.33E-02**	**4.97E-03**	**6.41E-01**	**7.48E-03**	**3.02E-03**	**3.89E-01**	**4.55E-03**	**1.09E-03**	**1.40E-01**	**1.64E-03**	**1.07E-03**	**1.38E-01**	**1.61E-03**
Total HPAH	**3.96E-02**	**NA**	**NA**	**2.10E-02**	**NA**	**NA**	**1.17E-02**	**NA**	**NA**	**2.50E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**
Total LPAH	**6.57E-02**	**NA**	**NA**	**3.34E-02**	**NA**	**NA**	**1.72E-02**	**NA**	**NA**	**1.18E-03**	**NA**	**NA**	**1.05E-03**	**NA**	**NA**
Total PAH	**6.83E-02**	**NA**	**NA**	**3.54E-02**	**NA**	**NA**	**1.89E-02**	**NA**	**NA**	**2.56E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-33. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 24 (All Years Data Set)

	SUF 1			SUF 0.5			SUF 0.25			SUF 0.029			SUF 0		
	Ref 0			Ref 0.5			Ref 0.75			Ref 0.971			Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	1.02E-02	NA	NA	1.31E-02	NA	NA	1.45E-02	NA	NA	1.58E-02	NA	NA	1.60E-02	NA	NA
ARSENIC	2.04E+00	3.76E-01	9.39E-02	2.12E+00	3.91E-01	9.76E-02	2.16E+00	3.98E-01	9.95E-02	2.20E+00	4.05E-01	1.01E-01	2.20E+00	4.05E-01	1.01E-01
CADMIUM	**9.59E-02**	**1.12E+00**	**5.51E-03**	**4.98E-02**	**5.84E-01**	**2.86E-03**	**2.68E-02**	**3.14E-01**	**1.54E-03**	**6.43E-03**	**7.54E-02**	**3.70E-04**	**3.76E-03**	**4.41E-02**	**2.16E-04**
CHROMIUM	**3.20E+00**	**1.23E+00**	**2.10E-01**	**2.28E+00**	**8.78E-01**	**1.50E-01**	**1.82E+00**	**7.00E-01**	**1.19E-01**	**1.41E+00**	**5.43E-01**	**9.26E-02**	**1.36E+00**	**5.23E-01**	**8.91E-02**
COPPER	**1.66E+00**	**6.49E-01**	**2.61E-02**	**1.14E+00**	**4.44E-01**	**1.78E-02**	**8.75E-01**	**3.41E-01**	**1.37E-02**	**6.43E-01**	**2.51E-01**	**1.01E-02**	**6.12E-01**	**2.39E-01**	**9.60E-03**
LEAD	**6.33E-01**	**2.70E+01**	**6.79E-02**	**3.90E-01**	**1.66E+01**	**4.18E-02**	**2.68E-01**	**1.15E+01**	**2.88E-02**	**1.61E-01**	**6.88E+00**	**1.73E-02**	**1.47E-01**	**6.28E+00**	**1.58E-02**
MERCURY	**9.74E-03**	**2.45E-01**	**5.31E-02**	**8.60E-03**	**2.16E-01**	**4.68E-02**	**8.02E-03**	**2.02E-01**	**4.37E-02**	**7.52E-03**	**1.89E-01**	**4.10E-02**	**7.45E-03**	**1.87E-01**	**4.06E-02**
NICKEL	2.29E+00	1.48E+00	3.59E-02	2.16E+00	1.39E+00	3.37E-02	2.09E+00	1.35E+00	3.26E-02	2.03E+00	1.31E+00	3.17E-02	2.02E+00	1.30E+00	3.16E-02
SELENIUM	1.77E-01	7.70E-01	1.90E-01	1.59E-01	6.92E-01	1.71E-01	1.50E-01	6.53E-01	1.62E-01	1.42E-01	6.19E-01	1.53E-01	1.41E-01	6.14E-01	1.52E-01
SILVER	**9.16E-02**	**NA**	**NA**	**4.81E-02**	**NA**	**NA**	**2.63E-02**	**NA**	**NA**	**7.08E-03**	**NA**	**NA**	**4.55E-03**	**NA**	**NA**
ZINC	**8.59E+00**	**4.85E-01**	**4.85E-02**	**6.69E+00**	**3.78E-01**	**3.78E-02**	**5.74E+00**	**3.25E-01**	**3.25E-02**	**4.91E+00**	**2.77E-01**	**2.77E-02**	**4.80E+00**	**2.71E-01**	**2.71E-02**
ALDRIN*	3.30E-04	NA	NA	2.15E-04	NA	NA	1.58E-04	NA	NA	1.07E-04	NA	NA	1.00E-04	NA	NA
ALPHA-CHLORDANE	**1.29E-04**	**3.41E-05**	**6.82E-06**	**6.78E-05**	**1.79E-05**	**3.59E-06**	**3.73E-05**	**9.86E-06**	**1.97E-06**	**1.03E-05**	**2.73E-06**	**5.46E-07**	**6.77E-06**	**1.79E-06**	**3.58E-07**
DIELDRIN*	1.56E-03	1.86E-02	1.64E-03	8.14E-04	9.67E-03	8.56E-04	4.40E-04	5.22E-03	4.62E-04	1.08E-04	1.29E-03	1.14E-04	6.50E-05	7.72E-04	6.83E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**8.56E-03**	**7.21E-03**	**1.15E-04**	**4.41E-03**	**3.72E-03**	**5.91E-05**	**2.34E-03**	**1.97E-03**	**3.13E-05**	**5.06E-04**	**4.26E-04**	**6.78E-06**	**2.66E-04**	**2.24E-04**	**3.56E-06**
Total PCB	**4.50E-02**	**4.69E-01**	**3.87E-02**	**2.31E-02**	**2.41E-01**	**1.99E-02**	**1.22E-02**	**1.27E-01**	**1.05E-02**	**2.47E-03**	**2.58E-02**	**2.13E-03**	**1.20E-03**	**1.26E-02**	**1.04E-03**
Total 4,4-DDx	**6.80E-03**	**9.53E-01**	**1.11E-02**	**4.17E-03**	**5.84E-01**	**6.81E-03**	**2.85E-03**	**3.99E-01**	**4.66E-03**	**1.68E-03**	**2.36E-01**	**2.75E-03**	**1.53E-03**	**2.14E-01**	**2.50E-03**
Total HPAH	**2.33E+00**	**NA**	**NA**	**1.21E+00**	**NA**	**NA**	**6.55E-01**	**NA**	**NA**	**1.63E-01**	**NA**	**NA**	**9.79E-02**	**NA**	**NA**
Total LPAH	**4.13E-01**	**NA**	**NA**	**2.09E-01**	**NA**	**NA**	**1.08E-01**	**NA**	**NA**	**1.75E-02**	**NA**	**NA**	**5.71E-03**	**NA**	**NA**
Total PAH	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-34. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Surface Data Set)

	SUF 1			SUF 0.5			SUF 0.25			SUF 0.029			SUF 0		
	Ref 0			Ref 0.5			Ref 0.75			Ref 0.971			Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	9.79E-03	NA	NA	1.29E-02	NA	NA	1.44E-02	NA	NA	1.58E-02	NA	NA	1.60E-02	NA	NA
ARSENIC	1.94E+00	3.57E-01	8.92E-02	2.07E+00	3.81E-01	9.53E-02	2.14E+00	3.93E-01	9.83E-02	2.20E+00	4.04E-01	1.01E-01	2.20E+00	4.05E-01	1.01E-01
CADMIUM	**9.04E-02**	**1.06E+00**	**5.19E-03**	**4.71E-02**	**5.52E-01**	**2.71E-03**	**2.54E-02**	**2.98E-01**	**1.46E-03**	**6.27E-03**	**7.35E-02**	**3.60E-04**	**3.76E-03**	**4.41E-02**	**2.16E-04**
CHROMIUM	**2.63E+00**	**1.01E+00**	**1.73E-01**	**1.99E+00**	**7.68E-01**	**1.31E-01**	**1.67E+00**	**6.45E-01**	**1.10E-01**	**1.39E+00**	**5.37E-01**	**9.15E-02**	**1.36E+00**	**5.23E-01**	**8.91E-02**
COPPER	**1.44E+00**	**5.62E-01**	**2.26E-02**	**1.03E+00**	**4.00E-01**	**1.61E-02**	**8.19E-01**	**3.19E-01**	**1.29E-02**	**6.36E-01**	**2.48E-01**	**9.98E-03**	**6.12E-01**	**2.39E-01**	**9.60E-03**
LEAD	**7.27E-01**	**3.10E+01**	**7.79E-02**	**4.37E-01**	**1.87E+01**	**4.68E-02**	**2.92E-01**	**1.25E+01**	**3.13E-02**	**1.64E-01**	**6.99E+00**	**1.76E-02**	**1.47E-01**	**6.28E+00**	**1.58E-02**
MERCURY	**9.67E-03**	**2.43E-01**	**5.27E-02**	**8.56E-03**	**2.15E-01**	**4.67E-02**	**8.00E-03**	**2.01E-01**	**4.36E-02**	**7.51E-03**	**1.89E-01**	**4.10E-02**	**7.45E-03**	**1.87E-01**	**4.06E-02**
NICKEL	1.90E+00	1.23E+00	2.97E-02	1.96E+00	1.26E+00	3.06E-02	1.99E+00	1.28E+00	3.11E-02	2.02E+00	1.30E+00	3.15E-02	2.02E+00	1.30E+00	3.16E-02
SELENIUM	1.76E-01	7.69E-01	1.90E-01	1.59E-01	6.91E-01	1.71E-01	1.50E-01	6.53E-01	1.61E-01	1.42E-01	6.19E-01	1.53E-01	1.41E-01	6.14E-01	1.52E-01
SILVER	**9.89E-02**	**NA**	**NA**	**5.17E-02**	**NA**	**NA**	**2.81E-02**	**NA**	**NA**	**7.29E-03**	**NA**	**NA**	**4.55E-03**	**NA**	**NA**
ZINC	7.59E+00	4.29E-01	4.29E-02	6.19E+00	3.50E-01	3.50E-02	5.49E+00	3.10E-01	3.10E-02	4.88E+00	2.76E-01	2.76E-02	4.80E+00	2.71E-01	2.71E-02
ALDRIN*	2.76E-05	NA	NA	6.40E-05	NA	NA	8.22E-05	NA	NA	9.83E-05	NA	NA	1.00E-04	NA	NA
ALPHA-CHLORDANE	**3.86E-05**	**1.02E-05**	**2.04E-06**	**2.27E-05**	**6.01E-06**	**1.20E-06**	**1.47E-05**	**3.90E-06**	**7.80E-07**	**7.70E-06**	**2.04E-06**	**4.07E-07**	**6.77E-06**	**1.79E-06**	**3.58E-07**
DIELDRIN*	1.65E-03	1.96E-02	1.73E-03	8.57E-04	1.02E-02	9.01E-04	4.61E-04	5.48E-03	4.85E-04	1.11E-04	1.32E-03	1.17E-04	6.50E-05	7.72E-04	6.83E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**1.04E-02**	**8.72E-03**	**1.39E-04**	**5.31E-03**	**4.47E-03**	**7.11E-05**	**2.79E-03**	**2.35E-03**	**3.73E-05**	**5.58E-04**	**4.70E-04**	**7.48E-06**	**2.66E-04**	**2.24E-04**	**3.56E-06**
Total PCB	**4.96E-02**	**5.17E-01**	**4.27E-02**	**2.54E-02**	**2.65E-01**	**2.19E-02**	**1.33E-02**	**1.39E-01**	**1.14E-02**	**2.61E-03**	**2.72E-02**	**2.25E-03**	**1.20E-03**	**1.26E-02**	**1.04E-03**
Total 4,4-DDx	**7.42E-03**	**1.04E+00**	**1.21E-02**	**4.47E-03**	**6.27E-01**	**7.32E-03**	**3.00E-03**	**4.21E-01**	**4.91E-03**	**1.70E-03**	**2.38E-01**	**2.78E-03**	**1.53E-03**	**2.14E-01**	**2.50E-03**
Total HPAH	**2.11E+00**	**NA**	**NA**	**1.10E+00**	**NA**	**NA**	**6.00E-01**	**NA**	**NA**	**1.56E-01**	**NA**	**NA**	**9.79E-02**	**NA**	**NA**
Total LPAH	**1.27E-01**	**NA**	**NA**	**6.61E-02**	**NA**	**NA**	**3.59E-02**	**NA**	**NA**	**9.21E-03**	**NA**	**NA**	**5.71E-03**	**NA**	**NA**
Total PAH	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-35. Summary of Surf Scoter BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Subsurface Data Set)

	SUF 1			SUF 0.5			SUF 0.25			SUF 0.029			SUF 0		
	Ref 0			Ref 0.5			Ref 0.75			Ref 0.971			Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	1.23E-02	NA	NA	1.41E-02	NA	NA	1.50E-02	NA	NA	1.59E-02	NA	NA	1.60E-02	NA	NA
ARSENIC	1.80E+00	3.31E-01	8.26E-02	2.00E+00	3.68E-01	9.20E-02	2.10E+00	3.87E-01	9.67E-02	2.19E+00	4.03E-01	1.01E-01	2.20E+00	4.05E-01	1.01E-01
CADMIUM	**2.45E-01**	**2.88E+00**	**1.41E-02**	**1.25E-01**	**1.48E+00**	**7.16E-03**	**6.41E-02**	**7.52E-01**	**3.69E-03**	**1.08E-02**	**1.26E-01**	**6.19E-04**	**3.76E-03**	**4.41E-02**	**2.16E-04**
CHROMIUM	**3.28E+00**	**1.26E+00**	**2.16E-01**	**2.32E+00**	**8.94E-01**	**1.52E-01**	**1.84E+00**	**7.08E-01**	**1.21E-01**	**1.41E+00**	**5.44E-01**	**9.28E-02**	**1.36E+00**	**5.23E-01**	**8.91E-02**
COPPER	**1.54E+00**	**6.01E-01**	**2.42E-02**	**1.08E+00**	**4.20E-01**	**1.69E-02**	**8.44E-01**	**3.29E-01**	**1.32E-02**	**6.39E-01**	**2.49E-01**	**1.00E-02**	**6.12E-01**	**2.39E-01**	**9.60E-03**
LEAD	**1.61E+00**	**6.86E+01**	**1.72E-01**	**8.77E-01**	**3.74E+01**	**9.40E-02**	**5.12E-01**	**2.19E+01**	**5.49E-02**	**1.89E-01**	**8.08E+00**	**2.03E-02**	**1.47E-01**	**6.28E+00**	**1.58E-02**
MERCURY	**9.78E-03**	**2.46E-01**	**5.33E-02**	**8.61E-03**	**2.17E-01**	**4.70E-02**	**8.03E-03**	**2.02E-01**	**4.38E-02**	**7.52E-03**	**1.89E-01**	**4.10E-02**	**7.45E-03**	**1.87E-01**	**4.06E-02**
NICKEL	2.11E+00	1.36E+00	3.29E-02	2.06E+00	1.33E+00	3.22E-02	2.04E+00	1.32E+00	3.19E-02	2.02E+00	1.30E+00	3.16E-02	2.02E+00	1.30E+00	3.16E-02
SELENIUM	1.76E-01	7.67E-01	1.90E-01	1.59E-01	6.91E-01	1.71E-01	1.50E-01	6.52E-01	1.61E-01	1.42E-01	6.19E-01	1.53E-01	1.41E-01	6.14E-01	1.52E-01
SILVER	**1.48E-01**	**NA**	**NA**	**7.63E-02**	**NA**	**NA**	**4.04E-02**	**NA**	**NA**	**8.71E-03**	**NA**	**NA**	**4.55E-03**	**NA**	**NA**
ZINC	8.19E+00	4.63E-01	4.63E-02	6.49E+00	3.67E-01	3.67E-02	5.64E+00	3.19E-01	3.19E-02	4.89E+00	2.77E-01	2.77E-02	4.80E+00	2.71E-01	2.71E-02
ALDRIN*	2.76E-05	NA	NA	6.40E-05	NA	NA	8.22E-05	NA	NA	9.83E-05	NA	NA	1.00E-04	NA	NA
ALPHA-CHLORDANE	**4.15E-05**	**1.10E-05**	**2.20E-06**	**2.42E-05**	**6.39E-06**	**1.28E-06**	**1.55E-05**	**4.09E-06**	**8.18E-07**	**7.78E-06**	**2.06E-06**	**4.12E-07**	**6.77E-06**	**1.79E-06**	**3.58E-07**
DIELDRIN*	1.17E-03	1.38E-02	1.23E-03	6.15E-04	7.31E-03	6.47E-04	3.40E-04	4.04E-03	3.58E-04	9.69E-05	1.15E-03	1.02E-04	6.50E-05	7.72E-04	6.83E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**6.80E-03**	**5.73E-03**	**9.11E-05**	**3.53E-03**	**2.98E-03**	**4.73E-05**	**1.90E-03**	**1.60E-03**	**2.54E-05**	**4.55E-04**	**3.83E-04**	**6.10E-06**	**2.66E-04**	**2.24E-04**	**3.56E-06**
Total PCB	**7.70E-02**	**8.03E-01**	**6.63E-02**	**3.91E-02**	**4.08E-01**	**3.37E-02**	**2.02E-02**	**2.10E-01**	**1.74E-02**	**3.40E-03**	**3.55E-02**	**2.93E-03**	**1.20E-03**	**1.26E-02**	**1.04E-03**
Total 4,4-DDx	**7.03E-03**	**9.85E-01**	**1.15E-02**	**4.28E-03**	**5.99E-01**	**7.00E-03**	**2.91E-03**	**4.07E-01**	**4.75E-03**	**1.69E-03**	**2.37E-01**	**2.76E-03**	**1.53E-03**	**2.14E-01**	**2.50E-03**
Total HPAH	**2.10E+00**	**NA**	**NA**	**1.10E+00**	**NA**	**NA**	**5.97E-01**	**NA**	**NA**	**1.56E-01**	**NA**	**NA**	**9.79E-02**	**NA**	**NA**
Total LPAH	**9.65E-02**	**NA**	**NA**	**5.11E-02**	**NA**	**NA**	**2.84E-02**	**NA**	**NA**	**8.34E-03**	**NA**	**NA**	**5.71E-03**	**NA**	**NA**
Total PAH	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-36. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 24 (All Years Data Set)

	SUF 1			SUF 0.5			SUF 0.25			SUF 0.02933			SUF 0		
	Ref 0			Ref 0.5			Ref 0.75			Ref 0.97067			Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	8.86E-04	NA	NA	1.14E-03	NA	NA	1.26E-03	NA	NA	1.37E-03	NA	NA	1.39E-03	NA	NA
ARSENIC	2.07E-01	7.22E-02	1.81E-02	2.15E-01	7.51E-02	1.88E-02	2.19E-01	7.65E-02	1.91E-02	2.23E-01	7.78E-02	1.94E-02	2.23E-01	7.79E-02	1.95E-02
CADMIUM	**4.25E-02**	**9.45E-01**	**4.63E-03**	**2.21E-02**	**4.91E-01**	**2.41E-03**	**1.19E-02**	**2.64E-01**	**1.29E-03**	**2.87E-03**	**6.37E-02**	**3.12E-04**	**1.67E-03**	**3.71E-02**	**1.82E-04**
CHROMIUM	**5.43E-01**	**3.97E-01**	**6.77E-02**	**3.87E-01**	**2.83E-01**	**4.82E-02**	**3.08E-01**	**2.25E-01**	**3.84E-02**	**2.39E-01**	**1.75E-01**	**2.98E-02**	**2.30E-01**	**1.68E-01**	**2.87E-02**
COPPER	**1.66E+00**	**1.23E+00**	**4.93E-02**	**1.13E+00**	**8.38E-01**	**3.37E-02**	**8.72E-01**	**6.45E-01**	**2.59E-02**	**6.41E-01**	**4.74E-01**	**1.91E-02**	**6.10E-01**	**4.51E-01**	**1.81E-02**
LEAD	**3.30E-01**	**2.67E+01**	**6.70E-02**	**2.03E-01**	**1.64E+01**	**4.13E-02**	**1.40E-01**	**1.13E+01**	**2.84E-02**	**8.40E-02**	**6.80E+00**	**1.71E-02**	**7.66E-02**	**6.20E+00**	**1.56E-02**
MERCURY	**1.29E-02**	**6.14E-01**	**1.33E-01**	**1.58E-02**	**7.52E-01**	**1.63E-01**	**1.72E-02**	**8.20E-01**	**1.78E-01**	**1.85E-02**	**8.81E-01**	**1.91E-01**	**1.87E-02**	**8.89E-01**	**1.93E-01**
NICKEL	8.61E-02	1.05E-01	2.55E-03	8.09E-02	9.89E-02	2.40E-03	7.84E-02	9.58E-02	2.32E-03	7.61E-02	9.30E-02	2.25E-03	7.58E-02	9.26E-02	2.24E-03
SELENIUM	1.70E-01	1.40E+00	3.47E-01	1.63E-01	1.34E+00	3.32E-01	1.59E-01	1.31E+00	3.25E-01	1.56E-01	1.29E+00	3.18E-01	1.56E-01	1.28E+00	3.17E-01
SILVER	**3.52E-02**	**NA**	**NA**	**1.85E-02**	**NA**	**NA**	**1.01E-02**	**NA**	**NA**	**2.73E-03**	**NA**	**NA**	**1.75E-03**	**NA**	**NA**
ZINC	**1.21E+01**	**1.30E+00**	**1.30E-01**	**9.44E+00**	**1.01E+00**	**1.01E-01**	**8.11E+00**	**8.68E-01**	**8.68E-02**	**6.92E+00**	**7.42E-01**	**7.42E-02**	**6.77E+00**	**7.25E-01**	**7.25E-02**
ALDRIN*	5.10E-06	NA	NA	3.33E-06	NA	NA	2.44E-06	NA	NA	1.65E-06	NA	NA	1.55E-06	NA	NA
ALPHA-CHLORDANE	**1.09E-03**	**5.44E-04**	**1.09E-04**	**5.71E-04**	**2.86E-04**	**5.73E-05**	**3.14E-04**	**1.58E-04**	**3.15E-05**	**8.72E-05**	**4.37E-05**	**8.75E-06**	**5.71E-05**	**2.86E-05**	**5.72E-06**
DIELDRIN*	8.51E-04	1.92E-02	1.70E-03	4.43E-04	9.98E-03	8.83E-04	2.39E-04	5.39E-03	4.77E-04	5.93E-05	1.33E-03	1.18E-04	3.54E-05	7.96E-04	7.05E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	4.76E-06	4.42E-06	4.42E-07	3.04E-06	2.82E-06	2.82E-07	2.18E-06	2.02E-06	2.02E-07	1.42E-06	1.32E-06	1.32E-07	1.32E-06	1.22E-06	1.22E-07
GAMMA-CHLORDANE*	2.14E-04	1.07E-04	2.14E-05	1.11E-04	5.54E-05	1.11E-05	5.90E-05	2.96E-05	5.91E-06	1.34E-05	6.72E-06	1.34E-06	7.34E-06	3.68E-06	7.36E-07
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**1.94E-01**	**3.10E-01**	**4.92E-03**	**1.00E-01**	**1.60E-01**	**2.54E-03**	**5.30E-02**	**8.46E-02**	**1.35E-03**	**1.15E-02**	**1.84E-02**	**2.93E-04**	**6.02E-03**	**9.60E-03**	**1.53E-04**
Total PCB	**2.37E-01**	**4.68E+00**	**3.86E-01**	**1.22E-01**	**2.40E+00**	**1.98E-01**	**6.39E-02**	**1.26E+00**	**1.04E-01**	**1.31E-02**	**2.59E-01**	**2.14E-02**	**6.34E-03**	**1.25E-01**	**1.03E-02**
Total 4,4-DDx	**1.61E-02**	**4.26E+00**	**4.98E-02**	**9.84E-03**	**2.61E+00**	**3.05E-02**	**6.72E-03**	**1.78E+00**	**2.08E-02**	**3.98E-03**	**1.06E+00**	**1.23E-02**	**3.61E-03**	**9.59E-01**	**1.12E-02**
Total HPAH	**1.02E-01**	**NA**	**NA**	**5.34E-02**	**NA**	**NA**	**2.88E-02**	**NA**	**NA**	**7.19E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**
Total LPAH	**2.05E-01**	**NA**	**NA**	**1.04E-01**	**NA**	**NA**	**5.35E-02**	**NA**	**NA**	**8.78E-03**	**NA**	**NA**	**2.84E-03**	**NA**	**NA**
Total PAH	**1.40E-01**	**NA**	**NA**	**7.20E-02**	**NA**	**NA**	**3.82E-02**	**NA**	**NA**	**8.28E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-37. Summary of Least Tern BERA HQs for a Range of SUF at IR Site 24 (2005/2006 Surface Data Set)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.02933 Ref 0.97067			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	8.52E-04	NA	NA	1.12E-03	NA	NA	1.26E-03	NA	NA	1.37E-03	NA	NA	1.39E-03	NA	NA
ARSENIC	1.97E-01	6.86E-02	1.71E-02	2.10E-01	7.33E-02	1.83E-02	2.17E-01	7.56E-02	1.89E-02	2.23E-01	7.77E-02	1.94E-02	2.23E-01	7.79E-02	1.95E-02
CADMIUM	**4.01E-02**	**8.91E-01**	**4.37E-03**	**2.09E-02**	**4.64E-01**	**2.27E-03**	**1.13E-02**	**2.51E-01**	**1.23E-03**	**2.79E-03**	**6.21E-02**	**3.04E-04**	**1.67E-03**	**3.71E-02**	**1.82E-04**
CHROMIUM	**4.46E-01**	**3.26E-01**	**5.55E-02**	**3.38E-01**	**2.47E-01**	**4.21E-02**	**2.84E-01**	**2.08E-01**	**3.54E-02**	**2.36E-01**	**1.73E-01**	**2.95E-02**	**2.30E-01**	**1.68E-01**	**2.87E-02**
COPPER	**1.36E+00**	**1.01E+00**	**4.05E-02**	**9.87E-01**	**7.29E-01**	**2.93E-02**	**7.98E-01**	**5.90E-01**	**2.37E-02**	**6.32E-01**	**4.67E-01**	**1.88E-02**	**6.10E-01**	**4.51E-01**	**1.81E-02**
LEAD	**3.79E-01**	**3.07E+01**	**7.70E-02**	**2.28E-01**	**1.84E+01**	**4.63E-02**	**1.52E-01**	**1.23E+01**	**3.09E-02**	**8.54E-02**	**6.91E+00**	**1.74E-02**	**7.66E-02**	**6.20E+00**	**1.56E-02**
MERCURY	**1.13E-02**	**5.39E-01**	**1.17E-01**	**1.50E-02**	**7.14E-01**	**1.55E-01**	**1.68E-02**	**8.02E-01**	**1.74E-01**	**1.84E-02**	**8.79E-01**	**1.90E-01**	**1.87E-02**	**8.89E-01**	**1.93E-01**
NICKEL	7.13E-02	8.72E-02	2.11E-03	7.35E-02	8.99E-02	2.18E-03	7.47E-02	9.12E-02	2.21E-03	7.56E-02	9.24E-02	2.24E-03	7.58E-02	9.26E-02	2.24E-03
SELENIUM	1.26E-01	1.04E+00	2.58E-01	1.41E-01	1.16E+00	2.88E-01	1.48E-01	1.22E+00	3.03E-01	1.55E-01	1.28E+00	3.16E-01	1.56E-01	1.28E+00	3.17E-01
SILVER	**3.80E-02**	**NA**	**NA**	**1.99E-02**	**NA**	**NA**	**1.08E-02**	**NA**	**NA**	**2.81E-03**	**NA**	**NA**	**1.75E-03**	**NA**	**NA**
ZINC	1.07E+01	1.15E+00	1.15E-01	8.73E+00	9.36E-01	9.36E-02	7.75E+00	8.30E-01	8.30E-02	6.88E+00	7.37E-01	7.37E-02	6.77E+00	7.25E-01	7.25E-02
ALDRIN*	2.39E-07	NA	NA	8.94E-07	NA	NA	1.22E-06	NA	NA	1.51E-06	NA	NA	1.55E-06	NA	NA
ALPHA-CHLORDANE	**2.31E-04**	**1.16E-04**	**2.32E-05**	**1.44E-04**	**7.23E-05**	**1.45E-05**	**1.01E-04**	**5.05E-05**	**1.01E-05**	**6.22E-05**	**3.12E-05**	**6.24E-06**	**5.71E-05**	**2.86E-05**	**5.72E-06**
DIELDRIN*	8.98E-04	2.02E-02	1.79E-03	4.67E-04	1.05E-02	9.30E-04	2.51E-04	5.65E-03	5.00E-04	6.07E-05	1.37E-03	1.21E-04	3.54E-05	7.96E-04	7.05E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	3.31E-07	3.08E-07	3.08E-08	8.24E-07	7.66E-07	7.66E-08	1.07E-06	9.95E-07	9.95E-08	1.29E-06	1.20E-06	1.20E-07	1.32E-06	1.22E-06	1.22E-07
GAMMA-CHLORDANE*	1.77E-04	8.89E-05	1.78E-05	9.23E-05	4.63E-05	9.26E-06	4.98E-05	2.50E-05	5.00E-06	1.23E-05	6.18E-06	1.24E-06	7.34E-06	3.68E-06	7.36E-07
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**2.35E-01**	**3.74E-01**	**5.96E-03**	**1.20E-01**	**1.92E-01**	**3.05E-03**	**6.32E-02**	**1.01E-01**	**1.60E-03**	**1.27E-02**	**2.03E-02**	**3.23E-04**	**6.02E-03**	**9.60E-03**	**1.53E-04**
Total PCB	**2.61E-01**	**5.15E+00**	**4.26E-01**	**1.34E-01**	**2.64E+00**	**2.18E-01**	**6.99E-02**	**1.38E+00**	**1.14E-01**	**1.38E-02**	**2.73E-01**	**2.25E-02**	**6.34E-03**	**1.25E-01**	**1.03E-02**
Total 4,4-DDx	**1.75E-02**	**4.65E+00**	**5.43E-02**	**1.06E-02**	**2.80E+00**	**3.27E-02**	**7.09E-03**	**1.88E+00**	**2.20E-02**	**4.02E-03**	**1.07E+00**	**1.25E-02**	**3.61E-03**	**9.59E-01**	**1.12E-02**
Total HPAH	**4.62E-02**	**NA**	**NA**	**2.53E-02**	**NA**	**NA**	**1.48E-02**	**NA**	**NA**	**5.54E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**
Total LPAH	**6.29E-02**	**NA**	**NA**	**3.29E-02**	**NA**	**NA**	**1.79E-02**	**NA**	**NA**	**4.60E-03**	**NA**	**NA**	**2.84E-03**	**NA**	**NA**
Total PAH	**6.36E-02**	**NA**	**NA**	**3.39E-02**	**NA**	**NA**	**1.91E-02**	**NA**	**NA**	**6.05E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-38. Summary of Least Tern BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Subsurface Data Set)

	SUF 1			SUF 0.5			SUF 0.25			SUF 0.02933			SUF 0		
	Ref 0			Ref 0.5			Ref 0.75			Ref 0.97067			Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	1.07E-03	NA	NA	1.23E-03	NA	NA	1.31E-03	NA	NA	1.38E-03	NA	NA	1.39E-03	NA	NA
ARSENIC	1.82E-01	6.35E-02	1.59E-02	2.03E-01	7.07E-02	1.77E-02	2.13E-01	7.43E-02	1.86E-02	2.22E-01	7.75E-02	1.94E-02	2.23E-01	7.79E-02	1.95E-02
CADMIUM	**1.09E-01**	**2.42E+00**	**1.19E-02**	**5.52E-02**	**1.23E+00**	**6.02E-03**	**2.85E-02**	**6.32E-01**	**3.10E-03**	**4.81E-03**	**1.07E-01**	**5.24E-04**	**1.67E-03**	**3.71E-02**	**1.82E-04**
CHROMIUM	**5.57E-01**	**4.07E-01**	**6.94E-02**	**3.93E-01**	**2.88E-01**	**4.90E-02**	**3.12E-01**	**2.28E-01**	**3.89E-02**	**2.40E-01**	**1.75E-01**	**2.99E-02**	**2.30E-01**	**1.68E-01**	**2.87E-02**
COPPER	**1.54E+00**	**1.13E+00**	**4.56E-02**	**1.07E+00**	**7.93E-01**	**3.19E-02**	**8.42E-01**	**6.22E-01**	**2.50E-02**	**6.37E-01**	**4.71E-01**	**1.90E-02**	**6.10E-01**	**4.51E-01**	**1.81E-02**
LEAD	**8.37E-01**	**6.77E+01**	**1.70E-01**	**4.57E-01**	**3.70E+01**	**9.28E-02**	**2.67E-01**	**2.16E+01**	**5.42E-02**	**9.89E-02**	**8.00E+00**	**2.01E-02**	**7.66E-02**	**6.20E+00**	**1.56E-02**
MERCURY	**1.37E-02**	**6.53E-01**	**1.42E-01**	**1.62E-02**	**7.71E-01**	**1.67E-01**	**1.74E-02**	**8.30E-01**	**1.80E-01**	**1.85E-02**	**8.82E-01**	**1.91E-01**	**1.87E-02**	**8.89E-01**	**1.93E-01**
NICKEL	7.91E-02	9.67E-02	2.34E-03	7.74E-02	9.46E-02	2.29E-03	7.66E-02	9.36E-02	2.27E-03	7.59E-02	9.27E-02	2.25E-03	7.58E-02	9.26E-02	2.24E-03
SELENIUM	7.78E-02	6.42E-01	1.59E-01	1.17E-01	9.63E-01	2.38E-01	1.36E-01	1.12E+00	2.78E-01	1.53E-01	1.26E+00	3.13E-01	1.56E-01	1.28E+00	3.17E-01
SILVER	**5.69E-02**	**NA**	**NA**	**2.93E-02**	**NA**	**NA**	**1.55E-02**	**NA**	**NA**	**3.37E-03**	**NA**	**NA**	**1.75E-03**	**NA**	**NA**
ZINC	1.16E+01	1.24E+00	1.24E-01	9.16E+00	9.81E-01	9.81E-02	7.96E+00	8.53E-01	8.53E-02	6.91E+00	7.40E-01	7.40E-02	6.77E+00	7.25E-01	7.25E-02
ALDRIN*	2.25E-07	NA	NA	8.87E-07	NA	NA	1.22E-06	NA	NA	1.51E-06	NA	NA	1.55E-06	NA	NA
ALPHA-CHLORDANE	**3.50E-04**	**1.76E-04**	**3.51E-05**	**2.04E-04**	**1.02E-04**	**2.04E-05**	**1.30E-04**	**6.54E-05**	**1.31E-05**	**6.57E-05**	**3.29E-05**	**6.59E-06**	**5.71E-05**	**2.86E-05**	**5.72E-06**
DIELDRIN*	6.35E-04	1.43E-02	1.26E-03	3.35E-04	7.54E-03	6.68E-04	1.85E-04	4.17E-03	3.69E-04	5.29E-05	1.19E-03	1.05E-04	3.54E-05	7.96E-04	7.05E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	3.22E-07	2.99E-07	2.99E-08	8.19E-07	7.61E-07	7.61E-08	1.07E-06	9.92E-07	9.92E-08	1.29E-06	1.20E-06	1.20E-07	1.32E-06	1.22E-06	1.22E-07
GAMMA-CHLORDANE*	1.40E-04	6.99E-05	1.40E-05	7.34E-05	3.68E-05	7.36E-06	4.04E-05	2.02E-05	4.05E-06	1.12E-05	5.62E-06	1.12E-06	7.34E-06	3.68E-06	7.36E-07
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**1.54E-01**	**2.46E-01**	**3.91E-03**	**8.01E-02**	**1.28E-01**	**2.03E-03**	**4.31E-02**	**6.87E-02**	**1.09E-03**	**1.04E-02**	**1.65E-02**	**2.63E-04**	**6.02E-03**	**9.60E-03**	**1.53E-04**
Total PCB	**4.05E-01**	**8.01E+00**	**6.61E-01**	**2.06E-01**	**4.07E+00**	**3.36E-01**	**1.06E-01**	**2.10E+00**	**1.73E-01**	**1.80E-02**	**3.56E-01**	**2.94E-02**	**6.34E-03**	**1.25E-01**	**1.03E-02**
Total 4,4-DDx	**1.66E-02**	**4.40E+00**	**5.14E-02**	**1.01E-02**	**2.68E+00**	**3.13E-02**	**6.86E-03**	**1.82E+00**	**2.12E-02**	**3.99E-03**	**1.06E+00**	**1.24E-02**	**3.61E-03**	**9.59E-01**	**1.12E-02**
Total HPAH	**2.45E-02**	**NA**	**NA**	**1.44E-02**	**NA**	**NA**	**9.37E-03**	**NA**	**NA**	**4.91E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**
Total LPAH	**3.69E-02**	**NA**	**NA**	**1.99E-02**	**NA**	**NA**	**1.13E-02**	**NA**	**NA**	**3.84E-03**	**NA**	**NA**	**2.84E-03**	**NA**	**NA**
Total PAH	**3.39E-02**	**NA**	**NA**	**1.91E-02**	**NA**	**NA**	**1.17E-02**	**NA**	**NA**	**5.18E-03**	**NA**	**NA**	**4.31E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-39. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 24 (All Years Data Set)

	SUF 1 Ref 0			SUF 0.5 Ref 0.5			SUF 0.25 Ref 0.75			SUF 0.0038 Ref 0.9962			SUF 0 Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	9.01E-04	NA	NA	1.16E-03	NA	NA	1.28E-03	NA	NA	1.41E-03	NA	NA	1.41E-03	NA	NA
ARSENIC	7.06E-02	1.20E-02	2.99E-03	7.34E-02	1.24E-02	3.11E-03	7.48E-02	1.27E-02	3.17E-03	7.62E-02	1.29E-02	3.23E-03	7.62E-02	1.29E-02	3.23E-03
CADMIUM	**2.16E-02**	**2.33E-01**	**1.14E-03**	**1.12E-02**	**1.21E-01**	**5.95E-04**	**6.05E-03**	**6.52E-02**	**3.20E-04**	**9.27E-04**	**1.00E-02**	**4.90E-05**	**8.48E-04**	**9.15E-03**	**4.49E-05**
CHROMIUM	**3.67E-01**	**1.30E-01**	**6.92E-02**	**2.61E-01**	**9.26E-02**	**4.92E-02**	**2.08E-01**	**7.38E-02**	**3.93E-02**	**1.56E-01**	**5.54E-02**	**2.95E-02**	**1.55E-01**	**5.51E-02**	**2.93E-02**
COPPER	**6.10E-01**	**2.19E-01**	**8.80E-03**	**4.17E-01**	**1.50E-01**	**6.02E-03**	**3.21E-01**	**1.15E-01**	**4.63E-03**	**2.26E-01**	**8.11E-02**	**3.26E-03**	**2.24E-01**	**8.05E-02**	**3.24E-03**
LEAD	**2.09E-01**	**8.20E+00**	**2.06E-02**	**1.29E-01**	**5.05E+00**	**1.27E-02**	**8.86E-02**	**3.48E+00**	**8.74E-03**	**4.91E-02**	**1.93E+00**	**4.84E-03**	**4.85E-02**	**1.90E+00**	**4.78E-03**
MERCURY	**4.10E-03**	**9.49E-02**	**2.06E-02**	**5.02E-03**	**1.16E-01**	**2.52E-02**	**5.48E-03**	**1.27E-01**	**2.75E-02**	**5.93E-03**	**1.37E-01**	**2.98E-02**	**5.94E-03**	**1.37E-01**	**2.98E-02**
NICKEL	1.22E-01	7.25E-02	1.76E-03	1.15E-01	6.81E-02	1.65E-03	1.11E-01	6.60E-02	1.60E-03	1.08E-01	6.38E-02	1.55E-03	1.08E-01	6.38E-02	1.55E-03
SELENIUM	5.08E-02	2.04E-01	5.04E-02	4.86E-02	1.95E-01	4.82E-02	4.75E-02	1.91E-01	4.71E-02	4.65E-02	1.86E-01	4.61E-02	4.65E-02	1.86E-01	4.60E-02
SILVER	**1.69E-02**	**NA**	**NA**	**8.87E-03**	**NA**	**NA**	**4.86E-03**	**NA**	**NA**	**9.01E-04**	**NA**	**NA**	**8.40E-04**	**NA**	**NA**
ZINC	**3.79E+00**	**1.97E-01**	**1.97E-02**	**2.95E+00**	**1.53E-01**	**1.53E-02**	**2.53E+00**	**1.32E-01**	**1.32E-02**	**2.12E+00**	**1.10E-01**	**1.10E-02**	**2.11E+00**	**1.10E-01**	**1.10E-02**
ALDRIN*	2.00E-06	NA	NA	1.31E-06	NA	NA	9.57E-07	NA	NA	6.14E-07	NA	NA	6.09E-07	NA	NA
ALPHA-CHLORDANE	**3.23E-04**	**7.87E-05**	**1.57E-05**	**1.70E-04**	**4.14E-05**	**8.28E-06**	**9.36E-05**	**2.28E-05**	**4.56E-06**	**1.82E-05**	**4.42E-06**	**8.84E-07**	**1.70E-05**	**4.14E-06**	**8.28E-07**
DIELDRIN*	2.55E-04	2.78E-03	2.56E-04	1.33E-04	1.45E-03	1.34E-04	7.17E-05	7.83E-04	7.21E-05	1.15E-05	1.26E-04	1.16E-05	1.06E-05	1.16E-04	1.07E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	1.78E-06	8.01E-07	8.01E-08	1.13E-06	5.11E-07	5.11E-08	8.12E-07	3.67E-07	3.67E-08	4.96E-07	2.24E-07	2.24E-08	4.91E-07	2.22E-07	2.22E-08
GAMMA-CHLORDANE*	6.47E-05	1.58E-05	3.15E-06	3.35E-05	8.15E-06	1.63E-06	1.78E-05	4.34E-06	8.69E-07	2.46E-06	5.99E-07	1.20E-07	2.22E-06	5.41E-07	1.08E-07
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**5.74E-02**	**4.45E-02**	**7.08E-04**	**2.96E-02**	**2.29E-02**	**3.65E-04**	**1.57E-02**	**1.22E-02**	**1.93E-04**	**1.99E-03**	**1.54E-03**	**2.45E-05**	**1.78E-03**	**1.38E-03**	**2.19E-05**
Total PCB	**7.04E-02**	**6.75E-01**	**5.57E-02**	**3.61E-02**	**3.46E-01**	**2.86E-02**	**1.90E-02**	**1.82E-01**	**1.51E-02**	**2.14E-03**	**2.06E-02**	**1.70E-03**	**1.88E-03**	**1.81E-02**	**1.49E-03**
Total 4,4-DDx	**4.76E-03**	**6.14E-01**	**7.17E-03**	**2.92E-03**	**3.76E-01**	**4.39E-03**	**2.00E-03**	**2.57E-01**	**3.00E-03**	**1.09E-03**	**1.40E-01**	**1.63E-03**	**1.07E-03**	**1.38E-01**	**1.61E-03**
Total HPAH	**5.77E-02**	**NA**	**NA**	**3.01E-02**	**NA**	**NA**	**1.63E-02**	**NA**	**NA**	**2.64E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**
Total LPAH	**7.58E-02**	**NA**	**NA**	**3.84E-02**	**NA**	**NA**	**1.97E-02**	**NA**	**NA**	**1.33E-03**	**NA**	**NA**	**1.05E-03**	**NA**	**NA**
Total PAH	**7.87E-02**	**NA**	**NA**	**4.06E-02**	**NA**	**NA**	**2.15E-02**	**NA**	**NA**	**2.72E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-40. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Surface Data Set)

	SUF 1			SUF 0.5			SUF 0.25			SUF 0.0038			SUF 0		
	Ref 0			Ref 0.5			Ref 0.75			Ref 0.9962			Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	8.67E-04	NA	NA	1.14E-03	NA	NA	1.28E-03	NA	NA	1.41E-03	NA	NA	1.41E-03	NA	NA
ARSENIC	6.71E-02	1.14E-02	2.84E-03	7.17E-02	1.21E-02	3.03E-03	7.40E-02	1.25E-02	3.13E-03	7.62E-02	1.29E-02	3.23E-03	7.62E-02	1.29E-02	3.23E-03
CADMIUM	**2.04E-02**	**2.20E-01**	**1.08E-03**	**1.06E-02**	**1.15E-01**	**5.62E-04**	**5.73E-03**	**6.19E-02**	**3.03E-04**	**9.23E-04**	**9.95E-03**	**4.88E-05**	**8.48E-04**	**9.15E-03**	**4.49E-05**
CHROMIUM	**3.01E-01**	**1.07E-01**	**1.82E-02**	**2.28E-01**	**8.09E-02**	**1.38E-02**	**1.92E-01**	**6.80E-02**	**1.16E-02**	**1.56E-01**	**5.53E-02**	**9.43E-03**	**1.55E-01**	**5.51E-02**	**9.39E-03**
COPPER	**5.01E-01**	**1.80E-01**	**7.24E-03**	**3.63E-01**	**1.30E-01**	**5.24E-03**	**2.94E-01**	**1.05E-01**	**4.24E-03**	**2.26E-01**	**8.09E-02**	**3.25E-03**	**2.24E-01**	**8.05E-02**	**3.24E-03**
LEAD	**2.40E-01**	**9.42E+00**	**2.37E-02**	**1.44E-01**	**5.66E+00**	**1.42E-02**	**9.63E-02**	**3.78E+00**	**9.50E-03**	**4.92E-02**	**1.93E+00**	**4.86E-03**	**4.85E-02**	**1.90E+00**	**4.78E-03**
MERCURY	**3.60E-03**	**8.34E-02**	**1.81E-02**	**4.77E-03**	**1.10E-01**	**2.39E-02**	**5.36E-03**	**1.24E-01**	**2.69E-02**	**5.93E-03**	**1.37E-01**	**2.97E-02**	**5.94E-03**	**1.37E-01**	**2.98E-02**
NICKEL	1.01E-01	6.00E-02	1.45E-03	1.04E-01	6.19E-02	1.50E-03	1.06E-01	6.29E-02	1.52E-03	1.08E-01	6.38E-02	1.55E-03	1.08E-01	6.38E-02	1.55E-03
SELENIUM	3.77E-02	1.51E-01	3.74E-02	4.21E-02	1.69E-01	4.17E-02	4.43E-02	1.77E-01	4.39E-02	4.64E-02	1.86E-01	4.60E-02	4.65E-02	1.86E-01	4.60E-02
SILVER	**1.83E-02**	**NA**	**NA**	**9.55E-03**	**NA**	**NA**	**5.19E-03**	**NA**	**NA**	**9.06E-04**	**NA**	**NA**	**8.40E-04**	**NA**	**NA**
ZINC	3.34E+00	1.74E-01	1.74E-02	2.73E+00	1.42E-01	1.42E-02	2.42E+00	1.26E-01	1.26E-02	2.12E+00	1.10E-01	1.10E-02	2.11E+00	1.10E-01	1.10E-02
ALDRIN*	9.38E-08	NA	NA	3.51E-07	NA	NA	4.80E-07	NA	NA	6.07E-07	NA	NA	6.09E-07	NA	NA
ALPHA-CHLORDANE	**6.89E-05**	**1.68E-05**	**3.35E-06**	**4.29E-05**	**1.05E-05**	**2.09E-06**	**3.00E-05**	**7.29E-06**	**1.46E-06**	**1.72E-05**	**4.19E-06**	**8.37E-07**	**1.70E-05**	**4.14E-06**	**8.28E-07**
DIELDRIN*	2.69E-04	2.94E-03	2.60E-04	1.40E-04	1.53E-03	1.35E-04	7.52E-05	8.21E-04	7.27E-05	1.16E-05	1.26E-04	1.12E-05	1.06E-05	1.16E-04	1.02E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	1.24E-07	5.58E-08	5.58E-09	3.07E-07	1.39E-07	1.39E-08	3.99E-07	1.80E-07	1.80E-08	4.90E-07	2.21E-07	2.21E-08	4.91E-07	2.22E-07	2.22E-08
GAMMA-CHLORDANE*	5.37E-05	1.31E-05	2.61E-06	2.79E-05	6.80E-06	1.36E-06	1.51E-05	3.67E-06	7.34E-07	2.42E-06	5.89E-07	1.18E-07	2.22E-06	5.41E-07	1.08E-07
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**6.95E-02**	**5.38E-02**	**8.56E-04**	**3.56E-02**	**2.76E-02**	**4.39E-04**	**1.87E-02**	**1.45E-02**	**2.30E-04**	**2.04E-03**	**1.58E-03**	**2.51E-05**	**1.78E-03**	**1.38E-03**	**2.19E-05**
Total PCB	**7.75E-02**	**7.44E-01**	**6.14E-02**	**3.97E-02**	**3.81E-01**	**3.15E-02**	**2.08E-02**	**1.99E-01**	**1.65E-02**	**2.17E-03**	**2.08E-02**	**1.72E-03**	**1.88E-03**	**1.81E-02**	**1.49E-03**
Total 4,4-DDx	**5.19E-03**	**6.69E-01**	**7.81E-03**	**3.13E-03**	**4.04E-01**	**4.71E-03**	**2.10E-03**	**2.71E-01**	**3.16E-03**	**1.09E-03**	**1.40E-01**	**1.64E-03**	**1.07E-03**	**1.38E-01**	**1.61E-03**
Total HPAH	**2.60E-02**	**NA**	**NA**	**1.42E-02**	**NA**	**NA**	**8.33E-03**	**NA**	**NA**	**2.52E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**
Total LPAH	**2.32E-02**	**NA**	**NA**	**1.21E-02**	**NA**	**NA**	**6.59E-03**	**NA**	**NA**	**1.13E-03**	**NA**	**NA**	**1.05E-03**	**NA**	**NA**
Total PAH	**3.58E-02**	**NA**	**NA**	**1.91E-02**	**NA**	**NA**	**1.08E-02**	**NA**	**NA**	**2.56E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 6-41. Summary of Double-Crested Cormorant BERA HQs for a Range of SUFs at IR Site 24 (2005/2006 Subsurface Data Set)

	SUF 1			SUF 0.5			SUF 0.25			SUF 0.0038			SUF 0		
	Ref 0			Ref 0.5			Ref 0.75			Ref 0.9962			Ref 1		
	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)	Dose (mg/kg/day)	NOAEL TRV HQ (unitless)	LOAEL TRV HQ (unitless)
ANTIMONY	1.09E-03	NA	NA	1.25E-03	NA	NA	1.33E-03	NA	NA	1.41E-03	NA	NA	1.41E-03	NA	NA
ARSENIC	6.21E-02	1.05E-02	2.63E-03	6.92E-02	1.17E-02	2.93E-03	7.27E-02	1.23E-02	3.08E-03	7.62E-02	1.29E-02	3.23E-03	7.62E-02	1.29E-02	3.23E-03
CADMIUM	**5.54E-02**	**5.97E-01**	**2.93E-03**	**2.81E-02**	**3.03E-01**	**1.49E-03**	**1.45E-02**	**1.56E-01**	**7.65E-04**	**1.06E-03**	**1.14E-02**	**5.58E-05**	**8.48E-04**	**9.15E-03**	**4.49E-05**
CHROMIUM	**3.76E-01**	**1.33E-01**	**2.27E-02**	**2.66E-01**	**9.42E-02**	**1.61E-02**	**2.10E-01**	**7.46E-02**	**1.27E-02**	**1.56E-01**	**5.54E-02**	**9.44E-03**	**1.55E-01**	**5.51E-02**	**9.39E-03**
COPPER	**5.65E-01**	**2.03E-01**	**8.15E-03**	**3.95E-01**	**1.42E-01**	**5.69E-03**	**3.10E-01**	**1.11E-01**	**4.47E-03**	**2.26E-01**	**8.10E-02**	**3.26E-03**	**2.24E-01**	**8.05E-02**	**3.24E-03**
LEAD	**5.30E-01**	**2.08E+01**	**5.23E-02**	**2.89E-01**	**1.14E+01**	**2.85E-02**	**1.69E-01**	**6.63E+00**	**1.67E-02**	**5.03E-02**	**1.98E+00**	**4.96E-03**	**4.85E-02**	**1.90E+00**	**4.78E-03**
MERCURY	**4.37E-03**	**1.01E-01**	**2.19E-02**	**5.15E-03**	**1.19E-01**	**2.58E-02**	**5.55E-03**	**1.28E-01**	**2.78E-02**	**5.94E-03**	**1.37E-01**	**2.98E-02**	**5.94E-03**	**1.37E-01**	**2.98E-02**
NICKEL	1.12E-01	6.66E-02	1.61E-03	1.10E-01	6.52E-02	1.58E-03	1.09E-01	6.45E-02	1.56E-03	1.08E-01	6.38E-02	1.55E-03	1.08E-01	6.38E-02	1.55E-03
SELENIUM	2.32E-02	9.31E-02	2.30E-02	3.48E-02	1.40E-01	3.45E-02	4.07E-02	1.63E-01	4.03E-02	4.64E-02	1.86E-01	4.60E-02	4.65E-02	1.86E-01	4.60E-02
SILVER	**2.73E-02**	**NA**	**NA**	**1.41E-02**	**NA**	**NA**	**7.46E-03**	**NA**	**NA**	**9.41E-04**	**NA**	**NA**	**8.40E-04**	**NA**	**NA**
ZINC	3.61E+00	1.88E-01	1.88E-02	2.86E+00	1.49E-01	1.49E-02	2.49E+00	1.29E-01	1.29E-02	2.12E+00	1.10E-01	1.10E-02	2.11E+00	1.10E-01	1.10E-02
ALDRIN*	8.84E-08	NA	NA	3.48E-07	NA	NA	4.79E-07	NA	NA	6.07E-07	NA	NA	6.09E-07	NA	NA
ALPHA-CHLORDANE	**1.04E-04**	**2.54E-05**	**5.08E-06**	**6.07E-05**	**1.48E-05**	**2.95E-06**	**3.88E-05**	**9.45E-06**	**1.89E-06**	**1.73E-05**	**4.22E-06**	**8.44E-07**	**1.70E-05**	**4.14E-06**	**8.28E-07**
DIELDRIN*	1.90E-04	2.08E-03	1.84E-04	1.00E-04	1.10E-03	9.70E-05	5.54E-05	6.06E-04	5.36E-05	1.13E-05	1.23E-04	1.09E-05	1.06E-05	1.16E-04	1.02E-05
ENDOSULFAN I*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC*	1.20E-07	5.42E-08	5.42E-09	3.06E-07	1.38E-07	1.38E-08	3.98E-07	1.80E-07	1.80E-08	4.90E-07	2.21E-07	2.21E-08	4.91E-07	2.22E-07	2.22E-08
GAMMA-CHLORDANE*	4.22E-05	1.03E-05	2.06E-06	2.22E-05	5.41E-06	1.08E-06	1.22E-05	2.98E-06	5.95E-07	2.37E-06	5.78E-07	1.16E-07	2.22E-06	5.41E-07	1.08E-07
HEPTACHLOR EPOXIDE*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**4.56E-02**	**3.54E-02**	**5.62E-04**	**2.37E-02**	**1.84E-02**	**2.92E-04**	**1.27E-02**	**9.87E-03**	**1.57E-04**	**1.95E-03**	**1.51E-03**	**2.40E-05**	**1.78E-03**	**1.38E-03**	**2.19E-05**
Total PCB	**1.20E-01**	**1.16E+00**	**9.54E-02**	**6.12E-02**	**5.87E-01**	**4.85E-02**	**3.15E-02**	**3.02E-01**	**2.50E-02**	**2.33E-03**	**2.24E-02**	**1.85E-03**	**1.88E-03**	**1.81E-02**	**1.49E-03**
Total 4,4-DDx	**4.92E-03**	**6.34E-01**	**7.40E-03**	**3.00E-03**	**3.86E-01**	**4.51E-03**	**2.03E-03**	**2.62E-01**	**3.06E-03**	**1.09E-03**	**1.40E-01**	**1.63E-03**	**1.07E-03**	**1.38E-01**	**1.61E-03**
Total HPAH	**1.38E-02**	**NA**	**NA**	**8.13E-03**	**NA**	**NA**	**5.28E-03**	**NA**	**NA**	**2.47E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**
Total LPAH	**1.36E-02**	**NA**	**NA**	**7.33E-03**	**NA**	**NA**	**4.19E-03**	**NA**	**NA**	**1.10E-03**	**NA**	**NA**	**1.05E-03**	**NA**	**NA**
Total PAH	**1.91E-02**	**NA**	**NA**	**1.08E-02**	**NA**	**NA**	**6.60E-03**	**NA**	**NA**	**2.49E-03**	**NA**	**NA**	**2.43E-03**	**NA**	**NA**

Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
Highlighted cells indicate HQs>1.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table 7-1. Chemicals of Potential Concern for the Human Health Risk Assessment

Inorganics	SVOCs	PCBs/Pesticides
Ag	Acenaphthene	2,4'-DDD
As	Acenaphthylene	2,4'-DDE
Cd	Anthracene	2,4'-DDT
Cr	Benzo(a)anthracene	4,4'-DDD
Cu	Benzo(a)pyrene	4,4'-DDE
Hg	Benzo(b)fluoranthene	4,4'-DDT
Ni	Benzo(g,h,i)perylene	*alpha*-Chlordane
Pb	Benzo(k)fluoranthene	Dieldrin
Sb	Chrysene	Endosulfan II
Se	Dibenz(a,h)anthracene	Endrin aldehyde
Zn	Fluoranthene	*gamma*-Chlordane
	Fluorene	Total PCBs
Organotins	Indeno(1,2,3-cd)pyrene	
Tributyltin	2-Methylnaphthalene	
	Naphthalene	
	Phenanthrene	
	Pyrene	

Table 7-2 . Comparison of Modeled Fish Tissue Concentrations for IR Site 24 to Reference

Chemical	All Years (mg/kg)	2005/2006 (mg/kg)	Reference (mg/kg)
Antimony	0.0006	0.0006	0.004
Arsenic	0.262	0.249	0.293
Cadmium	0.0328	0.0309	0.0205
Chromium	0.497	0.408	0.641
Copper	1.62	1.33	1.55
Lead	0.279	0.320	0.0816
Mercury	0.0123	0.0108	0.0593
Nickel	0.0988	0.0818	0.124
Selenium	0.181	0.134	0.244
Silver	0.0272	0.0293	0.0169
Zinc	12.4	10.9	18.8
2-Methylnaphthalene	8.48E-03	NA	1.38E-03
Acenaphthene	4.69E-02	1.07E-02	3.06E-03
Acenaphthylene	2.08E-04	1.12E-04	1.28E-04
Anthracene	1.01E-02	6.99E-03	6.18E-04
Benzo(a)anthracene	6.14E-03	2.38E-03	1.40E-04
Benzo(a)pyrene	2.67E-03	1.54E-03	6.19E-05
Benzo(b)fluoranthene	4.34E-03	1.84E-03	3.37E-04
Benzo(g,h,i)perylene	1.13E-03	8.10E-04	2.20E-04
Benzo(k)fluoranthene	3.37E-03	2.12E-03	5.15E-05
Chrysene	1.64E-02	7.10E-03	6.47E-04
Dibenzo(a,h)anthracene	1.57E-04	7.45E-05	4.31E-05
Fluoranthene	5.68E-02	2.48E-02	4.59E-03
Fluorene	3.19E-02	5.82E-03	3.34E-03
Indeno(1,2,3-cd)pyrene	1.10E-03	7.49E-04	1.24E-04
Naphthalene	1.88E-03	4.65E-04	2.97E-03
Phenanthrene	1.65E-01	3.75E-02	2.69E-02
Pyrene	2.77E-02	1.31E-02	1.11E-03
2,4'-DDD	2.57E-05	2.98E-05	2.33E-05
2,4'-DDE	2.63E-04	6.89E-06	7.73E-05
2,4'-DDT	1.96E-05	1.95E-05	3.02E-05
4,4'-DDD	6.53E-03	7.58E-03	5.28E-03
4,4'-DDE	5.71E-03	5.14E-03	1.64E-02
4,4'-DDT	3.89E-04	3.46E-04	4.44E-03
Aldrin	4.61E-06	2.16E-07	2.02E-05
alpha-BHC	3.97E-06	4.00E-07	3.13E-05
alpha-Chlordane	8.74E-04	1.86E-04	1.62E-03
Dieldrin	7.18E-04	7.57E-04	2.05E-03
Endosulfan I	3.32E-05	2.83E-07	3.60E-05
Endosulfan II	7.82E-06	8.49E-07	4.23E-05
Endosulfan Sulfate	8.08E-06	2.10E-06	4.51E-05
Endrin	1.07E-06	4.03E-08	1.72E-05
Endrin Aldehyde	4.65E-06	2.58E-07	3.51E-05
gamma-BHC	4.43E-06	3.09E-07	3.13E-05
gamma-Chlordane	1.72E-04	1.43E-04	4.68E-04
Heptachlor	1.52E-06	1.05E-07	2.33E-05
Heptachlor Epoxide	3.20E-06	2.53E-07	1.97E-05
Total PCBs	0.277	0.305	0.174
Tributyltin	0.154	0.186	0.037

Table 7-3. Total Cumulative Risks from Exposures at Reference Locations Based on U.S. EPA Toxicity Values

Risk Scenario	Risk		Hazard	
	CTE	RME	CTE	RME
Sediment	3.37E-08	7.90E-07	2.35E-03	1.71E-02
Ingestion of fish	5.77E-06	2.60E-04	1.15E+00	1.56E+01
Ingestion of shellfish	4.59E-05	2.06E-03	1.02E+00	1.38E+01
Total	5.17E-05	2.33E-03	2.17E+00	2.93E+01

Source: Table 6-6a from Battelle et al., 2004c

Table 7-4. Exposure Factors

Exposure Parameters	Symbol	Units	Average Adult/Child	RME Adult/Child	Reference
Exposure Point Concentration	EPC	mg/kg	95% UCL	95% UCL	See Section 5
Ingestion Rate - Fish	IR_{fish}	kg/day	0.016 / 0.0056	0.108 / 0.011	SFEI, 2002; U.S. EPA 1997b
Ingestion Rate - Shellfish	IR_{shell}	kg/day	0.0008/NA	0.0054/NA	SFEI, 2002; U.S. EPA 1997b
Ingestion Rate - Sediment	IR_{sed}	mg/day	50 / 100	100 / 200	U.S. EPA, 2004a
Fraction Ingested from Contaminated Source	FI	unitless	0.5	1	Prof. Judgment
Exposure Frequency - Bivalve	EF	days/year	365	365	U.S. EPA, 1989b
Exposure Frequency - Direct Contact	EF	days/year	13	26	Prof. Judgment
Skin Surface Area	SA	cm^2/day	5,700 / 2,800	5,700 / 2,800	U.S. EPA, 2004a
Adherence Factor	AF	mg/cm^2	0.07 / 0.2	0.07 / 0.2	U.S. EPA, 2004a
Dermal Absorption Factor	DAF	unitless	chemical-specific	chemical-specific	U.S. EPA, 2004a
Exposure Duration	ED	years	9 / 6	30 / 6	U.S. EPA 1989b & 1991
Body Weight	BW	kg	70 / 15	70 / 15	U.S. EPA, 2004a
Averaging Time- cancer	AT_c	days	25,550	25,550	U.S. EPA, 2004a
Averaging Time - noncancer	AT_{nc}	days	3,285 / 2,190	10,950 / 2,190	U.S. EPA, 2004a

Table 7-5. Summary of Toxicity Criteria

COPC	Carcinogen Classification[a]	Dermal Absorption Factor[d]	Oral Cancer Slope Factor[b] $(mg/kg\text{-}day)^{-1}$	Oral Reference Dose[b] (mg/kg-day)
		Inorganics		
Ag	D	1.00E-02	NA	5.0E-03 [2]
As	A	3.00E-02	9.45E+00 [1]	3.0E-04 [2]
Cd	B1	1.00E-03	3.8E-01 [1]	5.0E-04 [2]
Cr	A (CrVI), NA (CrIII)	1.00E-02	1.9E-01 [1,c]	3.0E-03 [2]
Cu	D	1.00E-02	NA	3.7E-02 [3]
Hg	NA	1.00E-01	NA	1.0E-04 [2,4]
Ni	NA	1.00E-02	NA	2.0E-02 [2]
Sb	NA	1.00E-02	NA	4.0E-04 [2]
Se	D	1.00E-02	NA	5.0E-03 [2]
Zn	D	1.00E-02	NA	3.0E-01 [2]
		SVOCs		
Acenaphthene	NA	1.00E-01	NA	6.0E-02 [2]
Acenaphthylene	NA	1.00E-01	NA	NA
Anthracene	D	1.00E-01	NA	3.0E-01 [2]
Benzo(a)anthracene	B2	1.30E-01	1.2E+00 [1]	NA
Benzo(a)pyrene	B2	1.30E-01	1.2E+01 [1]	NA
Benzo(b)fluoranthene	B2	1.30E-01	1.2E+00 [1]	NA
Benzo(g,h,i)perylene	D	1.00E-01	NA	NA
Benzo(k)fluoranthene	B2	1.30E-01	1.2E+00 [1]	NA
Chrysene	B2	1.30E-01	1.2E-01 [1]	NA
Dibenz(a,h)anthracene	B2	1.30E-01	4.1E+00 [1]	NA
Fluoranthene	D	1.30E-01	NA	4.0E-02 [2]
Fluorene	D	1.00E-01	NA	4.0E-02 [2]
Indeno(1,2,3-cd)pyrene	B2	1.30E-01	1.2E+00 [1]	NA
2-Methylnaphthalene	NA	1.00E-01	NA	4.0E-03 [2]
Naphthalene	C	1.00E-01	1.2E-01 [1]	2.0E-02 [2]
Phenanthrene	D	1.00E-01	NA	NA
Pyrene	D	1.00E-01	NA	3.0E-02 [2]
		PCBs/Pesticides		
2,4'-DDD	B2	3.00E-02	2.4E-01 [2]	NA
2,4'-DDE	B2	3.00E-02	3.4E-01 [2]	NA
2,4'-DDT	B2	3.00E-02	3.4E-01 [2]	5.0E-04 [2]
4,4'-DDD	B2	3.00E-02	2.4E-01 [1,2]	NA
4,4'-DDE	B2	3.00E-02	3.4E-01 [1,2]	NA
4,4'-DDT	B2	3.00E-02	3.4E-01 [1,2]	5.0E-04 [2]
alpha-Chlordane	B2	4.00E-02	1.3E+00 [1]	5.0E-04 [2,5]
Dieldrin	B2	1.00E-01	1.6E+01 [1,2]	5.0E-05 [2]
Endosulfan II	NA	1.00E-01	NA	6.0E-03 [2]
Endrin aldehyde	D	1.00E-01	NA	NA
gamma-Chlordane	B2	4.00E-02	1.3E+00 [1,2]	5.0E-04 [2,5]
Total PCBs	B2	1.40E-01	5.0E+00 [1]	2.00E-05 [2,6]
		Organotins		
Tributyltin	NA	1.00E-01	NA	3.0E-04 [2]

(a) Carcinogen Classification defined as: (A) human carcinogen, (B1) probable human carcinogen based on human epidemiological studies, (B2) probable human carcinogen based on animal studies, (C) probable human carcinogen with limited animal evidence, and (D) not classifiable as a human carcinogen.

(b) Toxicity values are referenced as follows: (1) Cal/U.S. EPA OEHHA Cancer Slope Factors (DTSC, 2002); (2) U.S. EPA IRIS (U.S. EPA, 2005b); (3) U.S. EPA HEAST (2001b); (4) oral RfD for methylmercury; (5) oral RfD for technical chlordane; and (6) oral RfD for Aroclor 1254.

(c) CSF withdrawn from Cal/U.S. EPA OEHHA in 1991.

(d) Dermal absorption factors (DAF) were based on data reported by U.S. EPA Region 9 in the development of PRGs (U.S. EPA, 2004a). For those COPCs with no available information, a DAF of 0.01 was assumed for metals, and 0.1 for organics.

NA = not applicable (no U.S. EPA-acceptable toxicity values are provided for this compound).

Table 7-6. Summary of Non-Cancer Hazards Associated with Shellfish Consumption Pathway for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Hazard	
	Hazard Quotient		% Contribution to Total Hazard	Hazard Quotient		% Contribution to Total Hazard		
	RME	CTE		RME	CTE		RME	CTE
Ag	0.00008	0.000006	0.005	0.00007	0.000005	0.008	0.0004	0.00003
As	0.64	0.05	45.67	0.65	0.05	69.74	1.06	0.08
Cd	0.001	0.00006	0.05	0.0006	0.00004	0.06	0.02	0.001
Cr	0.27	0.02	19.52	0.05	0.004	5.23	0.09	0.01
Cu	0.004	0.0003	0.26	0.003	0.0002	0.31	0.006	0.0004
Hg	0.004	0.0003	0.27	0.13	0.01	13.63	0.02	0.001
Ni	0.001	0.00004	0.04	0.01	0.001	0.90	0.01	0.001
Sb	0.06	0.005	4.54	0.001	0.00007	0.10	0.005	0.0003
Se	0.002	0.0001	0.14	0.001	0.0001	0.14	0.01	0.001
Zn	0.003	0.0002	0.18	0.002	0.0001	0.17	0.005	0.0004
Acenaphthene	0.000006	0.0000004	0.0004	0.0000007	0.00000005	0.0001	0.0000005	3.58E-08
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	0.000008	0.0000006	0.001	0.00001	0.0000009	0.001	0.0000003	0.00000002
Benzo(a)anthracene	---	---	---	---	---	---	---	---
Benzo(a)pyrene	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	---	---	---	---	---	---	---	---
Chrysene	---	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	---	---	---	---	---	---	---	---
Fluoranthene	0.0003	0.00002	0.02	0.001	0.00008	0.12	0.00002	0.000001
Fluorene	0.00001	0.0000007	0.001	0.00001	0.0000008	0.001	0.0000008	0.00000006
Indeno(1,2,3-cd)pyrene	---	---	---	---	---	---	---	---
2-Methylnaphthalene	NA	NA	---	NA	NA	NA	0.000003	0.0000002
Naphthalene	0.00005	0.000004	0.004	0.00002	0.000001	0.002	0.000008	0.0000006
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	0.001	0.00009	0.08	0.003	0.0002	0.30	0.00003	0.000002
2,4'-DDD	---	---	---	---	---	---	---	---
2,4'-DDE	---	---	---	---	---	---	---	---
2,4'-DDT	0.003	0.0002	0.17	0.00006	0.000004	0.01	0.00001	0.000001
4,4'-DDD	---	---	---	---	---	---	---	---
4,4'-DDE	---	---	---	---	---	---	---	---
4,4'-DDT	0.005	0.0004	0.38	0.00006	0.000004	0.01	0.00002	0.000001
alpha-Chlordane	0.00002	0.000001	0.001	0.000005	0.0000004	0.001	0.00002	0.000001
Dieldrin	0.002	0.0001	0.12	0.0009	0.00007	0.10	0.0003	0.00002
Endosulfan II	NA	NA	---	NA	NA	NA	0.00000047	0.00000003
Endrin aldehyde	NA	NA	---	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	---	NA	NA	NA	0.00002	0.000001
Total PCBs	0.40	0.03	28.42	0.08	0.006	---	0.026	0.002
TBT	0.0010	0.00007	0.07	0.002	0.0002	0.24	0.001	0.0001
Hazard Index	1.39	0.10		0.93	0.07		1.25	0.09

Note: Concentrations for chemicals that were not detected in shellfish tissue were derived from sediment EPCs using bioaccumulation factors.

Table 7-7. Summary of Cancer Risks Associated with Shellfish Consumption Pathway for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Risks	
	Risk Values		% Contribution to Total Risk	Risk Values		% Contribution to Total Risk		
	RME	CTE		RME	CTE		RME	CTE
Ag	---	---	---	---	---	---	---	---
As	7.73E-04	1.72E-05	85.89	7.89E-04	1.75E-05	90.45	1.28E-03	2.86E-05
Cd	6.21E-08	1.38E-09	0.007	4.82E-08	1.07E-09	0.01	1.41E-06	3.14E-08
Cr	6.64E-05	1.48E-06	7.38	1.19E-05	2.64E-07	1.36	2.12E-05	4.72E-07
Cu	---	---	---	---	---	---	---	---
Hg	---	---	---	---	---	---	---	---
Ni	---	---	---	---	---	---	---	---
Sb	---	---	---	---	---	---	---	---
Se	---	---	---	---	---	---	---	---
Zn	---	---	---	---	---	---	---	---
Acenaphthene	---	---	---	---	---	---	---	---
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	---	---	---	---	---	---	---	---
Benzo(a)anthracene	2.94E-06	6.53E-08	0.33	5.01E-06	1.11E-07	0.57	1.05E-07	2.33E-09
Benzo(a)pyrene	3.31E-05	7.35E-07	3.67	5.45E-05	1.21E-06	6.25	1.51E-06	3.35E-08
Benzo(b)fluoranthene	3.14E-06	6.97E-08	0.35	3.27E-06	7.27E-08	0.37	1.45E-07	3.22E-09
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	1.97E-06	4.38E-08	0.22	2.73E-06	6.08E-08	0.31	1.52E-07	3.37E-09
Chrysene	3.19E-07	7.08E-09	0.04	5.15E-07	1.14E-08	0.06	1.71E-08	3.81E-10
Dibenz(a,h)anthracene	4.85E-07	1.08E-08	0.05	4.73E-07	1.05E-08	0.05	3.43E-08	7.63E-10
Fluoranthene	---	---	---	---	---	---	---	---
Fluorene	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	3.48E-07	7.73E-09	0.04	8.28E-07	1.84E-08	0.09	7.21E-08	1.60E-09
2-Methylnaphthalene	---	---	---	---	---	---	---	---
Naphthalene	5.03E-08	1.12E-09	0.006	1.77E-08	3.93E-10	0.002	7.84E-09	1.74E-10
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	---	---	---	---	---	---	---	---
2,4'-DDD	6.86E-09	1.52E-10	0.001	3.20E-09	7.10E-11	0.0004	1.21E-09	2.68E-11
2,4'-DDE	5.52E-10	1.23E-11	0.00004	4.53E-10	1.01E-11	0.0001	9.14E-10	2.03E-11
2,4'-DDT	2.16E-07	4.81E-09	0.02	4.08E-09	9.08E-11	0.0005	9.54E-10	2.12E-11
4,4'-DDD	2.62E-08	5.82E-10	0.003	1.20E-08	2.67E-10	0.001	5.12E-09	1.14E-10
4,4'-DDE	2.71E-08	6.01E-10	0.003	1.04E-08	2.30E-10	0.001	1.03E-08	2.29E-10
4,4'-DDT	3.85E-07	8.57E-09	0.04	4.29E-09	9.53E-11	0.0005	1.17E-09	2.60E-11
alpha-Chlordane	5.61E-09	1.25E-10	0.0006	1.37E-09	3.04E-11	0.0002	5.03E-09	1.12E-10
Dieldrin	5.61E-07	1.25E-08	0.06	3.19E-07	7.08E-09	0.04	1.14E-07	2.53E-09
Endosulfan II	---	---	---	---	---	---	---	---
Endrin aldehyde	---	---	---	---	---	---	---	---
gamma-Chlordane	NA	NA	NA	NA	NA	NA	4.32E-09	9.59E-11
Total PCBs	1.70E-05	3.77E-07	1.89	3.57E-06	7.93E-08	0.41	1.11E-06	2.47E-08
TBT	---	---	---	---	---	---	---	---
Total Cumulative Risk	9.0E-04	2.0E-05		8.7E-04	1.9E-05		1.3E-03	2.9E-05

Note: Concentrations for chemicals that were not detected in shellfish tissue were derived from sediment EPCs using bioaccumulation factors.

Table 7-8. Summary of Non-Cancer Hazards Associated with Direct Contact with Sediments for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Hazard	
	Hazard Quotient		% Contribution to Total Hazard	Hazard Quotient		% Contribution to Total Hazard		
	RME	CTE	RME	RME	CTE	RME	RME	CTE
Ag	3.64E-06	4.72E-07	0.02	3.56E-06	4.62E-07	0.03	6.38E-06	8.28E-07
As	2.67E-03	3.70E-04	11.19	1.91E-03	2.64E-04	18.73	3.61E-03	4.99E-04
Cd	5.23E-05	6.57E-06	0.22	4.06E-05	5.10E-06	0.40	6.82E-05	8.56E-06
Cr	1.14E-02	1.43E-03	47.79	2.05E-03	2.56E-04	20.05	2.76E-03	3.45E-04
Cu	1.96E-04	2.54E-05	0.82	1.42E-04	1.84E-05	1.39	1.18E-04	1.54E-05
Hg	2.60E-03	3.37E-04	10.87	4.93E-03	6.40E-04	48.37	4.27E-04	5.55E-05
Ni	4.08E-04	5.30E-05	1.71	2.25E-04	2.92E-05	2.21	4.20E-04	5.45E-05
Sb	2.74E-03	3.55E-04	11.45	4.23E-05	5.49E-06	0.41	2.50E-04	3.25E-05
Se	4.40E-06	5.71E-07	0.02	2.96E-06	3.85E-07	0.03	1.02E-05	1.32E-06
Zn	4.27E-05	5.54E-06	0.18	2.29E-05	2.98E-06	0.22	3.79E-05	4.92E-06
Acenaphthene	2.07E-07	3.55E-08	0.001	2.47E-08	4.24E-09	0.0002	2.32E-08	3.98E-09
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	2.21E-07	3.79E-08	0.001	3.25E-07	5.59E-08	0.003	2.02E-08	3.47E-09
Benzo(a)anthracene	---	---	---	---	---	---	---	---
Benzo(a)pyrene	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	---	---	---	---	---	---	---	---
Chrysene	---	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	---	---	---	---	---	---	---	---
Fluoranthene	3.07E-06	5.27E-07	0.01	1.02E-05	1.75E-06	0.10	6.92E-07	1.19E-07
Fluorene	4.63E-07	7.96E-08	0.002	5.29E-07	9.08E-08	0.005	2.74E-08	4.71E-09
Indeno(1,2,3-cd)pyrene	---	---	---	---	---	---	---	---
2-Methylnaphthalene	9.00E-07	1.55E-07	0.004	4.88E-07	8.38E-08	0.005	2.61E-07	4.49E-08
Naphthalene	3.22E-07	5.53E-08	0.001	1.13E-07	1.94E-08	0.001	7.81E-08	1.34E-08
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	7.43E-06	1.28E-06	0.03	1.74E-05	2.98E-06	0.17	1.16E-06	1.99E-07
2,4'-DDD	---	---	---	---	---	---	---	---
2,4'-DDE	---	---	---	---	---	---	---	---
2,4'-DDT	1.01E-05	1.47E-06	0.04	1.91E-07	2.78E-08	0.002	---	---
4,4'-DDD	---	---	---	---	---	---	---	---
4,4'-DDE	---	---	---	---	---	---	---	---
4,4'-DDT	4.63E-05	6.75E-06	0.19	5.16E-07	7.52E-08	0.005	4.03E-07	5.87E-08
alpha-Chlordane	3.05E-07	4.44E-08	0.001	7.42E-08	1.08E-08	0.0007	3.22E-08	4.69E-09
Dieldrin	2.39E-06	3.49E-07	0.01	1.36E-06	1.98E-07	0.01	---	---
Endosulfan II	9.51E-09	1.39E-09	0.00004	6.52E-09	9.51E-10	0.0001	---	---
Endrin aldehyde	5.46E-06	7.97E-07	0.02	---	---	---	---	---
gamma-Chlordane	5.25E-07	7.65E-08	0.002	1.02E-07	1.49E-08	0.001	---	---
Total PCBs	3.67E-03	6.31E-04	15.36	7.72E-04	1.33E-04	7.57	9.76E-05	1.68E-05
TBT	1.50E-05	2.41E-06	0.06	2.80E-05	4.50E-06	0.27	1.79E-06	2.87E-07
Hazard Index	0.02	0.003		0.01	0.001		0.008	0.001

Table 7-9. Summary of Non-Cancer Hazards to Children Associated with Direct Contact with Sediments for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Hazard	
	Hazard Quotient		% Contribution to Total Hazard	Hazard Quotient		% Contribution to Total Hazard		
	RME	CTE	RME	RME	CTE	RME	RME	CTE
Ag	3.36E-05	4.31E-06	0.02	3.28E-05	4.22E-06	0.04	5.88E-05	7.56E-06
As	2.42E-02	3.25E-03	11.09	1.73E-02	2.33E-03	18.53	3.26E-02	4.39E-03
Cd	4.88E-04	6.12E-05	0.22	3.79E-04	4.74E-05	0.41	6.36E-04	7.97E-05
Cr	1.07E-01	1.33E-02	48.96	1.91E-02	2.39E-03	20.48	2.57E-02	3.22E-03
Cu	1.81E-03	2.32E-04	0.83	1.31E-03	1.68E-04	1.40	1.09E-03	1.40E-04
Hg	2.40E-02	3.08E-03	11.00	4.55E-02	5.85E-03	48.84	3.94E-03	5.06E-04
Ni	3.76E-03	4.83E-04	1.73	2.08E-03	2.67E-04	2.23	3.88E-03	4.98E-04
Sb	2.53E-02	3.24E-03	11.60	3.90E-04	5.01E-05	0.42	2.31E-03	2.97E-04
Se	4.06E-05	5.21E-06	0.02	2.73E-05	3.51E-06	0.03	9.40E-05	1.21E-05
Zn	3.94E-04	5.06E-05	0.18	2.12E-04	2.72E-05	0.23	3.49E-04	4.49E-05
Acenaphthene	1.71E-06	2.78E-07	0.001	2.05E-07	3.31E-08	0.0002	1.92E-07	3.11E-08
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	1.83E-06	2.96E-07	0.001	2.70E-06	4.37E-07	0.003	1.67E-07	2.71E-08
Benzo(a)anthracene	---	---	---	---	---	---	---	---
Benzo(a)pyrene	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	---	---	---	---	---	---	---	---
Chrysene	---	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	---	---	---	---	---	---	---	---
Fluoranthene	2.54E-05	4.12E-06	0.01	8.43E-05	1.37E-05	0.09	5.74E-06	9.30E-07
Fluorene	3.84E-06	6.22E-07	0.002	4.38E-06	7.10E-07	0.005	2.27E-07	3.68E-08
Indeno(1,2,3-cd)pyrene	---	---	---	---	---	---	---	---
2-Methylnaphthalene	7.46E-06	1.21E-06	0.003	4.05E-06	6.55E-07	0.004	2.17E-06	3.51E-07
Naphthalene	2.67E-06	4.32E-07	0.001	9.38E-07	1.52E-07	0.001	6.48E-07	1.05E-07
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	6.16E-05	9.98E-06	0.03	1.44E-04	2.33E-05	0.15	9.59E-06	1.55E-06
2,4'-DDD	---	---	---	---	---	---	---	---
2,4'-DDE	---	---	---	---	---	---	---	---
2,4'-DDT	8.97E-05	1.26E-05	0.04	1.69E-06	2.38E-07	0.002	---	---
4,4'-DDD	---	---	---	---	---	---	---	---
4,4'-DDE	---	---	---	---	---	---	---	---
4,4'-DDT	4.11E-04	5.77E-05	0.19	4.57E-06	6.42E-07	0.005	3.57E-06	5.01E-07
alpha-Chlordane	2.70E-06	3.79E-07	0.001	6.58E-07	9.23E-08	0.0007	2.86E-07	4.01E-08
Dieldrin	2.12E-05	2.98E-06	0.01	1.21E-05	1.69E-06	0.01	---	---
Endosulfan II	8.43E-08	1.18E-08	0.00004	5.78E-08	8.12E-09	0.0001	---	---
Endrin aldehyde	4.85E-05	6.80E-06	0.02	---	---	---	---	---
gamma-Chlordane	4.66E-06	6.53E-07	0.002	9.07E-07	1.27E-07	0.001	---	---
Total PCBs	3.04E-02	4.93E-03	13.98	6.40E-03	1.04E-03	6.87	8.09E-04	1.31E-04
TBT	1.28E-04	1.95E-05	0.06	2.39E-04	3.64E-05	0.26	1.52E-05	2.32E-06
Hazard Index	0.22	0.03		0.09	0.01		0.07	0.009

Table 7-10. Summary of Cancer Risks Associated with Direct Contact with Sediments for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Risks	
	Risk Values		% Contribution to Total Risk	Risk Values		% Contribution to Total Risk		
	RME[1]	CTE	RME[1]	RME[1]	CTE	RME[1]	RME[1]	CTE
Ag	---	---	---	---	---	---	---	---
As	8.47E-06	1.35E-07	46.22	6.05E-06	9.64E-08	56.75	1.14E-05	1.82E-07
Cd	1.14E-08	1.60E-10	0.06	8.81E-09	1.24E-10	0.08	1.48E-08	2.09E-10
Cr	7.44E-06	1.05E-07	40.60	1.33E-06	1.87E-08	12.49	1.80E-06	2.53E-08
Cu	---	---	---	---	---	---	---	---
Hg	---	---	---	---	---	---	---	---
Ni	---	---	---	---	---	---	---	---
Sb	---	---	---	---	---	---	---	---
Se	---	---	---	---	---	---	---	---
Zn	---	---	---	---	---	---	---	---
Acenaphthene	---	---	---	---	---	---	---	---
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	---	---	---	---	---	---	---	---
Benzo(a)anthracene	1.21E-07	2.53E-09	0.66	2.06E-07	4.31E-09	1.93	1.49E-08	3.12E-10
Benzo(a)pyrene	1.50E-06	3.14E-08	8.17	2.47E-06	5.17E-08	23.13	2.71E-07	5.67E-09
Benzo(b)fluoranthene	1.28E-07	2.69E-09	0.70	1.34E-07	2.80E-09	1.25	2.26E-08	4.73E-10
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	9.49E-08	1.99E-09	0.52	1.32E-07	2.76E-09	1.23	2.24E-08	4.69E-10
Chrysene	1.65E-08	3.47E-10	0.09	2.67E-08	5.61E-10	0.25	1.61E-09	3.39E-11
Dibenz(a,h)anthracene	8.65E-08	1.81E-09	0.47	8.43E-08	1.77E-09	0.79	1.34E-08	2.80E-10
Fluoranthene	---	---	---	---	---	---	---	---
Fluorene	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	5.88E-08	1.23E-09	0.32	1.40E-07	2.93E-09	1.31	2.28E-08	4.78E-10
2-Methylnaphthalene	---	---	---	---	---	---	---	---
Naphthalene	8.14E-10	1.71E-11	0.004	2.86E-10	6.00E-12	0.003	1.98E-10	4.14E-12
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	---	---	---	---	---	---	---	---
2,4'-DDD	1.24E-10	2.11E-12	0.001	5.78E-11	9.82E-13	0.0005	8.25E-12	1.40E-13
2,4'-DDE	1.18E-11	2.00E-13	0.0001	9.67E-12	1.64E-13	0.00009	1.41E-11	2.40E-13
2,4'-DDT	1.90E-09	3.22E-11	0.01	3.58E-11	6.08E-13	0.0003	---	---
4,4'-DDD	4.07E-10	6.92E-12	0.002	1.87E-10	3.17E-12	0.002	6.16E-11	1.05E-12
4,4'-DDE	2.19E-10	3.72E-12	0.001	8.38E-11	1.42E-12	0.001	4.66E-11	7.91E-13
4,4'-DDT	8.69E-09	1.48E-10	0.05	9.67E-11	1.64E-12	0.001	7.55E-11	1.28E-12
alpha-Chlordane	2.19E-10	3.71E-12	0.001	5.32E-11	9.04E-13	0.0005	2.31E-11	3.92E-13
Dieldrin	2.11E-09	3.59E-11	0.01	1.20E-09	2.04E-11	0.01	---	---
Endosulfan II	---	---	---	---	---	---	---	---
Endrin aldehyde	---	---	---	---	---	---	---	---
gamma-Chlordane	3.76E-10	6.39E-12	0.13	7.33E-11	1.25E-12	0.001	---	---
Total PCBs	3.87E-07	8.11E-09	2.11	8.14E-08	1.71E-09	0.76	1.03E-08	2.16E-10
TBT	---	---	---	---	---	---	---	---
Total Cumulative Risks	1.8E-05	2.9E-07		1.1E-05	1.8E-07		1.4E-05	2.2E-07

1. RME Risks are based on age-adjusted exposure factors.

Table 7-11. Summary of Cancer Risks to Children Associated with Direct Contact with Sediments for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Risks	
	Risk Values		% Contribution to Total Risk	Risk Values		% Contribution to Total Risk		
	RME	CTE	RME	RME	CTE	RME	RME	CTE
Ag	---	---	---	---	---	---	---	---
As	5.87E-06	7.91E-07	46.19	4.20E-06	5.65E-07	57.15	7.92E-06	1.07E-06
Cd	7.95E-09	9.96E-10	0.06	6.16E-09	7.73E-10	0.08	1.04E-08	1.30E-09
Cr	5.21E-06	6.51E-07	40.98	9.33E-07	1.17E-07	12.70	1.26E-06	1.57E-07
Cu	---	---	---	---	---	---	---	---
Hg	---	---	---	---	---	---	---	---
Ni	---	---	---	---	---	---	---	---
Sb	---	---	---	---	---	---	---	---
Se	---	---	---	---	---	---	---	---
Zn	---	---	---	---	---	---	---	---
Acenaphthene	---	---	---	---	---	---	---	---
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	---	---	---	---	---	---	---	---
Benzo(a)anthracene	8.14E-08	1.32E-08	0.64	1.39E-07	2.25E-08	1.89	1.00E-08	1.63E-09
Benzo(a)pyrene	1.01E-06	1.64E-07	7.94	1.66E-06	2.70E-07	22.67	1.83E-07	2.96E-08
Benzo(b)fluoranthene	8.65E-08	1.40E-08	0.68	9.02E-08	1.46E-08	1.23	1.52E-08	2.47E-09
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	6.40E-08	1.04E-08	0.50	8.88E-08	1.44E-08	1.21	1.51E-08	2.45E-09
Chrysene	1.12E-08	1.81E-09	0.09	1.80E-08	2.92E-09	0.25	1.09E-09	1.76E-10
Dibenz(a,h)anthracene	5.83E-08	9.45E-09	0.46	5.69E-08	9.21E-09	0.77	9.01E-09	1.46E-09
Fluoranthene	---	---	---	---	---	---	---	---
Fluorene	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	3.96E-08	6.42E-09	0.31	9.43E-08	1.53E-08	1.28	1.54E-08	2.49E-09
2-Methylnaphthalene	---	---	---	---	---	---	---	---
Naphthalene	5.49E-10	8.89E-11	0.004	1.93E-10	3.13E-11	0.003	1.33E-10	2.16E-11
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	---	---	---	---	---	---	---	---
2,4'-DDD	8.55E-11	1.20E-11	0.001	3.98E-11	5.59E-12	0.0005	5.68E-12	7.98E-13
2,4'-DDE	8.11E-12	1.14E-12	0.0001	6.66E-12	9.35E-13	0.00009	9.73E-12	1.37E-12
2,4'-DDT	1.31E-09	1.83E-10	0.01	2.47E-11	3.46E-12	0.0003	---	---
4,4'-DDD	2.81E-10	3.94E-11	0.002	1.29E-10	1.80E-11	0.002	4.25E-11	5.96E-12
4,4'-DDE	1.51E-10	2.12E-11	0.001	5.78E-11	8.11E-12	0.001	3.21E-11	4.51E-12
4,4'-DDT	5.99E-09	8.40E-10	0.05	6.66E-11	9.35E-12	0.001	5.21E-11	7.31E-12
alpha-Chlordane	1.51E-10	2.11E-11	0.001	3.67E-11	5.14E-12	0.0005	1.59E-11	2.23E-12
Dieldrin	1.46E-09	2.04E-10	0.01	8.27E-10	1.16E-10	0.01	---	---
Endosulfan II	---	---	---	---	---	---	---	---
Endrin aldehyde	---	---	---	---	---	---	---	---
gamma-Chlordane	2.59E-10	3.64E-11	0.002	5.05E-11	7.09E-12	0.001	---	---
Total PCBs	2.61E-07	4.23E-08	2.05	5.49E-08	8.89E-09	0.75	6.94E-09	1.12E-09
TBT	---	---	---	---	---	---	---	---
Total Cumulative Risks	1.3E-05	1.7E-06		7.3E-06	1.0E-06		9.4E-06	1.3E-06

Table 7-12. Summary of Non-Cancer Hazards Associated with Fish Consumption Pathway for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Hazard	
	Hazard Quotient		% Contribution to Total Hazard	Hazard Quotient		% Contribution to Total Hazard		
	RME	CTE		RME	CTE		RME	CTE
Ag	0.0002	0.00002	0.0009	0.0016	0.0001	0.0034	0.01	0.0004
As	1.08	0.08	3.98	3.30	0.24	6.9	1.51	0.11
Cd	0.003	0.0002	0.0114	0.0168	0.0012	0.0351	0.06	0.005
Cr	0.45	0.03	1.66	0.48	0.04	0.9972	0.33	0.02
Cu	0.04	0.003	0.15	0.17	0.01	0.3487	0.06	0.005
Hg	1.68	0.12	6.20	18.19	1.35	38	0.92	0.07
Ni	0.01	0.0005	0.024	0.017	0.001	0.0356	0.01	0.001
Sb	0.04	0.003	0.15	0.005	0.0004	0.0104	0.01	0.001
Se	0.02	0.002	0.08	0.08	0.01	0.1584	0.08	0.01
Zn	0.04	0.003	0.15	0.11	0.01	0.2395	0.10	0.01
Acenaphthene	0.0001	0.000004	0.0002	0.00004	0.000003	0.0001	0.0001	0.00001
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	0.000010	0.000001	0.00004	0.00010	0.00001	0.0002	0.000003	0.0000002
Benzo(a)anthracene	---	---	---	---	---	---	---	---
Benzo(a)pyrene	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	---	---	---	---	---	---	---	---
Chrysene	---	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	---	---	---	---	---	---	---	---
Fluoranthene	0.0002	0.00001	0.0007	0.0040	0.0003	0.0084	0.00018	0.00001
Fluorene	0.0001	0.000005	0.0002	0.0005	0.00004	0.0010	0.00013	0.00001
Indeno(1,2,3-cd)pyrene	---	---	---	---	---	---	---	---
2-Methylnaphthalene	0.000038	0.000003	0.0001	0.0001	0.00001	0.0003	0.0005	0.00004
Naphthalene	0.000022	0.000002	0.0001	0.0001	0.000004	0.0001	0.0002	0.00002
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	0.0002	0.00002	0.0009	0.0033	0.0002	0.0070	0.00006	0.000004
2,4'-DDD	---	---	---	---	---	---	---	---
2,4'-DDE	---	---	---	---	---	---	---	---
2,4'-DDT	0.01	0.001	0.033	0.001	0.0001	0.0023	0.00009	0.00001
4,4'-DDD	---	---	---	---	---	---	---	---
4,4'-DDE	---	---	---	---	---	---	---	---
4,4'-DDT	0.07	0.01	0.26	0.005	0.0004	0.0104	0.01	0.001
alpha-Chlordane	0.0014	0.0001	0.0050	0.0022	0.0002	0.0047	0.005	0.0004
Dieldrin	0.01	0.001	0.026	0.025	0.002	0.0529	0.06	0.005
Endosulfan II	0.000001	0.0000001	0.000004	0.000005	0.0000004	0.00001	0.000011	0.000001
Endrin aldehyde	---	---	---	---	---	---	---	---
gamma-Chlordane	0.001	0.0001	0.0029	0.0010	0.0001	0.0021	0.001	0.0001
Total PCBs	23.48	1.74	86.52	22.88	1.70	48	13.41	0.99
TBT	0.20	0.02	0.75	2.60	0.19	5	0.19	0.01
Hazard Index	27.13	2.01		47.89	3.55		16.76	1.24

Table 7-13. Summary of Cancer Risks Associated with Fish Consumption Pathway for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Risks	
	Risk Values		% Contribution to Total Risk	Risk Values		% Contribution to Total Risk		
	RME[1]	CTE		RME[1]	CTE		RME[1]	CTE
Ag	---	---	---	---	---	---	---	---
As	1.17E-03	2.91E-05	53.51	3.59E-03	8.91E-05	76.55	1.64E-03	4.07E-05
Cd	2.25E-07	5.58E-09	0.010	1.22E-06	3.04E-08	0.03	4.62E-06	1.15E-07
Cr	9.85E-05	2.44E-06	4.49	1.04E-04	2.59E-06	2.23	7.21E-05	1.79E-06
Cu	---	---	---	---	---	---	---	---
Hg	---	---	---	---	---	---	---	---
Ni	---	---	---	---	---	---	---	---
Sb	---	---	---	---	---	---	---	---
Se	---	---	---	---	---	---	---	---
Zn	---	---	---	---	---	---	---	---
Acenaphthene	---	---	---	---	---	---	---	---
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	---	---	---	---	---	---	---	---
Benzo(a)anthracene	7.91E-07	1.96E-08	0.04	8.59E-06	2.13E-07	0.18	9.91E-08	2.46E-09
Benzo(a)pyrene	7.24E-06	1.80E-07	0.33	7.33E-05	1.82E-06	1.56	4.40E-07	1.09E-08
Benzo(b)fluoranthene	6.65E-07	1.65E-08	0.03	4.52E-06	1.12E-07	0.10	2.39E-07	5.94E-09
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	8.52E-07	2.12E-08	0.04	7.23E-06	1.79E-07	0.15	3.66E-08	9.09E-10
Chrysene	2.23E-07	5.53E-09	0.01	2.20E-06	5.46E-08	0.05	4.60E-08	1.14E-09
Dibenz(a,h)anthracene	1.79E-07	4.45E-09	0.01	1.08E-06	2.67E-08	0.02	1.05E-07	2.60E-09
Fluoranthene	---	---	---	---	---	---	---	---
Fluorene	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	2.64E-07	6.55E-09	0.01	3.62E-06	8.99E-08	0.08	8.80E-08	2.18E-09
2-Methylnaphthalene	---	---	---	---	---	---	---	---
Naphthalene	2.05E-08	5.10E-10	0.001	4.68E-08	1.16E-09	0.001	2.11E-07	5.24E-09
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	---	---	---	---	---	---	---	---
2,4'-DDD	2.23E-09	5.55E-11	0.0001	7.11E-09	1.77E-10	0.0002	3.31E-09	8.21E-11
2,4'-DDE	1.34E-08	3.33E-10	0.001	6.00E-08	1.49E-09	0.0013	1.55E-08	3.86E-10
2,4'-DDT	5.76E-07	1.43E-08	0.03	7.14E-08	1.77E-09	0.0015	6.08E-09	1.51E-10
4,4'-DDD	9.21E-07	2.29E-08	0.04	2.83E-06	7.02E-08	0.06	7.49E-07	1.86E-08
4,4'-DDE	1.22E-06	3.03E-08	0.06	3.19E-06	7.91E-08	0.07	3.30E-06	8.19E-08
4,4'-DDT	4.61E-06	1.15E-07	0.21	3.24E-07	8.05E-09	0.01	8.94E-07	2.22E-08
alpha-Chlordane	3.39E-07	8.42E-09	0.02	5.56E-07	1.38E-08	0.01	1.24E-06	3.09E-08
Dieldrin	2.13E-06	5.29E-08	0.10	7.78E-06	1.93E-07	0.17	1.94E-05	4.83E-07
Endosulfan II	---	---	---	---	---	---	---	---
Endrin aldehyde	---	---	---	---	---	---	---	---
gamma-Chlordane	1.96E-07	4.86E-09	0.01	2.57E-07	6.37E-09	0.01	3.60E-07	8.94E-09
Total PCBs	9.01E-04	2.24E-05	41.07	8.78E-04	2.18E-05	18.73	5.14E-04	1.28E-05
TBT	---	---	---	---	---	---	---	---
Total Cumulative Risk	2.2E-03	5.4E-05		4.7E-03	1.2E-04		2.3E-03	5.6E-05

1. RME Risks are based on age-adjusted exposure factors.

Table 7-14. Summary of Non-Cancer Hazards to Children Associated with Fish Consumption Pathway for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Hazard	
	Hazard Quotient		% Contribution to Total Hazard	Hazard Quotient		% Contribution to Total Hazard		
	RME	CTE		RME	CTE		RME	CTE
Ag	0.0001	0.00003	0.001	0.0008	0.0002	0.003	0.002	0.001
As	0.51	0.13	3.98	1.57	0.40	6.89	0.72	0.18
Cd	0.001	0.0004	0.01	0.01	0.002	0.04	0.03	0.01
Cr	0.2	0.05	1.66	0.23	0.06	1.00	0.16	0.04
Cu	0.02	0.01	0.15	0.08	0.02	0.35	0.03	0.01
Hg	0.8	0.2	6.20	8.64	2.20	37.97	0.44	0.11
Ni	0.003	0.001	0.02	0.01	0.002	0.04	0.005	0.001
Sb	0.02	0.005	0.15	0.002	0.001	0.01	0.01	0.002
Se	0.01	0.003	0.08	0.04	0.01	0.16	0.04	0.01
Zn	0.02	0.005	0.15	0.05	0.01	0.24	0.05	0.01
Acenaphthene	0.00002	0.00001	0.0002	0.00002	0.00001	0.0001	0.00004	0.00001
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	0.000005	0.000001	0.00004	0.00005	0.00001	0.0002	0.000002	0.0000004
Benzo(a)anthracene	---	---	---	---	---	---	---	---
Benzo(a)pyrene	---	---	---	---	---	---	---	---
Benzo(b)fluoranthene	---	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	---	---	---	---	---	---	---	---
Chrysene	---	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	---	---	---	---	---	---	---	---
Fluoranthene	0.0001	0.00002	0.001	0.002	0.00049	0.01	0.0001	0.00002
Fluorene	0.00003	0.00001	0.0002	0.0002	0.00006	0.001	0.0001	0.00002
Indeno(1,2,3-cd)pyrene	---	---	---	---	---	---	---	---
2-Methylnaphthalene	0.00002	0.000005	0.0001	0.0001	0.00002	0.0003	0.0003	0.0001
Naphthalene	0.00001	0.000003	0.0001	0.000	0.00001	0.0001	0.0001	0.00003
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	0.0001	0.00003	0.001	0.002	0.00040	0.01	0.00003	0.00001
2,4'-DDD	---	---	---	---	---	---	---	---
2,4'-DDE	---	---	---	---	---	---	---	---
2,4'-DDT	0.004	0.001	0.03	0.001	0.00013	0.002	0.00004	0.00001
4,4'-DDD	---	---	---	---	---	---	---	---
4,4'-DDE	---	---	---	---	---	---	---	---
4,4'-DDT	0.03	0.01	0.26	0.002	0.001	0.01	0.01	0.002
alpha-Chlordane	0.001	0.0002	0.01	0.0011	0.0003	0.005	0.002	0.001
Dieldrin	0.003	0.0008	0.03	0.01	0.003	0.05	0.03	0.01
Endosulfan II	0.000001	0.0000001	0.000004	0.000002	0.000001	0.00001	0.00001	0.000001
Endrin aldehyde	---	---	---	---	---	---	---	---
gamma-Chlordane	0.0004	0.0001	0.003	0.0005	0.0001	0.002	0.001	0.0002
Total PCBs	11.16	2.84	86.52	10.88	2.77	47.78	6.37	1.62
TBT	0.1	0.02	0.75	1.24	0.32	5.44	0.09	0.02
Hazard Index	12.90	3.28		22.76	5.79		7.97	2.03

Table 7-15. Summary of Cancer Risks to Children Associated with Fish Consumption Pathway for IR Site 20

Chemical	All Years Surface			2005 Surface			Reference Risks	
	Risk Values		% Contribution to Total Risk	Risk Values		% Contribution to Total Risk		
	RME	CTE	RME	RME	CTE	RME	RME	CTE
Ag	---	---	---	---	---	---	---	---
As	1.25E-04	3.17E-05	53.51	3.81E-04	9.70E-05	76.55	1.74E-04	4.43E-05
Cd	2.39E-08	6.07E-09	0.010	1.30E-07	3.31E-08	0.03	4.91E-07	1.25E-07
Cr	1.05E-05	2.66E-06	4.49	1.11E-05	2.82E-06	2.23	7.66E-06	1.95E-06
Cu	---	---	---	---	---	---	---	---
Hg	---	---	---	---	---	---	---	---
Ni	---	---	---	---	---	---	---	---
Sb	---	---	---	---	---	---	---	---
Se	---	---	---	---	---	---	---	---
Zn	---	---	---	---	---	---	---	---
Acenaphthene	---	---	---	---	---	---	---	---
Acenaphthylene	---	---	---	---	---	---	---	---
Anthracene	---	---	---	---	---	---	---	---
Benzo(a)anthracene	8.41E-08	2.14E-08	0.04	9.13E-07	2.32E-07	0.18	1.05E-08	2.68E-09
Benzo(a)pyrene	7.68E-07	1.96E-07	0.33	7.78E-06	1.98E-06	1.56	4.67E-08	1.19E-08
Benzo(b)fluoranthene	7.06E-08	1.80E-08	0.03	4.80E-07	1.22E-07	0.10	2.54E-08	6.47E-09
Benzo(g,h,i)perylene	---	---	---	---	---	---	---	---
Benzo(k)fluoranthene	9.05E-08	2.30E-08	0.04	7.68E-07	1.95E-07	0.15	3.89E-09	9.89E-10
Chrysene	2.37E-08	6.02E-09	0.01	2.33E-07	5.94E-08	0.05	4.88E-09	1.24E-09
Dibenz(a,h)anthracene	1.90E-08	4.84E-09	0.01	1.14E-07	2.91E-08	0.02	1.11E-08	2.83E-09
Fluoranthene	---	---	---	---	---	---	---	---
Fluorene	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	2.80E-08	7.13E-09	0.01	3.85E-07	9.79E-08	0.08	9.34E-09	2.38E-09
2-Methylnaphthalene	---	---	---	---	---	---	---	---
Naphthalene	2.18E-09	5.55E-10	0.001	4.97E-09	1.27E-09	0.001	2.24E-08	5.71E-09
Phenanthrene	---	---	---	---	---	---	---	---
Pyrene	---	---	---	---	---	---	---	---
2,4'-DDD	2.37E-10	6.04E-11	0.0001	7.55E-10	1.92E-10	0.0002	3.51E-10	8.94E-11
2,4'-DDE	1.43E-09	3.63E-10	0.001	6.37E-09	1.62E-09	0.0013	1.65E-09	4.20E-10
2,4'-DDT	6.11E-08	1.56E-08	0.03	7.58E-09	1.93E-09	0.0015	6.45E-10	1.64E-10
4,4'-DDD	9.78E-08	2.49E-08	0.04	3.00E-07	7.64E-08	0.06	7.96E-08	2.03E-08
4,4'-DDE	1.29E-07	3.30E-08	0.06	3.38E-07	8.61E-08	0.07	3.50E-07	8.92E-08
4,4'-DDT	4.90E-07	1.25E-07	0.21	3.45E-08	8.77E-09	0.01	9.49E-08	2.42E-08
alpha-Chlordane	3.60E-08	9.17E-09	0.02	5.91E-08	1.50E-08	0.01	1.32E-07	3.36E-08
Dieldrin	2.26E-07	5.76E-08	0.10	8.26E-07	2.10E-07	0.17	2.06E-06	5.25E-07
Endosulfan II	---	---	---	---	---	---	---	---
Endrin aldehyde	---	---	---	---	---	---	---	---
gamma-Chlordane	2.08E-08	5.29E-09	0.01	2.72E-08	6.93E-09	0.01	3.82E-08	9.73E-09
Total PCBs	9.56E-05	2.43E-05	41.07	9.32E-05	2.37E-05	18.73	5.46E-05	1.39E-05
TBT	---	---	---	---	---	---	---	---
Total Cumulative Risk	2.3E-04	5.9E-05		5.0E-04	1.3E-04		2.4E-04	6.1E-05

Table 8-1. HQ Comparison for Nagy 1999 and Nagy 2001

Constituent	All Years				Current Surface				Current Subsurface			
	Surf Scoter Nagy 1999	Surf Scoter Nagy 2001	Least Tern Nagy 1999	Least Tern Nagy 2001	Surf Scoter Nagy 1999	Surf Scoter Nagy 2001	Least Tern Nagy 1999	Least Tern Nagy 2001	Surf Scoter Nagy 1999	Surf Scoter Nagy 2001	Least Tern Nagy 1999	Least Tern Nagy 2001
	unitless	unitless	unitless	unitless	unitless	unitless	unitless	unitless	unitless	unitless	unitless	unitless
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	3.76E-01	3.93E-01	7.22E-02	9.57E-02	3.57E-01	3.74E-01	6.86E-02	9.09E-02	3.31E-01	3.46E-01	6.35E-02	8.42E-02
CADMIUM	1.12E+00	1.17E+00	9.45E-01	1.25E+00	1.06E+00	1.10E+00	8.91E-01	1.18E+00	2.88E+00	2.99E+00	2.42E+00	3.20E+00
CHROMIUM	1.23E+00	1.29E+00	3.97E-01	5.26E-01	1.01E+00	1.05E+00	3.26E-01	4.32E-01	1.26E+00	1.32E+00	4.07E-01	5.39E-01
COPPER	6.49E-01	6.75E-01	1.23E+00	1.62E+00	5.62E-01	5.85E-01	1.01E+00	1.34E+00	6.01E-01	6.25E-01	1.13E+00	1.50E+00
LEAD	2.70E+01	2.79E+01	2.67E+01	3.54E+01	3.10E+01	3.20E+01	3.07E+01	4.06E+01	6.86E+01	7.07E+01	6.77E+01	8.98E+01
MERCURY	2.45E-01	2.56E-01	6.14E-01	8.14E-01	2.43E-01	2.54E-01	5.39E-01	7.15E-01	2.46E-01	2.57E-01	6.53E-01	8.66E-01
NICKEL	1.48E+00	1.54E+00	1.05E-01	1.39E-01	1.23E+00	1.28E+00	8.72E-02	1.16E-01	1.36E+00	1.42E+00	9.67E-02	1.28E-01
SELENIUM	7.70E-01	8.06E-01	1.40E+00	1.86E+00	7.69E-01	8.05E-01	1.04E+00	1.38E+00	7.67E-01	8.04E-01	6.42E-01	8.51E-01
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	4.85E-01	5.08E-01	1.30E+00	1.72E+00	4.29E-01	4.48E-01	1.15E+00	1.52E+00	4.63E-01	4.84E-01	1.24E+00	1.64E+00
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	3.41E-05	3.56E-05	5.44E-04	7.21E-04	1.02E-05	1.07E-05	1.16E-04	1.54E-04	1.10E-05	1.15E-05	1.76E-04	2.33E-04
DIELDRIN	1.86E-02	1.95E-02	1.92E-02	2.54E-02	1.96E-02	2.05E-02	2.02E-02	2.68E-02	1.38E-02	1.45E-02	1.43E-02	1.89E-02
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	6.25E-03	6.55E-03	2.37E-04	3.14E-04	2.21E-03	2.32E-03	8.90E-06	1.18E-05	2.21E-03	2.32E-03	8.48E-06	1.12E-05
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC	NA	NA	4.42E-06	5.86E-06	NA	NA	3.08E-07	4.08E-07	NA	NA	2.99E-07	3.97E-07
GAMMA-CHLORDANE	NA	NA	1.07E-04	1.42E-04	NA	NA	8.89E-05	1.18E-04	NA	NA	6.99E-05	9.27E-05
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	7.21E-03	7.54E-03	3.10E-01	4.10E-01	8.72E-03	9.12E-03	3.74E-01	4.96E-01	5.73E-03	5.99E-03	2.46E-01	3.26E-01
Total PCB	4.69E-01	4.91E-01	4.68E+00	6.20E+00	5.17E-01	5.41E-01	5.15E+00	6.83E+00	8.03E-01	8.41E-01	8.01E+00	1.06E+01
Total 4,4-DDx ND/2	9.53E-01	9.98E-01	4.26E+00	5.65E+00	1.04E+00	1.09E+00	4.65E+00	6.16E+00	9.85E-01	1.03E+00	4.40E+00	5.84E+00
Total HPAH (6) ND/2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total LPAH (6) ND/2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PAH (12) ND/2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Highlighted cells indicate HQs>1.

Table 9-1. Summary of Risk Assessment Conclusions for IR Site 20

Assessment Endpoint	Summary of Risk Characterization	Conclusions
HUMAN HEALTH RISK ASSESSMENT		
Direct Contact	• HQ's all below one. • Cancer risks were either below 10^{-6} or comparable to reference conditions.	No unacceptable risks associated with direct contact exposures.
Adult – shellfish ingestion	• HQ's all below one. • Cancer risks were either below 10^{-6} or comparable to reference conditions.	No unacceptable risks associated with shellfish inges-tion exposures.
Adult – finfish ingestion	• HQ's all below one or comparable to reference conditions. • Cancer risks were either below 10^{-6} or comparable to reference conditions.	No unacceptable risks associated with fish ingestion exposures.
ECOLOGICAL RISK ASSESSMENT		
Benthic Invertebrate Community AE(1)	• Limited toxicity observed in the 1993/94 bioassays likely associated with ammonia or other confounding factors. • Based on 2005 results, most sediment concentrations below ER-M and ambient concentrations.	No unacceptable risk posed to AE(1) at IR Site 20.
Fish Community AE(2)	None of the modeled fish tissue concentrations exceeded the NOAEL or LOAEL ERV for any constituent.	No unacceptable risk posed to AE(2) at IR Site 20.
Avian Community AE(3) – surf scoter	• Pb, Cr, and DDx were the only chemicals with low TRV exceedences. • For Pb, there were no exceedance of the high TRV and risks appear comparable to ambient. • Neither Cr nor DDx were above the low TRV in the 2005 data set.	No unacceptable risk posed to AE(3) at IR Site 20.
Avian Community AE(3) – least tern	• No exceedance of high TRVs at realistic SUFs. • Risks generally comparable to ambient. • Small exposure areas relative to total foraging area.	
Avian Community AE(3) – double-crested cormorant	• No exceedance of high TRVs at realistic SUFs. • Risks generally comparable to ambient. • Small exposure areas relative to total foraging area.	

Table 9-2. Summary of Risk Assessment Conclusions for IR Site 24

Assessment Endpoint	Summary of Risk Characterization	Conclusions
	HUMAN HEALTH RISK ASSESSMENT	
None	No complete exposure pathways identified.	No unacceptable risk posed to human health at IR Site 24.
	ECOLOGICAL RISK ASSESSMENT	
Benthic Invertebrate Community AE(1)	• High variation observed in the 1998 toxicity test results may be due to confounding factors associated with the methods, particularly given that the reference stations also exhibited significant toxicity. • Total PAH, pesticide, total PCB, and several metal concentrations exceeded ER-Ms in 2006 sediment samples collected in the sediment shelf located nearshore and under the roadway in the northeastern corner of the site. • Based on current surface sediment results, most sediment concentrations over the majority of the site are below ER-M and ambient concentrations, except in the northeastern corner and the sediment shelf east of the quay wall between outfalls J and K. Because no bioassays were conducted in this area, the potential toxicity of these sediments is unknown.	Any potential for adverse impacts to AE(1) at IR Site 24 appears to be limited to the northeastern corner.
Fish Community AE(2)	• Cd and Ag were the only chemicals potentially posing a risk to the fish community; potential risks only associated with deeper sediments in the northeastern corner and the sediment shelf east of the quay wall between outfalls J and K.	Any potential for adverse impacts to AE(2) at IR Site 24 appears to be limited to the northeastern corner.
Avian Community AE(3) – surf scoter	• No exceedance of high TRVs. • Cd, Cr, Pb, and DDX were the only chemicals with low TRV exceedances; any limited potential for risks primarily associated with northeastern corner and the sediment shelf east of the quay wall between outfalls J and K. • DDx was above the low TRV in the 2005/2006 Surface data set only.	Any potential for adverse impacts to AE(3) at IR Site 24 appears to be limited to the northeastern corner.
Avian Community AE(3) – least tern	• No exceedance of high TRVs. • Cd, Cr, Pb, PCBs and DDX were the only chemicals with low TRV exceedances; any limited potential for risks primarily associated with northeastern corner and the sediment shelf east of the quay wall between outfalls J and K.	
Avian Community AE(3) – double-crested cormorant	• No exceedance of high TRVs. • Pb and PCBs were the only chemicals with low TRV exceedances; any limited potential for risks primarily associated with northeastern corner and the sediment shelf east of the quay wall between outfalls J and K.	

APPENDIX A

SUMMARY OF ANALYTICAL DATA

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This appendix (on CD) contains supporting data for IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area). This appendix is organized in the following way.

Section A.1: IR Site 20 and IR Site 24 Box and Bubble Plots
Section A.2: IR Site 20 and IR Site 24 Summary of Analytical Data

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A.1 IR Site 20 and IR Site 24 Box and Bubble Plots

List of Figures

IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area) Box and Bubble Plots

Figure A-1. Box Plots of Antimony and Arsenic Concentrations in IR Site 20 and Reference Surface Sediments by Year A-1
Figure A-2. Box Plots of Cadmium and Chromium Concentrations in IR Site 20 and Reference Surface Sediments by Year A-2
Figure A-3. Box Plots of Copper and Lead Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-3
Figure A-4. Box Plots of Mercury and Nickel Concentrations in IR Site 20 and Reference Surface Sediments by Year A-4
Figure A-5. Box Plots of Selenium and Silver Concentrations in IR Site 20 and Reference Surface Sediments by Year A-5
Figure A-6. Box Plots of Zinc Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-6
Figure A-7. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in IR Site 20 and Reference Surface Sediments by Year A-7
Figure A-8. Box Plots of Acenaphthylene and Anthracene Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-8
Figure A-9. Box Plots of Fluorene and Naphthalene Concentrations in IR Site 20 and Reference Surface Sediments by Year A-9
Figure A-10. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in IR Site 20 and Reference Surface Sediments by Year A-10
Figure A-11. Box Plots of Benzo(a)pyrene and Benzo(b)fluoranthene Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-11
Figure A-12. Box Plots of Benzo(g,h,i)perylene and Benzo(k)fluoranthene Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-12
Figure A-13. Box Plots of Chrysene and Dibenzo(a,h)anthracene Concentrations in IR Site 20 and Reference Surface Sediments by Year A-13
Figure A-14. Box Plots of Fluoranthene and Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 and Reference Surface Sediments by Year A-14
Figure A-15. Box Plots of Pyrene and Tributyltin Concentrations in IR Site 20 and Reference Surface Sediments by Year A-15
Figure A-16. Box Plots of 2,4-DDD and 2,4-DDE Concentrations in IR Site 20 and Reference Surface Sediments by Year A-16
Figure A-17. Box Plots of 2,4-DDT and 4,4-DDD Concentrations in IR Site 20 and Reference Surface Sediments by Year A-17
Figure A-18. Box Plots of 4,4′-DDE and 4,4′-DDT Concentrations in IR Site 20 and Reference Surface Sediments by Year A-18
Figure A-19. Box Plots of Aldrin and *alpha*-BHC Concentrations in IR Site 20 and Reference Surface Sediments by Year A-19
Figure A-20. Box Plots of *alpha*-Chlordane and Dieldrin Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-20
Figure A-21. Box Plots of Endosulfan I and Endosulfan II Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-21
Figure A-22. Box Plots of Endosulfan Sulfate and Endrin Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-22

Figure A-23. Box Plots of Endrin Aldehyde and *gamma*-BHC Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-23
Figure A-24. Box Plots of *gamma*-Chlordane and Heptachlor Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-24
Figure A-25. Box Plots of Heptachlor Epoxide Concentrations in IR Site 20 and Reference Surface Sediments by Year. A-25
Figure A-26. Box Plots of Total Organic Carbon and Percent Fines in IR Site 20 and Reference Surface Sediments by Year. A-26
Figure A-27. Box Plots of Total PCB Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-27
Figure A-28. Box Plots of Total 4,4-DDx Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-28
Figure A-29. Box Plots of Total LPAH (sum of 6 analytes) Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-29
Figure A-30. Box Plots of Total HPAH (sum of 6 analytes) Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-30
Figure A-31. Box Plots of Total PAH (sum of 12 analytes) Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-31
Figure A-32. Box Plots of Antimony and Arsenic Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-32
Figure A-33. Box Plots of Cadmium and Chromium Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-33
Figure A-34. Box Plots of Copper and Lead Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-34
Figure A-35. Box Plots of Mercury and Nickel Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-35
Figure A-36. Box Plots of Selenium and Silver Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-36
Figure A-37. Box Plots of Zinc Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-37
Figure A-38. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-38
Figure A-39. Box Plots of Acenaphthylene and Anthracene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-39
Figure A-40. Box Plots of Fluorene and Naphthalene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-40
Figure A-41. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-41
Figure A-42. Box Plots of Benzo(a)pyrene and Benzo(b)fluoranthene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-42
Figure A-43. Box Plots of Benzo(g,h,i)perylene and Benzo(k)fluoranthene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-43
Figure A-44. Box Plots of Chrysene and Dibenzo(a,h)anthracene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-44
Figure A-45. Box Plots of Fluoranthene and Indeno(1,2,3-cd)pyrene Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-45
Figure A-46. Box Plots of Pyrene and Tributyltin Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-46
Figure A-47. Box Plots of 2,4-DDD and 2,4-DDE Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-47
Figure A-48. Box Plots of 2,4-DDT and 4,4-DDD Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-48

Figure A-49. Box Plots of 4,4′-DDE and 4,4′-DDT Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-49
Figure A-50. Box Plots of Aldrin and *alpha*-BHC Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-50
Figure A-51. Box Plots of *alpha*-Chlordane and Dieldrin Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-51
Figure A-52. Box Plots of Endosulfan I and Endosulfan II Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-52
Figure A-53. Box Plots of Endosulfan Sulfate and Endrin Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-53
Figure A-54. Box Plots of Endrin Aldehyde and *gamma*-BHC Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-54
Figure A-55. Box Plots of *gamma*-Chlordane and Heptachlor Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-55
Figure A-56. Box Plots of Heptachlor Epoxide Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-56
Figure A-57. Box Plots of Total Organic Carbon and Percent Fines Concentrations in 2005 Core Samples in IR Site 20 by Depth. A-57
Figure A-58. Box Plots of Total PCB Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum). A-58
Figure A-59. Box Plots of Total 4,4-DDx Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum). A-59
Figure A-60. Box Plots of Total LPAH (sum of 6 analytes) Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum). A-60
Figure A-61. Box Plots of Total HPAH (sum of 6 analytes) Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum). A-61
Figure A-62. Box Plots of Total PAH (sum of 12 analytes) Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum). A-62
Figure A-63. Bubble Plot of Antimony Concentrations in IR Site 20 Surface Sediment by Year. A-63
Figure A-64. Bubble Plot of Antimony Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-64
Figure A-65. Bubble Plot of Antimony Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-65
Figure A-66. Bubble Plot of Arsenic Concentrations in IR Site 20 Surface Sediment by Year. A-66
Figure A-67. Bubble Plot of Arsenic Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-67
Figure A-68. Bubble Plot of Arsenic Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-68
Figure A-69. Bubble Plot of Cadmium Concentrations in IR Site 20 Surface Sediment by Year. A-69
Figure A-70. Bubble Plot of Cadmium Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-70
Figure A-71. Bubble Plot of Cadmium Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-71
Figure A-72. Bubble Plot of Chromium Concentrations in IR Site 20 Surface Sediment by Year. A-72
Figure A-73. Bubble Plot of Chromium Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-73
Figure A-74. Bubble Plot of Chromium Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-74
Figure A-75. Bubble Plot of Copper Concentrations in IR Site 20 Surface Sediment by Year. A-75
Figure A-76. Bubble Plot of Copper Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-76

Figure A-77. Bubble Plot of Copper Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-77
Figure A-78. Bubble Plot of Lead Concentrations in IR Site 20 Surface Sediment by Year. A-78
Figure A-79. Bubble Plot of Lead Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-79
Figure A-80. Bubble Plot of Lead Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-80
Figure A-81. Bubble Plot of Mercury Concentrations in IR Site 20 Surface Sediment by Year. A-81
Figure A-82. Bubble Plot of Mercury Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-82
Figure A-83. Bubble Plot of Mercury Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-83
Figure A-84. Bubble Plot of Nickel Concentrations in IR Site 20 Surface Sediment by Year. A-84
Figure A-85. Bubble Plot of Nickel Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-85
Figure A-86. Bubble Plot of Nickel Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-86
Figure A-87. Bubble Plot of Selenium Concentrations in IR Site 20 Surface Sediment by Year. A-87
Figure A-88. Bubble Plot of Selenium Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-88
Figure A-89. Bubble Plot of Selenium Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-89
Figure A-90. Bubble Plot of Silver Concentrations in IR Site 20 Surface Sediment by Year. A-90
Figure 91. Bubble Plot of Silver Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-91
Figure A-92. Bubble Plot of Silver Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-92
Figure A-93. Bubble Plot of Zinc Concentrations in IR Site 20 Surface Sediment by Year. A-93
Figure A-94. Bubble Plot of Zinc Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-94
Figure A-95. Bubble Plot of Zinc Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-95
Figure A-96. Bubble Plot of Aldrin Concentrations in IR Site 20 Surface Sediment by Year. A-96
Figure A-97. Bubble Plot of Aldrin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-97
Figure A-98. Bubble Plot of Aldrin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-98
Figure A-99. Bubble Plot of *alpha*-BHC Concentrations in IR Site 20 Surface Sediment by Year. A-99
Figure A-100. Bubble Plot of *alpha*-BHC Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-100
Figure A-101. Bubble Plot of *alpha*-BHC Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-101
Figure A-102. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 20 Surface Sediment by Year. A-102
Figure A-103. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-103
Figure A-104. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-104
Figure A-105. Bubble Plot of Dieldrin Concentrations in IR Site 20 Surface Sediment by Year. A-105
Figure A-106. Bubble Plot of Dieldrin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-106

Figure A-107. Bubble Plot of Dieldrin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-107
Figure A-108. Bubble Plot of Endosulfan I Concentrations in IR Site 20 Surface Sediment by Year. A-108
Figure A-109. Bubble Plot of Endosulfan I Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-109
Figure A-110. Bubble Plot of Endosulfan I Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-110
Figure A-111. Bubble Plot of Endosulfan II Concentrations in IR Site 20 Surface Sediment by Year. A-111
Figure A-112. Bubble Plot of Endosulfan II Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-112
Figure A-113. Bubble Plot of Endosulfan II Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-113
Figure A-114. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 20 Surface Sediment by Year. A-114
Figure A-115. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-115
Figure A-116. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-116
Figure A-117. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 20 Surface Sediment by Year. A-117
Figure A-118. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-118
Figure A-119. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-119
Figure A-120. Bubble Plot of Endrin Concentrations in IR Site 20 Surface Sediment by Year. A-120
Figure A-121. Bubble Plot of Endrin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-121
Figure A-122. Bubble Plot of Endrin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-122
Figure A-123. Bubble Plot of *gamma*-BHC Concentrations in IR Site 20 Surface Sediment by Year. A-123
Figure A-124. Bubble Plot of *gamma*-BHC Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-124
Figure A-125. Bubble Plot of *gamma*-BHC Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-125
Figure A-126. Bubble Plot of *gamma*-Chlordane Concentrations in IR Site 20 Surface Sediment by Year. A-126
Figure A-127. Bubble Plot of *gamma*-Chlordane Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-127
Figure A-128. Bubble Plot of *gamma*-Chlordane Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-128
Figure A-129. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 20 Surface Sediment by Year. A-129
Figure A-130. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-130
Figure A-131. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-131
Figure A-132. Bubble Plot of Heptachlor Concentrations in IR Site 20 Surface Sediment by Year. A-132

Figure A-133. Bubble Plot of Heptachlor Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-133
Figure A-134. Bubble Plot of Heptachlor Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-134
Figure A-135. Bubble Plot of 2,4'-DDD Concentrations in IR Site 20 Surface Sediment by Year. A-135
Figure A-136. Bubble Plot of 2,4'-DDD Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-136
Figure A-137. Bubble Plot of 2,4'-DDD Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-137
Figure A-138. Bubble Plot of 2,4'-DDE Concentrations in IR Site 20 Surface Sediment by Year. A-138
Figure A-139. Bubble Plot of 2,4'-DDE Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-139
Figure A-140. Bubble Plot of 2,4'-DDE Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-140
Figure A-141. Bubble Plot of 2,4'-DDT Concentrations in IR Site 20 Surface Sediment by Year. A-141
Figure A-142. Bubble Plot of 2,4'-DDT Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-142
Figure A-143. Bubble Plot of 2,4'-DDT Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-143
Figure A-144. Bubble Plot of 4,4'-DDD Concentrations in IR Site 20 Surface Sediment by Year. A-144
Figure A-145. Bubble Plot of 4,4'-DDD Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-145
Figure A-146. Bubble Plot of 4,4'-DDD Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-146
Figure A-147. Bubble Plot of 4,4'-DDE Concentrations in IR Site 20 Surface Sediment by Year. A-147
Figure A-148. Bubble Plot of 4,4'-DDE Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-148
Figure A-149. Bubble Plot of 4,4'-DDE Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-149
Figure A-150. Bubble Plot of 4,4'-DDT Concentrations in IR Site 20 Surface Sediment by Year. A-150
Figure A-151. Bubble Plot of 4,4'-DDT Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-151
Figure A-152. Bubble Plot of 4,4'-DDT Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-152
Figure A-153. Bubble Plot of Fine Grains Concentrations in IR Site 20 Surface Sediment by Year. A-153
Figure A-154. Bubble Plot of Fine Grains Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-154
Figure A-155. Bubble Plot of Fine Grains Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-155
Figure A-156. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 20 Surface Sediment by Year. A-156
Figure A-157. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-157
Figure A-158. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-158
Figure A-159. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 20 Surface Sediment by Year. A-159
Figure A-160. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-160

Figure A-161. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-161
Figure A-162. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 20 Surface Sediment by Year. A-162
Figure A-163. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-163
Figure A-164. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-164
Figure A-165. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 20 Surface Sediment by Year. A-165
Figure A-166. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-166
Figure A-167. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-167
Figure A-168. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 20 Surface Sediment by Year. A-168
Figure A-169. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-169
Figure A-170. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-170
Figure A-171. Bubble Plot of Chrysene Concentrations in IR Site 20 Surface Sediment by Year. A-171
Figure A-172. Bubble Plot of Chrysene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-172
Figure A-173. Bubble Plot of Chrysene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-173
Figure 174. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 20 Surface Sediment by Year. A-174
Figure A-175. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-175
Figure A-176. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-176
Figure A-177. Bubble Plot of Fluoranthene Concentrations in IR Site 20 Surface Sediment by Year. A-177
Figure A-178. Bubble Plot of Fluoranthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-178
Figure A-179. Bubble Plot of Fluoranthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-179
Figure A-180. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 Surface Sediment by Year. A-180
Figure A-181. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-181
Figure A-182. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-182
Figure A-183. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment by Year. A-183
Figure A-184. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-184
Figure A-185. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-185
Figure A-186. Bubble Plot of Acenaphthene Concentrations in IR Site 20 Surface Sediment by Year. A-186

Figure A-187. Bubble Plot of Acenaphthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-187
Figure A-188. Bubble Plot of Acenaphthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-188
Figure A-189. Bubble Plot of Acenaphthylene Concentrations in IR Site 20 Surface Sediment by Year. A-189
Figure A-190. Bubble Plot of Acenaphthylene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-190
Figure A-191. Bubble Plot of Acenaphthylene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-191
Figure A-192. Bubble Plot of Anthracene Concentrations in IR Site 20 Surface Sediment by Year... A-192
Figure A-193. Bubble Plot of Anthracene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-193
Figure A-194. Bubble Plot of Anthracene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-194
Figure A-195. Bubble Plot of Fluorene Concentrations in IR Site 20 Surface Sediment by Year. A-195
Figure A-196. Bubble Plot of Fluorene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-196
Figure A-197. Bubble Plot of Fluorene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-197
Figure A-198. Bubble Plot of Naphthalene Concentrations in IR Site 20 Surface Sediment by Year. A-198
Figure A-199. Bubble Plot of Naphthalene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-199
Figure A-200. Bubble Plot of Naphthalene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-200
Figure A-201. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment by Year. A-201
Figure A-202. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-202
Figure A-203. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-203
Figure A-204. Bubble Plot of Tributyl Tin Concentrations in IR Site 20 Surface Sediment by Year. A-204
Figure A-205. Bubble Plot of Tributyl Tin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-205
Figure A-206. Bubble Plot of Tributyl Tin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-206
Figure A-207. Bubble Plot of Total Organic Carbon Concentrations in IR Site 20 Surface Sediment by Year. A-207
Figure A-208. Bubble Plot of Total Organic Carbon Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-208
Figure A-209. Bubble Plot of Total Organic Carbon Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-209
Figure A-210. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 20 Surface Sediment by Year. A-210
Figure A-211. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-211
Figure A-212. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-212

Figure A-213. Bubble Plot of Total HPAH (6) Concentrations in IR Site 20 Surface Sediment by Year. A-213
Figure A-214. Bubble Plot of Total HPAH (6) Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-214
Figure A-215. Bubble Plot of Total HPAH (6) Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-215
Figure A-216. Bubble Plot of Total LPAH (6) Concentrations in IR Site 20 Surface Sediment by Year. A-216
Figure A-217. Bubble Plot of Total LPAH (6) Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-217
Figure A-218. Bubble Plot of Total LPAH (6) Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-218
Figure A-219. Bubble Plot of Total PCB Concentrations in IR Site 20 Surface Sediment by Year. ... A-219
Figure A-220. Bubble Plot of Total PCB Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth. A-220
Figure A-221. Bubble Plot of Total PCB Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth. A-221
Figure A-222. Box Plots of Antimony and Arsenic Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-222
Figure A-223. Box Plots of Cadmium and Chromium Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-223
Figure A-224. Box Plots of Copper and Lead Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-224
Figure A-225. Box Plots of Mercury and Nickel Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-225
Figure A-226. Box Plots of Selenium and Silver Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-226
Figure A-227. Box Plots of Zinc Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-227
Figure A-228. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-228
Figure A-229. Box Plots of Acenaphthylene and Anthracene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-229
Figure A-230. Box Plots of Fluorene and Naphthalene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-230
Figure A-231. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-231
Figure A-232. Box Plots of Benzo(a)pyrene and Benzo(b)fluoranthene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-232
Figure A-233. Box Plots of Benzo(g,h,i)pyrene and Benzo(k)fluoranthene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-233
Figure A-234. Box Plots of Chrysene and Dibenzo(a,h)anthracene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-234
Figure A-235. Box Plots of Fluoranthene and Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-235
Figure A-236. Box Plots of Pyrene and Tributyltin Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-236
Figure A-237. Box Plots of 2, 4′-DDD and 2, 4′-DDE Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-237
Figure A-238. Box Plots of 2,4′-DDT and 4,4′-DDD Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-238

Figure A-239. Box Plots of 4,4'-DDE and 4,4'-DDT Concentrations in IR Site 24 and Reference Surface Sediments by Year A-239
Figure A-240. Box Plots of Aldrin and *alpha*-BHC Concentrations in IR Site 24 and Reference Surface Sediments by Year A-240
Figure A-241. Box Plots of *alpha*-Chlordane and Dieldrin Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-241
Figure A-242. Box Plots of Endosulfan I and Endosulfan II Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-242
Figure A-243. Box Plots of Endosulfan Sulfate and Endrin Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-243
Figure A-244. Box Plots of Endrin Aldehyde and *gamma*-BHC Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-244
Figure A-245. Box Plots of *gamma*-Chlordane and Heptachlor Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-245
Figure A-246. Box Plots of Heptachlor Epoxide Concentrations in IR Site 24 and Reference Surface Sediments by Year A-246
Figure A-247. Box Plots of Radium-226 and Radium-228 Concentrations in IR Site 24 and Reference Surface Sediments by Year. A-247
Figure A-248. Box Plots of Total Organic Carbon and Fine Grains Concentrations in IR Site 24 and Reference Surface Sediments by Year A-248
Figure A-249. Box Plots of Total PCB Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-249
Figure A-250. Box Plots of Total 4,4-DDx Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-250
Figure A-251. Box Plots of Total LPAH (sum of 6 analytes) Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-251
Figure A-252. Box Plots of Total HPAH (sum of 6 analytes) Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-252
Figure A-253. Box Plots of Total PAH (sum of 12 analytes) Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum). A-253
Figure A-254. Box Plots of Antimony and Arsenic Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-254
Figure A-255. Box Plots of Cadmium and Chromium Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-255
Figure A-256. Box Plots of Copper and Lead Concentrations in 2005-2006 Core Samples by Depth. A-256
Figure A-257. Box Plots of Mercury and Nickel Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-257
Figure A-258. Box Plots of Selenium and Silver Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-258
Figure A-259. Box Plots of Zinc Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-259
Figure A-260. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-260
Figure A-261. Box Plots of Acenaphthylene and Anthracene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-261
Figure A-262. Box Plots of Fluorene and Naphthalene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-262
Figure A-263. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth. A-263

Figure A-290. Bubble Plot of Arsenic Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-290
Figure A-291. Bubble Plot of Arsenic Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-291
Figure A-292. Bubble Plot of Cadmium Concentrations in IR Site 24 Surface Sediment by Year. A-292
Figure A-293. Bubble Plot of Cadmium Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-293
Figure A-294. Bubble Plot of Cadmium Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-294
Figure A-295. Bubble Plot of Chromium Concentrations in IR Site 24 Surface Sediment by Year. A-295
Figure A-296. Bubble Plot of Chromium Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-296
Figure A-297. Bubble Plot of Chromium Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-297
Figure A-298. Bubble Plot of Copper Concentrations in IR Site 24 Surface Sediment by Year. A-298
Figure A-299. Bubble Plot of Copper Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-299
Figure A-300. Bubble Plot of Copper Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-300
Figure A-301. Bubble Plot of Lead Concentrations in IR Site 24 Surface Sediment by Year. A-301
Figure A-302. Bubble Plot of Lead Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-302
Figure A-303. Bubble Plot of Lead Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-303
Figure A-304. Bubble Plot of Mercury Concentrations in IR Site 24 Surface Sediment by Year. A-304
Figure A-305. Bubble Plot of Mercury Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-305
Figure A-306. Bubble Plot of Mercury Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-306
Figure A-307. Bubble Plot of Nickel Concentrations in IR Site 24 Surface Sediment by Year. A-307
Figure A-308. Bubble Plot of Nickel Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-308
Figure A-309. Bubble Plot of Nickel Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-309
Figure A-310. Bubble Plot of Selenium Concentrations in IR Site 24 Surface Sediment by Year. A-310
Figure A-311. Bubble Plot of Selenium Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-311
Figure A-312. Bubble Plot of Selenium Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-312
Figure A-313. Bubble Plot of Silver Concentrations in IR Site 24 Surface Sediment by Year. A-313
Figure A-314. Bubble Plot of Silver Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-314
Figure A-315. Bubble Plot of Silver Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-315
Figure A-316. Bubble Plot of Zinc Concentrations in IR Site 24 Surface Sediment by Year. A-316
Figure A-317. Bubble Plot of Zinc Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-317
Figure A-318. Bubble Plot of Zinc Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-318
Figure A-319. Bubble Plot of Aldrin Concentrations in IR Site 24 Surface Sediment by Year. A-319

Figure A-320. Bubble Plot of Aldrin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-320
Figure A-321. Bubble Plot of Aldrin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-321
Figure A-322. Bubble Plot of Alpha-BHC Concentrations in IR Site 24 Surface Sediment by Year. A-322
Figure A-323. Bubble Plot of Alpha-BHC Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-323
Figure 324. Bubble Plot of Alpha-BHC Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-324
Figure A-325. Bubble Plot of Alpha-Chlordane Concentrations in IR Site 24 Surface Sediment by Year. A-325
Figure A-326. Bubble Plot of Alpha-Chlordane Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-326
Figure A-327. Bubble Plot of Alpha-Chlordane Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-327
Figure A-328. Bubble Plot of Dieldrin Concentrations in IR Site 24 Surface Sediment by Year. A-328
Figure A-329. Bubble Plot of Dieldrin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-329
Figure A-330. Bubble Plot of Dieldrin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-330
Figure A-331. Bubble Plot of Endosulfan I Concentrations in IR Site 24 Surface Sediment by Year. A-331
Figure A-332. Bubble Plot of Endosulfan I Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-332
Figure A-333. Bubble Plot of Endosulfan I Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-333
Figure A-334. Bubble Plot of Endosulfan II Concentrations in IR Site 24 Surface Sediment by Year. A-334
Figure A-335. Bubble Plot of Endosulfan II Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-335
Figure A-336. Bubble Plot of Endosulfan II Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-336
Figure A-337. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 24 Surface Sediment by Year. A-337
Figure A-338. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-338
Figure A-339. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-339
Figure A-340. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 24 Surface Sediment by Year. A-340
Figure A-341. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-341
Figure A-342. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-342
Figure A-343. Bubble Plot of Endrin Concentrations in IR Site 24 Surface Sediment by Year. A-343
Figure A-344. Bubble Plot of Endrin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-344
Figure A-345. Bubble Plot of Endrin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-345

Figure A-346. Bubble Plot of Gamma-BHC Concentrations in IR Site 24 Surface Sediment by Year. A-346
Figure A-347. Bubble Plot of Gamma-BHC Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-347
Figure A-348. Bubble Plot of Gamma-BHC Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-348
Figure A-349. Bubble Plot of Gamma-Chlordane Concentrations in IR Site 24 Surface Sediment by Year. A-349
Figure A-350. Bubble Plot of Gamma-Chlordane Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-350
Figure A-351. Bubble Plot of Gamma-Chlordane Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-351
Figure A-352. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 24 Surface Sediment by Year. A-352
Figure A-353. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-353
Figure A-354. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-354
Figure A-355. Bubble Plot of Heptachlor Concentrations in IR Site 24 Surface Sediment by Year. .. A-355
Figure A-356. Bubble Plot of Heptachlor Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-356
Figure A-357. Bubble Plot of Heptachlor Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-357
Figure A-358. Bubble Plot of 2,4'-DDD Concentrations in IR Site 24 Surface Sediment by Year..... A-358
Figure A-359. Bubble Plot of 2,4'-DDD Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-359
Figure A-360. Bubble Plot of 2,4'-DDD Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-360
Figure A-361. Bubble Plot of 2,4'-DDE Concentrations in IR Site 24 Surface Sediment by Year. A-361
Figure A-362. Bubble Plot of 2,4'-DDE Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-362
Figure A-363. Bubble Plot of 2,4'-DDE Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-363
Figure A-364. Bubble Plot of 2,4'-DDT Concentrations in IR Site 24 Surface Sediment by Year. A-364
Figure A-365. Bubble Plot of 2,4'-DDT Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-365
Figure A-366. Bubble Plot of 2,4'-DDT Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-366
Figure A-367. Bubble Plot of 4,4'-DDD Concentrations in IR Site 24 Surface Sediment by Year..... A-367
Figure A-368. Bubble Plot of 4,4'-DDD Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-368
Figure A-369. Bubble Plot of 4,4'-DDD Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-369
Figure A-370. Bubble Plot of 4,4'-DDE Concentrations in IR Site 24 Surface Sediment by Year. A-370
Figure A-371. Bubble Plot of 4,4'-DDE Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-371
Figure A-372. Bubble Plot of 4,4'-DDE Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-372
Figure A-373. Bubble Plot of 4,4'-DDT Concentrations in IR Site 24 Surface Sediment by Year. A-373
Figure A-374. Bubble Plot of 4,4'-DDT Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-374

Figure A-375. Bubble Plot of 4,4'-DDT Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-375
Figure A-376. Bubble Plot of Fine Grains Concentrations in IR Site 24 Surface Sediment by Year. A-376
Figure A-377. Bubble Plot of Fine Grains Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-377
Figure A-378. Bubble Plot of Fine Grains Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-378
Figure A-379. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 24 Surface Sediment by Year. A-379
Figure A-380. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-380
Figure A-381. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-381
Figure A-382. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 24 Surface Sediment by Year. A-382
Figure A-383. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-383
Figure A-384. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-384
Figure A-385. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 24 Surface Sediment by Year. A-385
Figure A-386. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-386
Figure A-387. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-387
Figure A-388. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 24 Surface Sediment by Year. A-388
Figure 389. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-389
Figure A-390. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-390
Figure A-391. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 24 Surface Sediment by Year. A-391
Figure A-392. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-392
Figure A-393. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-393
Figure A-394. Bubble Plot of Chrysene Concentrations in IR Site 24 Surface Sediment by Year. A-394
Figure A-395. Bubble Plot of Chrysene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-395
Figure A-396. Bubble Plot of Chrysene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-396
Figure A-397. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 24 Surface Sediment by Year. A-397
Figure A-398. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-398
Figure A-399. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-399
Figure A-400. Bubble Plot of Fluoranthene Concentrations in IR Site 24 Surface Sediment by Year. A-400

Figure A-401. Bubble Plot of Fluoranthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-401
Figure A-402. Bubble Plot of Fluoranthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-402
Figure A-403. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 Surface Sediment by Year. A-403
Figure A-404. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-404
Figure A-405. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-405
Figure A-406. Bubble Plot of Pyrene Concentrations in IR Site 24 Surface Sediment by Year. A-406
Figure A-407. Bubble Plot of Pyrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-407
Figure A-408. Bubble Plot of Pyrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-408
Figure A-409. Bubble Plot of Acenaphthene Concentrations in IR Site 24 Surface Sediment by Year. A-409
Figure A-410. Bubble Plot of Acenaphthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-410
Figure A-411. Bubble Plot of Acenaphthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-411
Figure A-412. Bubble Plot of Acenaphthylene Concentrations in IR Site 24 Surface Sediment by Year. A-412
Figure A-413. Bubble Plot of Acenaphthylene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-413
Figure A-414. Bubble Plot of Acenaphthylene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-414
Figure A-415. Bubble Plot of Anthracene Concentrations in IR Site 24 Surface Sediment by Year. A-415
Figure A-416. Bubble Plot of Anthracene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-416
Figure A-417. Bubble Plot of Anthracene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-417
Figure A-418. Bubble Plot of Fluorene Concentrations in IR Site 24 Surface Sediment by Year. A-418
Figure A-419. Bubble Plot of Fluorene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-419
Figure A-420. Bubble Plot of Fluorene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-420
Figure A-421. Bubble Plot of Naphthalene Concentrations in IR Site 24 Surface Sediment by Year. A-421
Figure A-422. Bubble Plot of Naphthalene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-422
Figure A-423. Bubble Plot of Naphthalene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-423
Figure A-424. Bubble Plot of Phenanthrene Concentrations in IR Site 24 Surface Sediment by Year. A-424
Figure A-425. Bubble Plot of Phenanthrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-425
Figure A-426. Bubble Plot of Phenanthrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-426
Figure A-427. Bubble Plot of Radium-226 Concentrations in IR Site 24 Surface Sediment by Year. A-427

Figure A-428. Bubble Plot of Radium-226 Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-428
Figure A-429. Bubble Plot of Radium-226 Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-429
Figure A-430. Bubble Plot of Radium-228 Concentrations in IR Site 24 Surface Sediment by Year. A-430
Figure A-431. Bubble Plot of Radium-228 Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-431
Figure A-432. Bubble Plot of Radium-228 Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-432
Figure A-433. Bubble Plot of Tributyl Tin Concentrations in IR Site 24 Surface Sediment by Year. A-433
Figure A-434. Bubble Plot of Tributyl Tin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-434
Figure A-435. Bubble Plot of Tributyl Tin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-435
Figure A-436. Bubble Plot of Total Organic Carbon Concentrations in IR Site 24 Surface Sediment by Year. A-436
Figure A-437. Bubble Plot of Total Organic Carbon Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-437
Figure A-438. Bubble Plot of Total Organic Carbon Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-438
Figure A-439. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 24 Surface Sediment by Year. A-439
Figure A-440. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-440
Figure A-441. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-441
Figure A-442. Bubble Plot of Total HPAH (6) Concentrations in IR Site 24 Surface Sediment by Year. A-442
Figure A-443. Bubble Plot of Total HPAH (6) Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-443
Figure A-444. Bubble Plot of Total HPAH (6) Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-444
Figure A-445. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment by Year. A-445
Figure A-446. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-446
Figure A-447. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-447
Figure A-448. Bubble Plot of Total PCB Concentrations in IR Site 24 Surface Sediment by Year. A-448
Figure A-449. Bubble Plot of Total PCB Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth. A-449
Figure A-450. Bubble Plot of Total PCB Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth. A-450

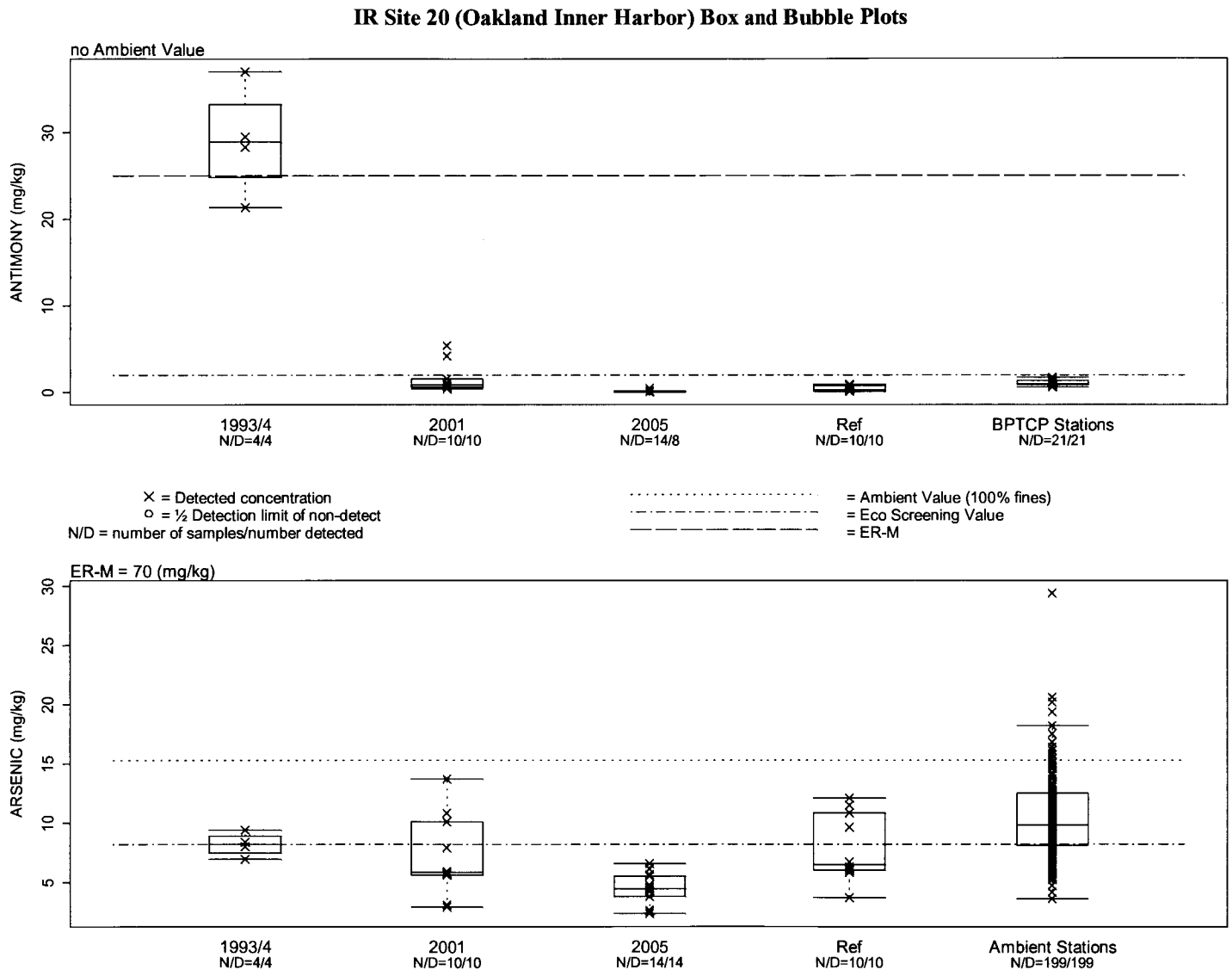

Figure A-1. Box Plots of Antimony and Arsenic Concentrations in IR Site 20 and Reference Surface Sediments by Year.

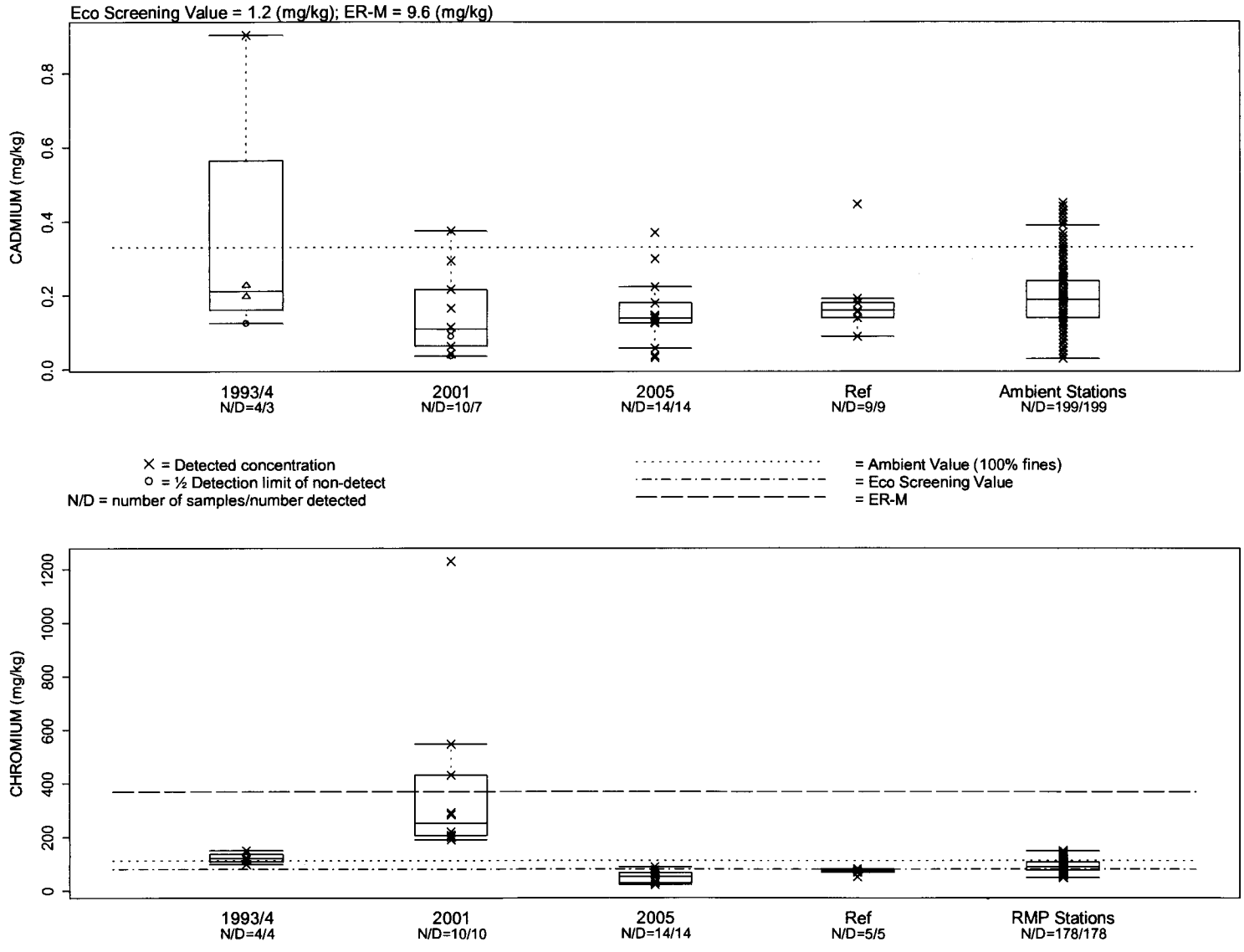

Figure A-2. Box Plots of Cadmium and Chromium Concentrations in IR Site 20 and Reference Surface Sediments by Year.

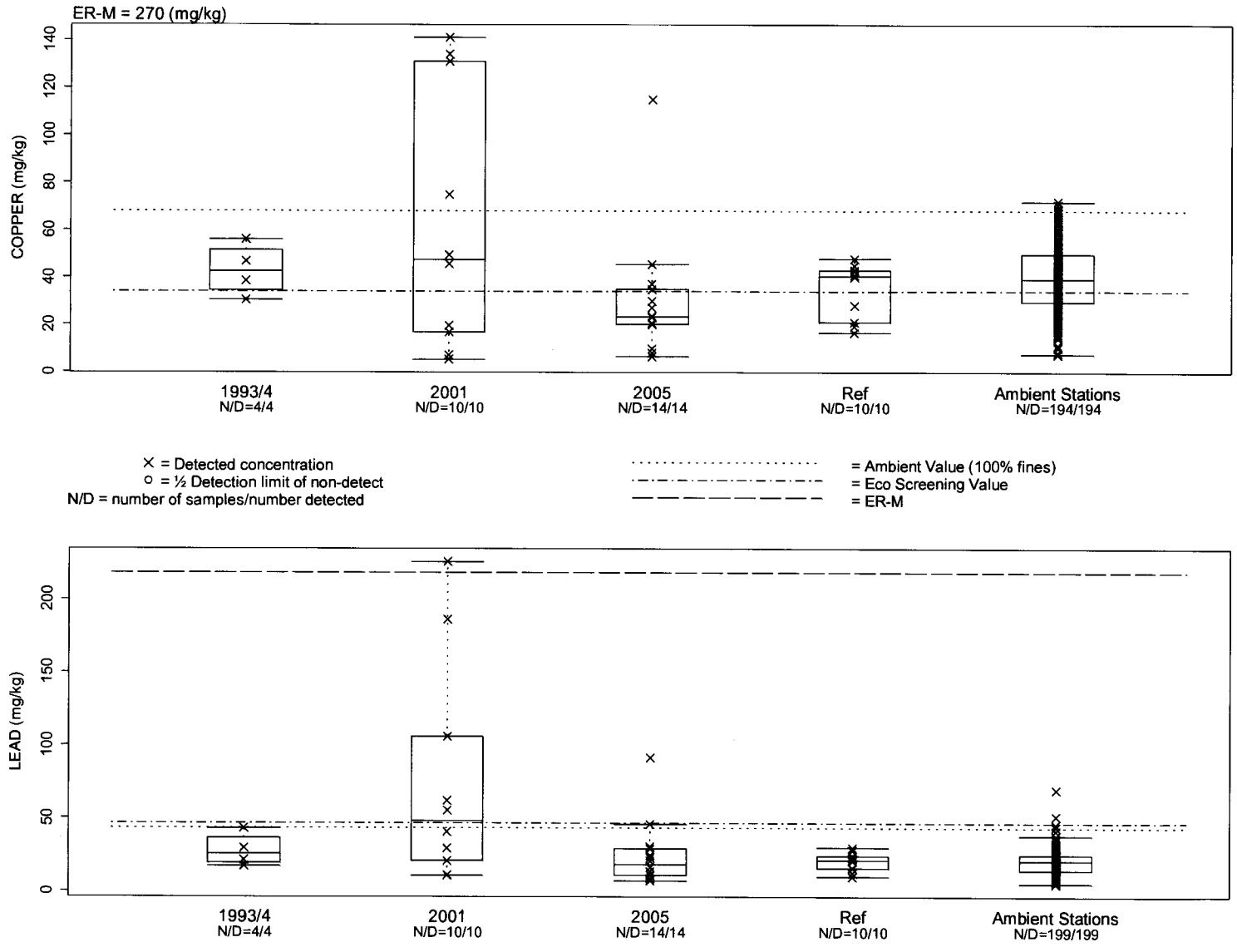

Figure A-3. Box Plots of Copper and Lead Concentrations in IR Site 20 and Reference Surface Sediments by Year.

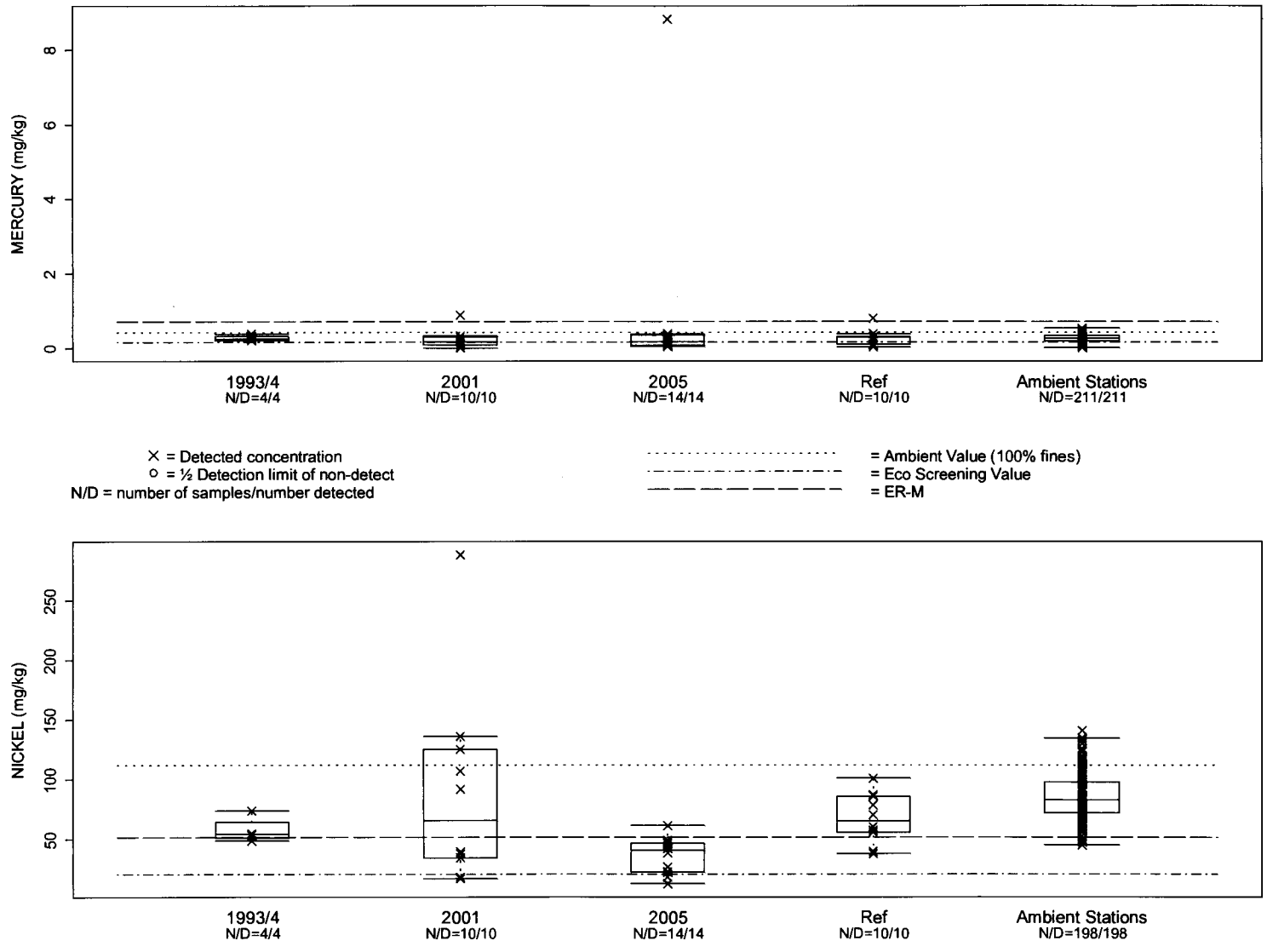

Figure A-4. Box Plots of Mercury and Nickel Concentrations in IR Site 20 and Reference Surface Sediments by Year.

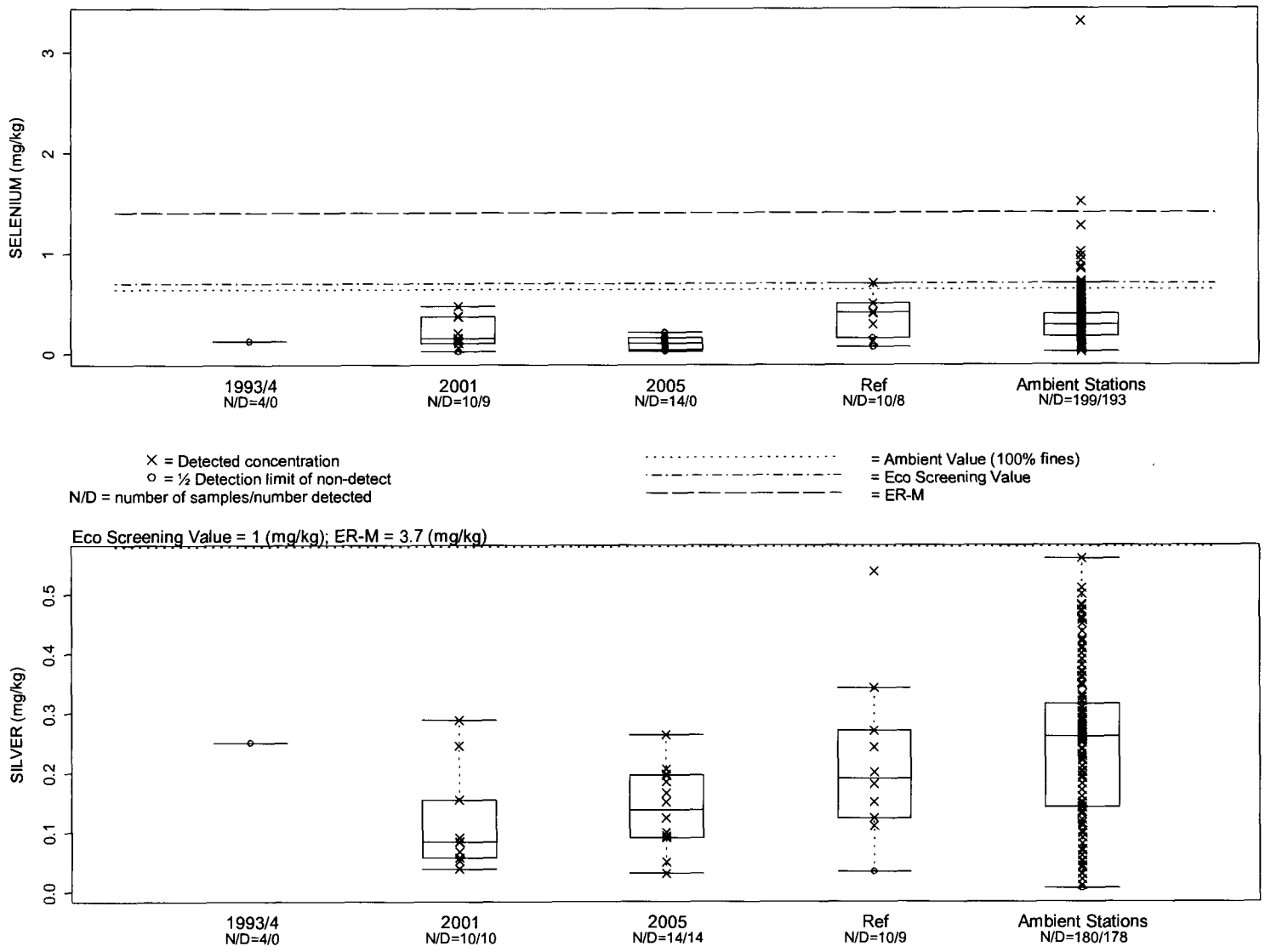

Figure A-5. Box Plots of Selenium and Silver Concentrations in IR Site 20 and Reference Surface Sediments by Year.

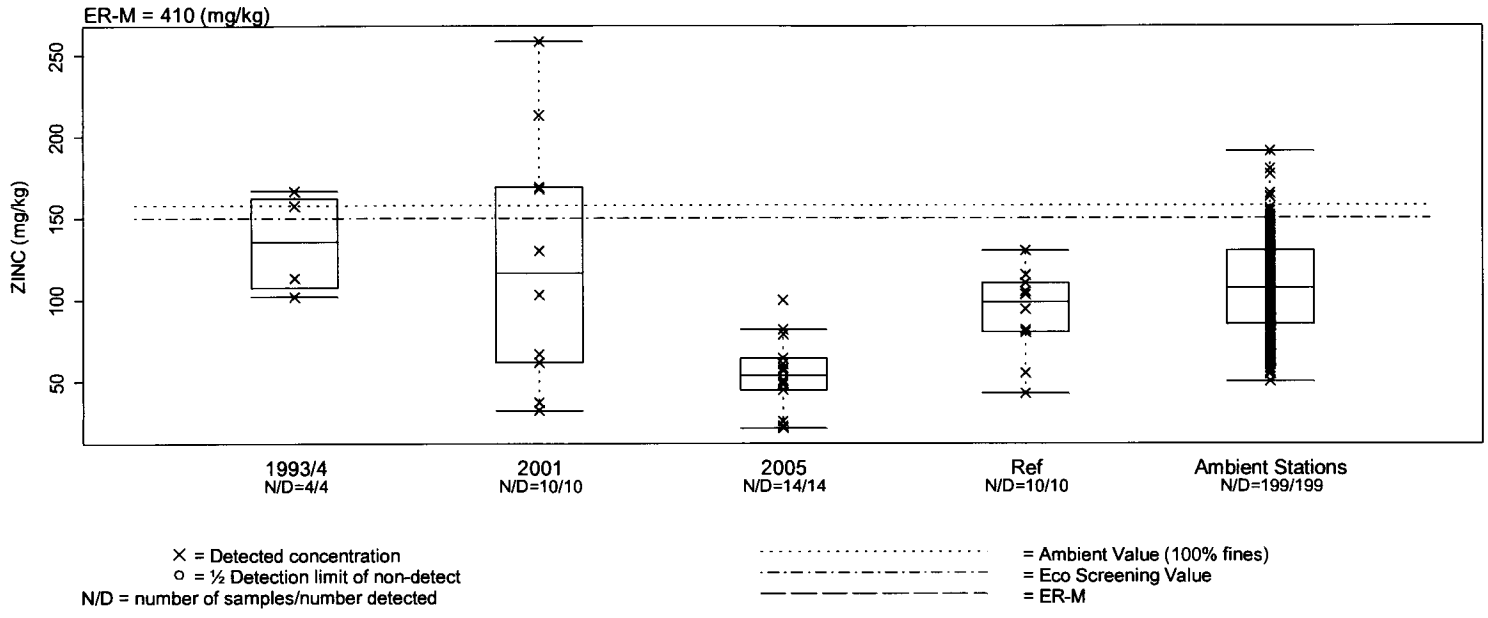

Figure A-6. Box Plots of Zinc Concentrations in IR Site 20 and Reference Surface Sediments by Year.

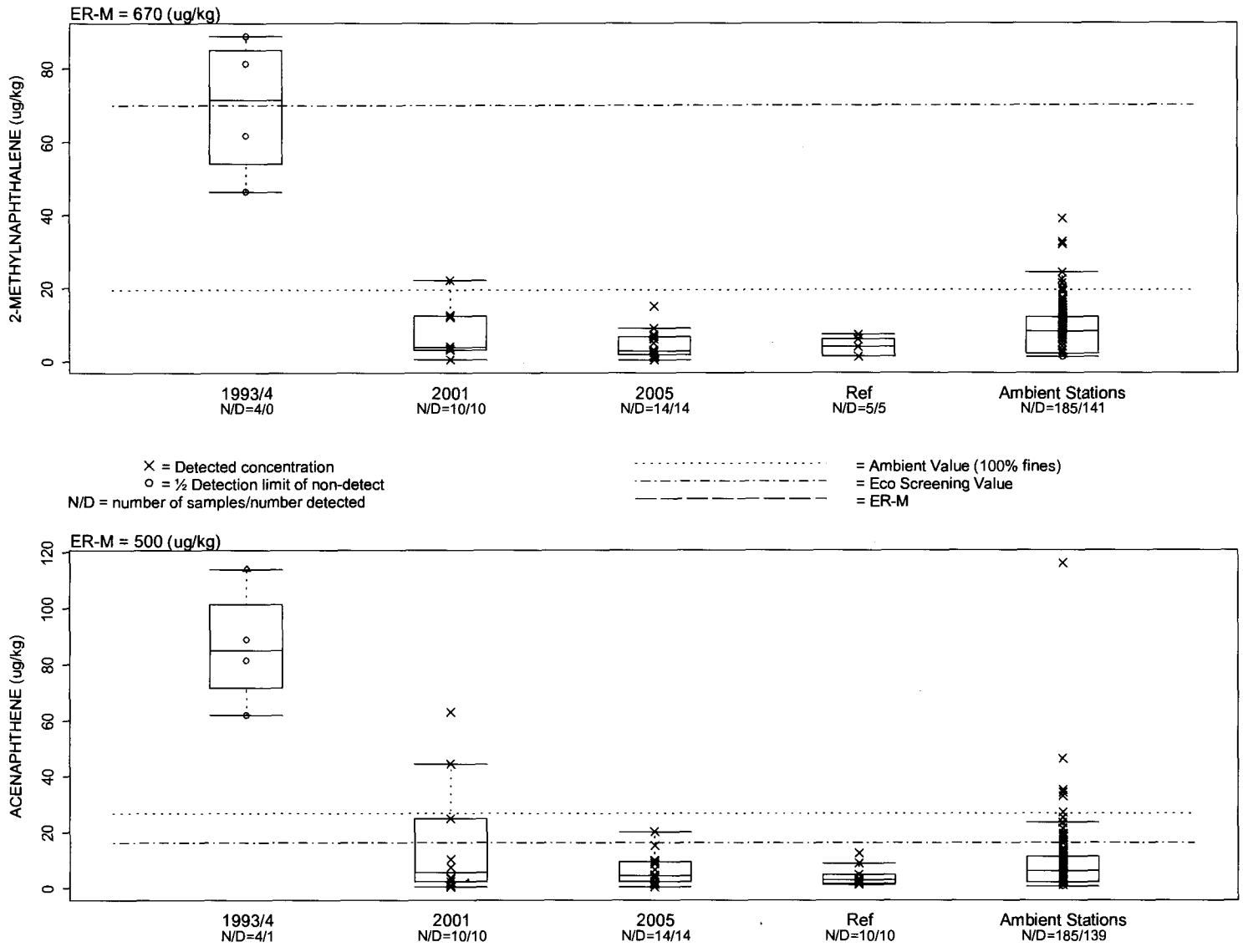

Figure A-7. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

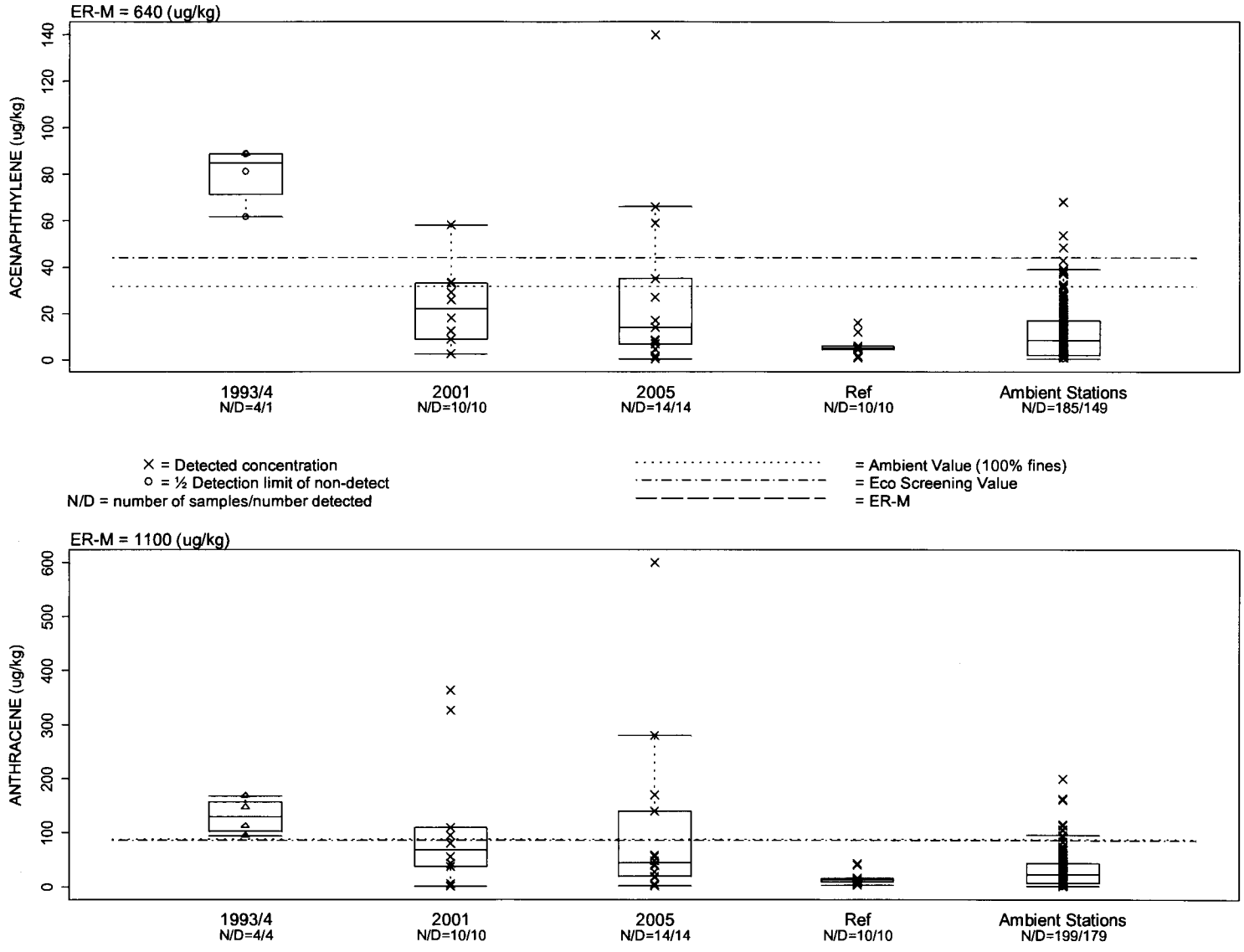

Figure A-8. Box Plots of Acenaphthylene and Anthracene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

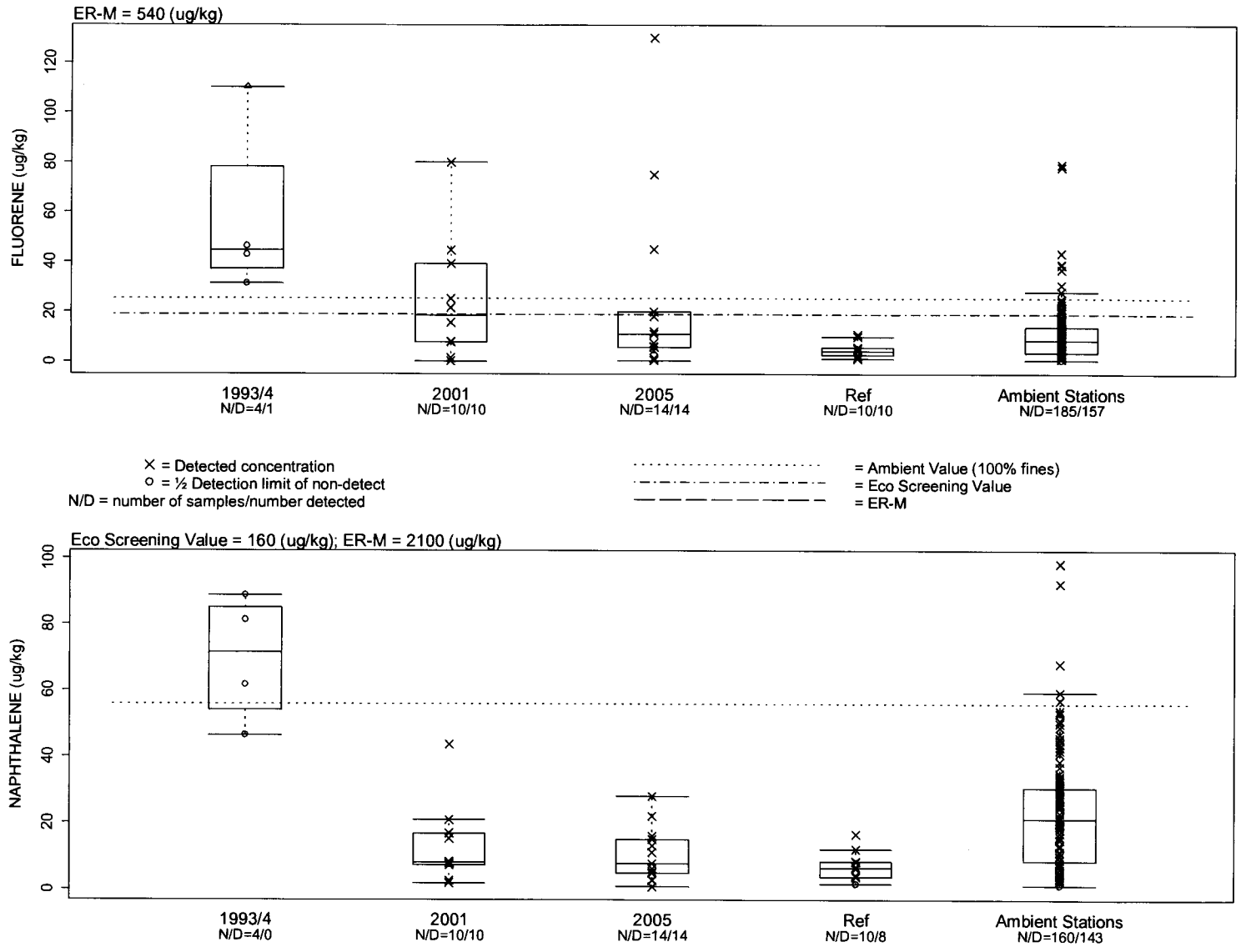

Figure A-9. Box Plots of Fluorene and Naphthalene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

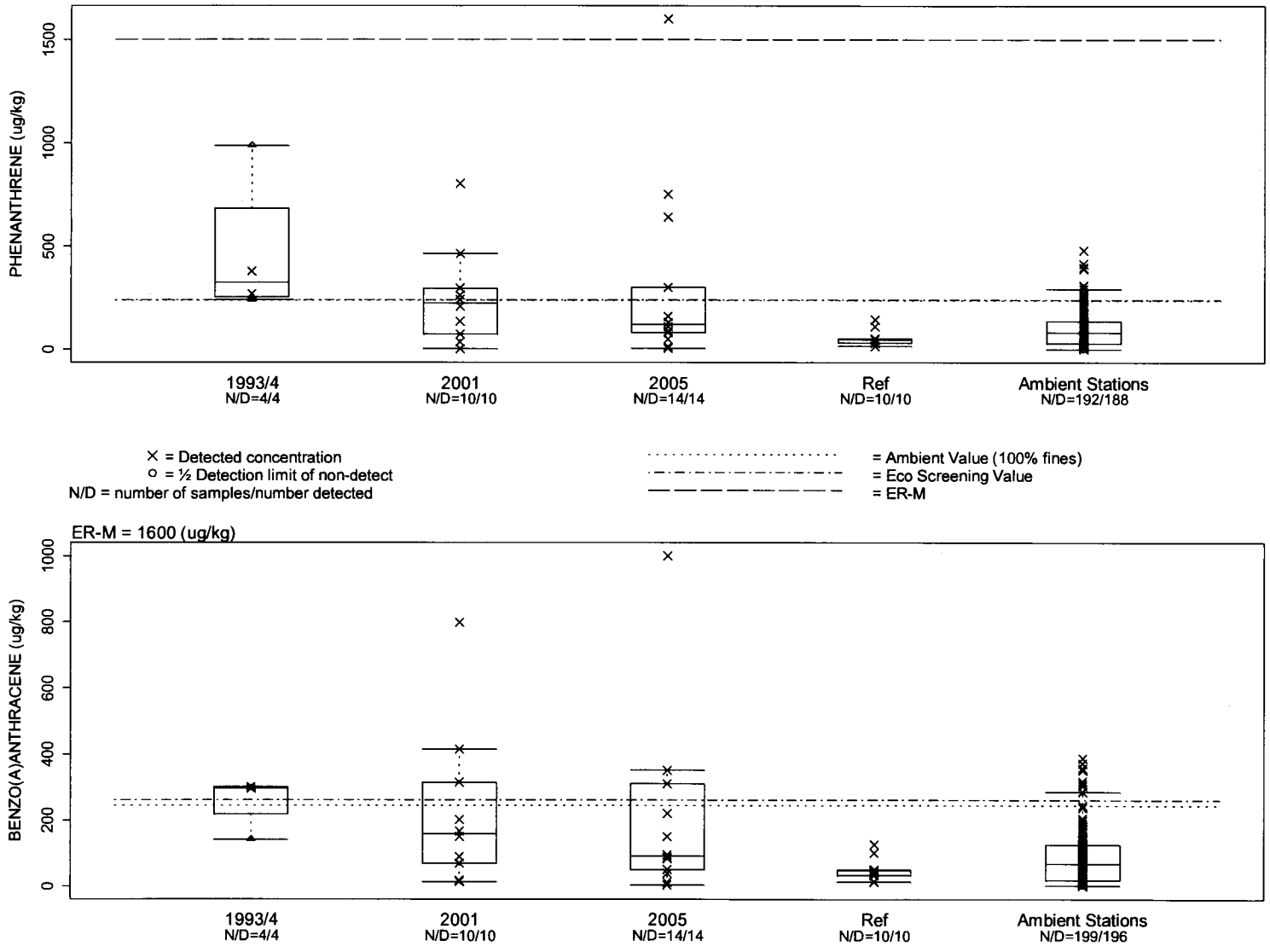

Figure A-10. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

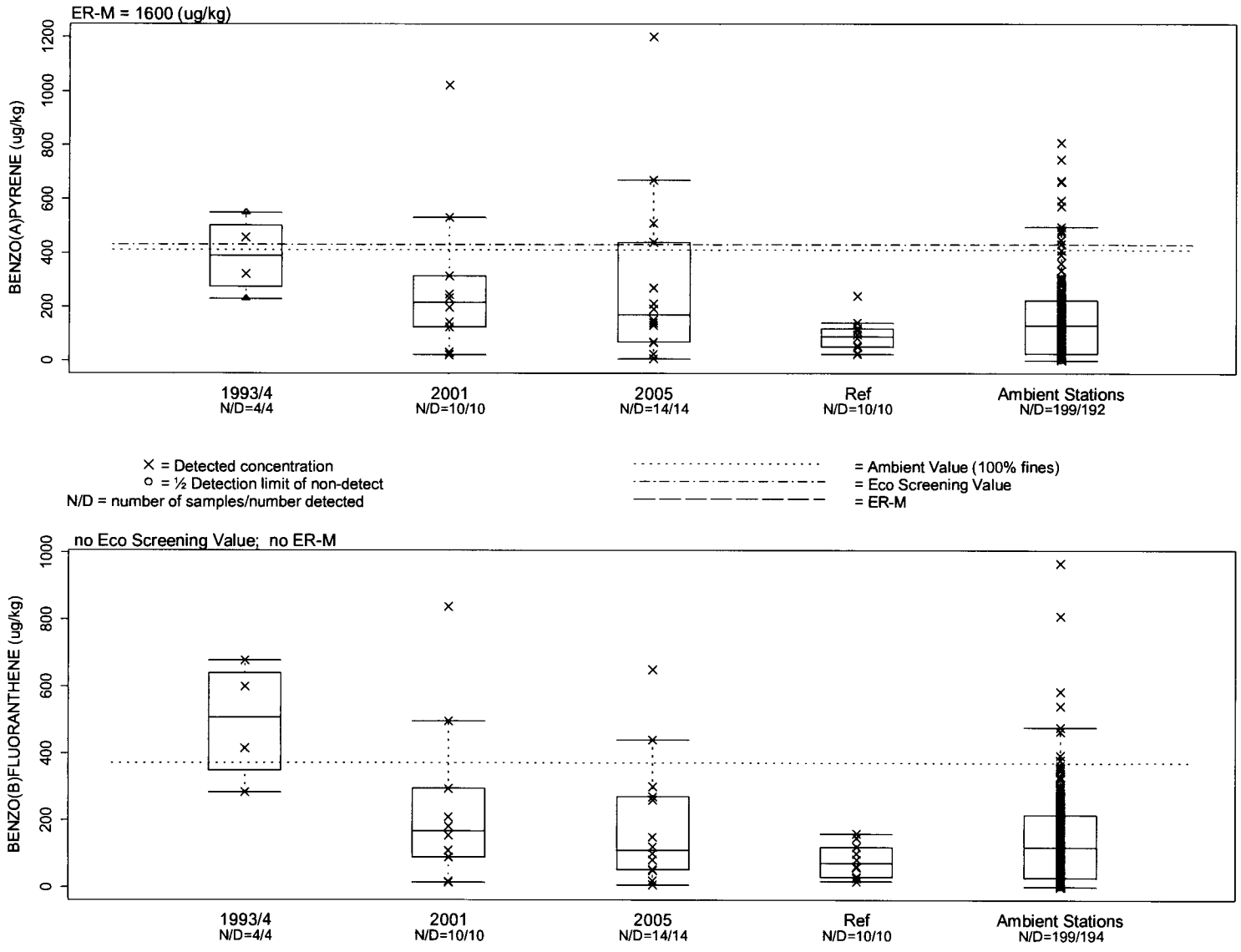

Figure A-11. Box Plots of Benzo(a)pyrene and Benzo(b)fluoranthene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

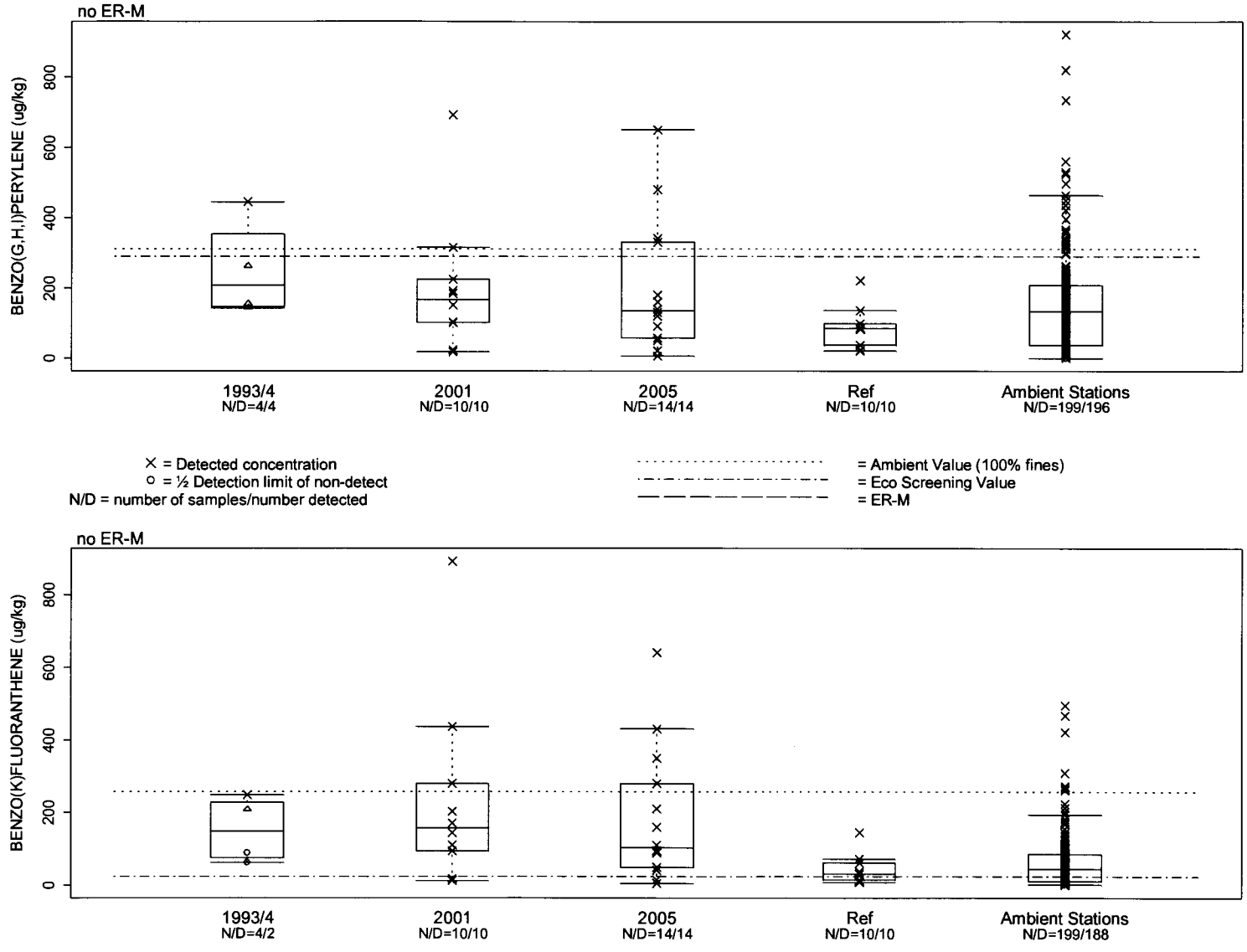

Figure A-12. Box Plots of Benzo(g,h,i)perylene and Benzo(k)fluoranthene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

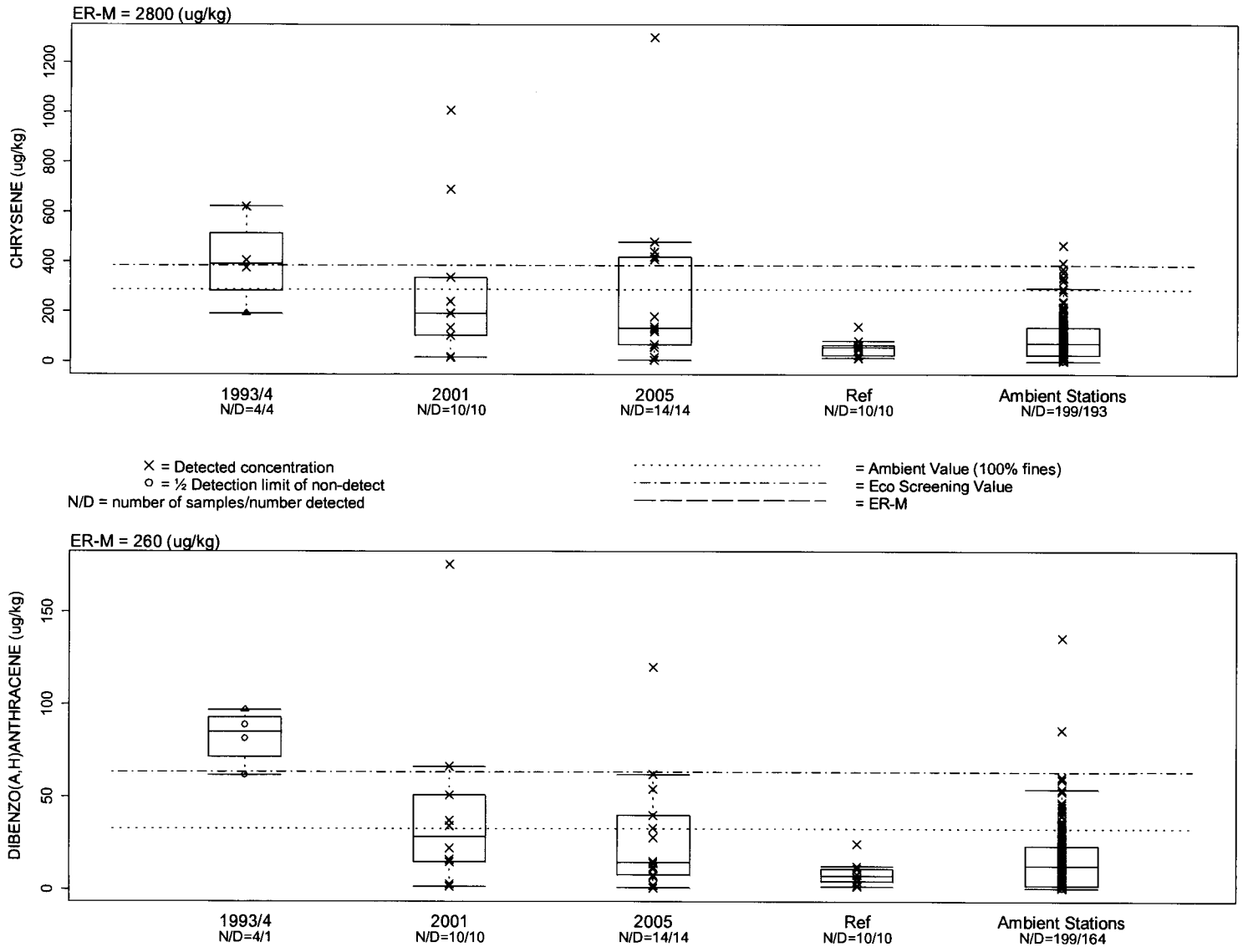

Figure A-13. Box Plots of Chrysene and Dibenzo(a,h)anthracene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

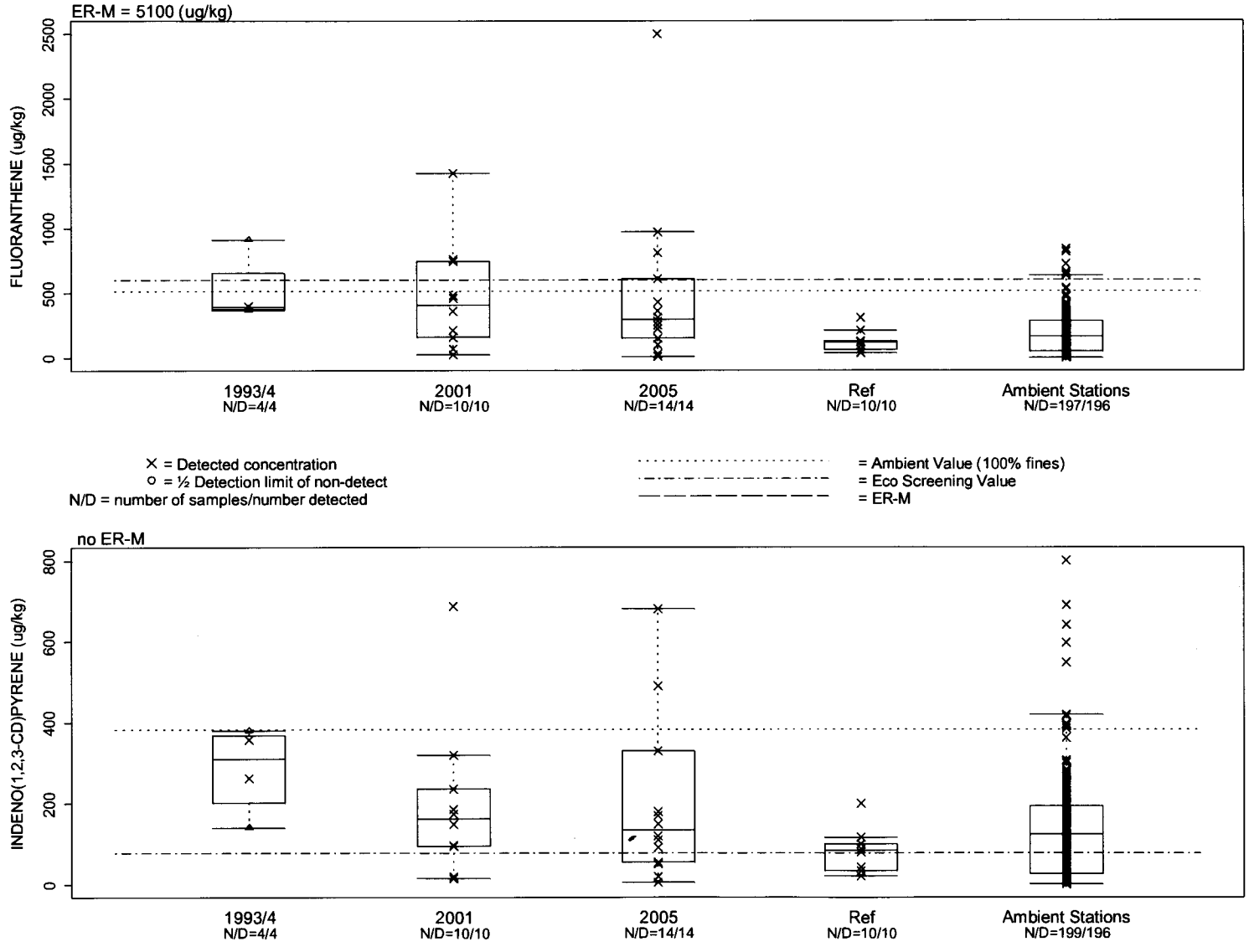

Figure A-14. Box Plots of Fluoranthene and Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 and Reference Surface Sediments by Year.

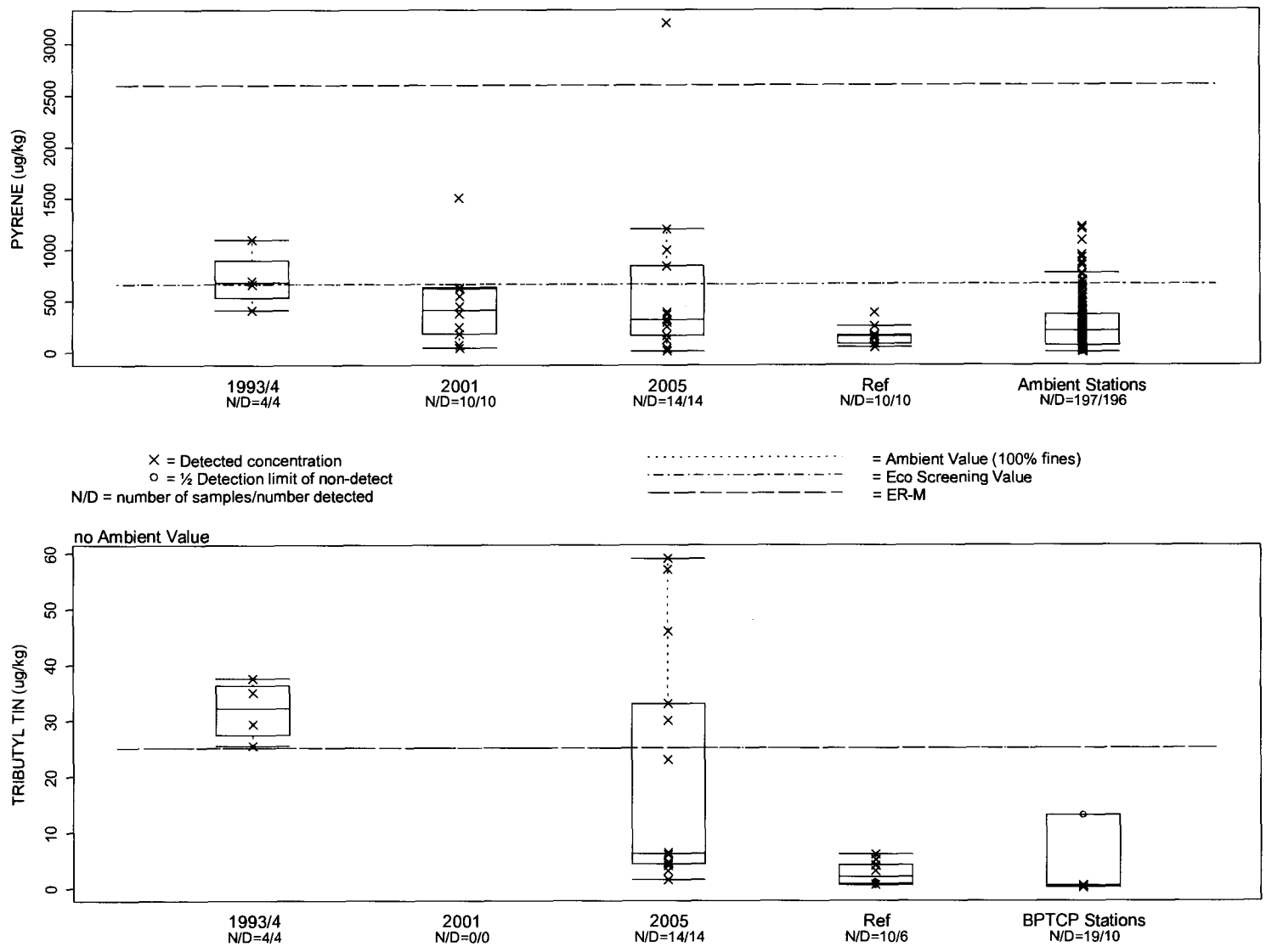

Figure A-15. Box Plots of Pyrene and Tributyltin Concentrations in IR Site 20 and Reference Surface Sediments by Year.

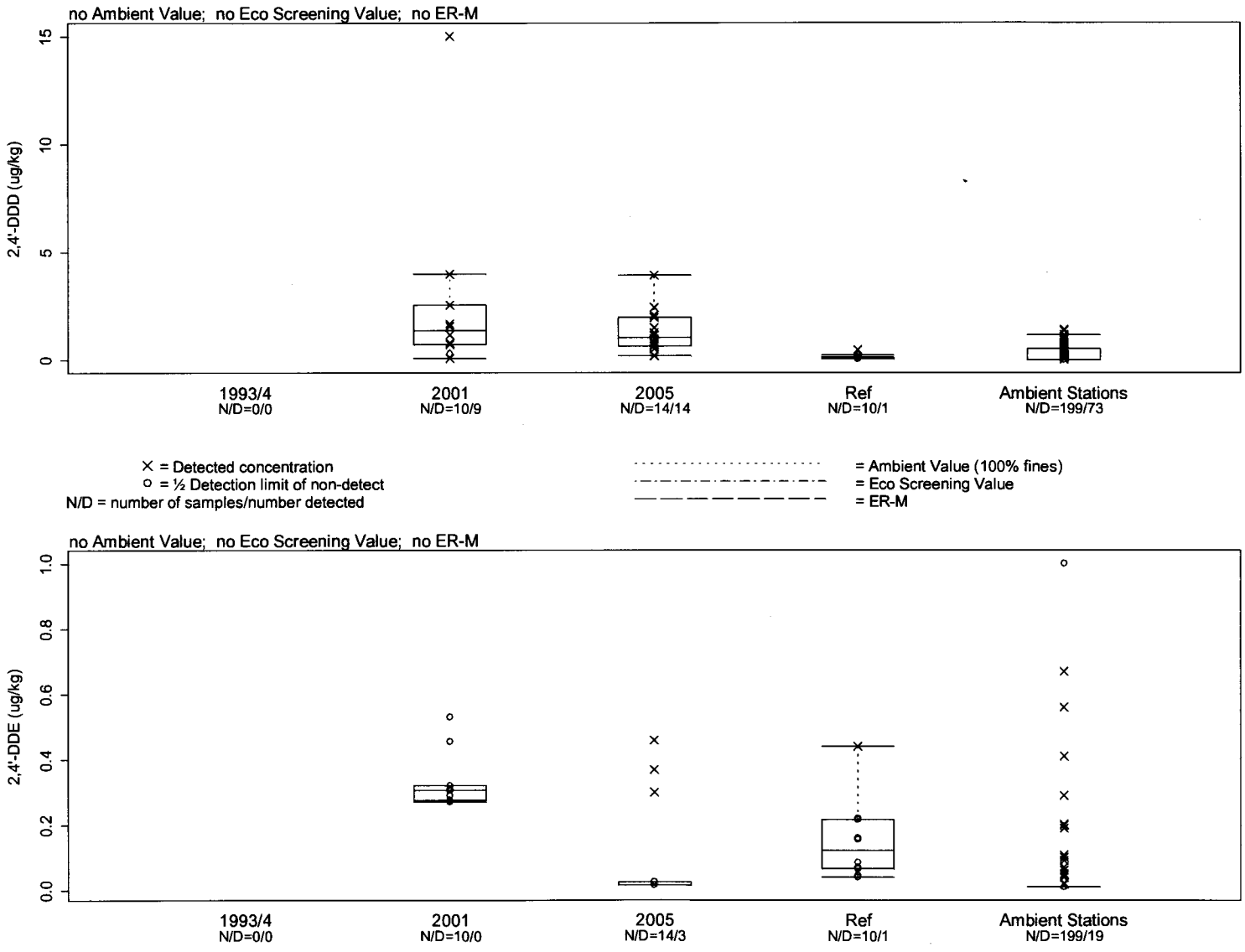

Figure A-16. Box Plots of 2,4-DDD and 2,4-DDE Concentrations in IR Site 20 and Reference Surface Sediments by Year.

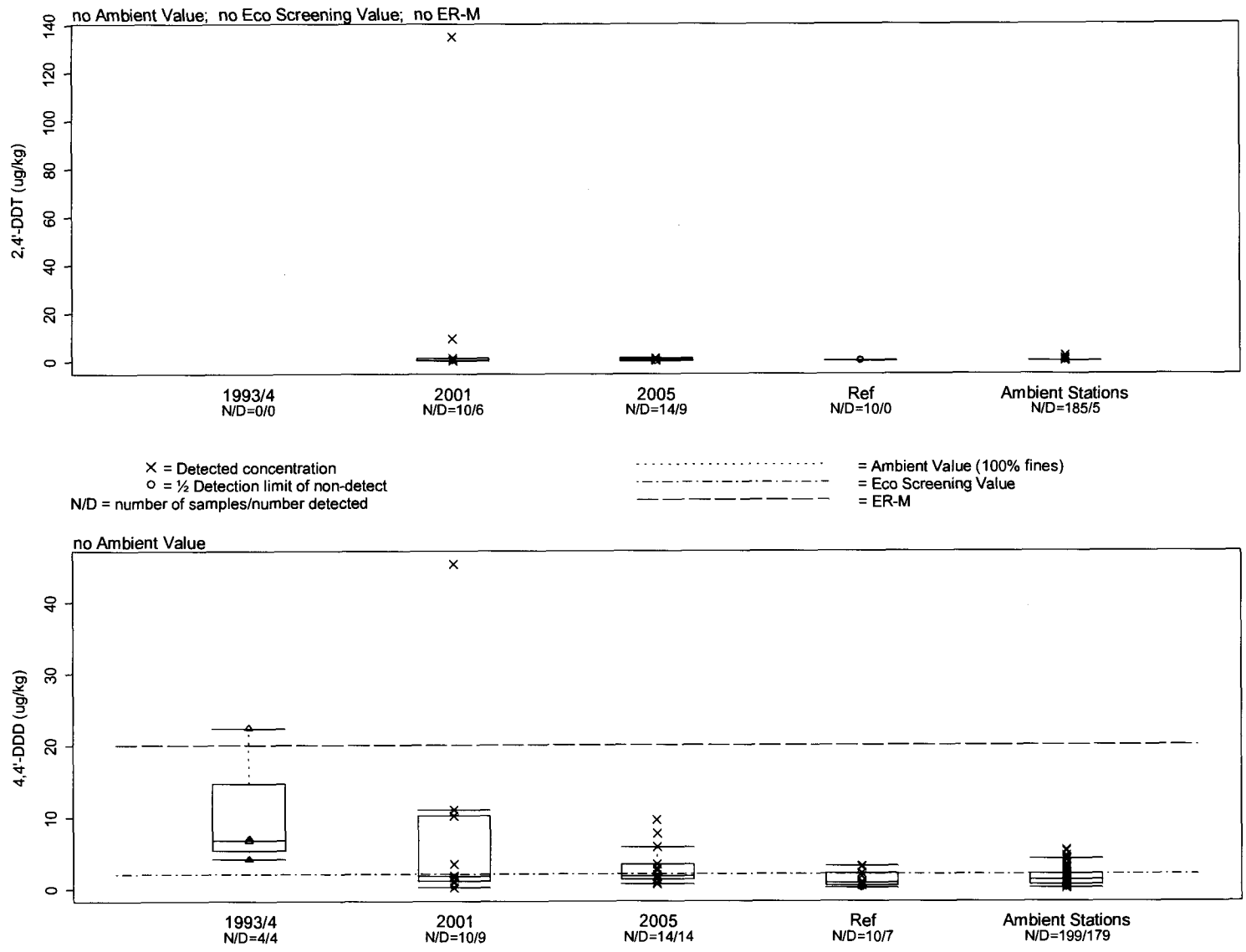

Figure A-17. Box Plots of 2,4-DDT and 4,4-DDD Concentrations in IR Site 20 and Reference Surface Sediments by Year.

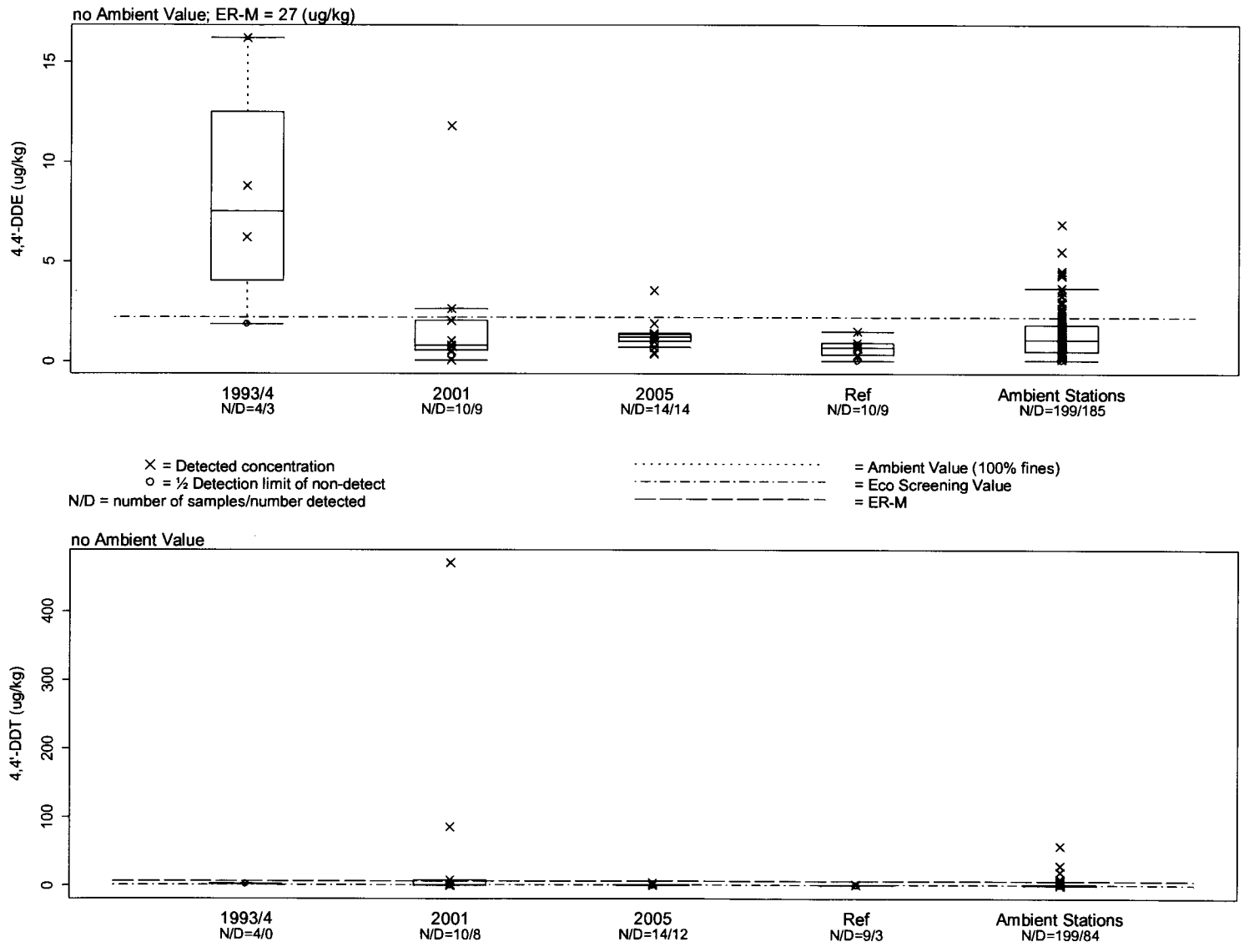

Figure A-18. Box Plots of 4,4′-DDE and 4,4′-DDT Concentrations in IR Site 20 and Reference Surface Sediments by Year.

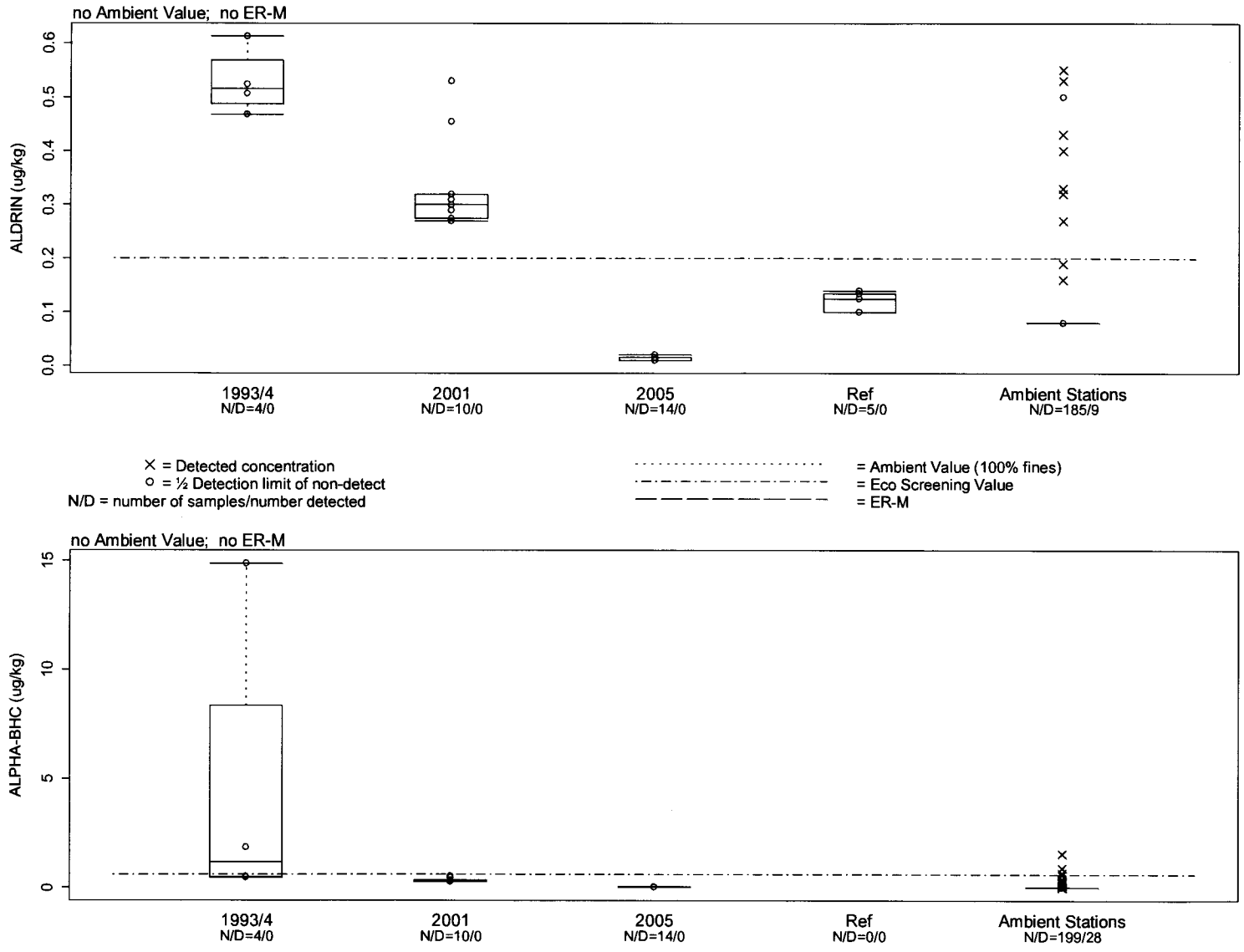

Figure A-19. Box Plots of Aldrin and *alpha*-BHC Concentrations in IR Site 20 and Reference Surface Sediments by Year.

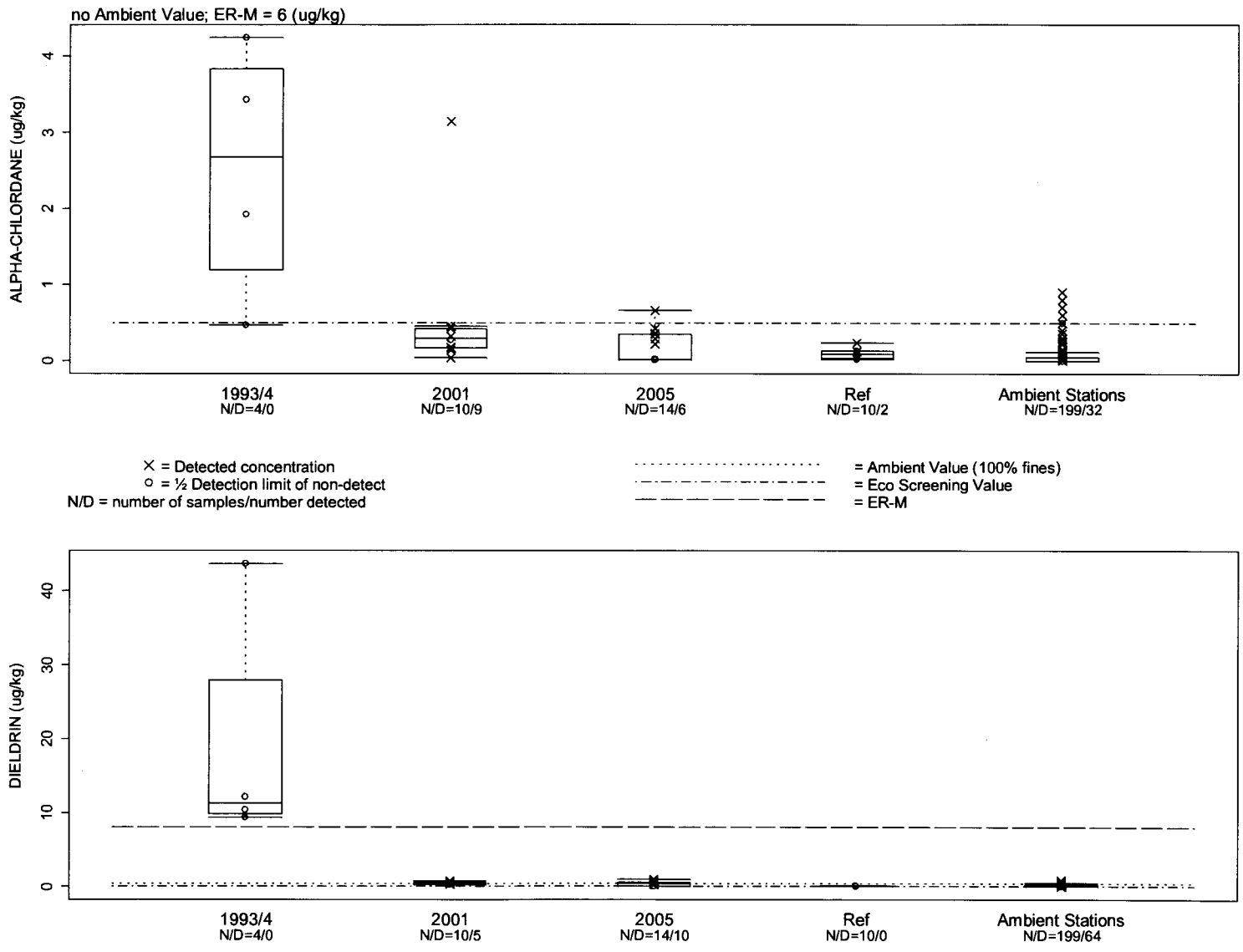

Figure A-20. Box Plots of *alpha*-Chlordane and Dieldrin Concentrations in IR Site 20 and Reference Surface Sediments by Year.

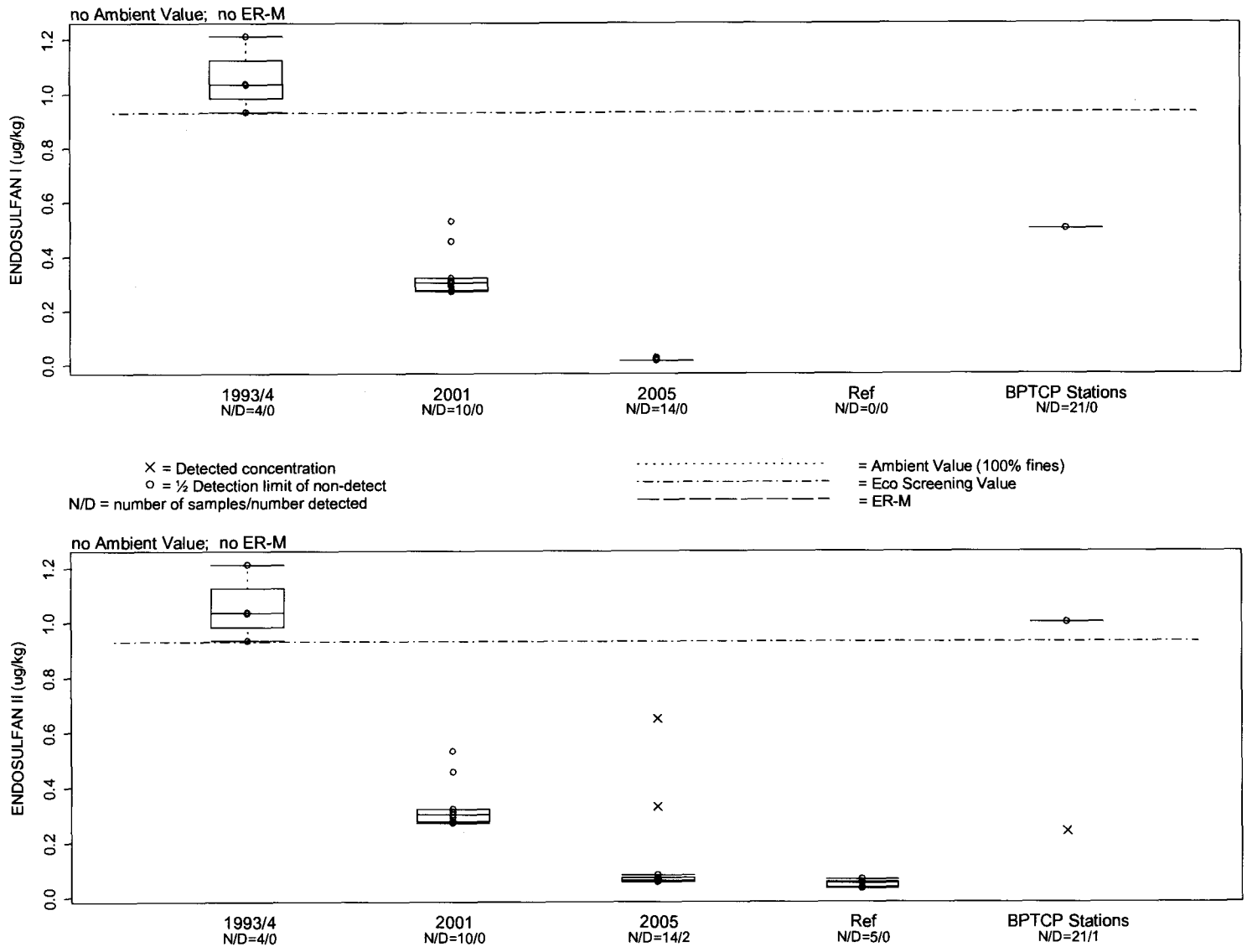

Figure A-21. Box Plots of Endosulfan I and Endosulfan II Concentrations in IR Site 20 and Reference Surface Sediments by Year.

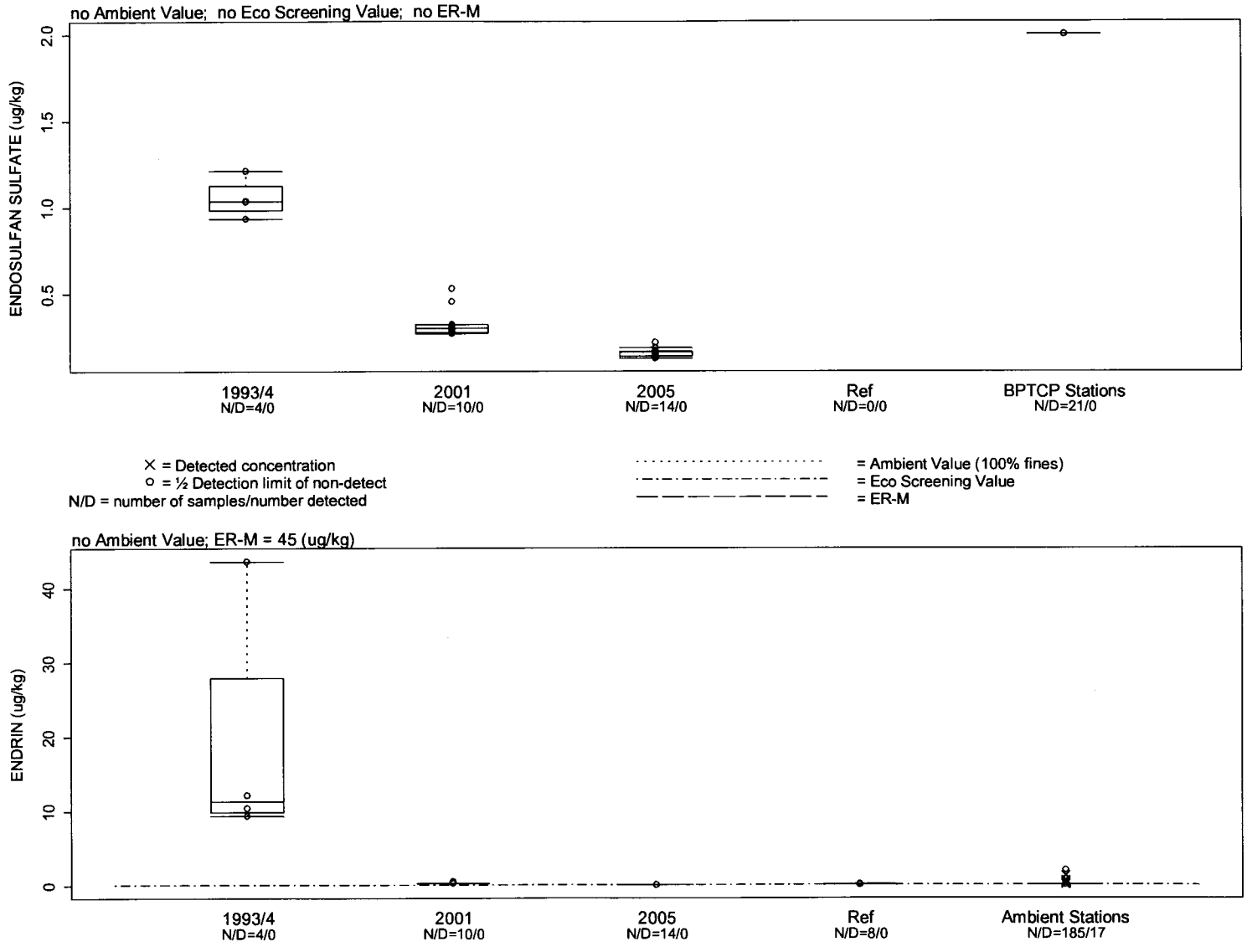

Figure A-22. Box Plots of Endosulfan Sulfate and Endrin Concentrations in IR Site 20 and Reference Surface Sediments by Year.

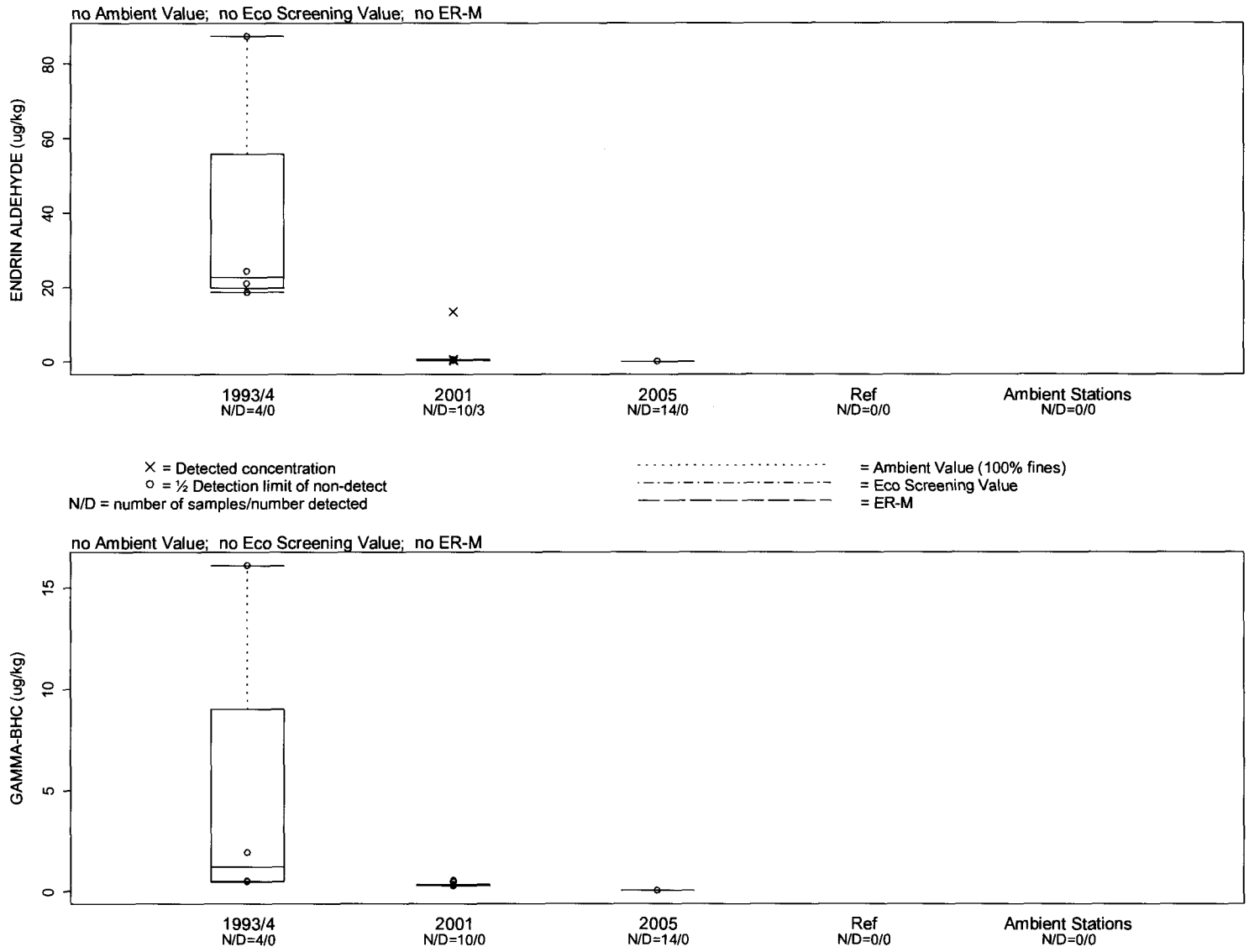

Figure A-23. Box Plots of Endrin Aldehyde and *gamma*-BHC Concentrations in IR Site 20 and Reference Surface Sediments by Year.

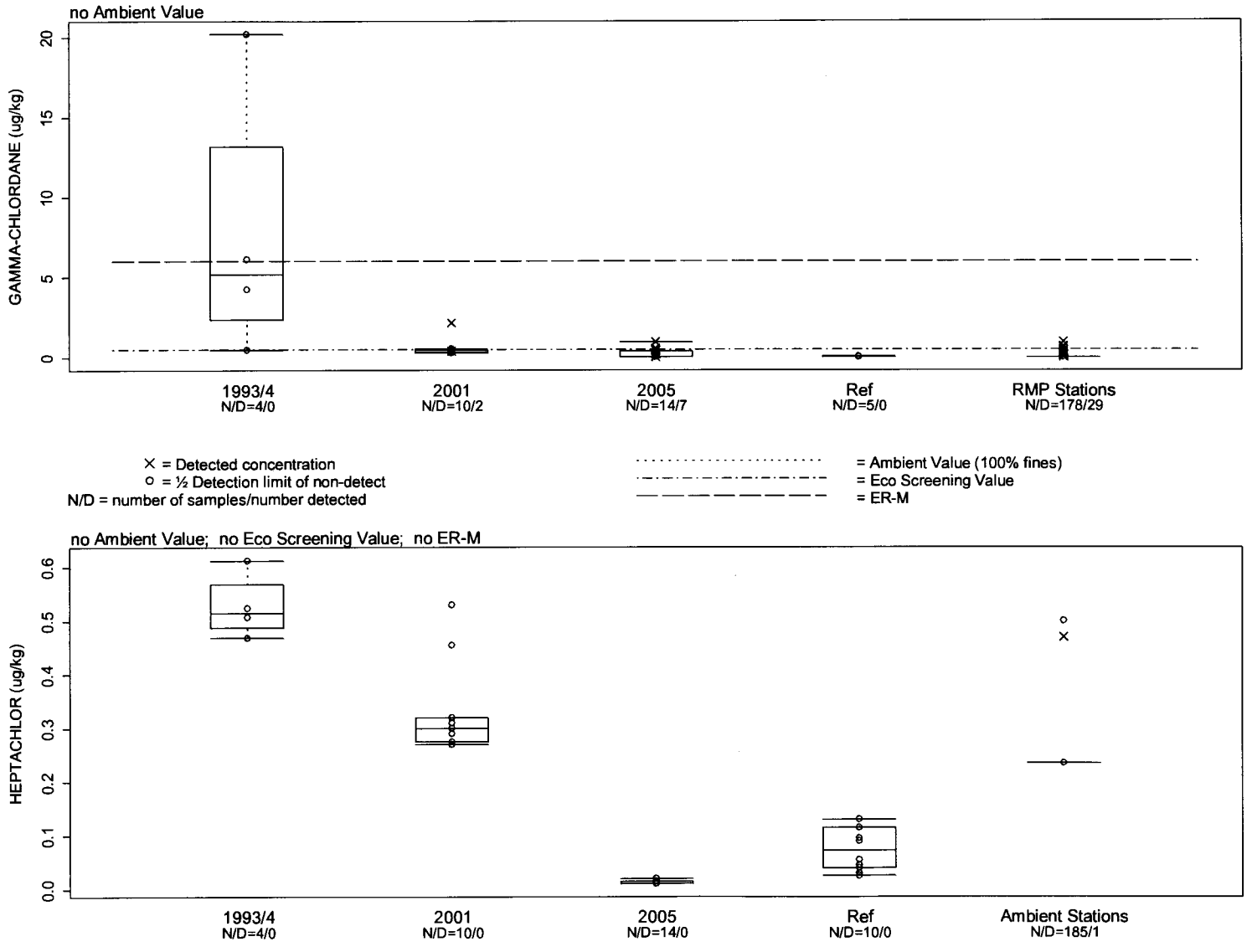

Figure A-24. Box Plots of *gamma*-Chlordane and Heptachlor Concentrations in IR Site 20 and Reference Surface Sediments by Year.

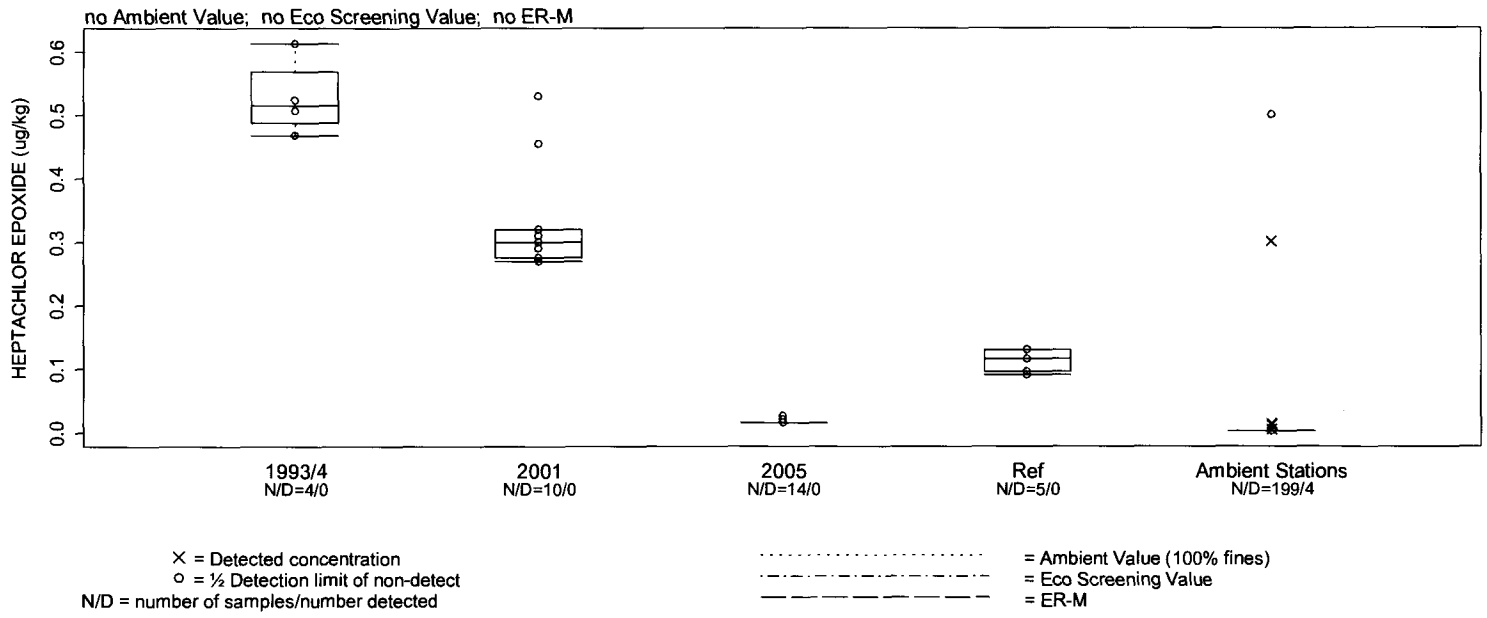

Figure A-25. Box Plots of Heptachlor Epoxide Concentrations in IR Site 20 and Reference Surface Sediments by Year.

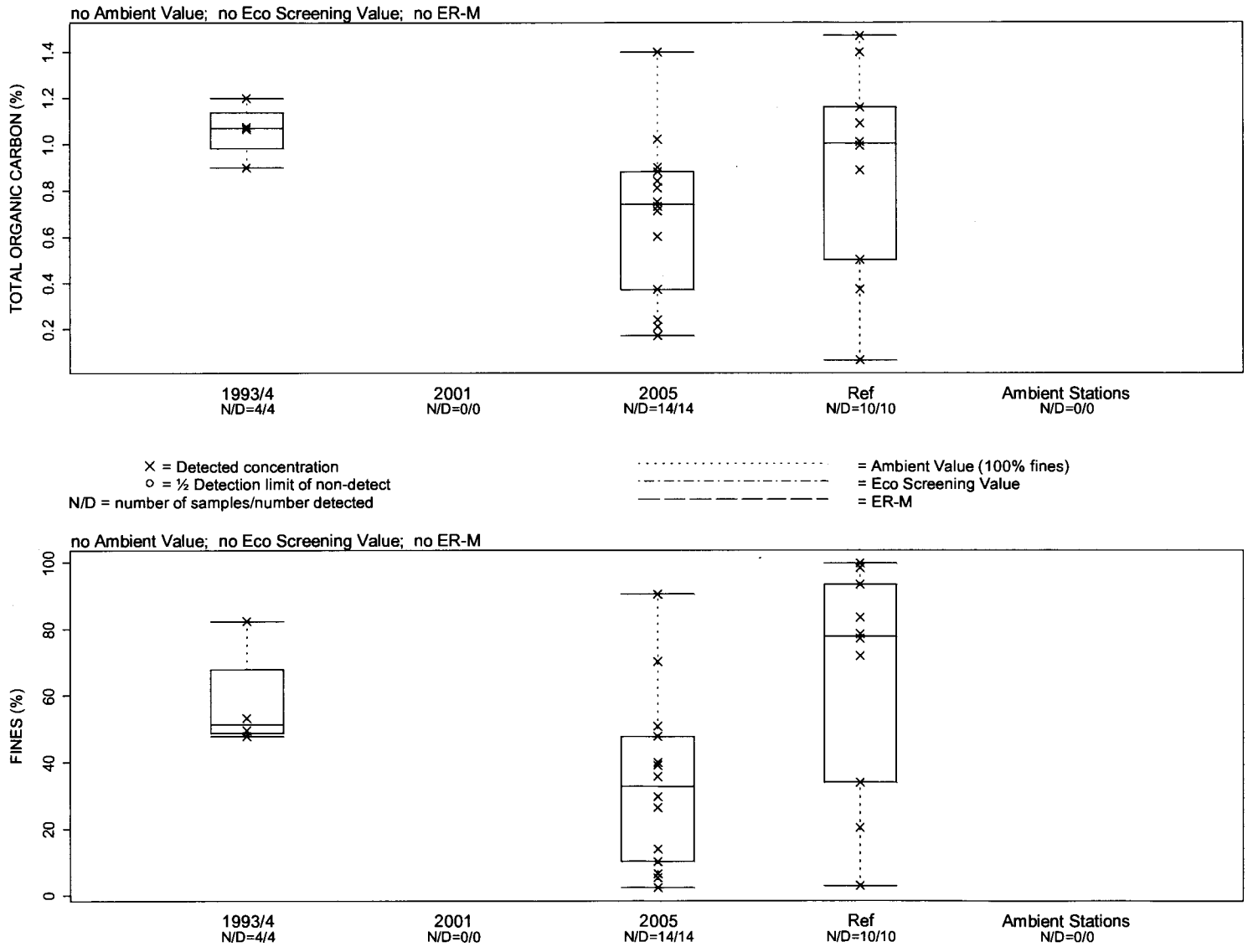

Figure A-26. Box Plots of Total Organic Carbon and Percent Fines in IR Site 20 and Reference Surface Sediments by Year.

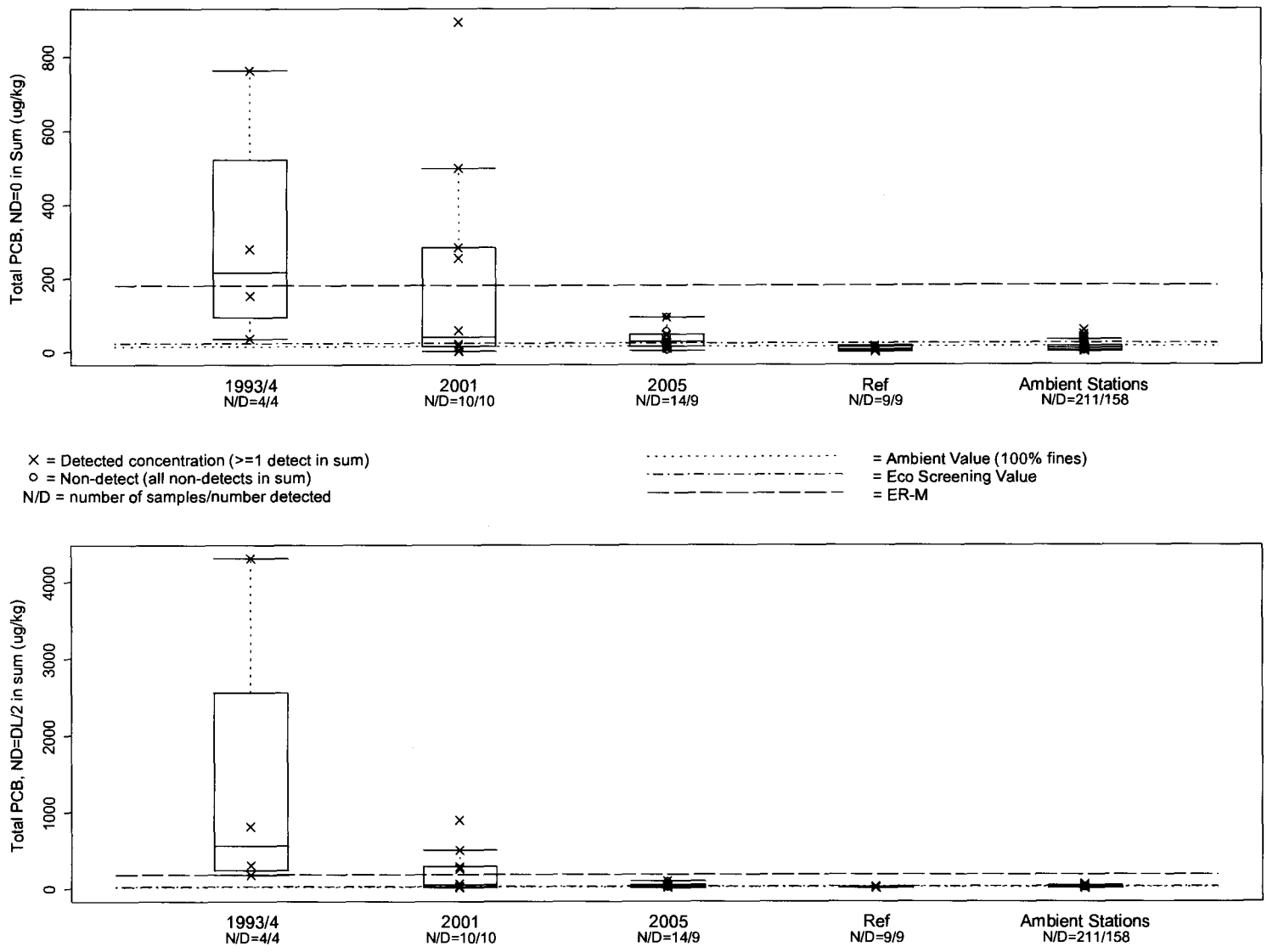

Figure A-27. Box Plots of Total PCB Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

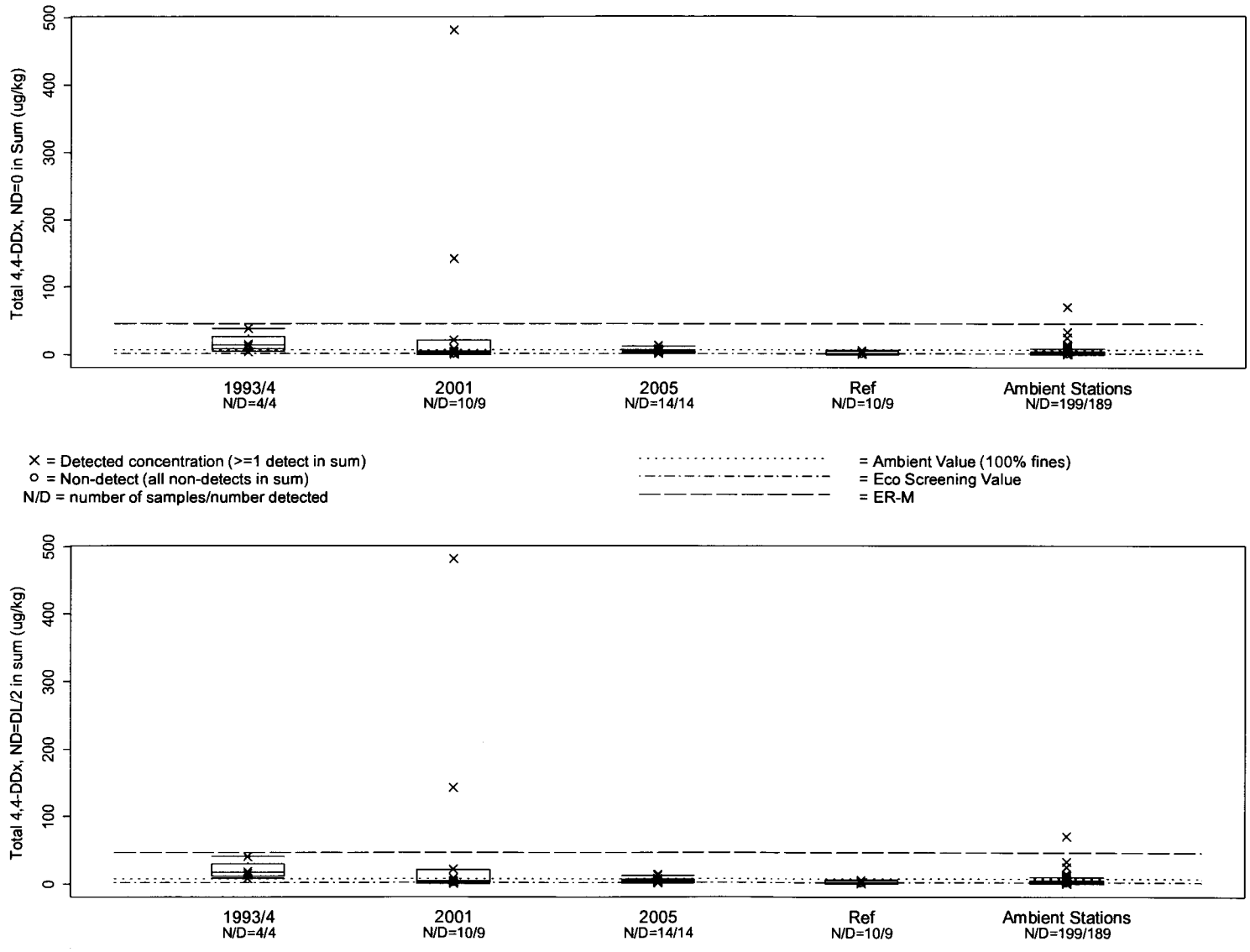

Figure A-28. Box Plots of Total 4,4-DDx Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

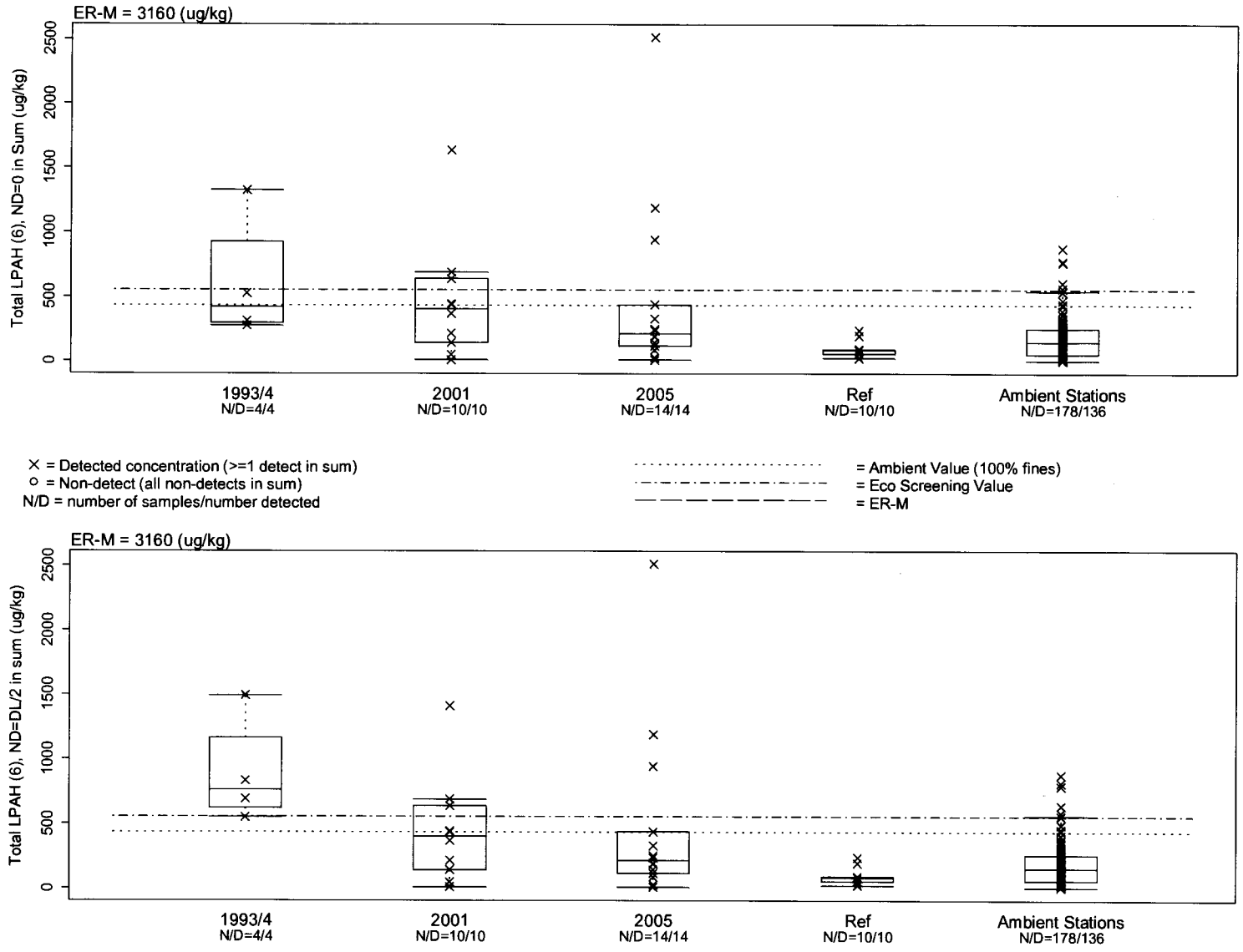

Figure A-29. Box Plots of Total LPAH (sum of 6 analytes) Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

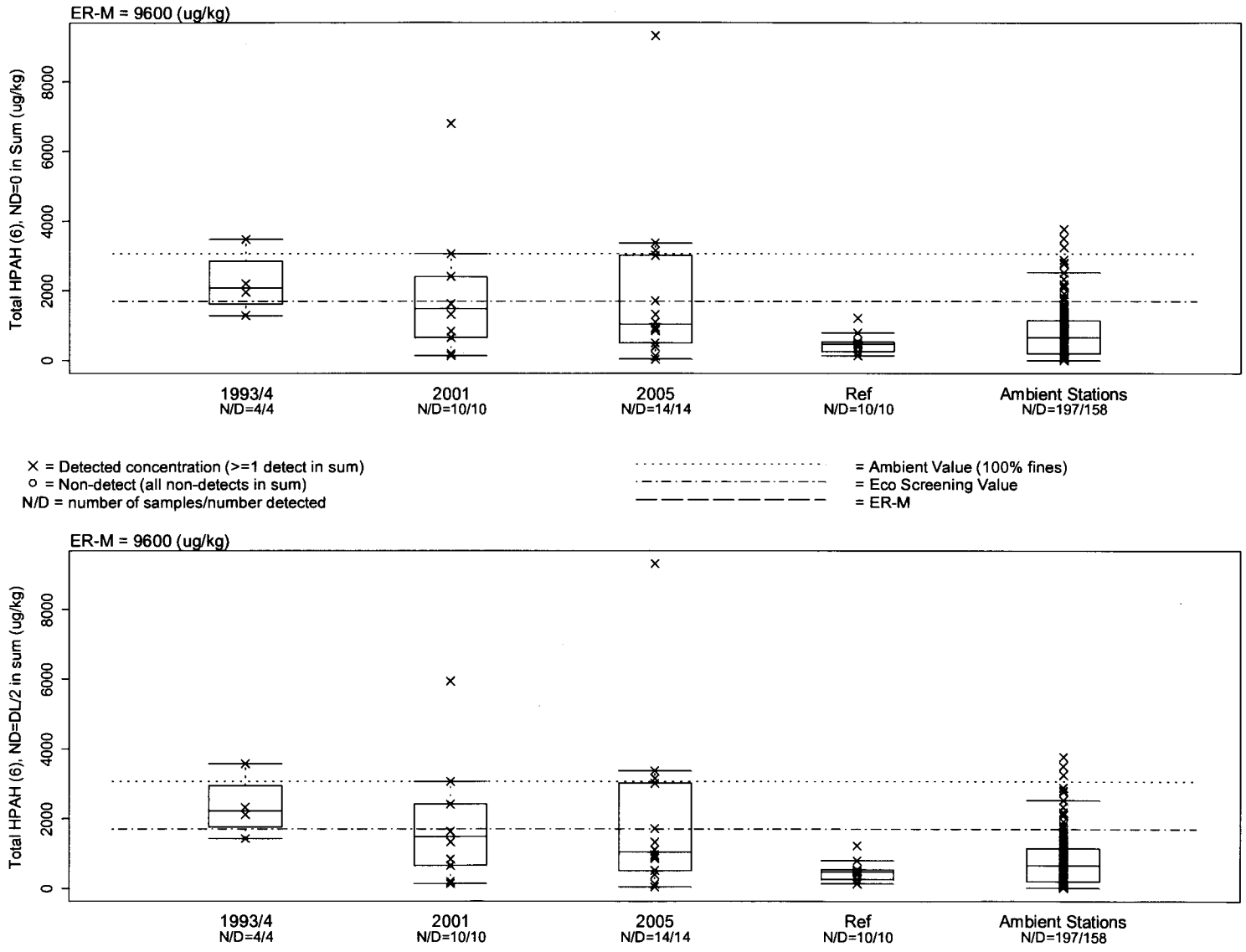

Figure A-30. Box Plots of Total HPAH (sum of 6 analytes) Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

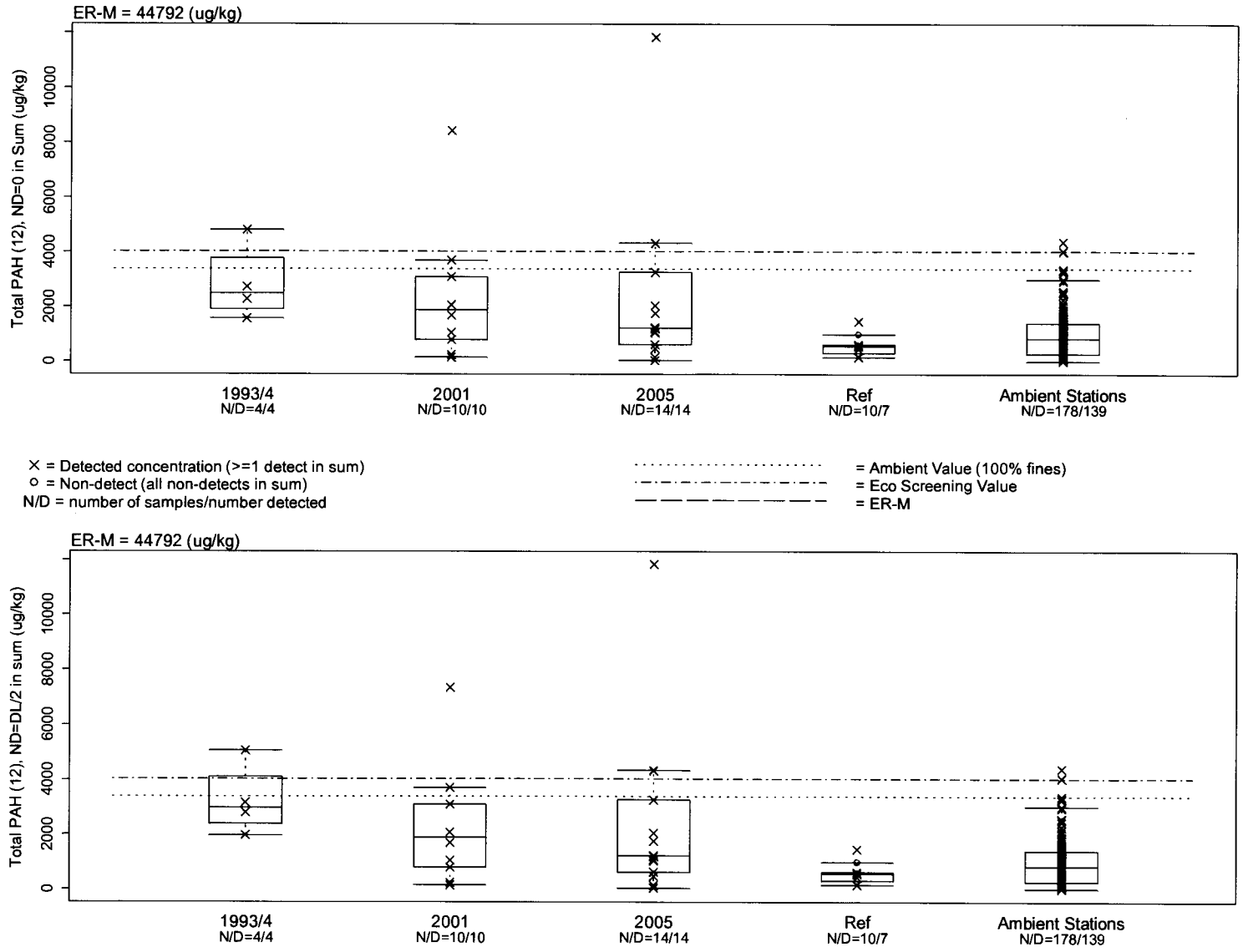

Figure A-31. Box Plots of Total PAH (sum of 12 analytes) Concentrations in IR Site 20 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

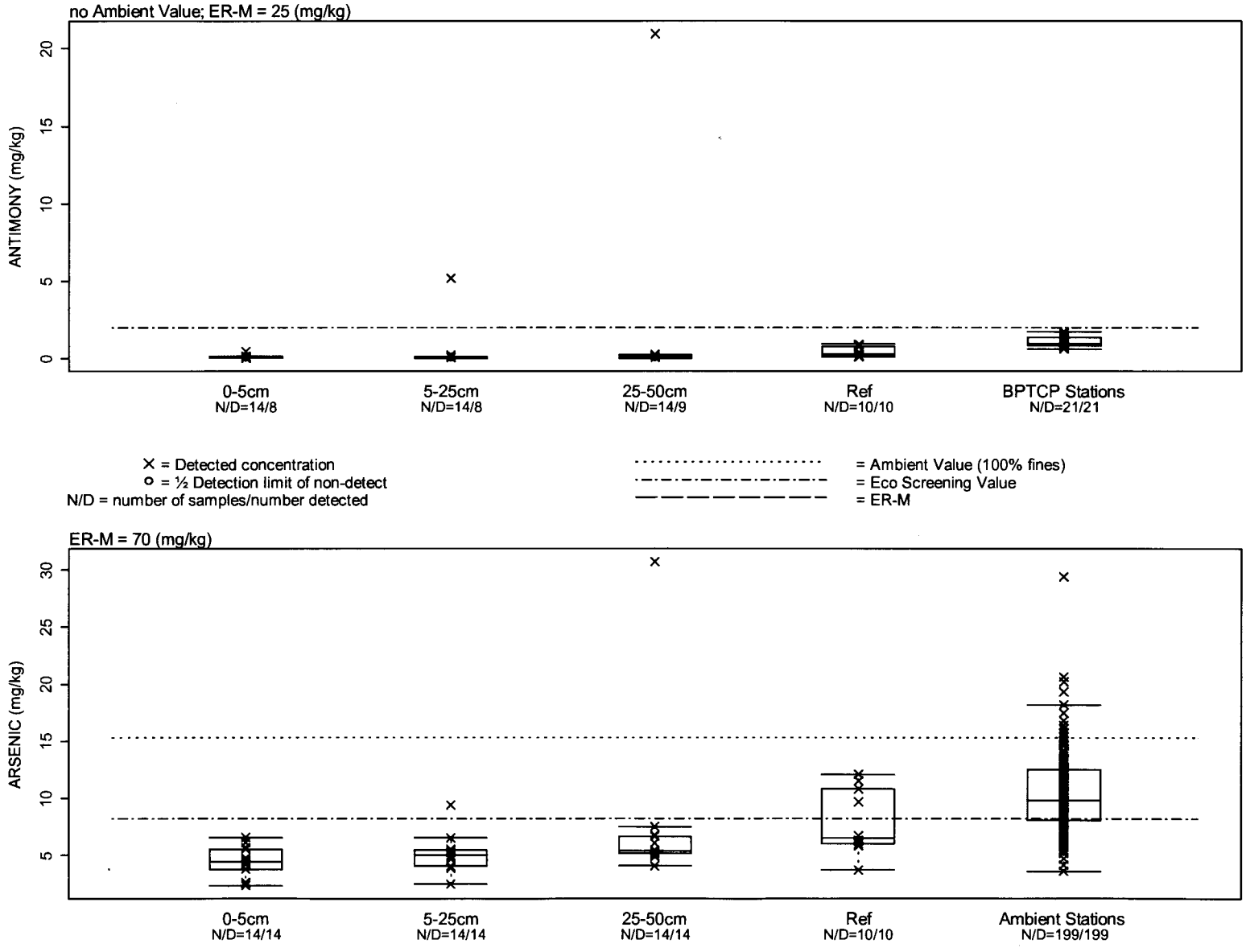

Figure A-32. Box Plots of Antimony and Arsenic Concentrations in 2005 Core Samples in IR Site 20 by Depth.

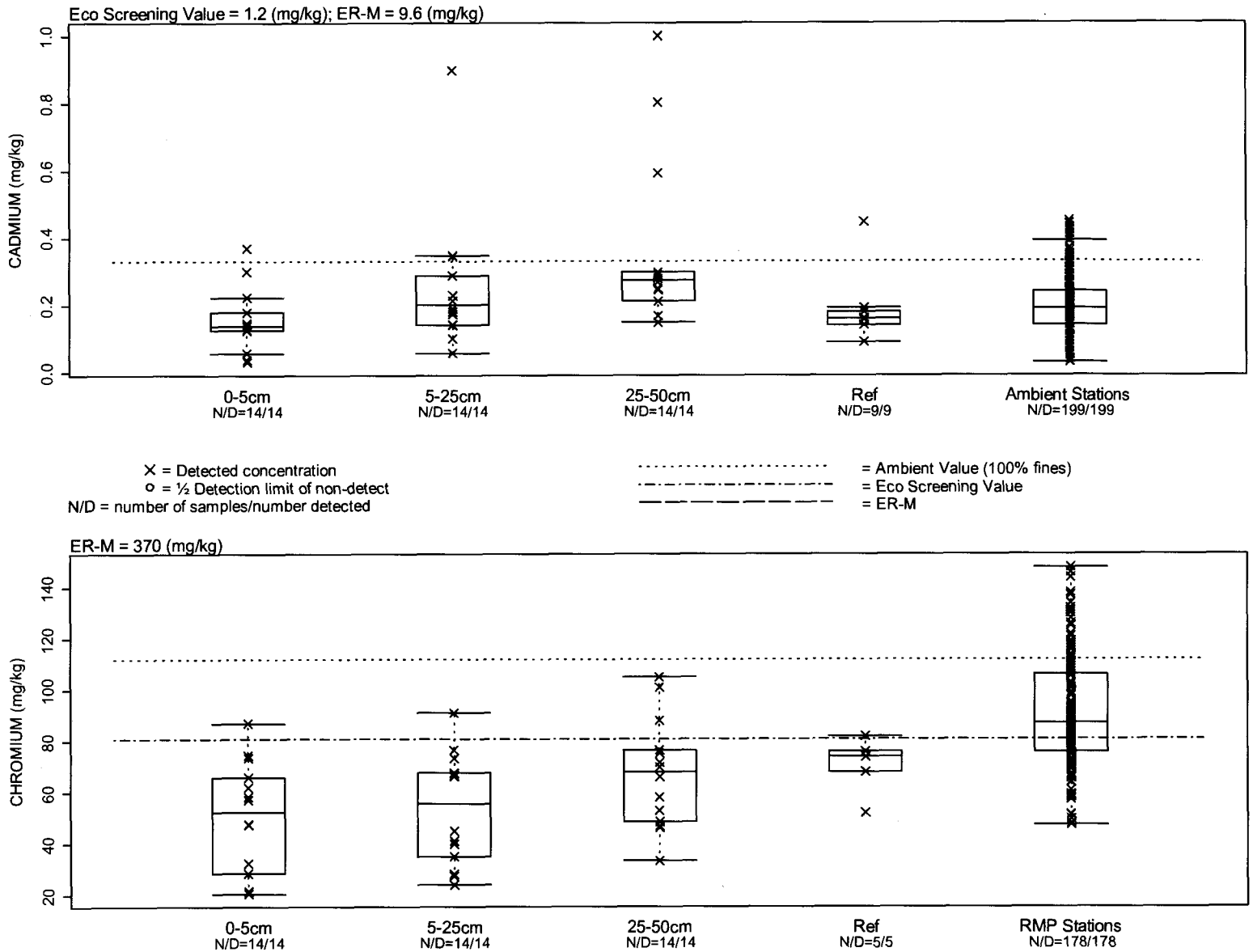

Figure A-33. Box Plots of Cadmium and Chromium Concentrations in 2005 Core Samples in IR Site 20 by Depth.

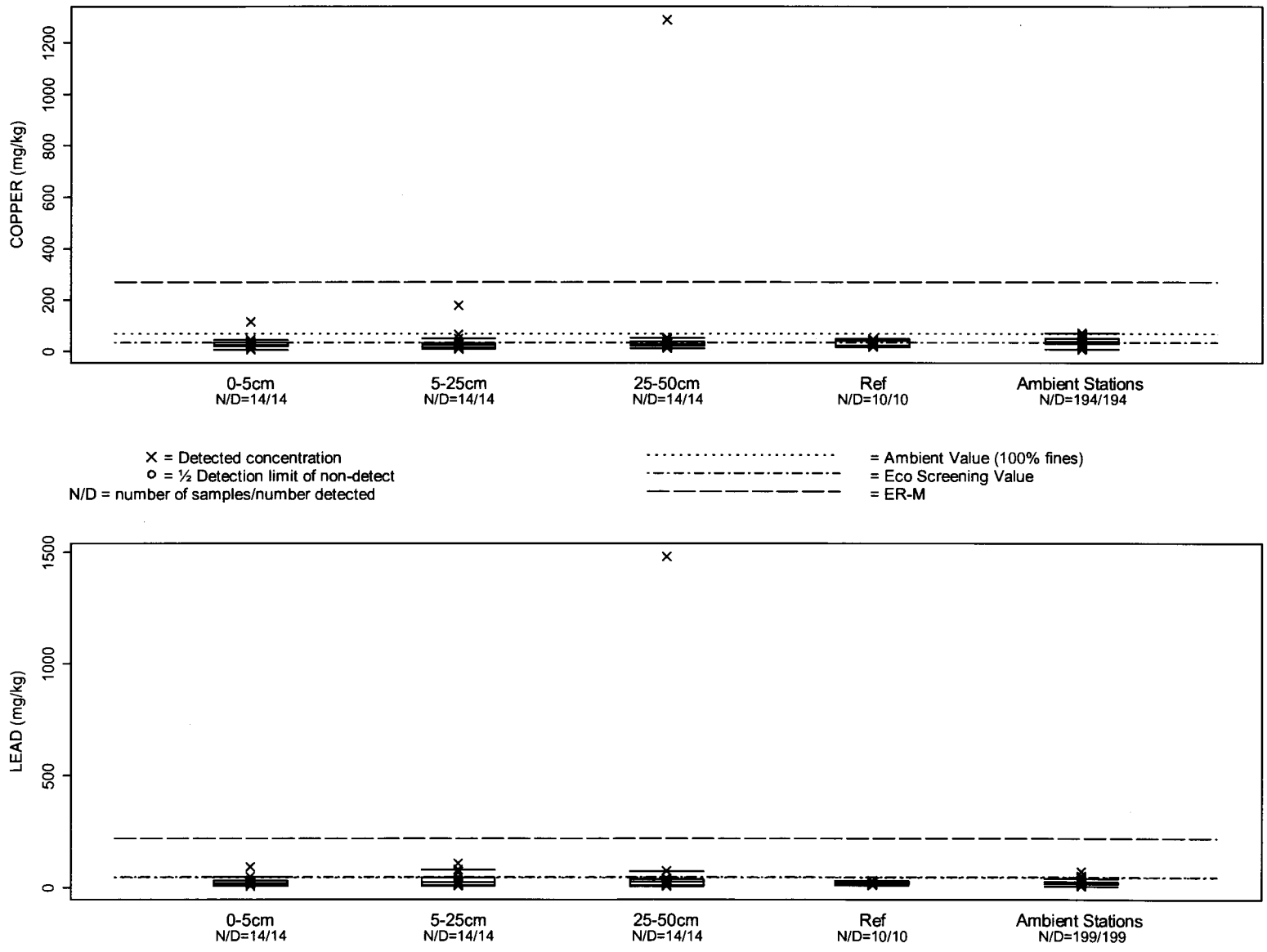

Figure A-34. Box Plots of Copper and Lead Concentrations in 2005 Core Samples in IR Site 20 by Depth.

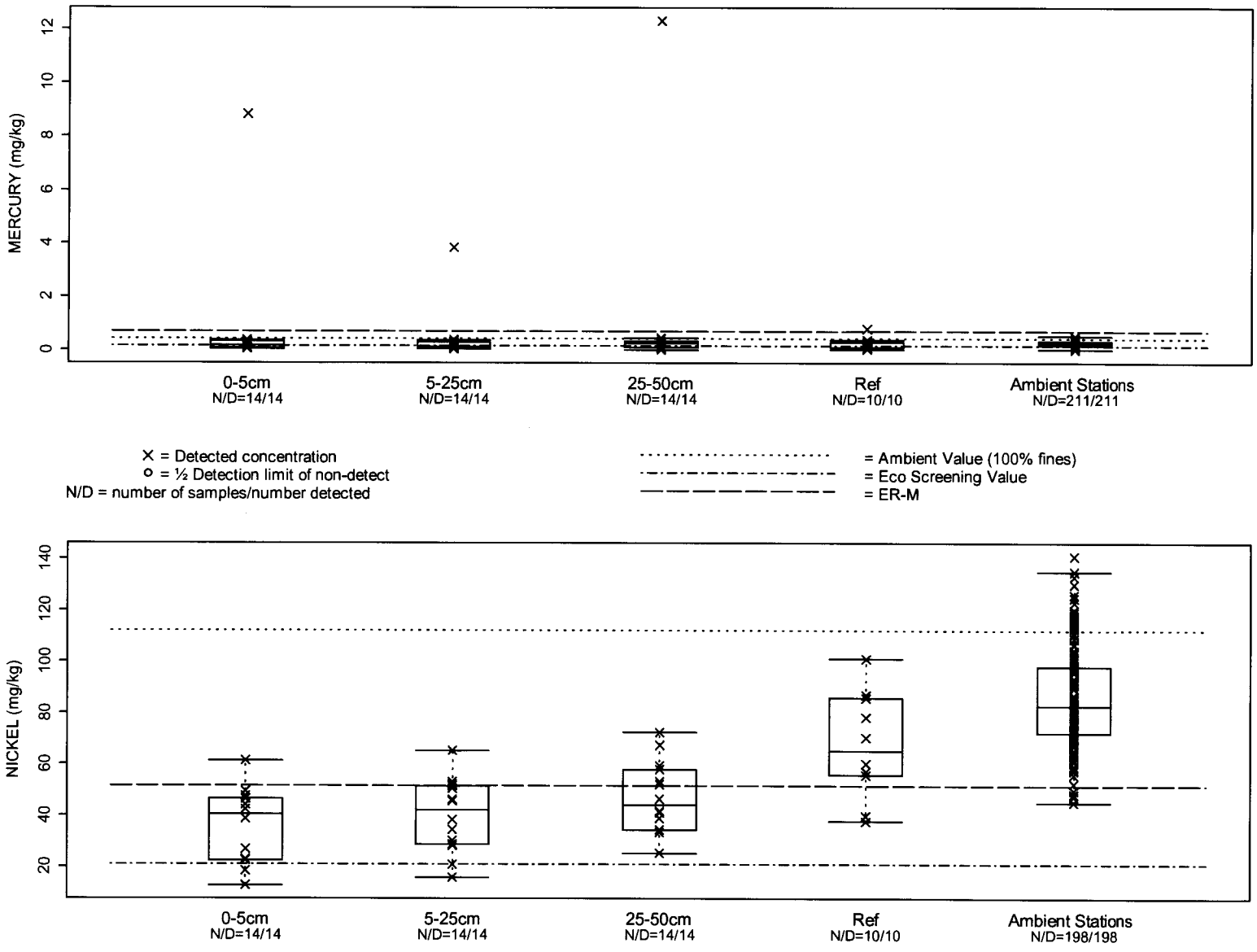

Figure A-35. Box Plots of Mercury and Nickel Concentrations in 2005 Core Samples in IR Site 20 by Depth.

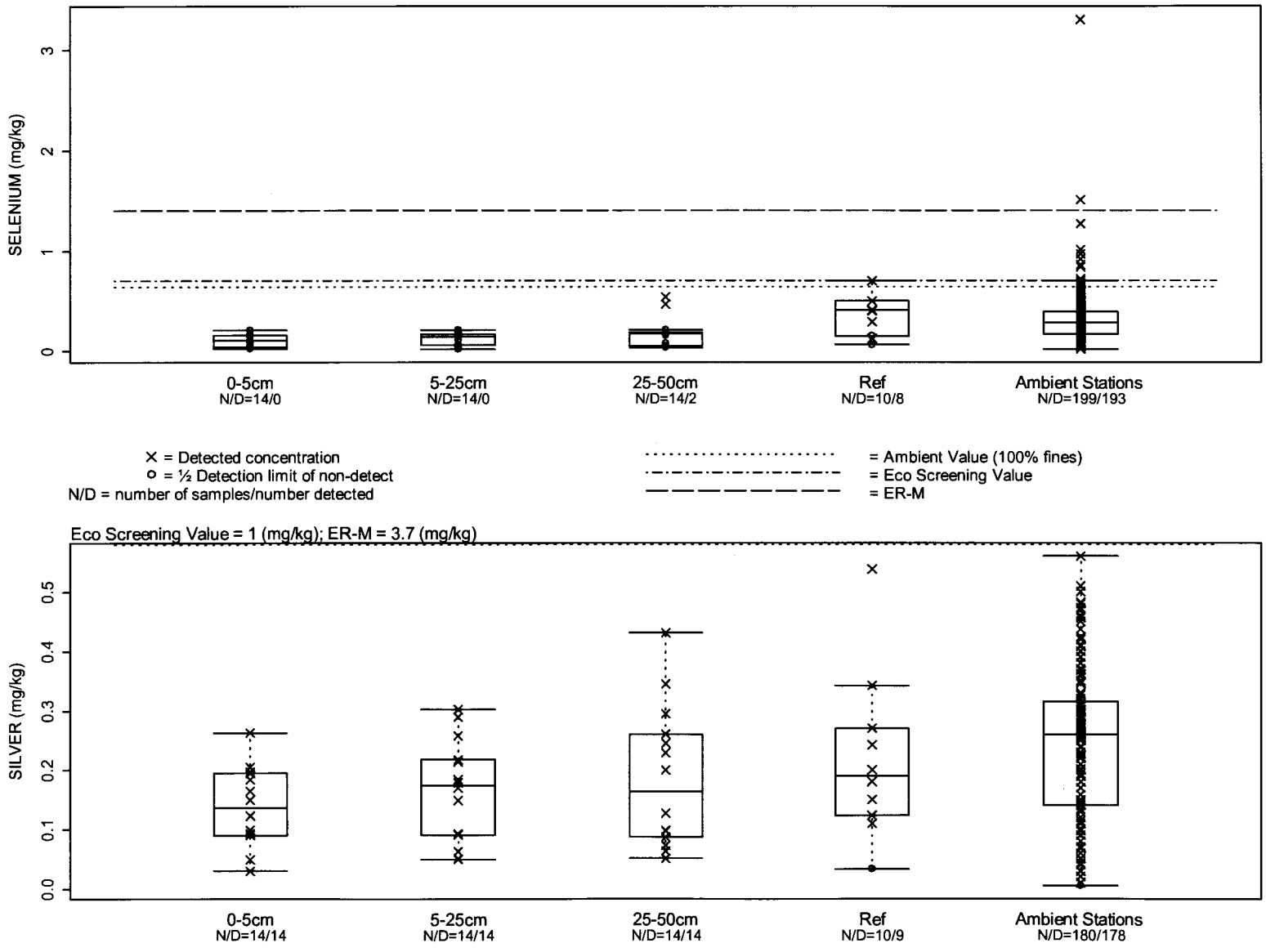

Figure A-36. Box Plots of Selenium and Silver Concentrations in 2005 Core Samples in IR Site 20 by Depth.

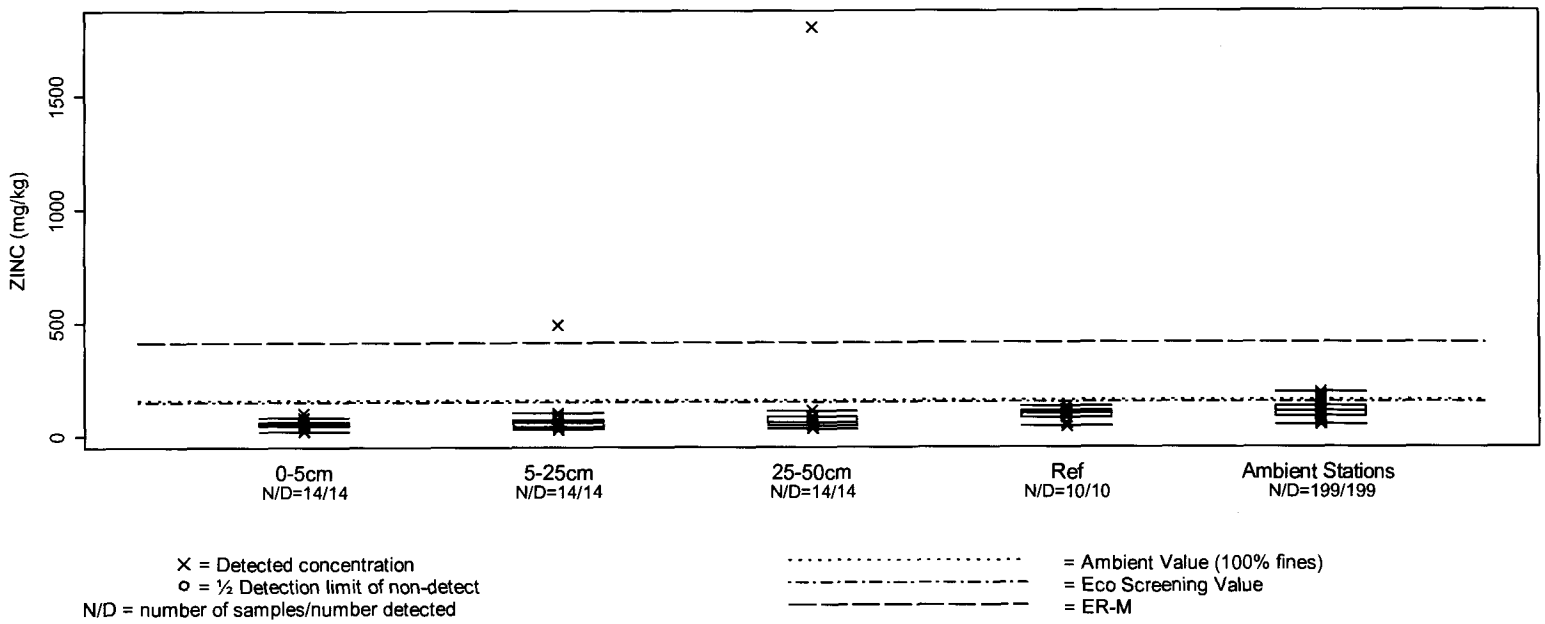

Figure A-37. Box Plots of Zinc Concentrations in 2005 Core Samples in IR Site 20 by Depth.

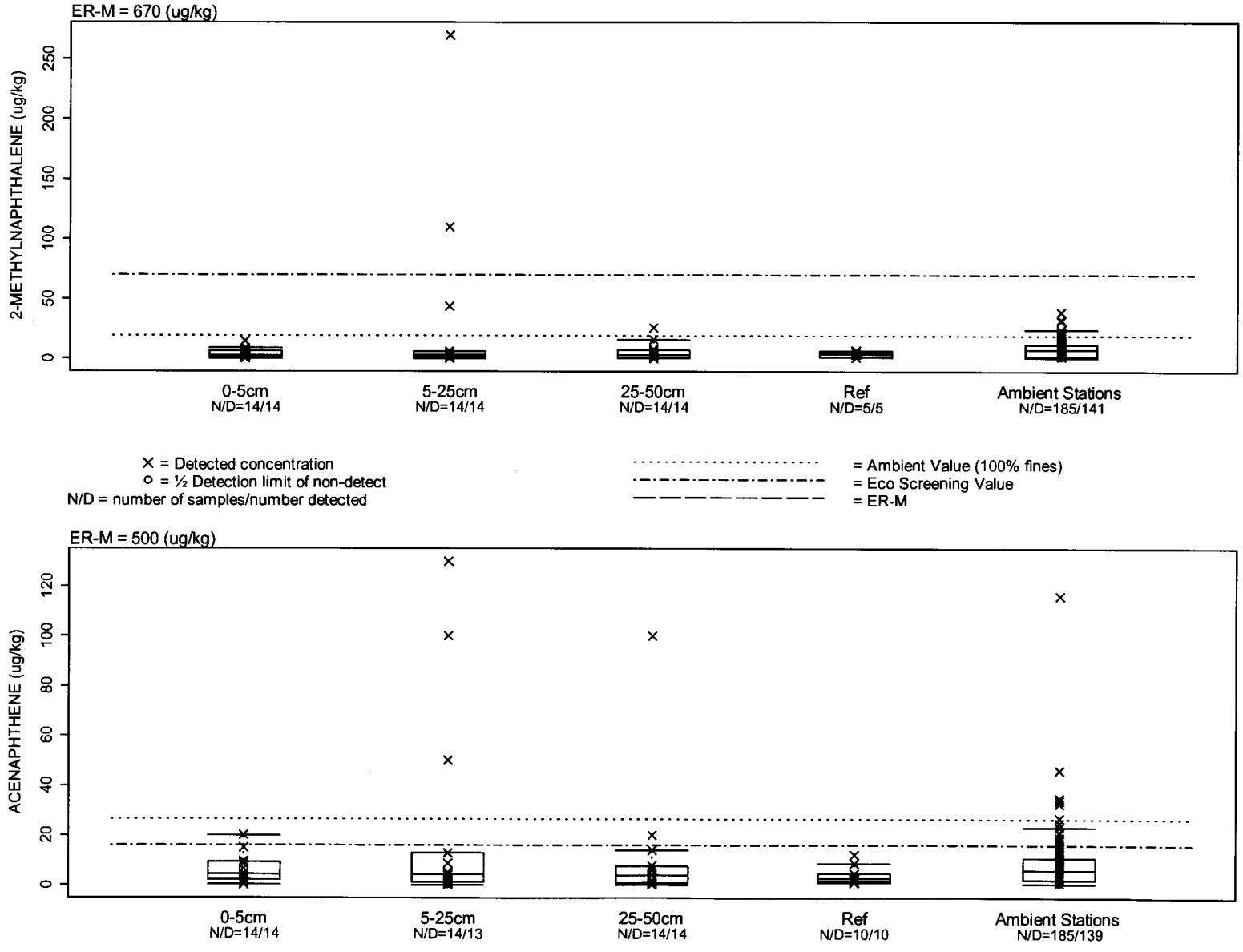

Figure A-38. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

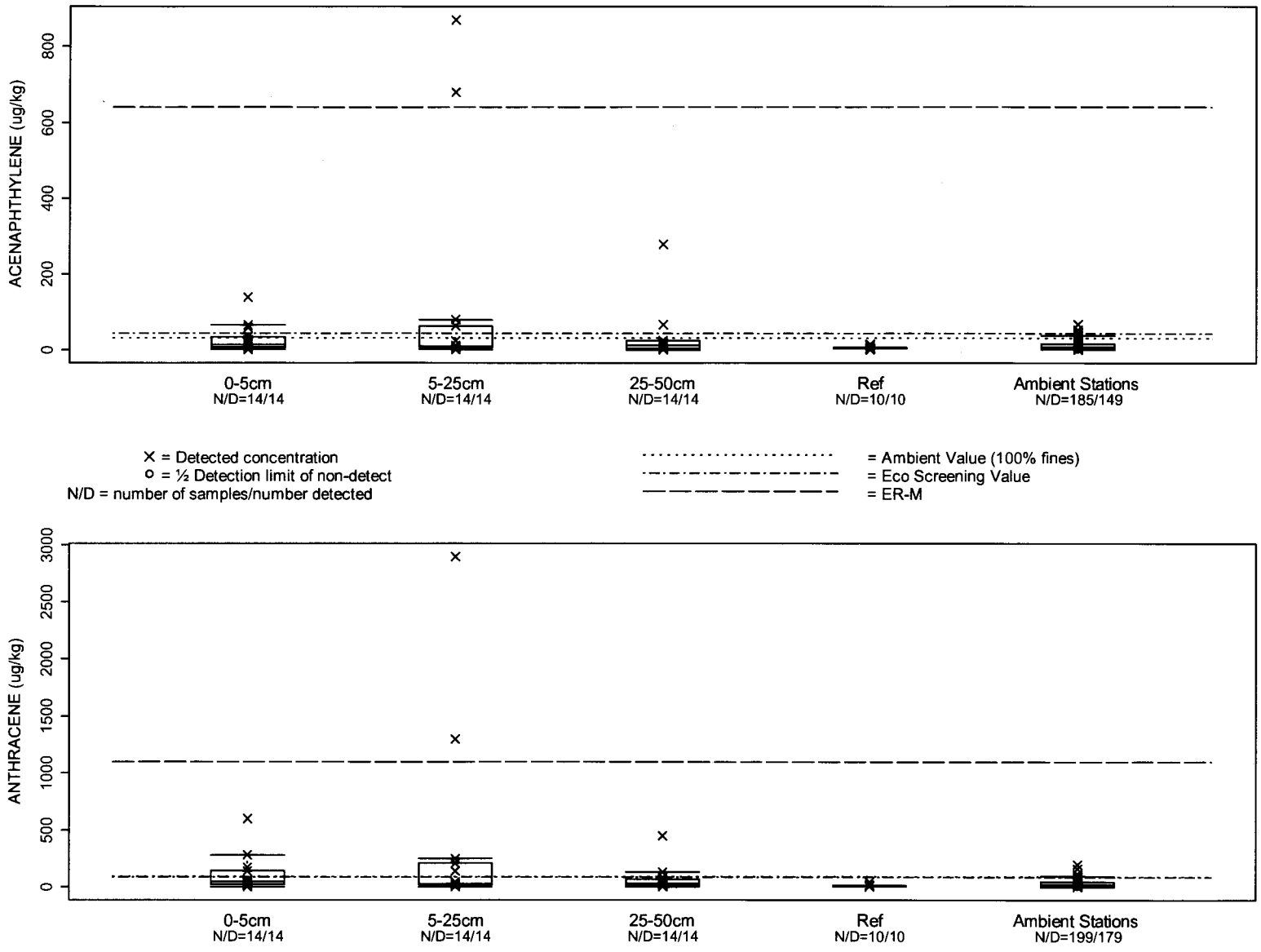

Figure A-39. Box Plots of Acenaphthylene and Anthracene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

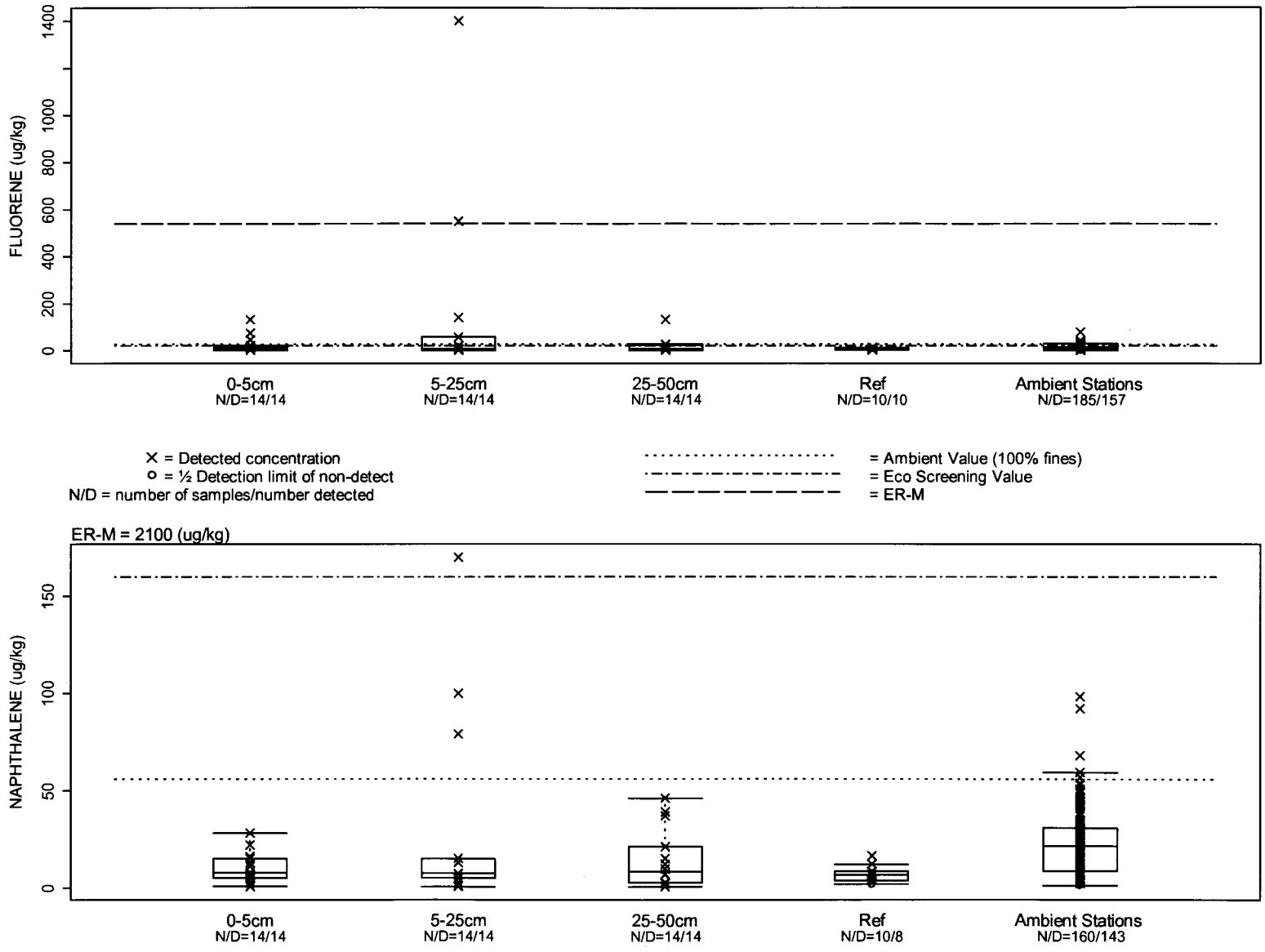

Figure A-40. Box Plots of Fluorene and Naphthalene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

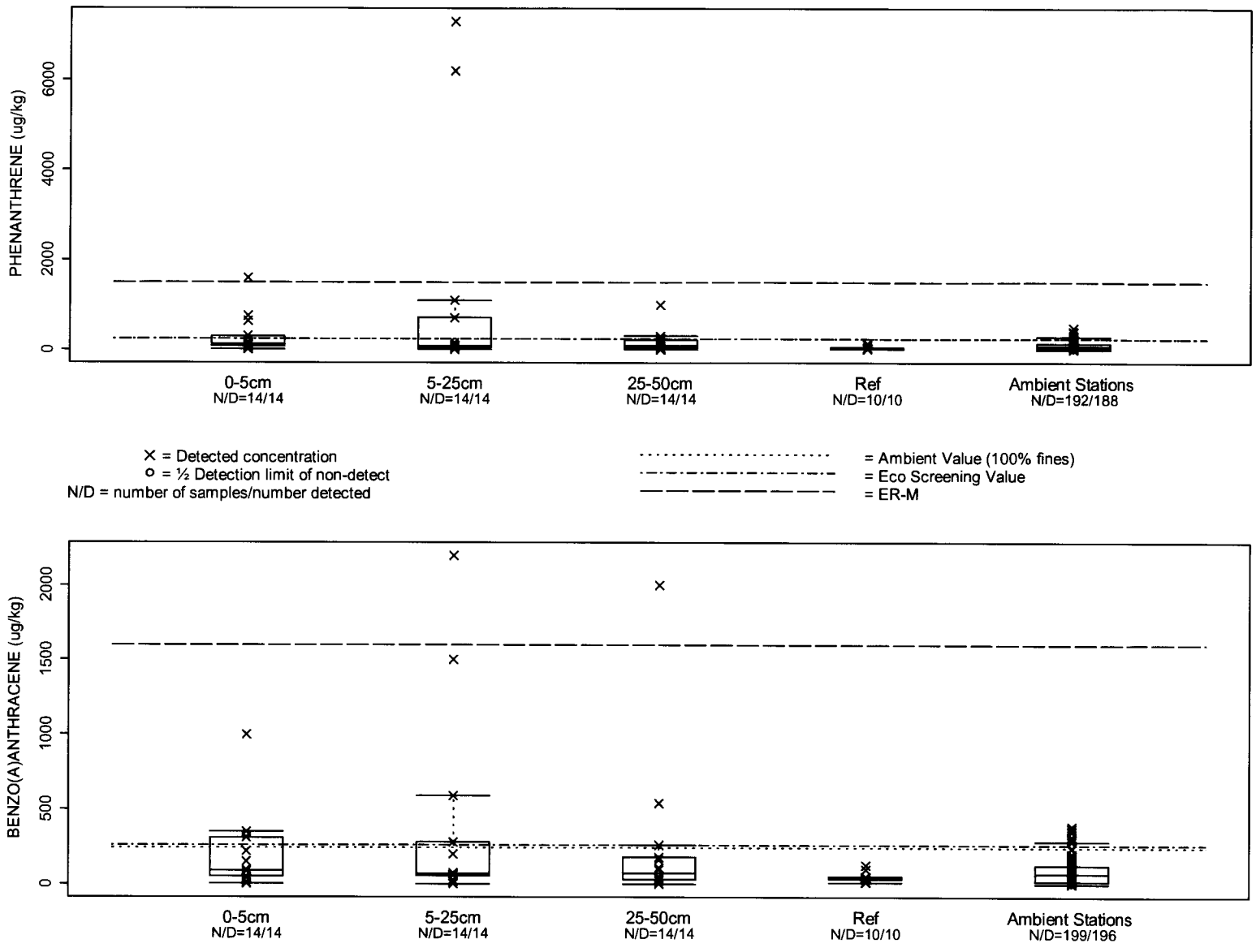

Figure A-41. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

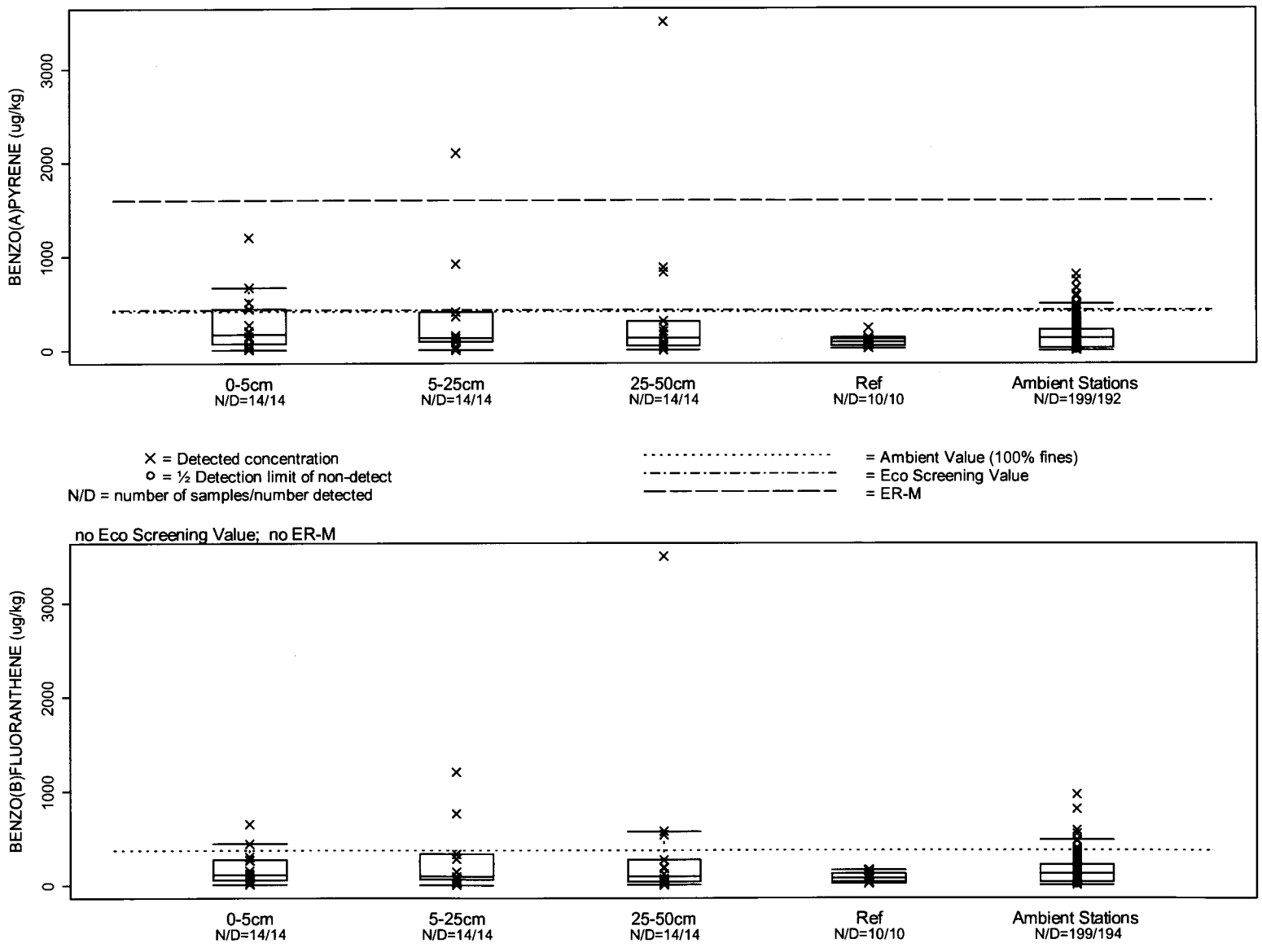

Figure A-42. Box Plots of Benzo(a)pyrene and Benzo(b)fluoranthene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

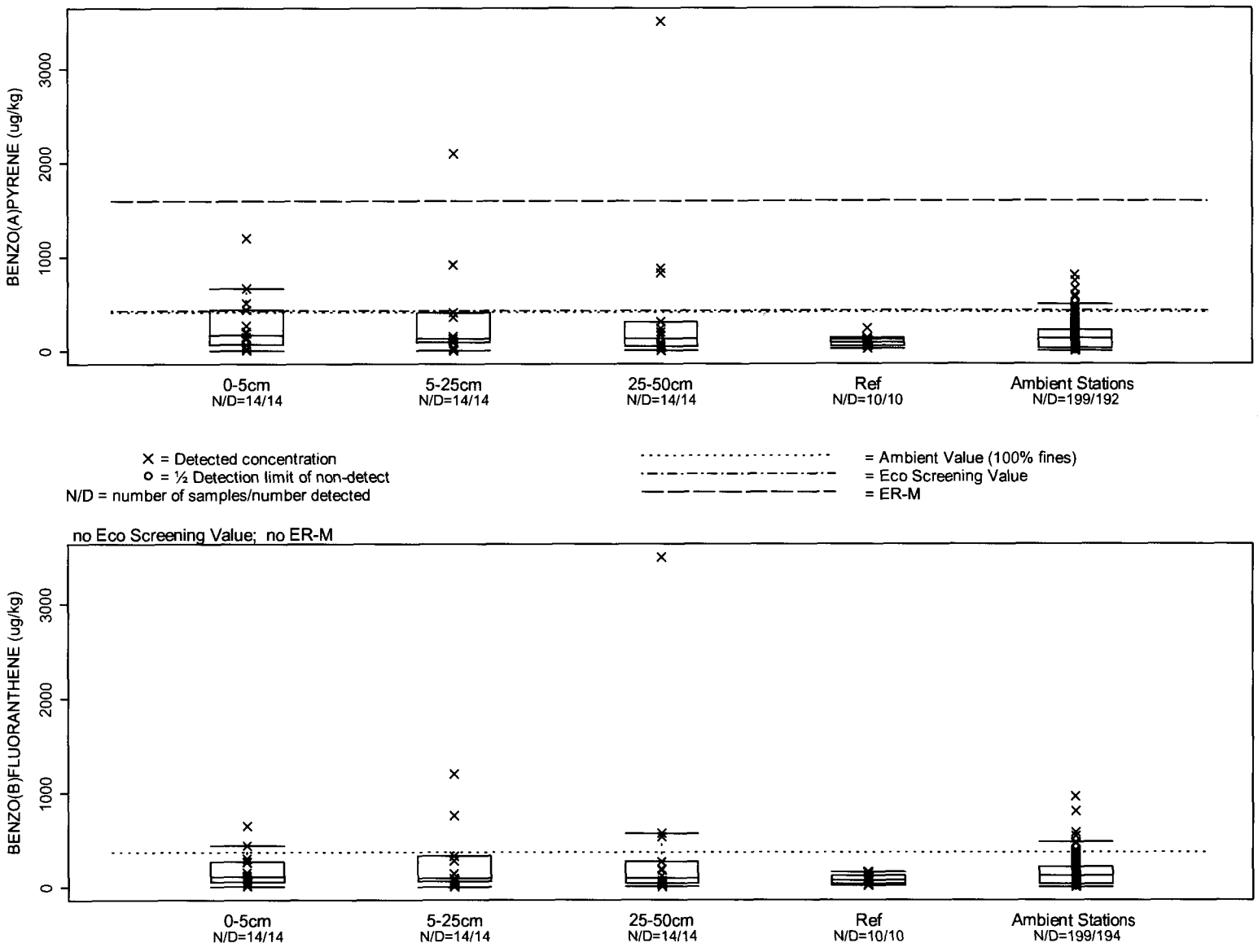

Figure A-43. Box Plots of Benzo(g,h,i)perylene and Benzo(k)fluoranthene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

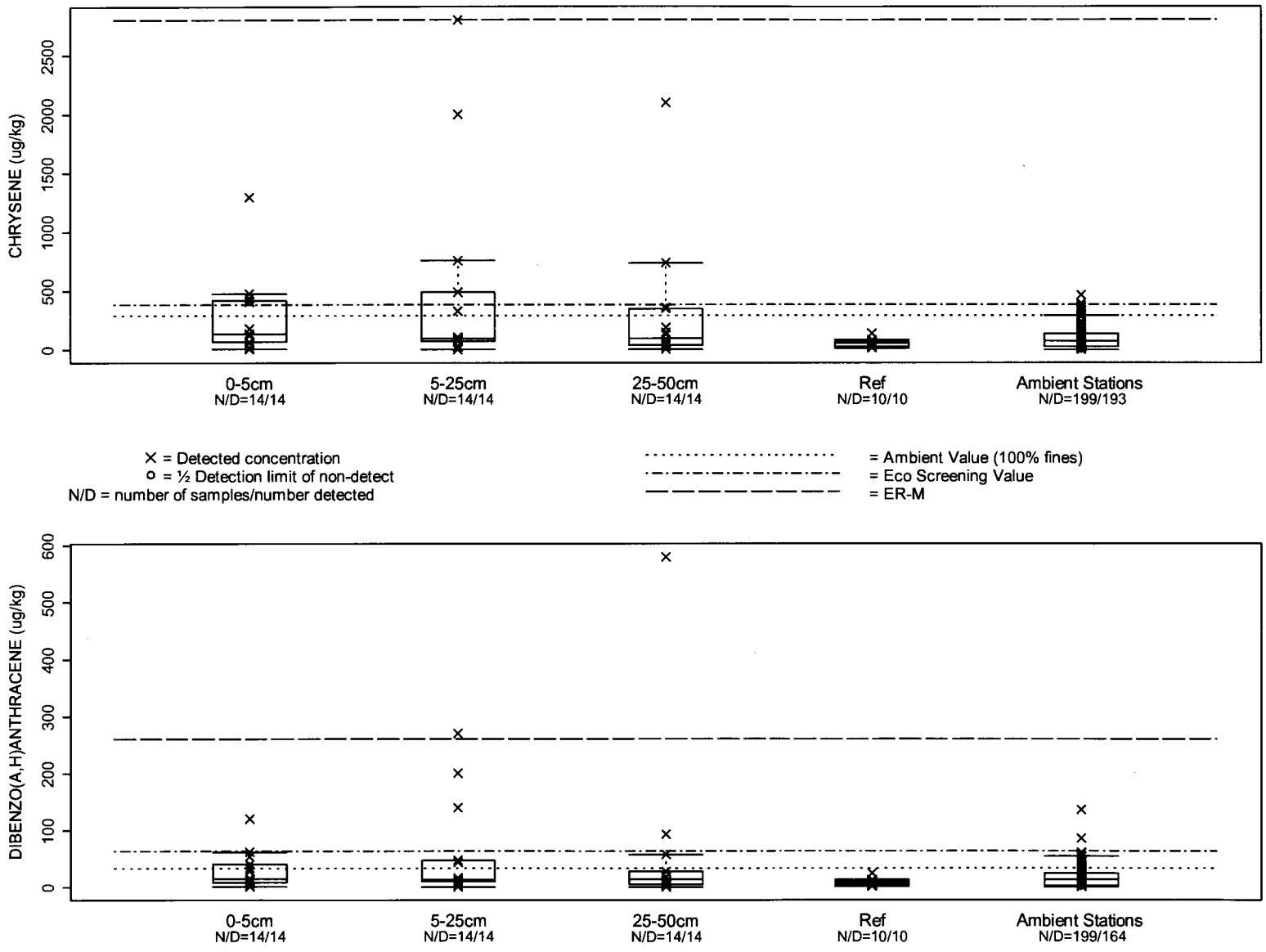

Figure A-44. Box Plots of Chrysene and Dibenzo(a,h)anthracene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

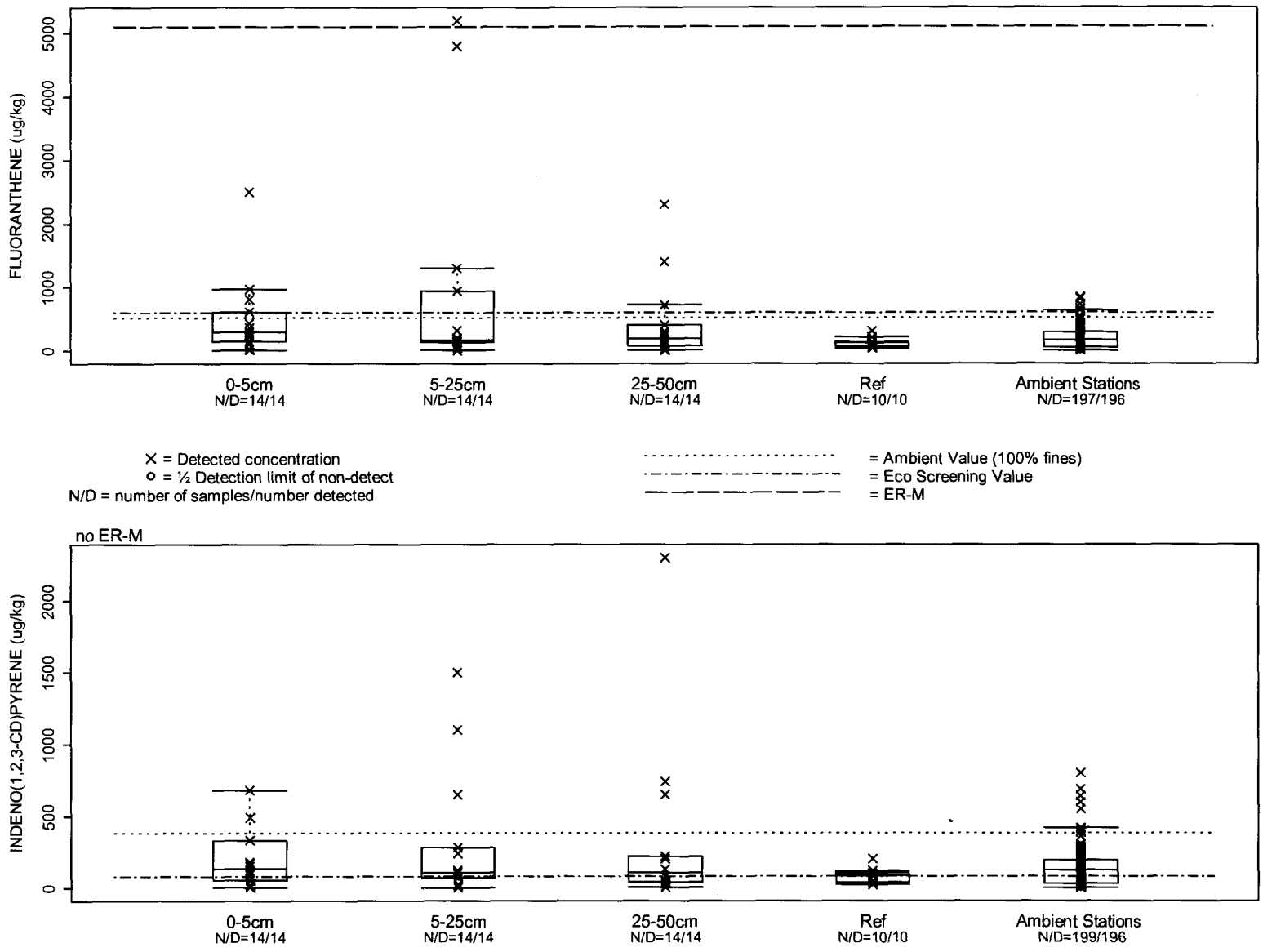

Figure A-45. Box Plots of Fluoranthene and Indeno(1,2,3-cd)pyrene Concentrations in 2005 Core Samples in IR Site 20 by Depth.

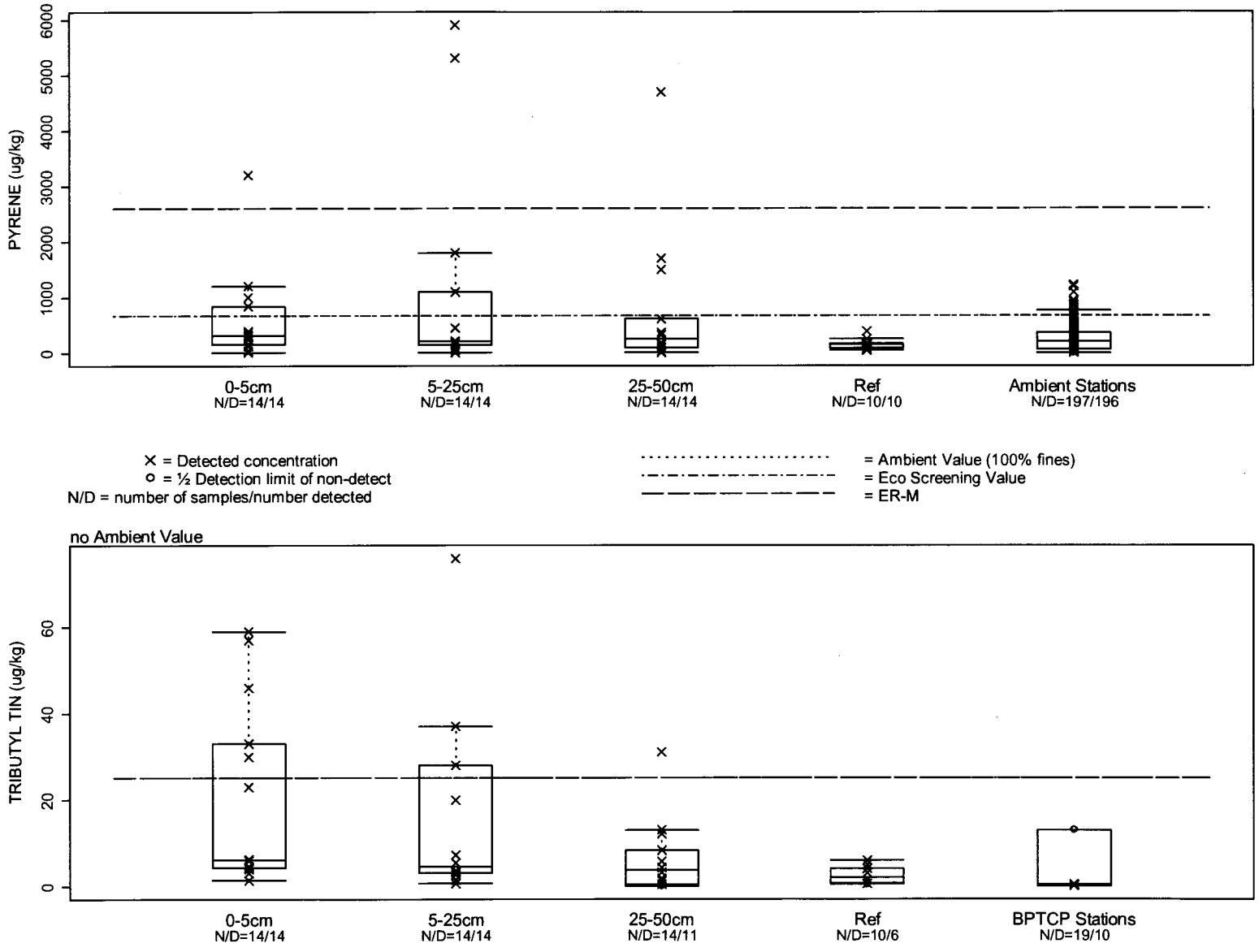

Figure A-46. Box Plots of Pyrene and Tributyltin Concentrations in 2005 Core Samples in IR Site 20 by Depth.

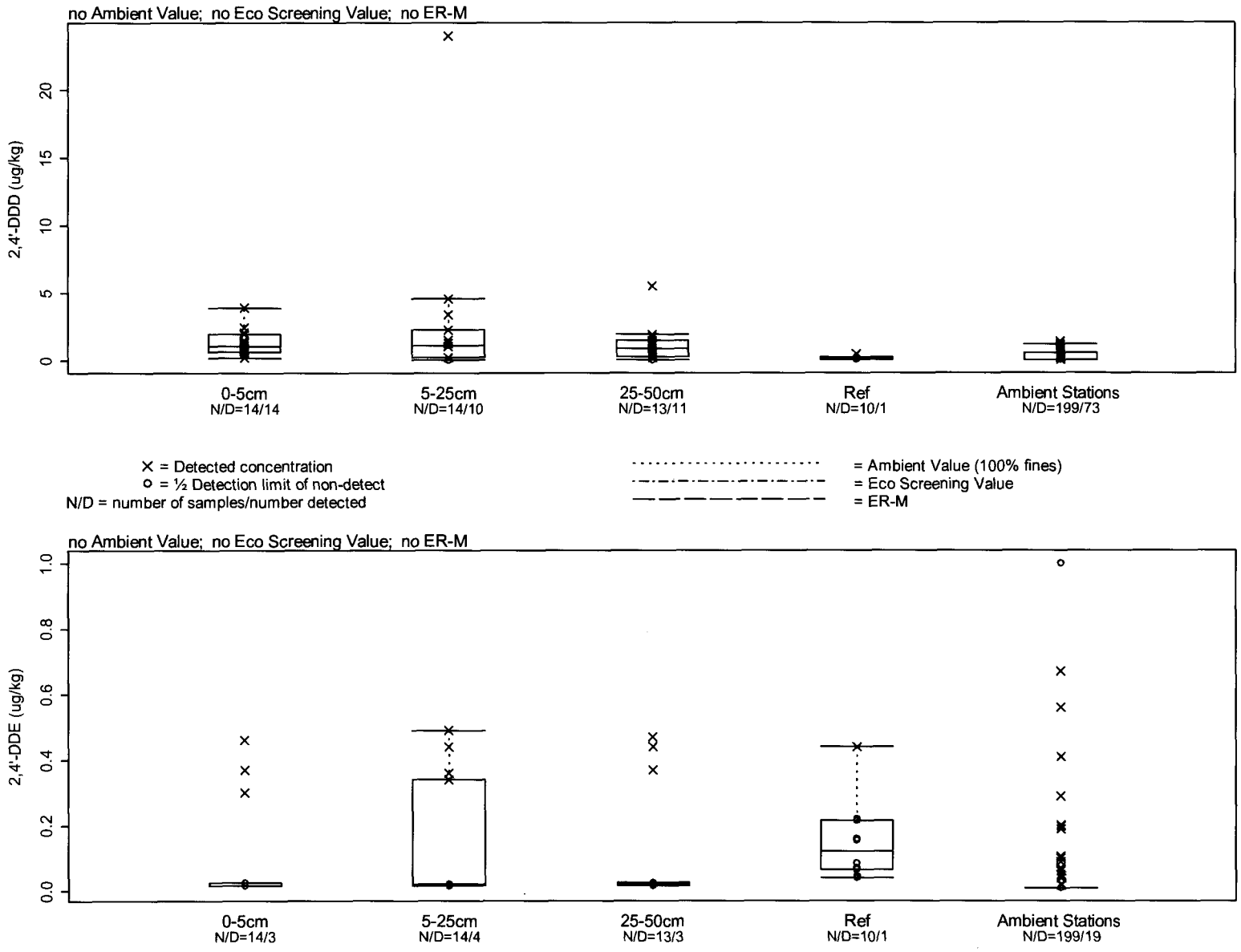

Figure A-47. Box Plots of 2,4-DDD and 2,4-DDE Concentrations in 2005 Core Samples in IR Site 20 by Depth.

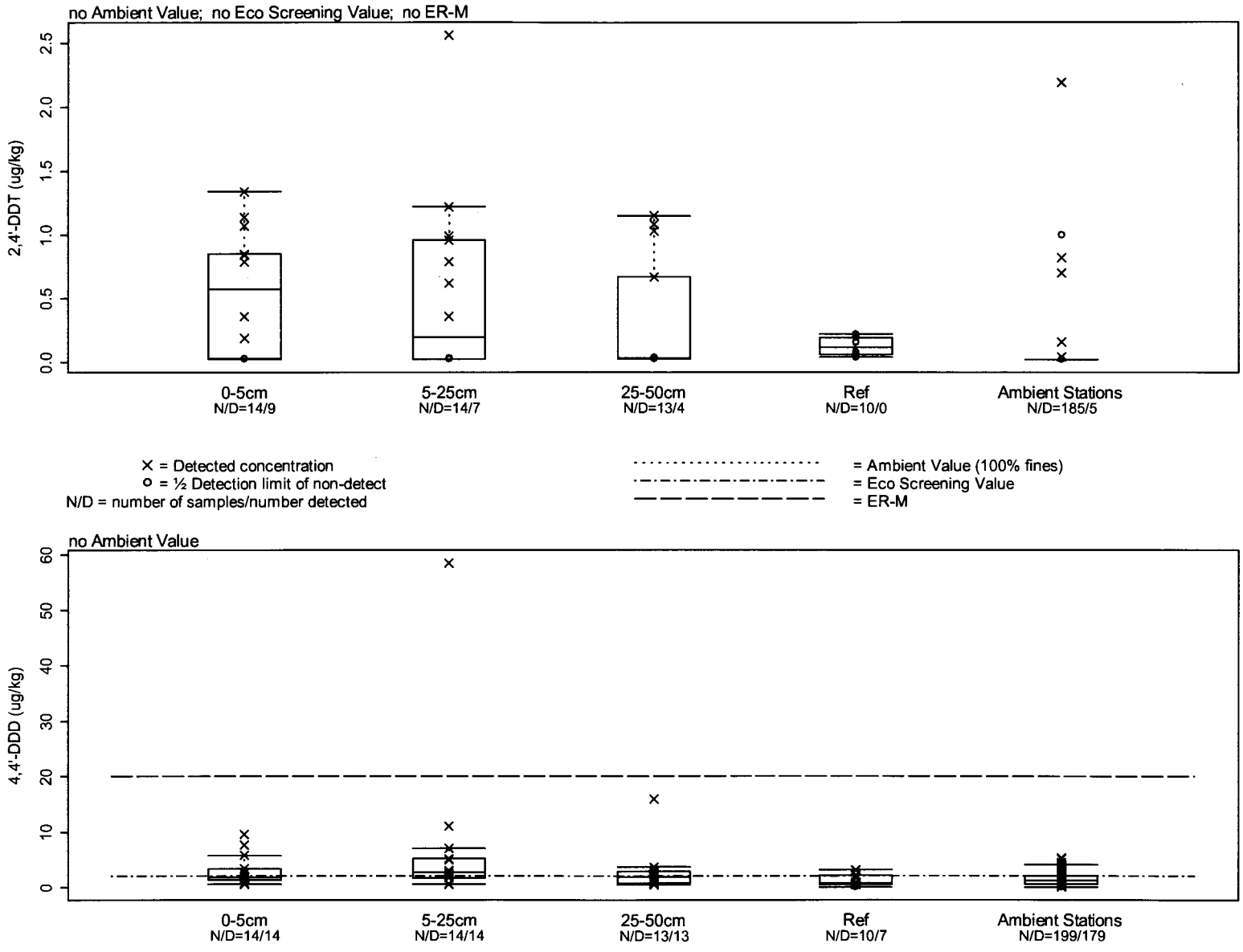

Figure A-48. Box Plots of 2,4-DDT and 4,4-DDD Concentrations in 2005 Core Samples in IR Site 20 by Depth.

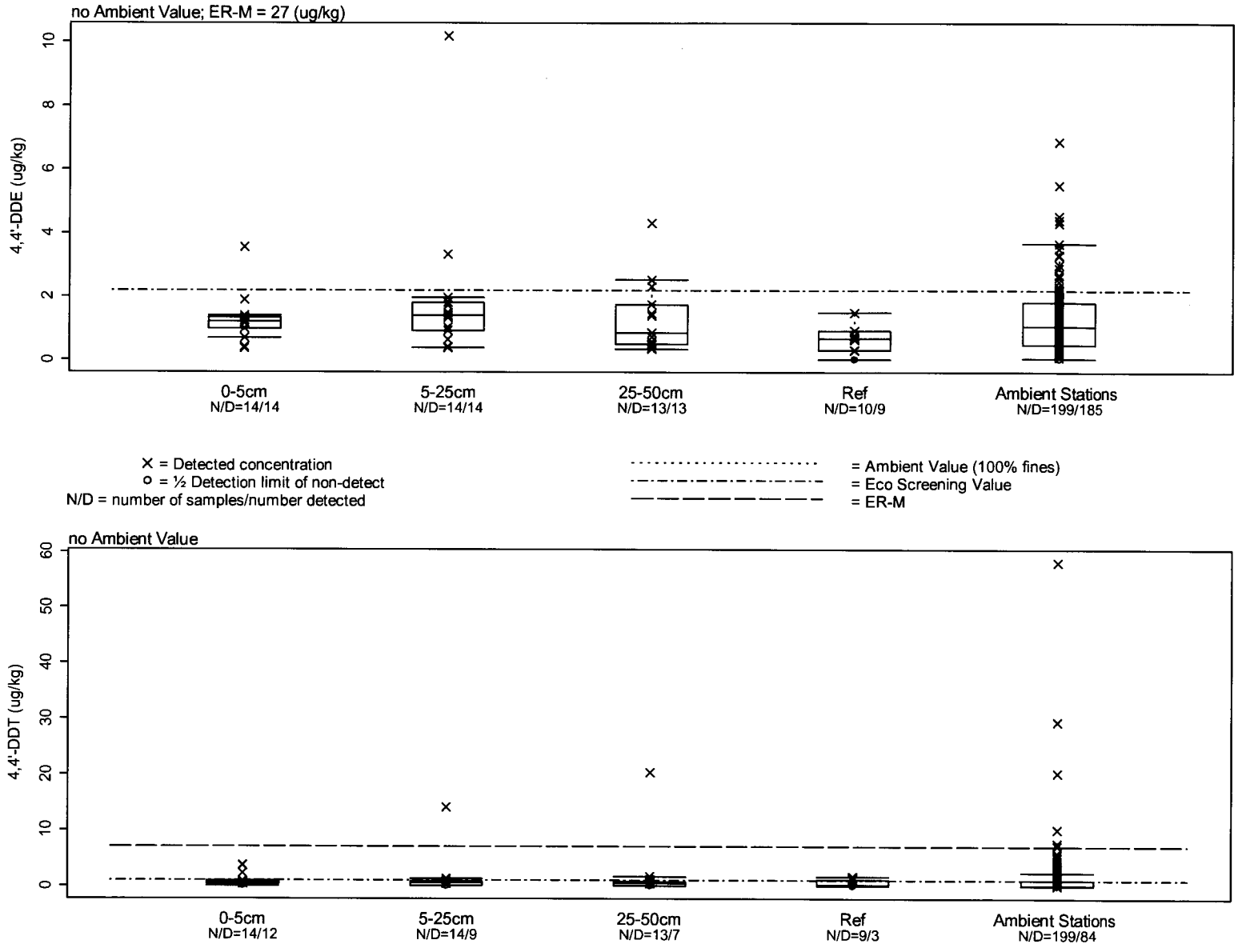

Figure A-49. Box Plots of 4,4′-DDE and 4,4′-DDT Concentrations in 2005 Core Samples in IR Site 20 by Depth.

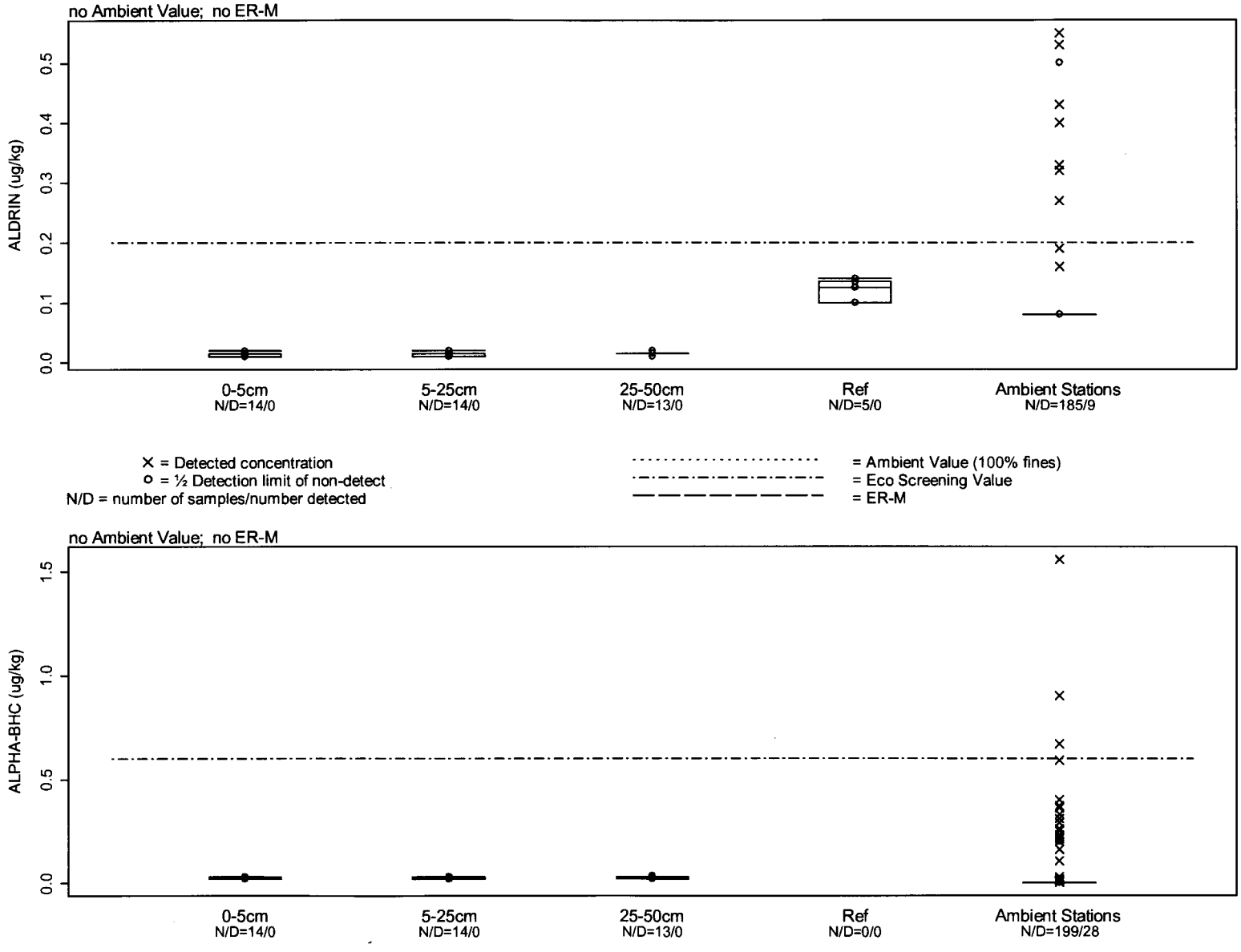

Figure A-50. Box Plots of Aldrin and *alpha*-BHC Concentrations in 2005 Core Samples in IR Site 20 by Depth.

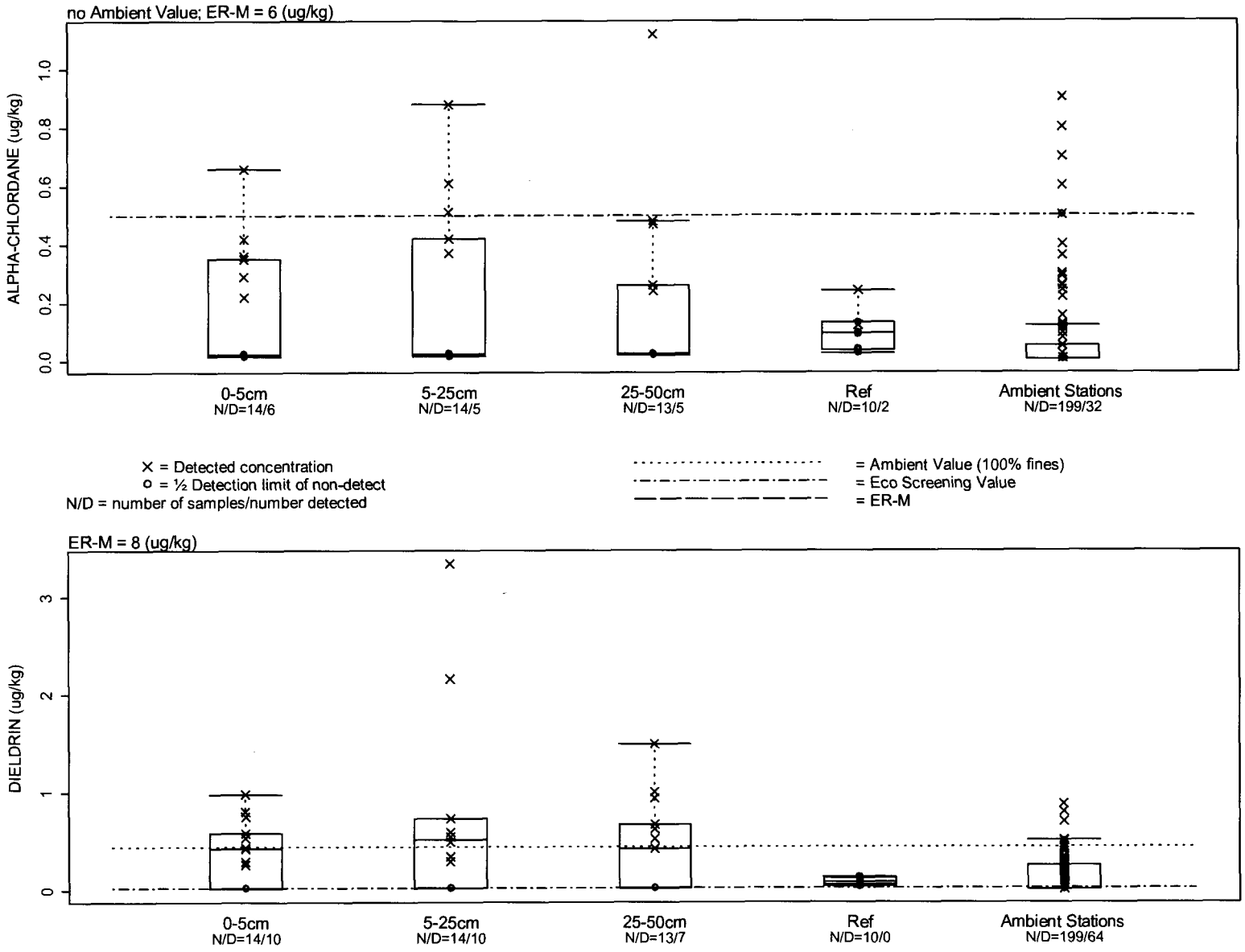

Figure A-51. Box Plots of *alpha*-Chlordane and Dieldrin Concentrations in 2005 Core Samples in IR Site 20 by Depth.

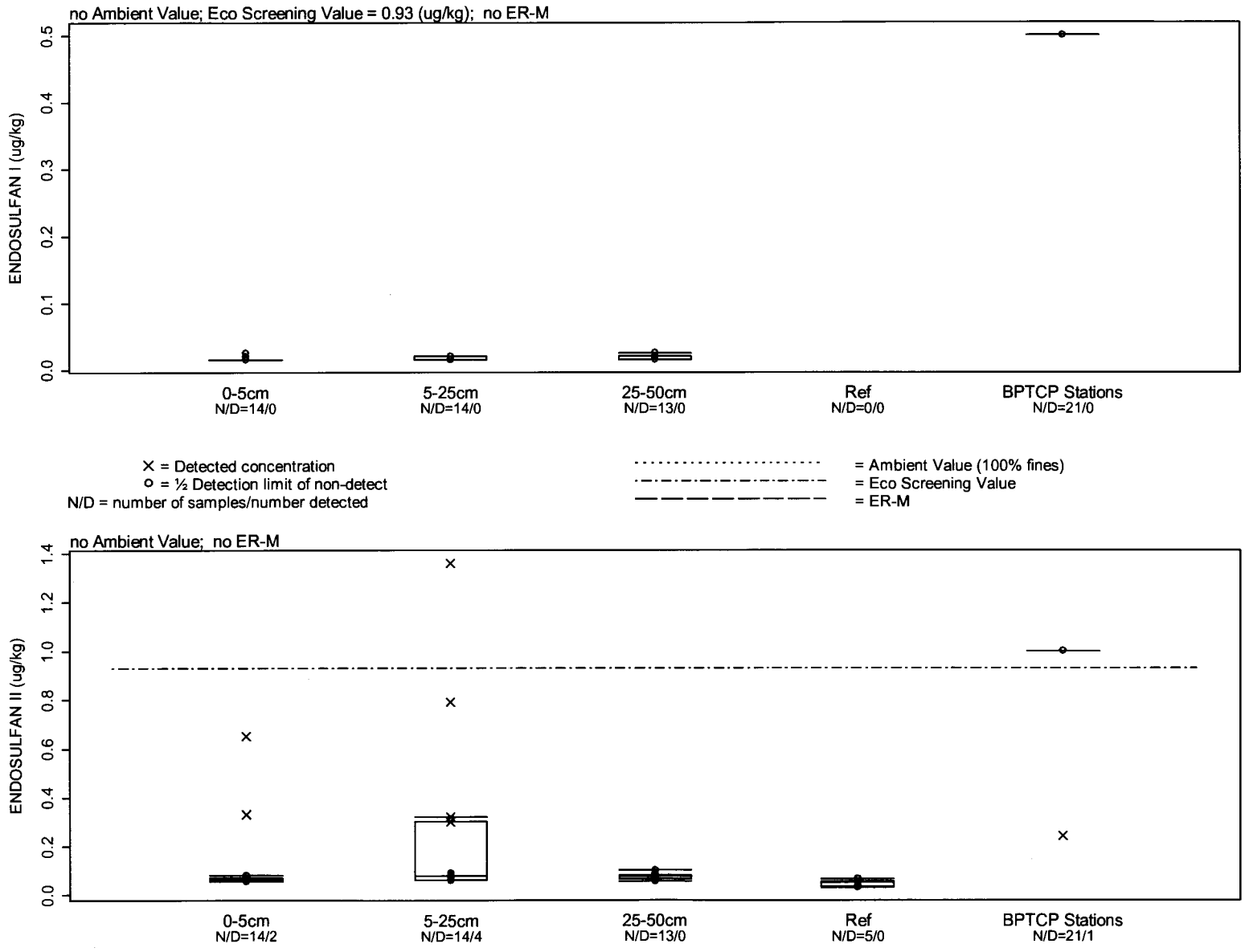

Figure A-52. Box Plots of Endosulfan I and Endosulfan II Concentrations in 2005 Core Samples in IR Site 20 by Depth.

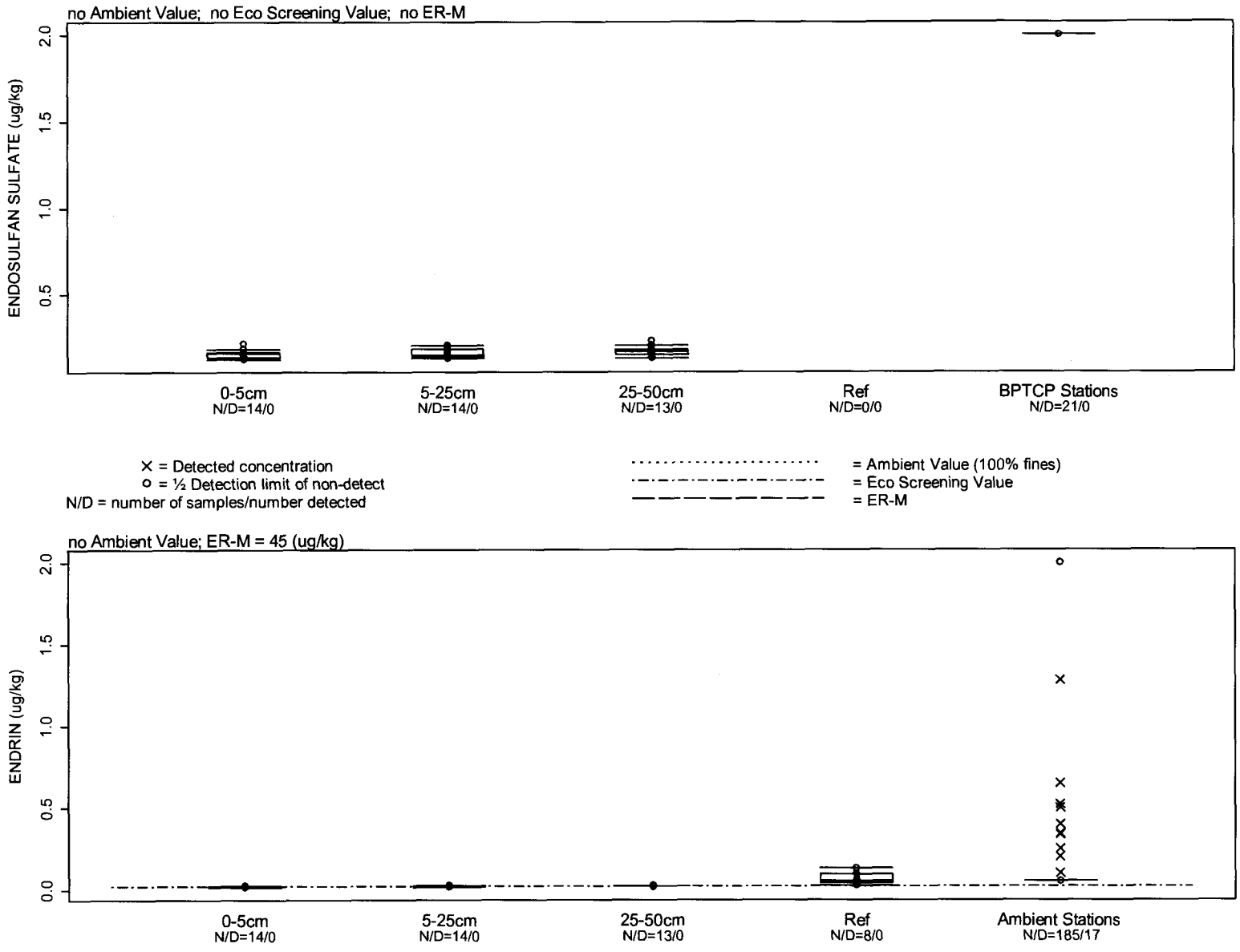

Figure A-53. Box Plots of Endosulfan Sulfate and Endrin Concentrations in 2005 Core Samples in IR Site 20 by Depth.

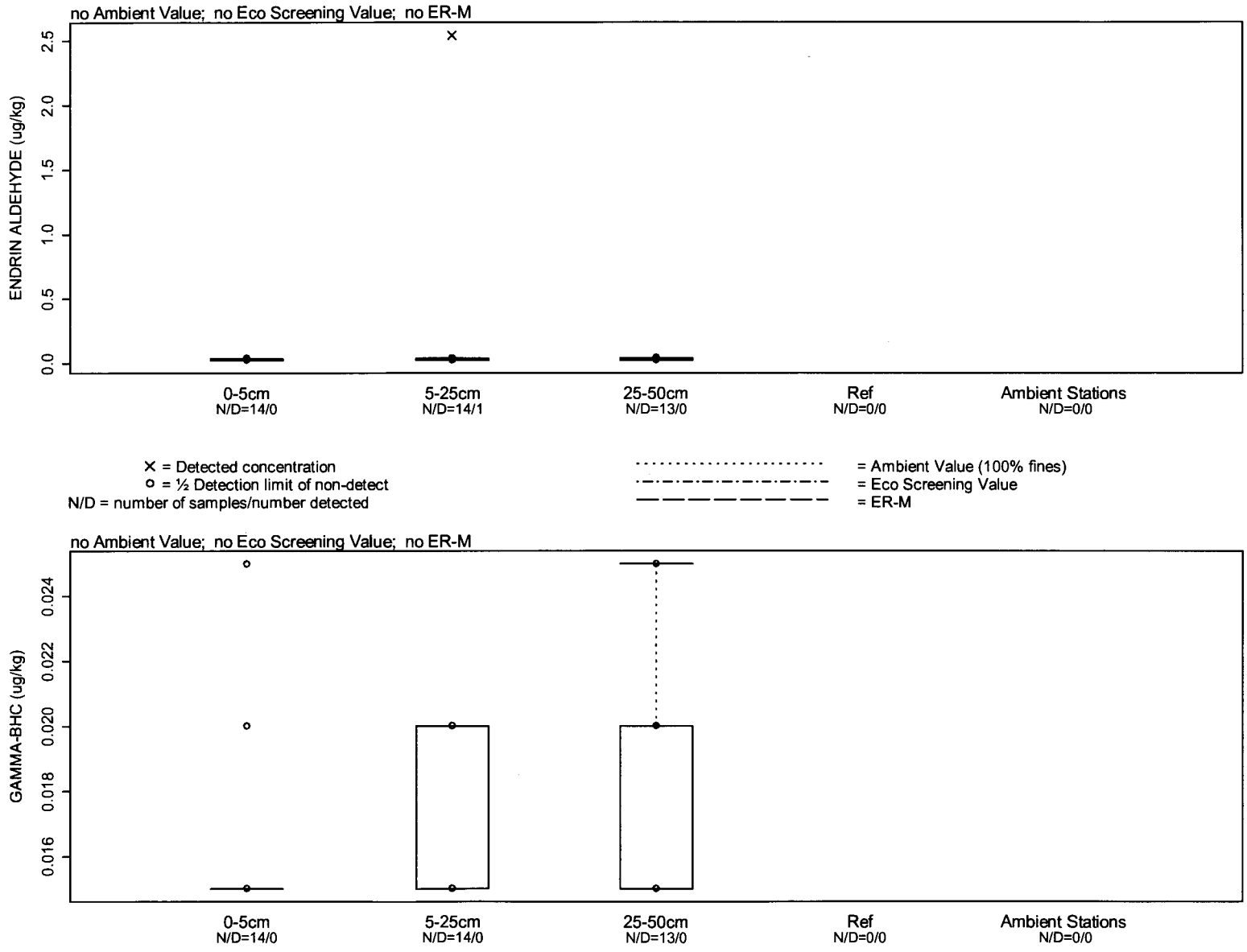

Figure A-54. Box Plots of Endrin Aldehyde and *gamma*-BHC Concentrations in 2005 Core Samples in IR Site 20 by Depth.

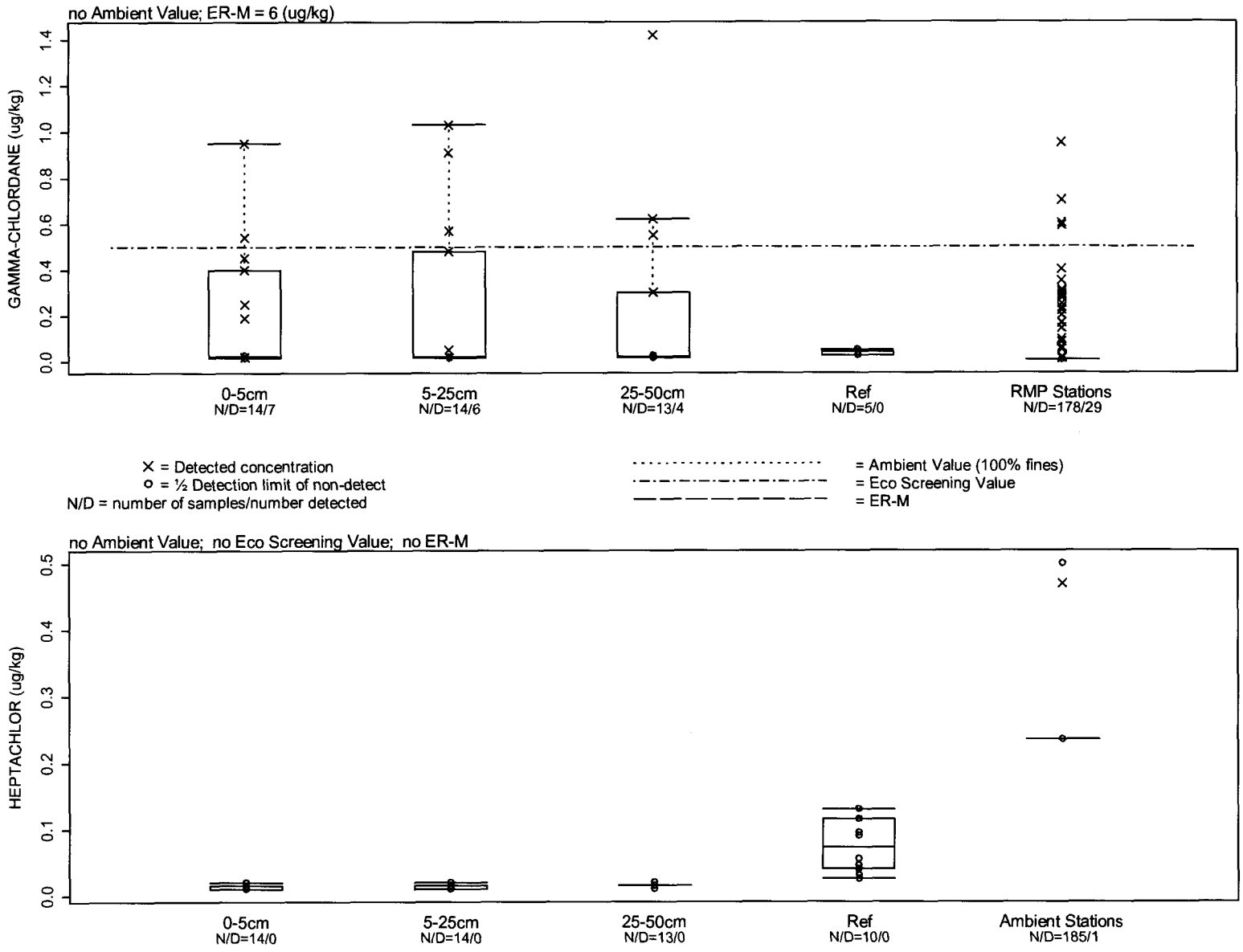

Figure A-55. Box Plots of *gamma*-Chlordane and Heptachlor Concentrations in 2005 Core Samples in IR Site 20 by Depth.

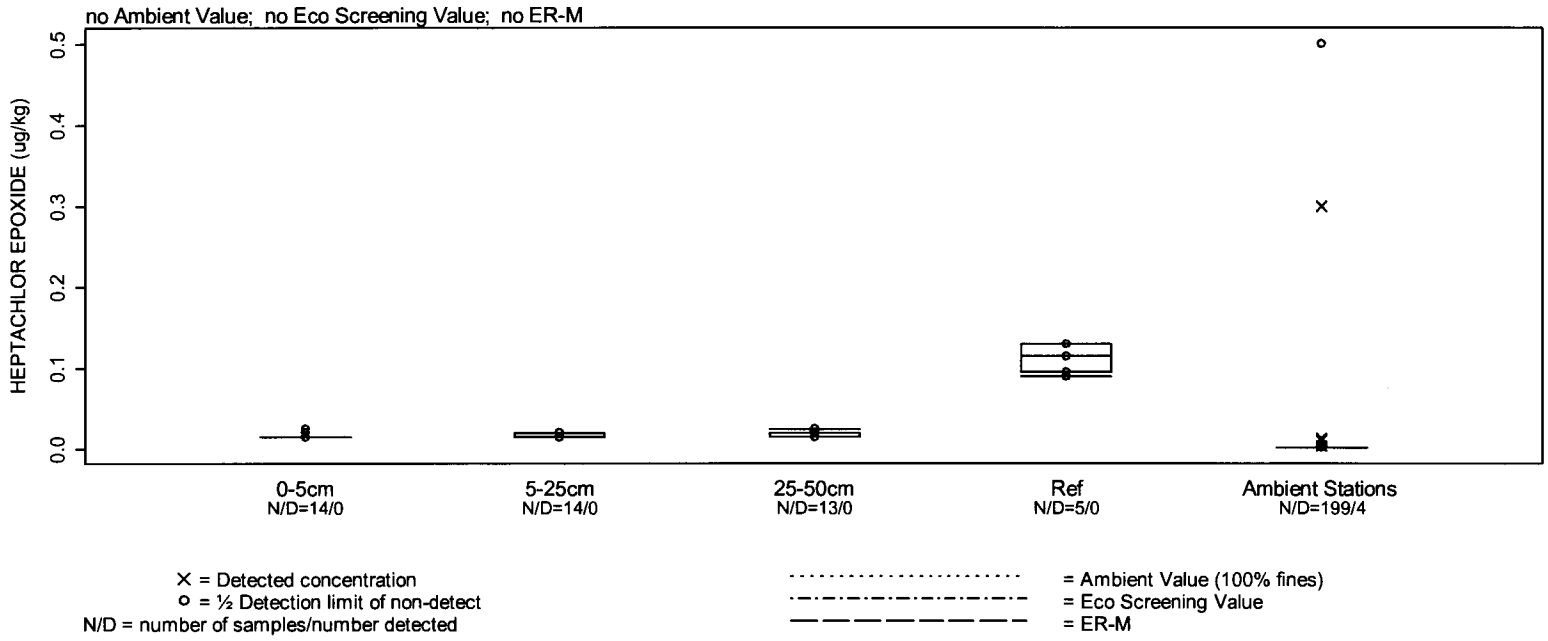

Figure A-56. Box Plots of Heptachlor Epoxide Concentrations in 2005 Core Samples in IR Site 20 by Depth.

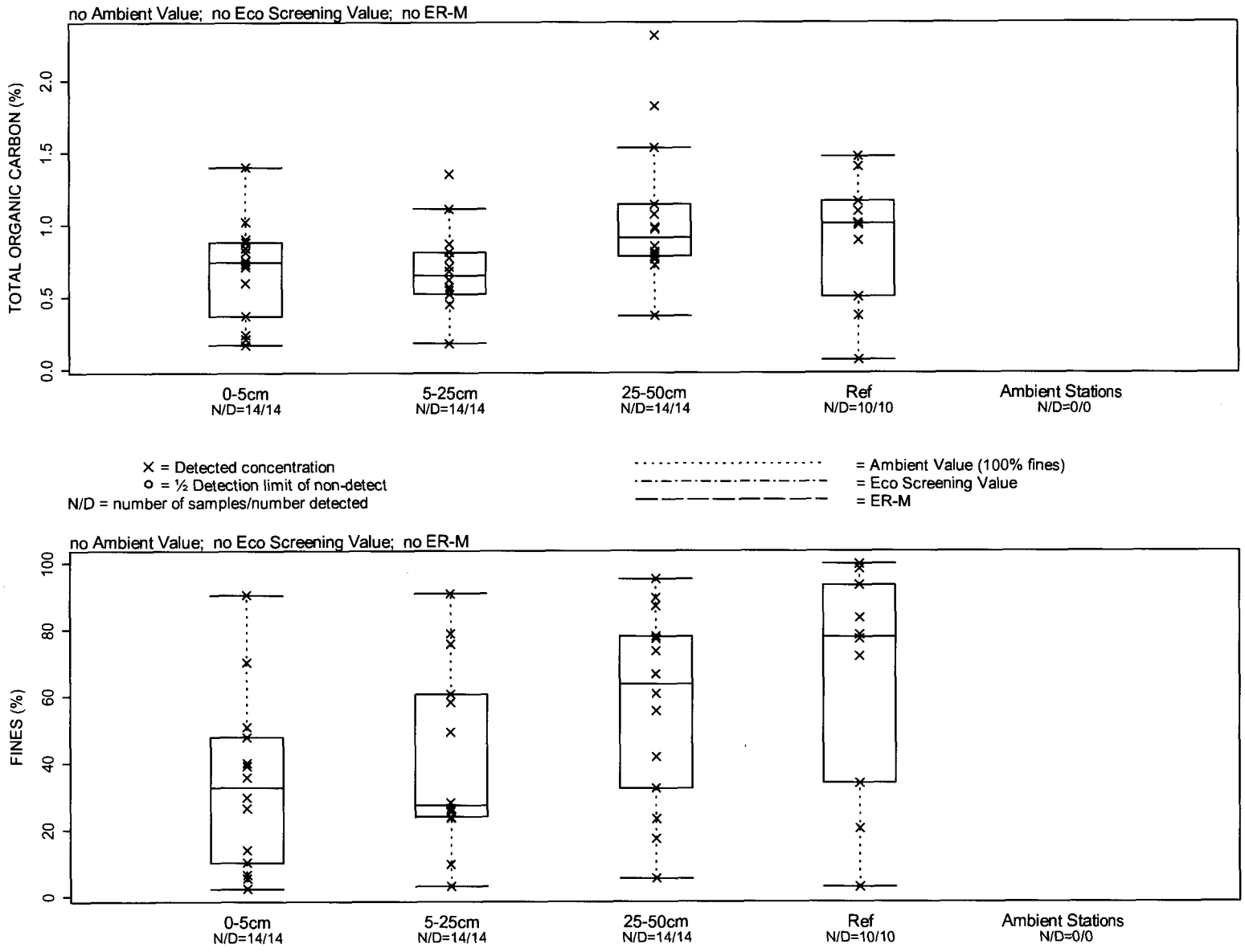

Figure A-57. Box Plots of Total Organic Carbon and Percent Fines Concentrations in 2005 Core Samples in IR Site 20 by Depth.

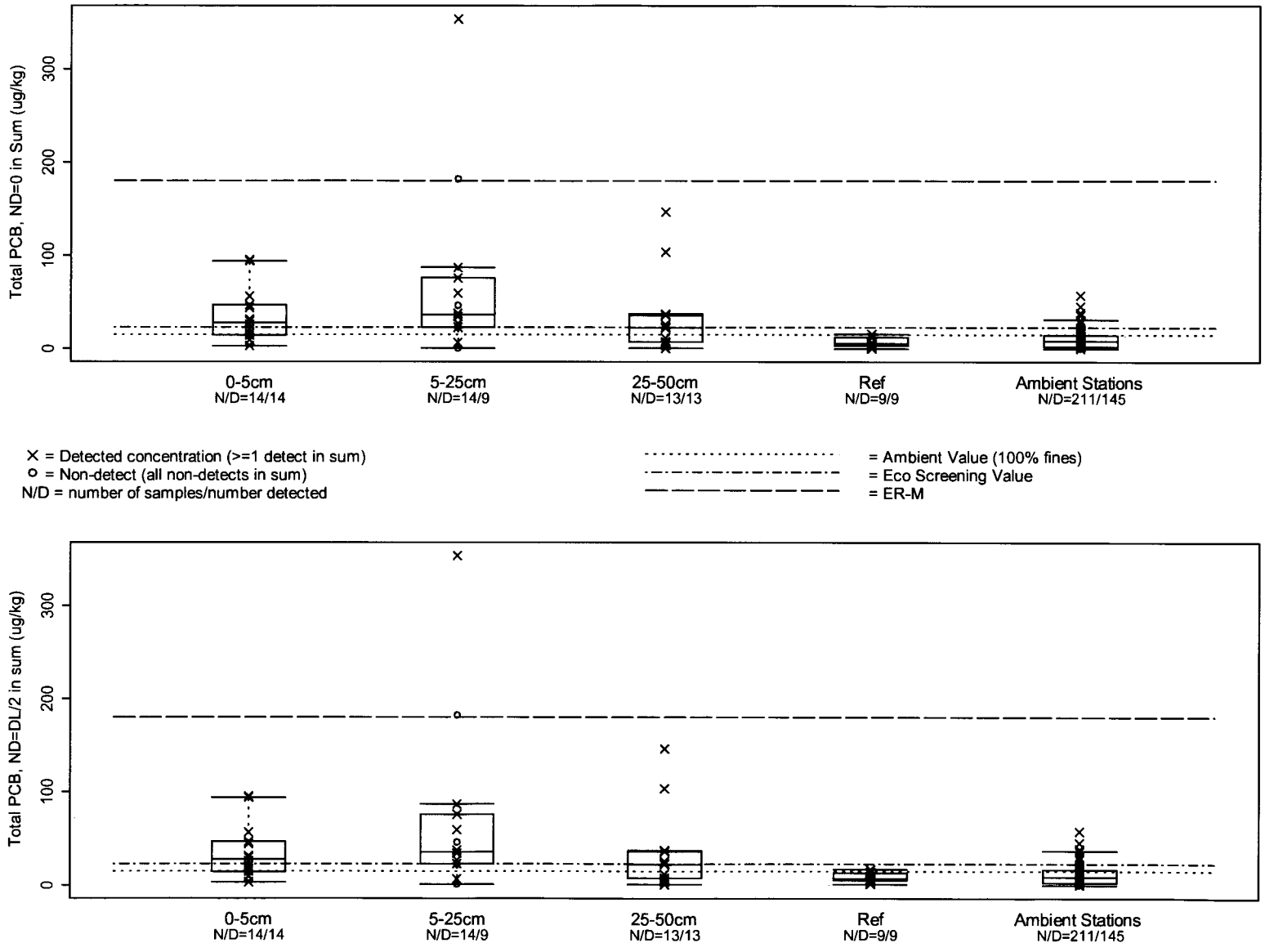

Figure A-58. Box Plots of Total PCB Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

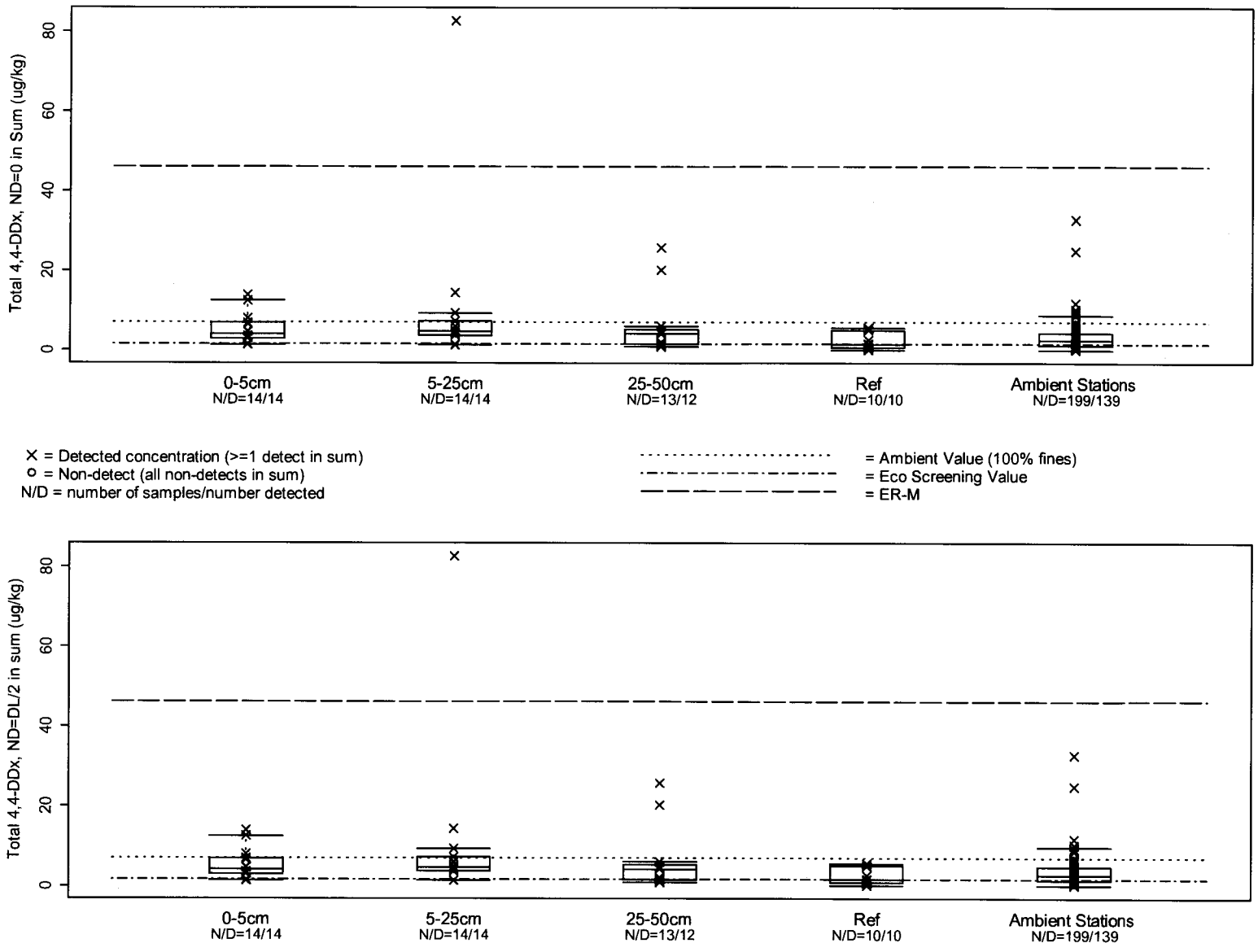

Figure A-59. Box Plots of Total 4,4-DDx Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

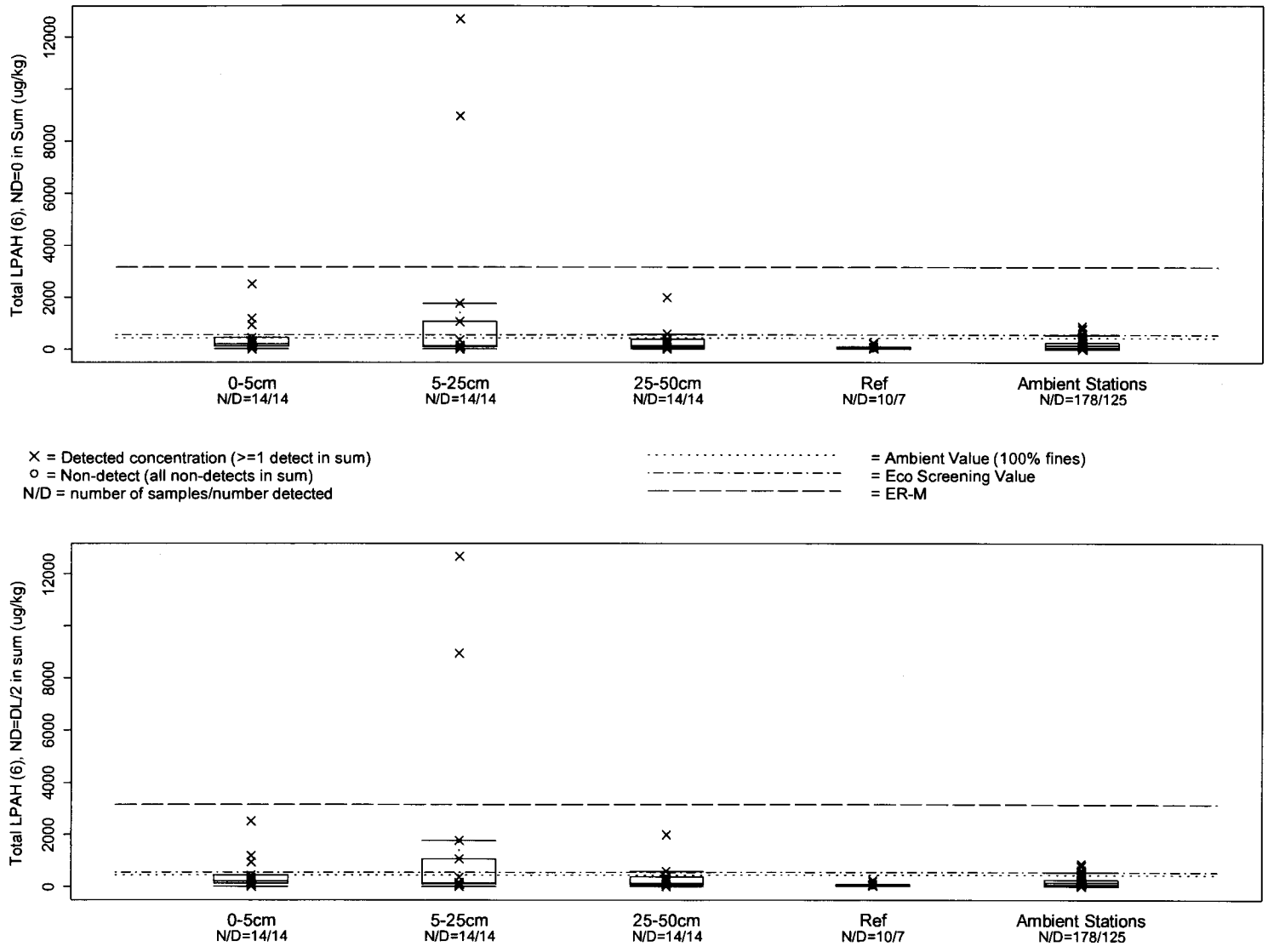

Figure A-60. Box Plots of Total LPAH (sum of 6 analytes) Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

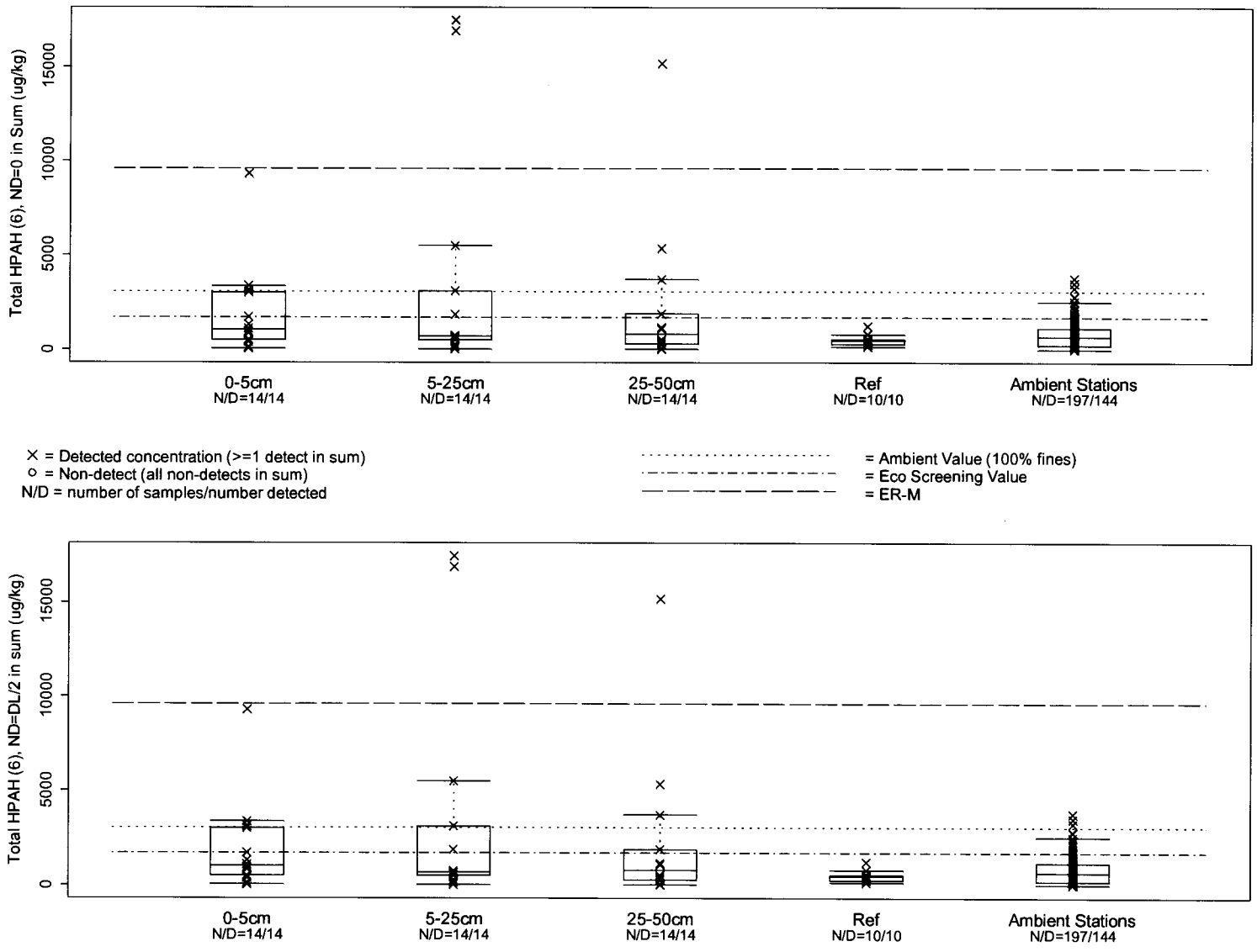

Figure A-61. Box Plots of Total HPAH (sum of 6 analytes) Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

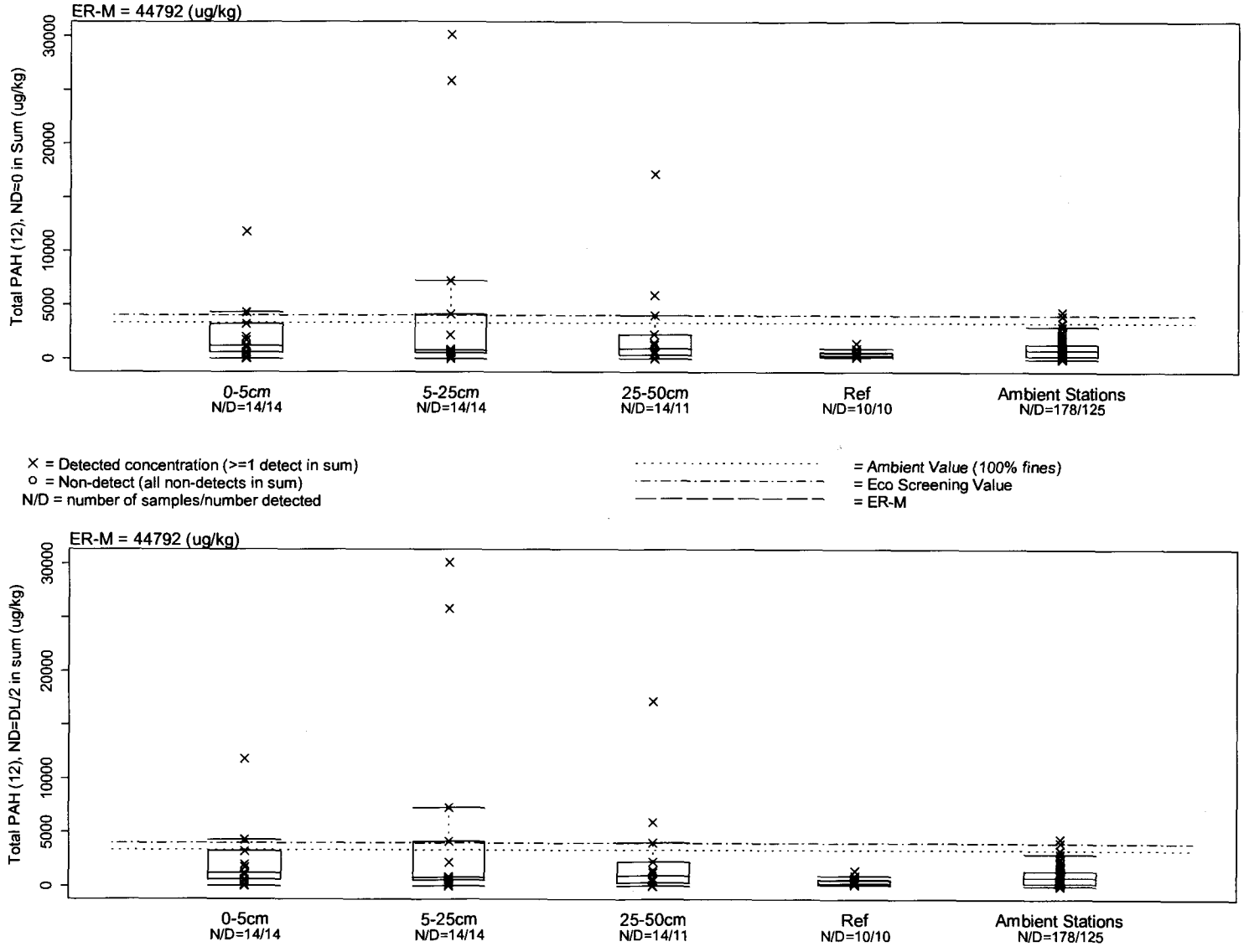

Figure A-62. Box Plots of Total PAH (sum of 12 analytes) Concentrations in 2005 Core Samples in IR Site 20 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

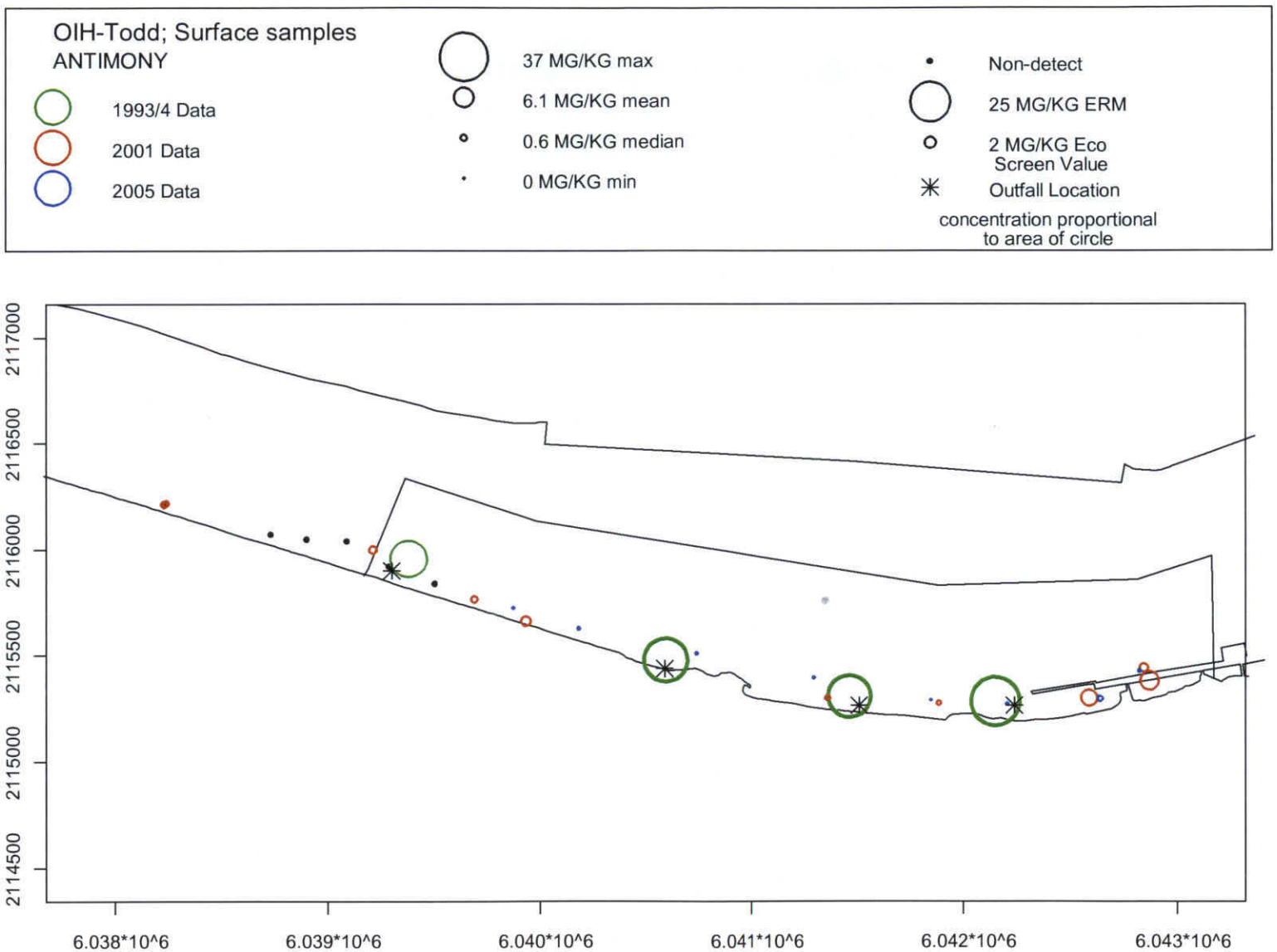

Figure A-63. Bubble Plot of Antimony Concentrations in IR Site 20 Surface Sediment by Year.

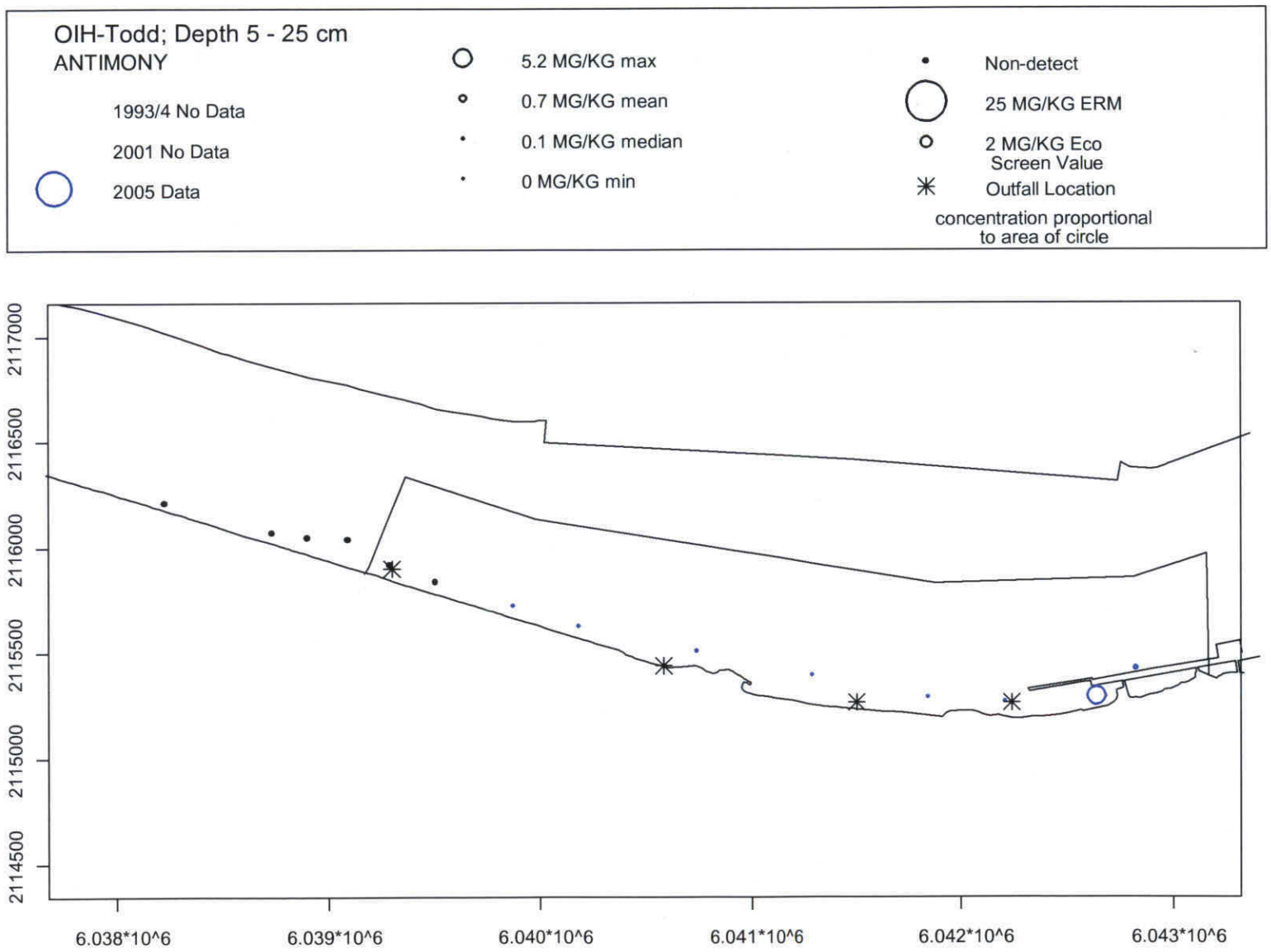

Figure A-64. Bubble Plot of Antimony Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

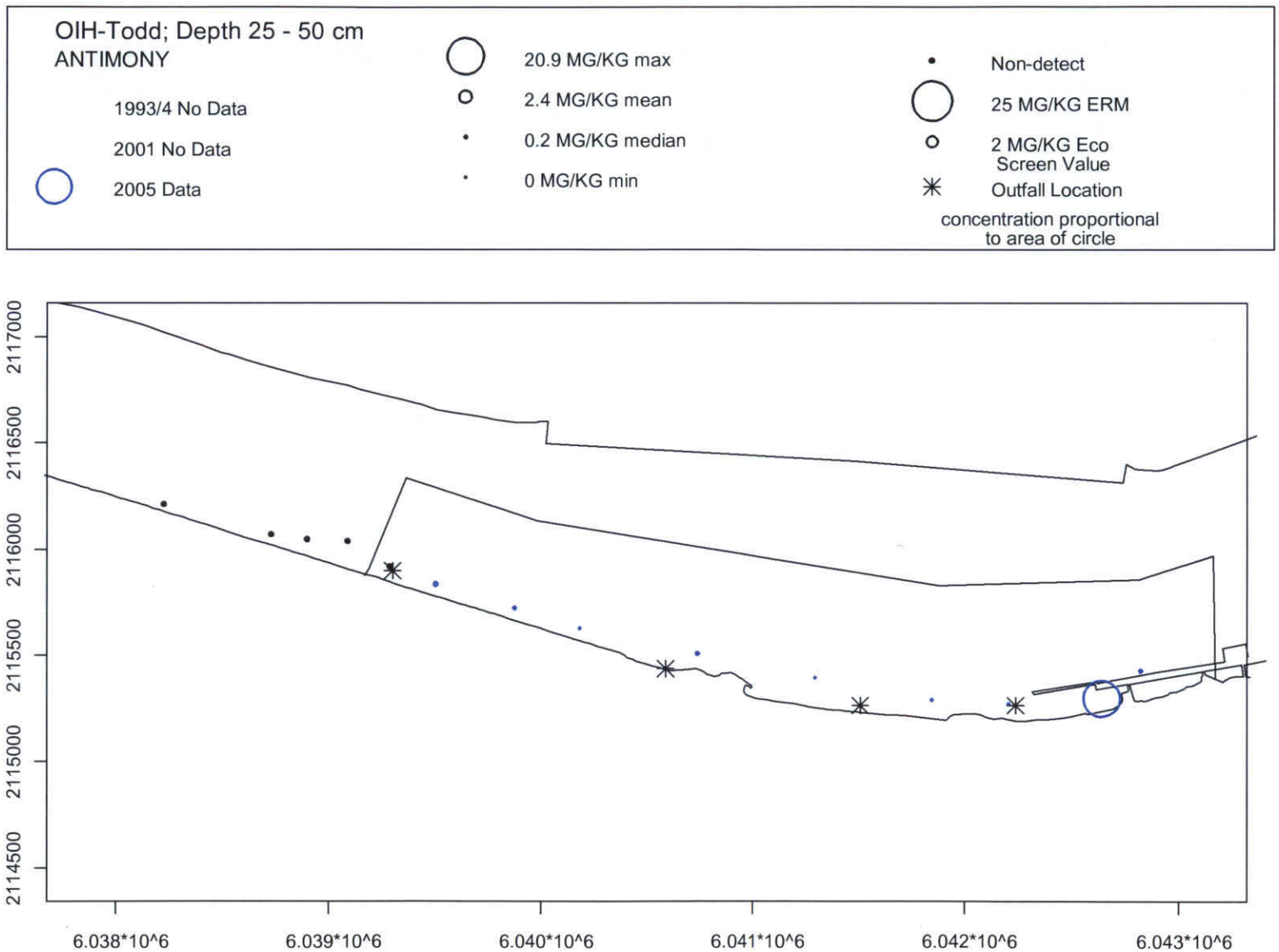

Figure A-65. Bubble Plot of Antimony Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

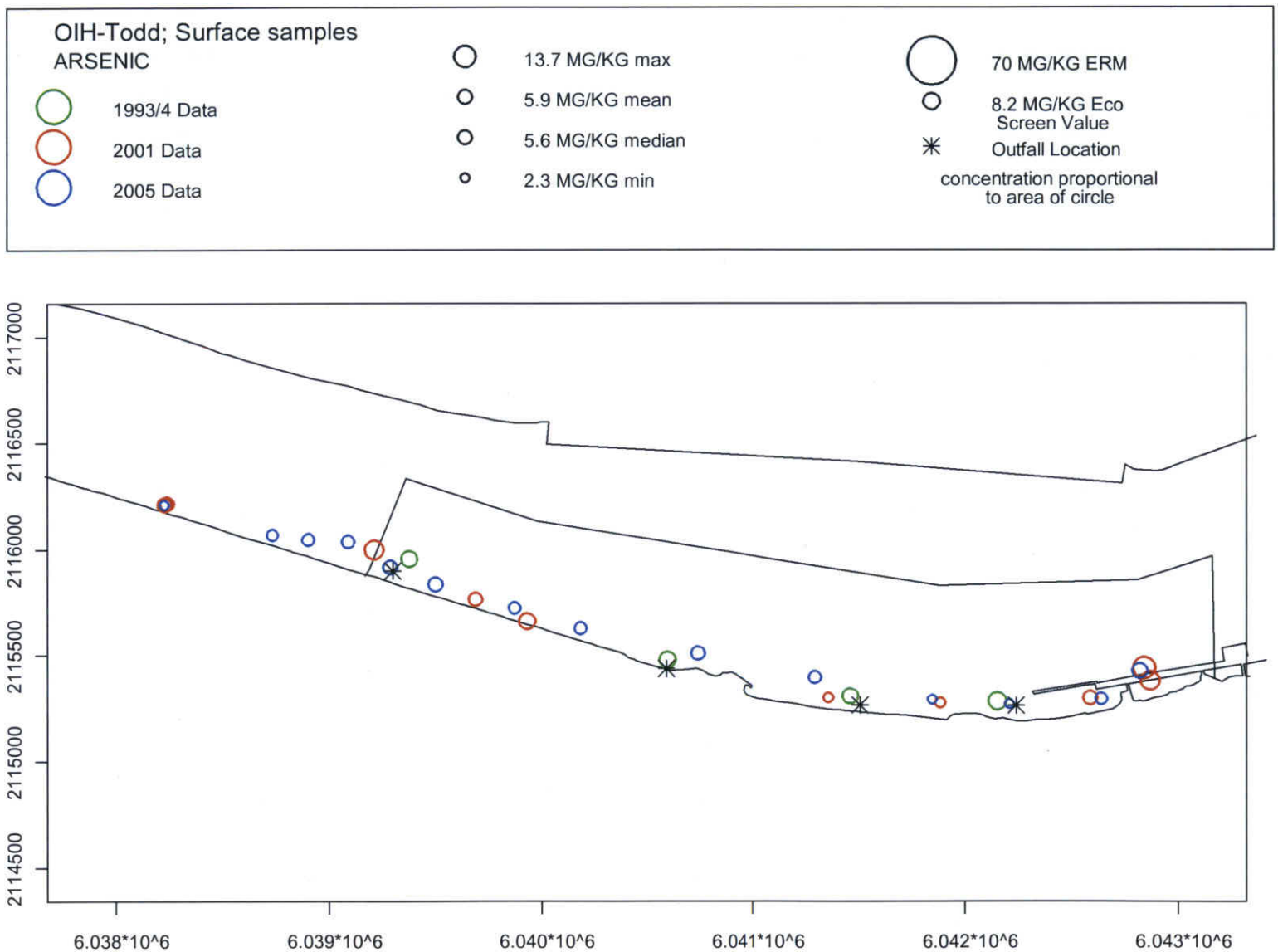

Figure A-66. Bubble Plot of Arsenic Concentrations in IR Site 20 Surface Sediment by Year.

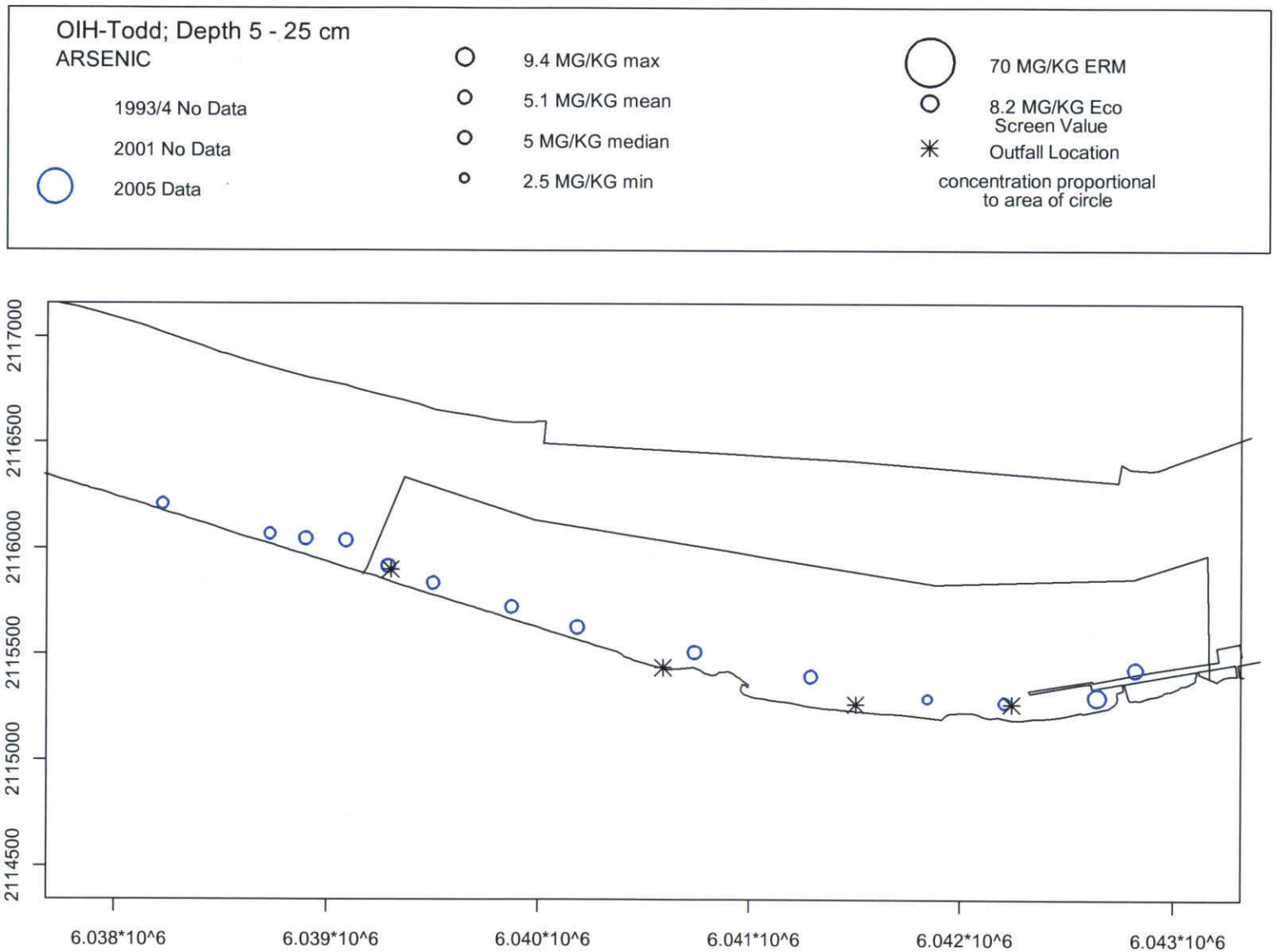

Figure A-67. Bubble Plot of Arsenic Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

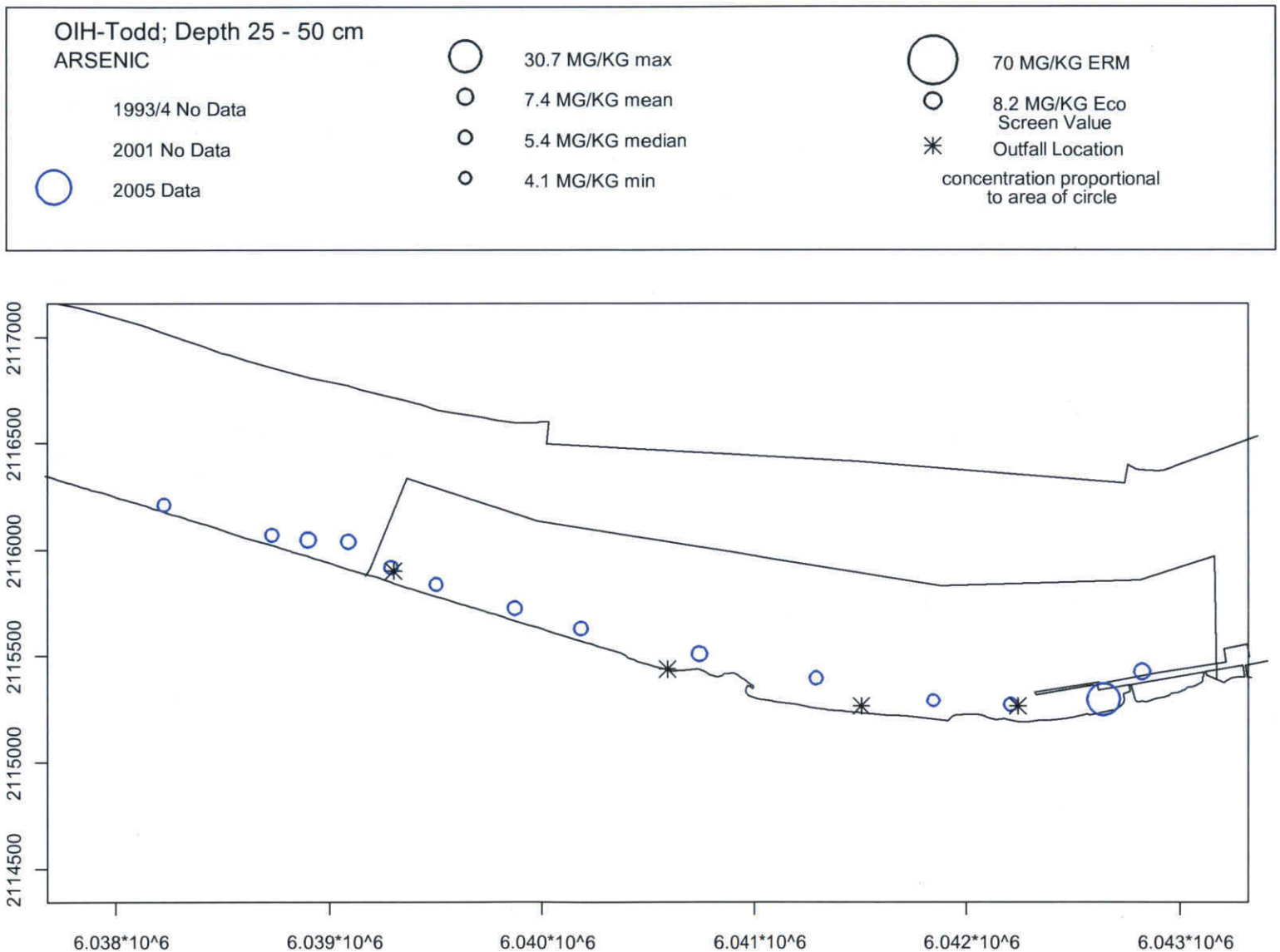

Figure A-68. Bubble Plot of Arsenic Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

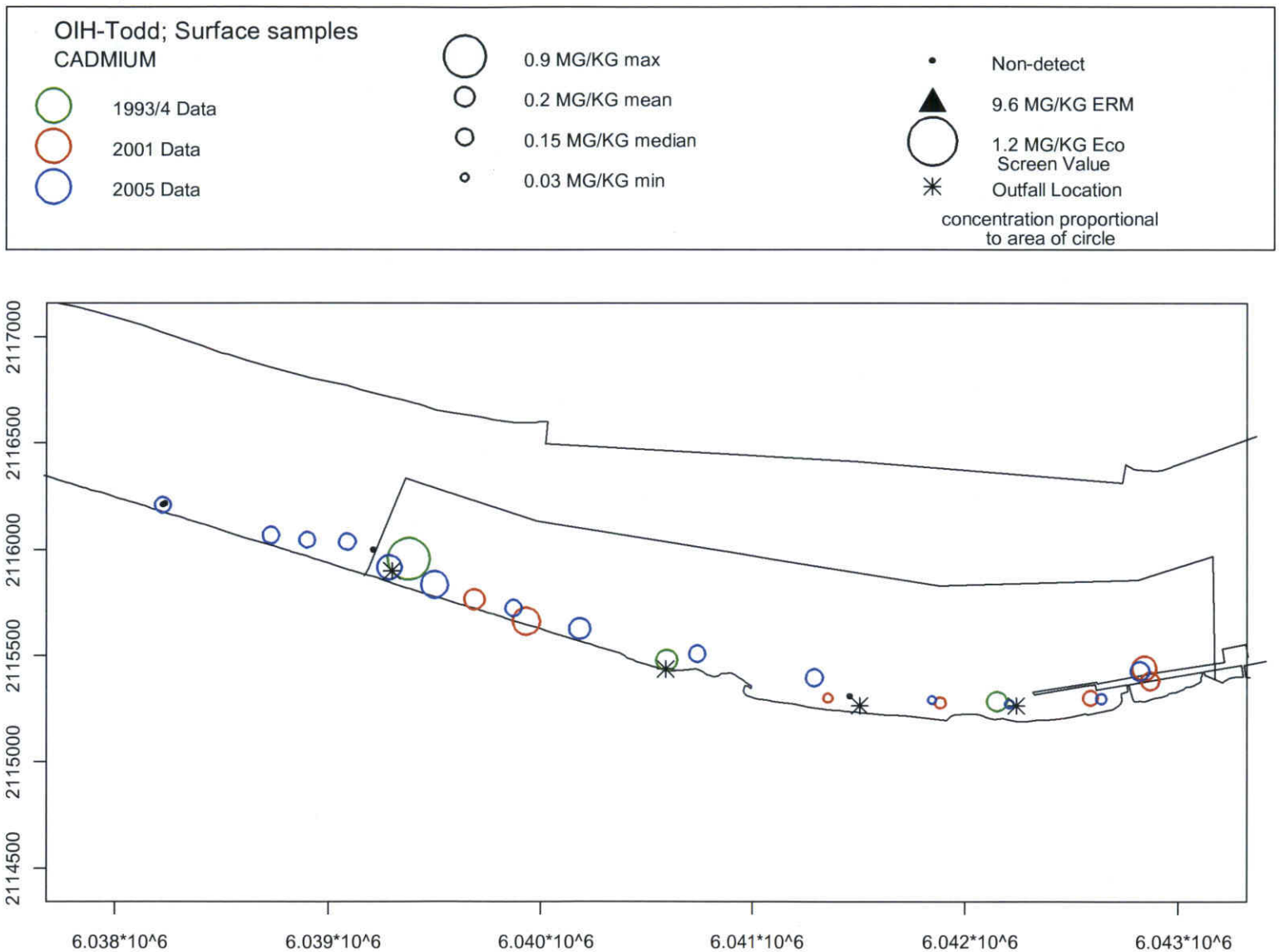

Figure A-69. Bubble Plot of Cadmium Concentrations in IR Site 20 Surface Sediment by Year.

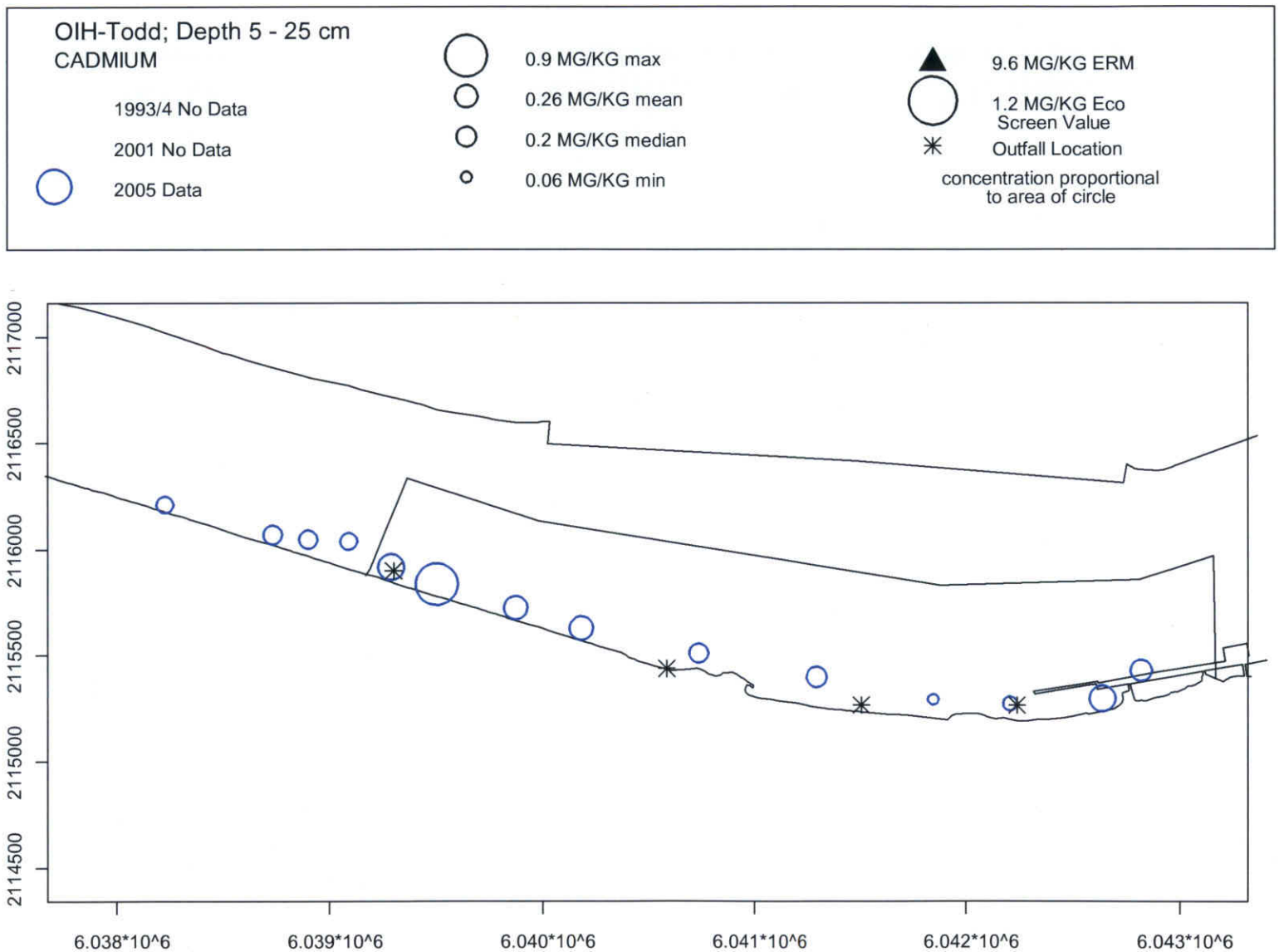

Figure A-70. Bubble Plot of Cadmium Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

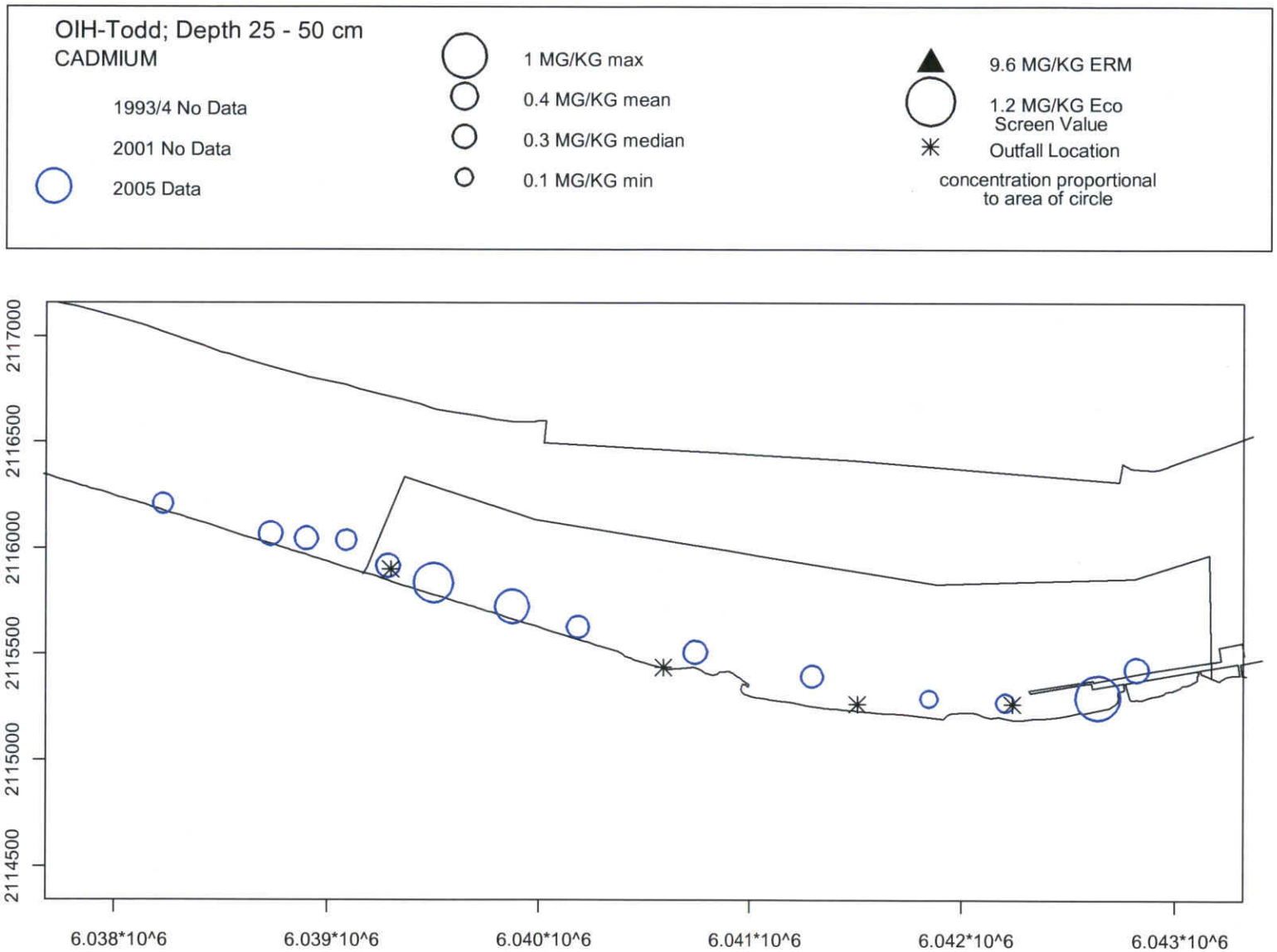

Figure A-71. Bubble Plot of Cadmium Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

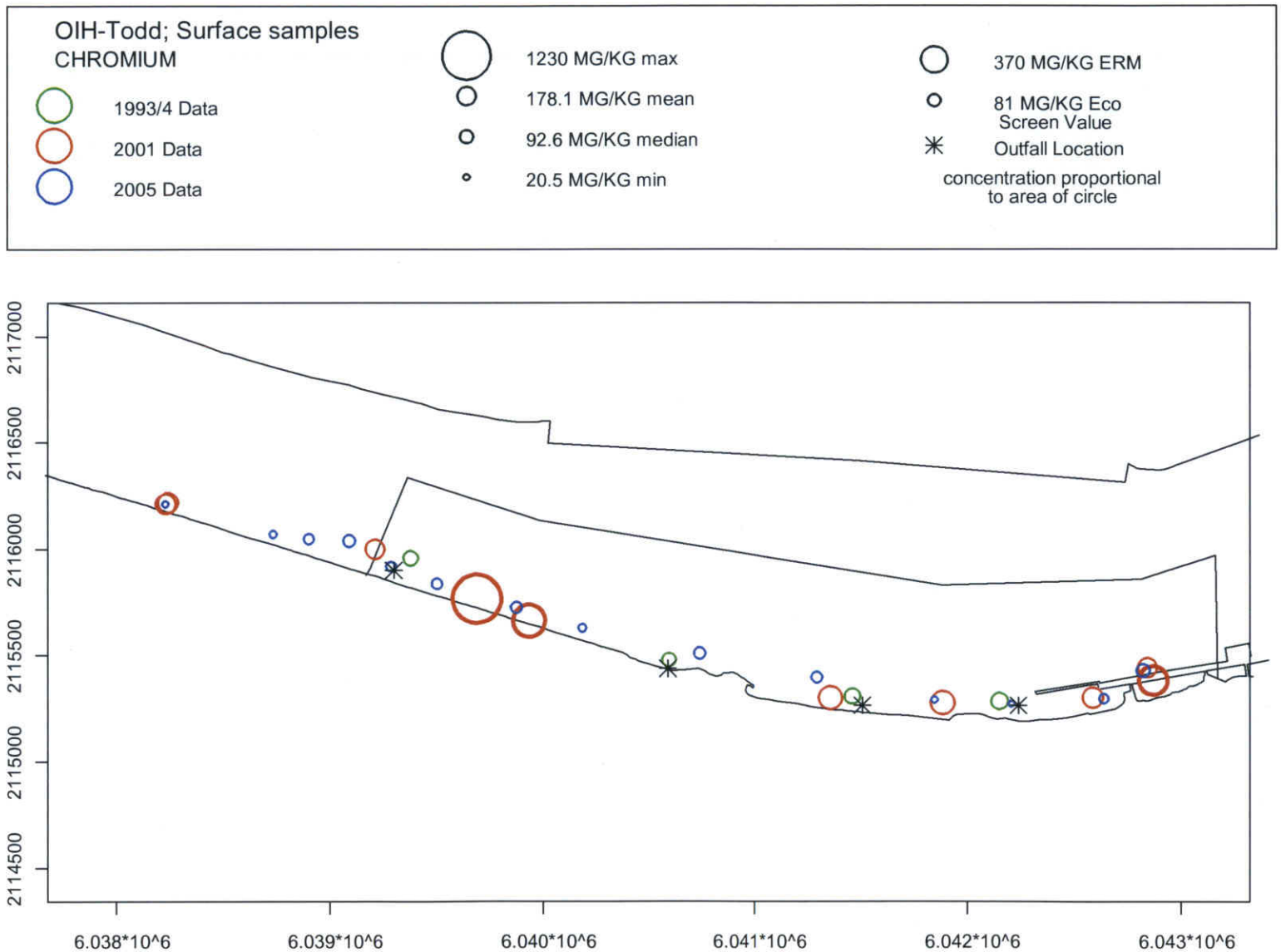

Figure A-72. Bubble Plot of Chromium Concentrations in IR Site 20 Surface Sediment by Year.

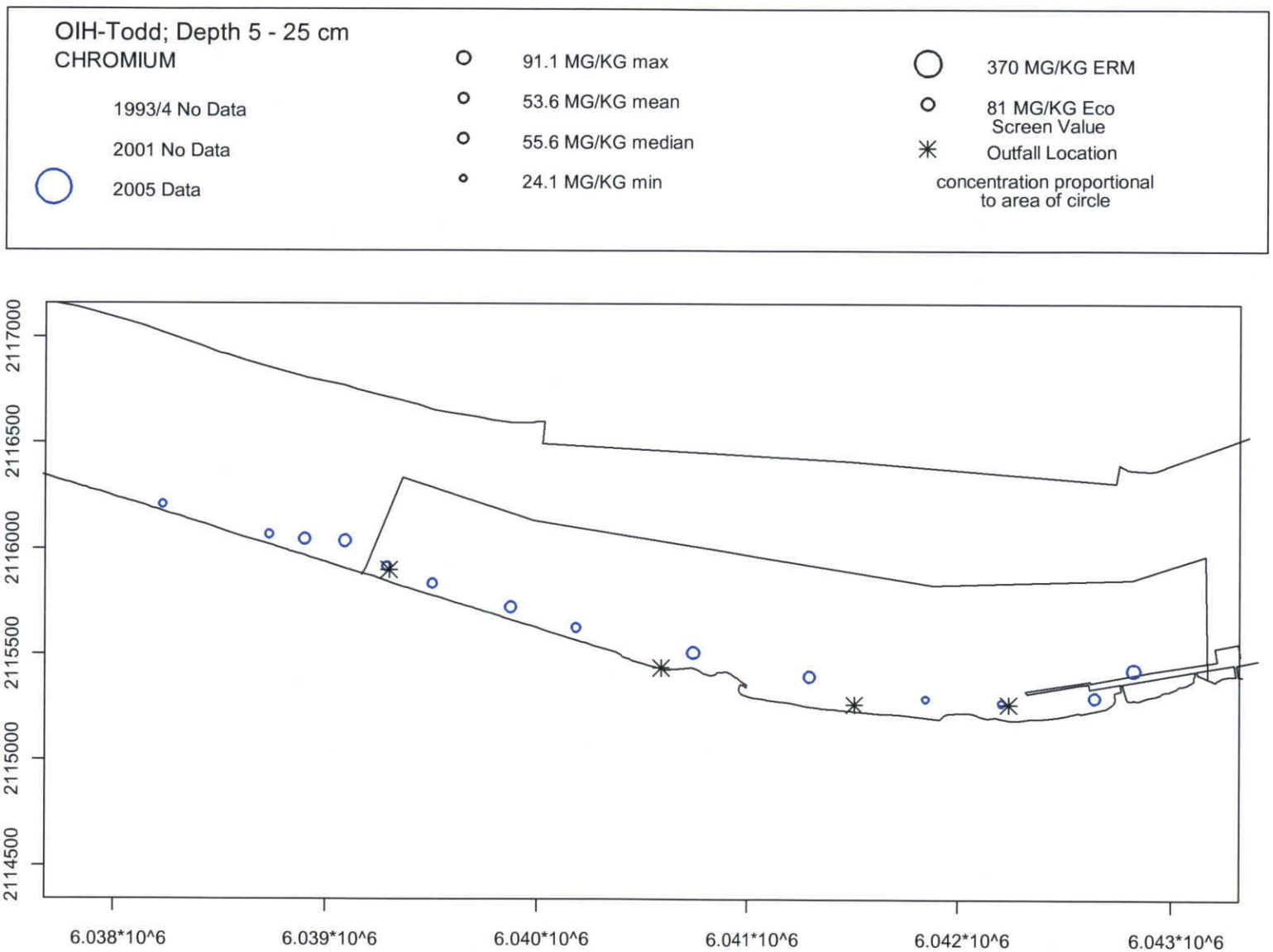

Figure A-73. Bubble Plot of Chromium Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

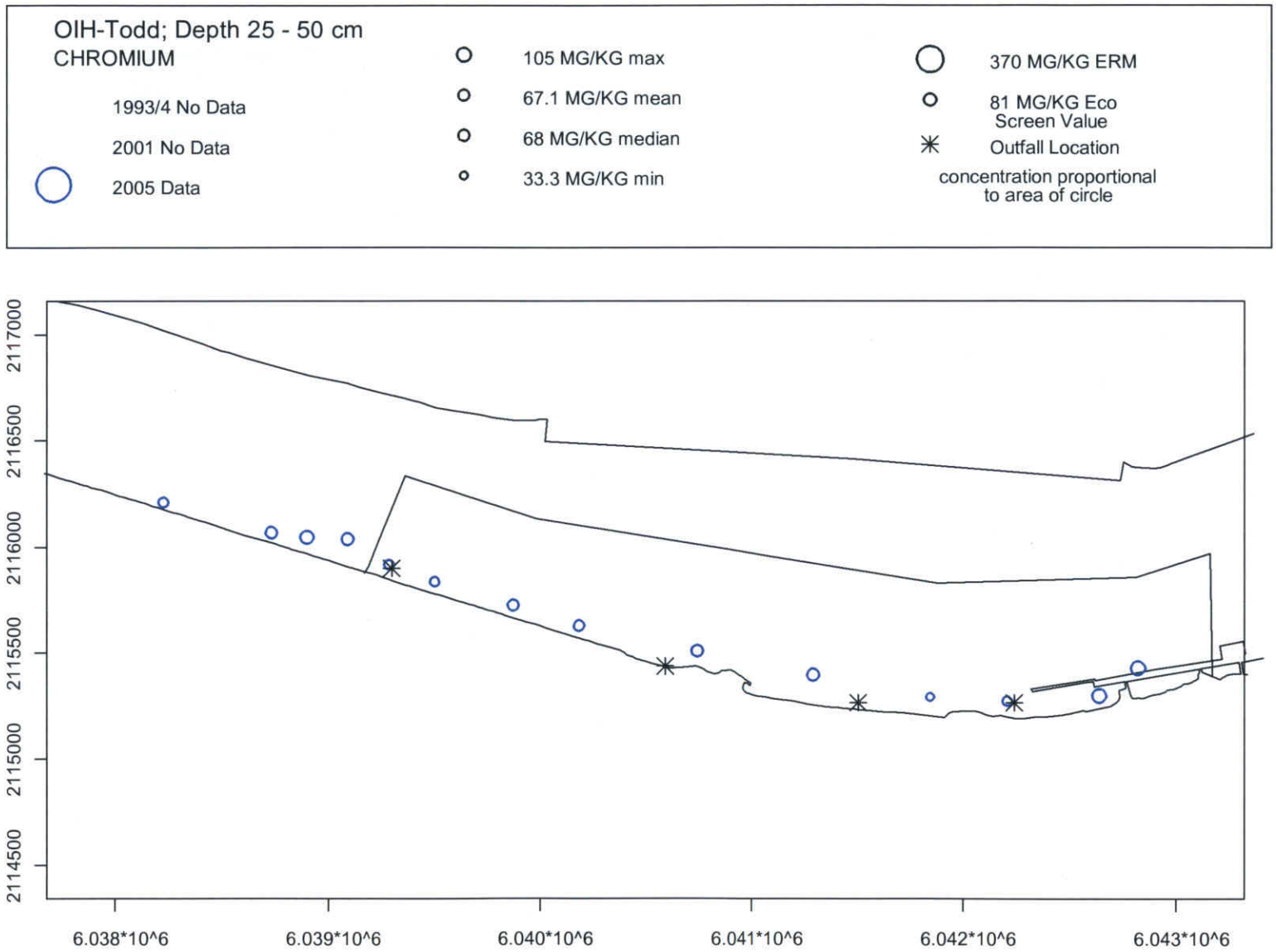

Figure A-74. Bubble Plot of Chromium Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

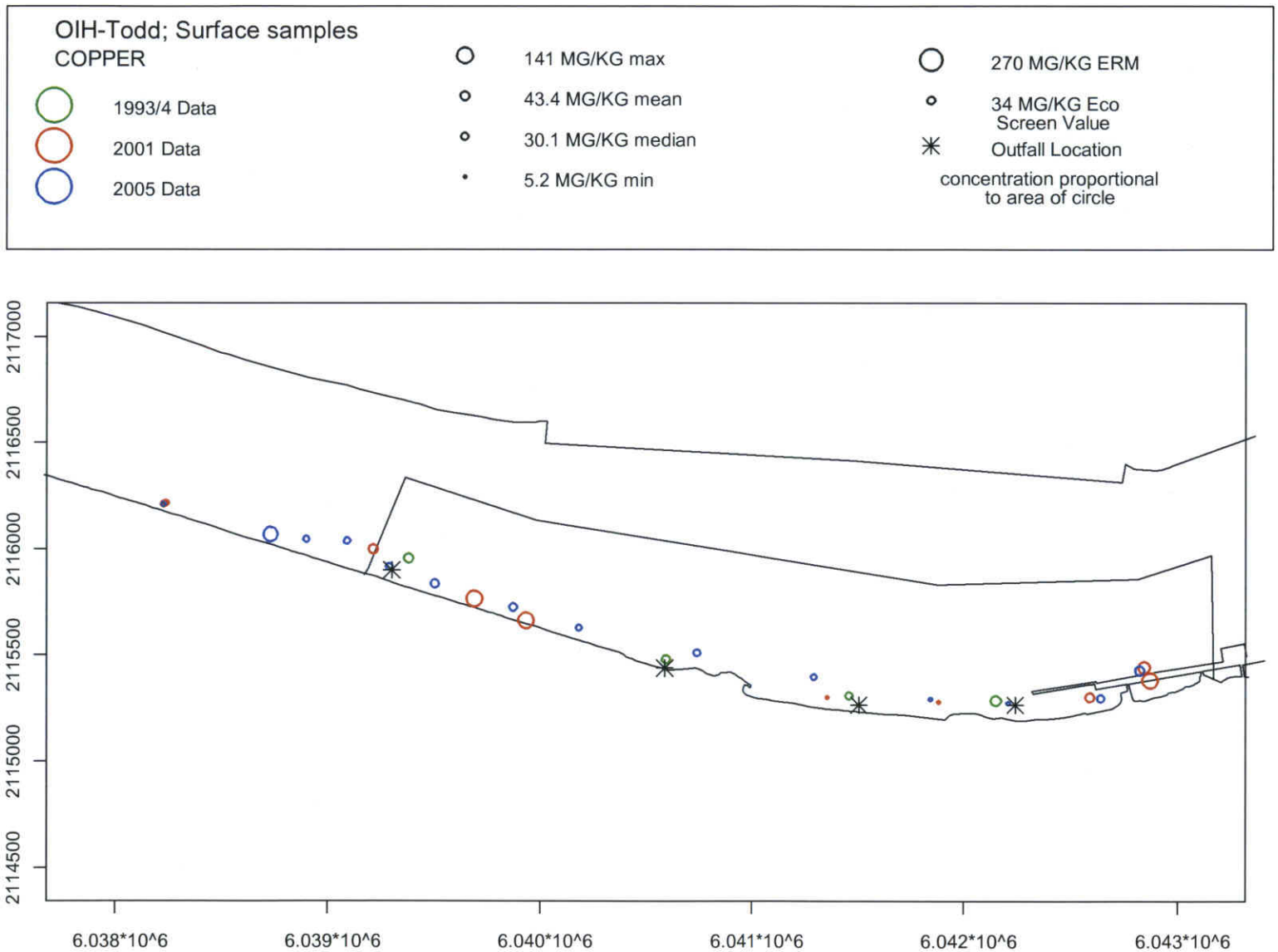

Figure A-75. Bubble Plot of Copper Concentrations in IR Site 20 Surface Sediment by Year.

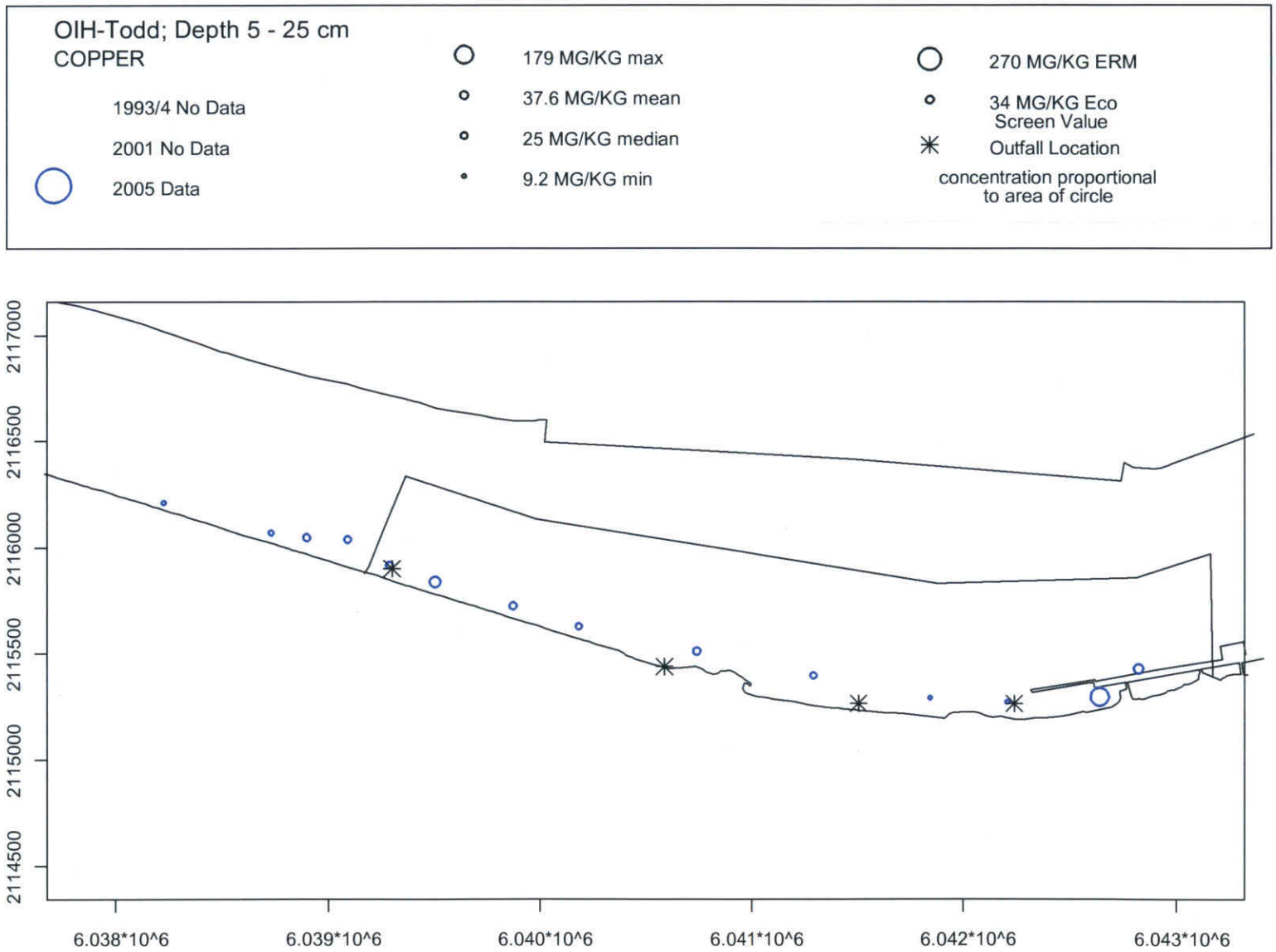

Figure A-76. Bubble Plot of Copper Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

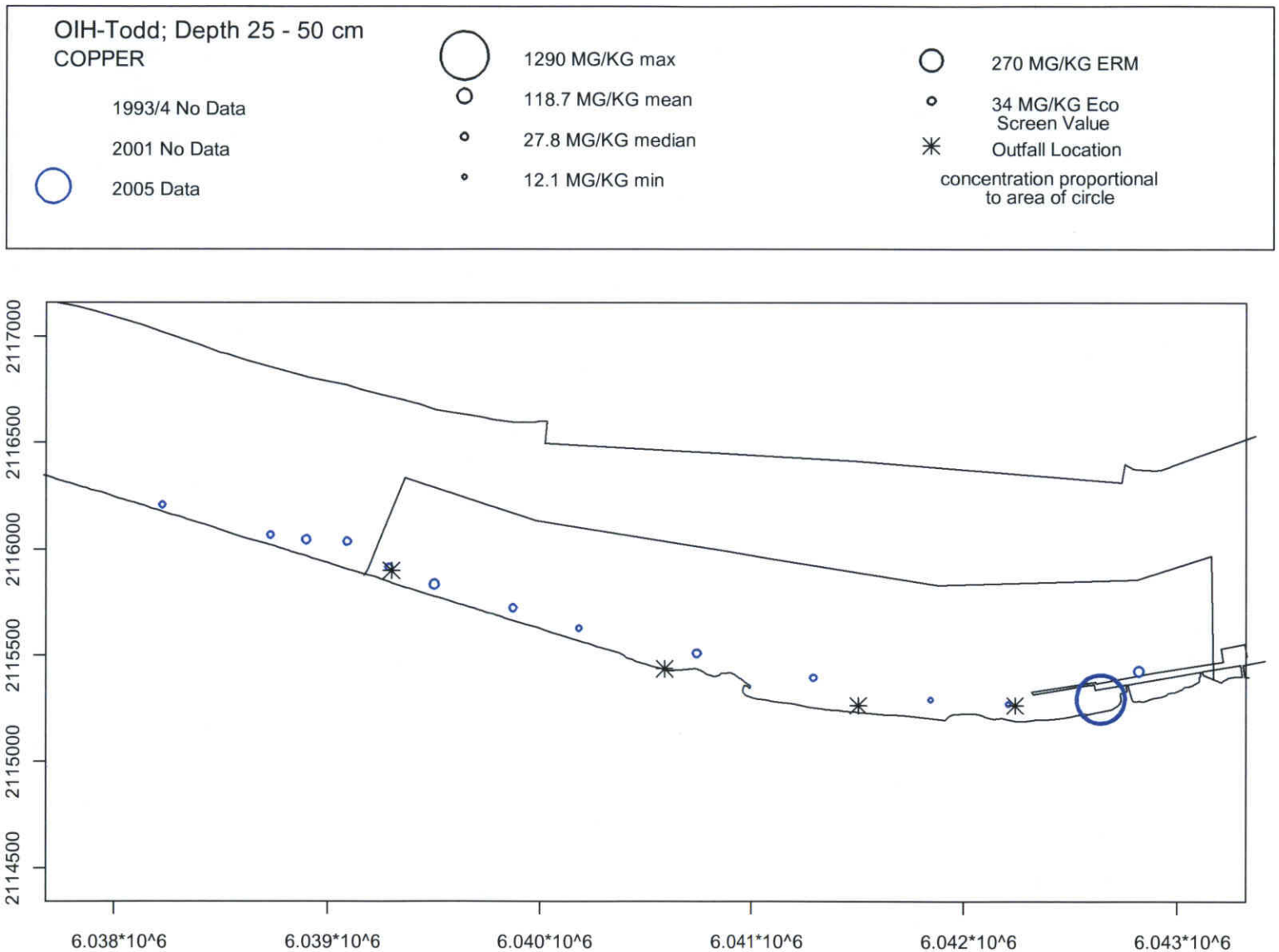

Figure A-77. Bubble Plot of Copper Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

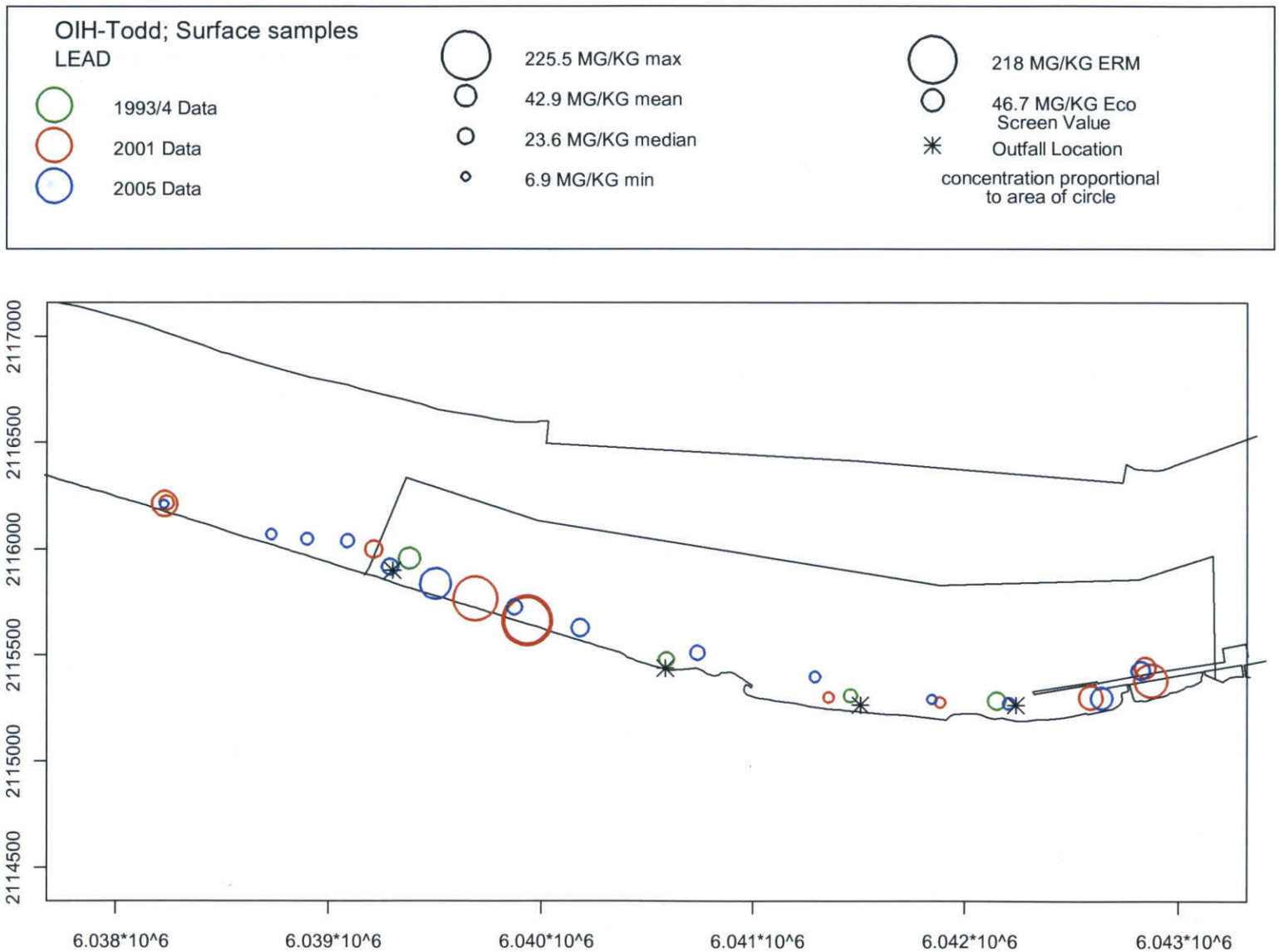

Figure A-78. Bubble Plot of Lead Concentrations in IR Site 20 Surface Sediment by Year.

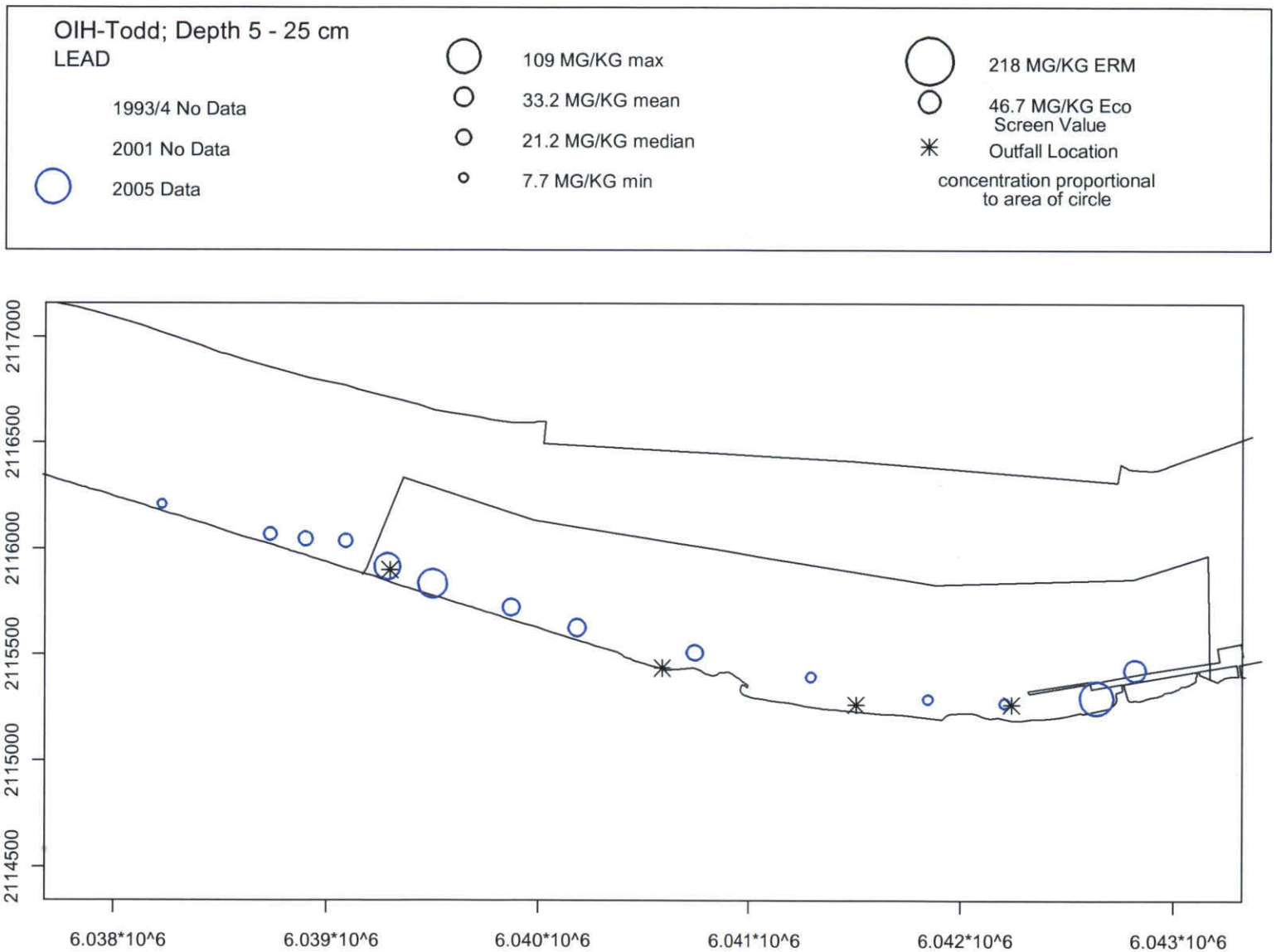

Figure A-79. Bubble Plot of Lead Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

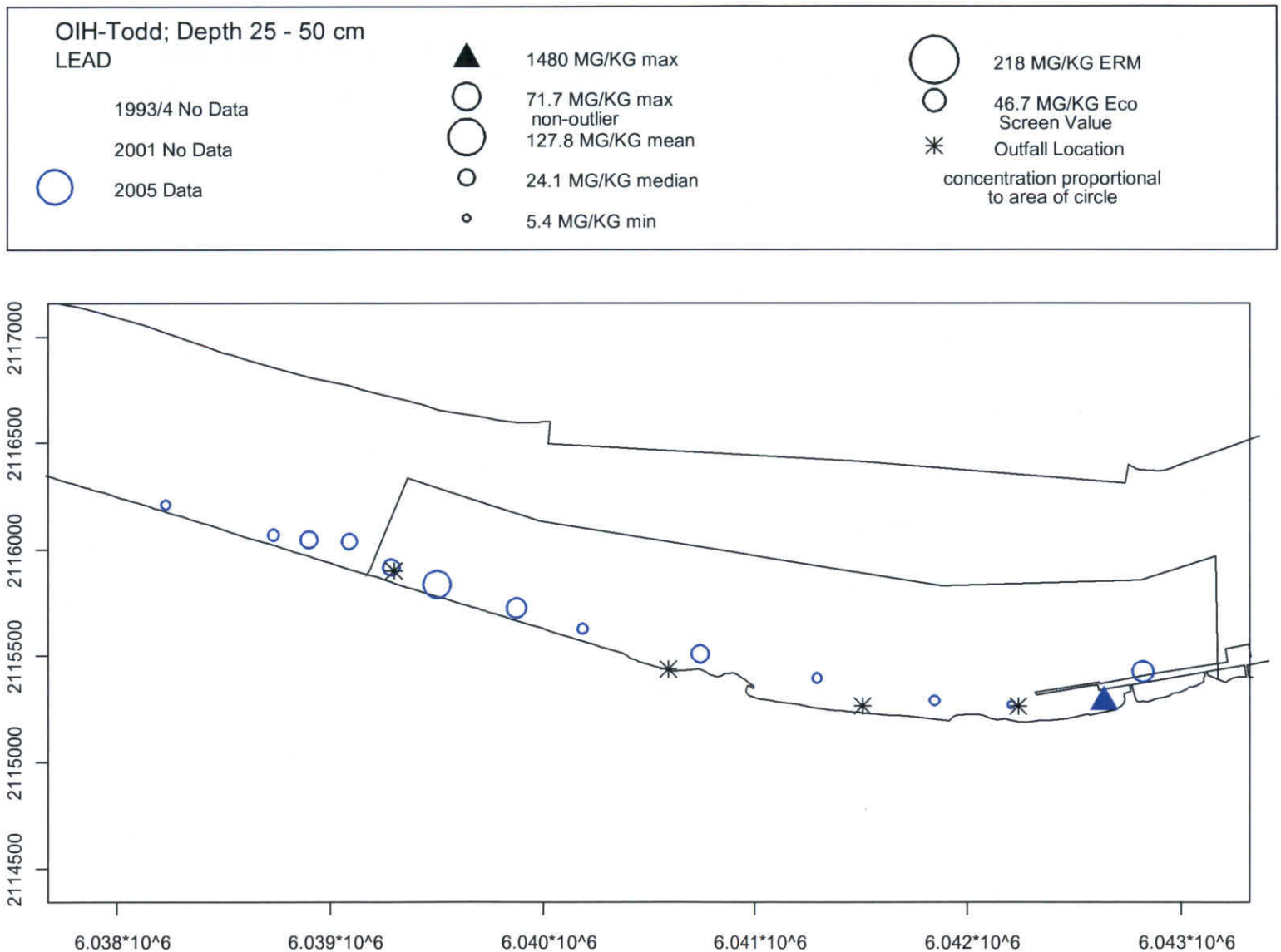

Figure A-80. Bubble Plot of Lead Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

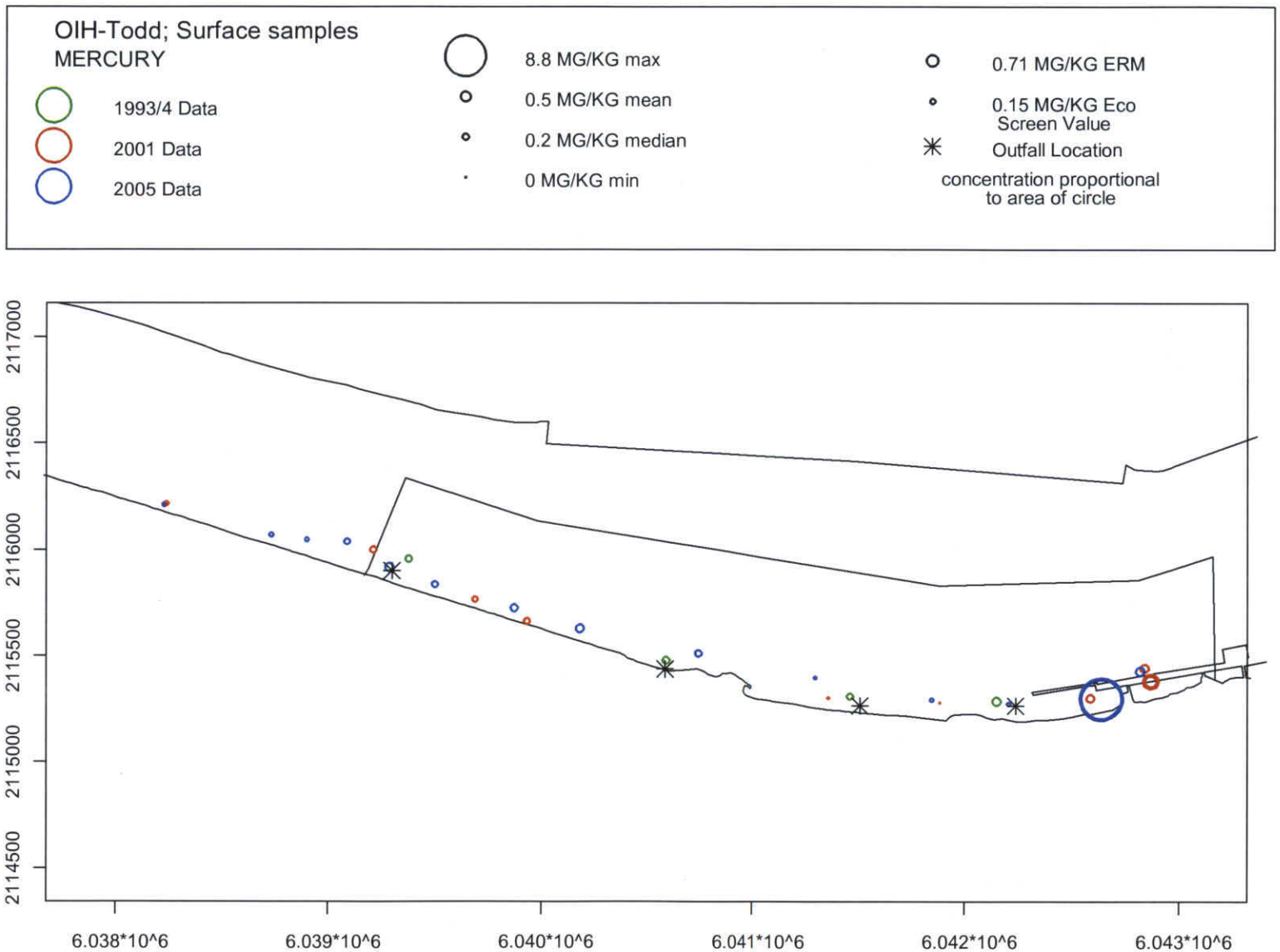

Figure A-81. Bubble Plot of Mercury Concentrations in IR Site 20 Surface Sediment by Year.

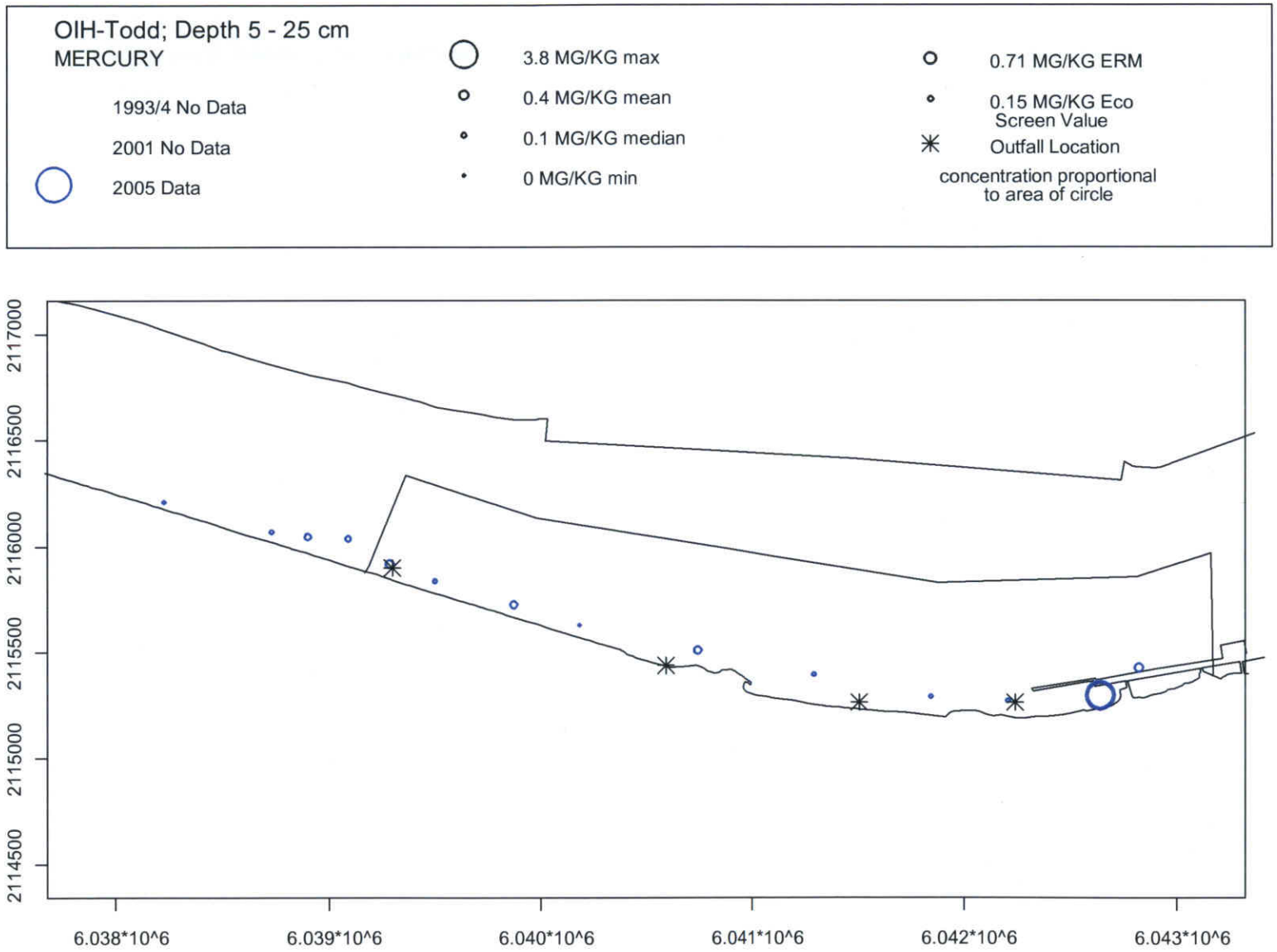

Figure A-82. Bubble Plot of Mercury Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

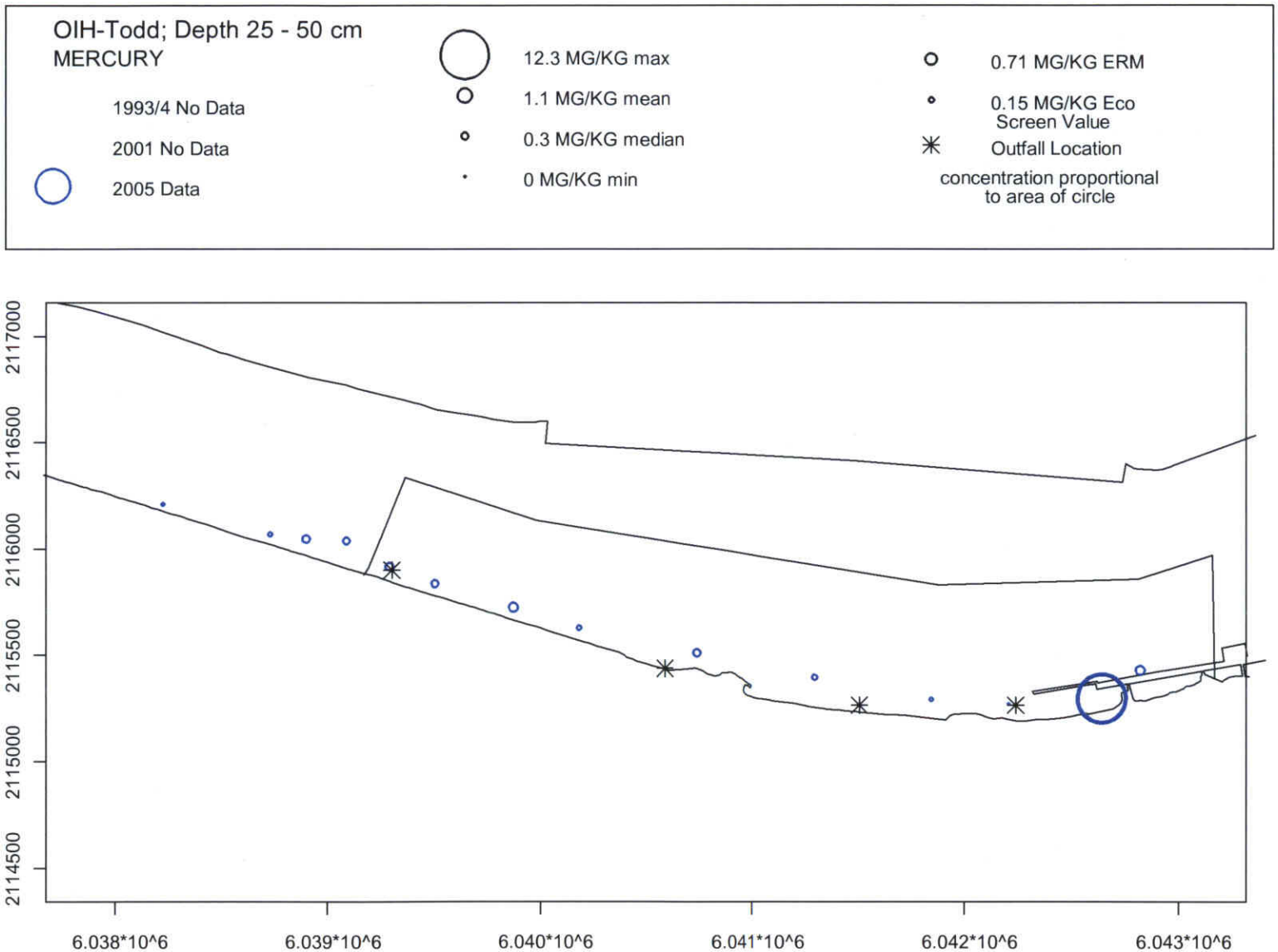

Figure A-83. Bubble Plot of Mercury Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

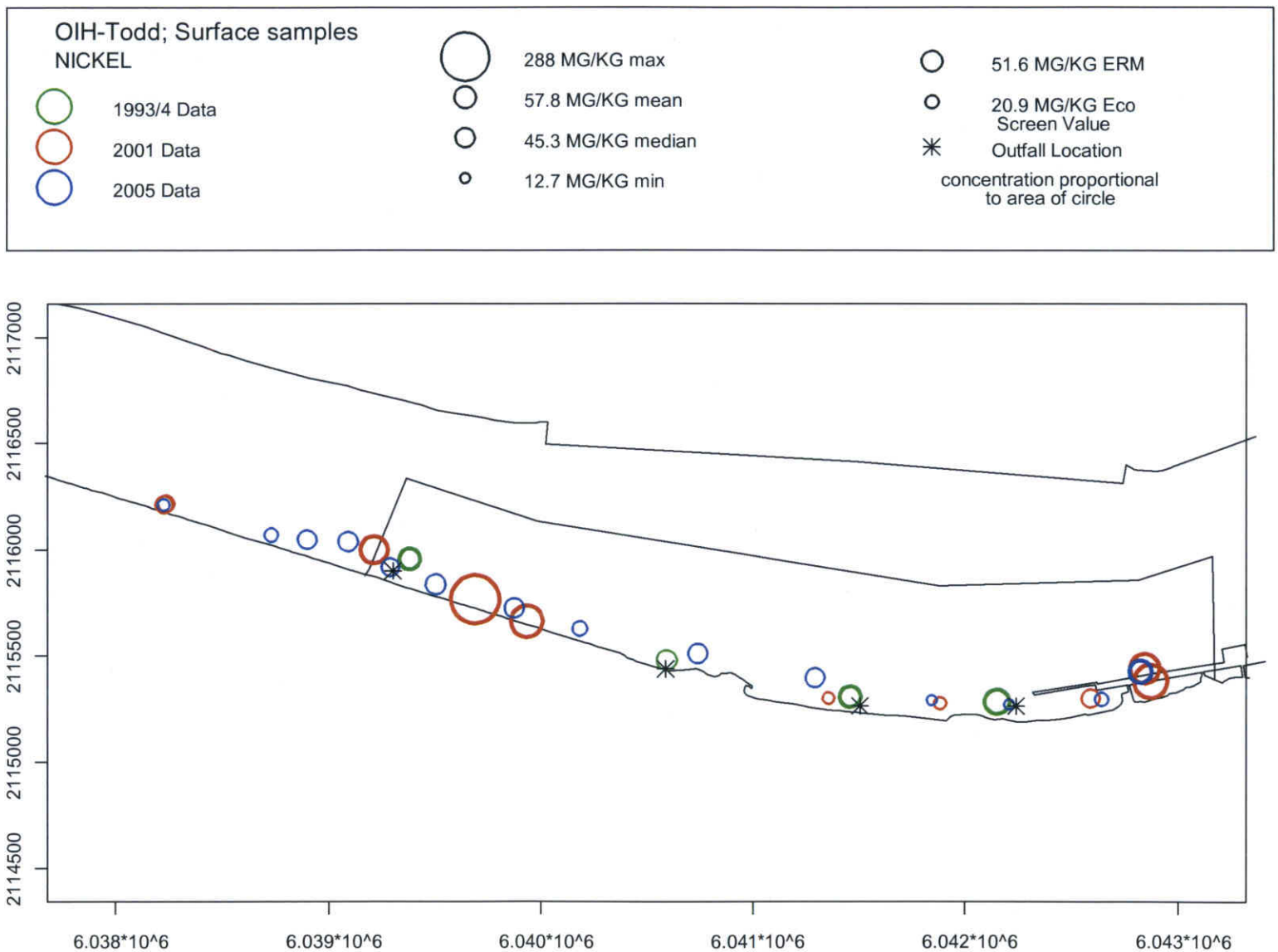

Figure A-84. Bubble Plot of Nickel Concentrations in IR Site 20 Surface Sediment by Year.

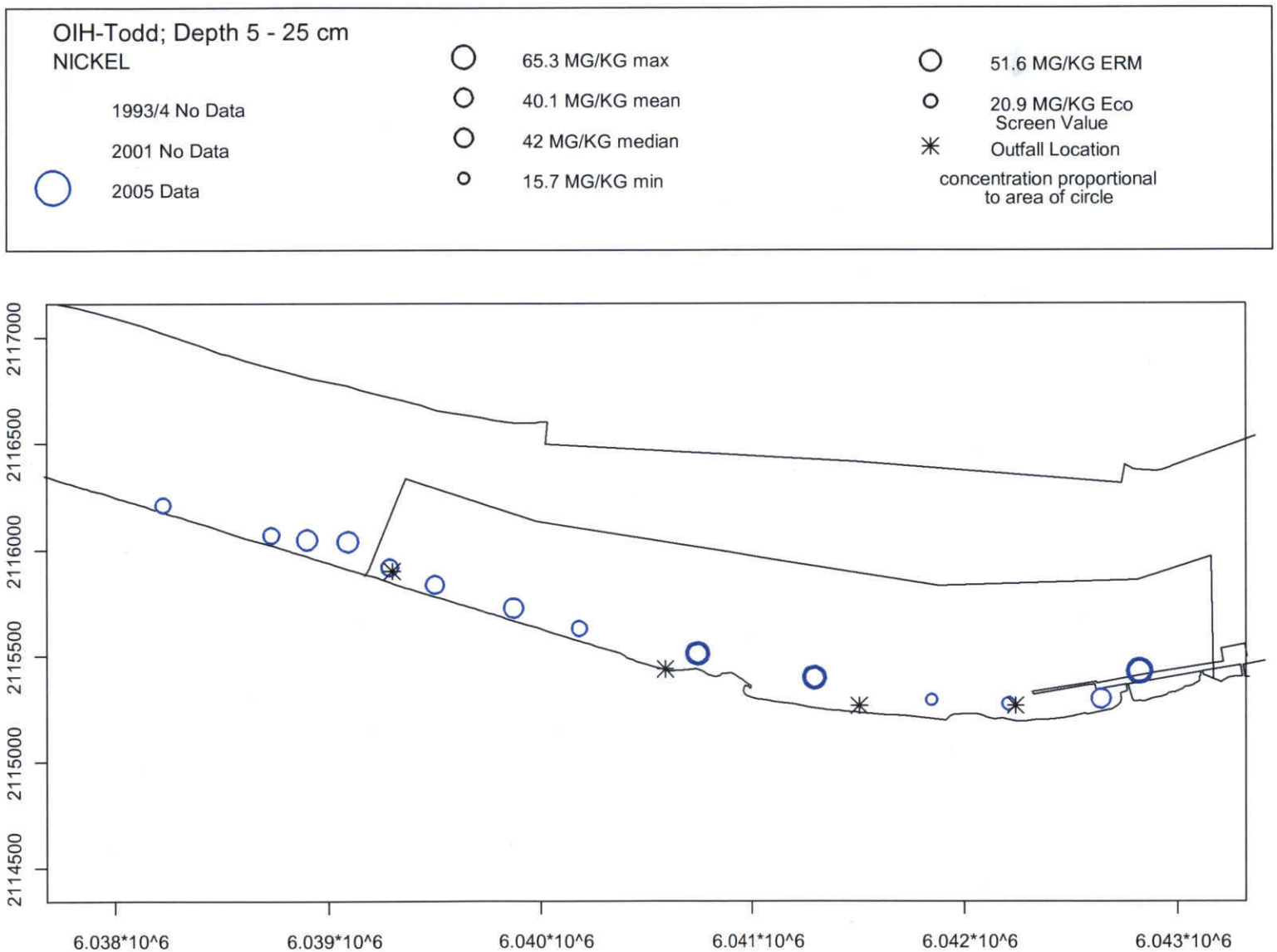

Figure A-85. Bubble Plot of Nickel Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

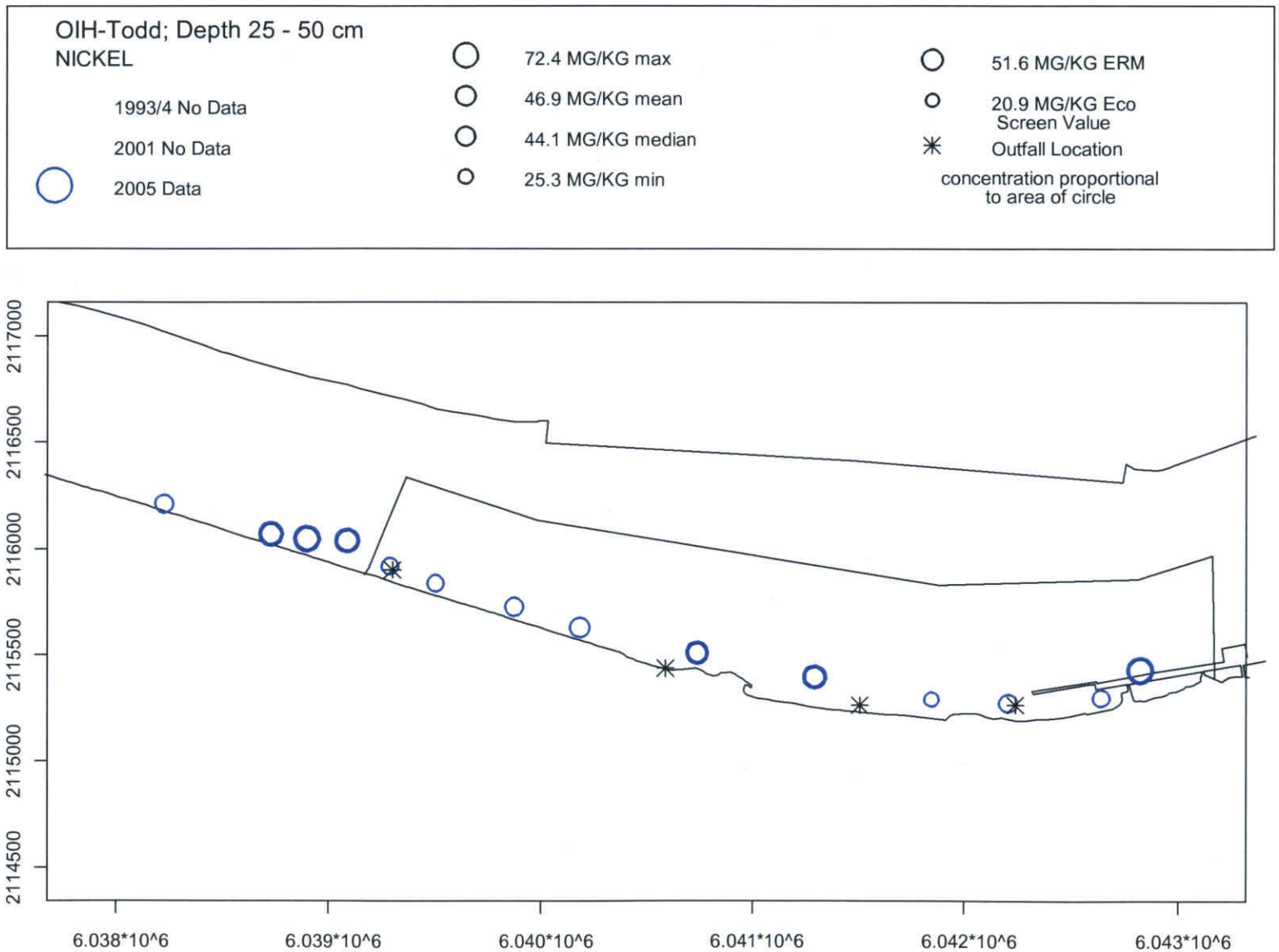

Figure A-86. Bubble Plot of Nickel Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

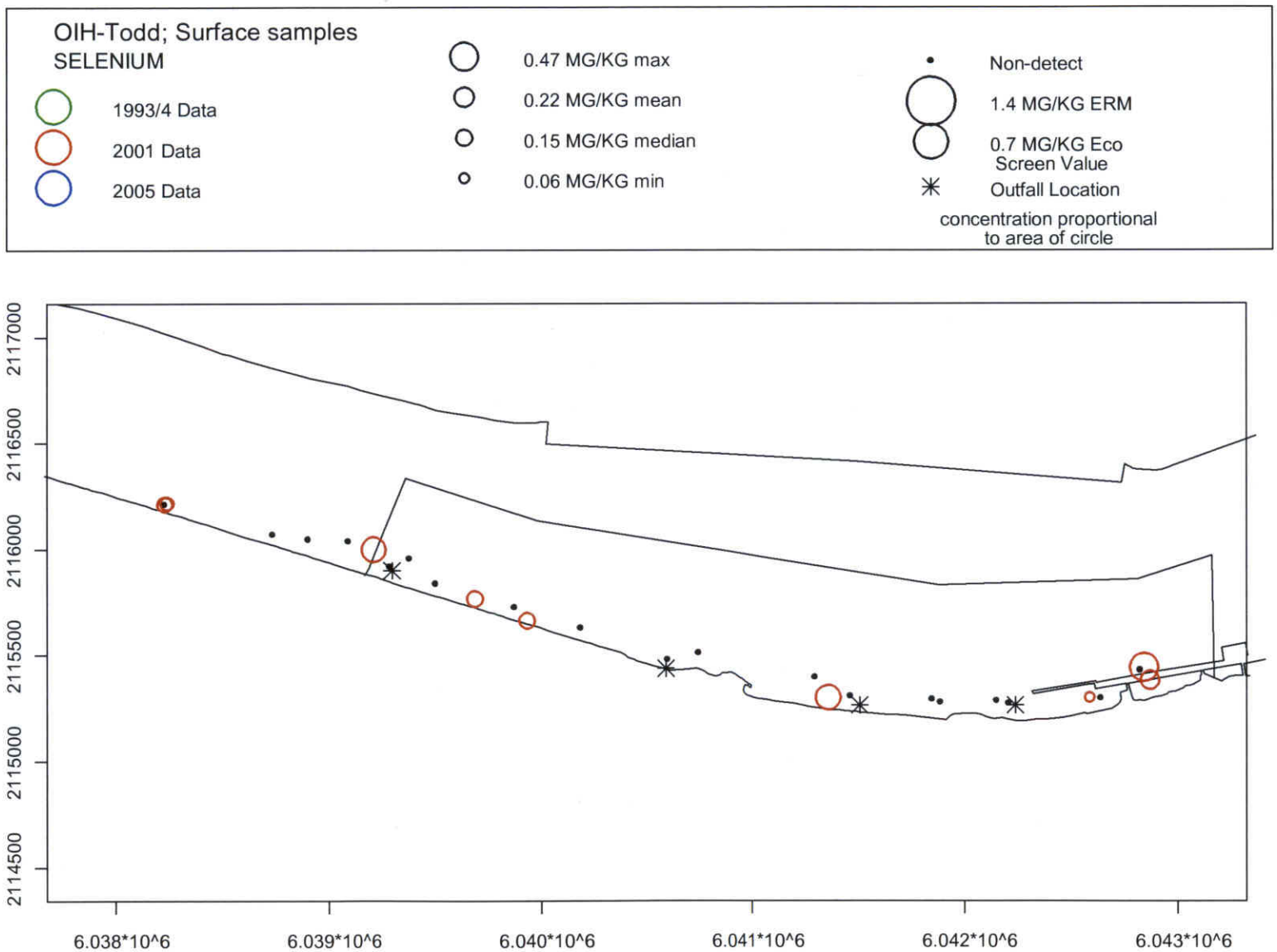

Figure A-87. Bubble Plot of Selenium Concentrations in IR Site 20 Surface Sediment by Year.

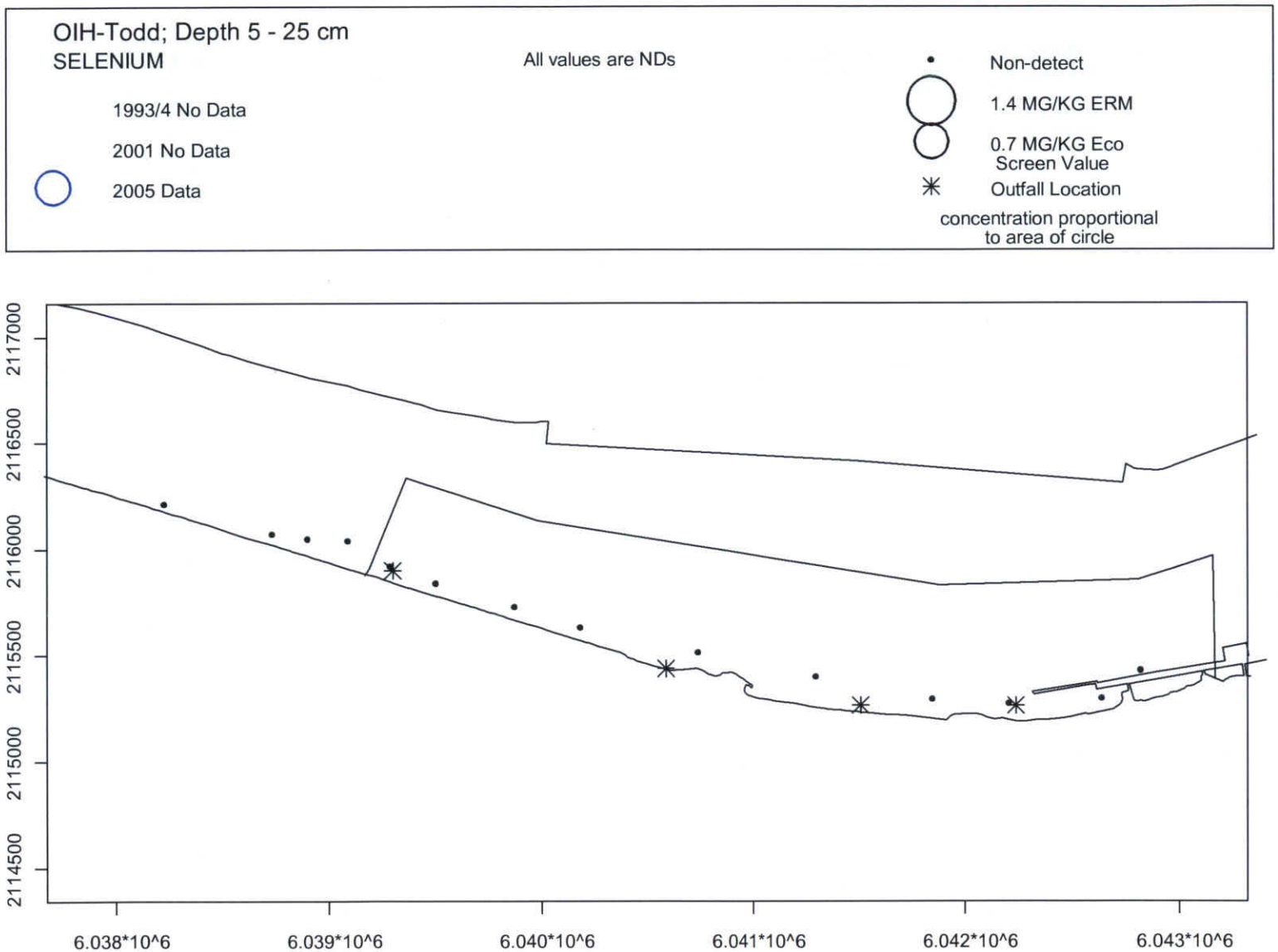

Figure A-88. Bubble Plot of Selenium Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

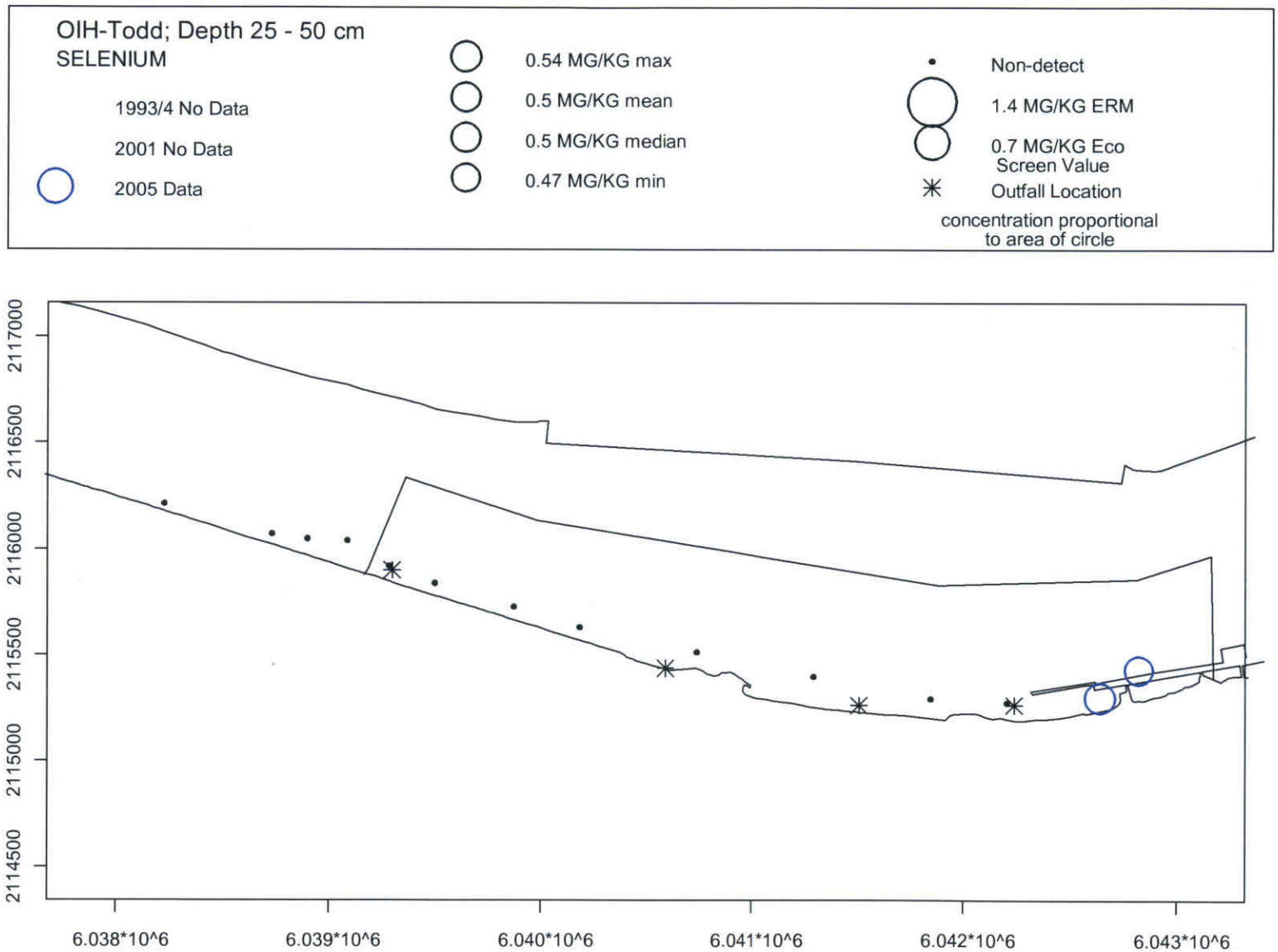

Figure A-89. Bubble Plot of Selenium Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

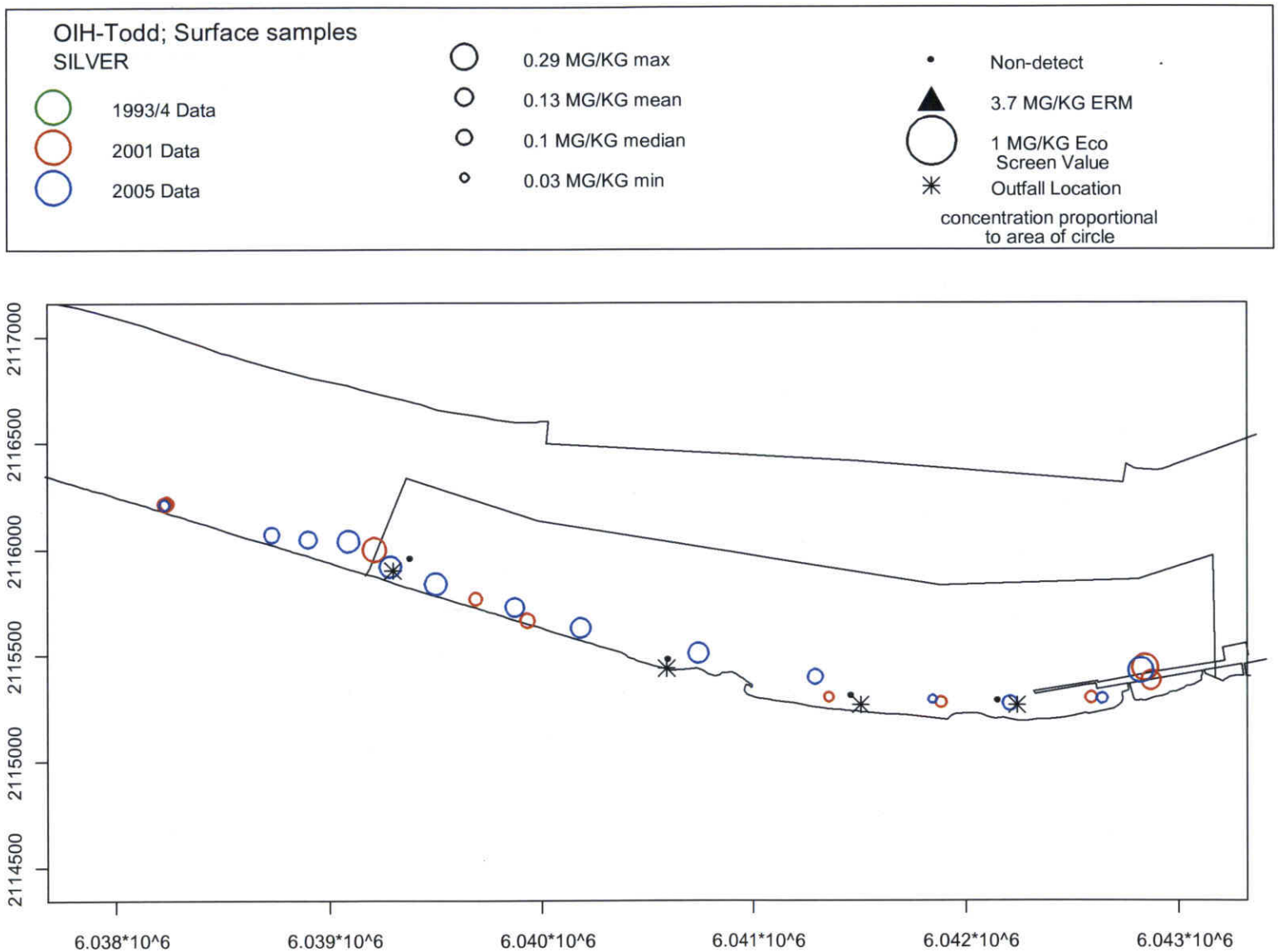

Figure A-90. Bubble Plot of Silver Concentrations in IR Site 20 Surface Sediment by Year.

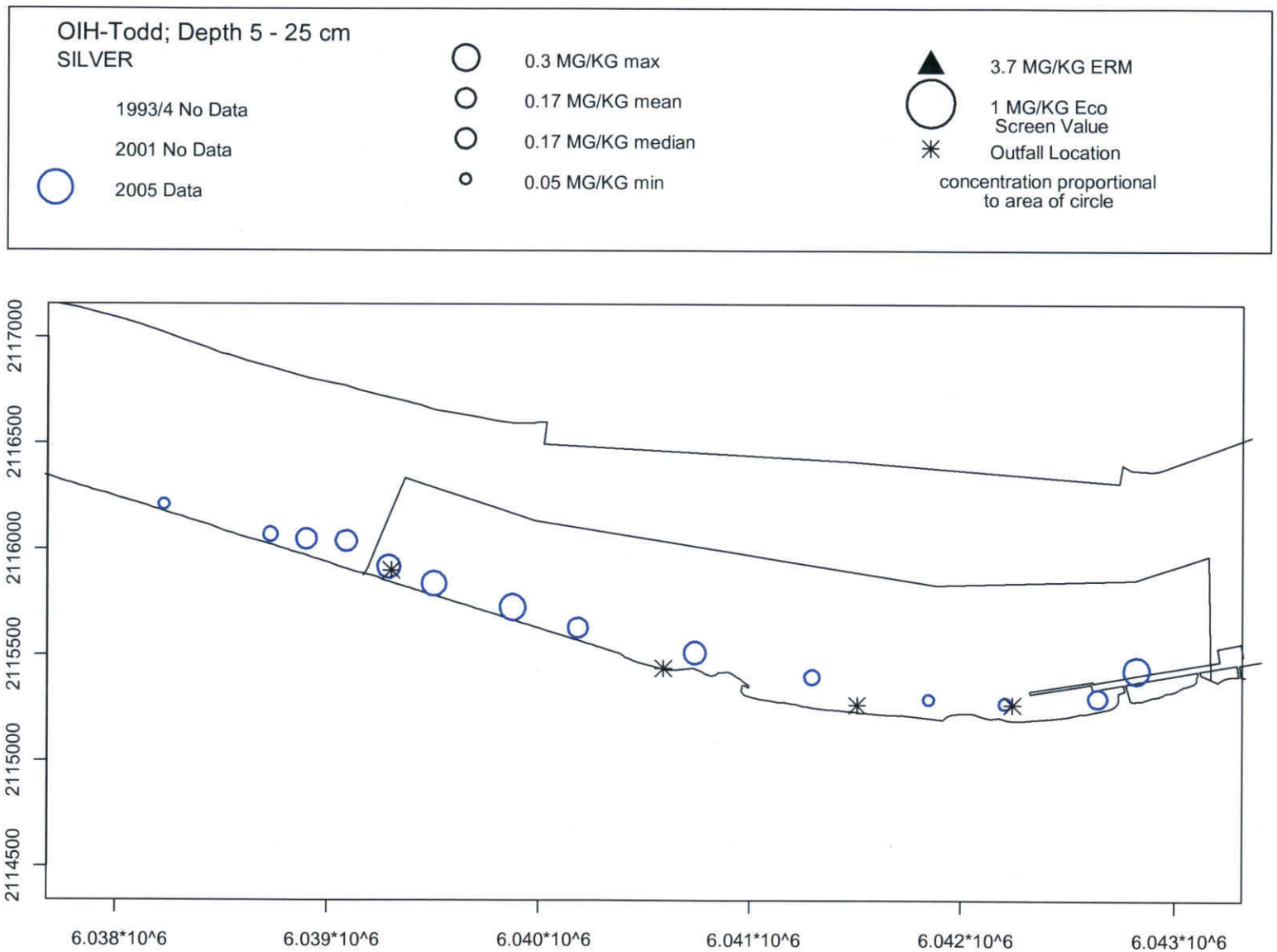

Figure 91. Bubble Plot of Silver Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

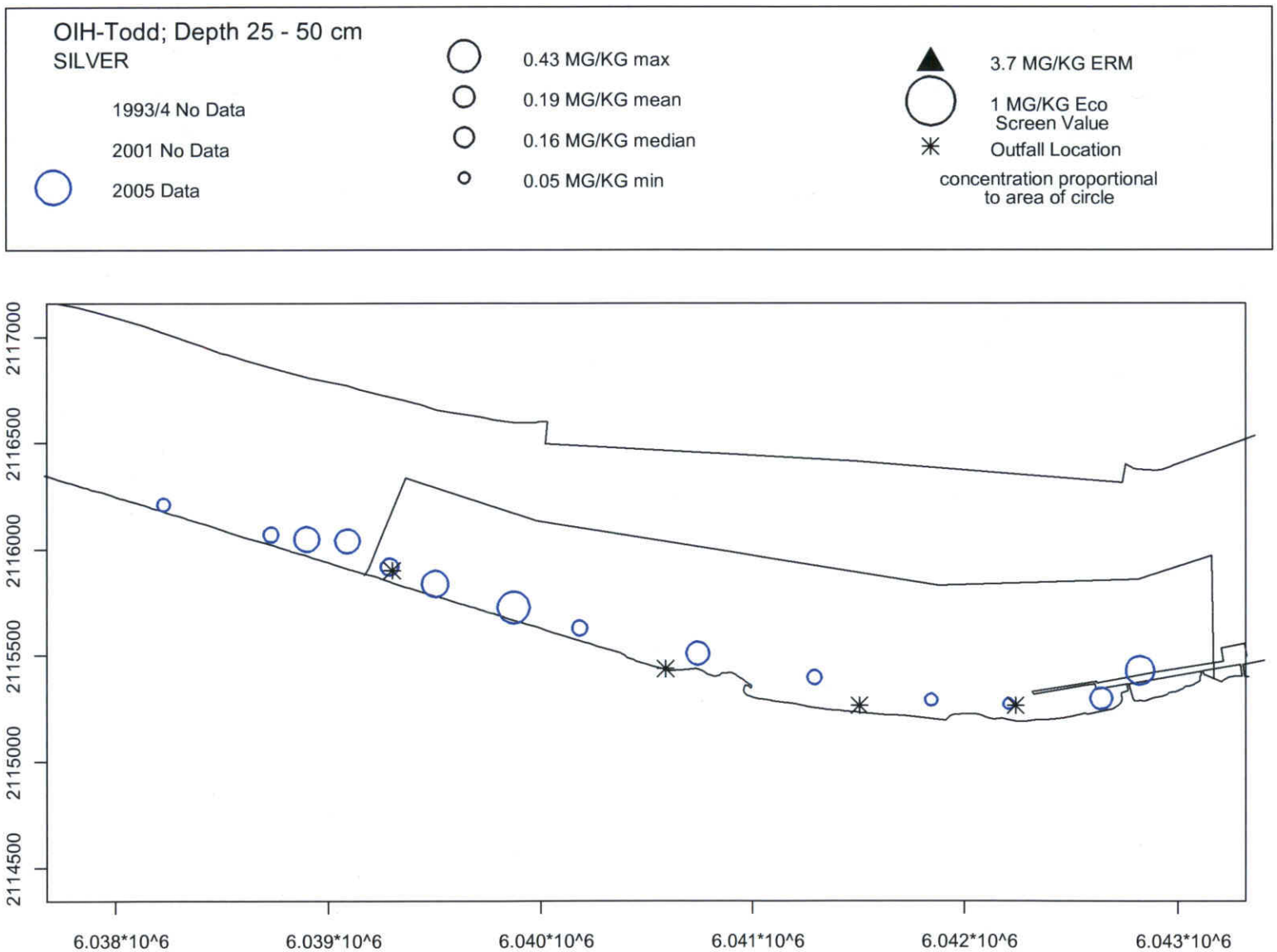

Figure A-92. Bubble Plot of Silver Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

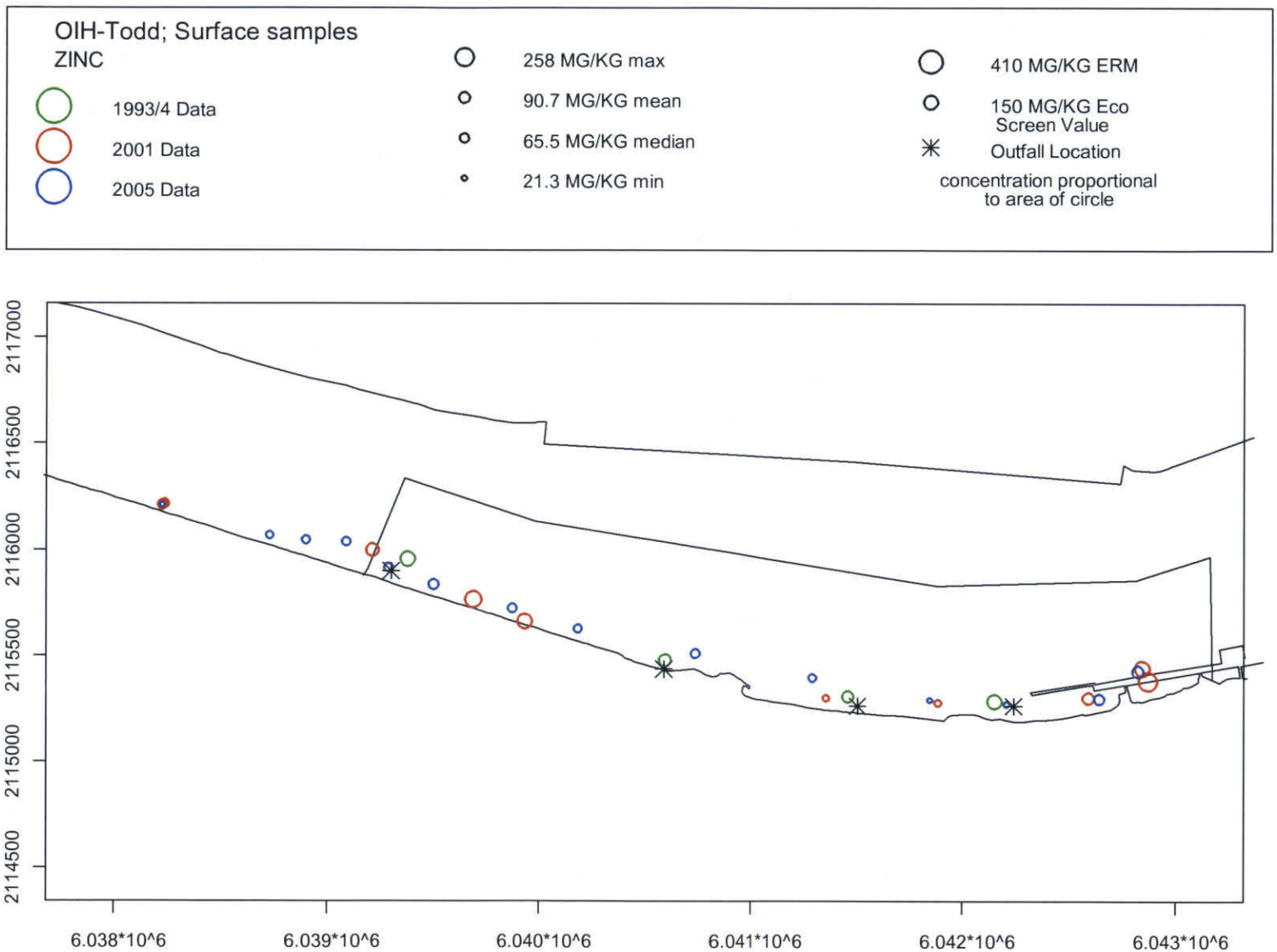

Figure A-93. Bubble Plot of Zinc Concentrations in IR Site 20 Surface Sediment by Year.

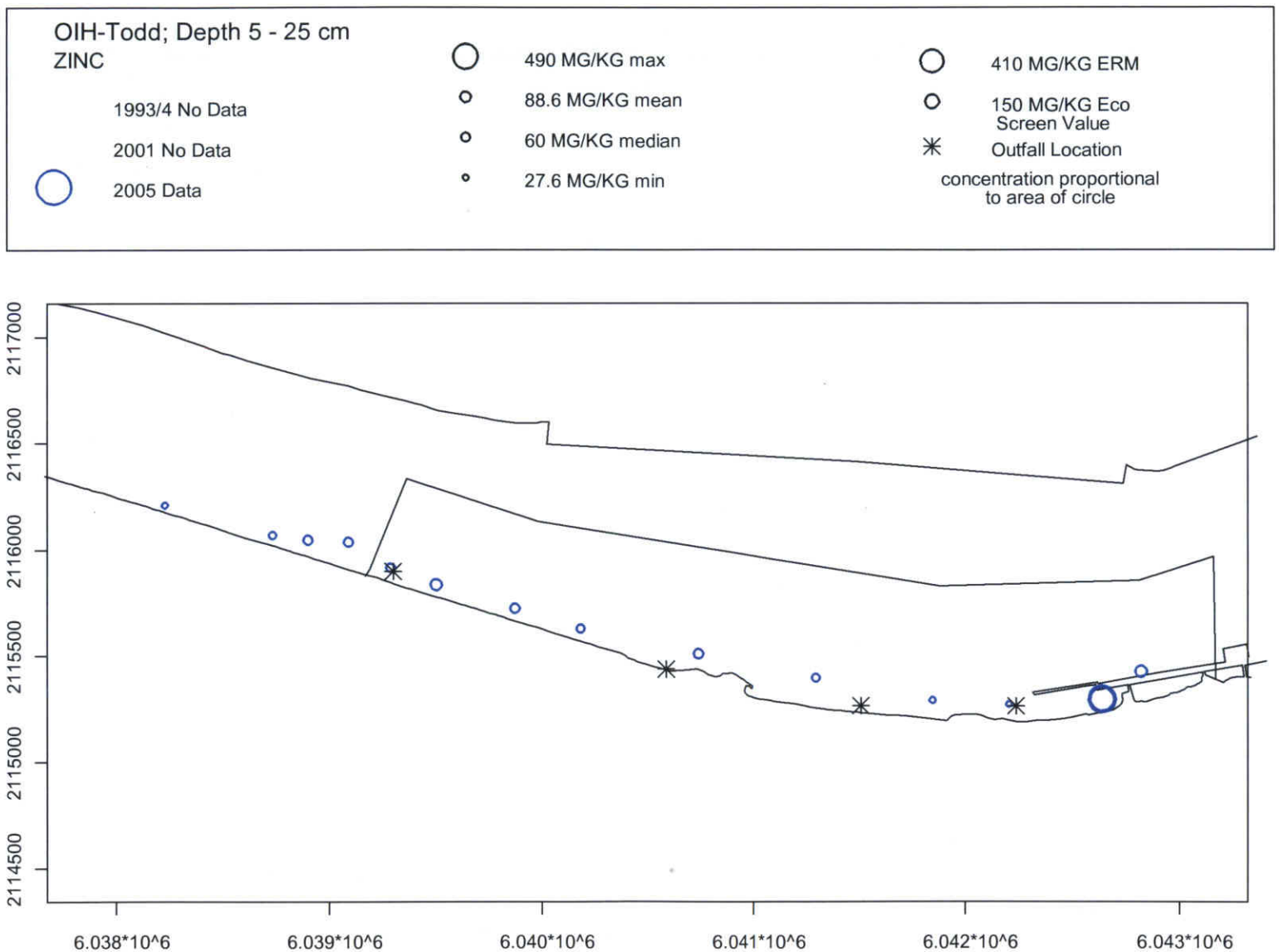

Figure A-94. Bubble Plot of Zinc Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

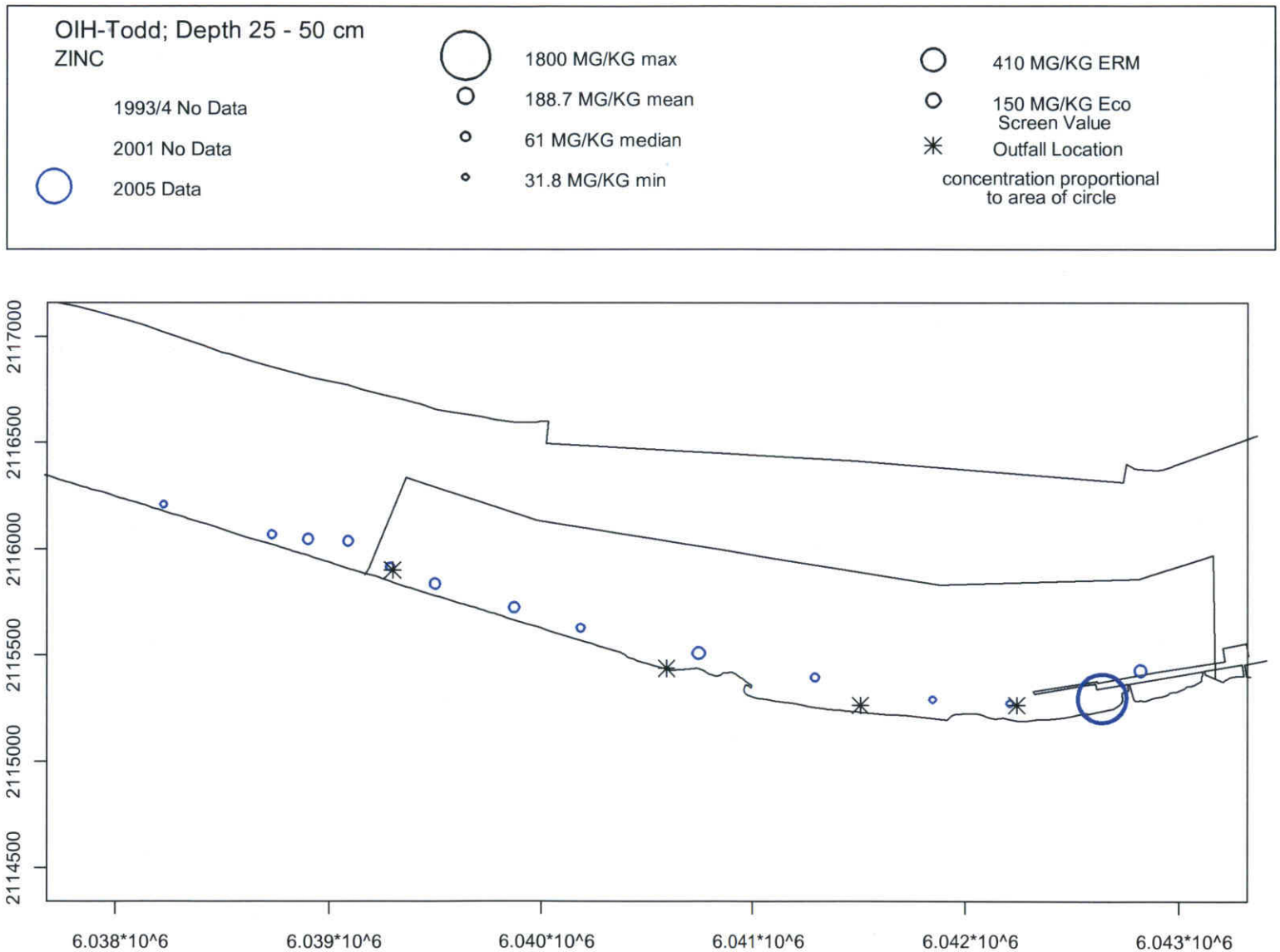

Figure A-95. Bubble Plot of Zinc Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

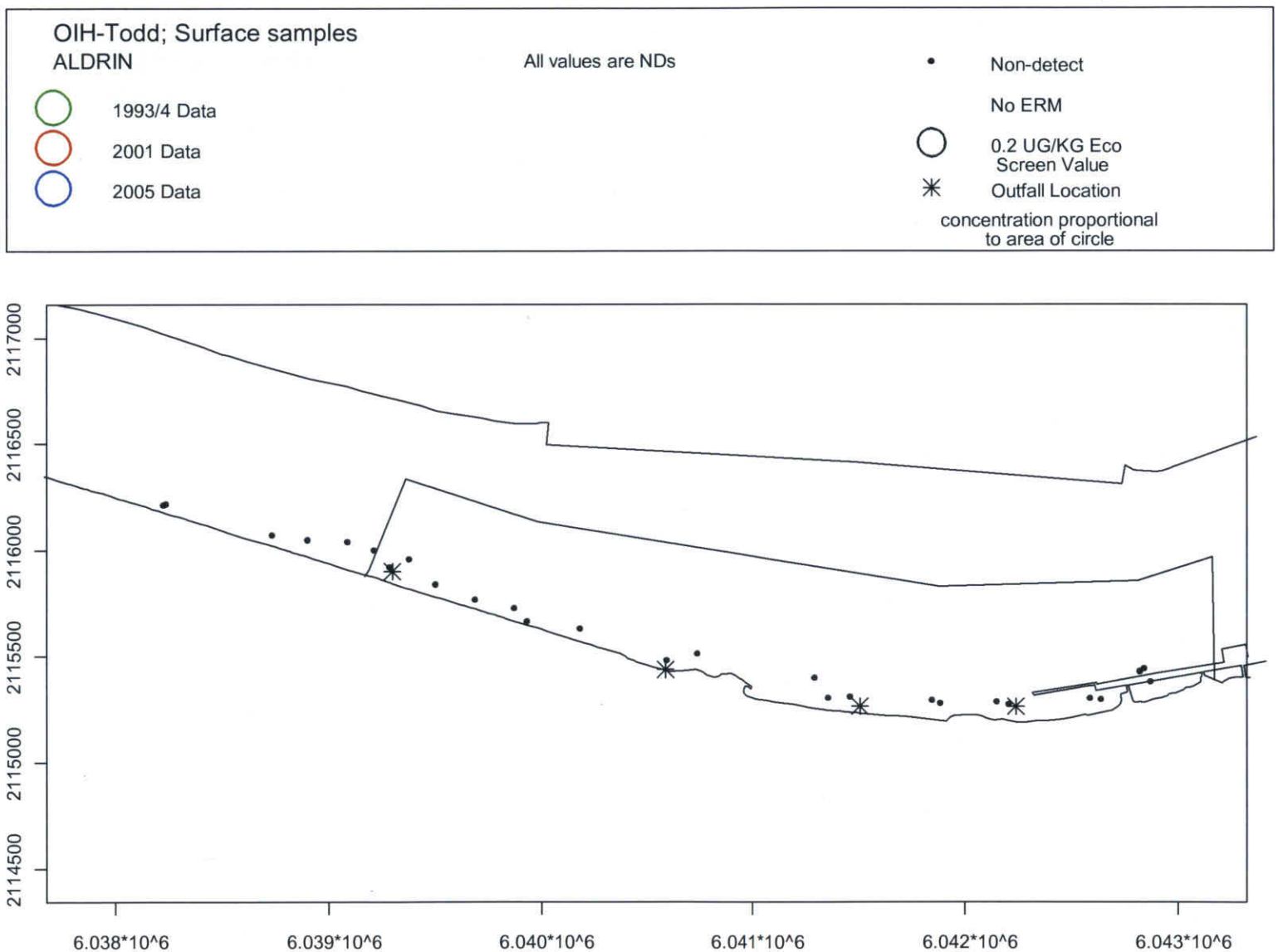

Figure A-96. Bubble Plot of Aldrin Concentrations in IR Site 20 Surface Sediment by Year.

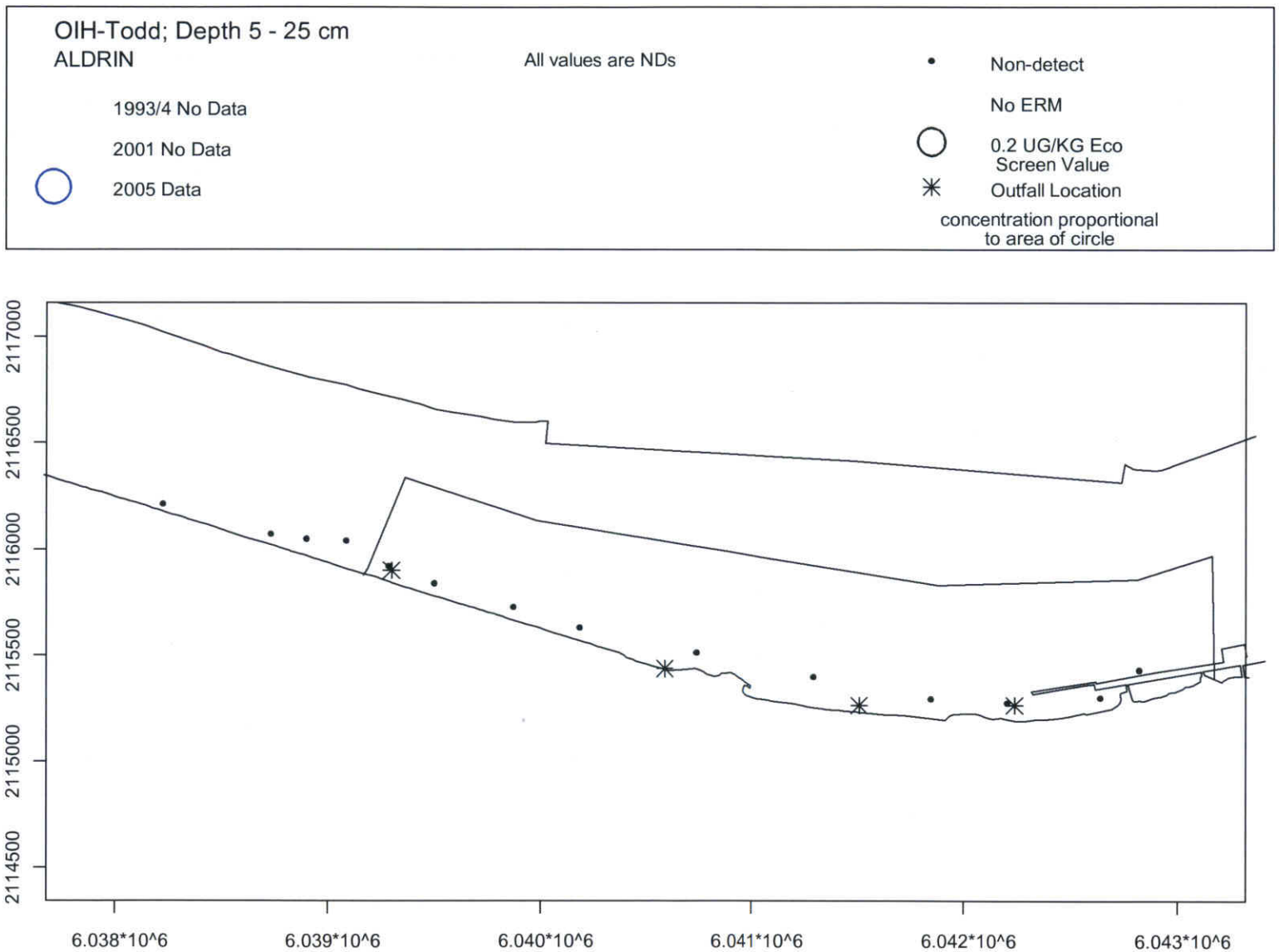

Figure A-97. Bubble Plot of Aldrin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

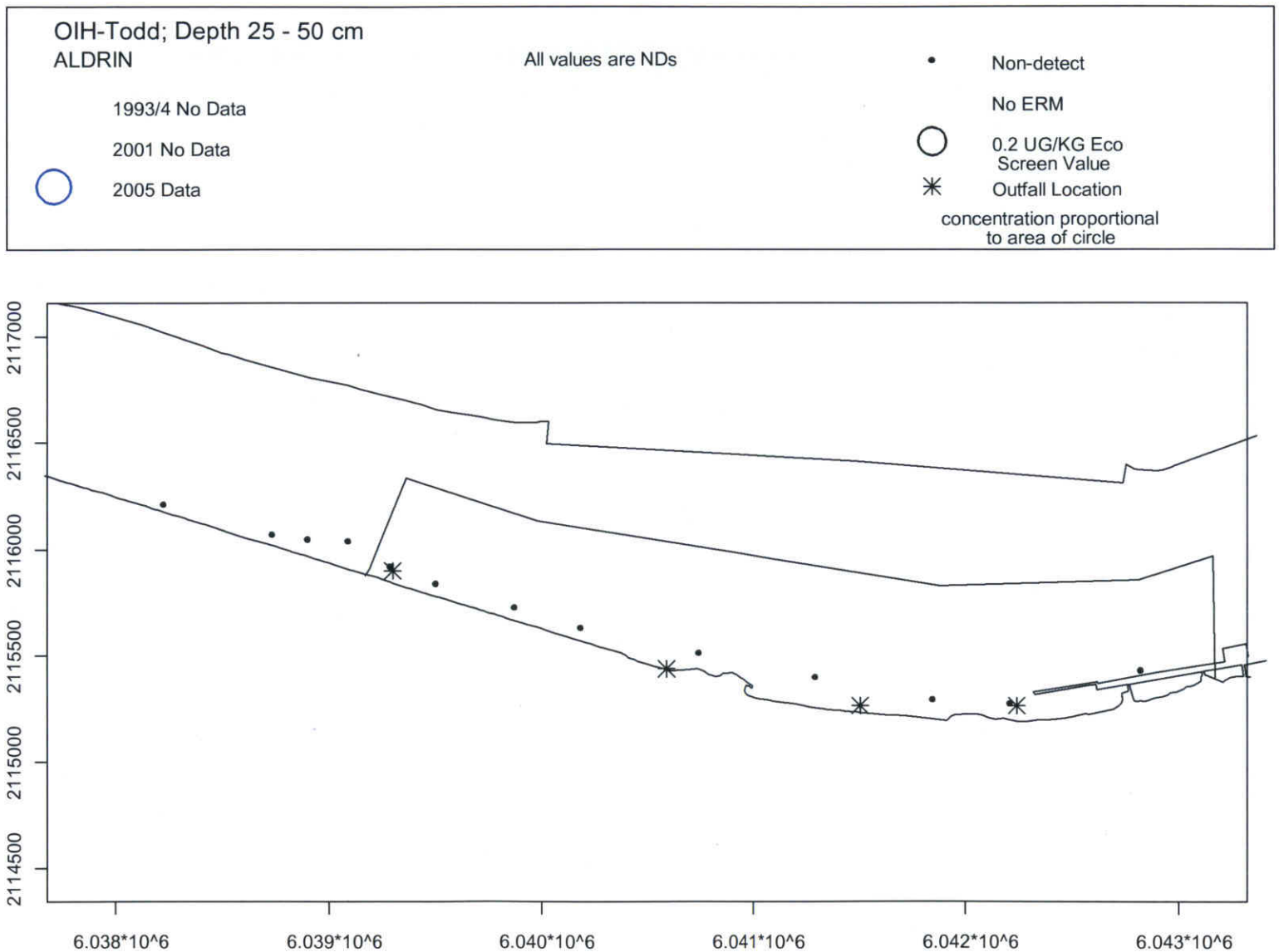

Figure A-98. Bubble Plot of Aldrin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

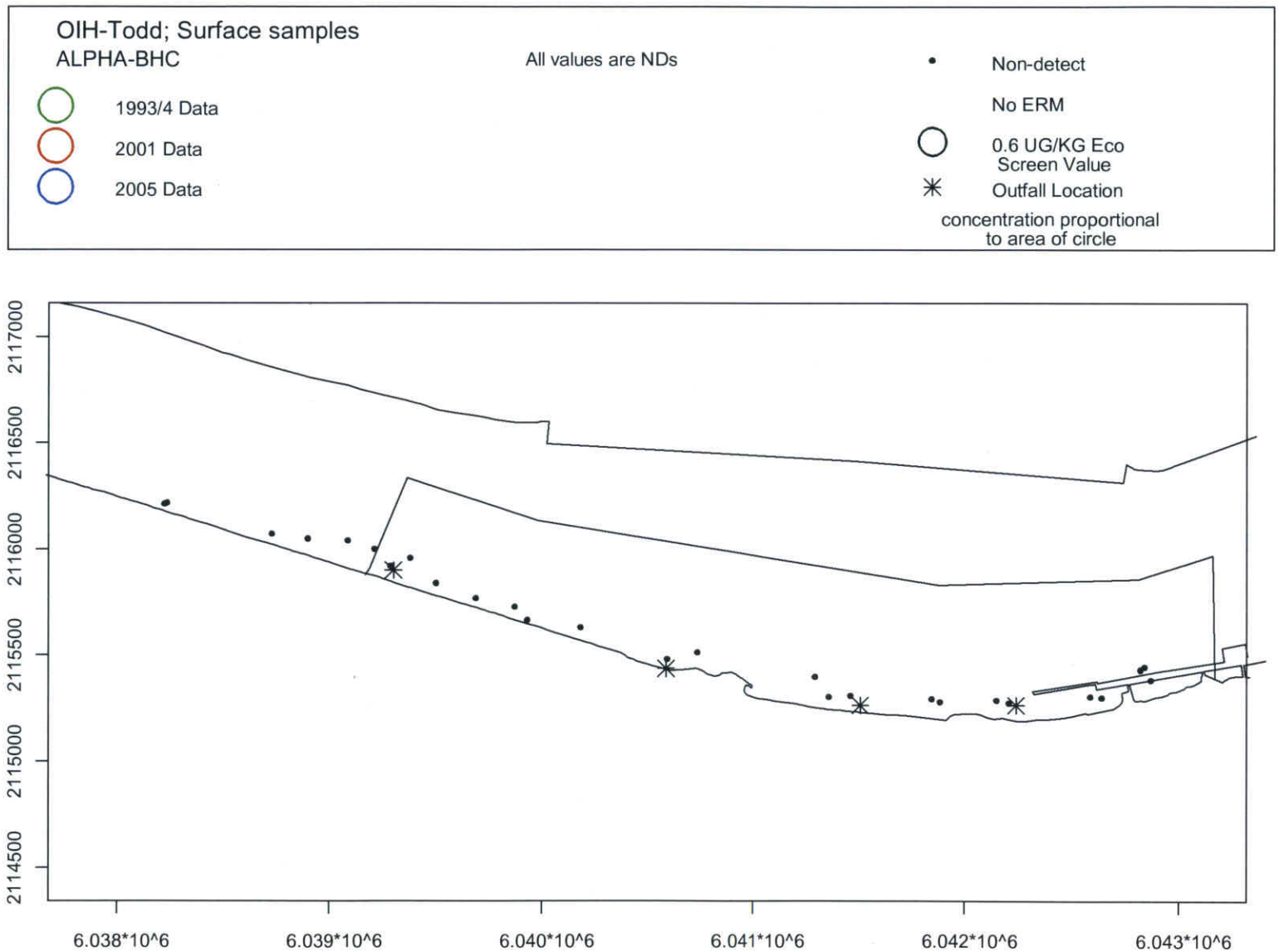

Figure A-99. Bubble Plot of *alpha*-BHC Concentrations in IR Site 20 Surface Sediment by Year.

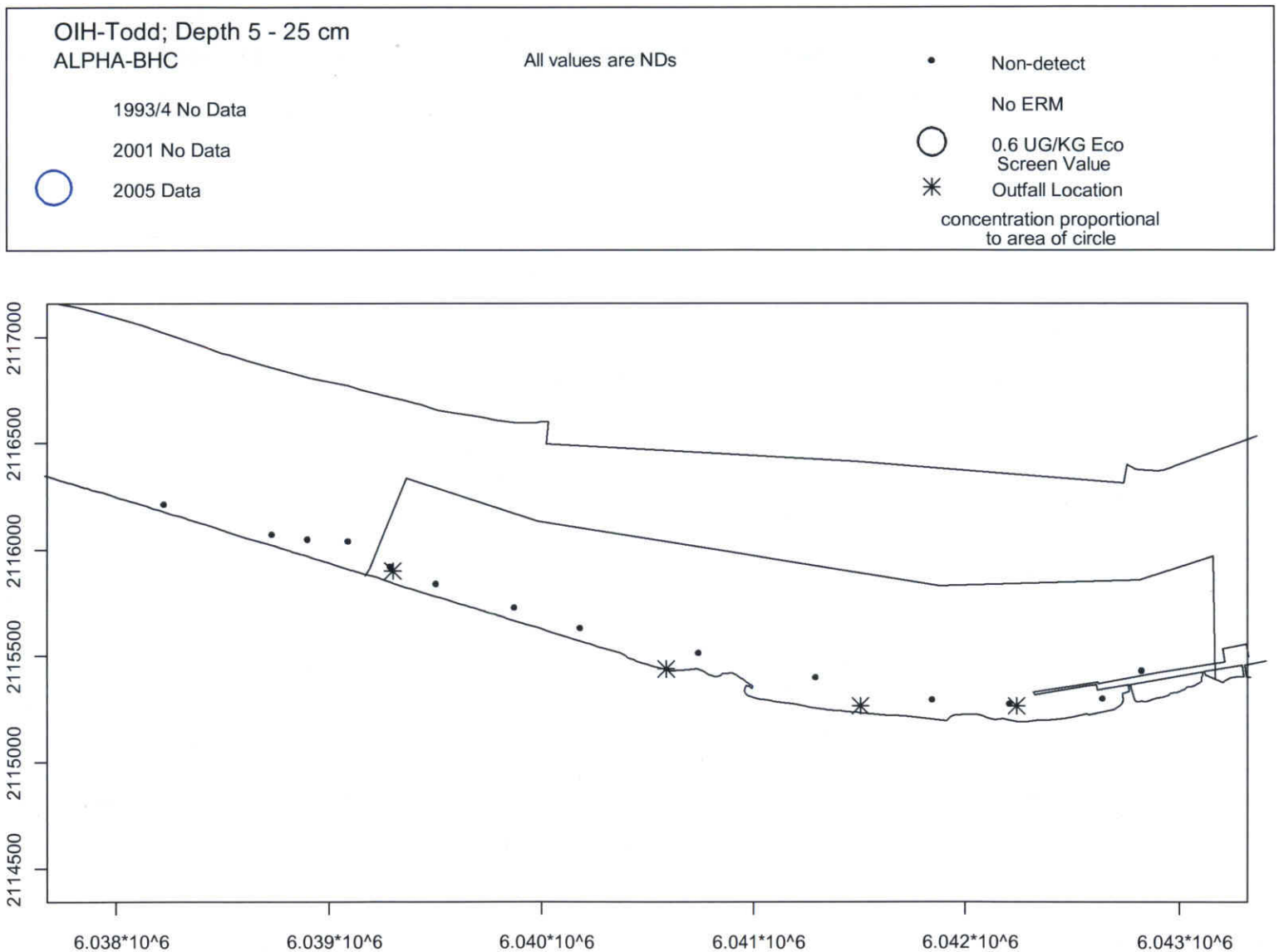

Figure A-100. Bubble Plot of *alpha*-BHC Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

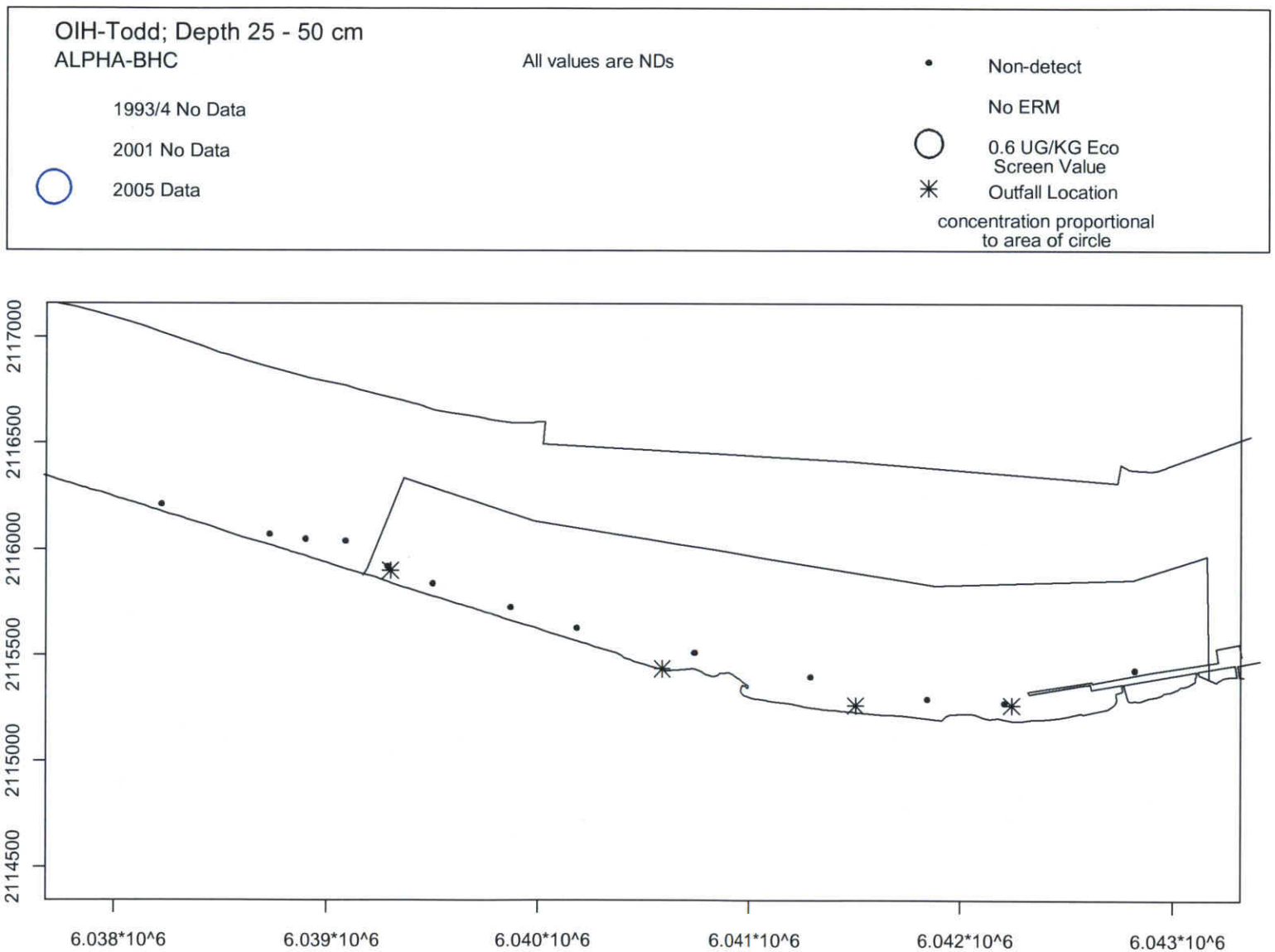

Figure A-101. Bubble Plot of *alpha*-BHC Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

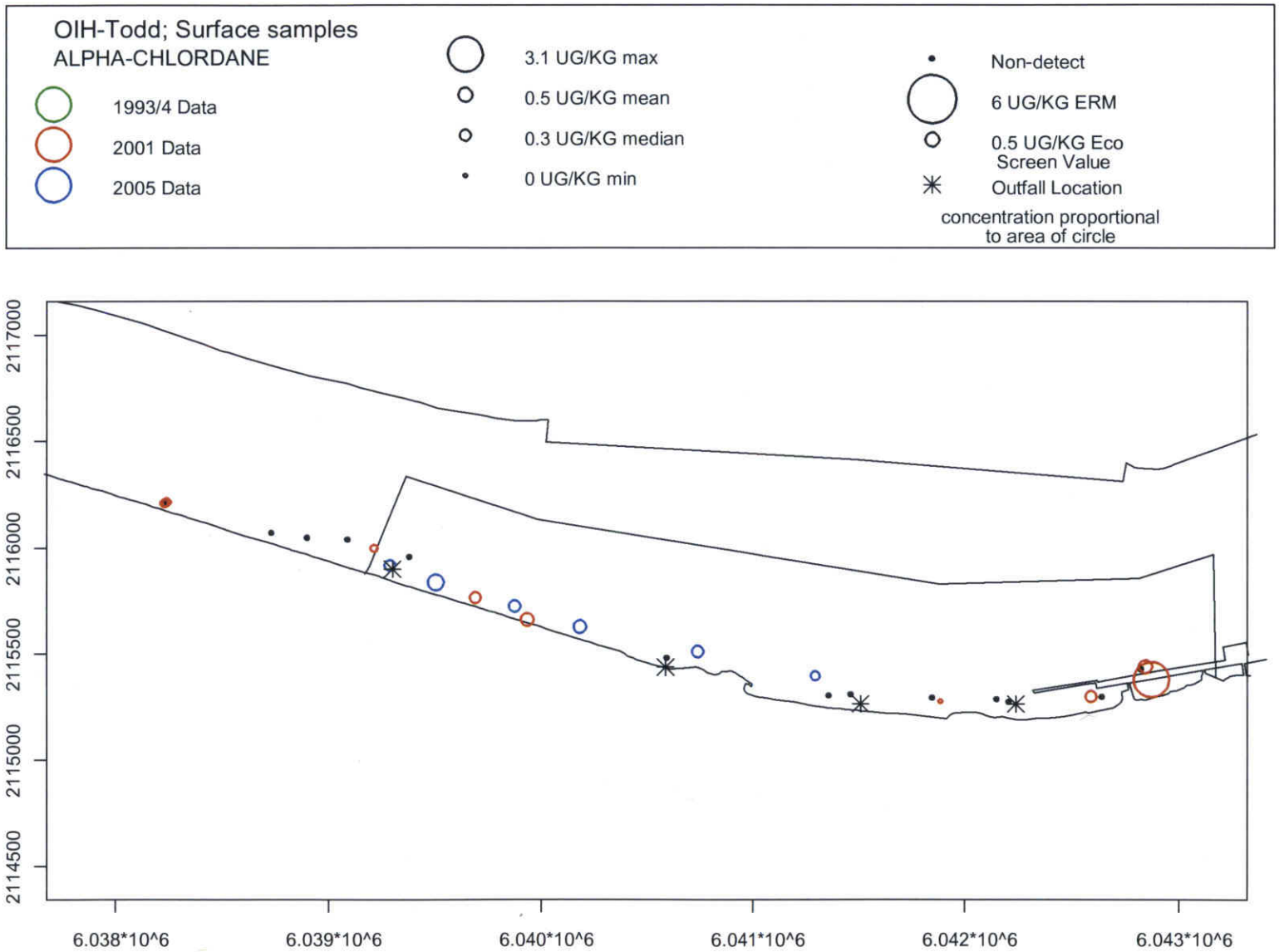

Figure A-102. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 20 Surface Sediment by Year.

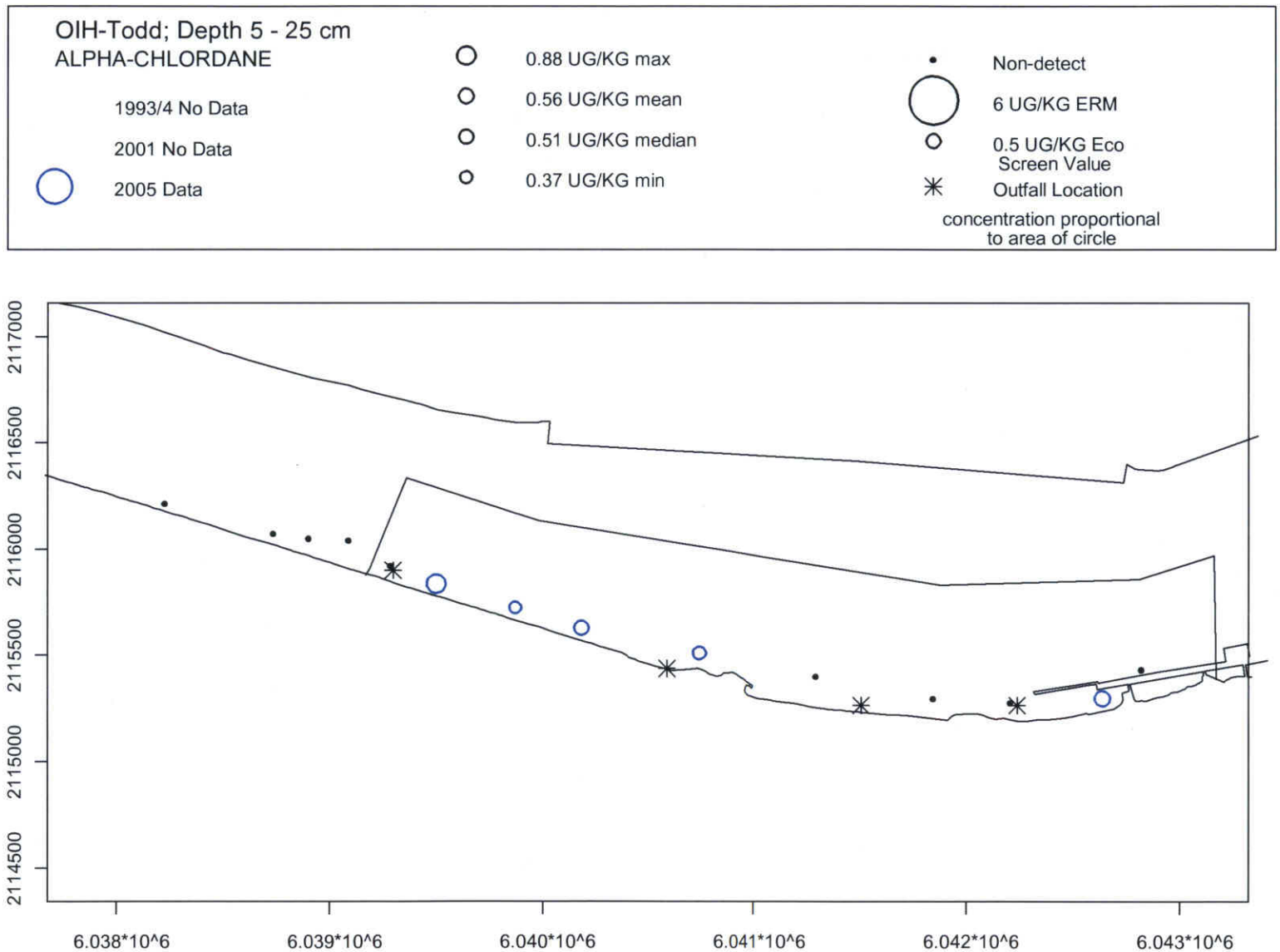

Figure A-103. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

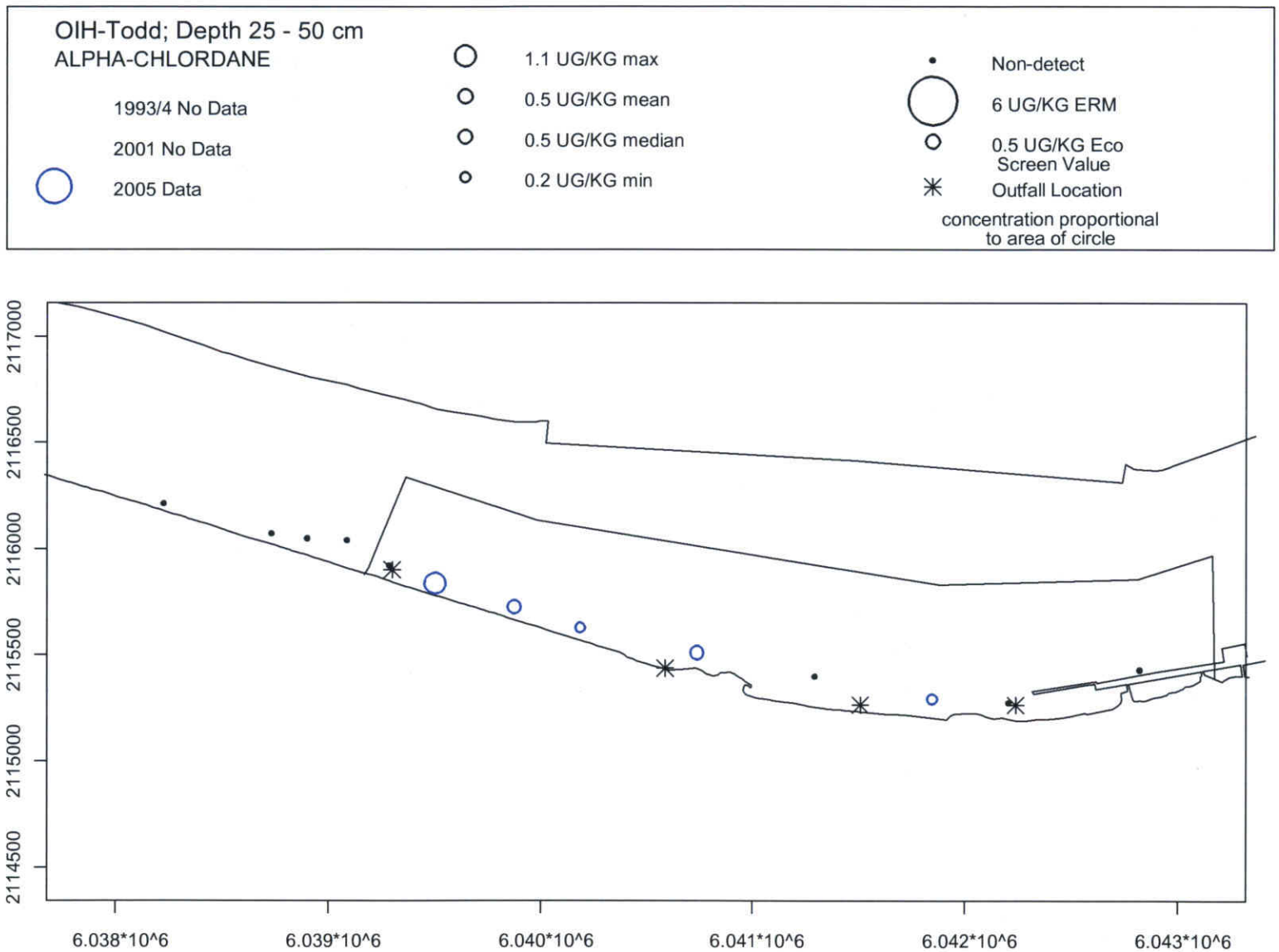

Figure A-104. Bubble Plot of *alpha*-Chlordane Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

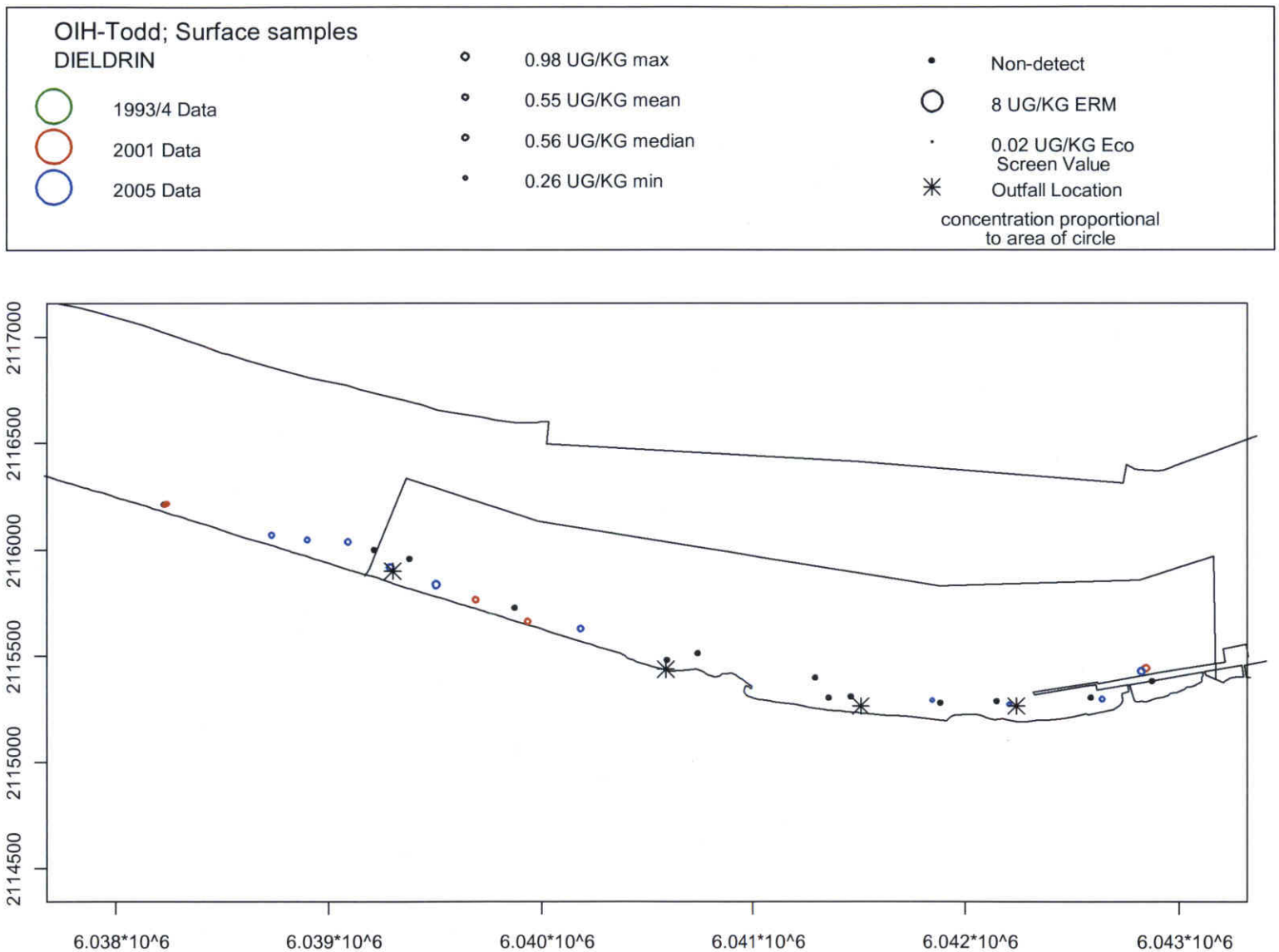

Figure A-105. Bubble Plot of Dieldrin Concentrations in IR Site 20 Surface Sediment by Year.

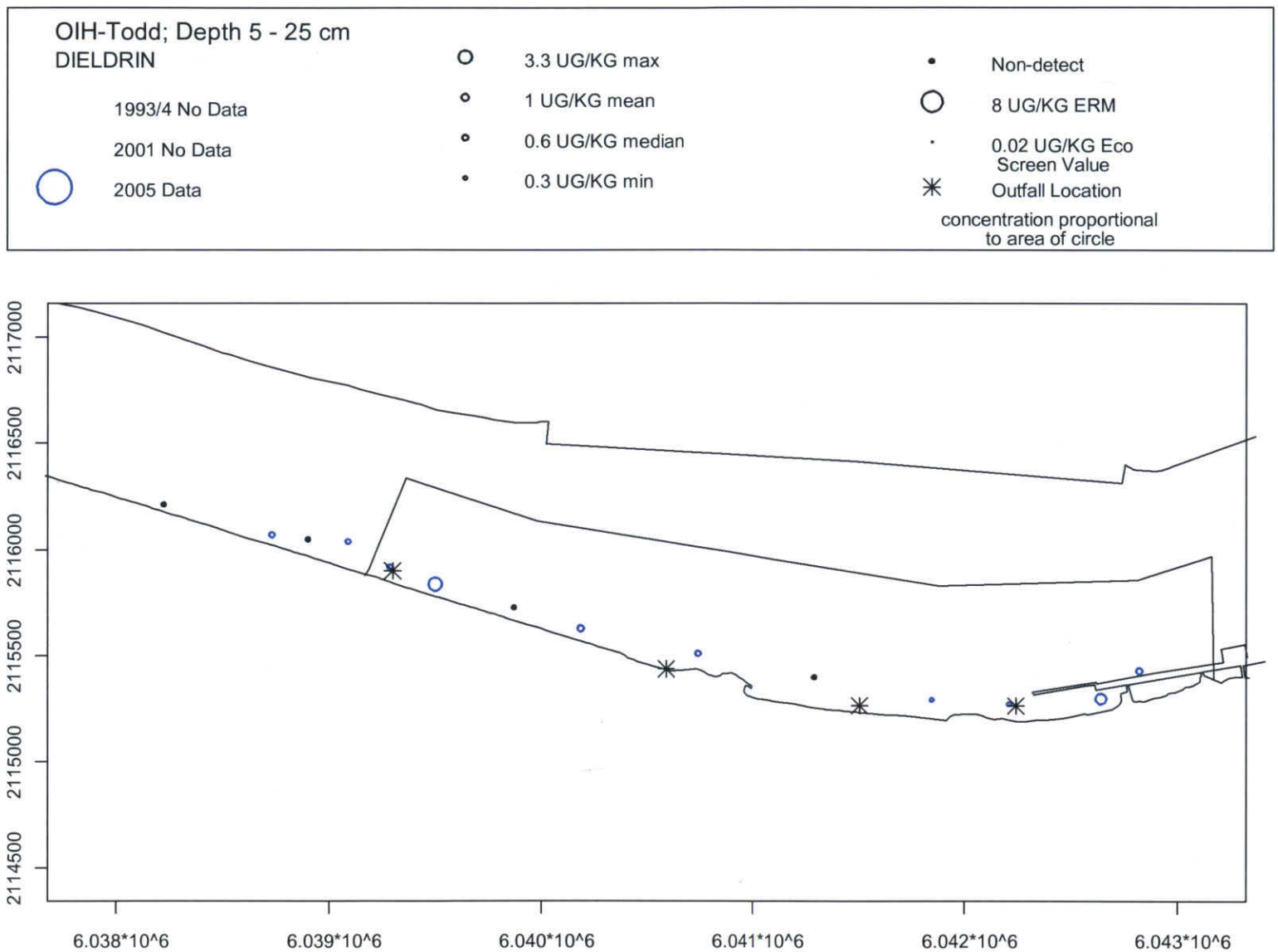

Figure A-106. Bubble Plot of Dieldrin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

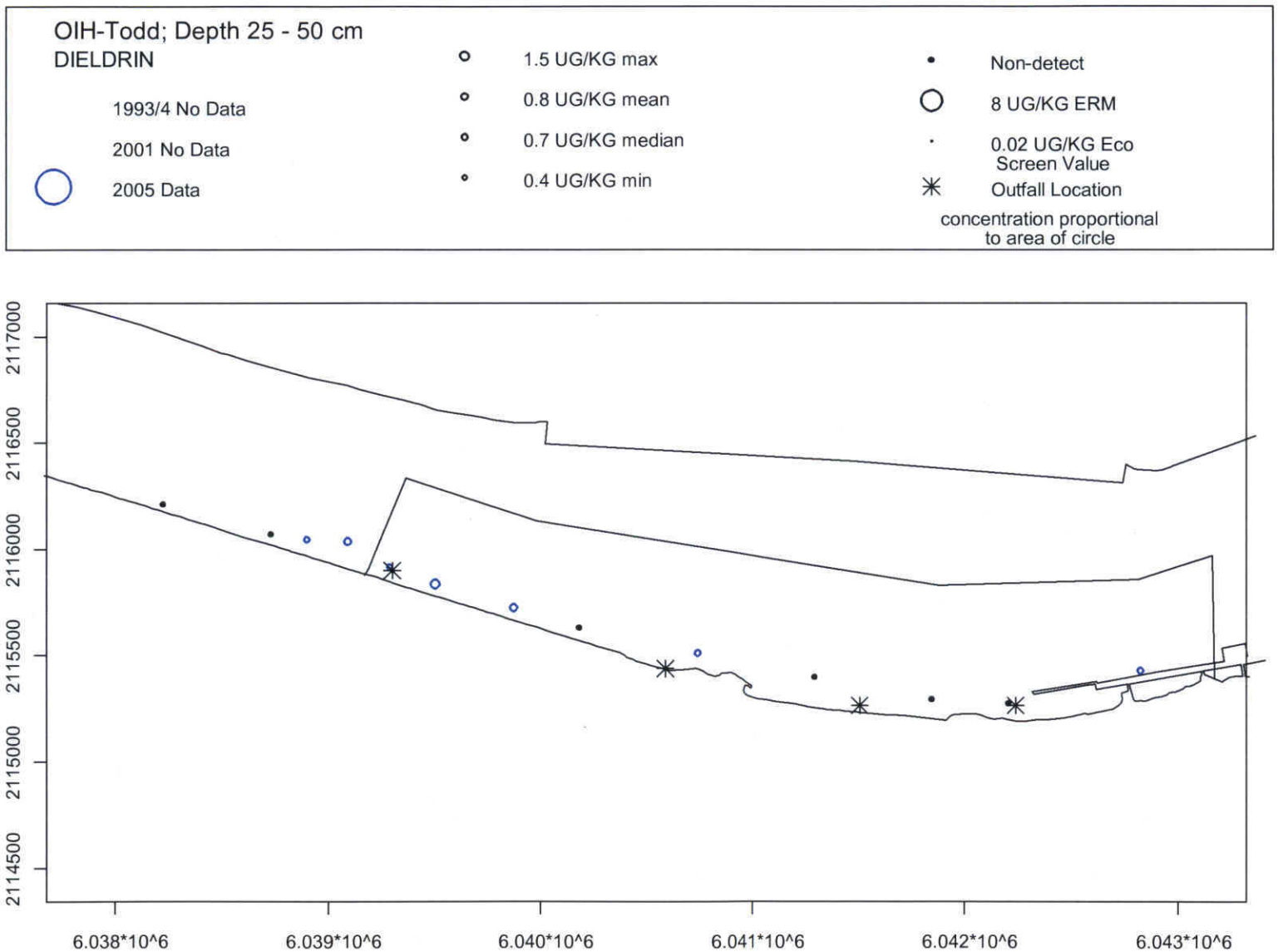

Figure A-107. Bubble Plot of Dieldrin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

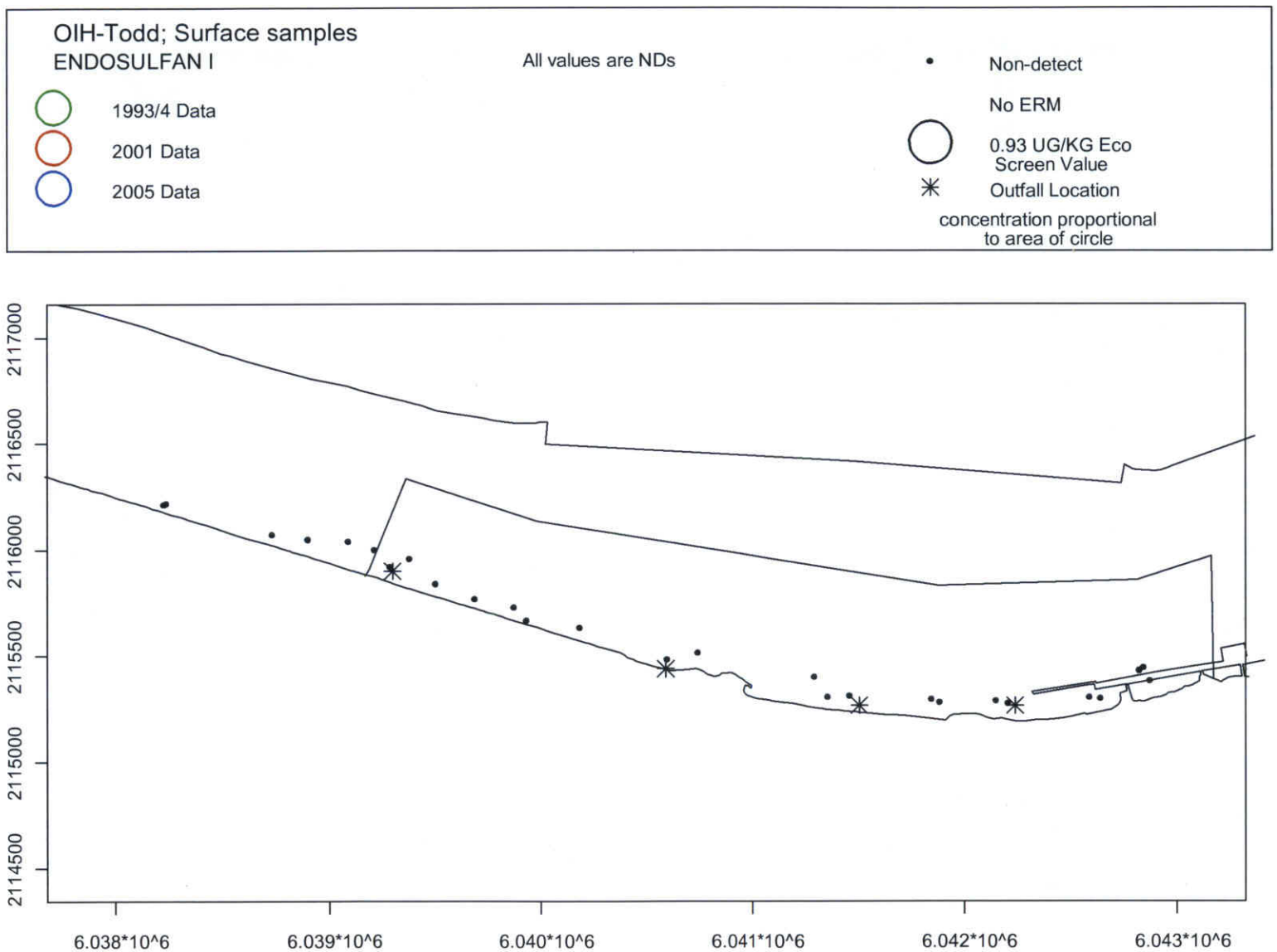

Figure A-108. Bubble Plot of Endosulfan I Concentrations in IR Site 20 Surface Sediment by Year.

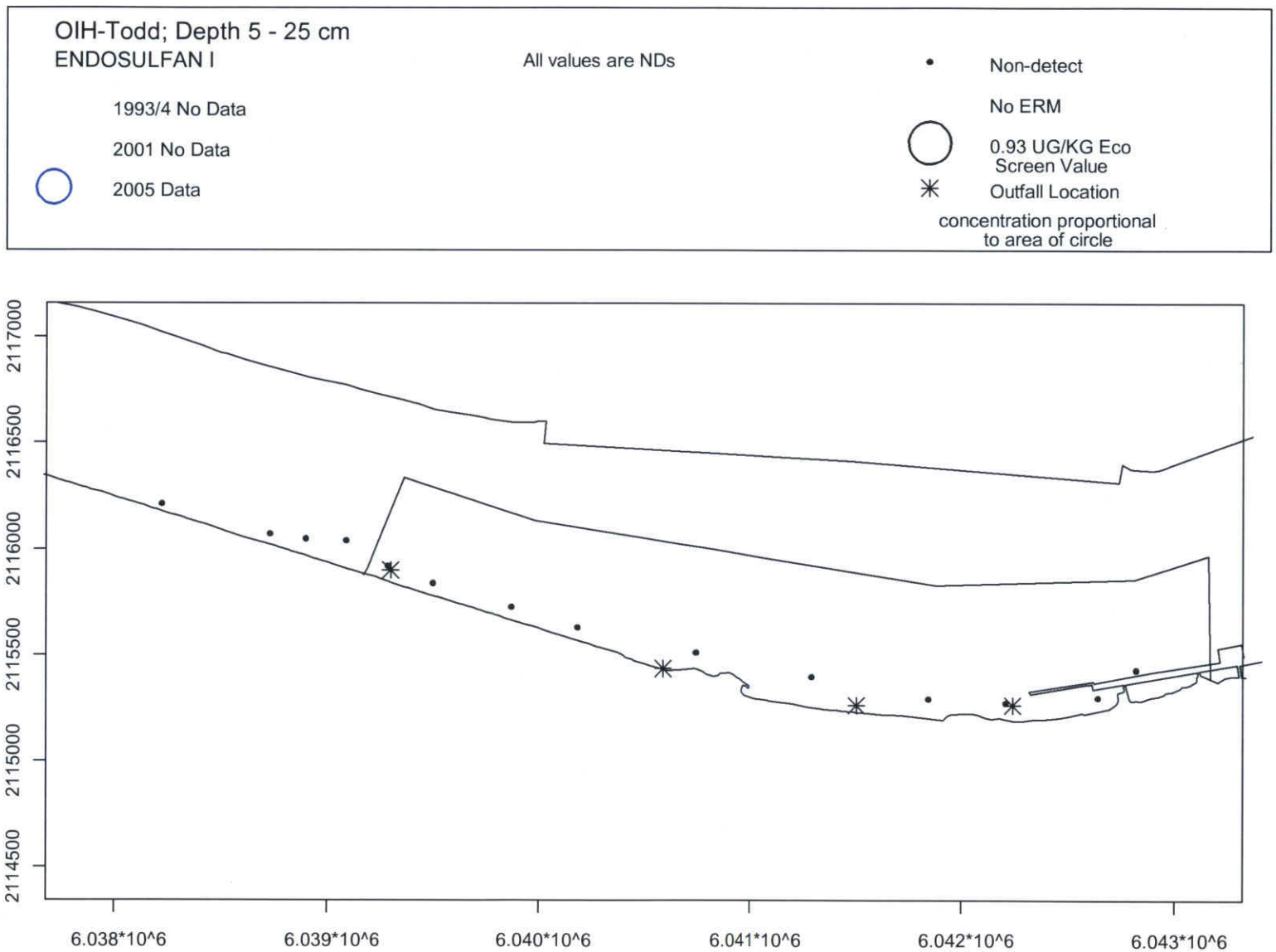

Figure A-109. Bubble Plot of Endosulfan I Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

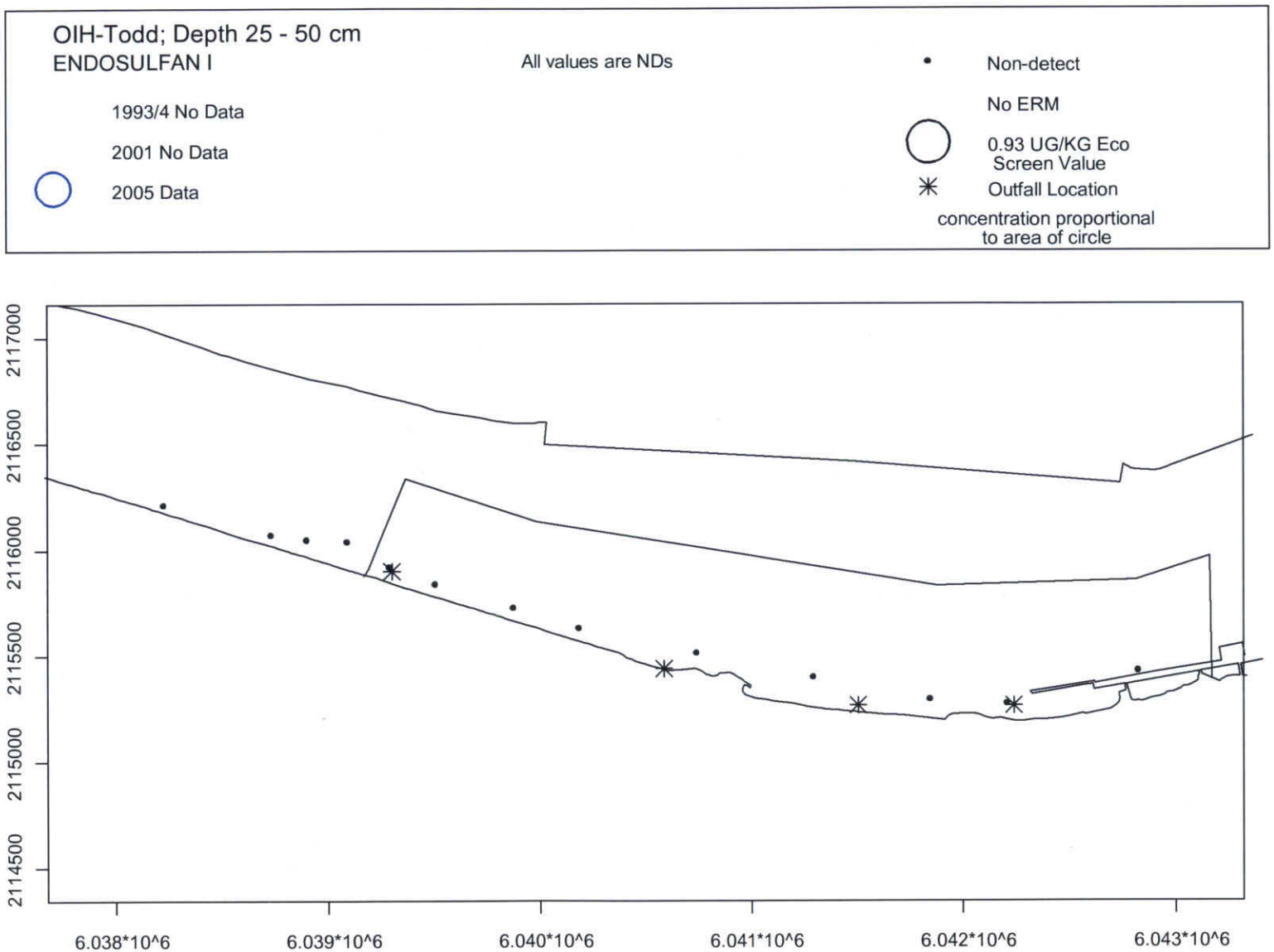

Figure A-110. Bubble Plot of Endosulfan I Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

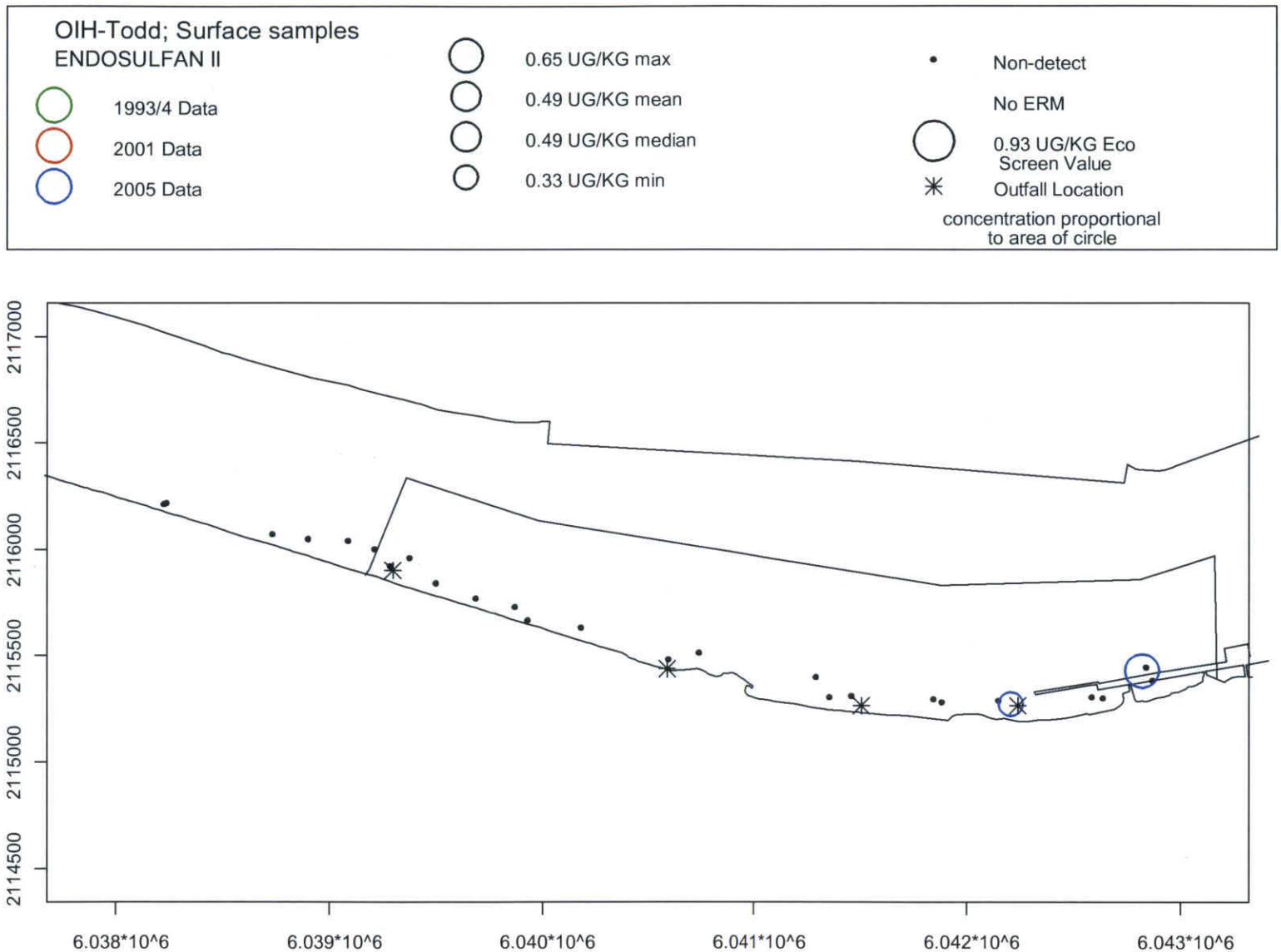

Figure A-111. Bubble Plot of Endosulfan II Concentrations in IR Site 20 Surface Sediment by Year.

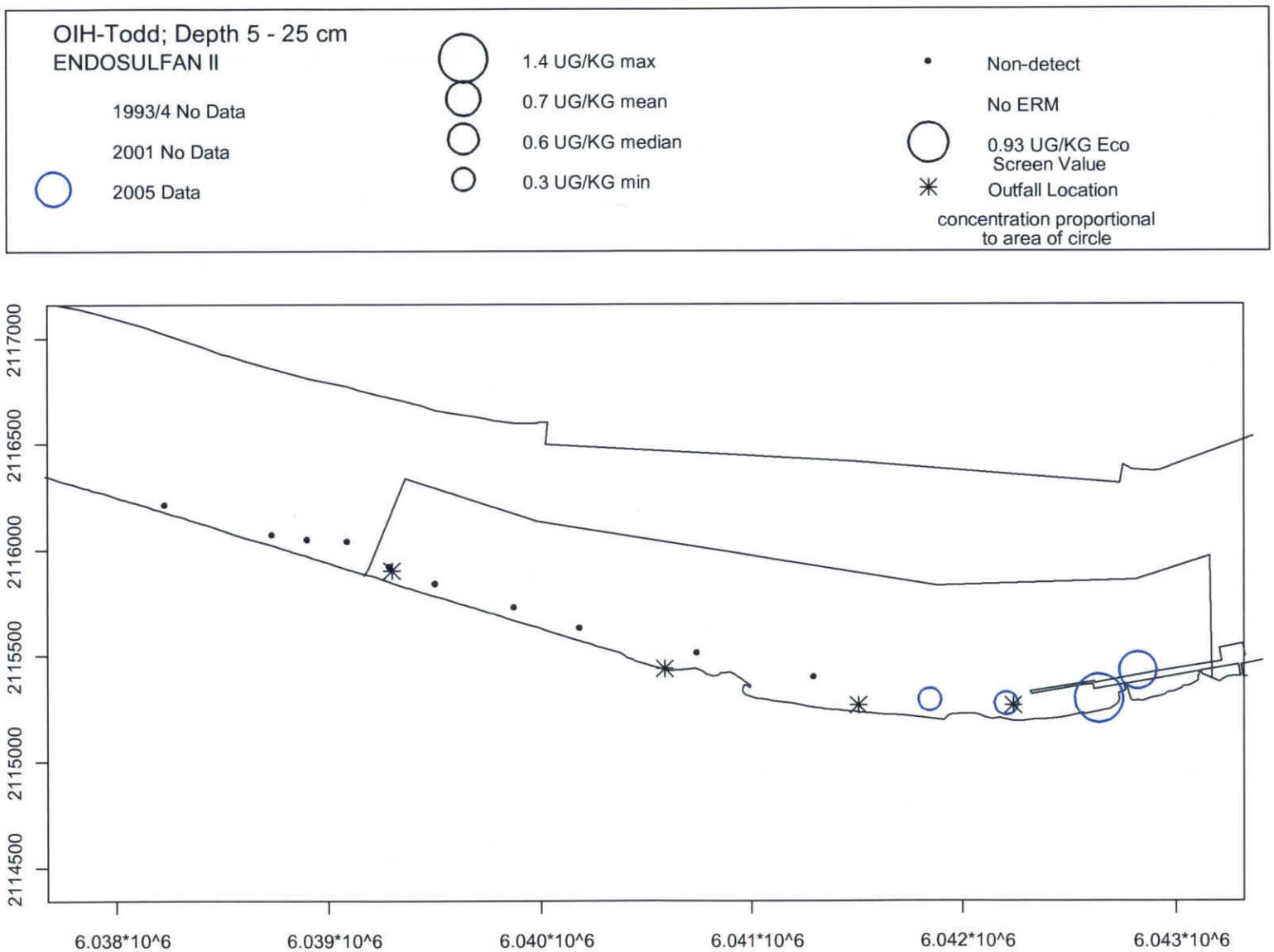

Figure A-112. Bubble Plot of Endosulfan II Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

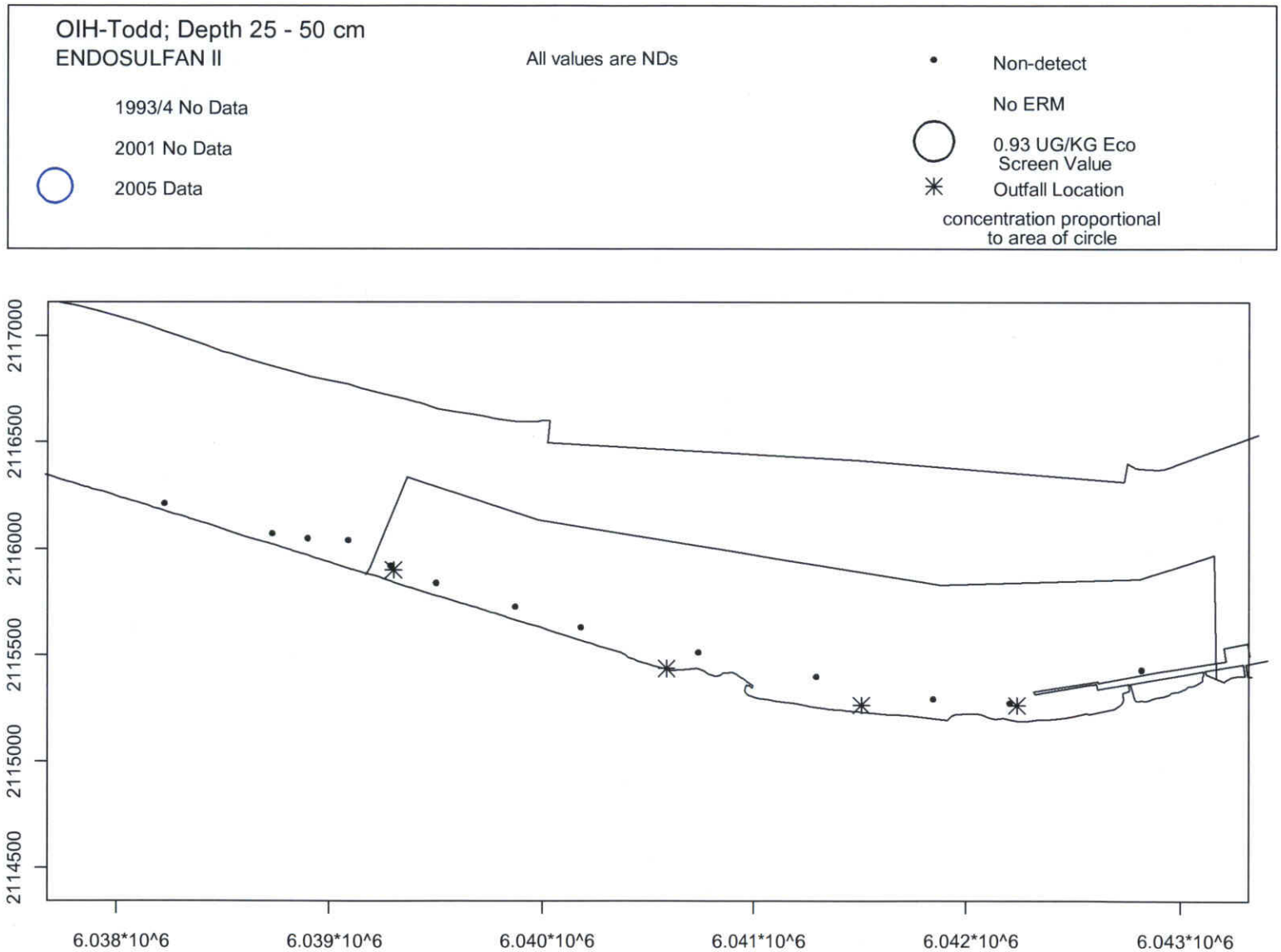

Figure A-113. Bubble Plot of Endosulfan II Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

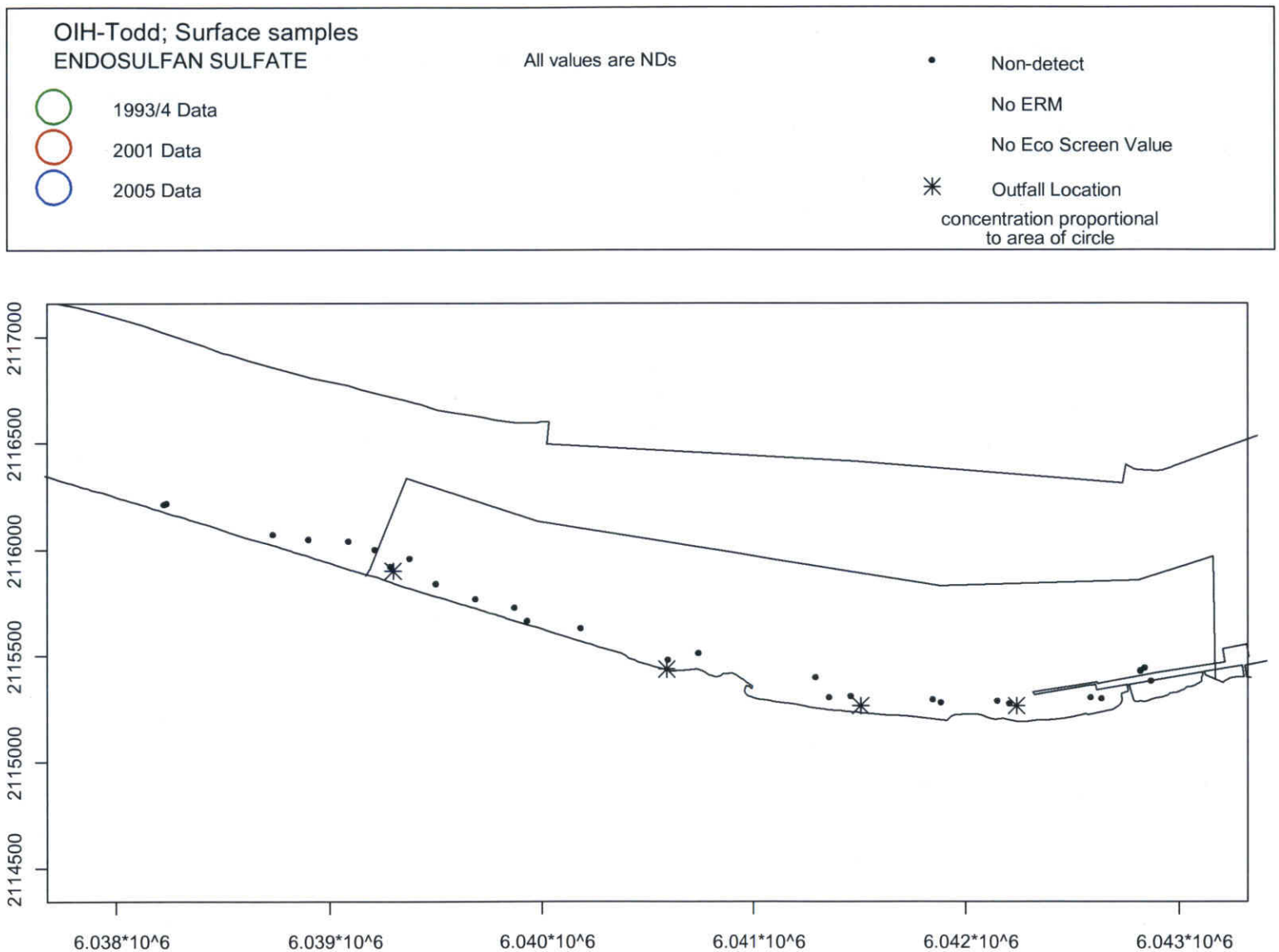

Figure A-114. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 20 Surface Sediment by Year.

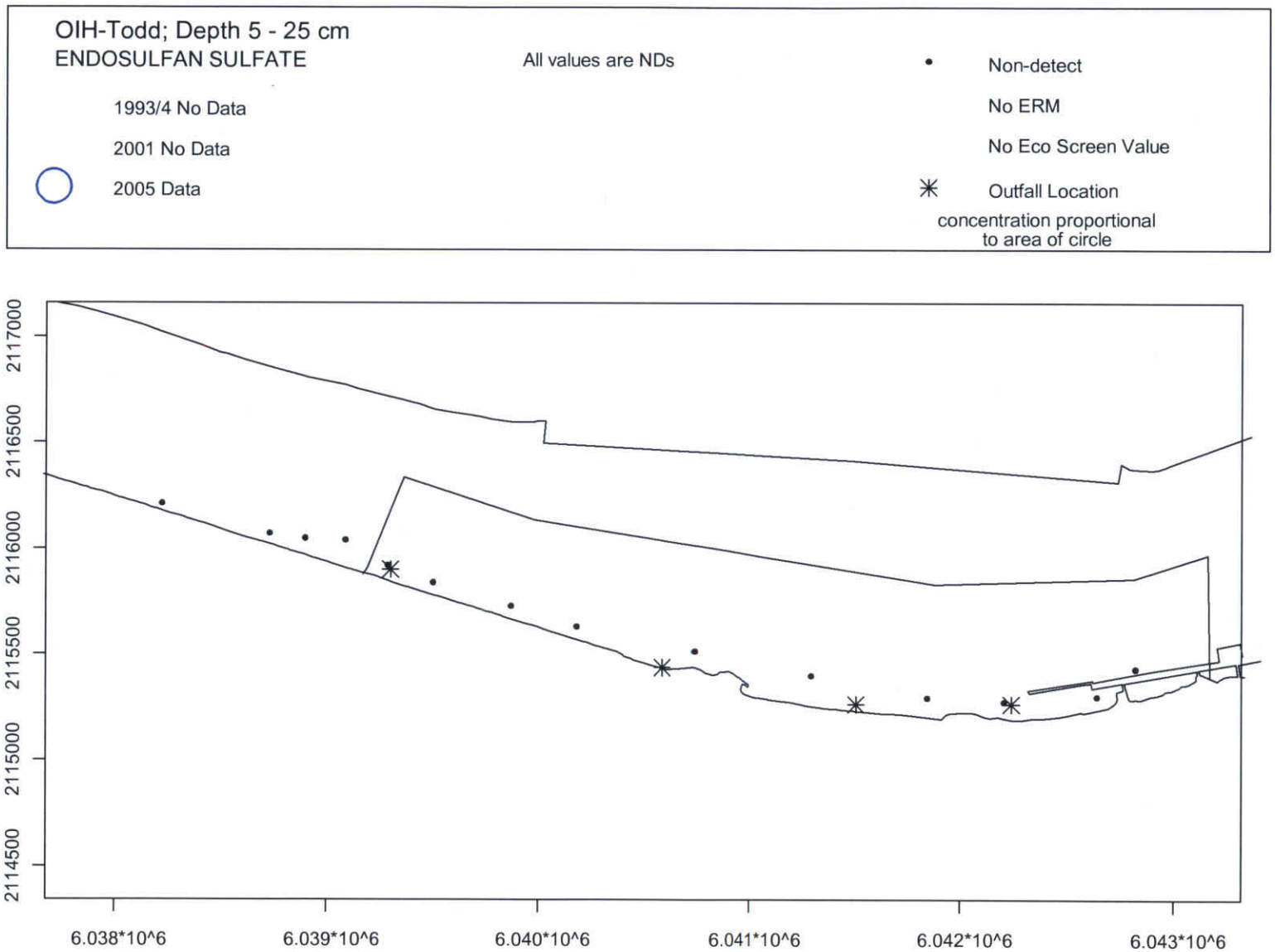

Figure A-115. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

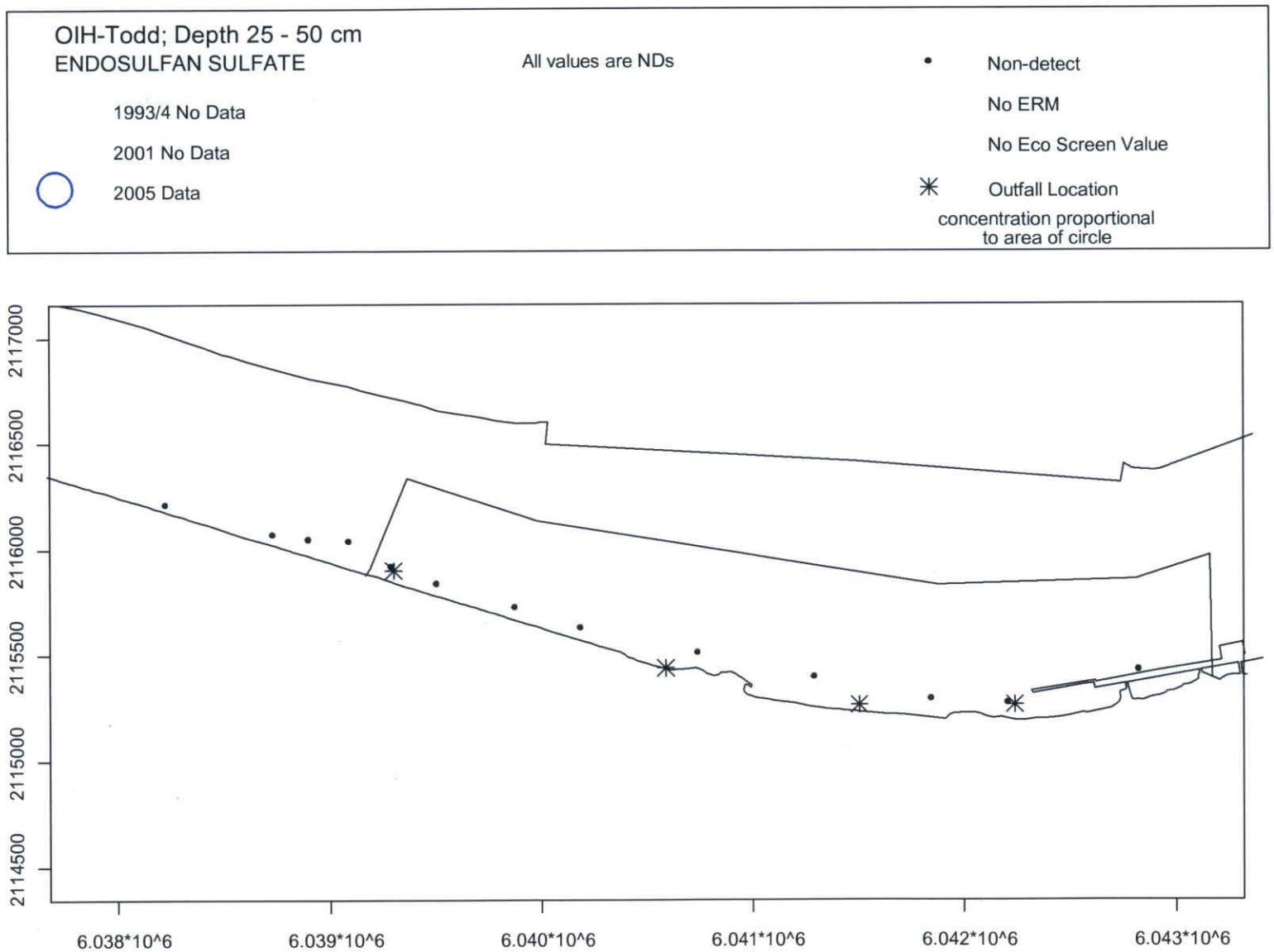

Figure A-116. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

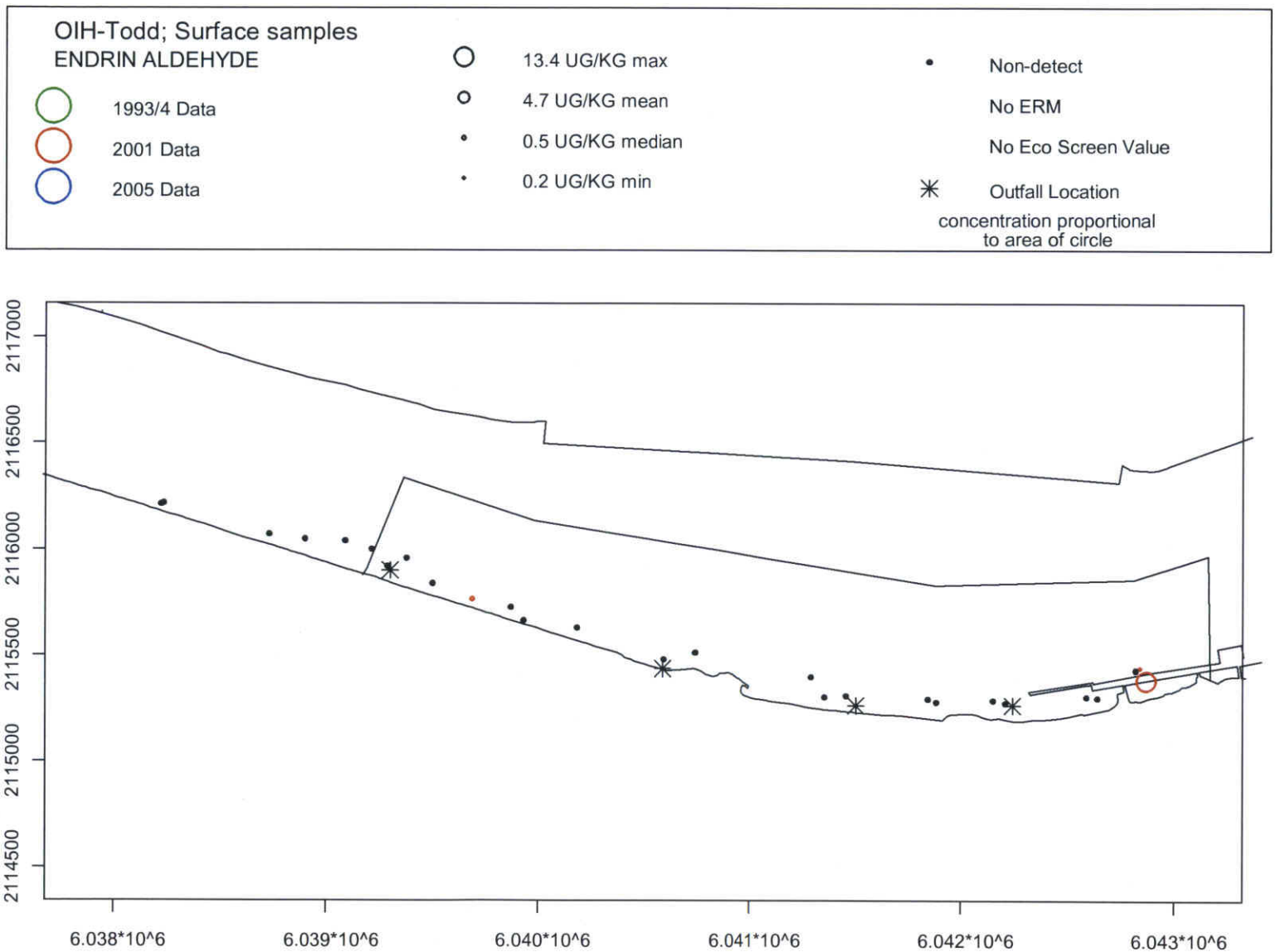

Figure A-117. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 20 Surface Sediment by Year.

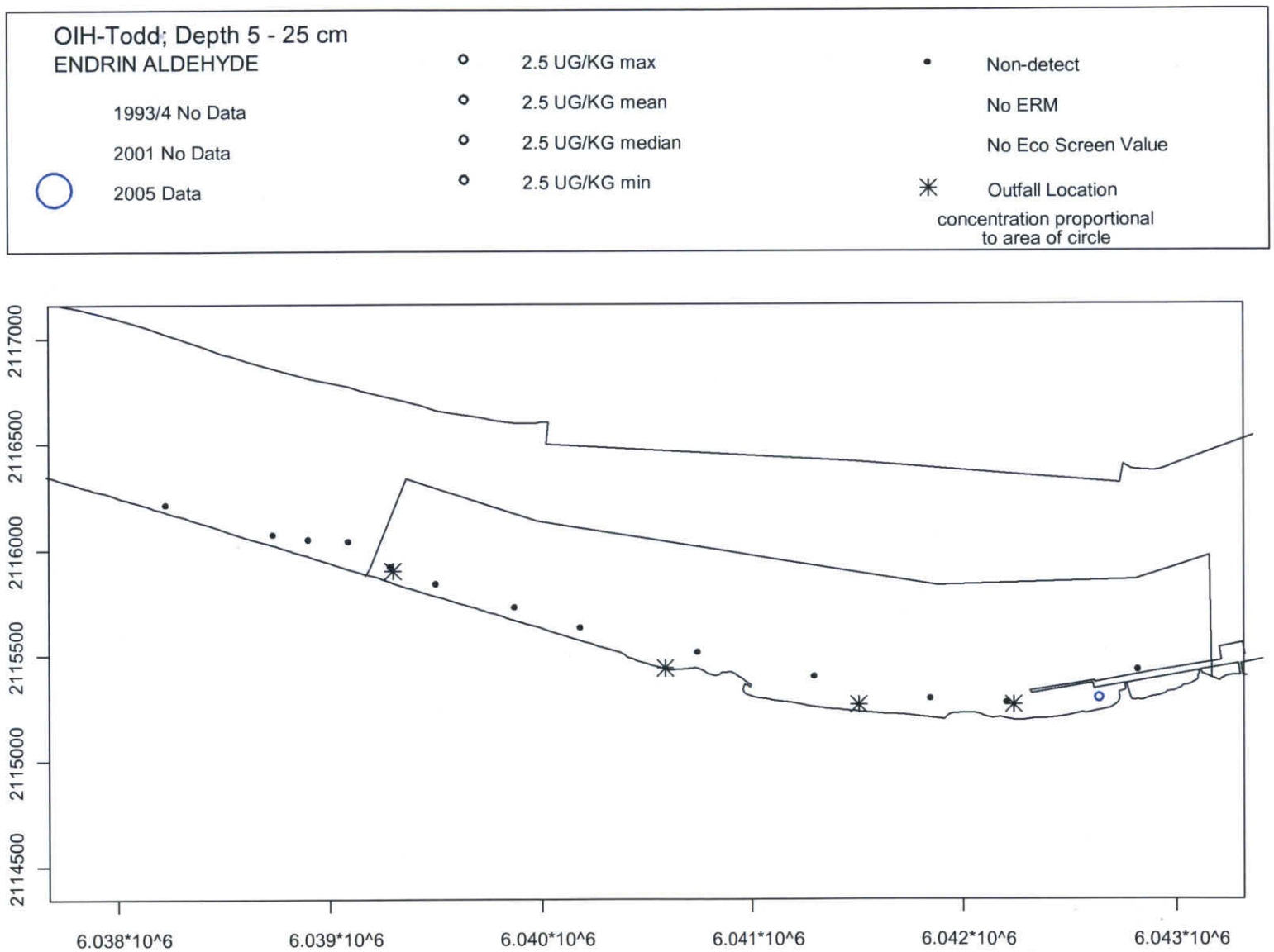

Figure A-118. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

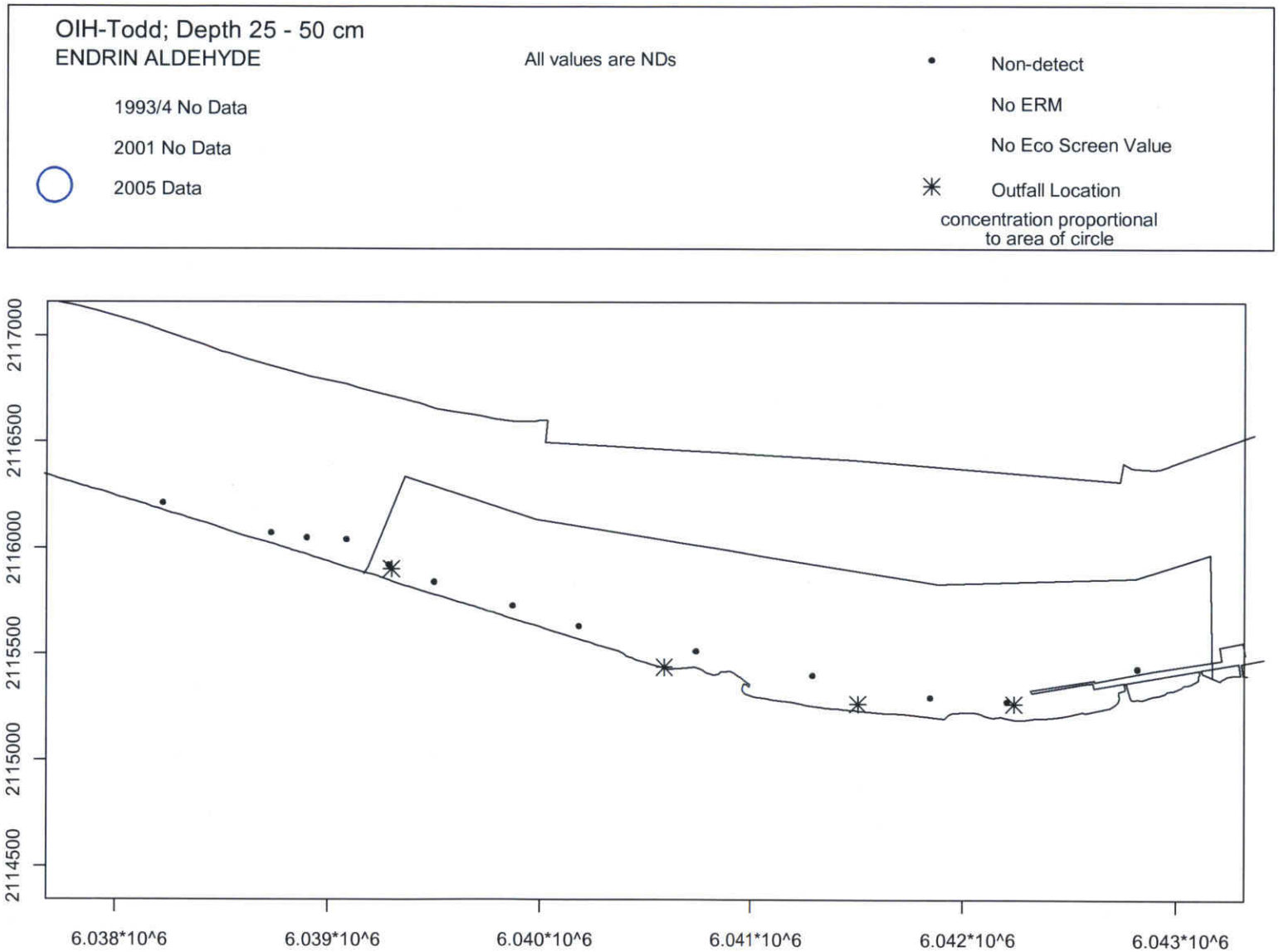

Figure A-119. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

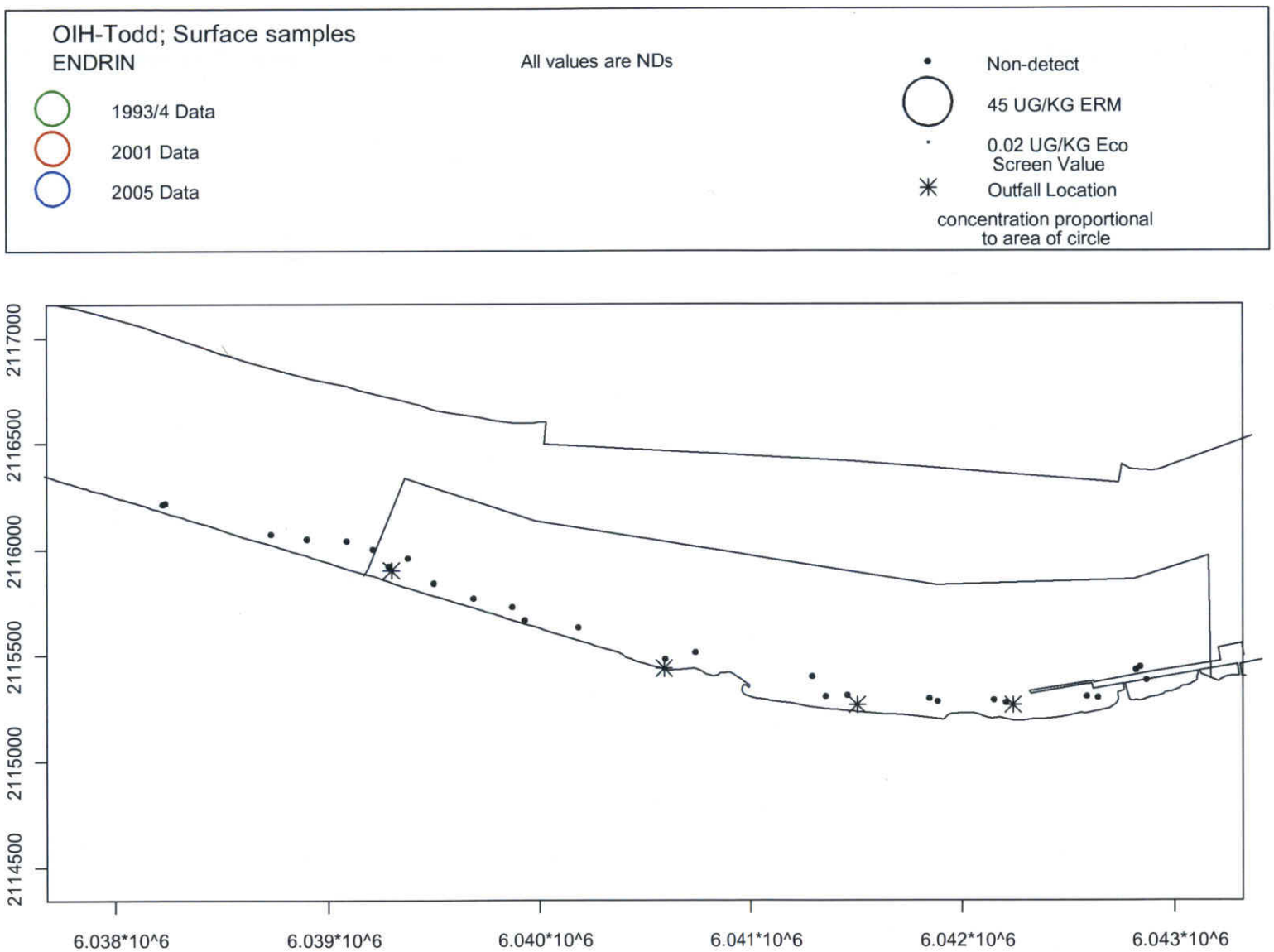

Figure A-120. Bubble Plot of Endrin Concentrations in IR Site 20 Surface Sediment by Year.

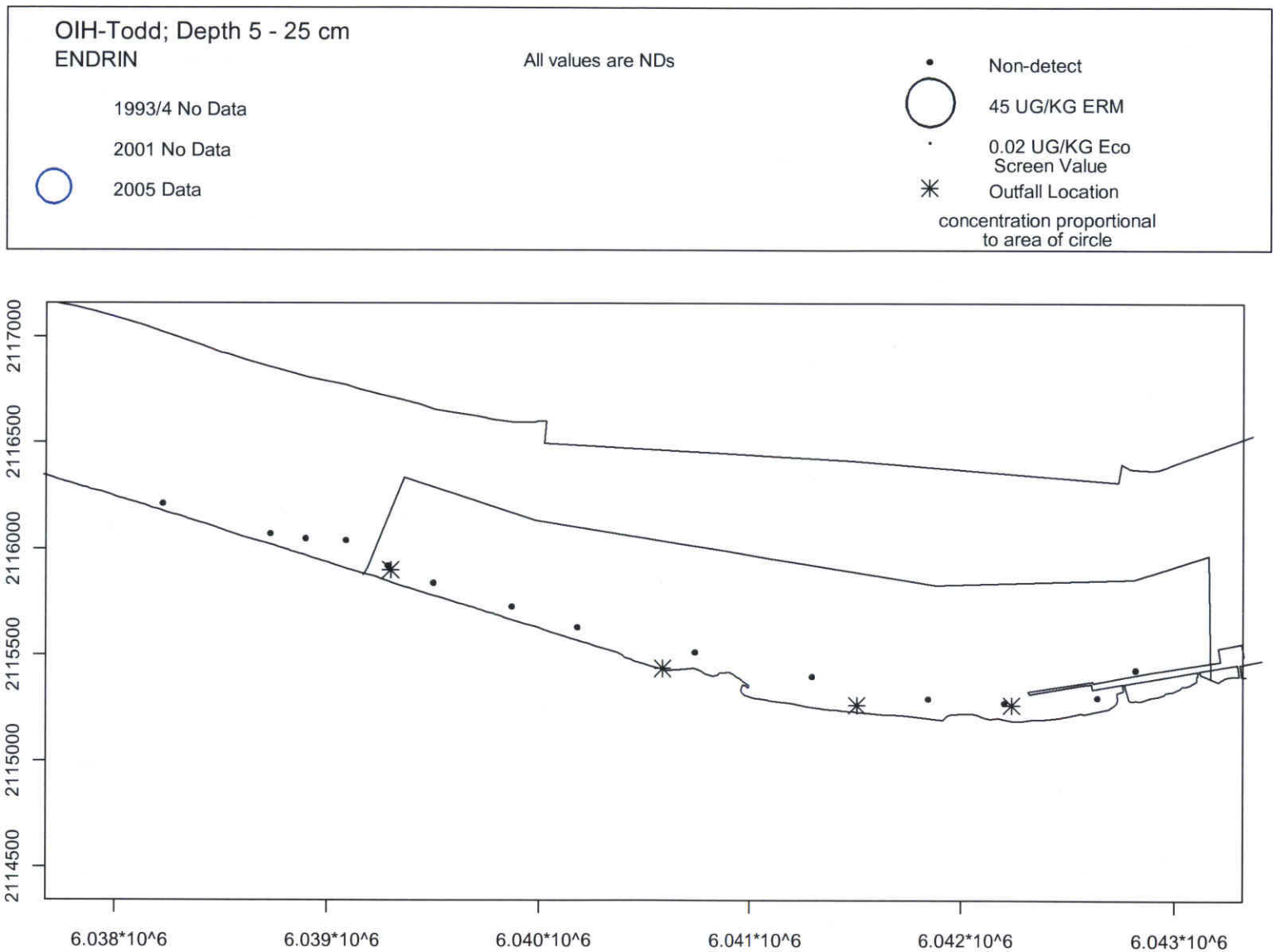

Figure A-121. Bubble Plot of Endrin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

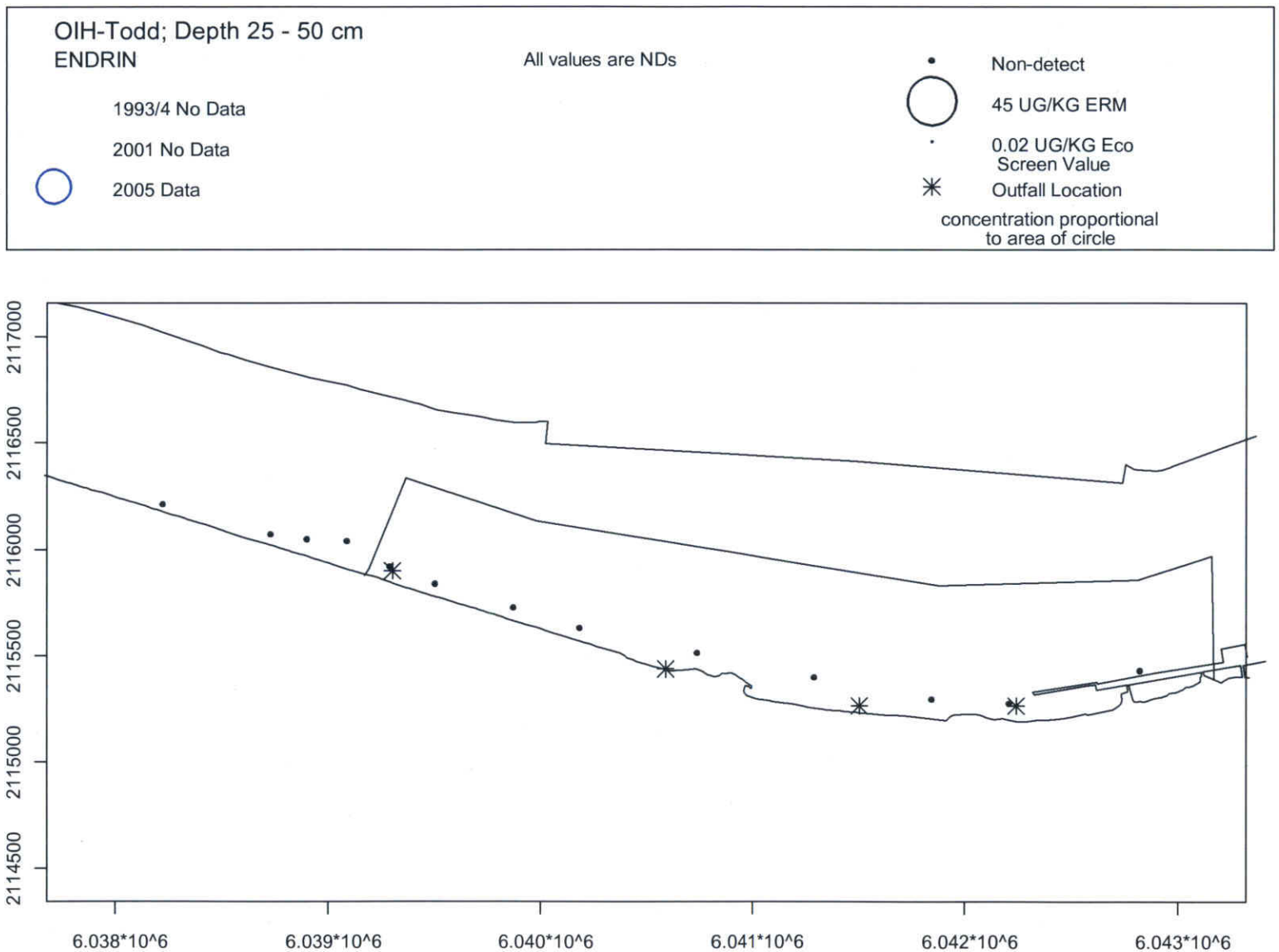

Figure A-122. Bubble Plot of Endrin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

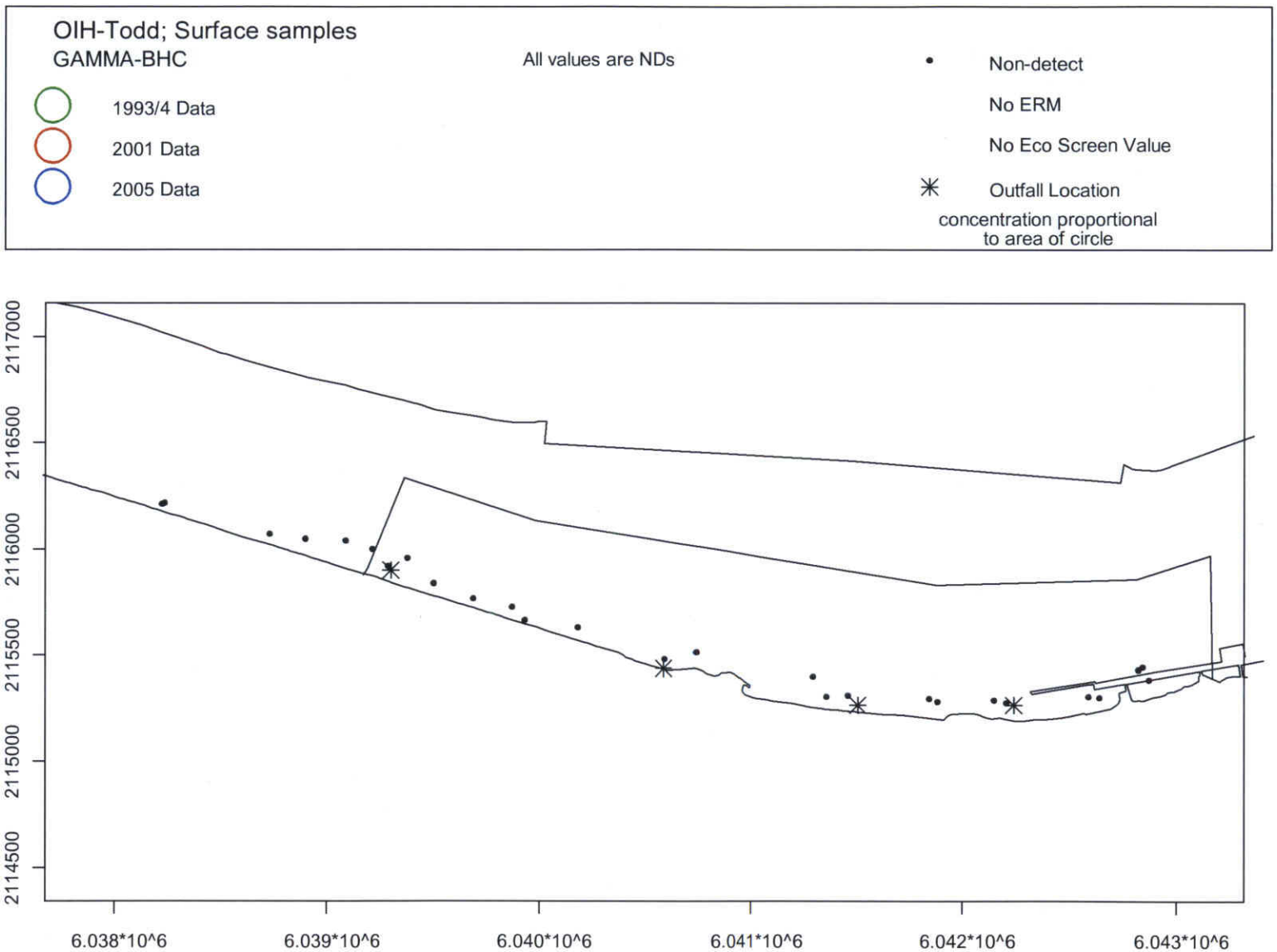

Figure A-123. Bubble Plot of *gamma*-BHC Concentrations in IR Site 20 Surface Sediment by Year.

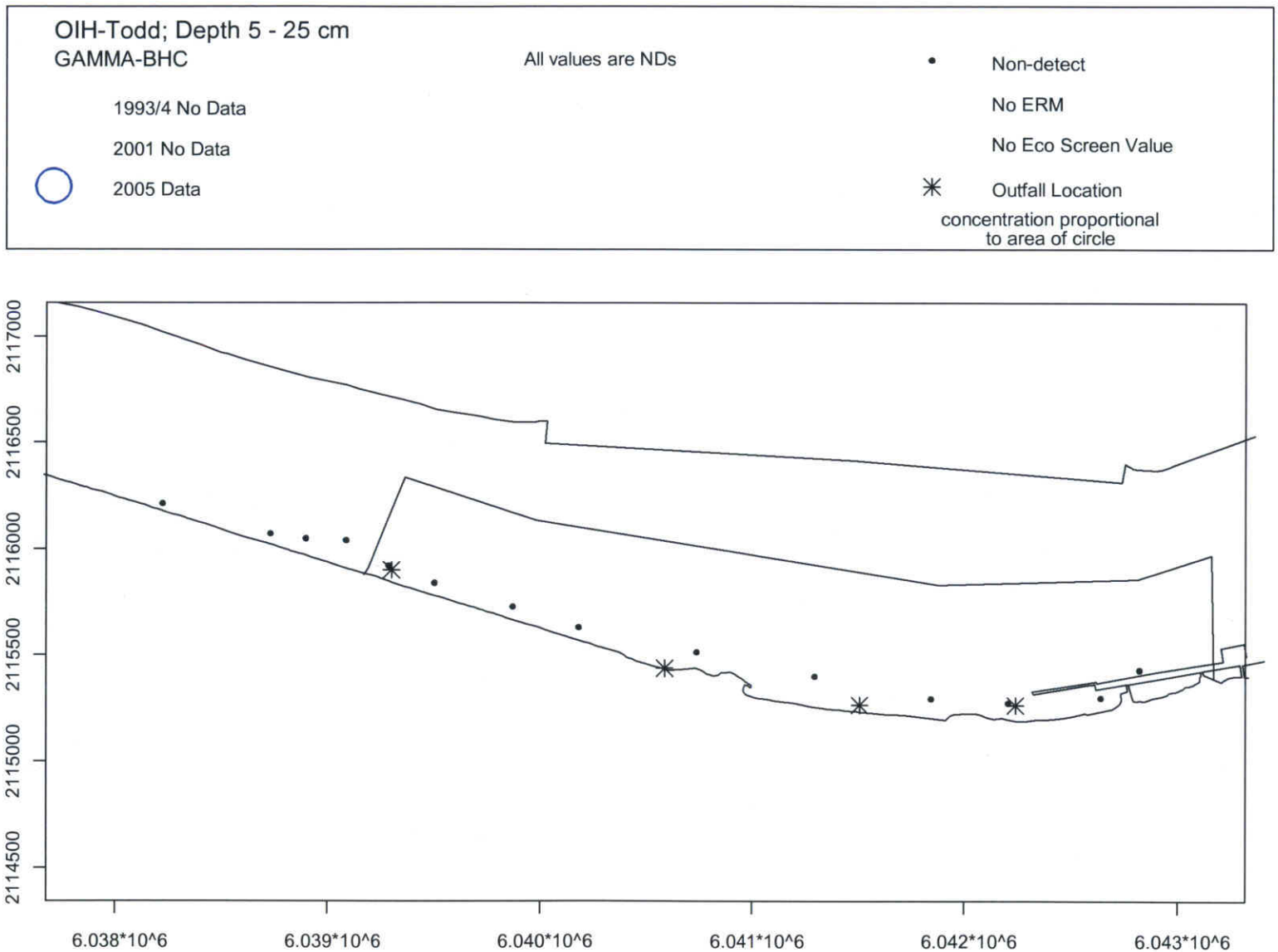

Figure A-124. Bubble Plot of *gamma*-BHC Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

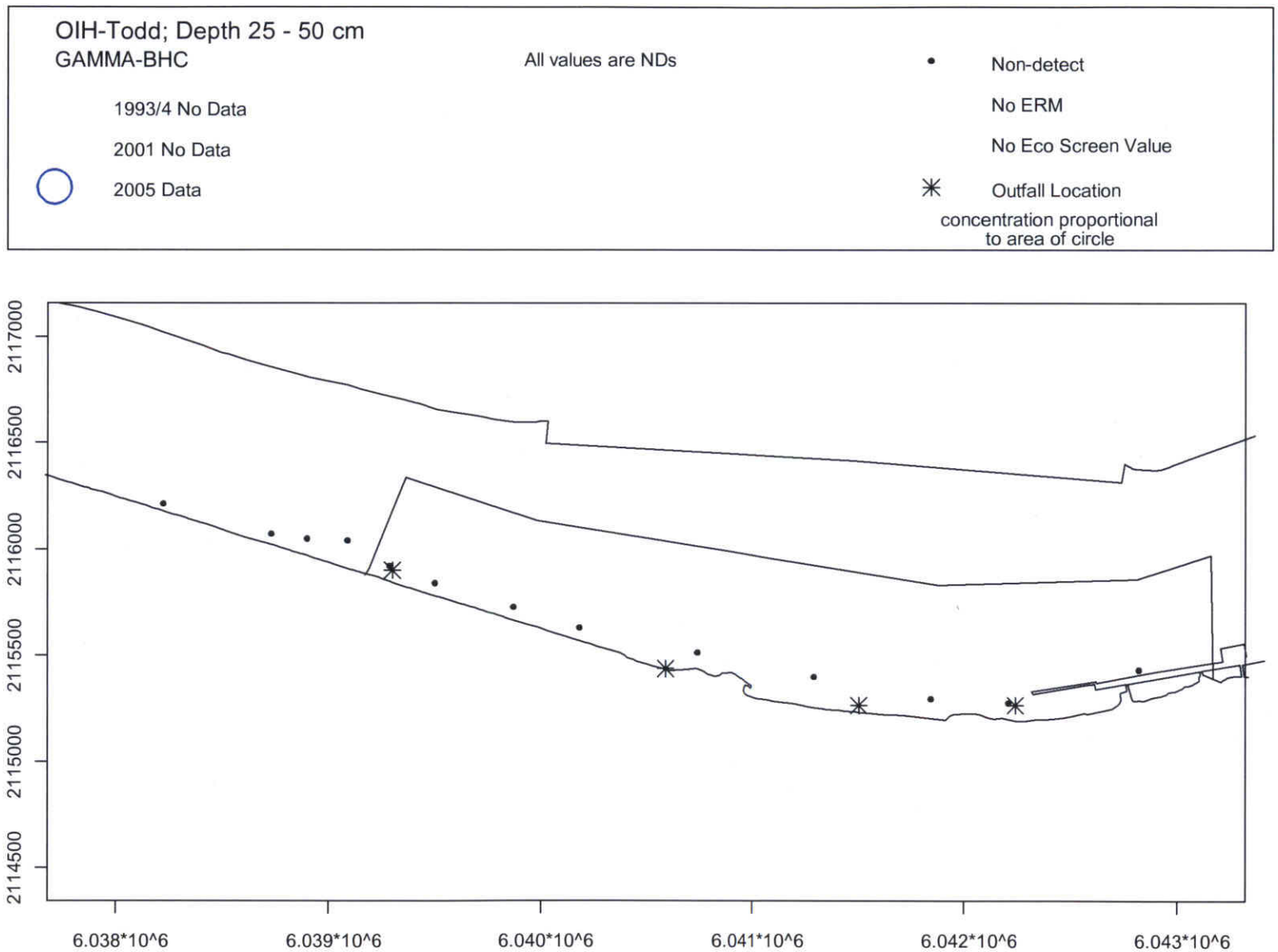

Figure A-125. Bubble Plot of *gamma*-BHC Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

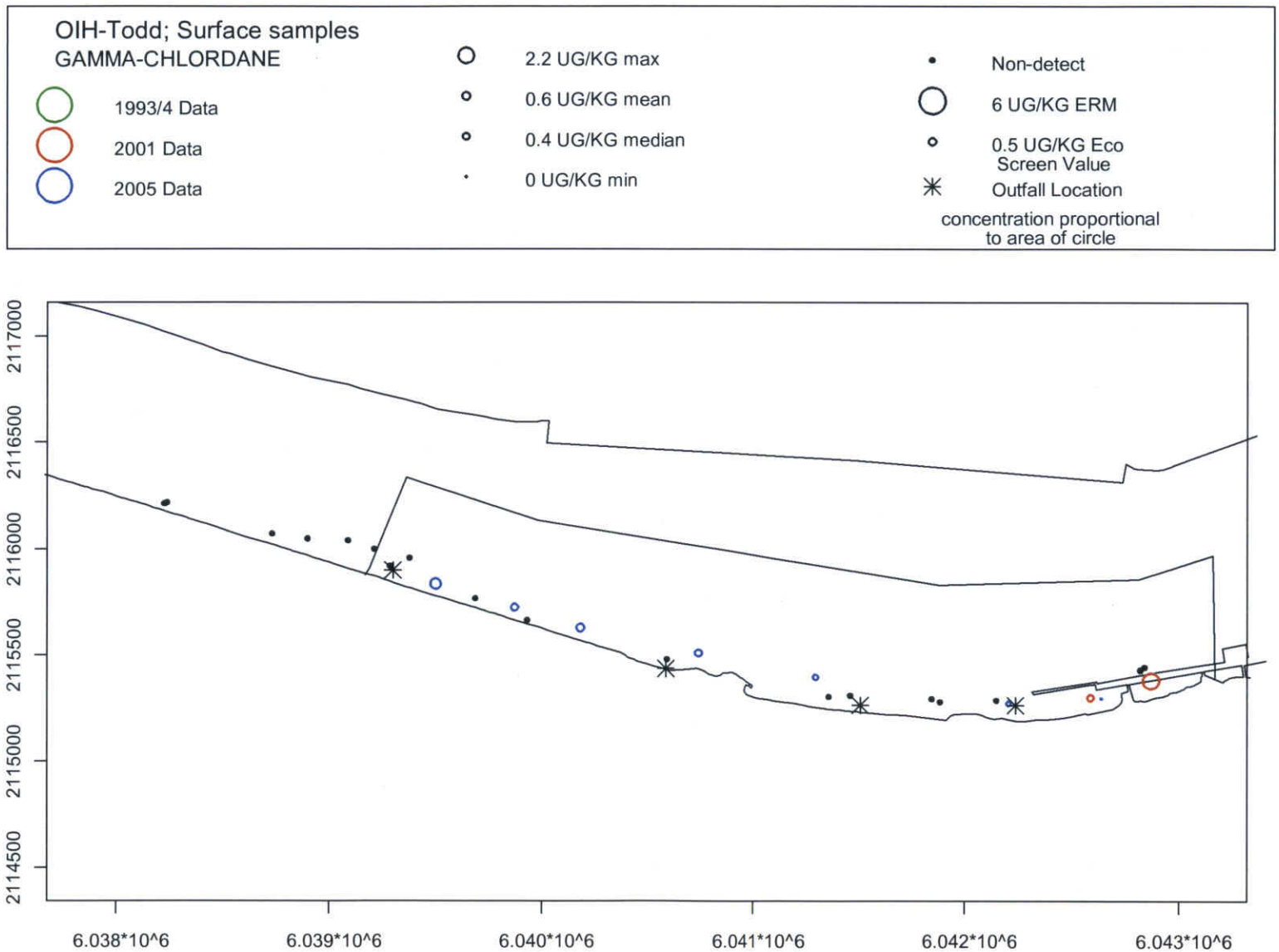

Figure A-126. Bubble Plot of *gamma*-Chlordane Concentrations in IR Site 20 Surface Sediment by Year.

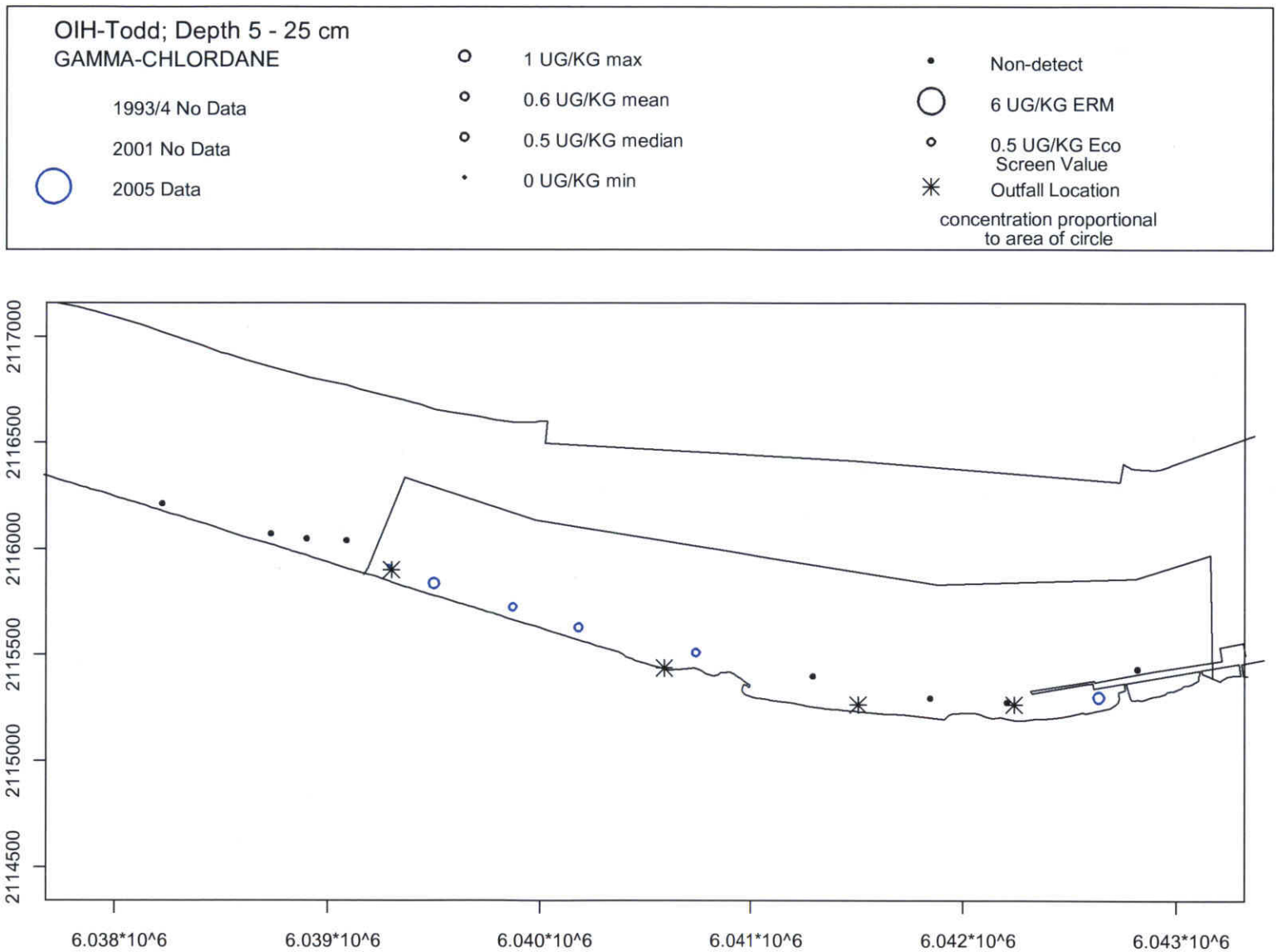

Figure A-127. Bubble Plot of *gamma*-Chlordane Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

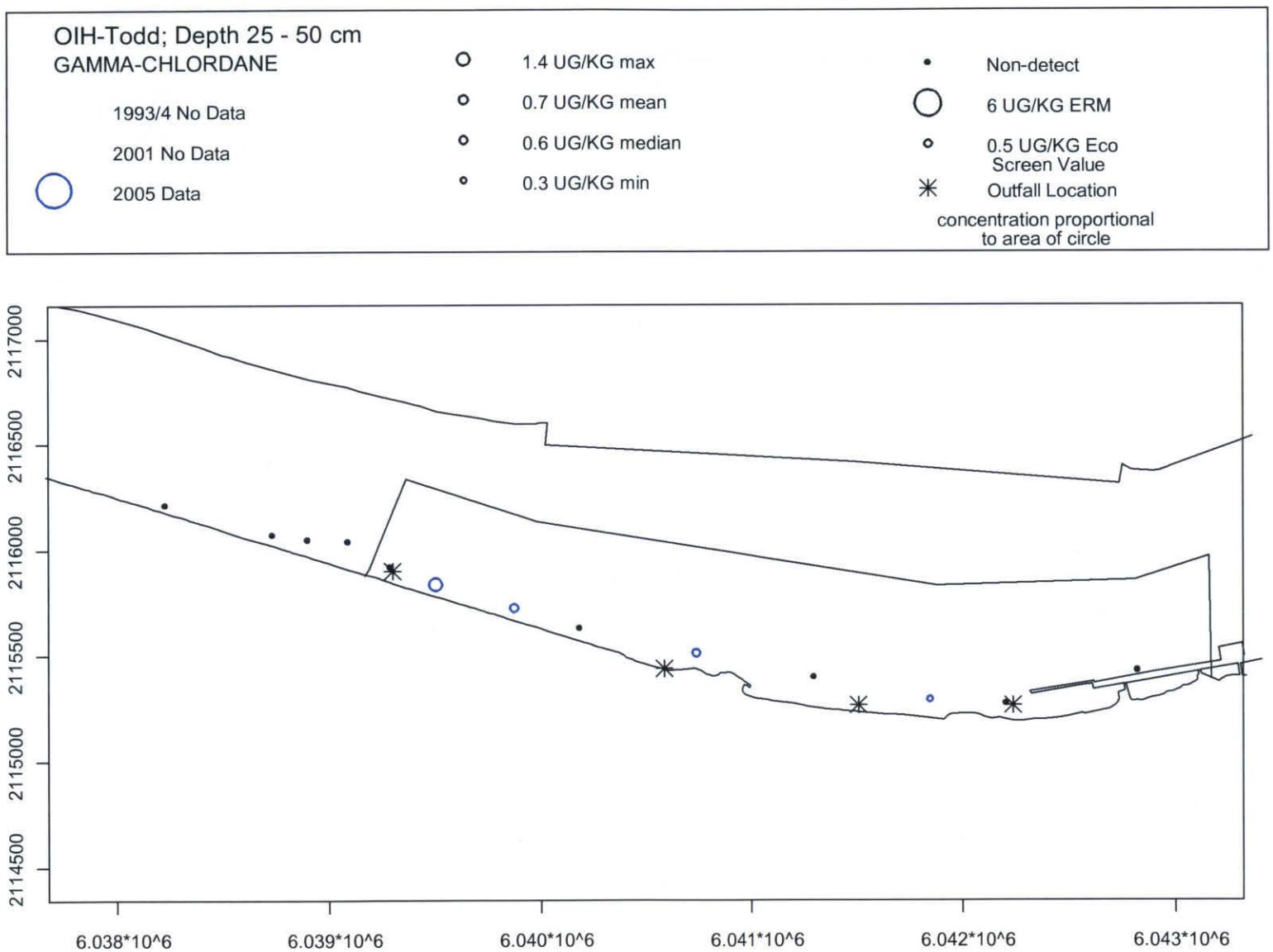

Figure A-128. Bubble Plot of *gamma*-Chlordane Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

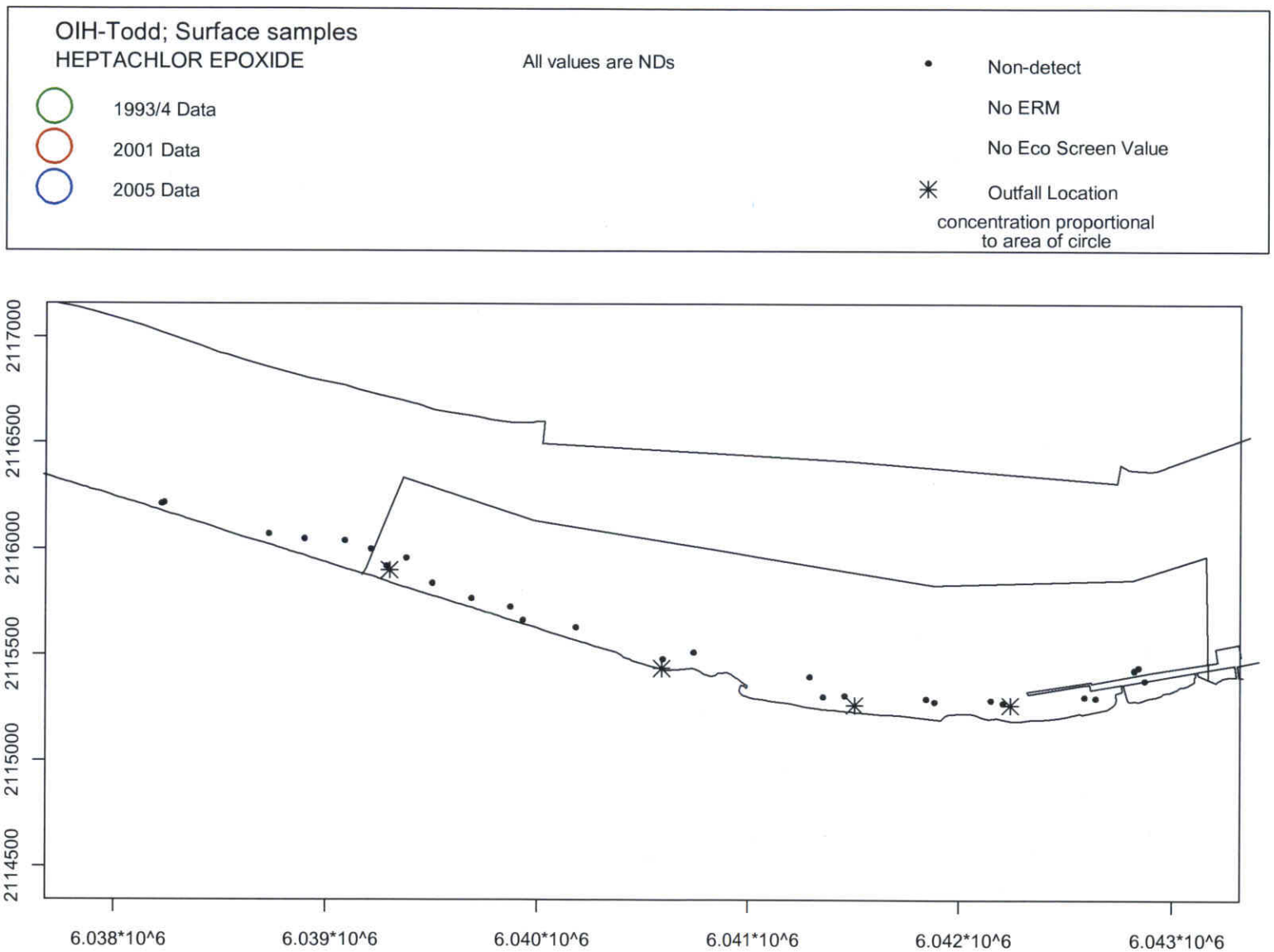

Figure A-129. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 20 Surface Sediment by Year.

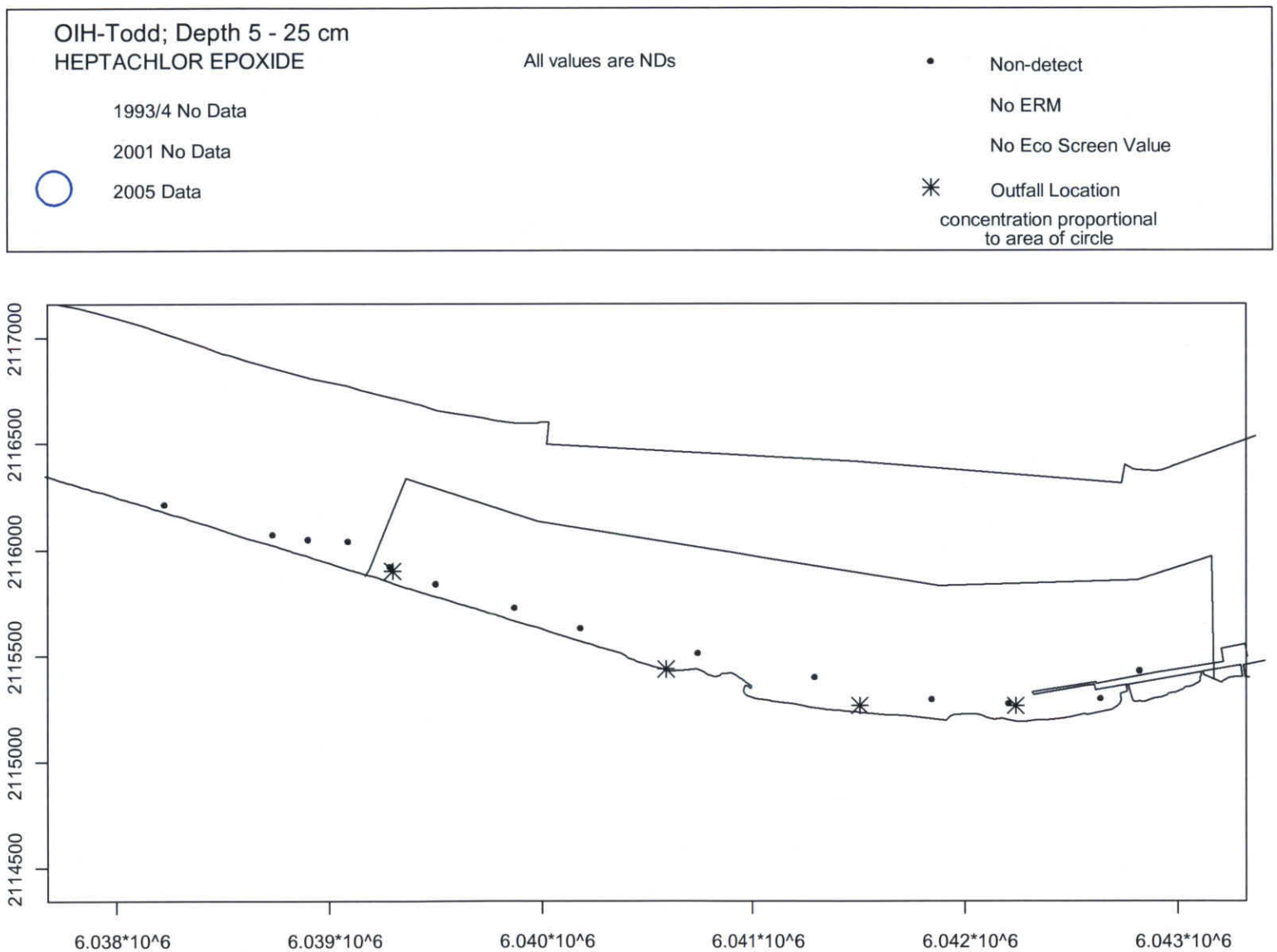

Figure A-130. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

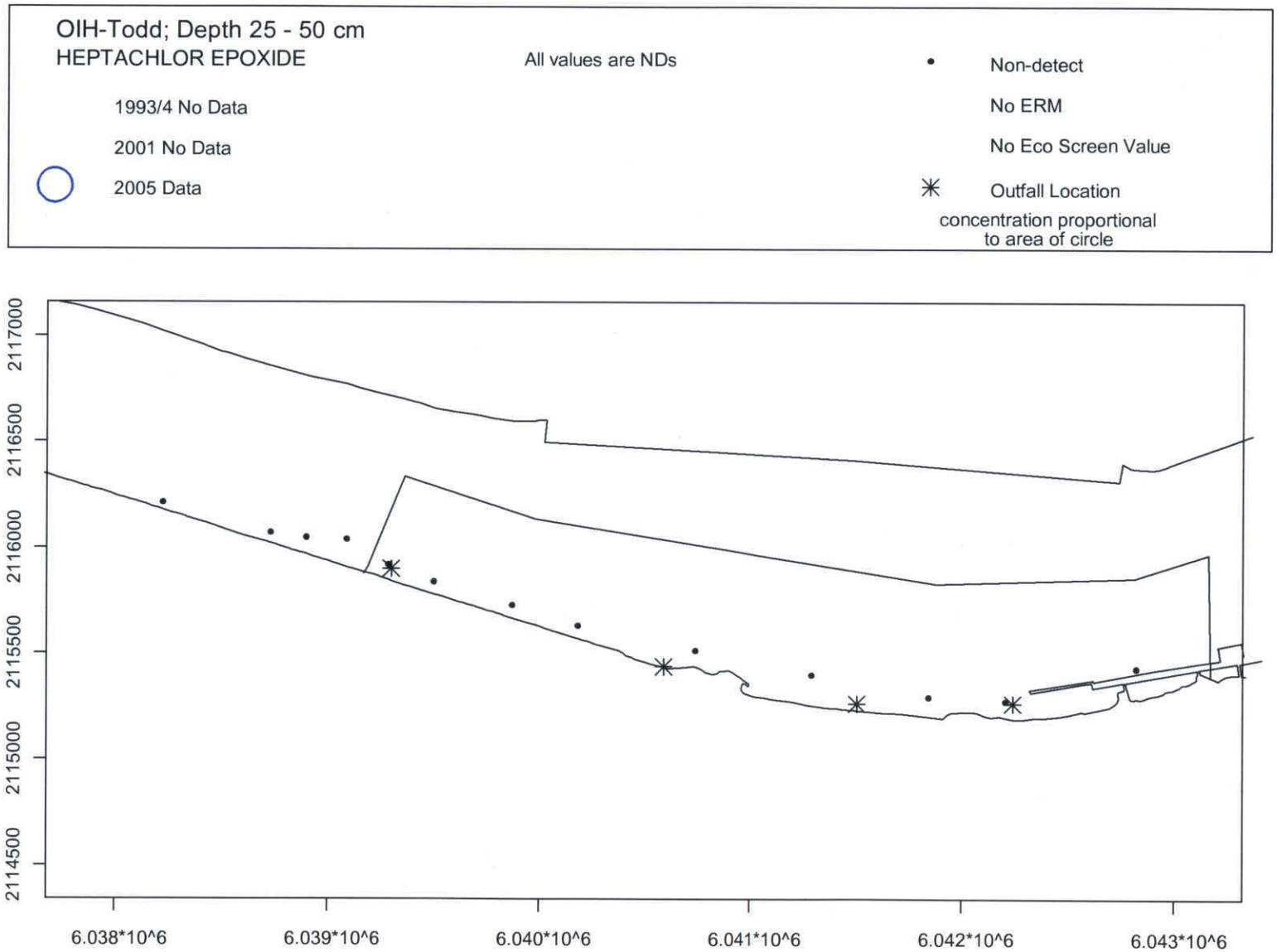

Figure A-131. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

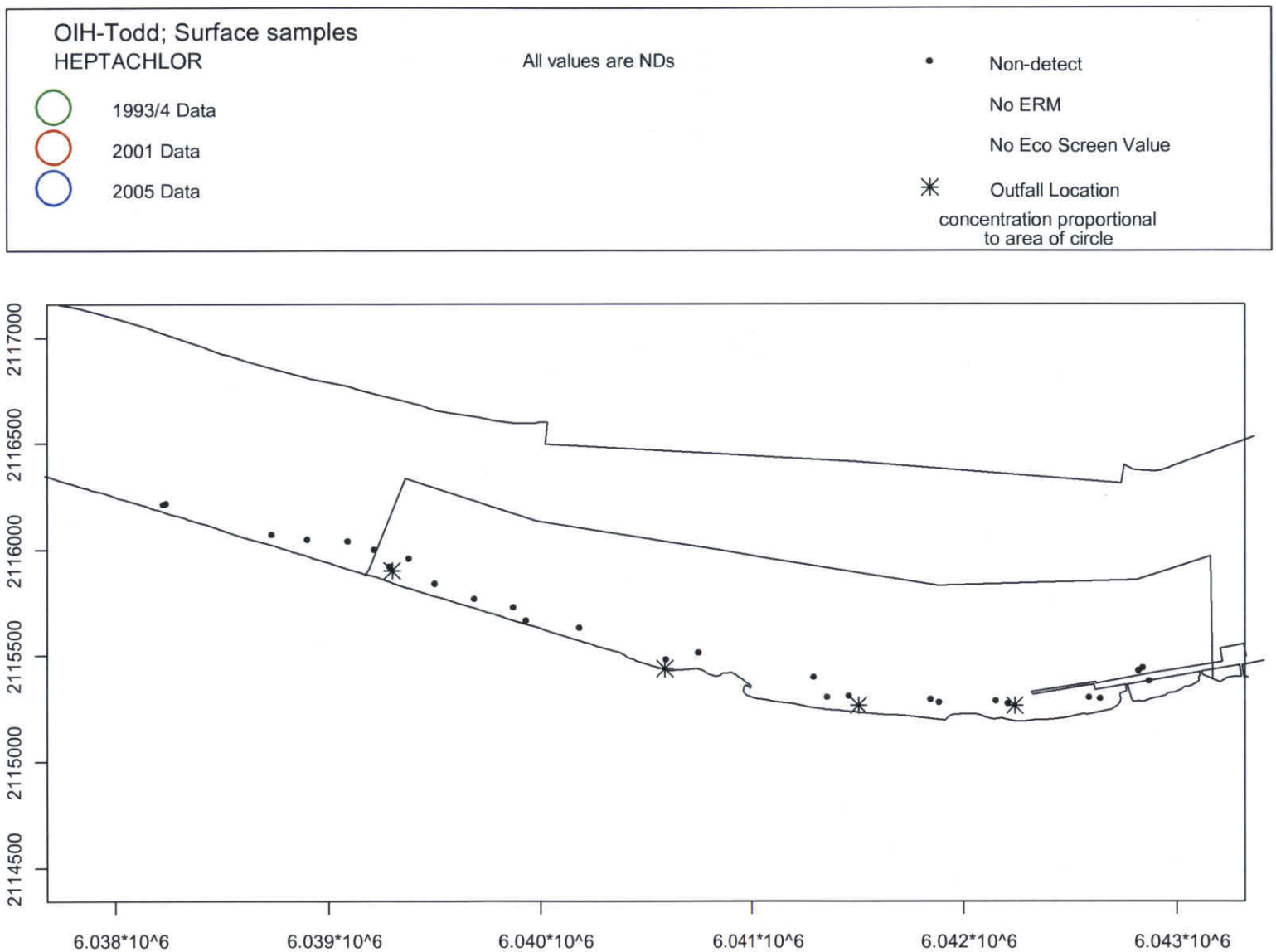

Figure A-132. Bubble Plot of Heptachlor Concentrations in IR Site 20 Surface Sediment by Year.

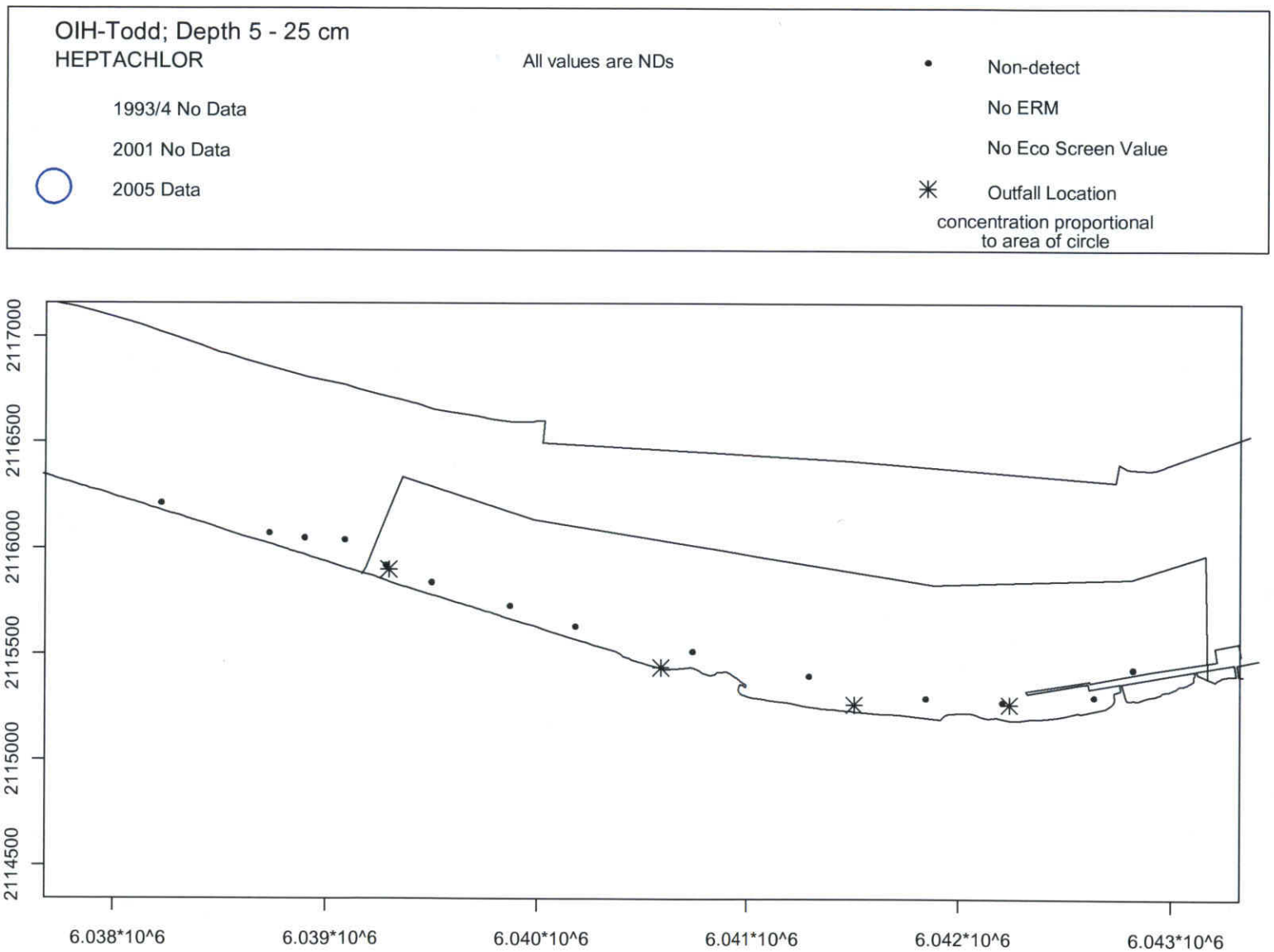

Figure A-133. Bubble Plot of Heptachlor Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

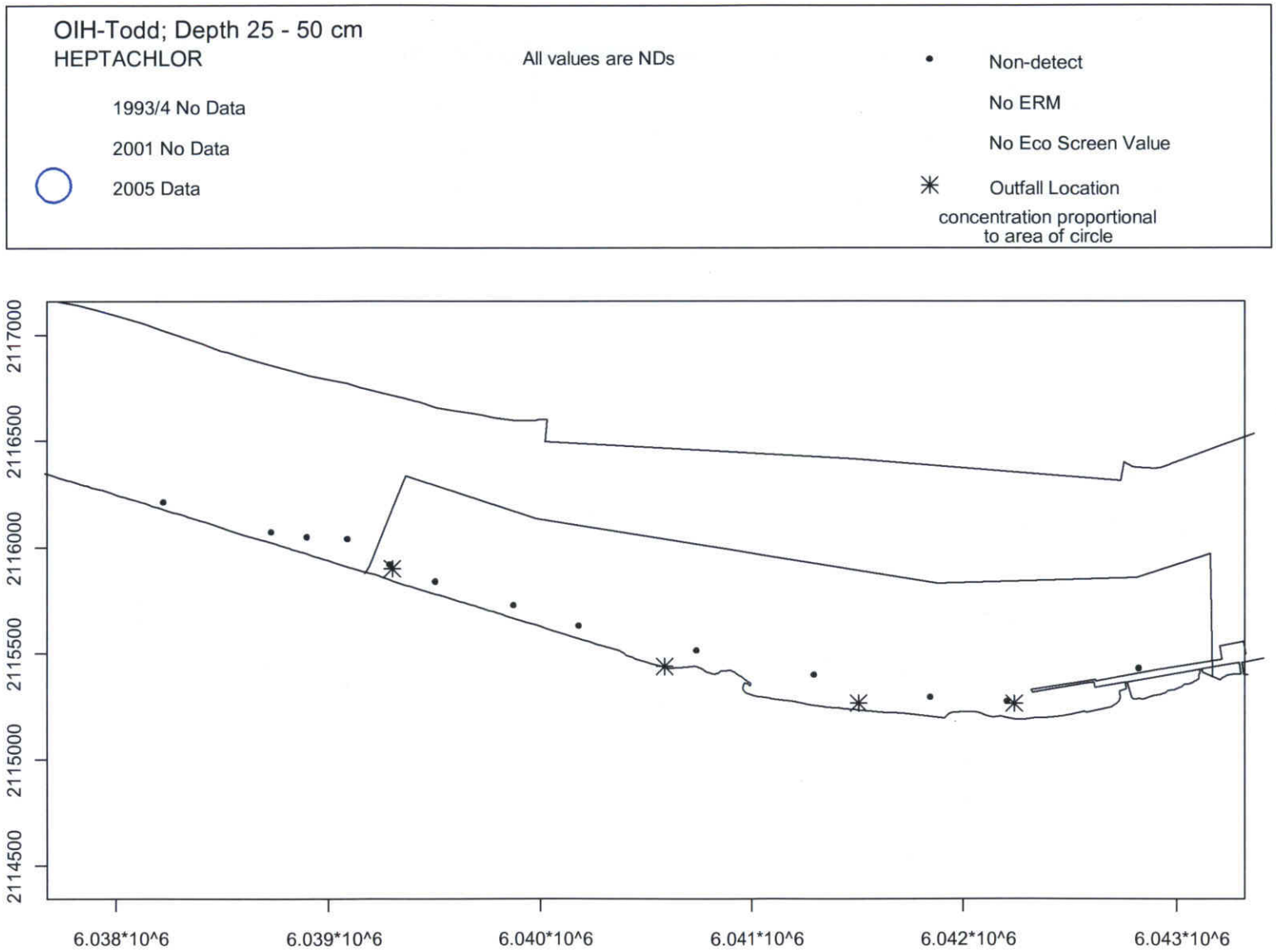

Figure A-134. Bubble Plot of Heptachlor Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

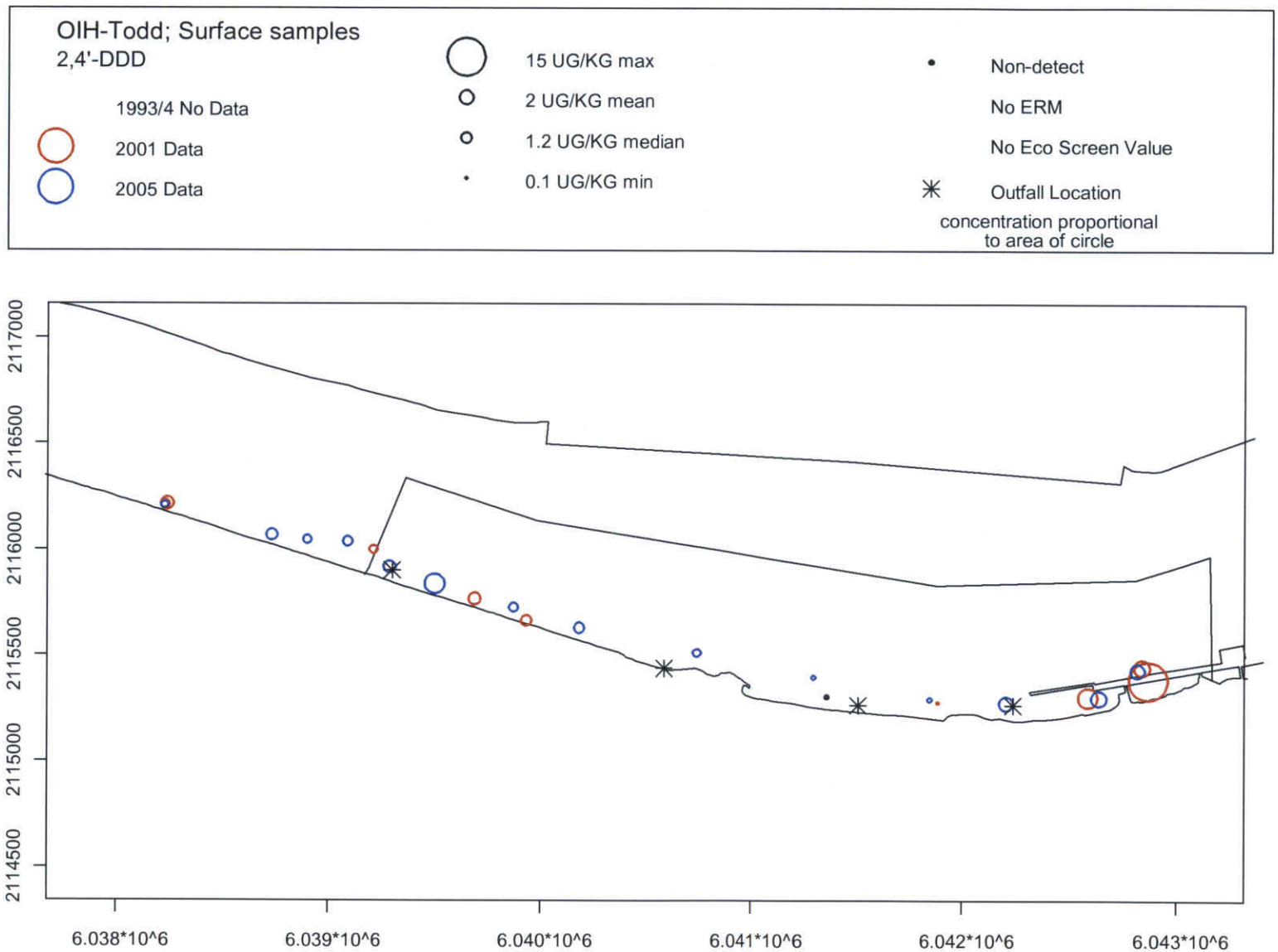

Figure A-135. Bubble Plot of 2,4'-DDD Concentrations in IR Site 20 Surface Sediment by Year.

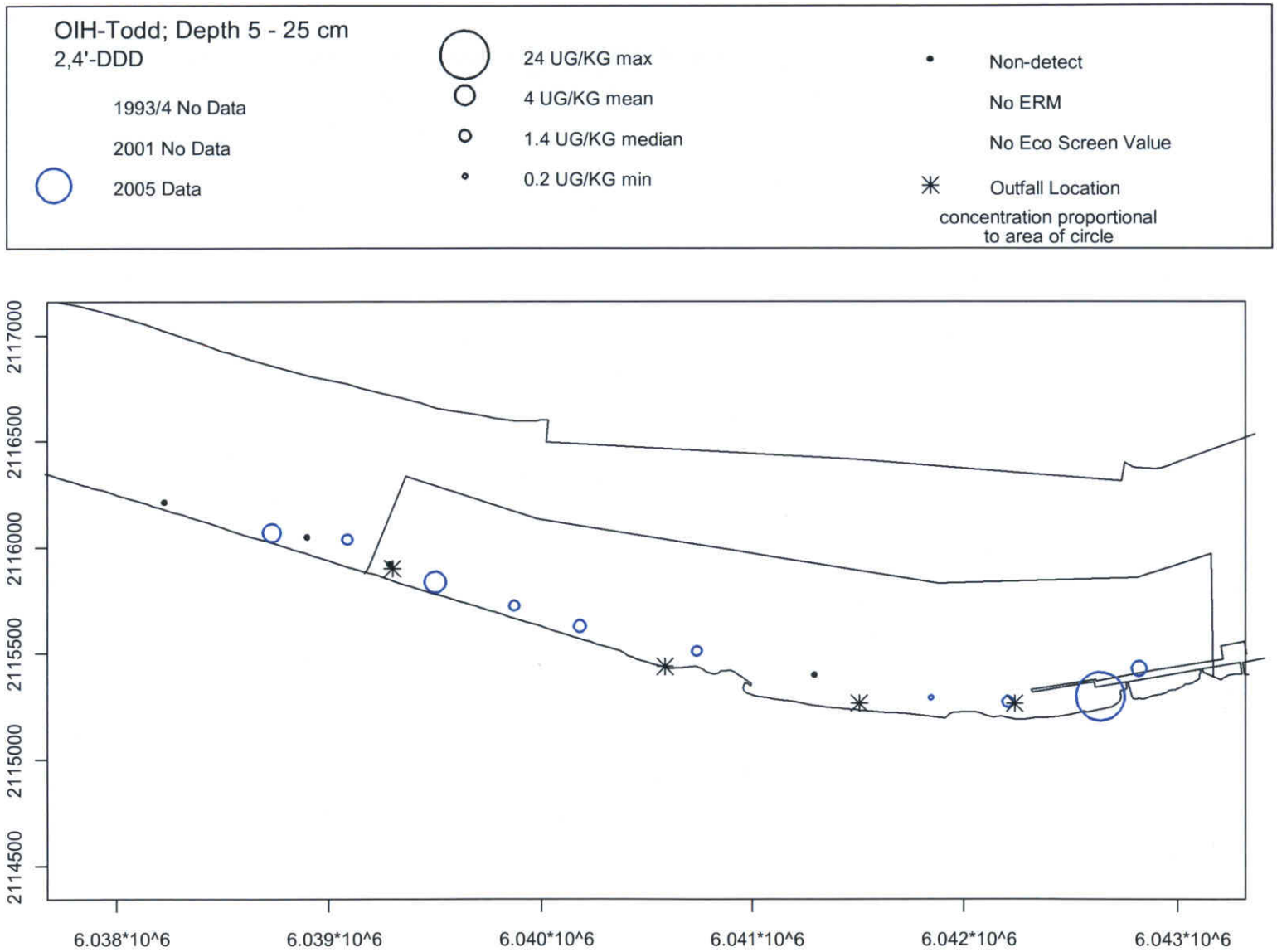

Figure A-136. Bubble Plot of 2,4'-DDD Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

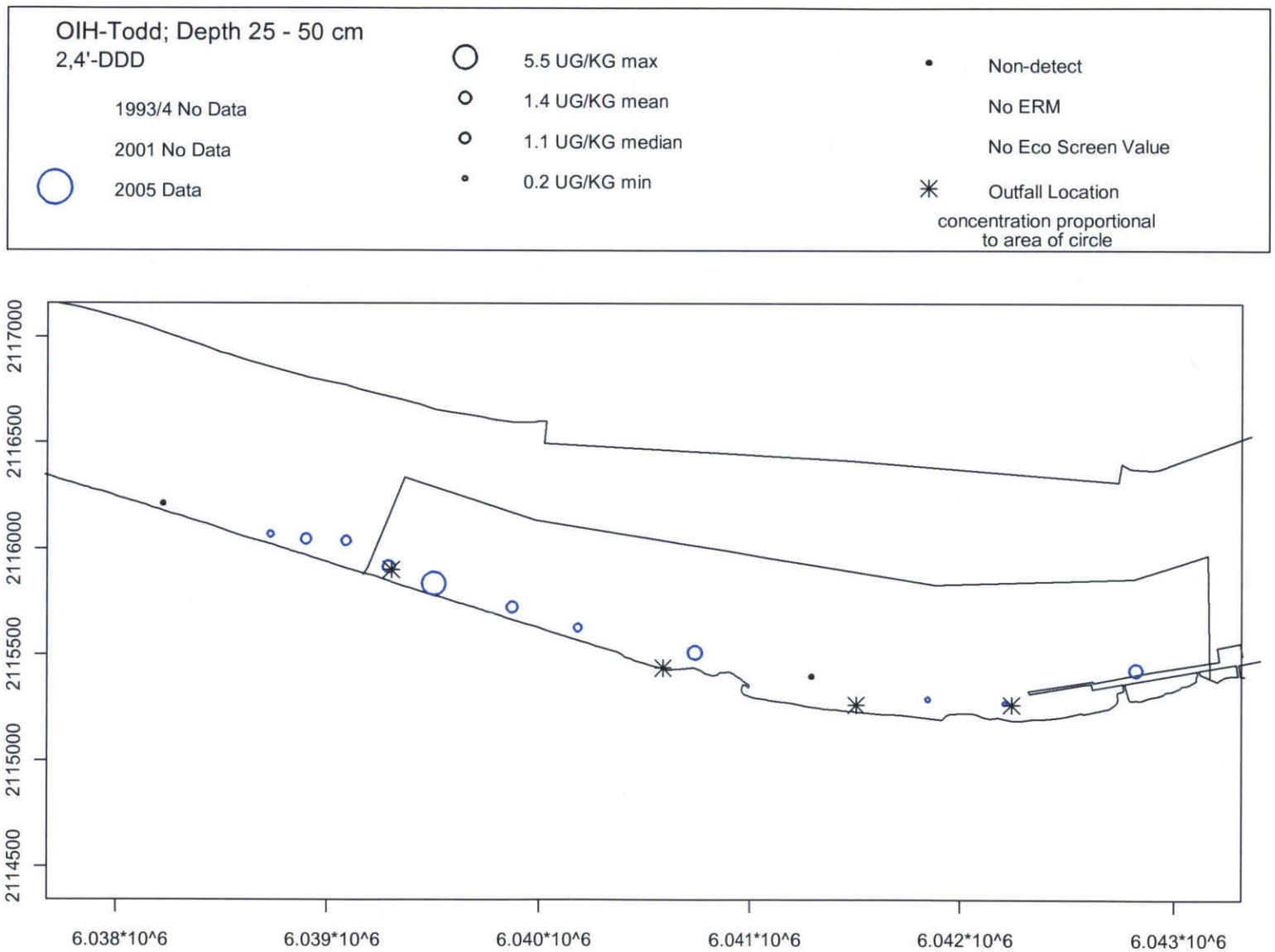

Figure A-137. Bubble Plot of 2,4'-DDD Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

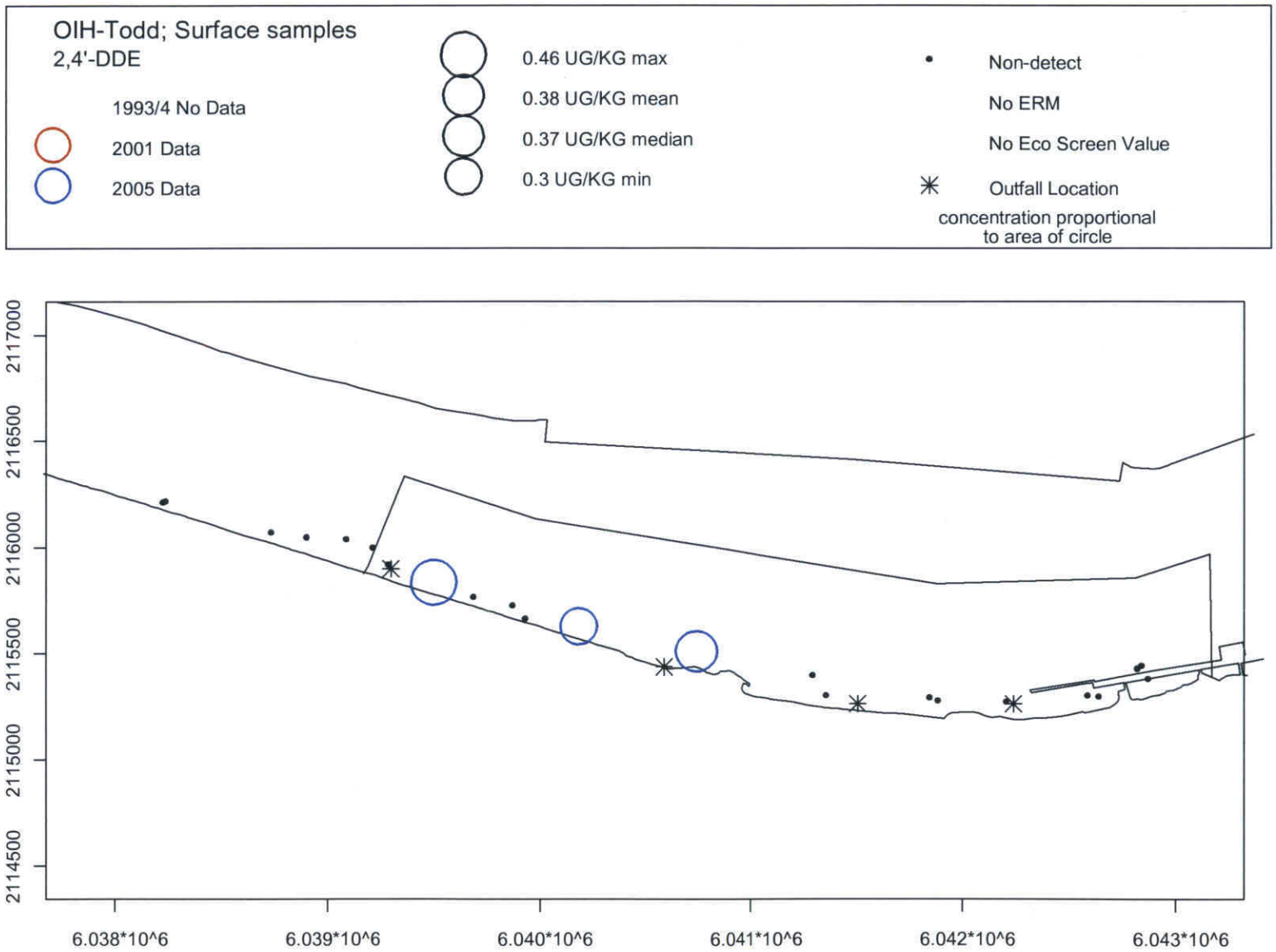

Figure A-138. Bubble Plot of 2,4'-DDE Concentrations in IR Site 20 Surface Sediment by Year.

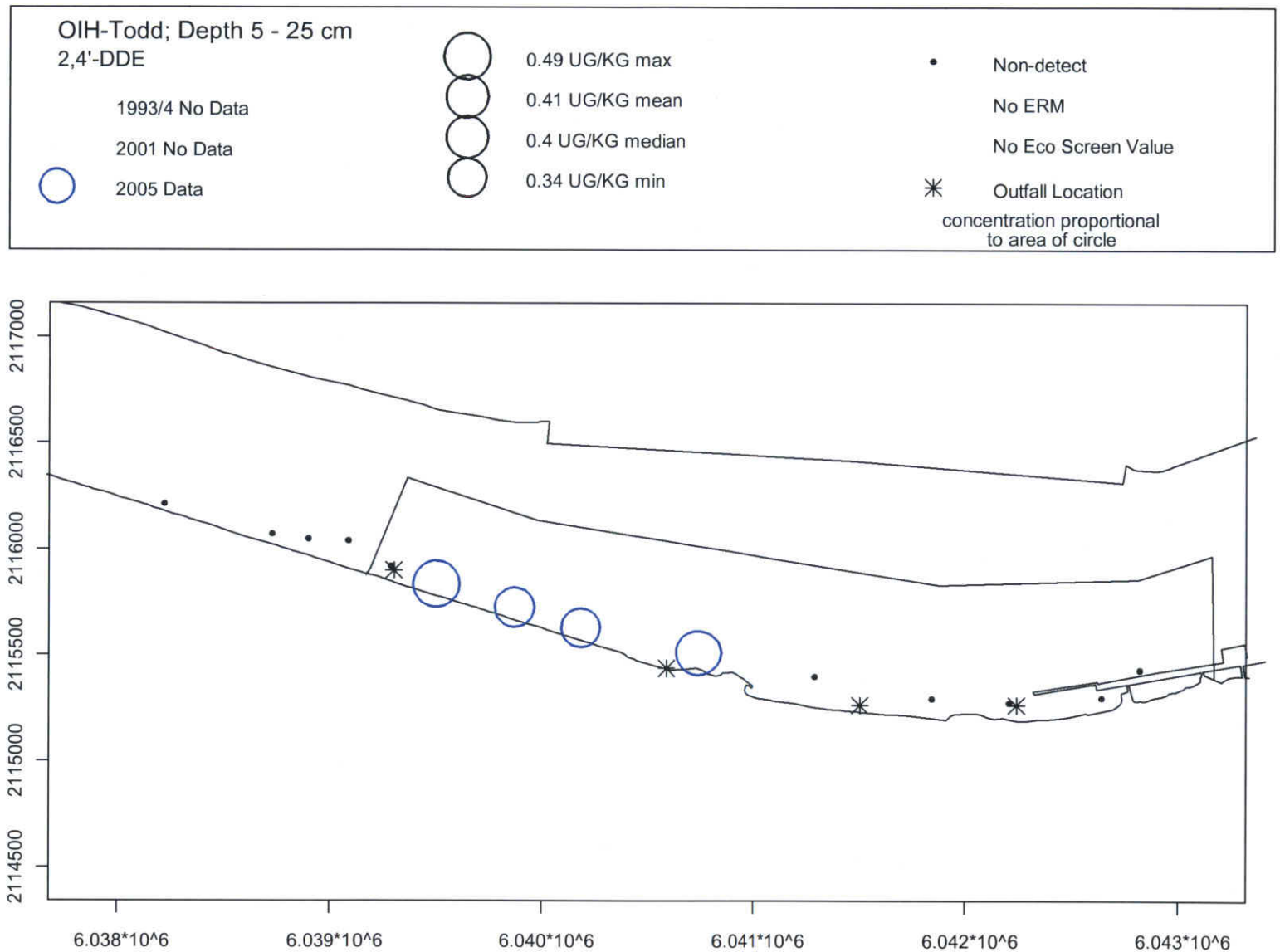

Figure A-139. Bubble Plot of 2,4'-DDE Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

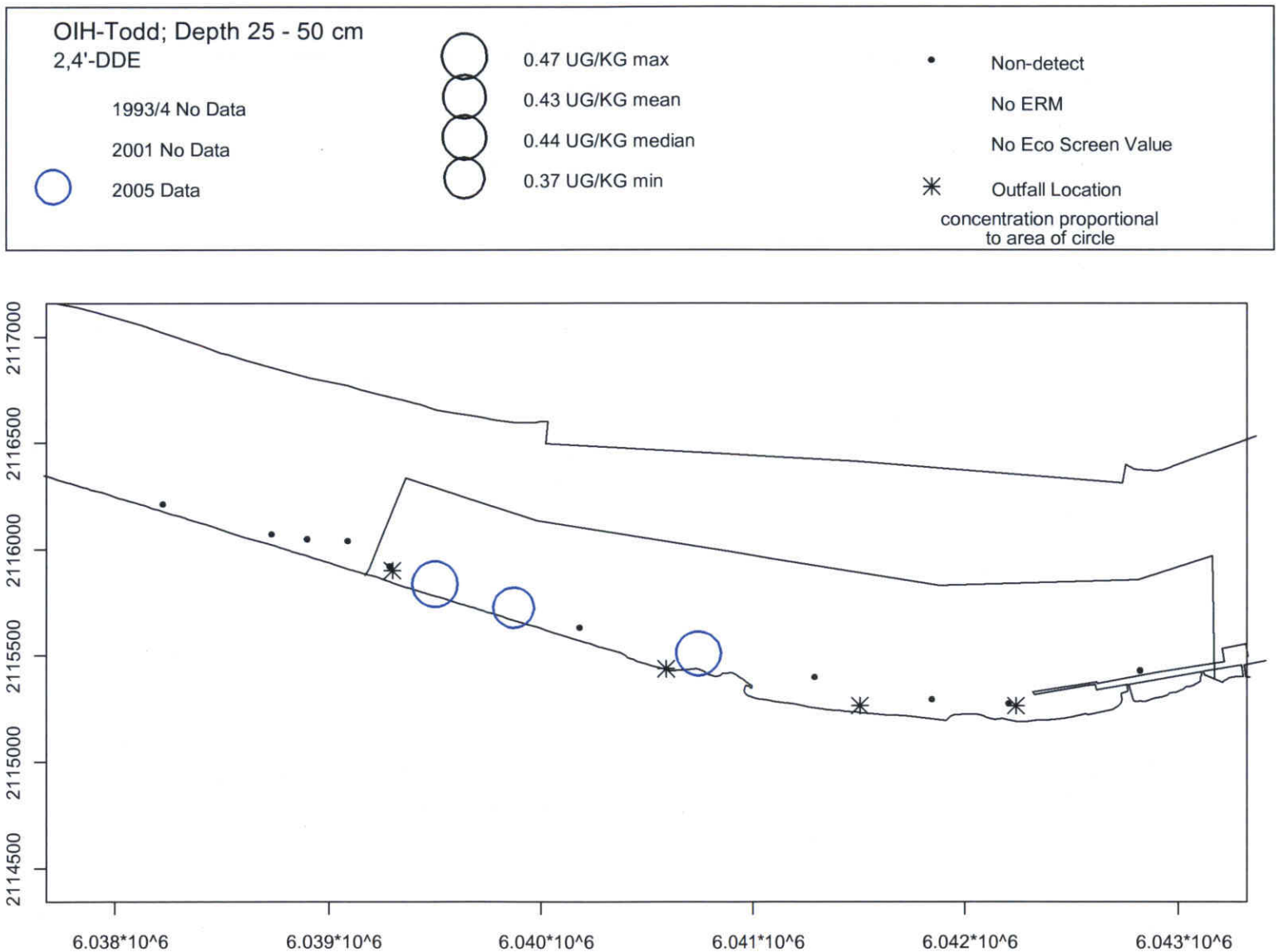

Figure A-140. Bubble Plot of 2,4'-DDE Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

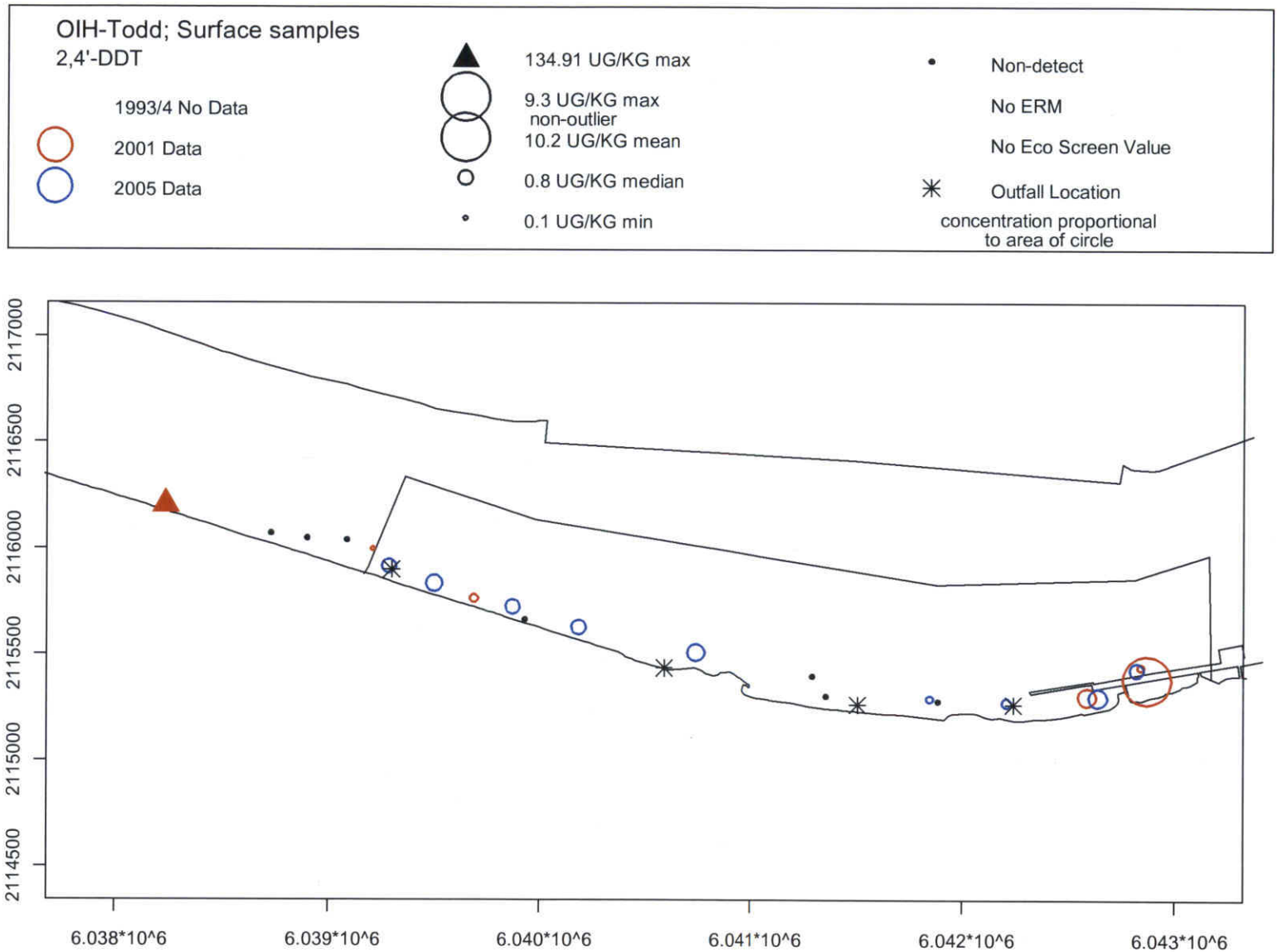

Figure A-141. Bubble Plot of 2,4'-DDT Concentrations in IR Site 20 Surface Sediment by Year.

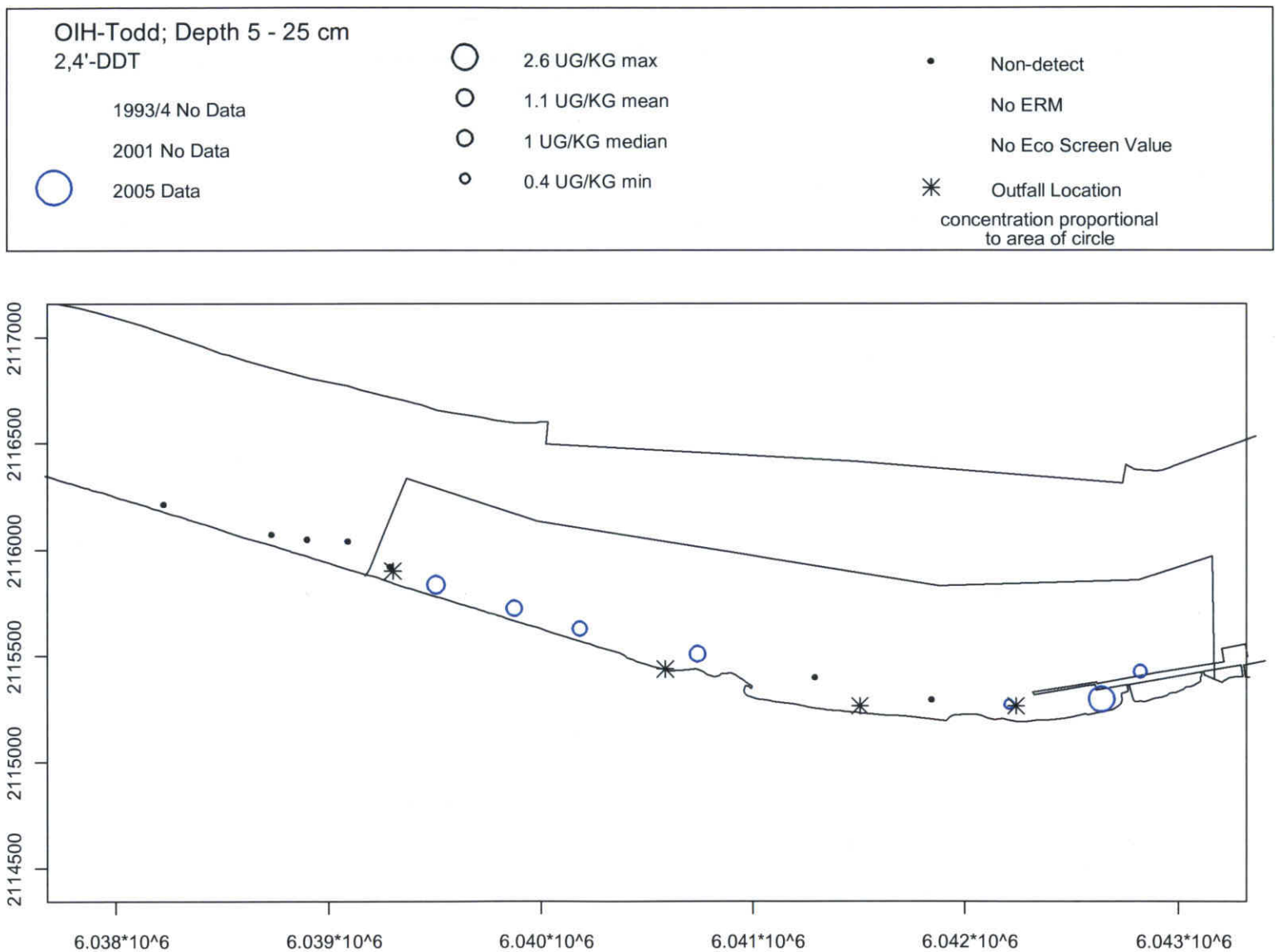

Figure A-142. Bubble Plot of 2,4'-DDT Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

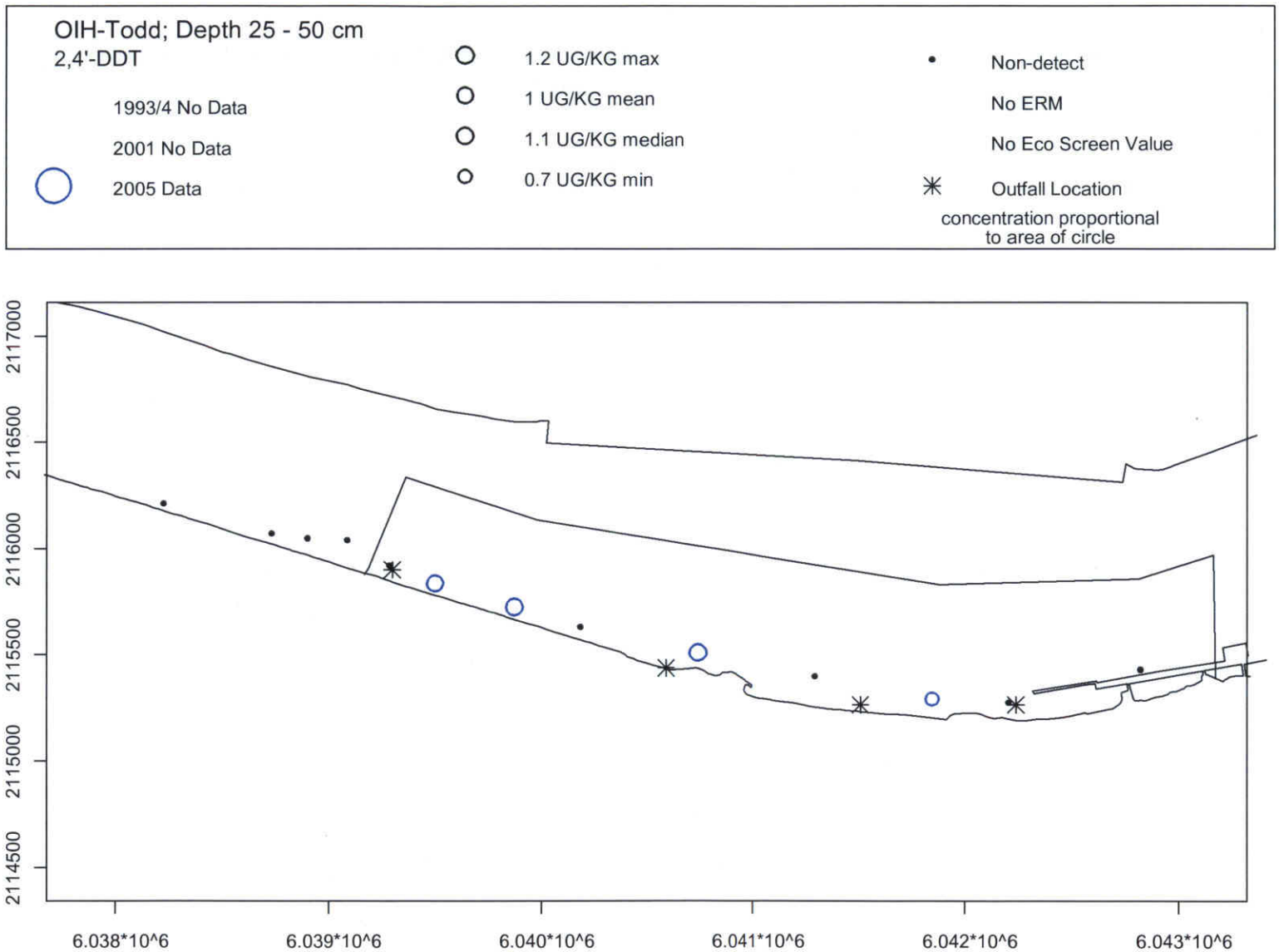

Figure A-143. Bubble Plot of 2,4'-DDT Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

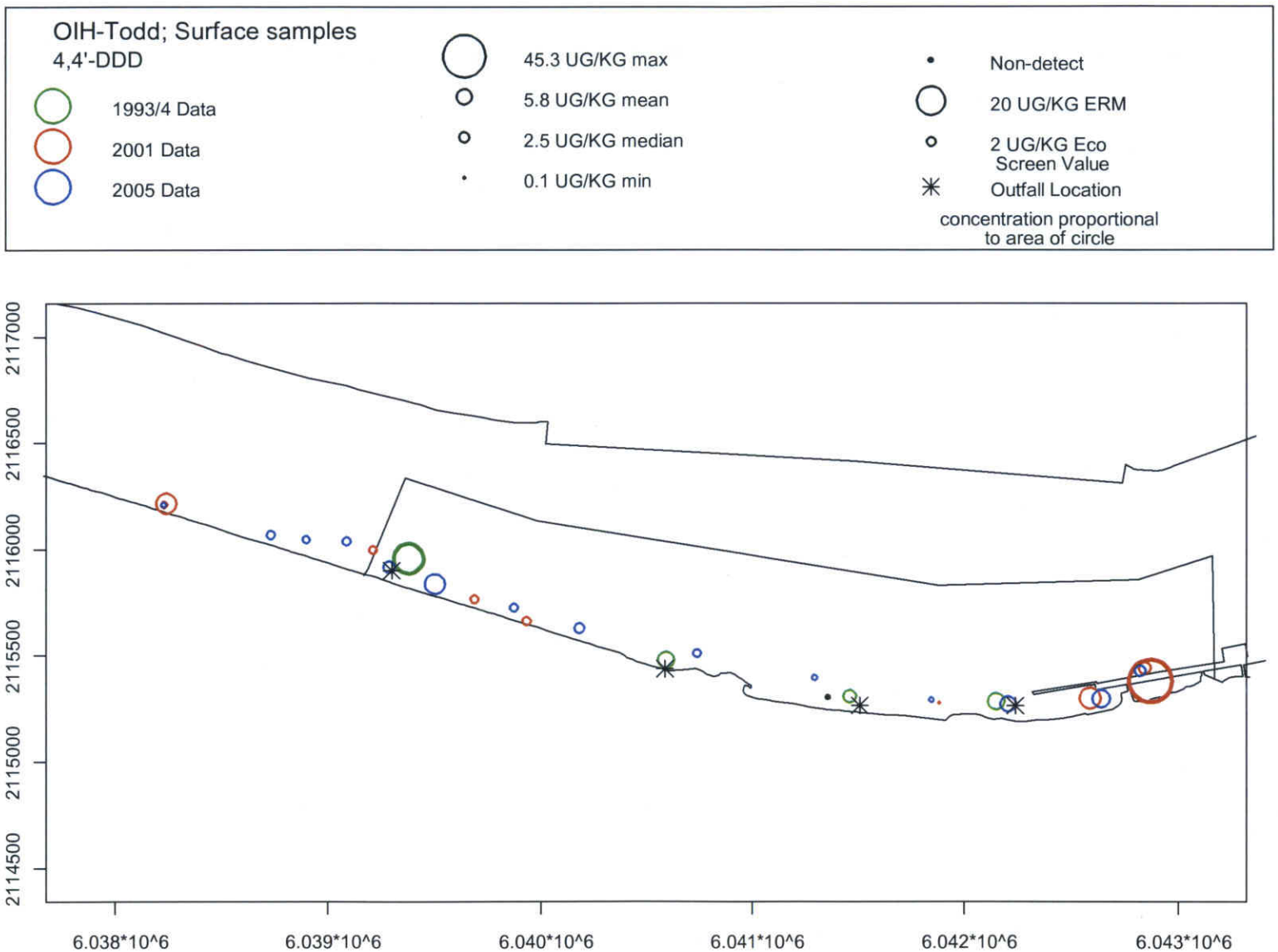

Figure A-144. Bubble Plot of 4,4'-DDD Concentrations in IR Site 20 Surface Sediment by Year.

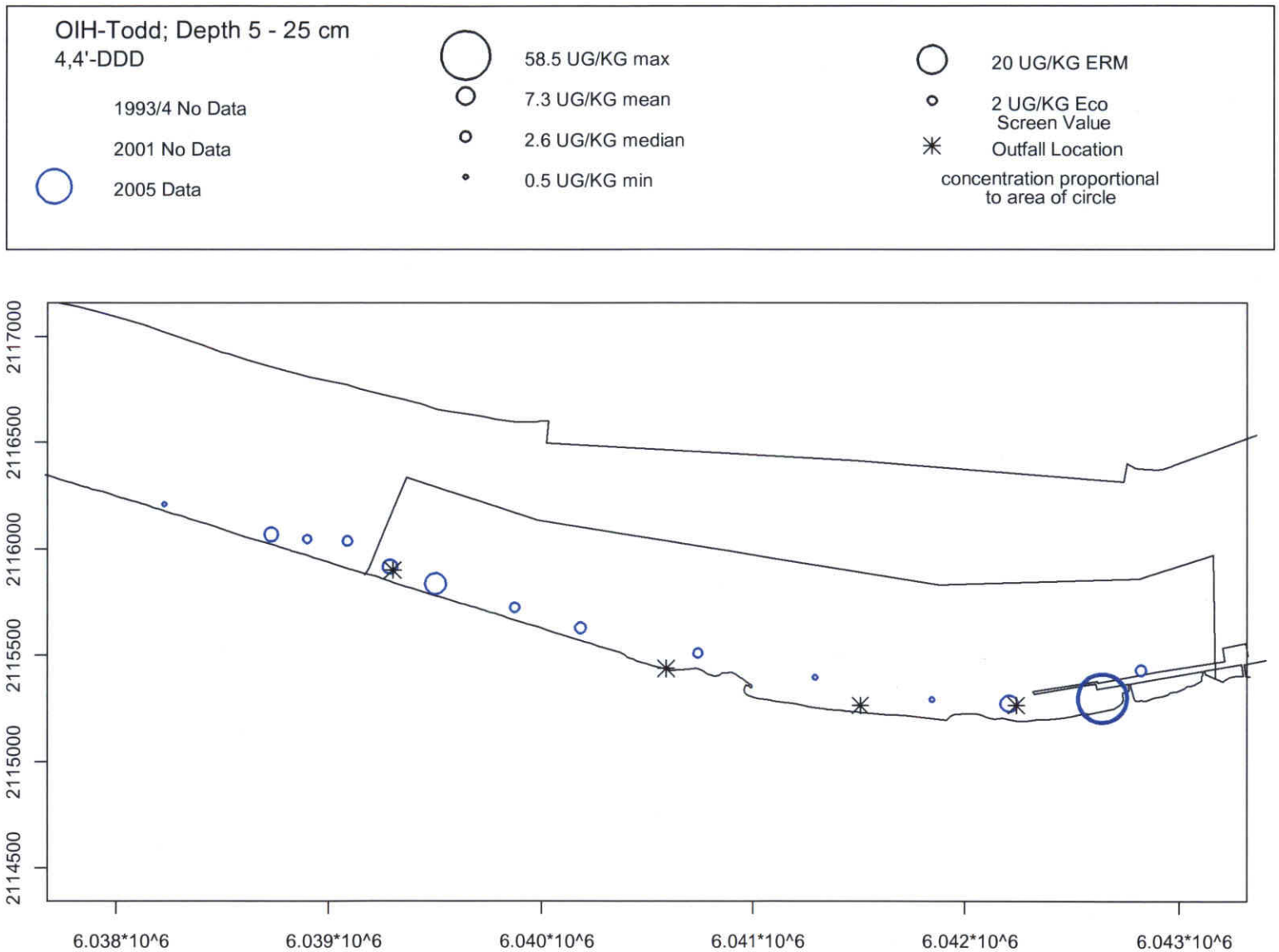

Figure A-145. Bubble Plot of 4,4'-DDD Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

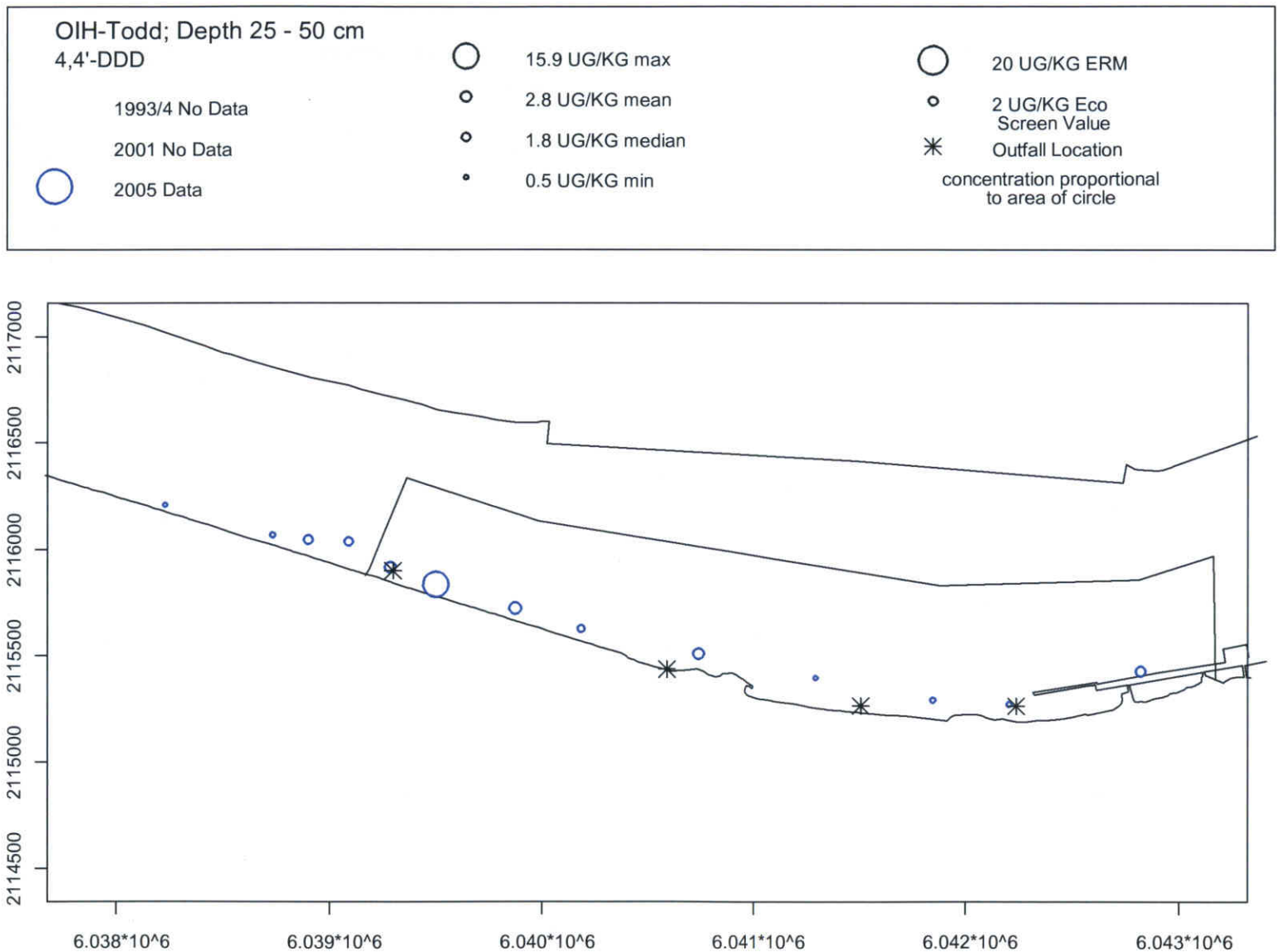

Figure A-146. Bubble Plot of 4,4'-DDD Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

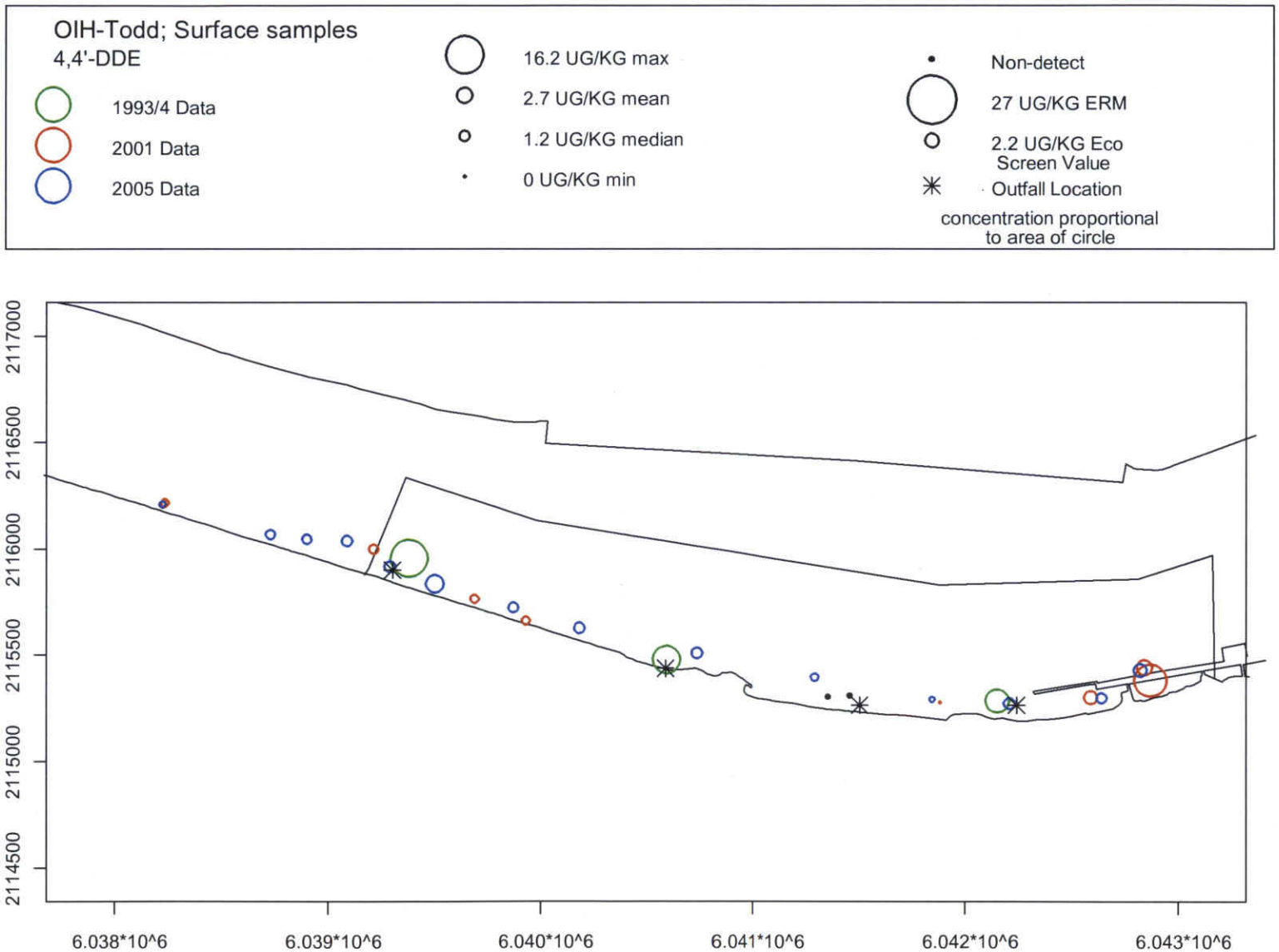

Figure A-147. Bubble Plot of 4,4'-DDE Concentrations in IR Site 20 Surface Sediment by Year.

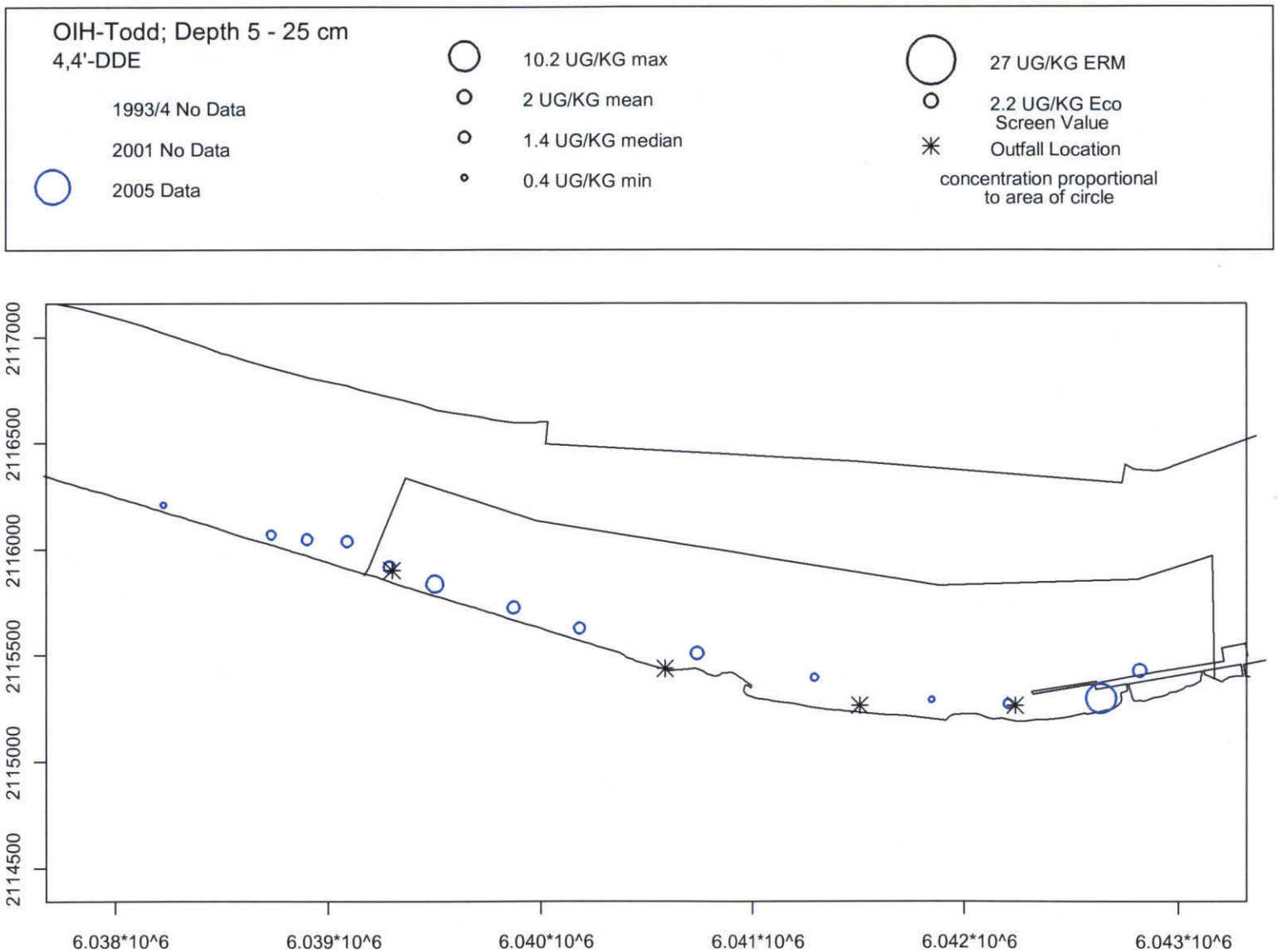

Figure A-148. Bubble Plot of 4,4'-DDE Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

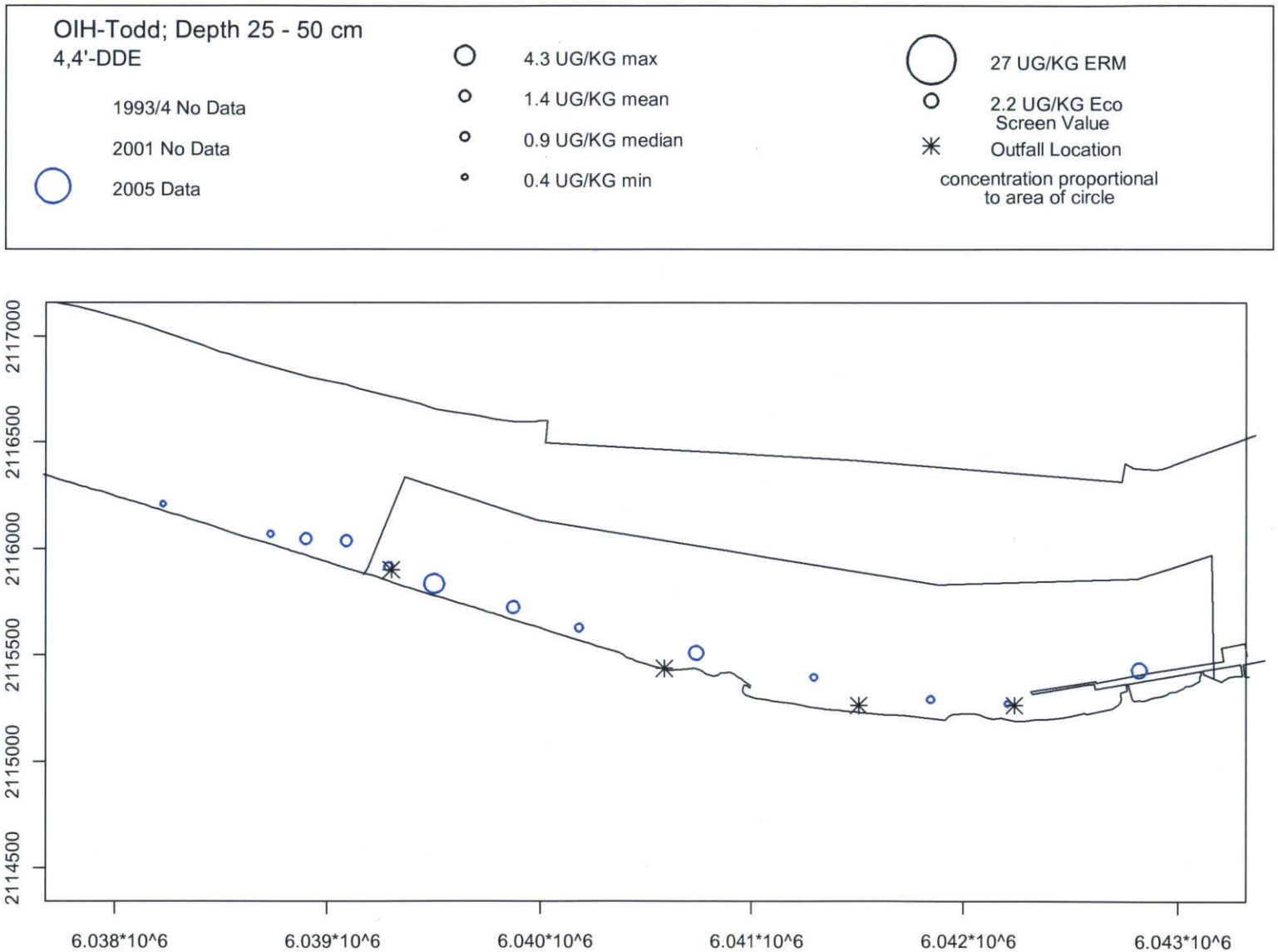

Figure A-149. Bubble Plot of 4,4'-DDE Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

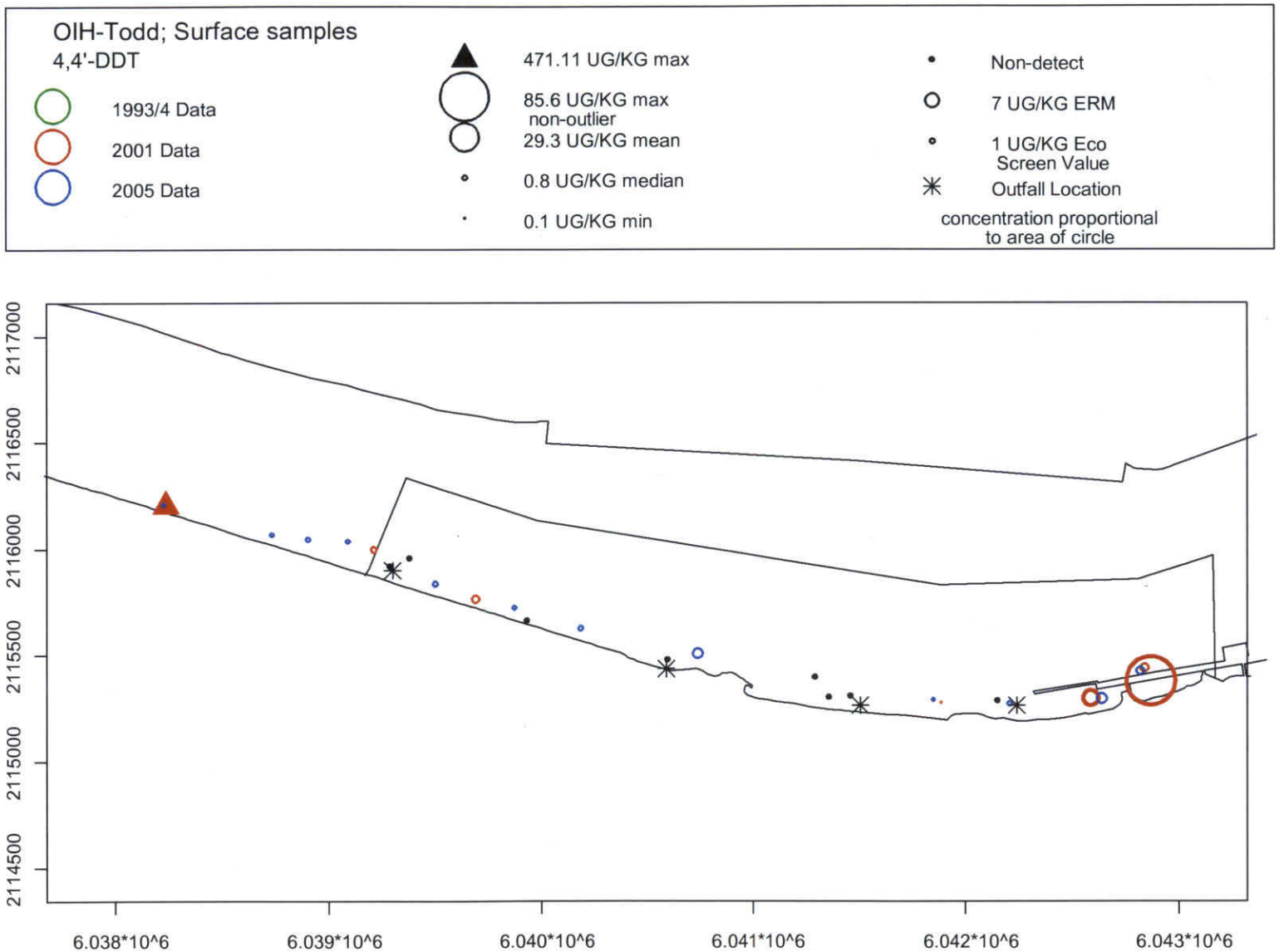

Figure A-150. Bubble Plot of 4,4'-DDT Concentrations in IR Site 20 Surface Sediment by Year.

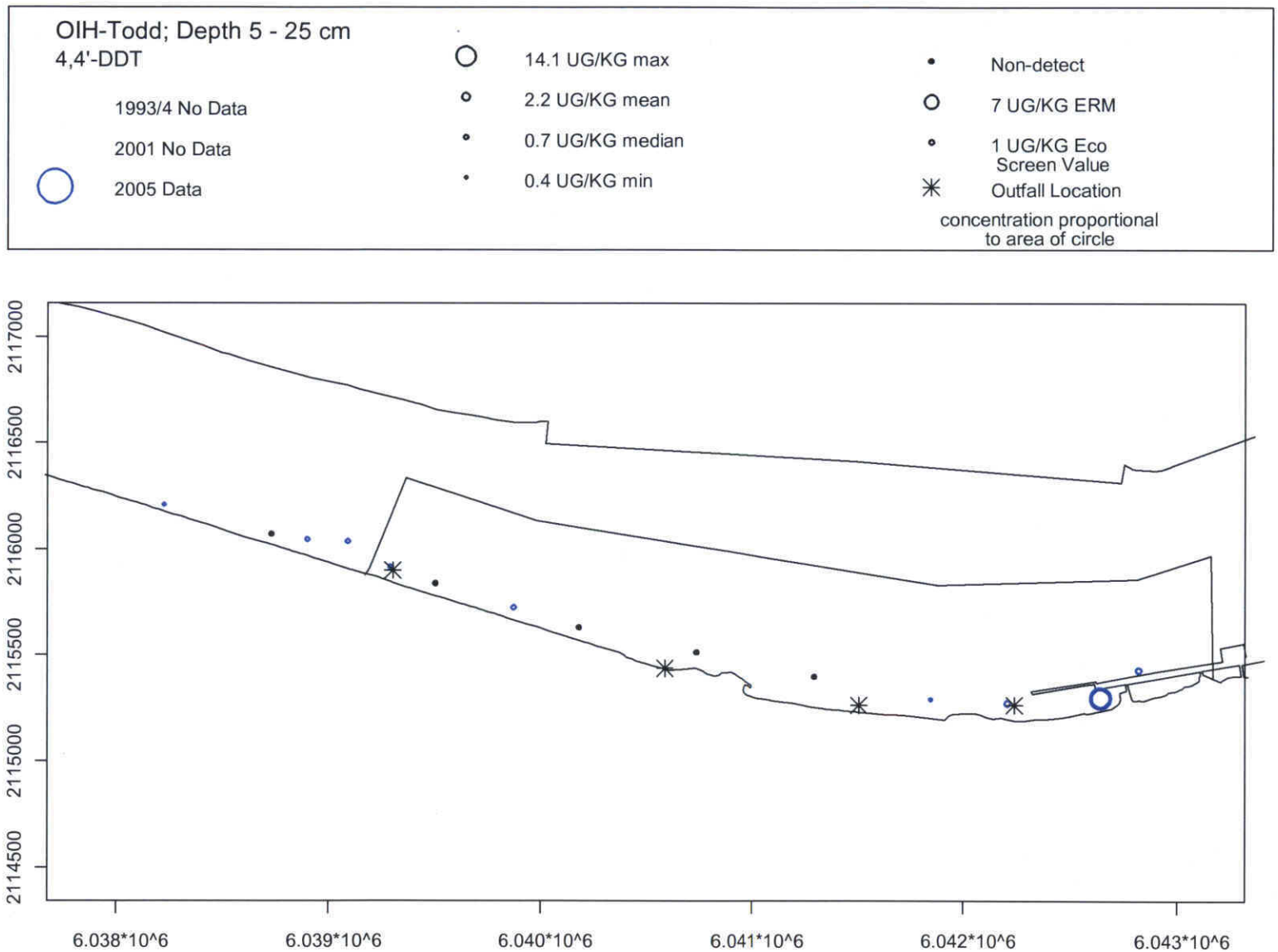

Figure A-151. Bubble Plot of 4,4'-DDT Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

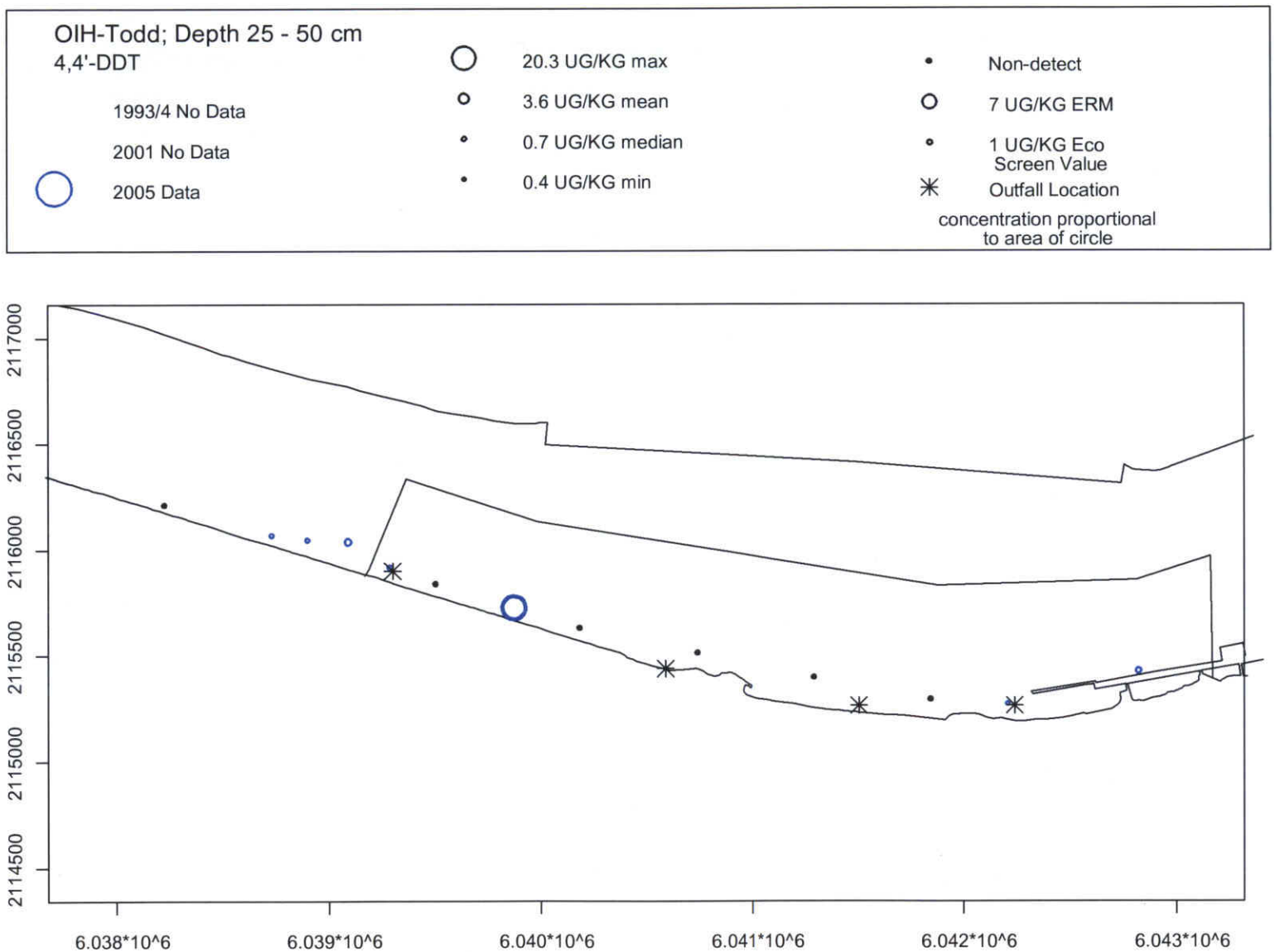

Figure A-152. Bubble Plot of 4,4'-DDT Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

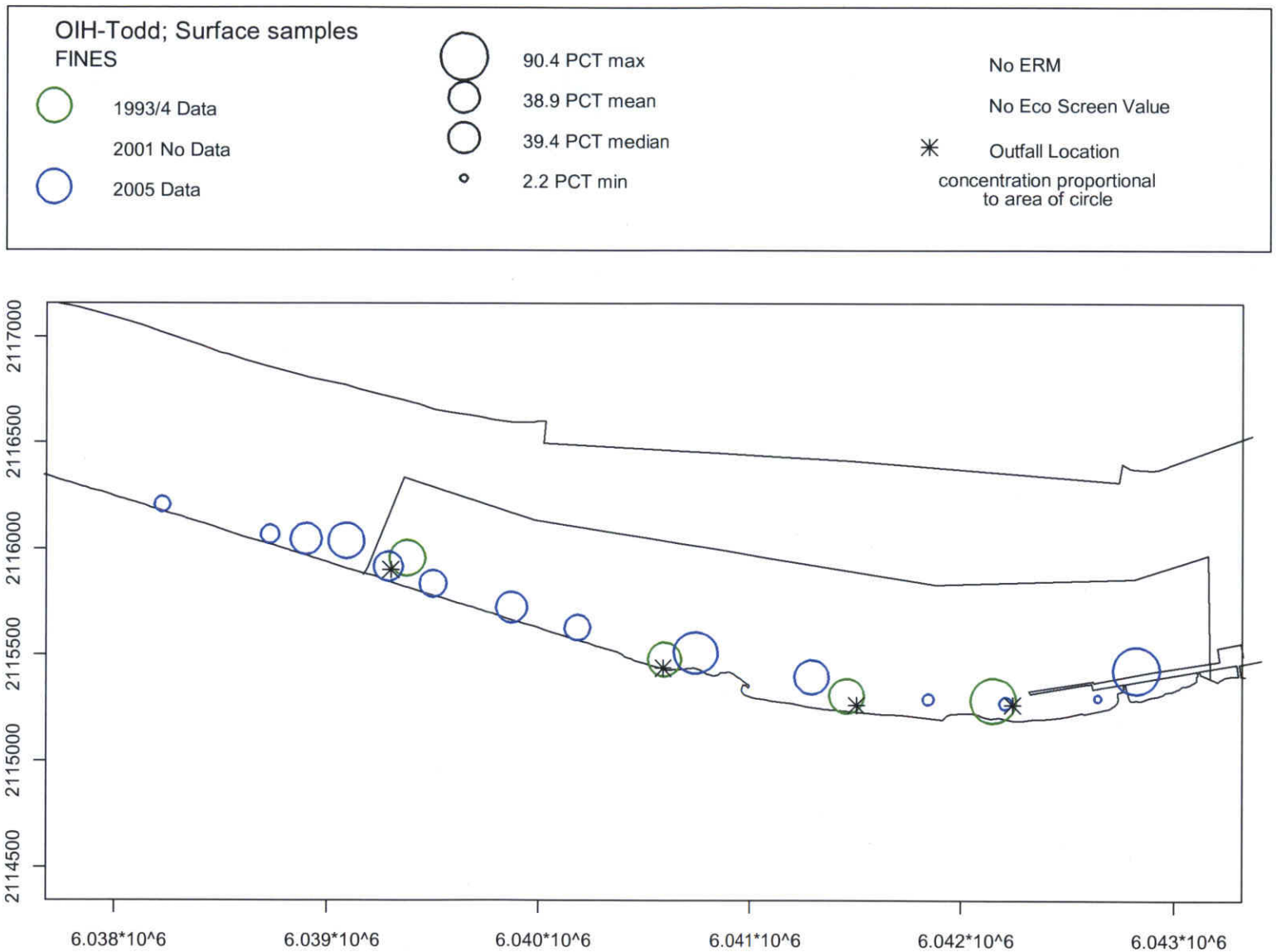

Figure A-153. Bubble Plot of Fine Grains Concentrations in IR Site 20 Surface Sediment by Year.

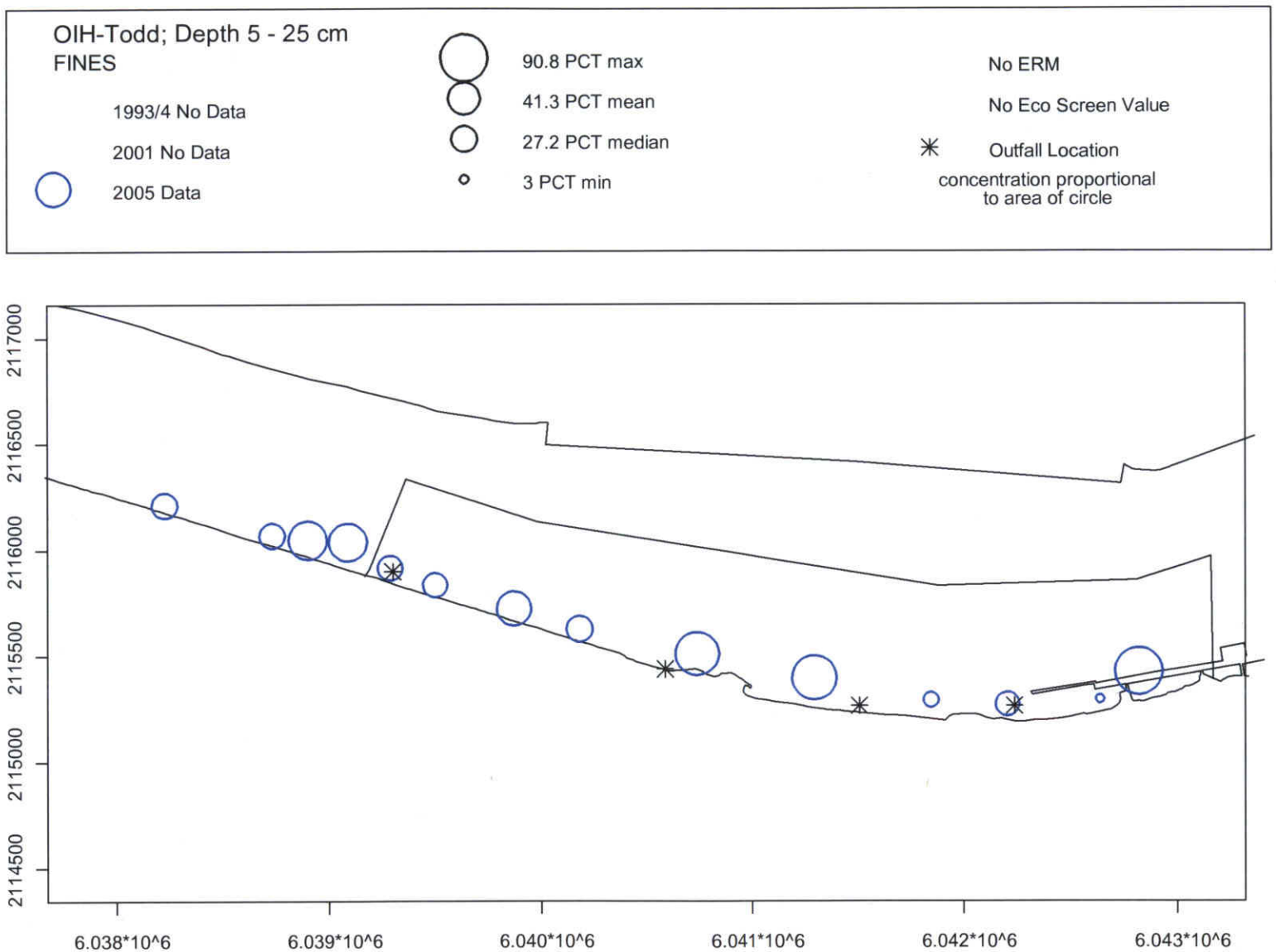

Figure A-154. Bubble Plot of Fine Grains Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

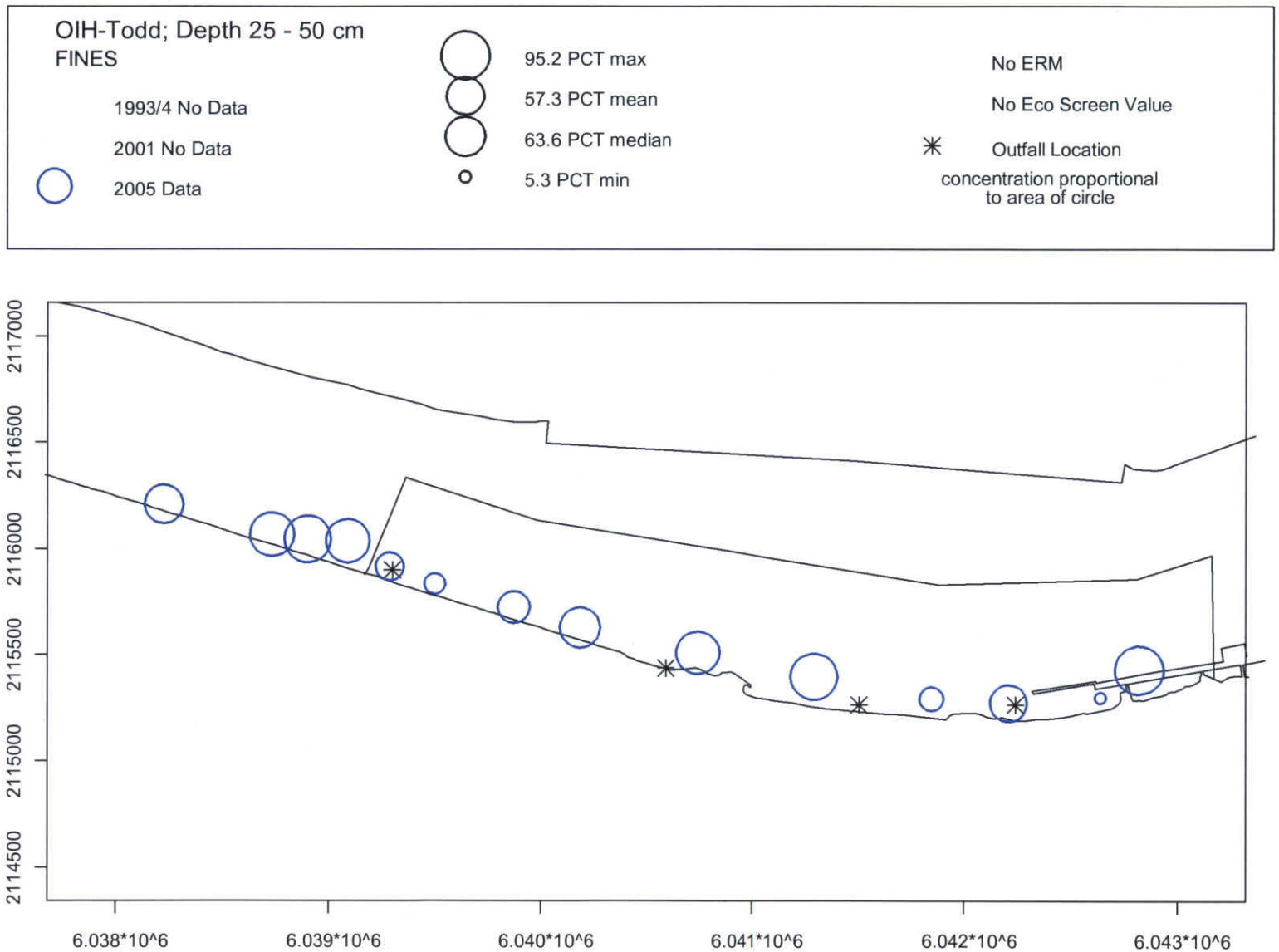

Figure A-155. Bubble Plot of Fine Grains Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

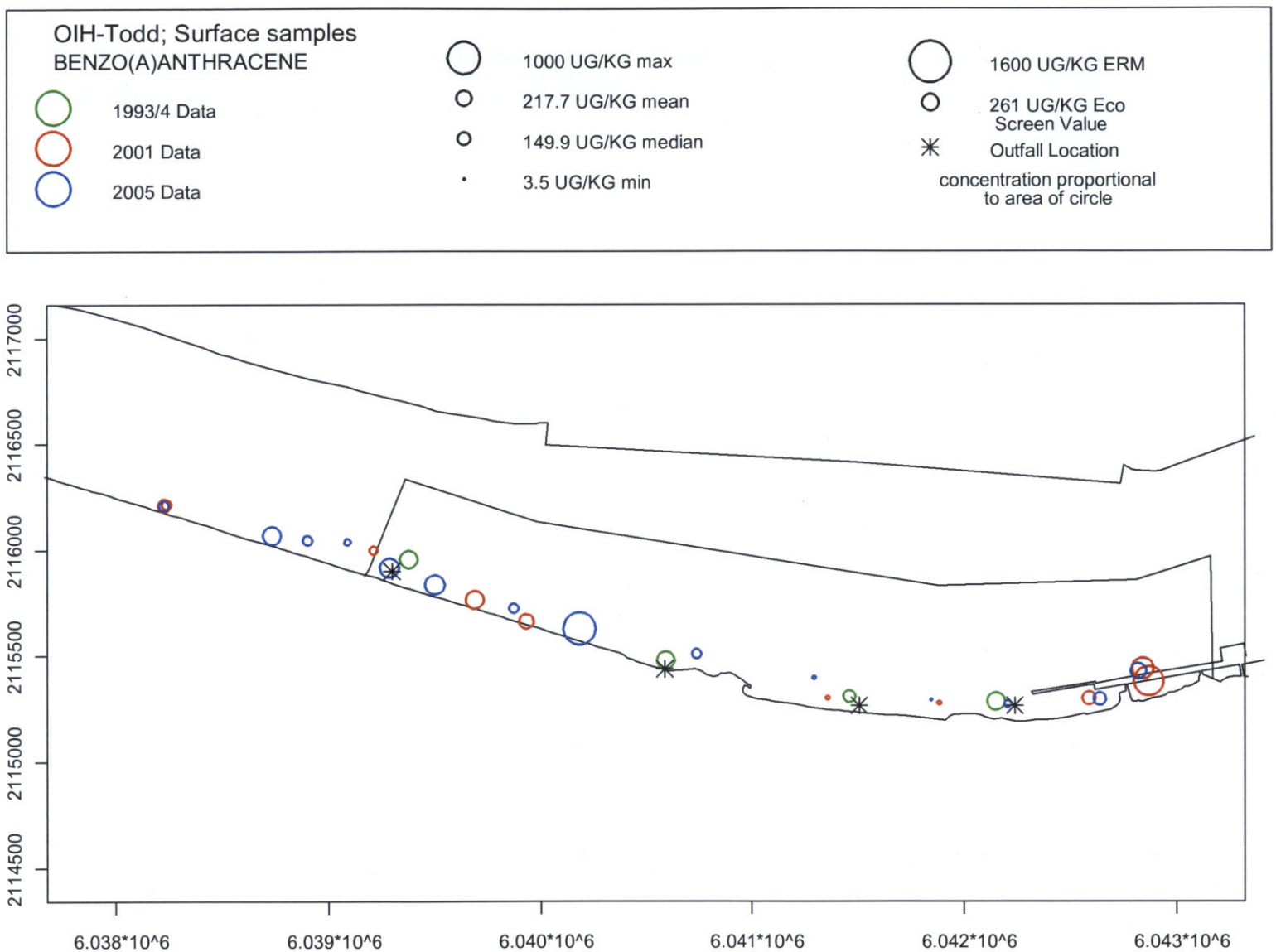

Figure A-156. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 20 Surface Sediment by Year.

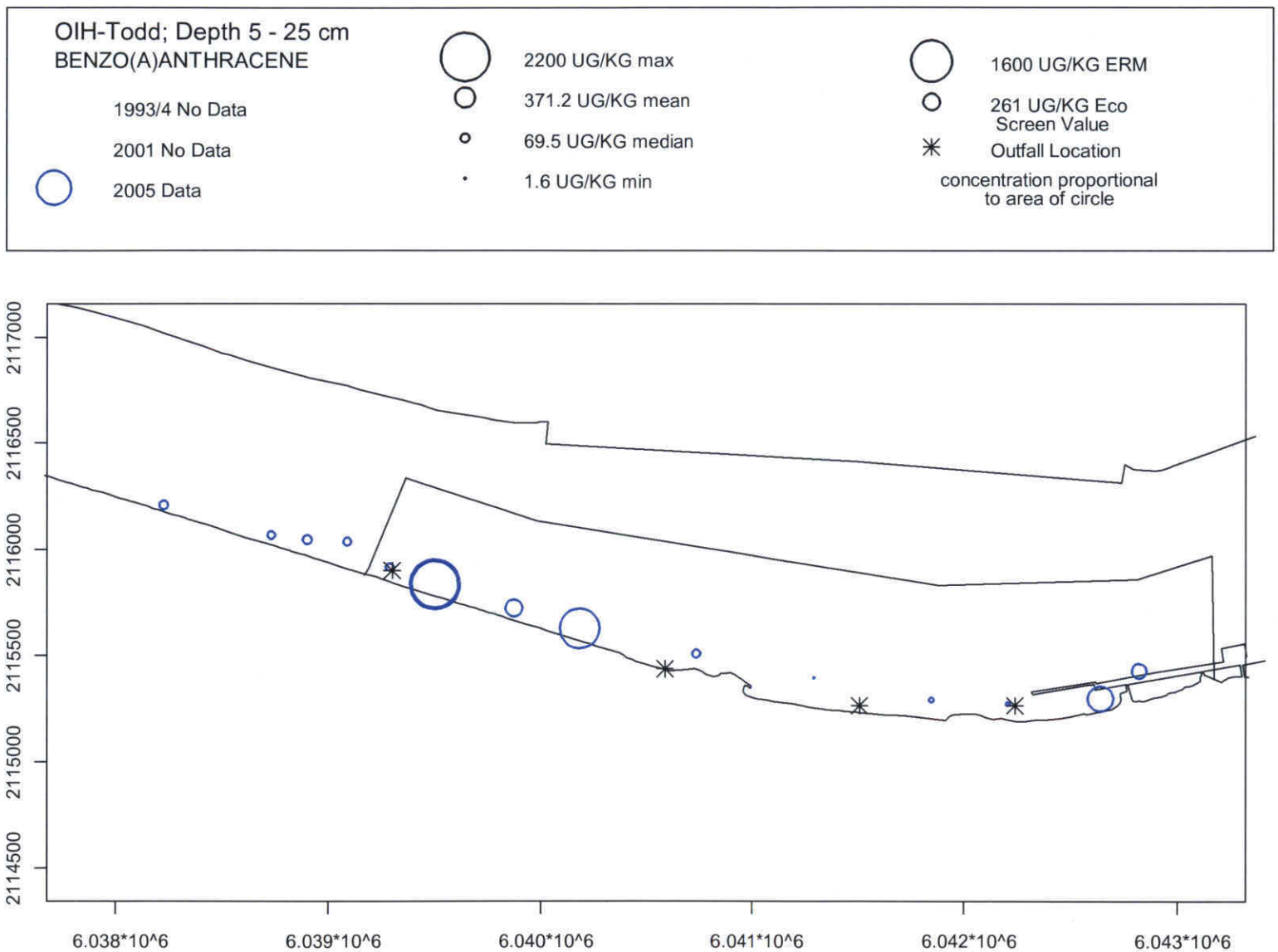

Figure A-157. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

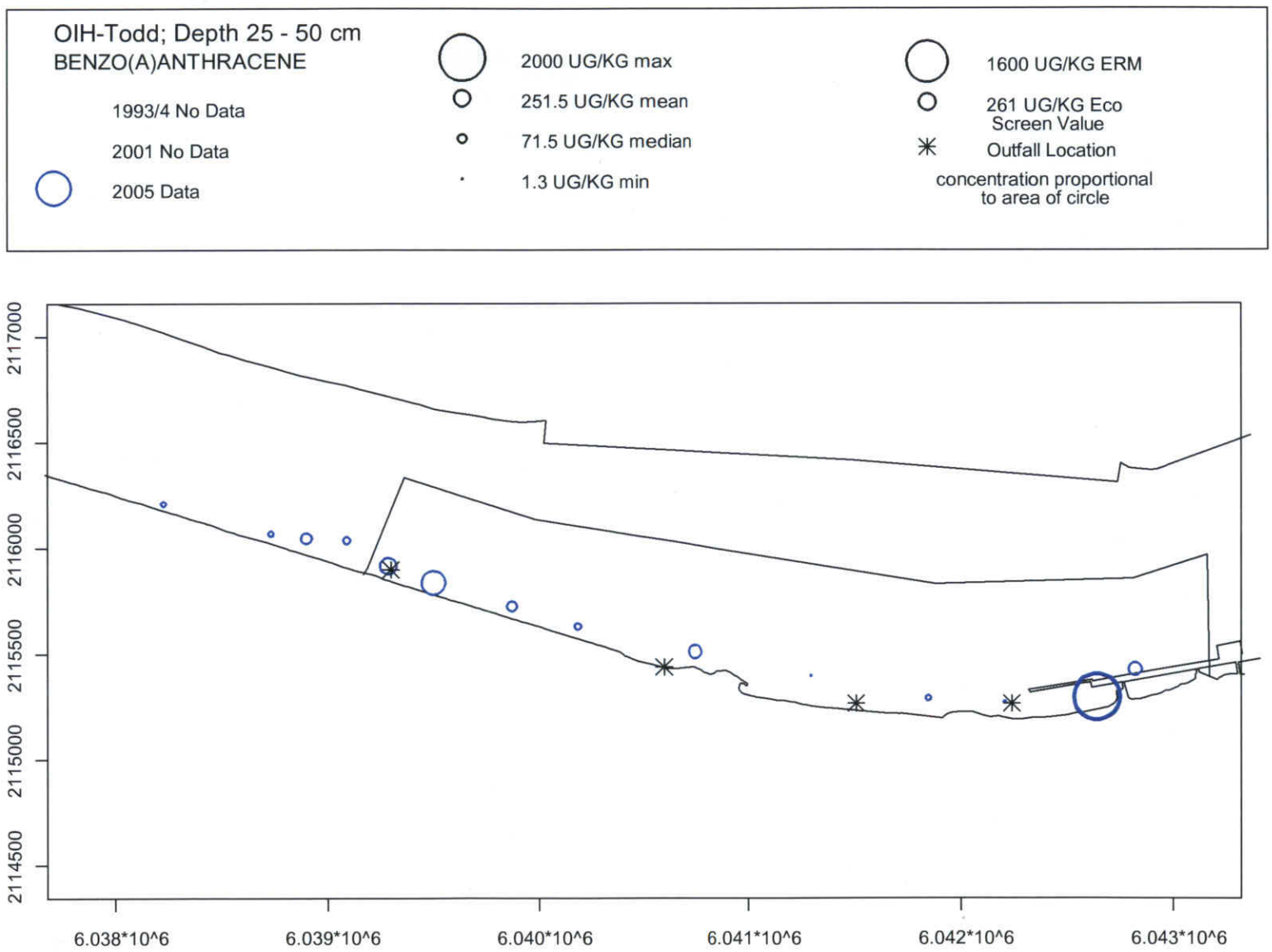

Figure A-158. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

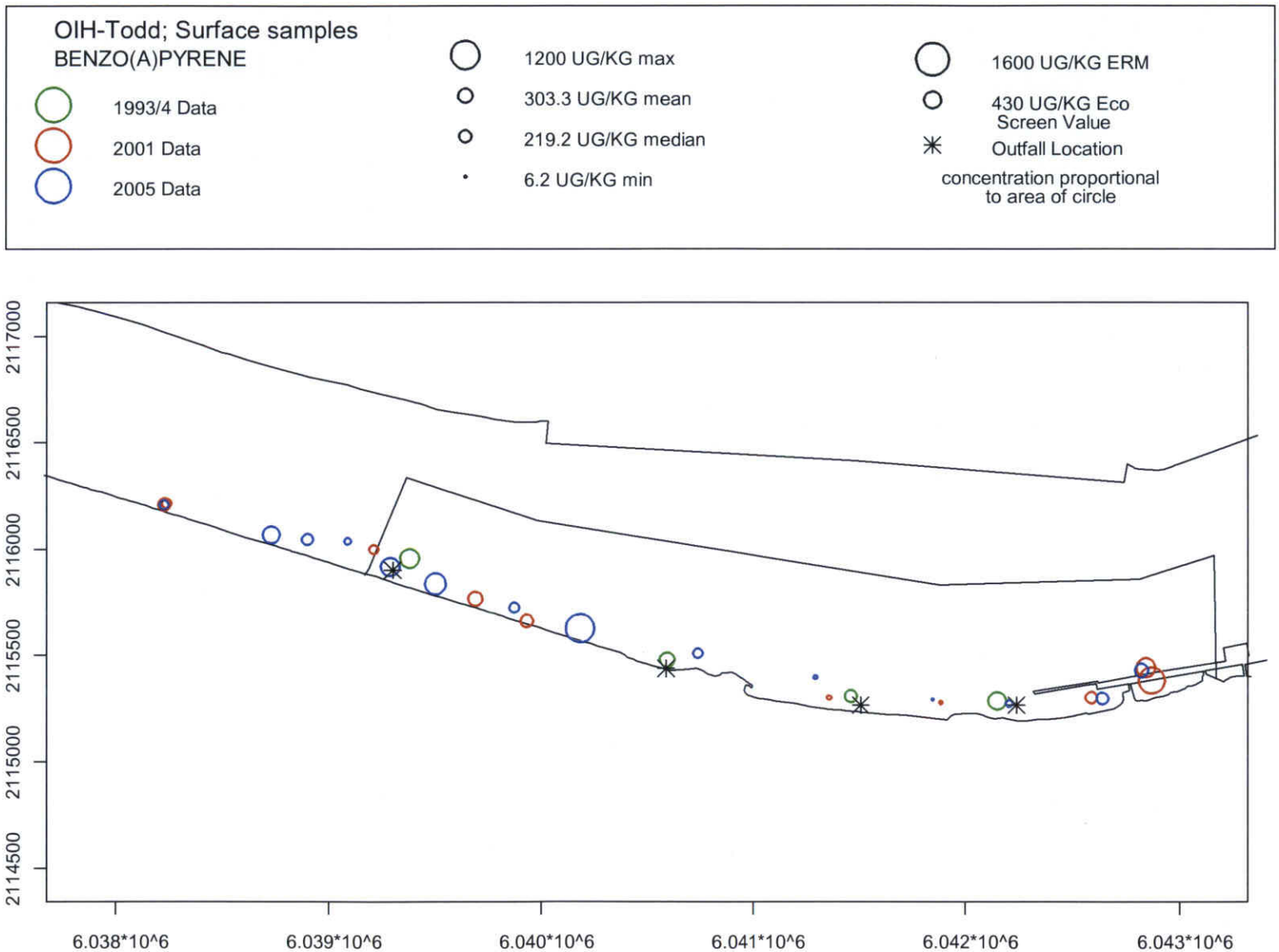

Figure A-159. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 20 Surface Sediment by Year.

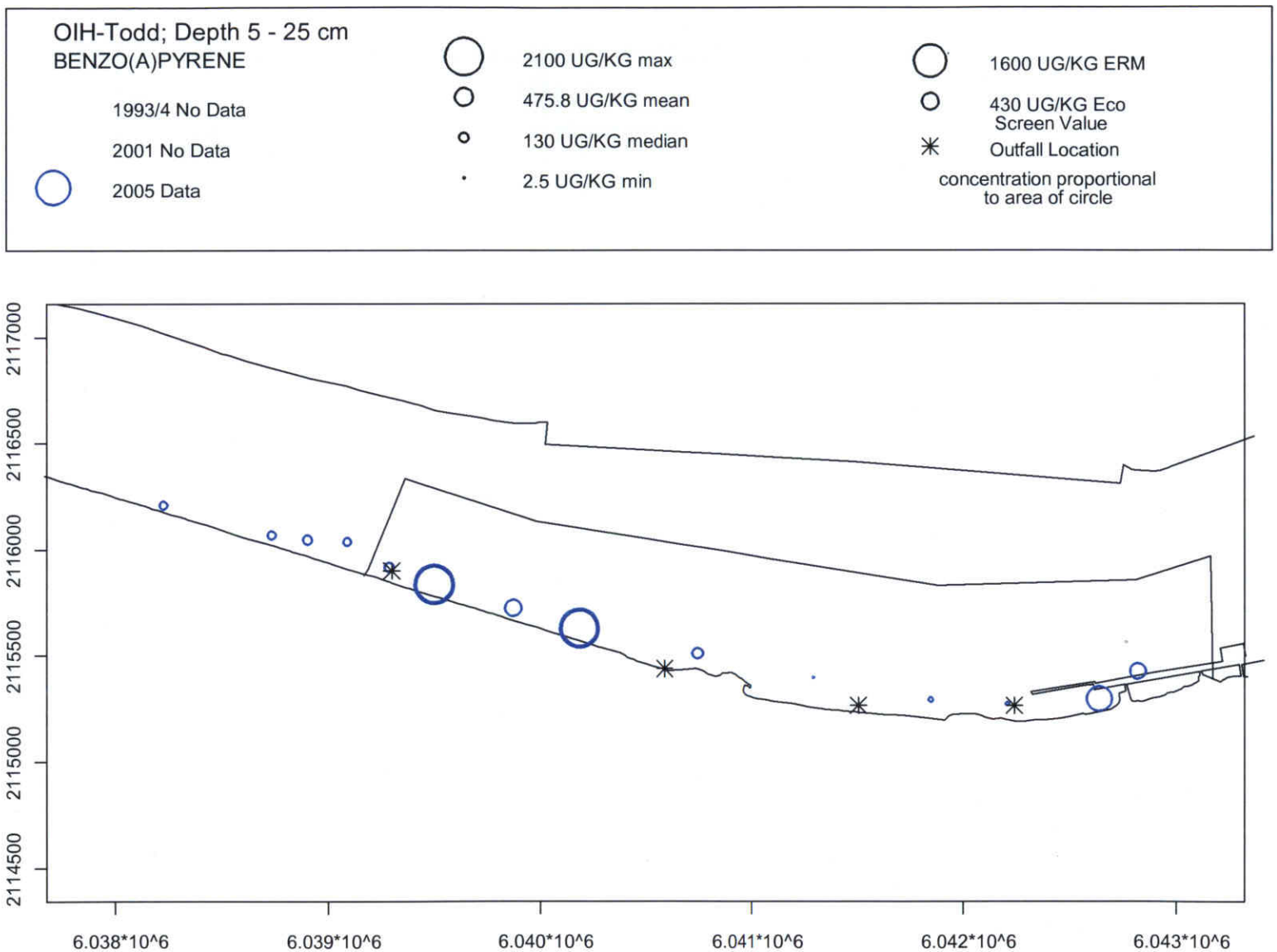

Figure A-160. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

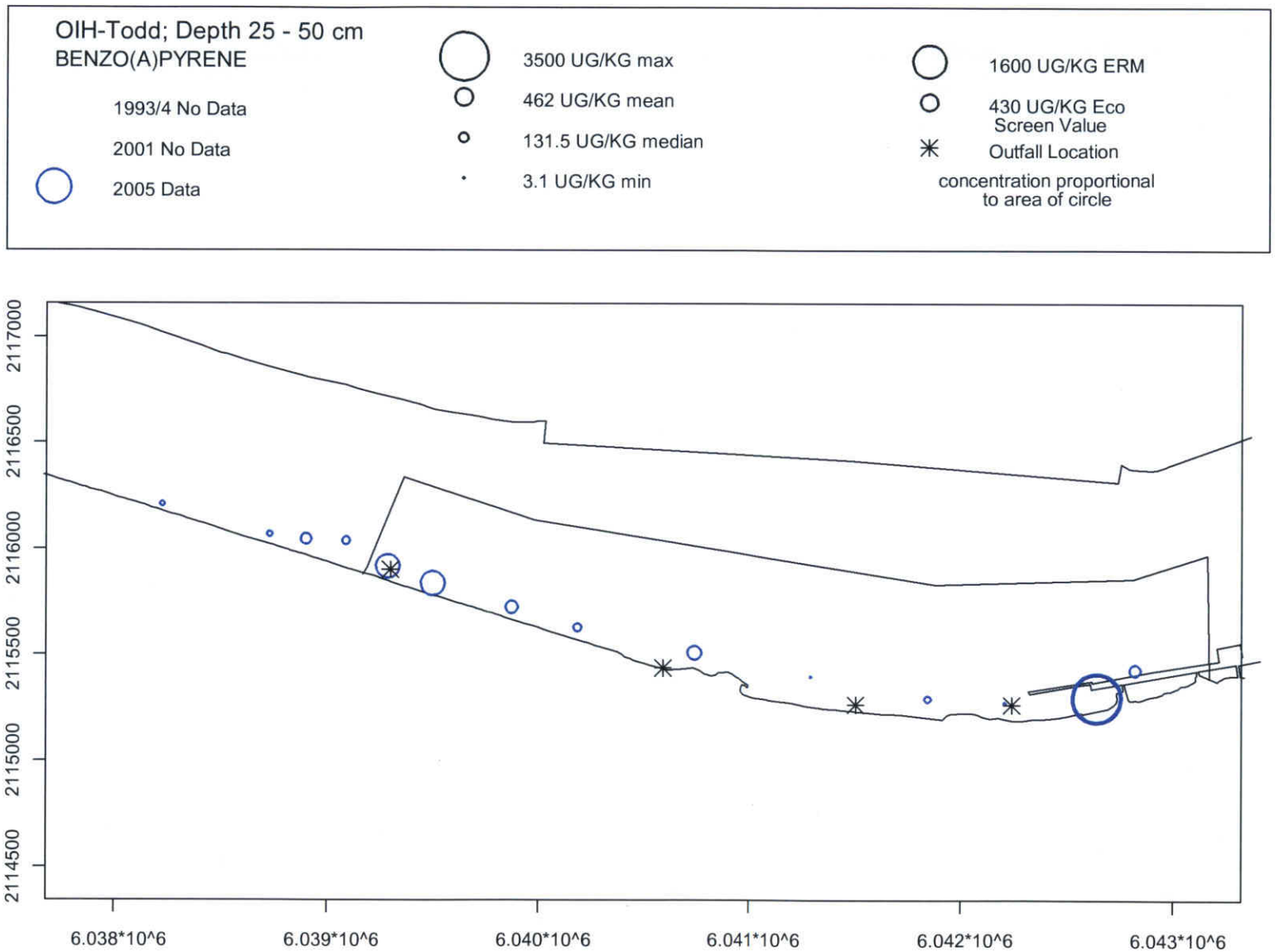

Figure A-161. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

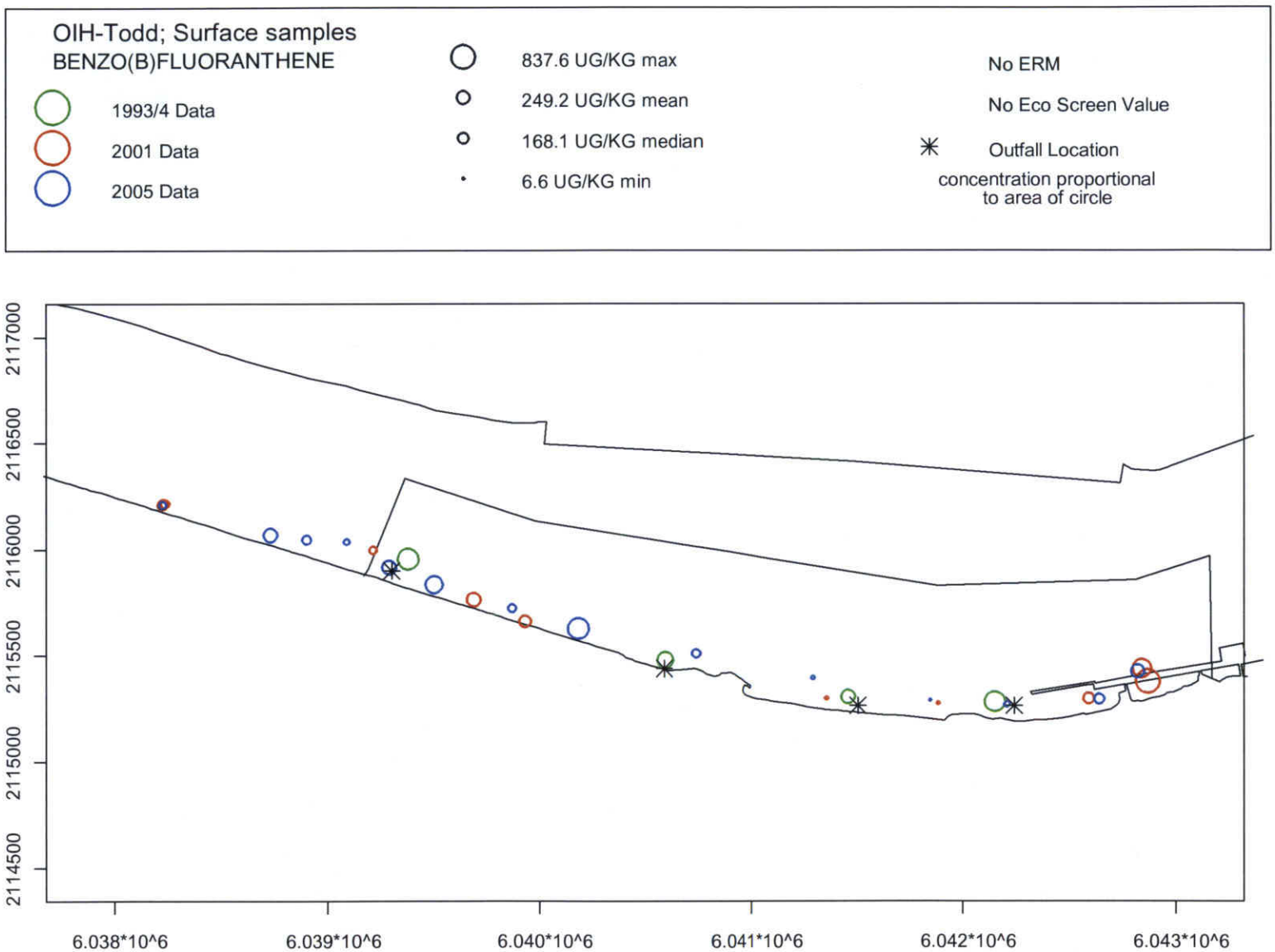

Figure A-162. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 20 Surface Sediment by Year.

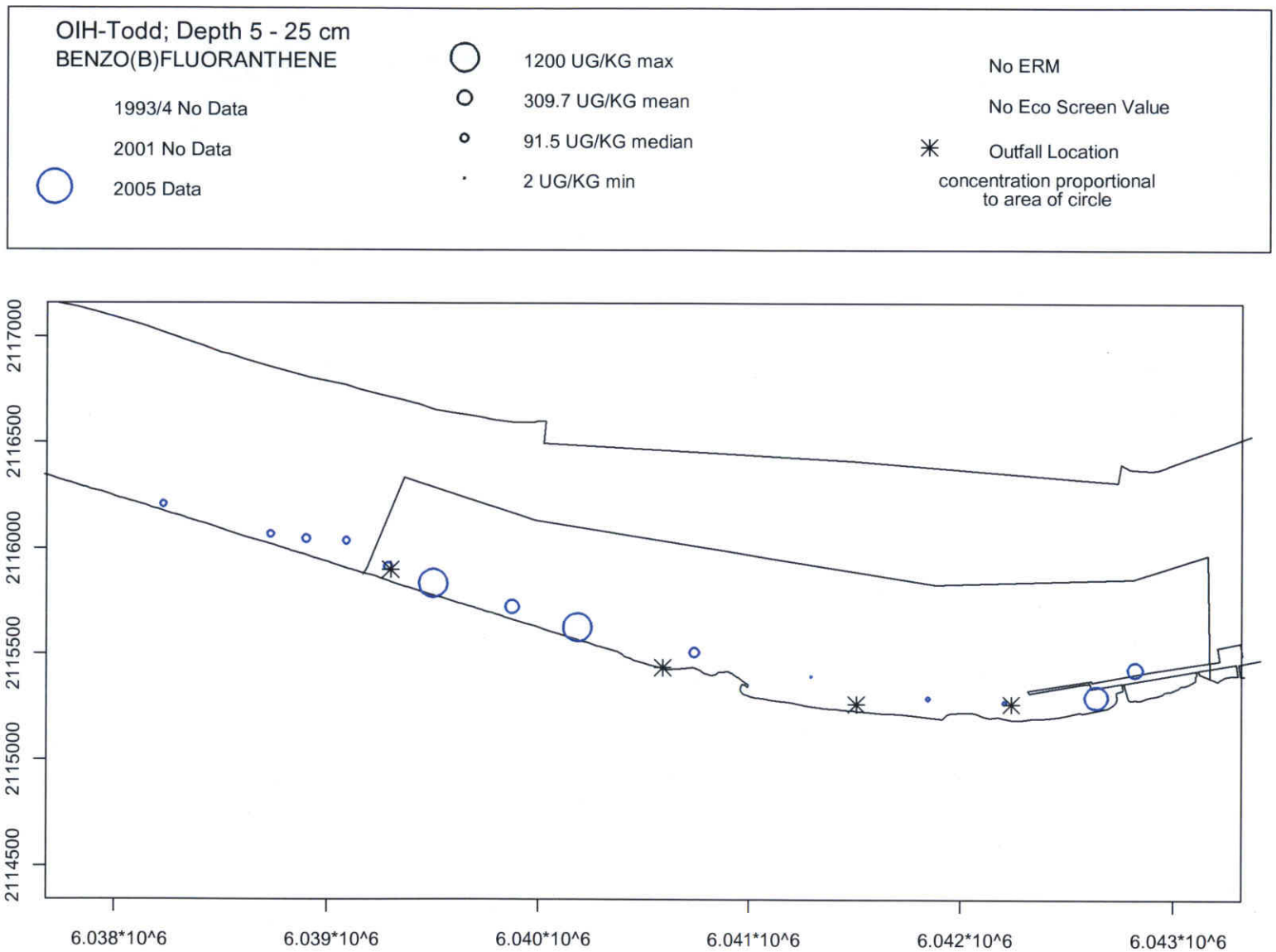

Figure A-163. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

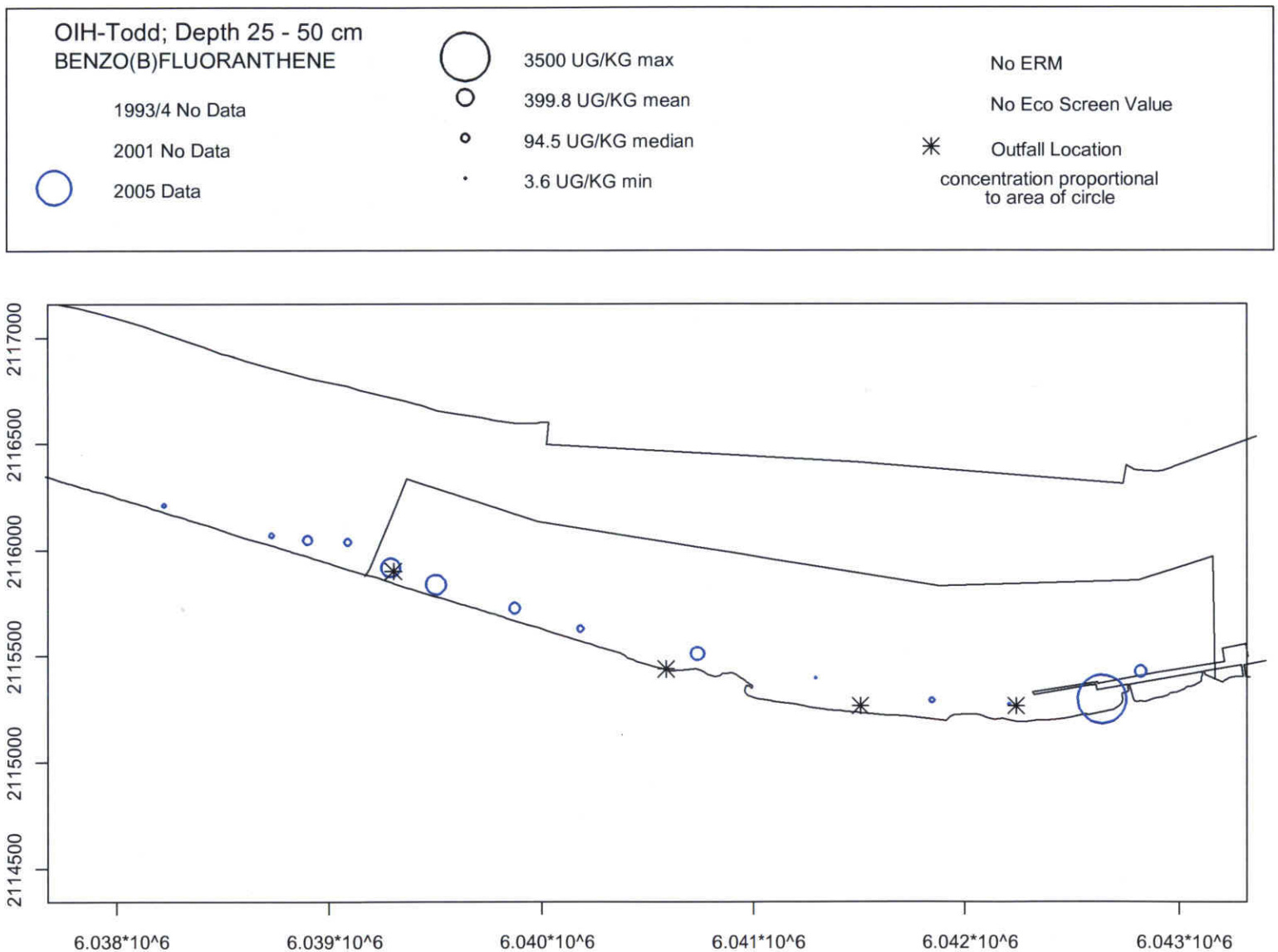

Figure A-164. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

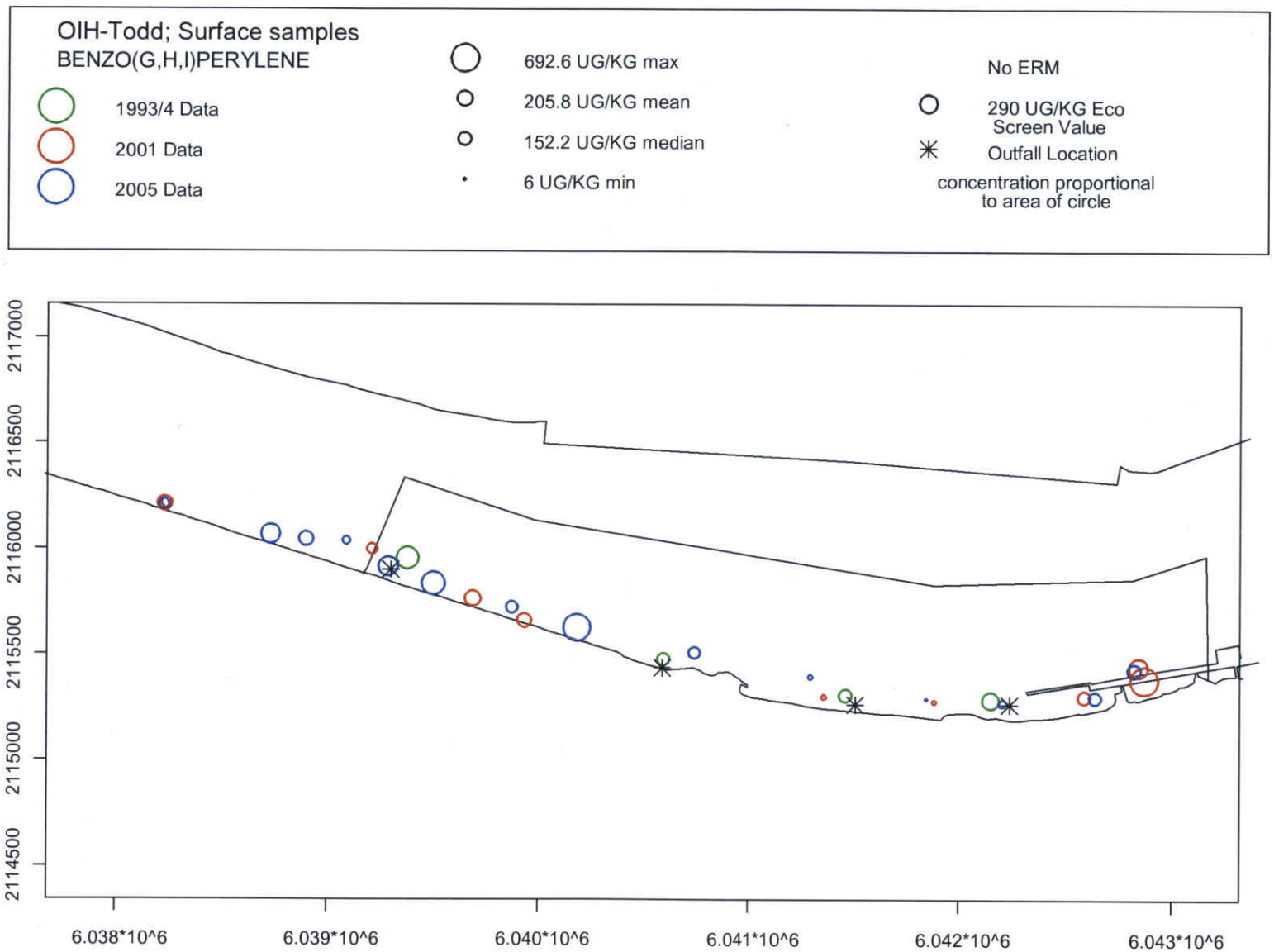

Figure A-165. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 20 Surface Sediment by Year.

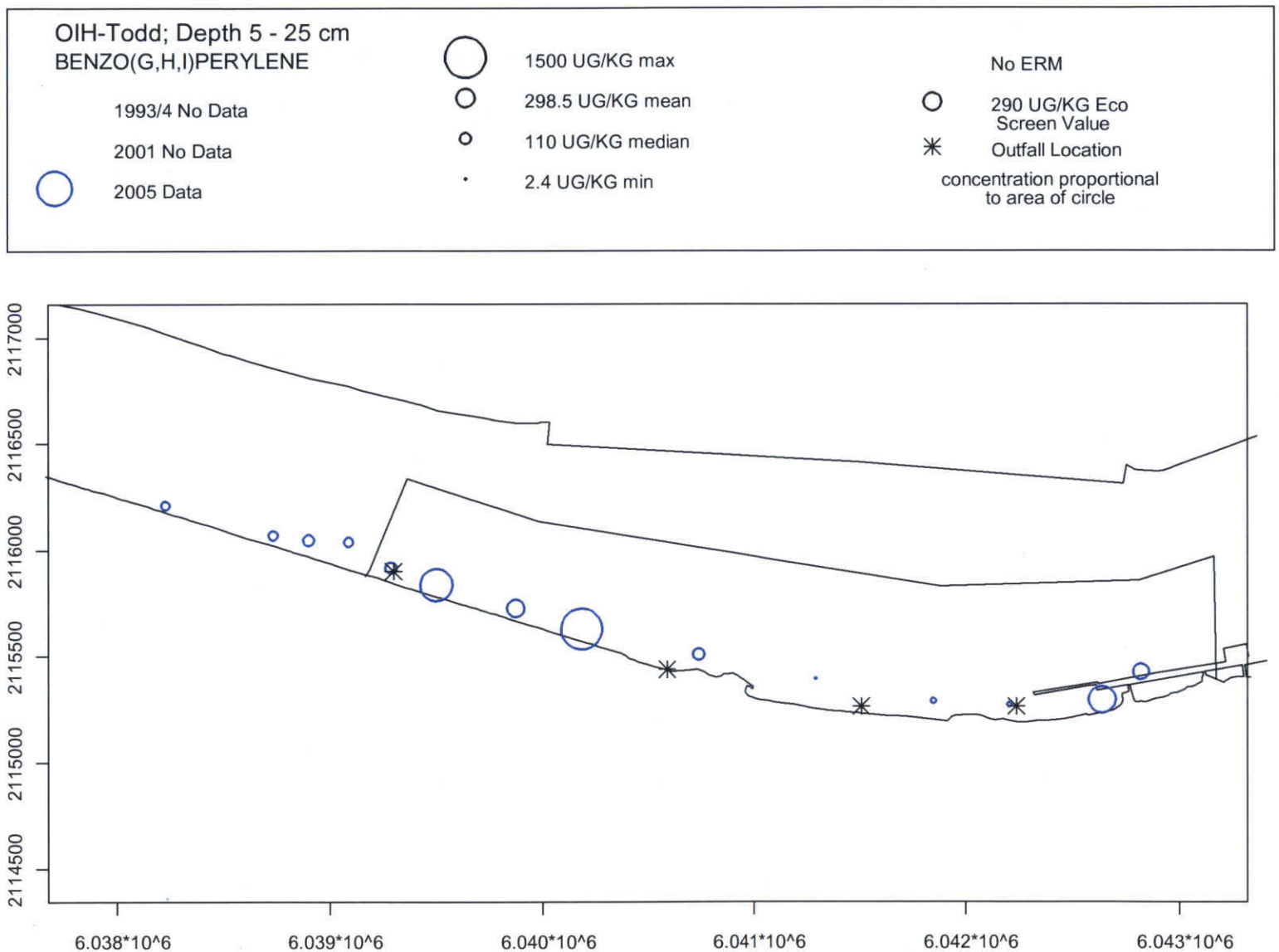

Figure A-166. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

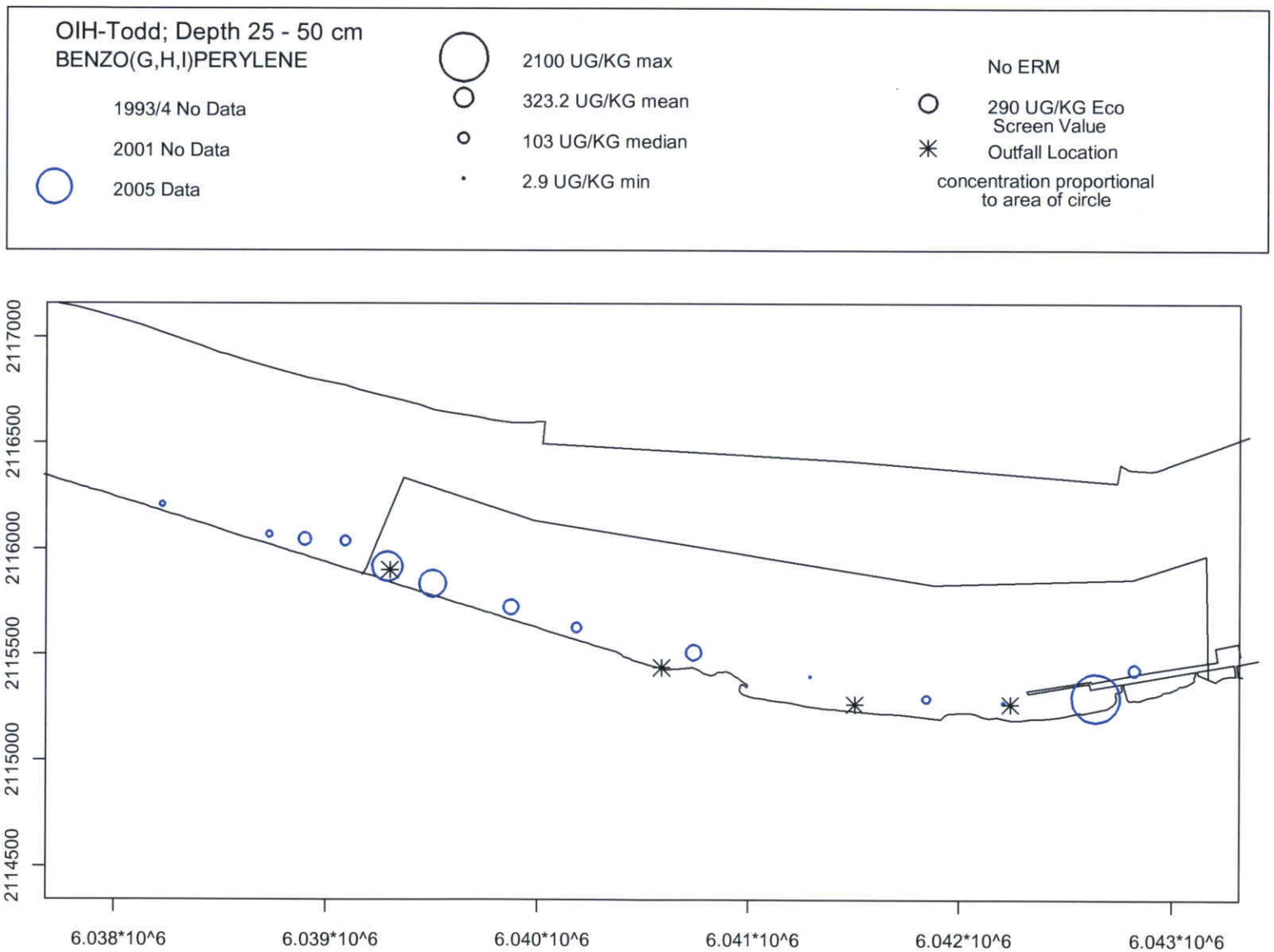

Figure A-167. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

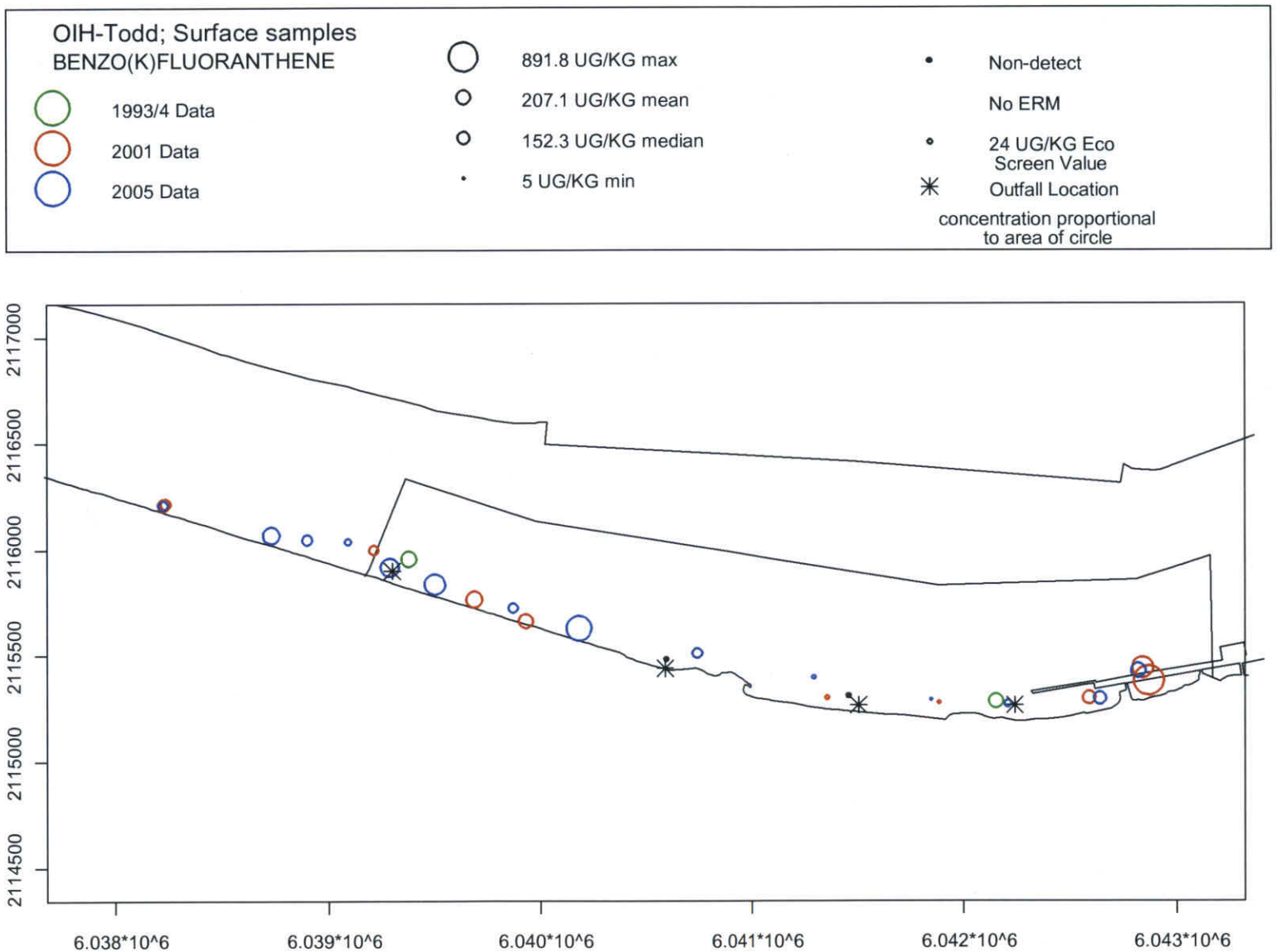

Figure A-168. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 20 Surface Sediment by Year.

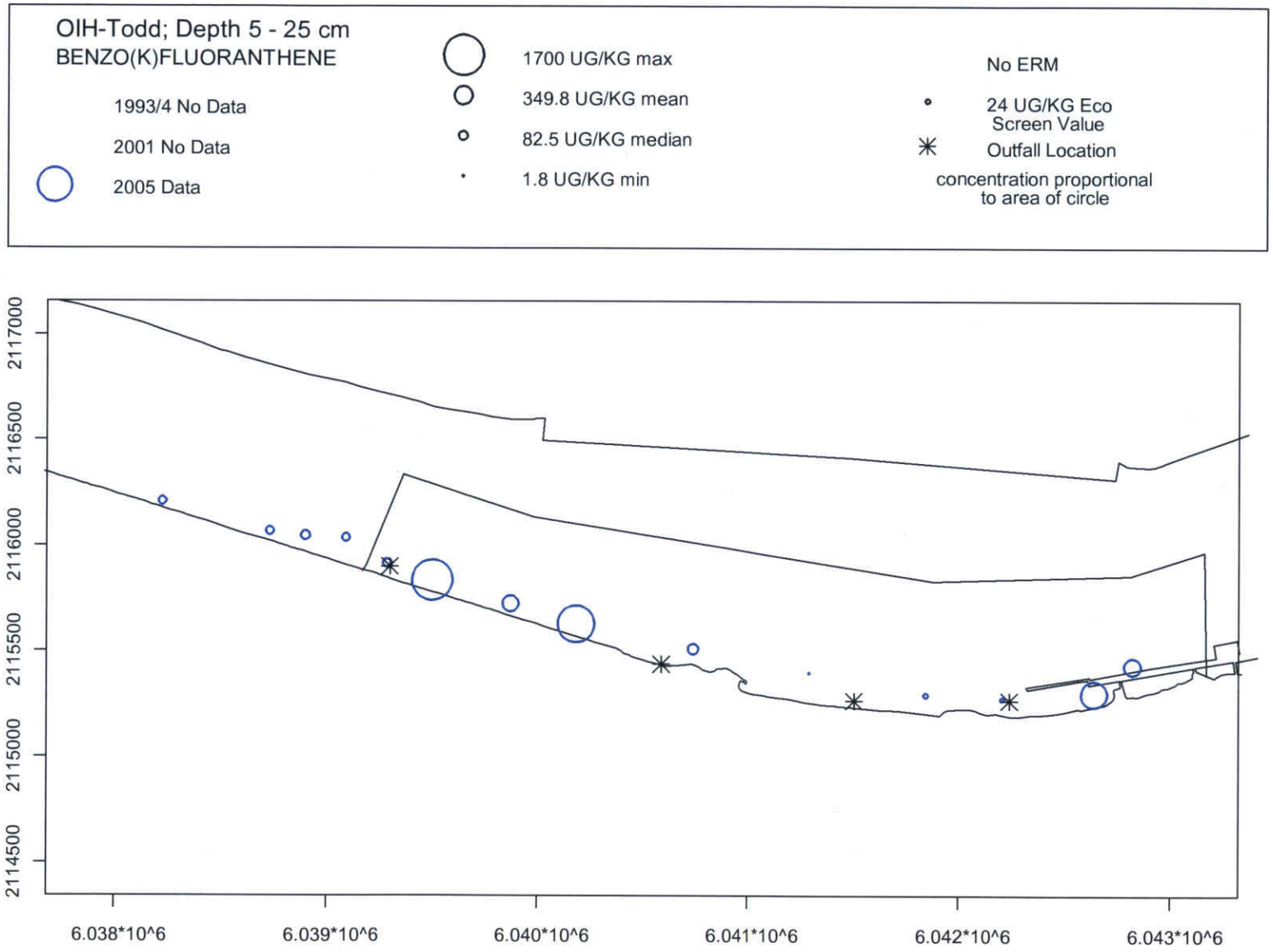

Figure A-169. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

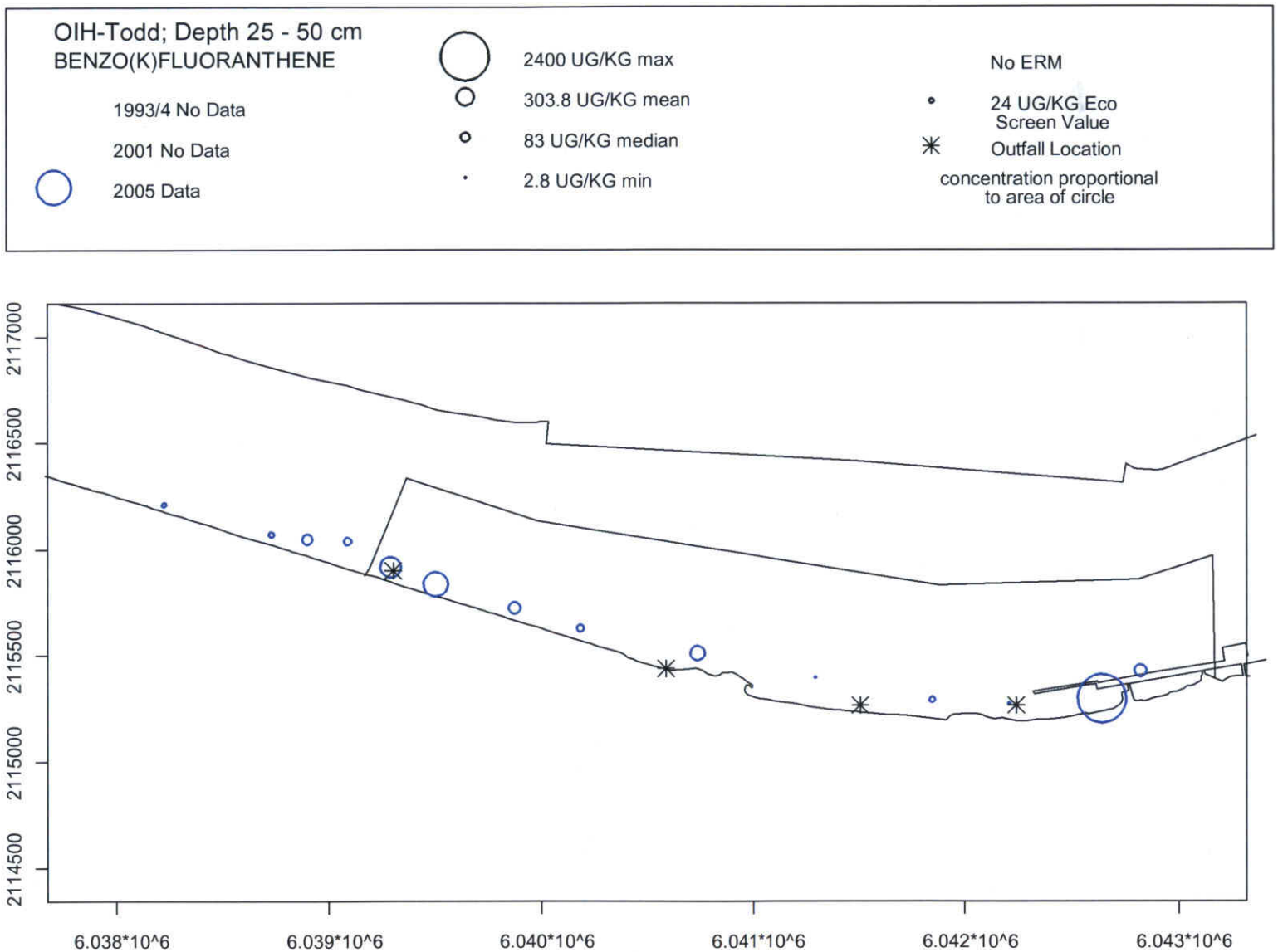

Figure A-170. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

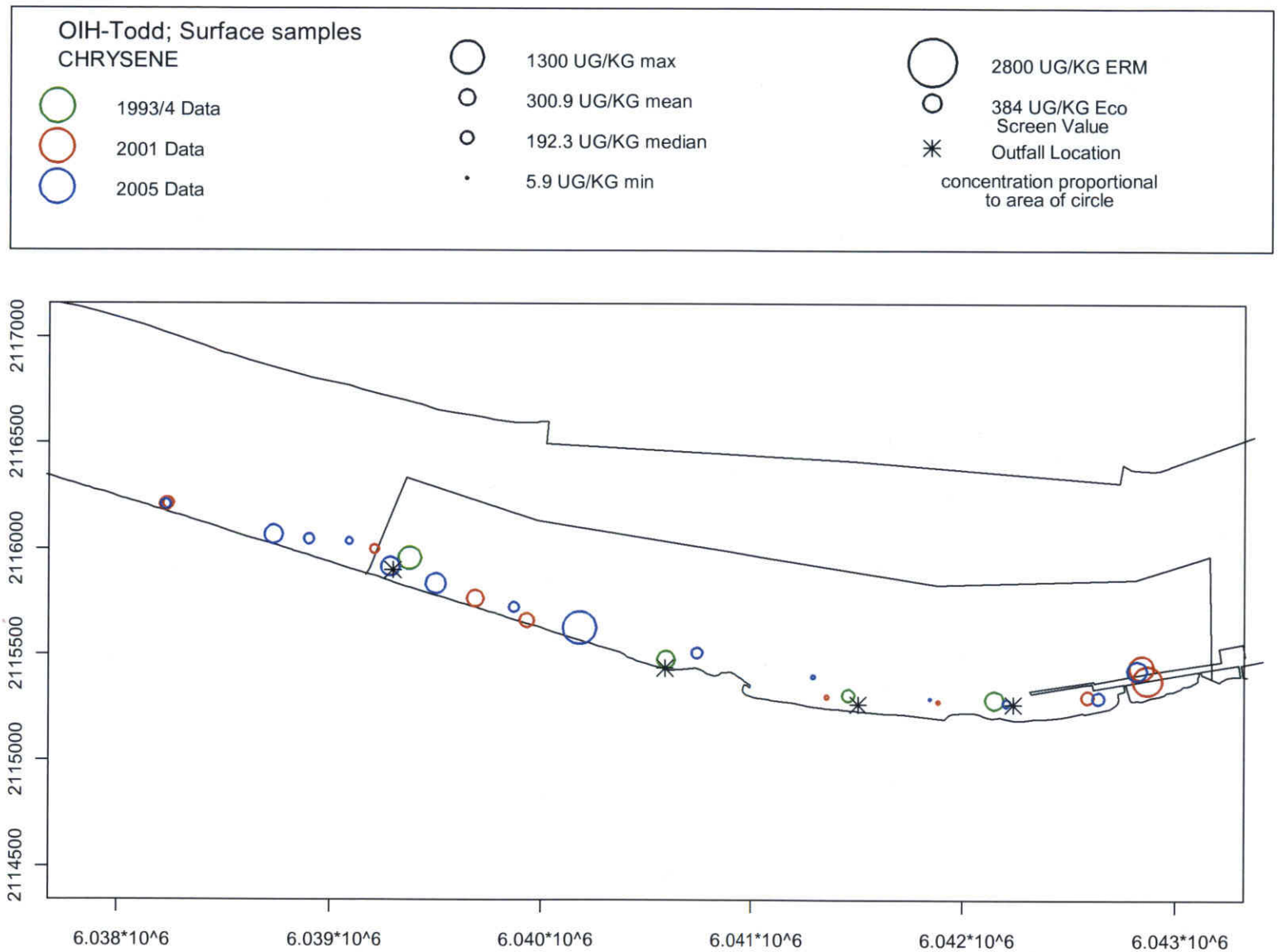

Figure A-171. Bubble Plot of Chrysene Concentrations in IR Site 20 Surface Sediment by Year.

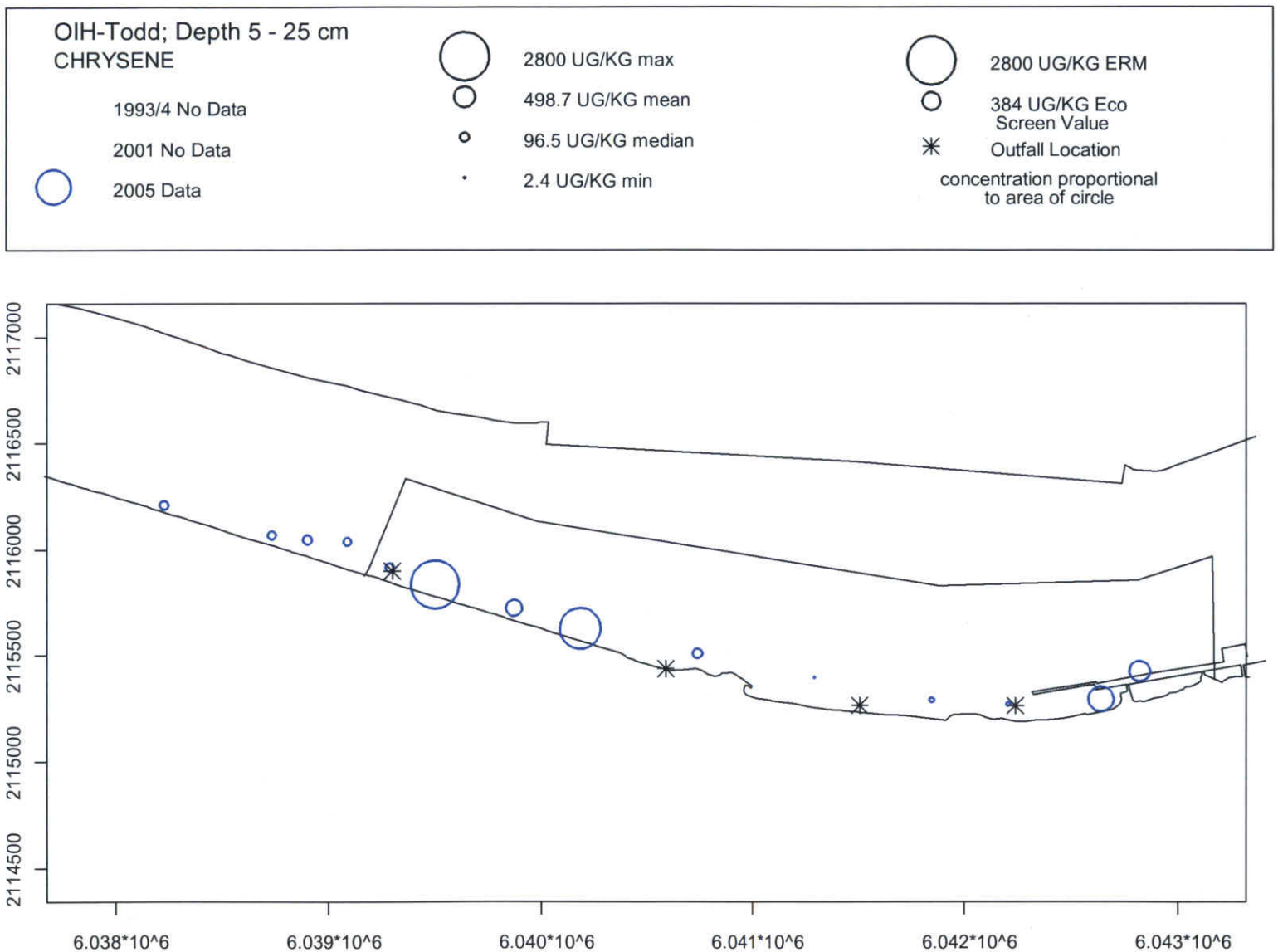

Figure A-172. Bubble Plot of Chrysene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

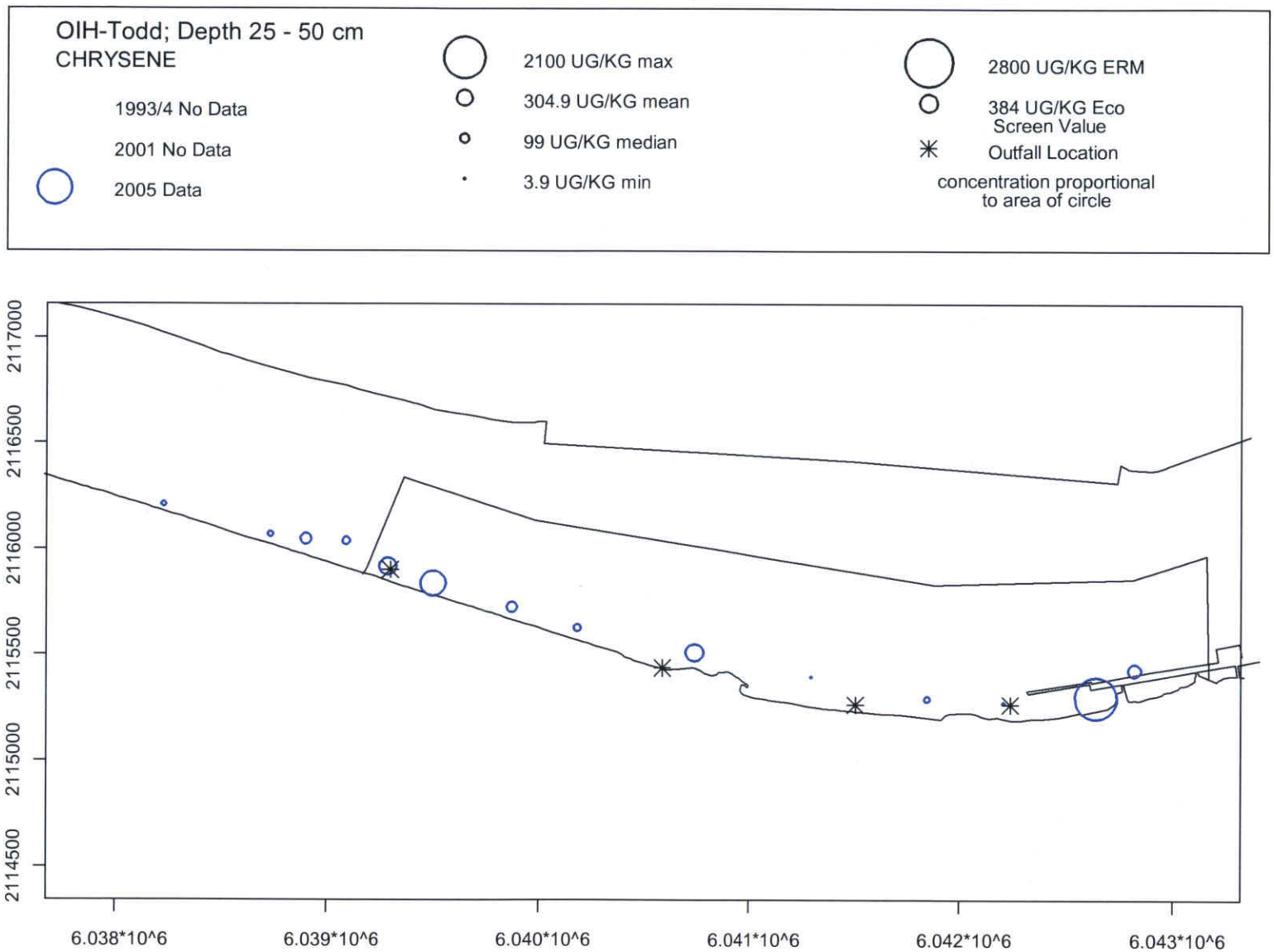

Figure A-173. Bubble Plot of Chrysene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

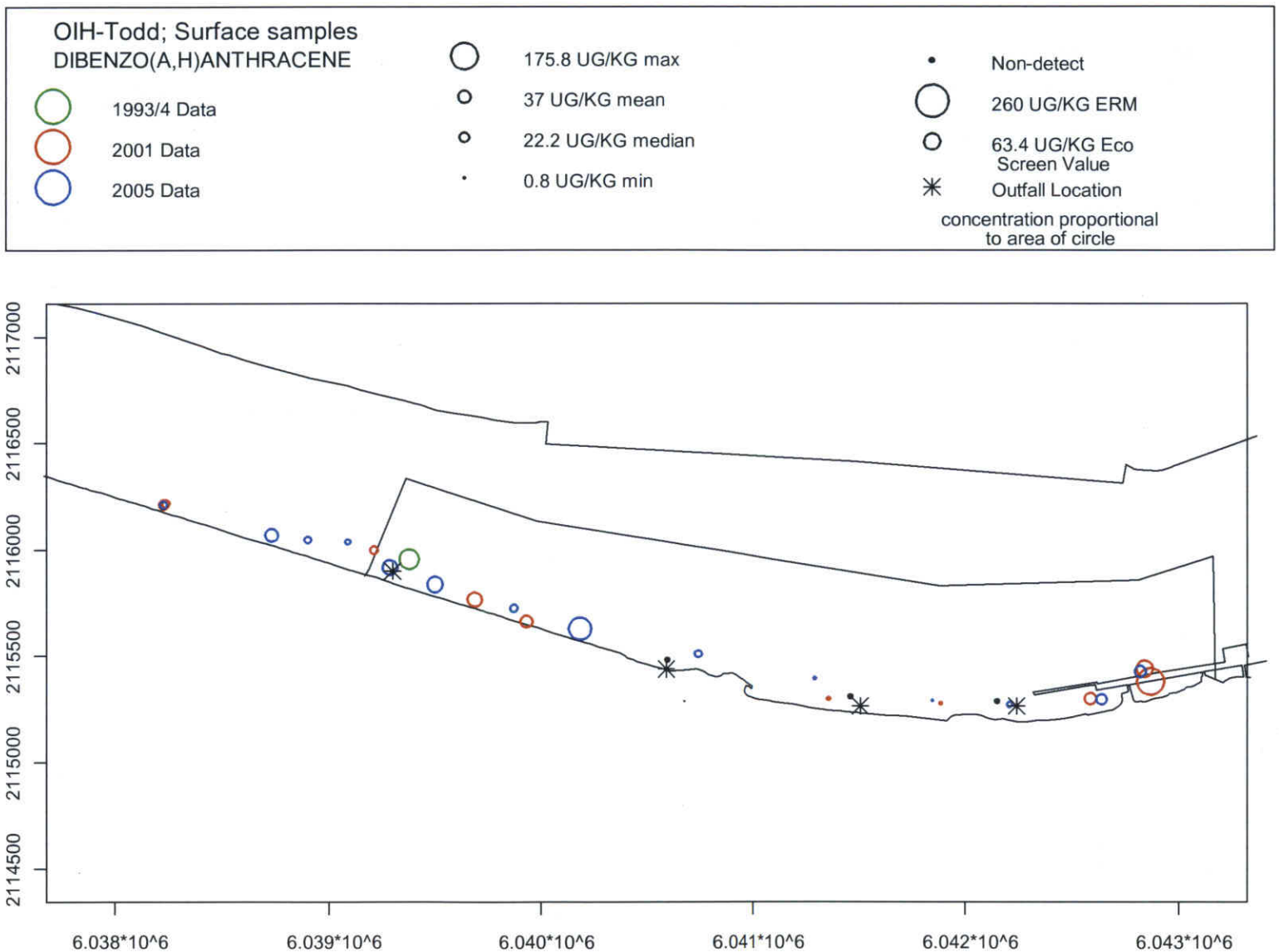

Figure 174. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 20 Surface Sediment by Year.

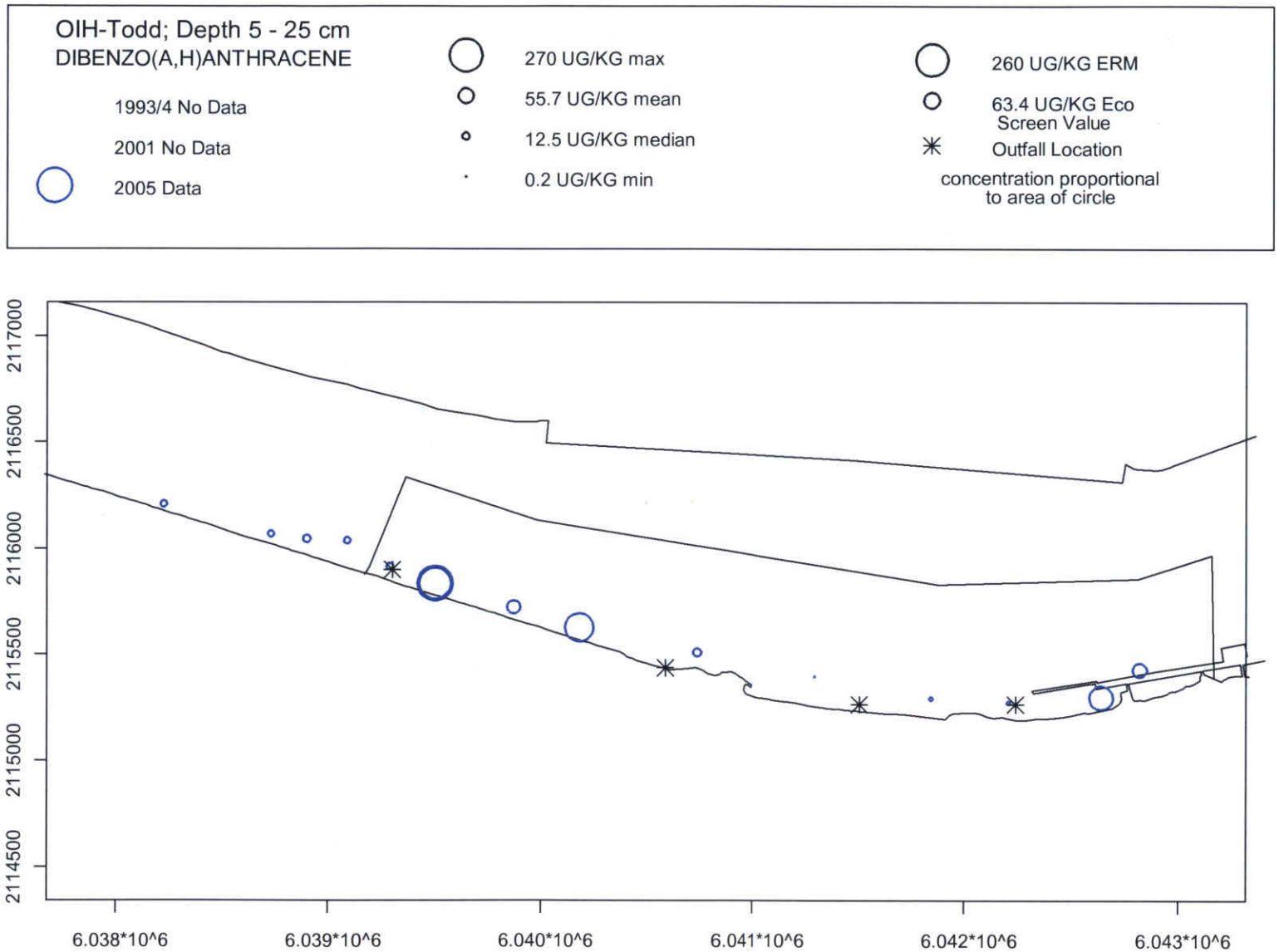

Figure A-175. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

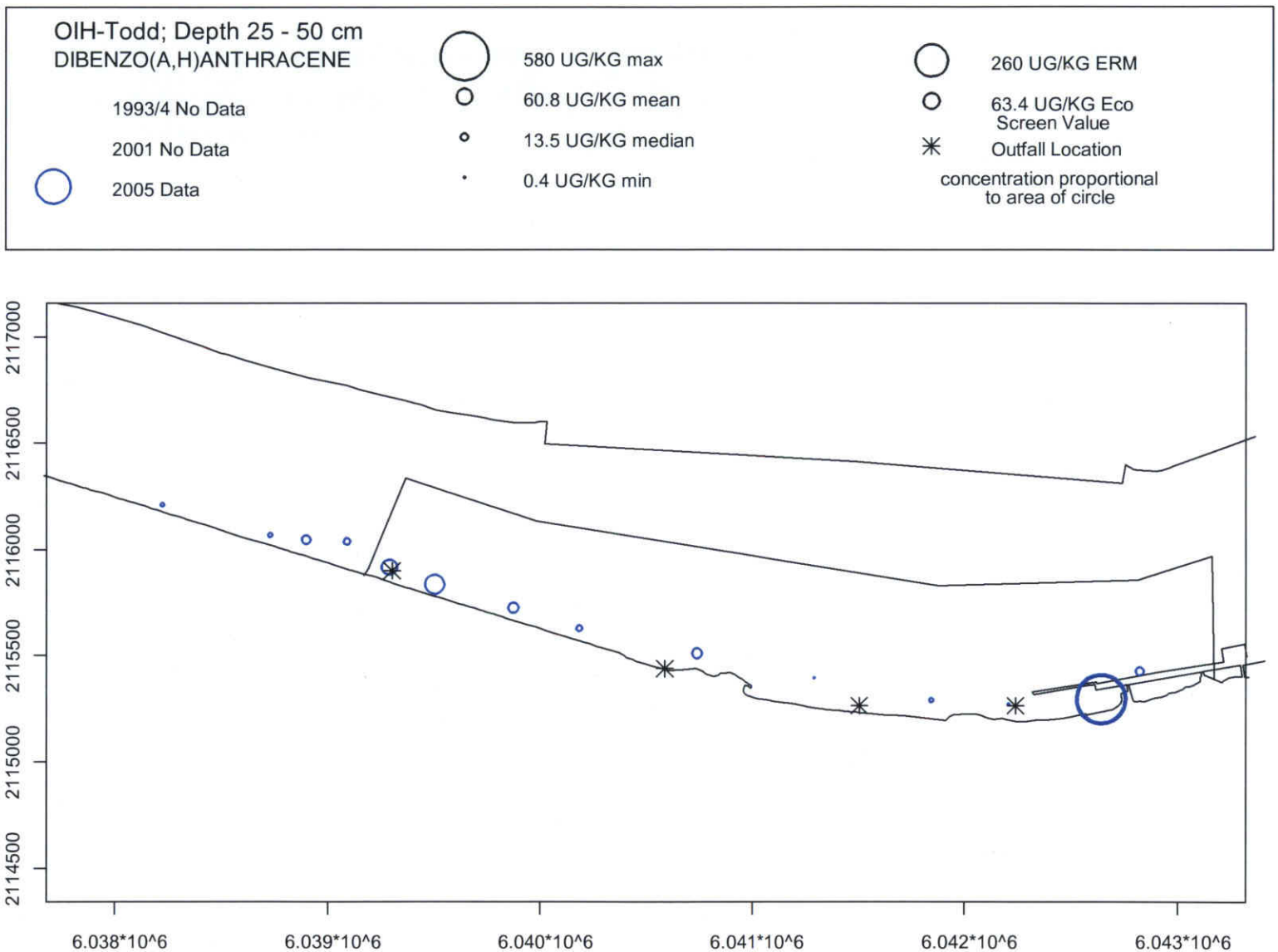

Figure A-176. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

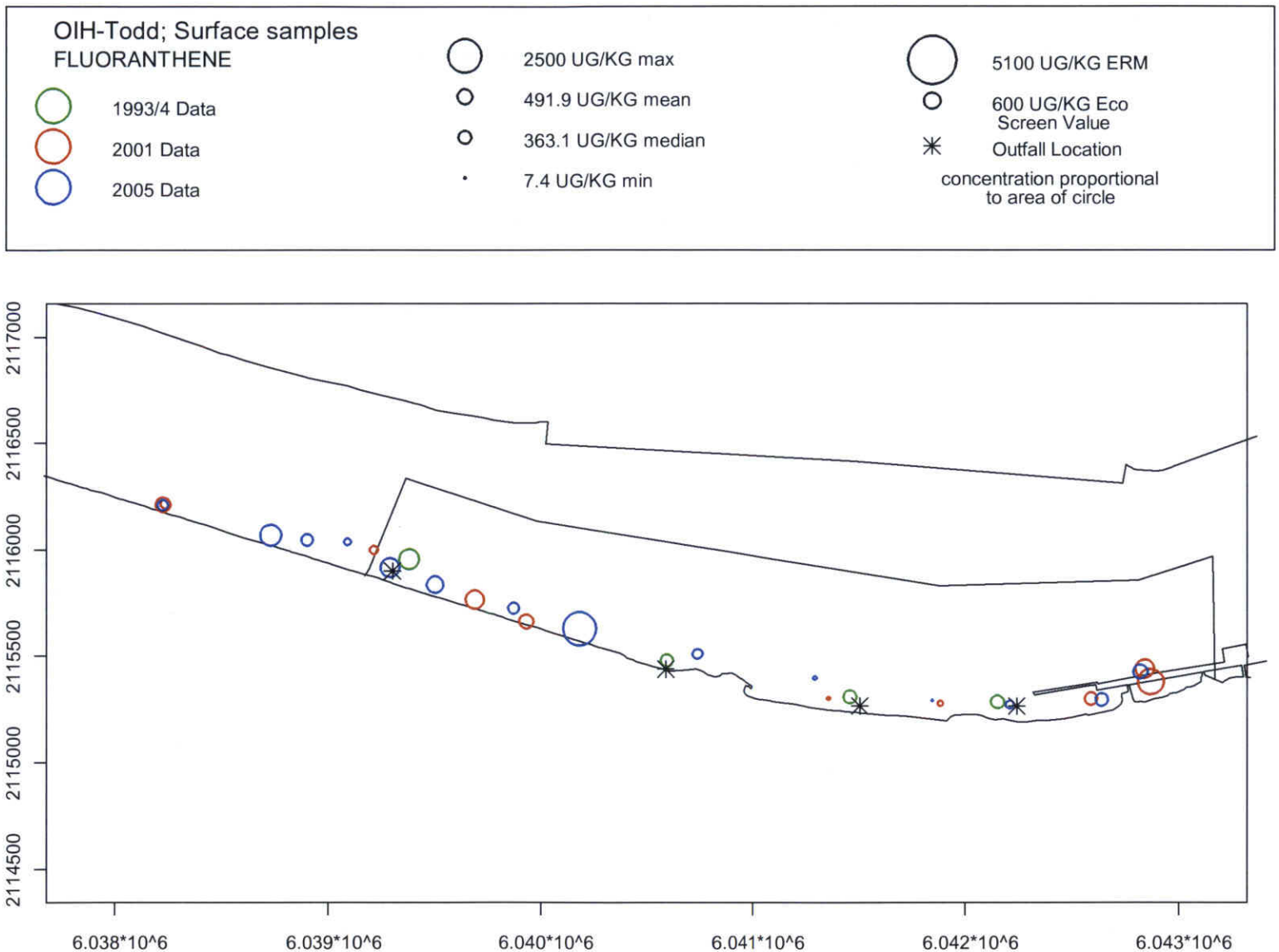

Figure A-177. Bubble Plot of Fluoranthene Concentrations in IR Site 20 Surface Sediment by Year.

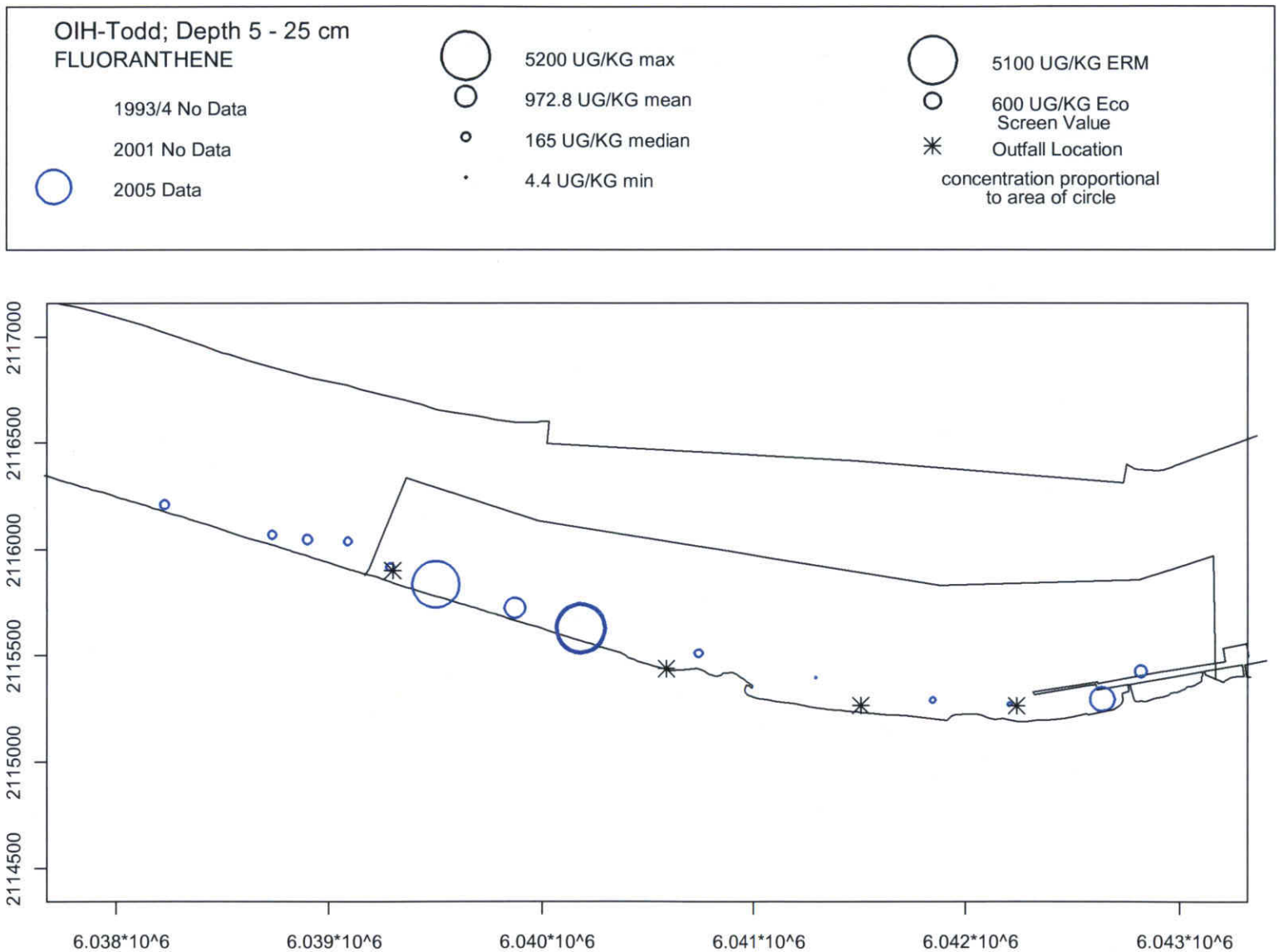

Figure A-178. Bubble Plot of Fluoranthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

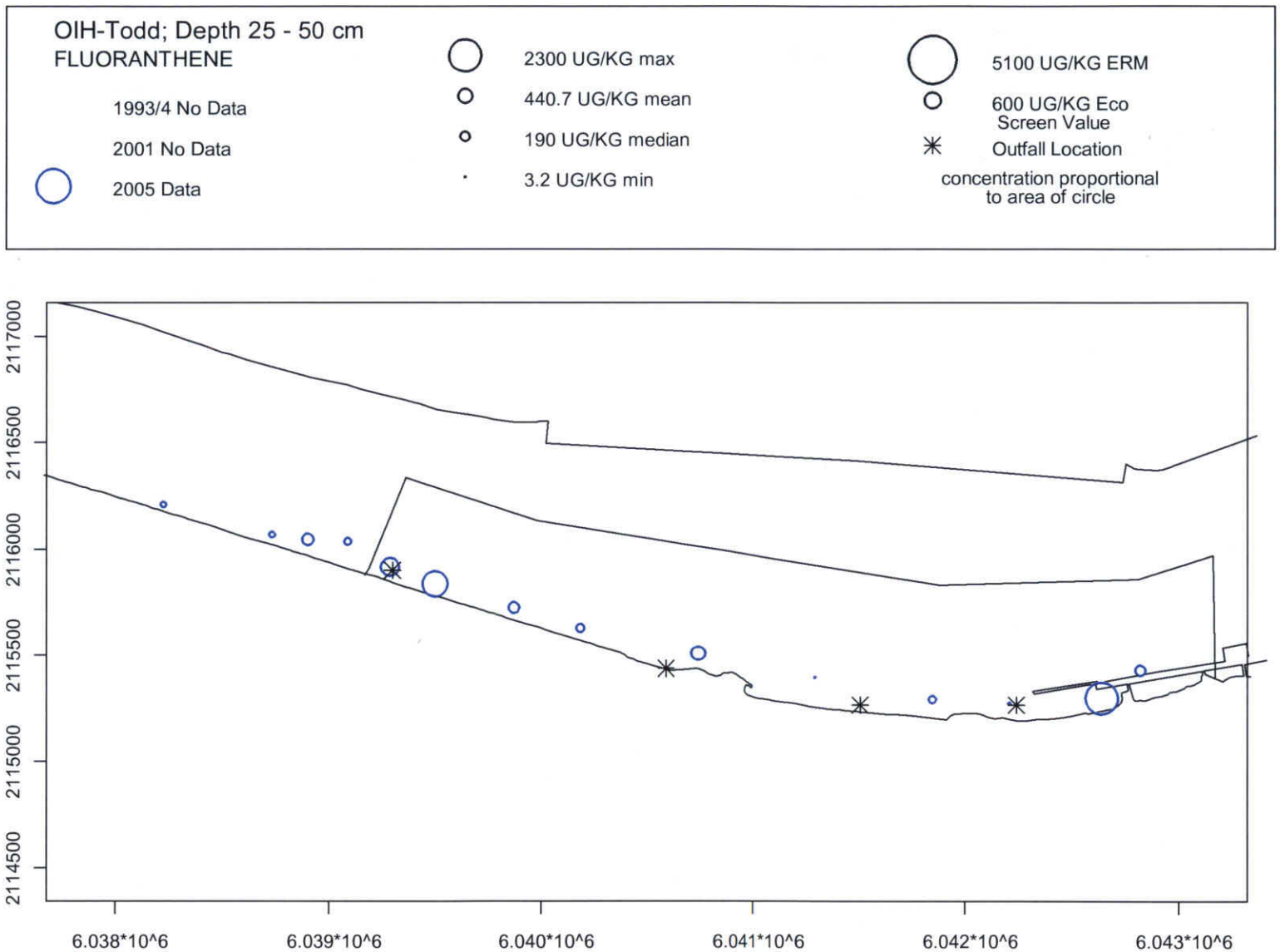

Figure A-179. Bubble Plot of Fluoranthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

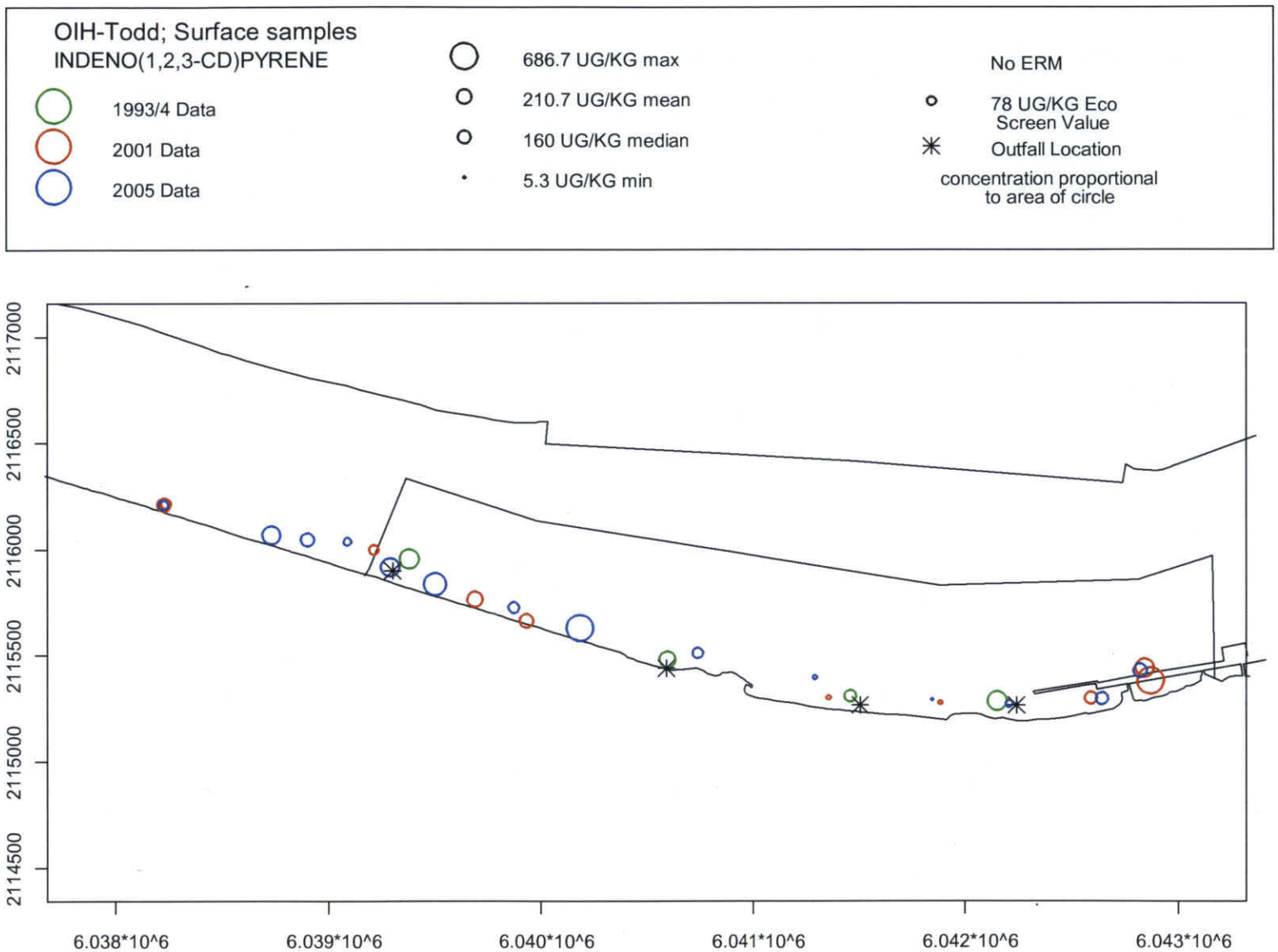

Figure A-180. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 Surface Sediment by Year.

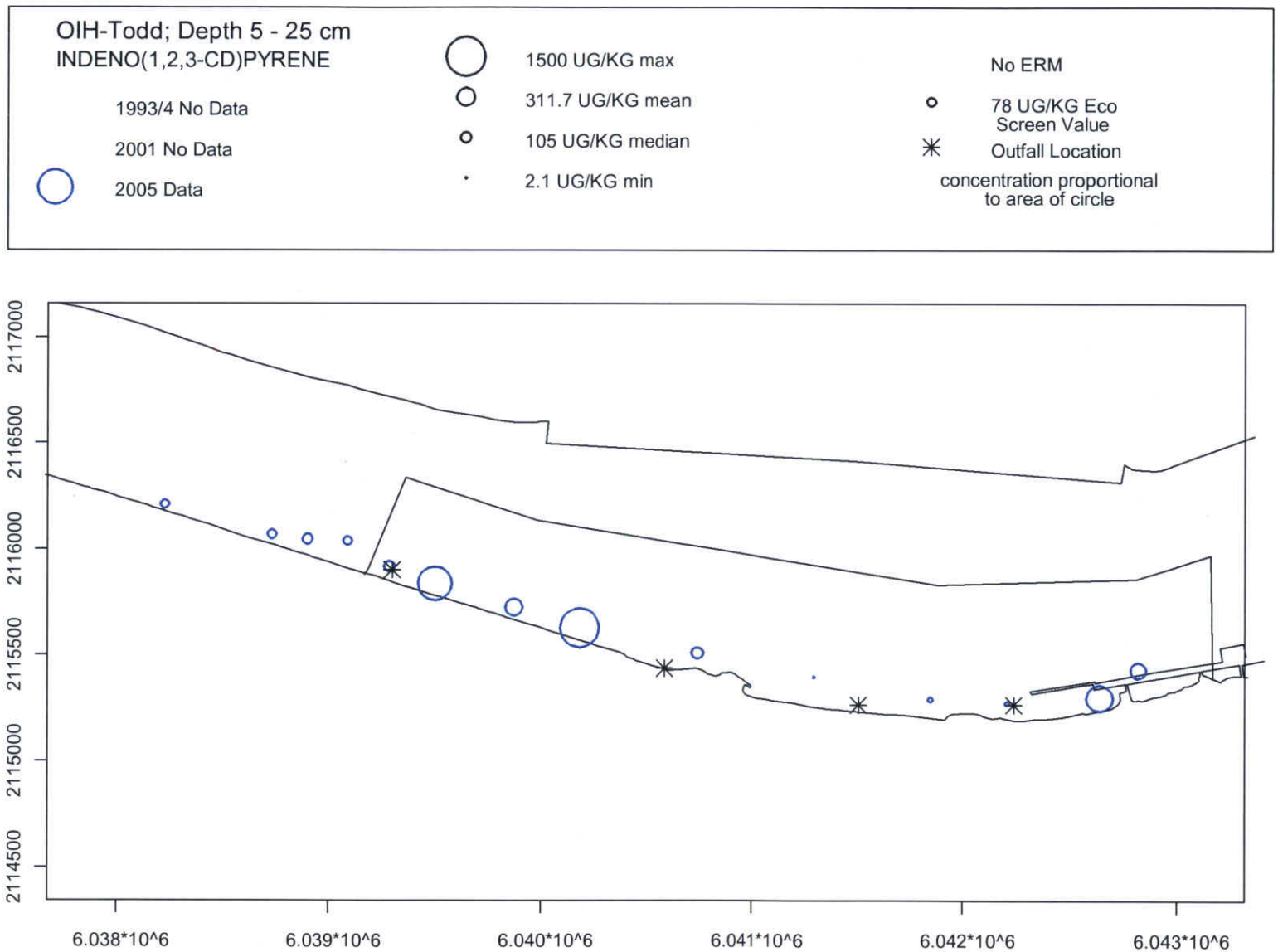

Figure A-181. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

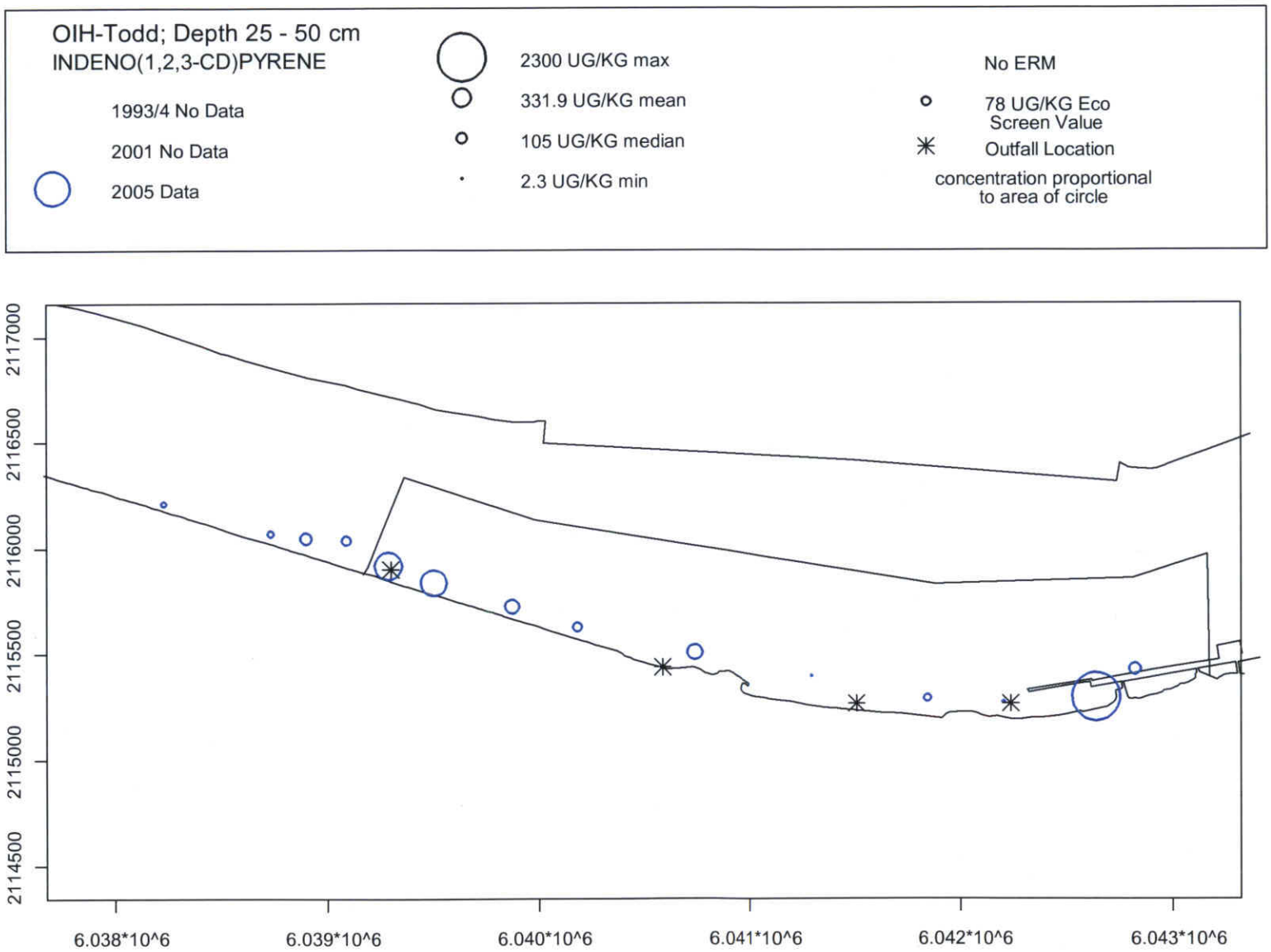

Figure A-182. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

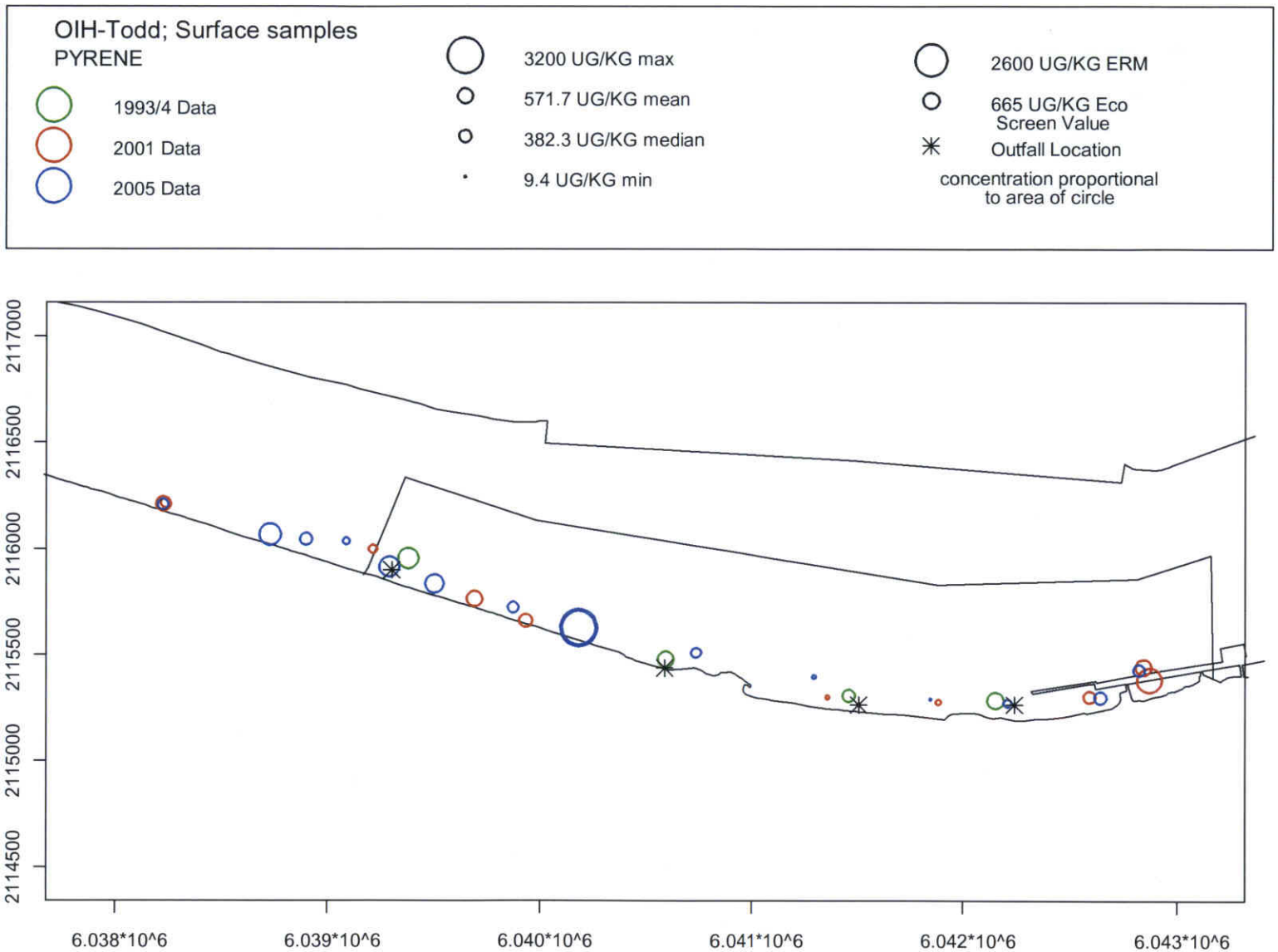

Figure A-183. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment by Year.

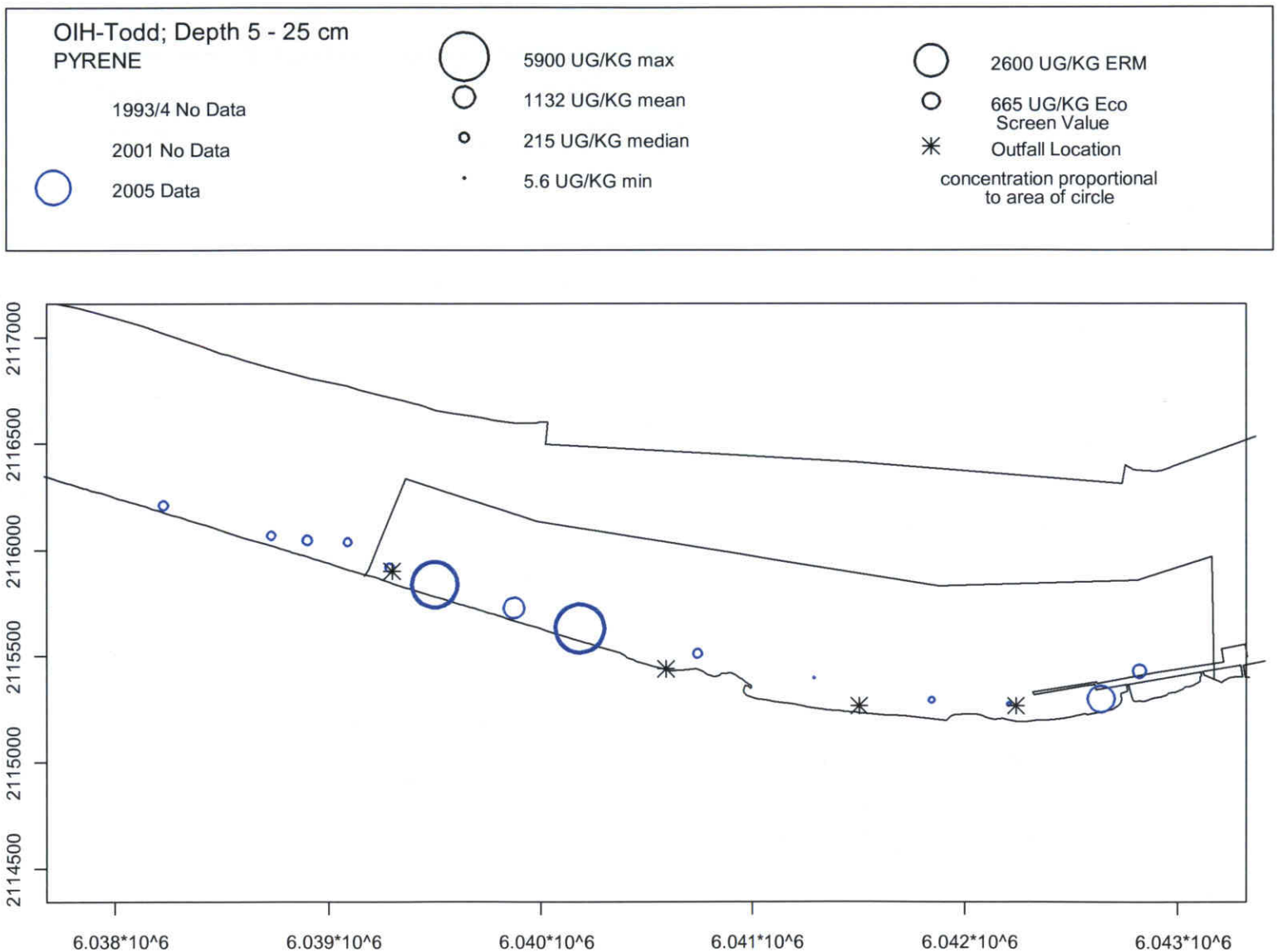

Figure A-184. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

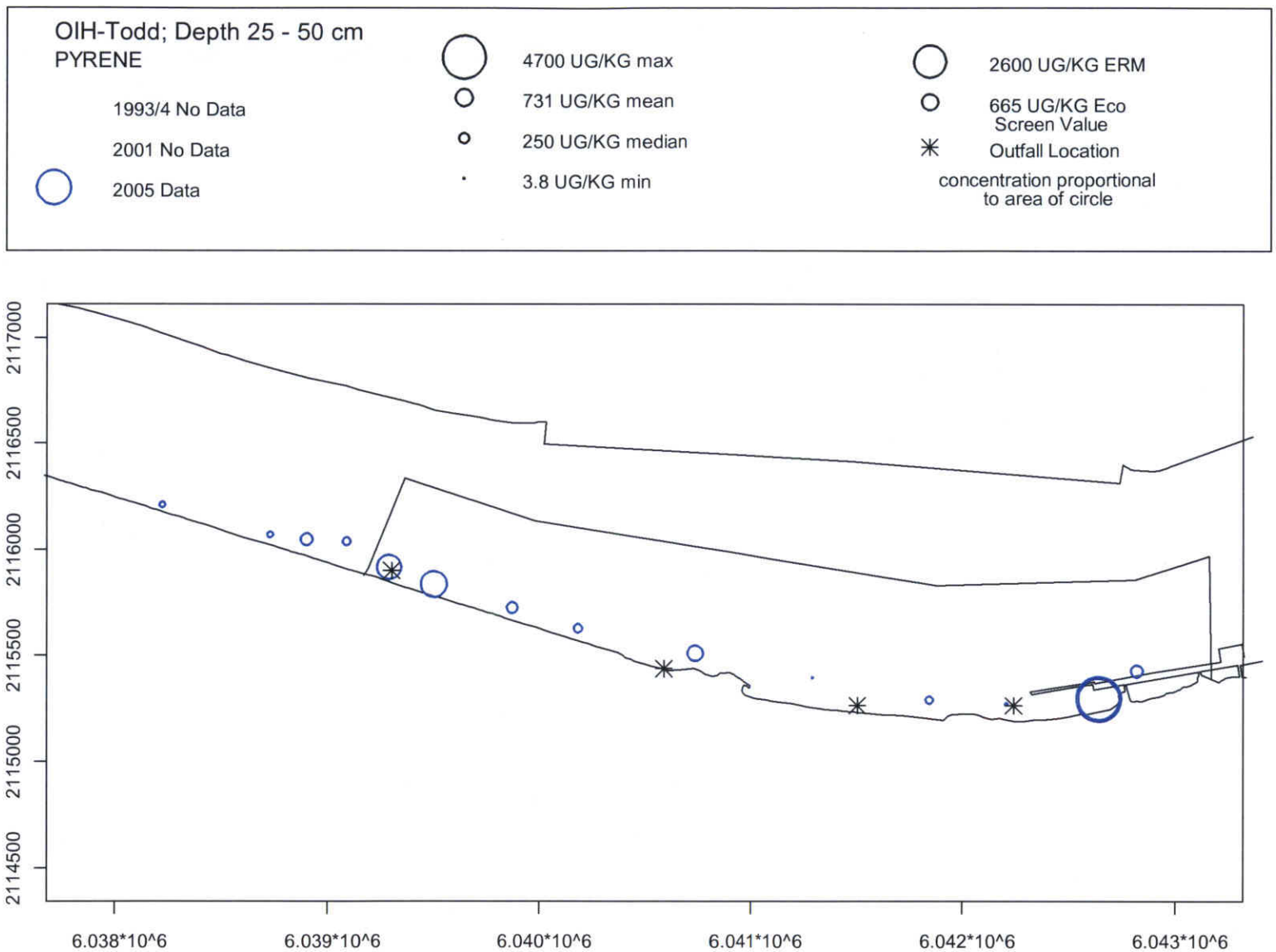

Figure A-185. Bubble Plot of Pyrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

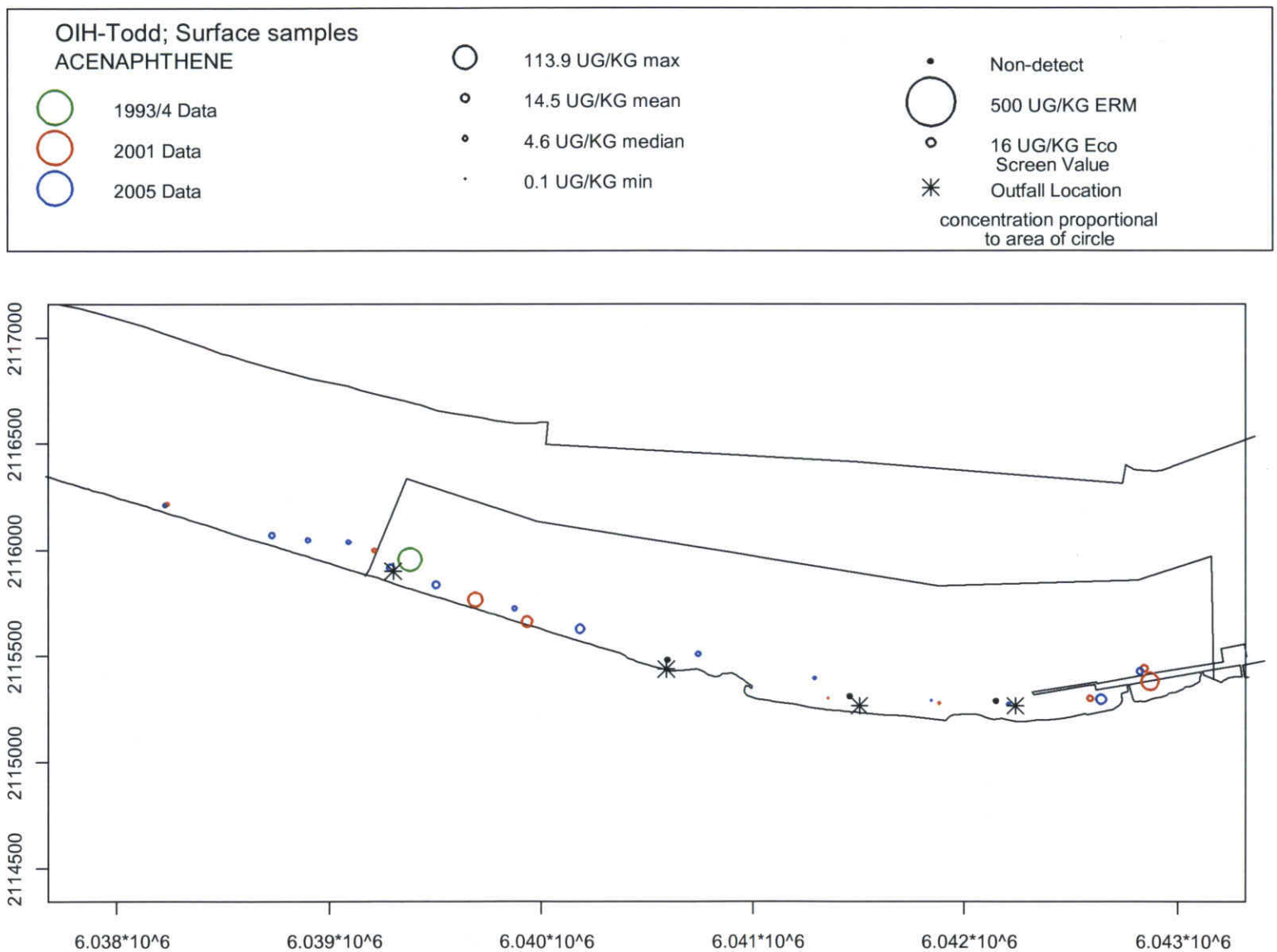

Figure A-186. Bubble Plot of Acenaphthene Concentrations in IR Site 20 Surface Sediment by Year.

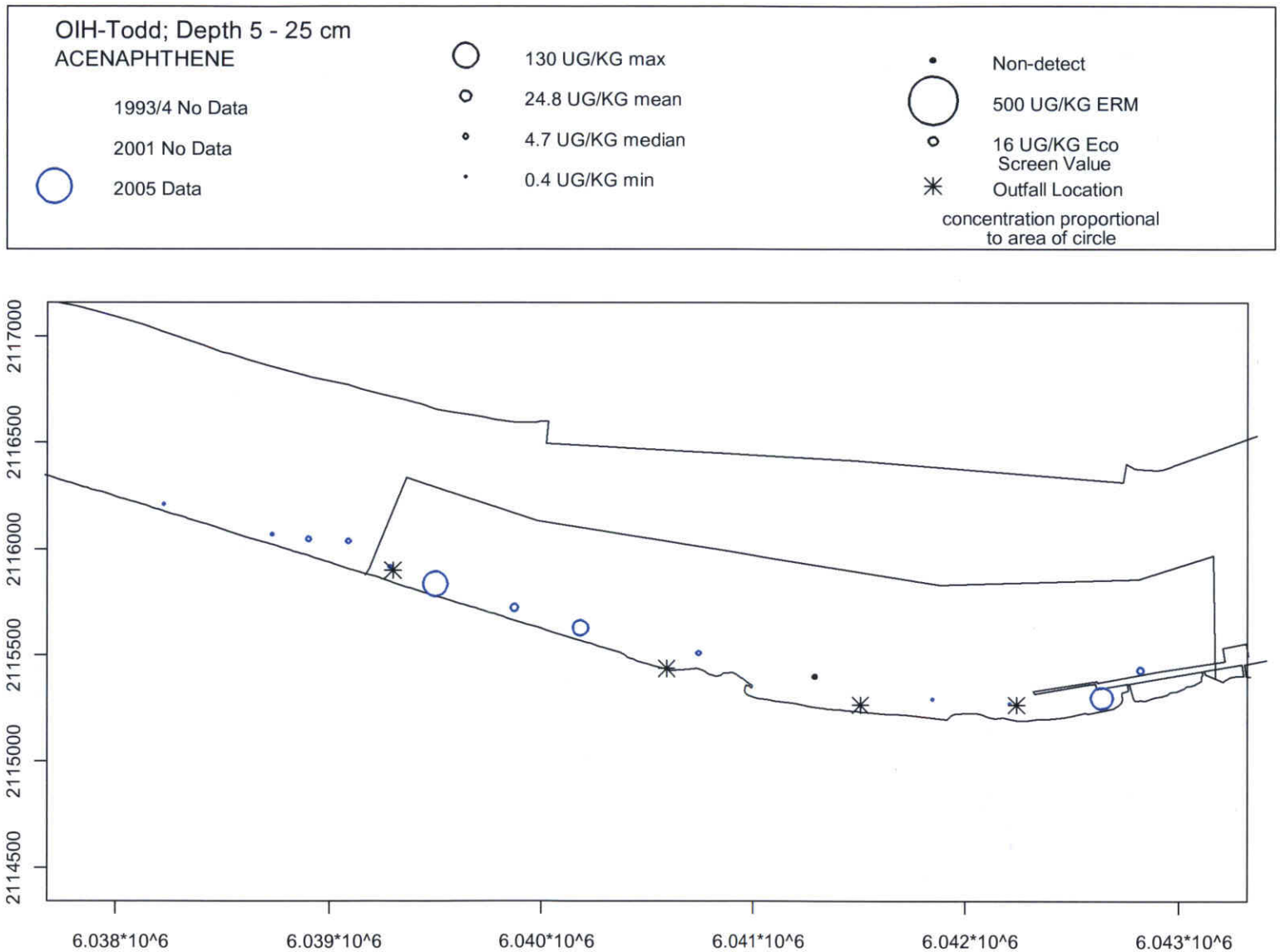

Figure A-187. Bubble Plot of Acenaphthene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

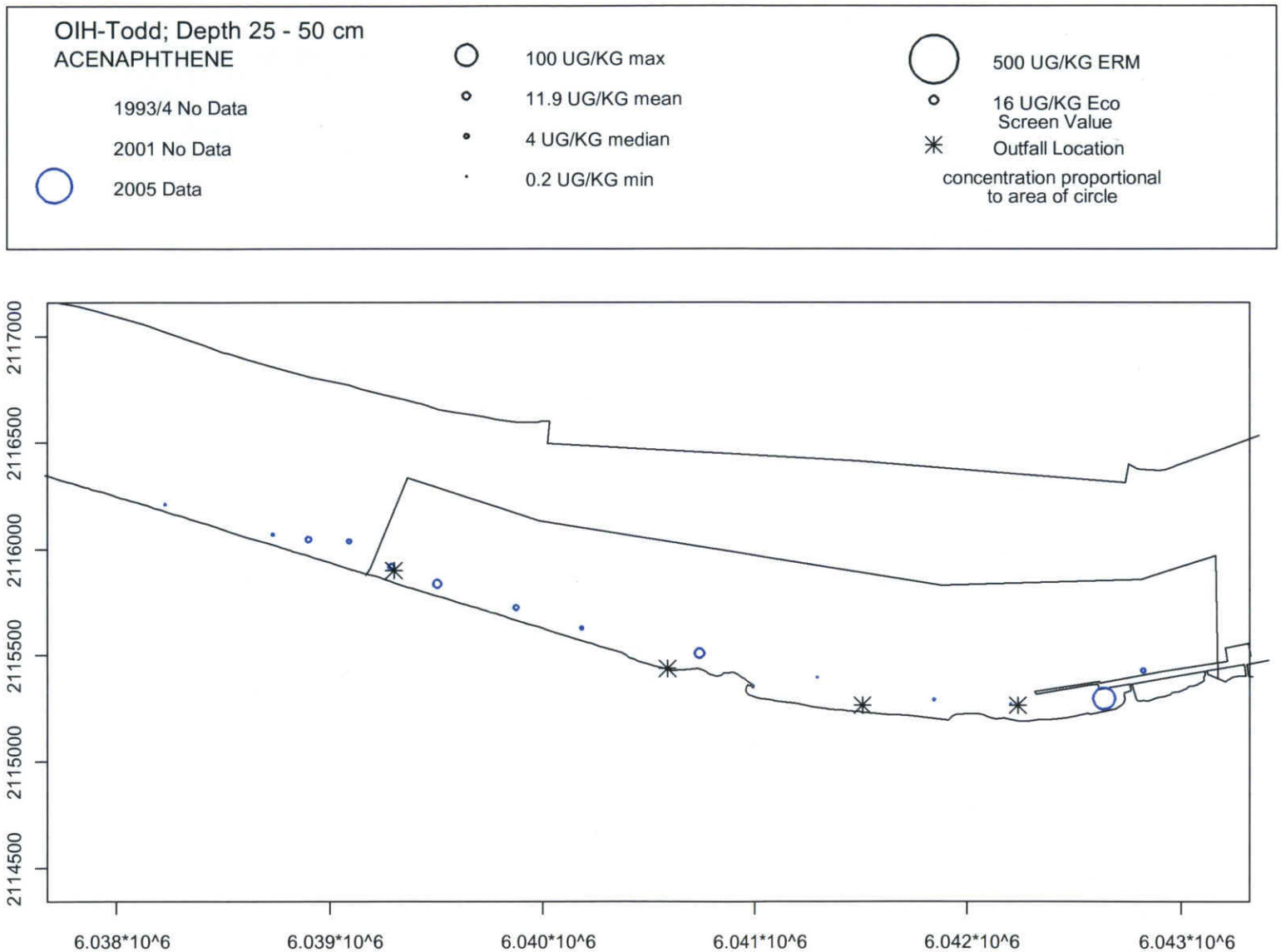

Figure A-188. Bubble Plot of Acenaphthene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

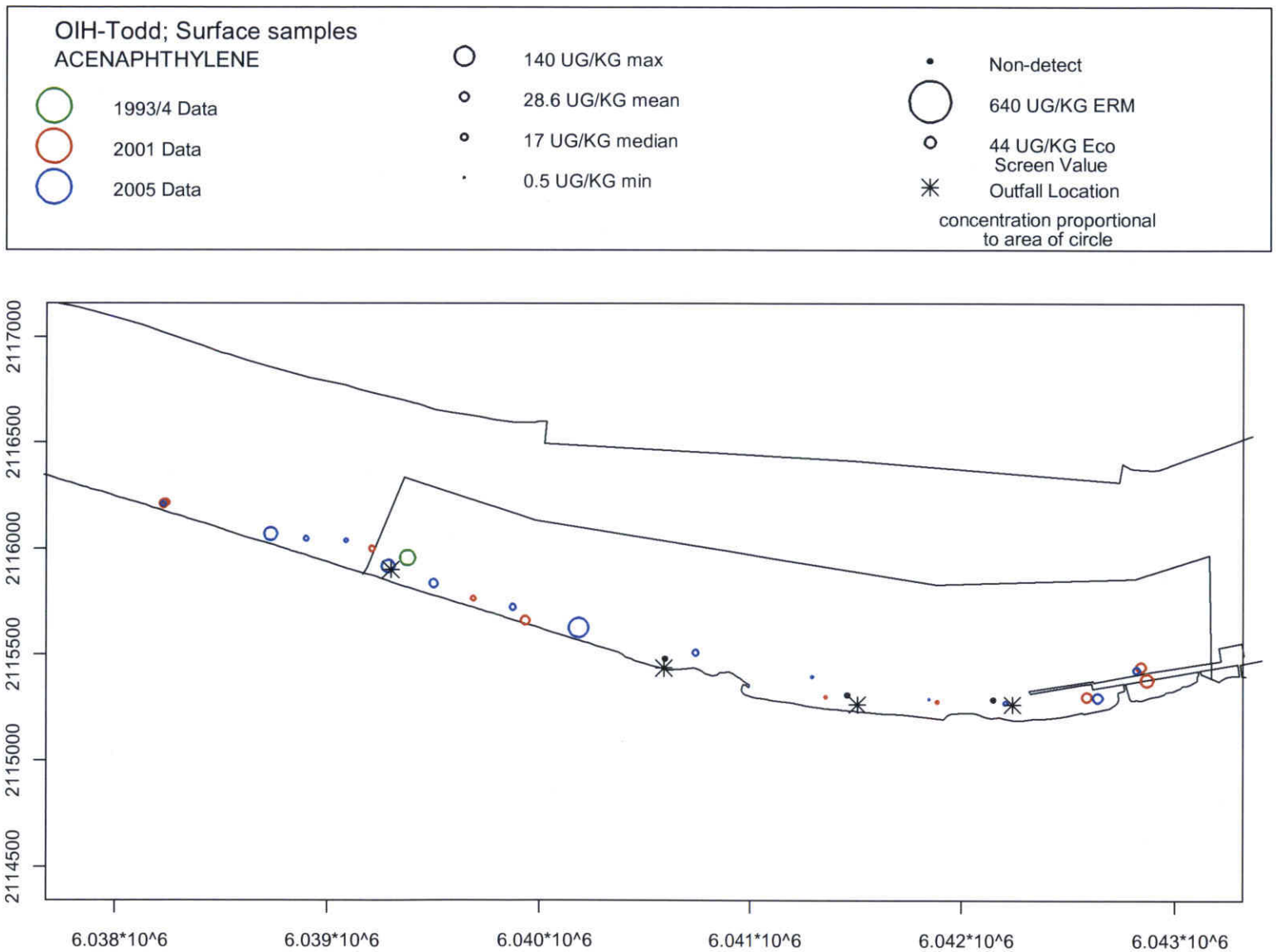

Figure A-189. Bubble Plot of Acenaphthylene Concentrations in IR Site 20 Surface Sediment by Year.

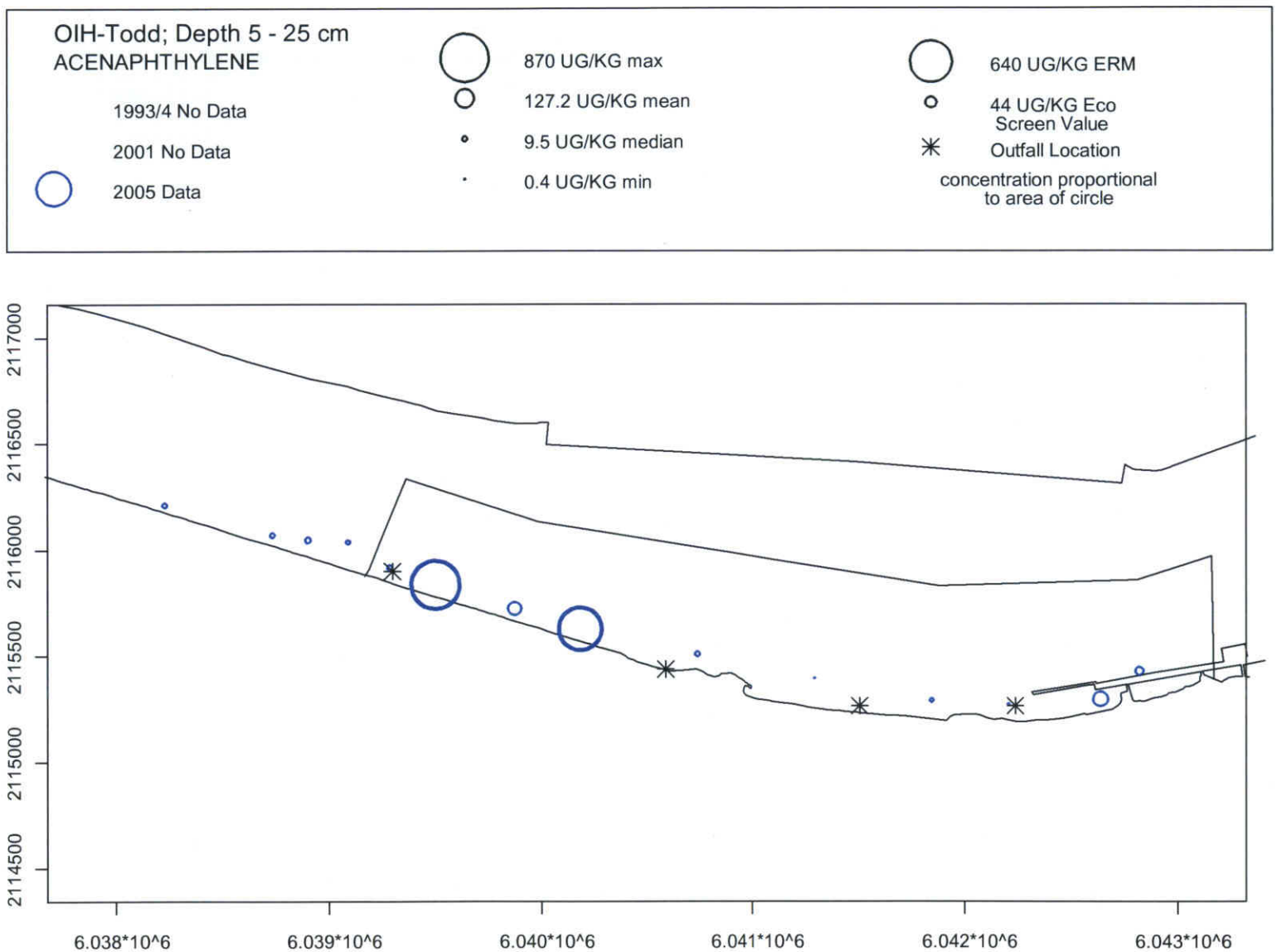

Figure A-190. Bubble Plot of Acenaphthylene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

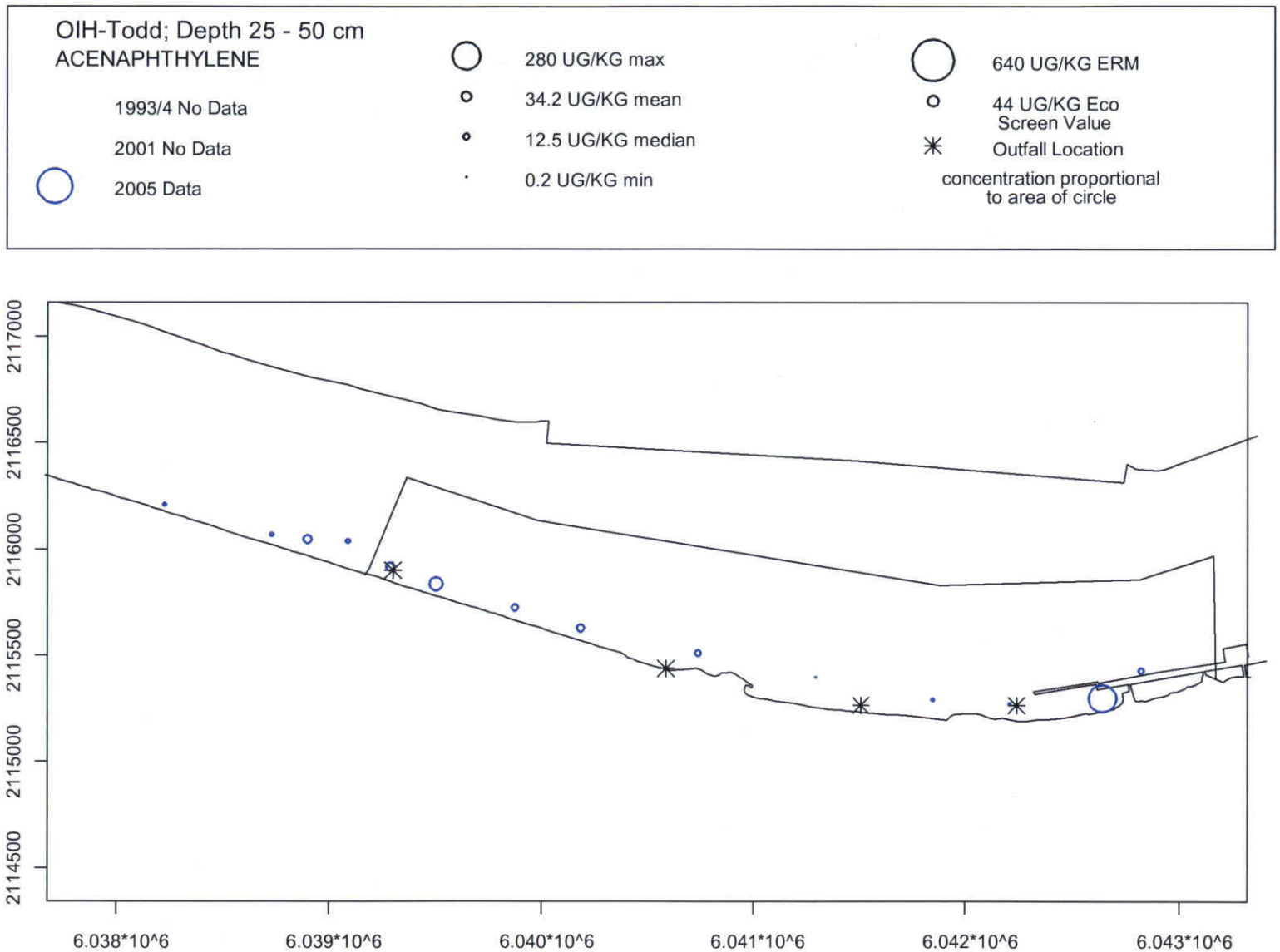

Figure A-191. Bubble Plot of Acenaphthylene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

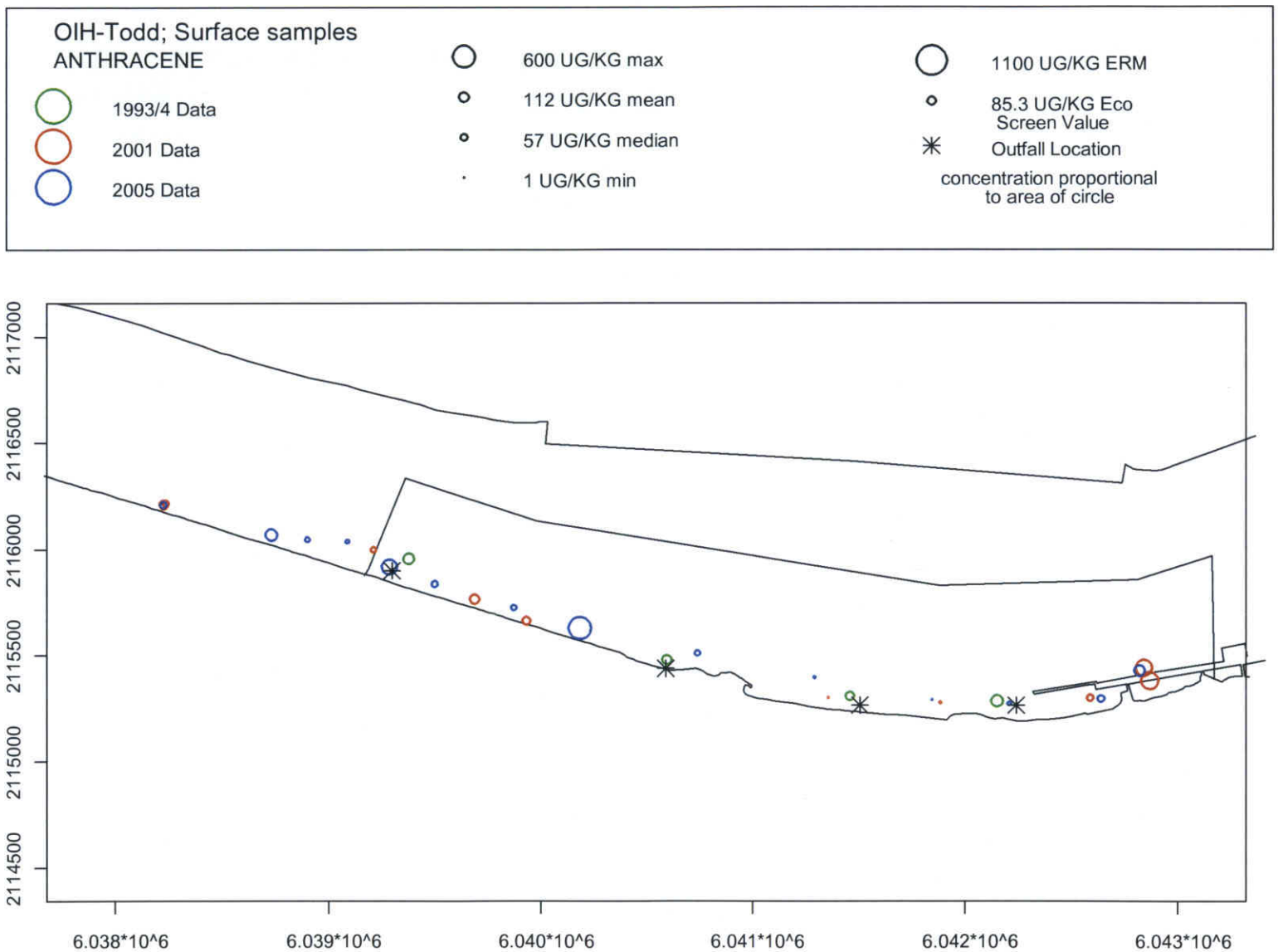

Figure A-192. Bubble Plot of Anthracene Concentrations in IR Site 20 Surface Sediment by Year.

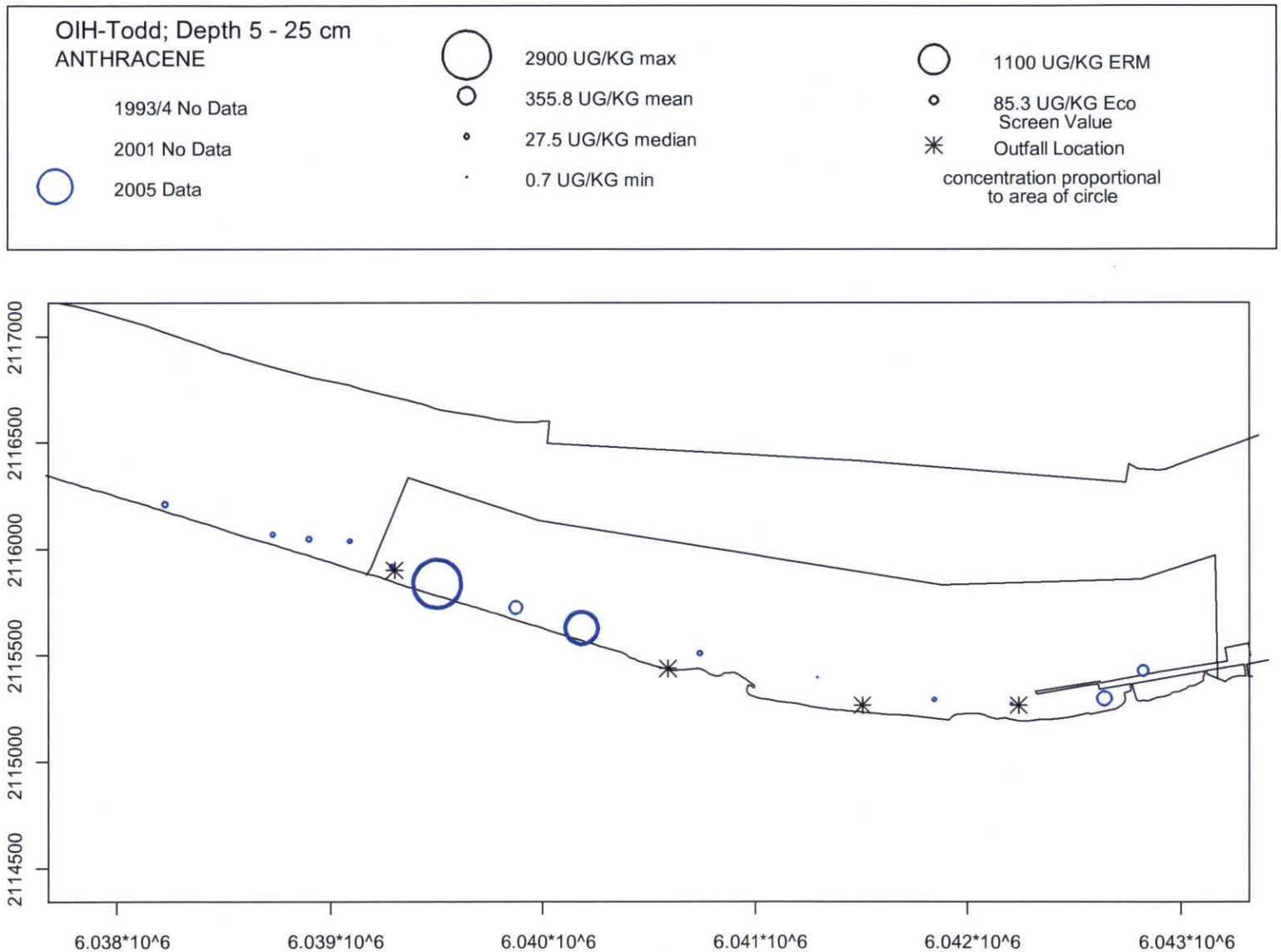

Figure A-193. Bubble Plot of Anthracene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

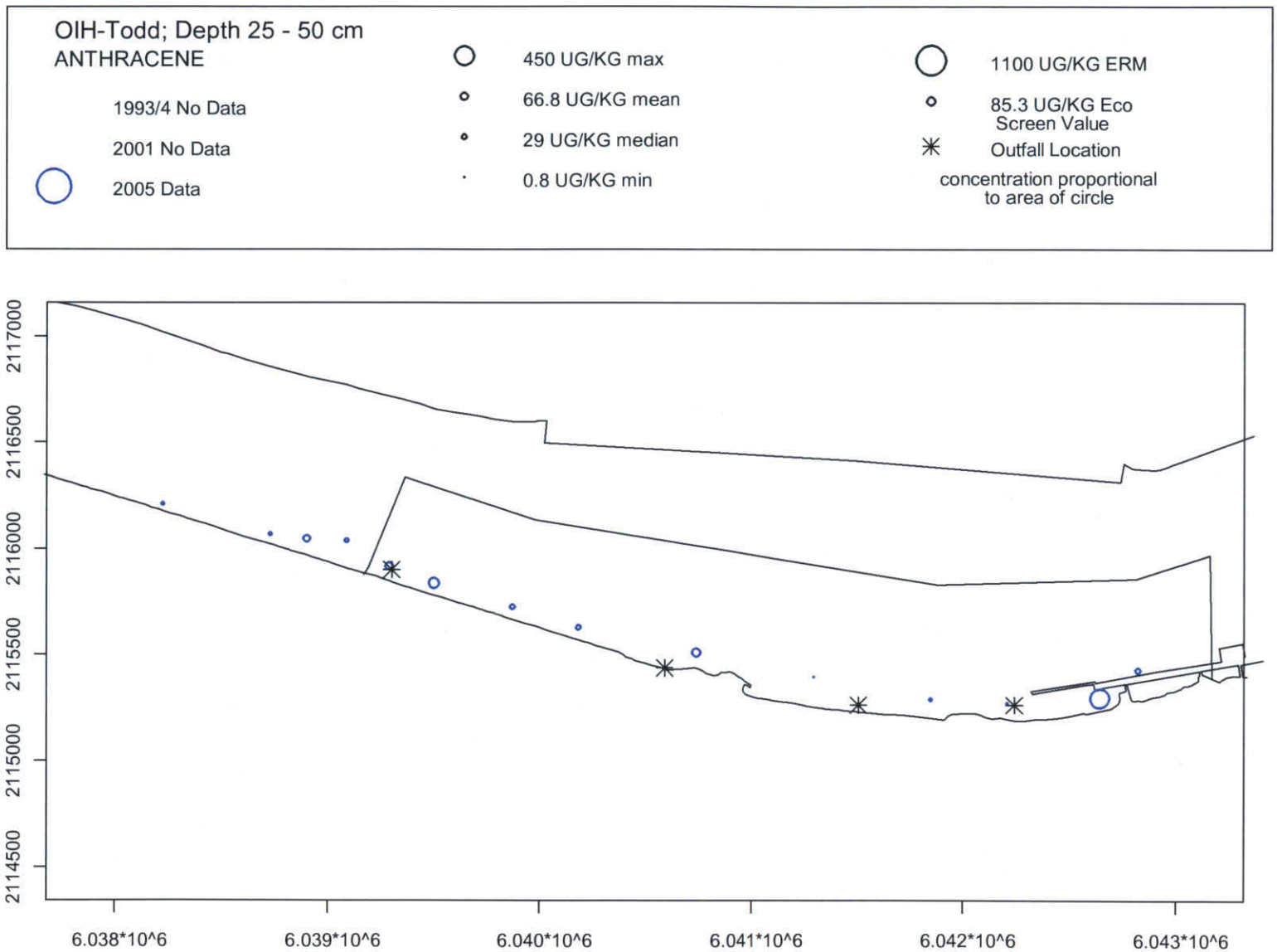

Figure A-194. Bubble Plot of Anthracene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

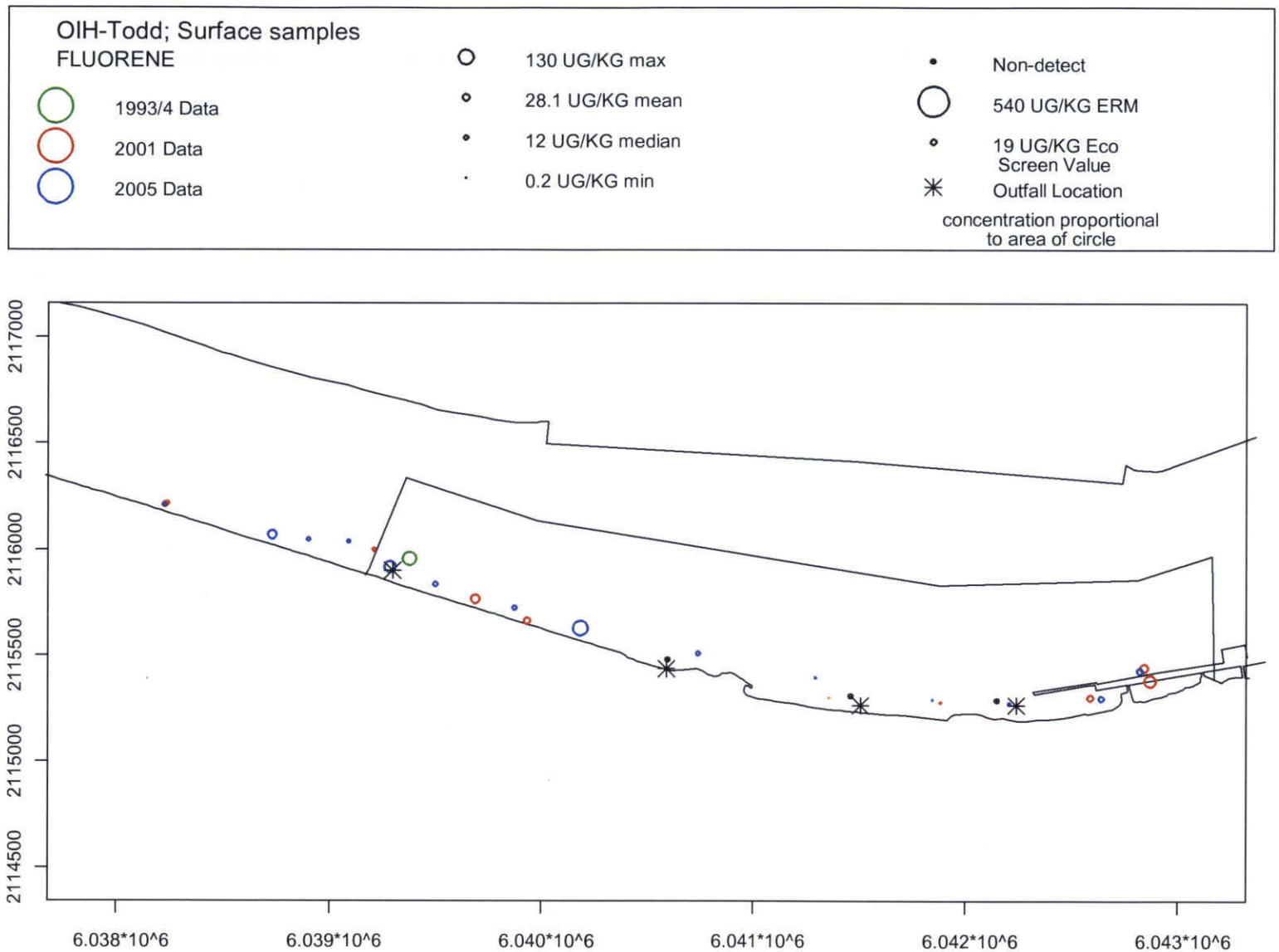

Figure A-195. Bubble Plot of Fluorene Concentrations in IR Site 20 Surface Sediment by Year.

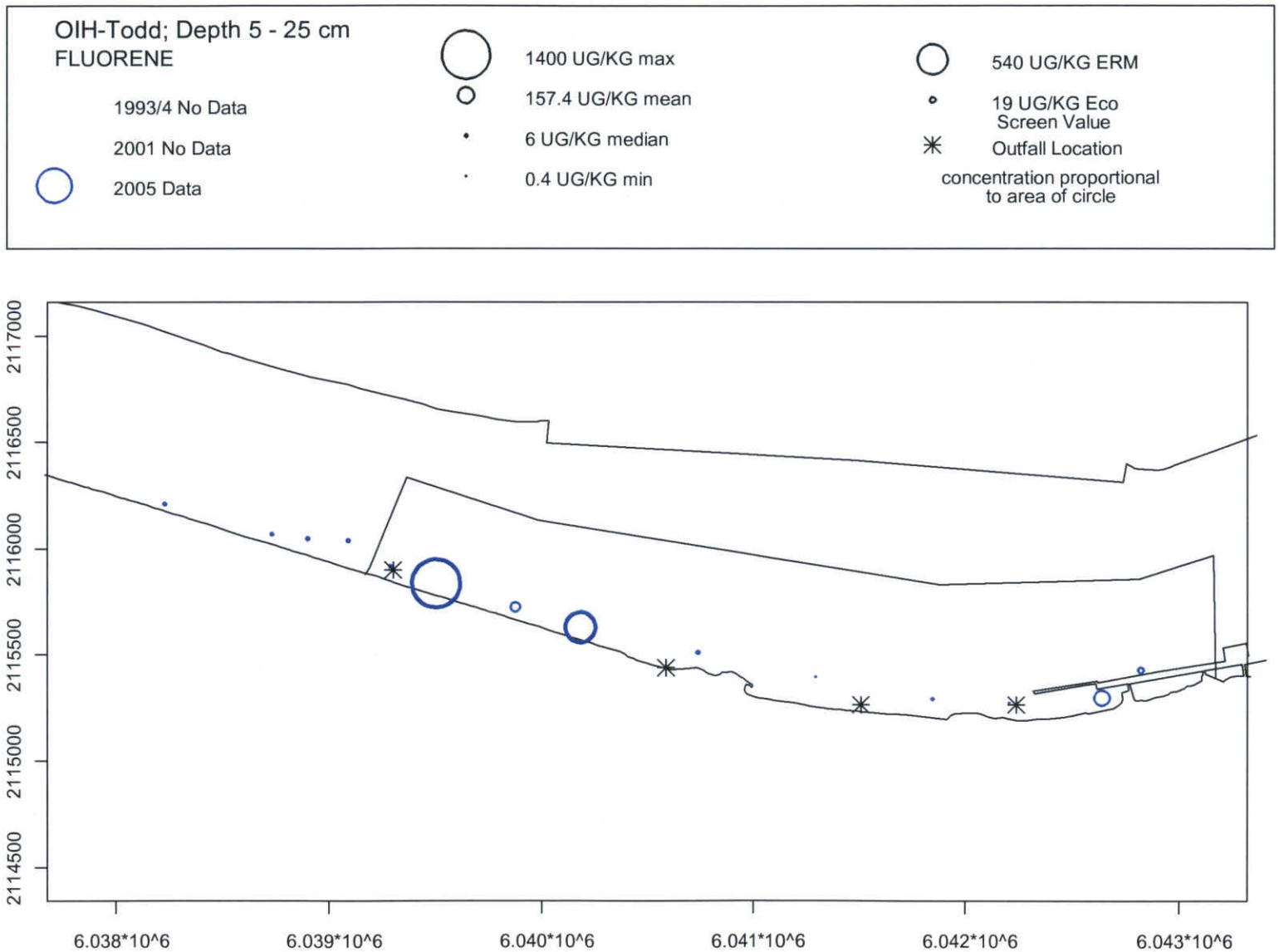

Figure A-196. Bubble Plot of Fluorene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

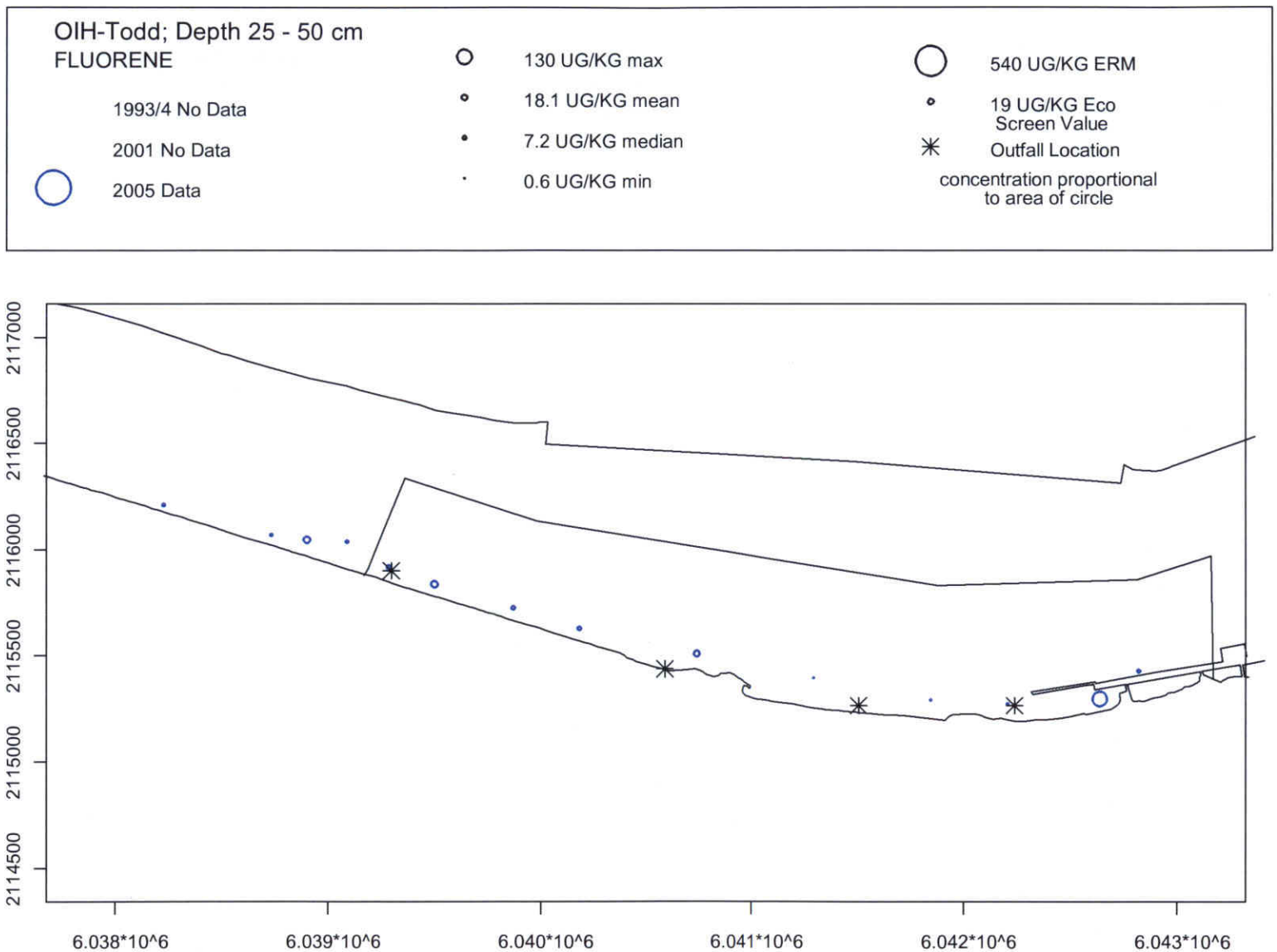

Figure A-197. Bubble Plot of Fluorene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

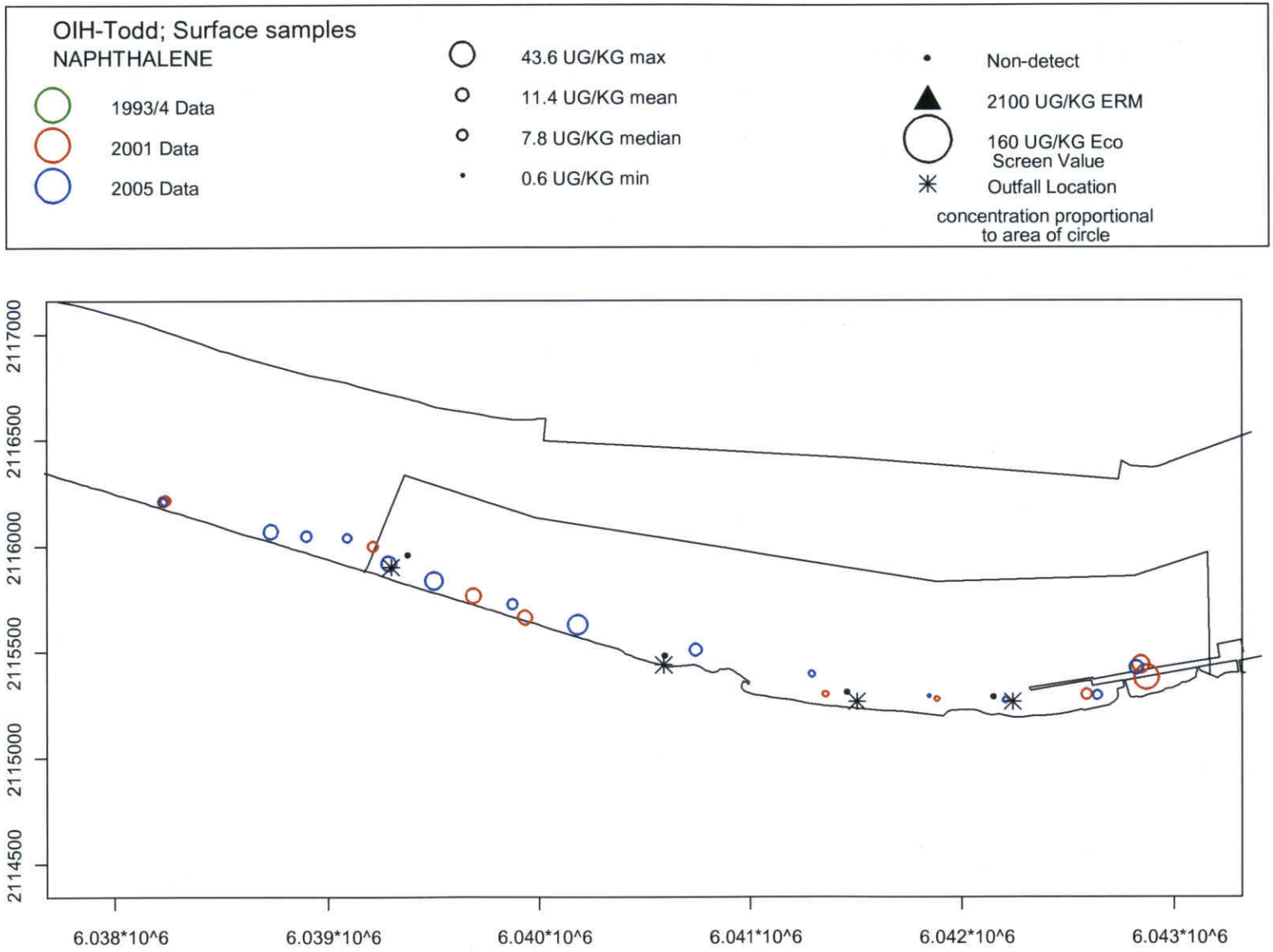

Figure A-198. Bubble Plot of Naphthalene Concentrations in IR Site 20 Surface Sediment by Year.

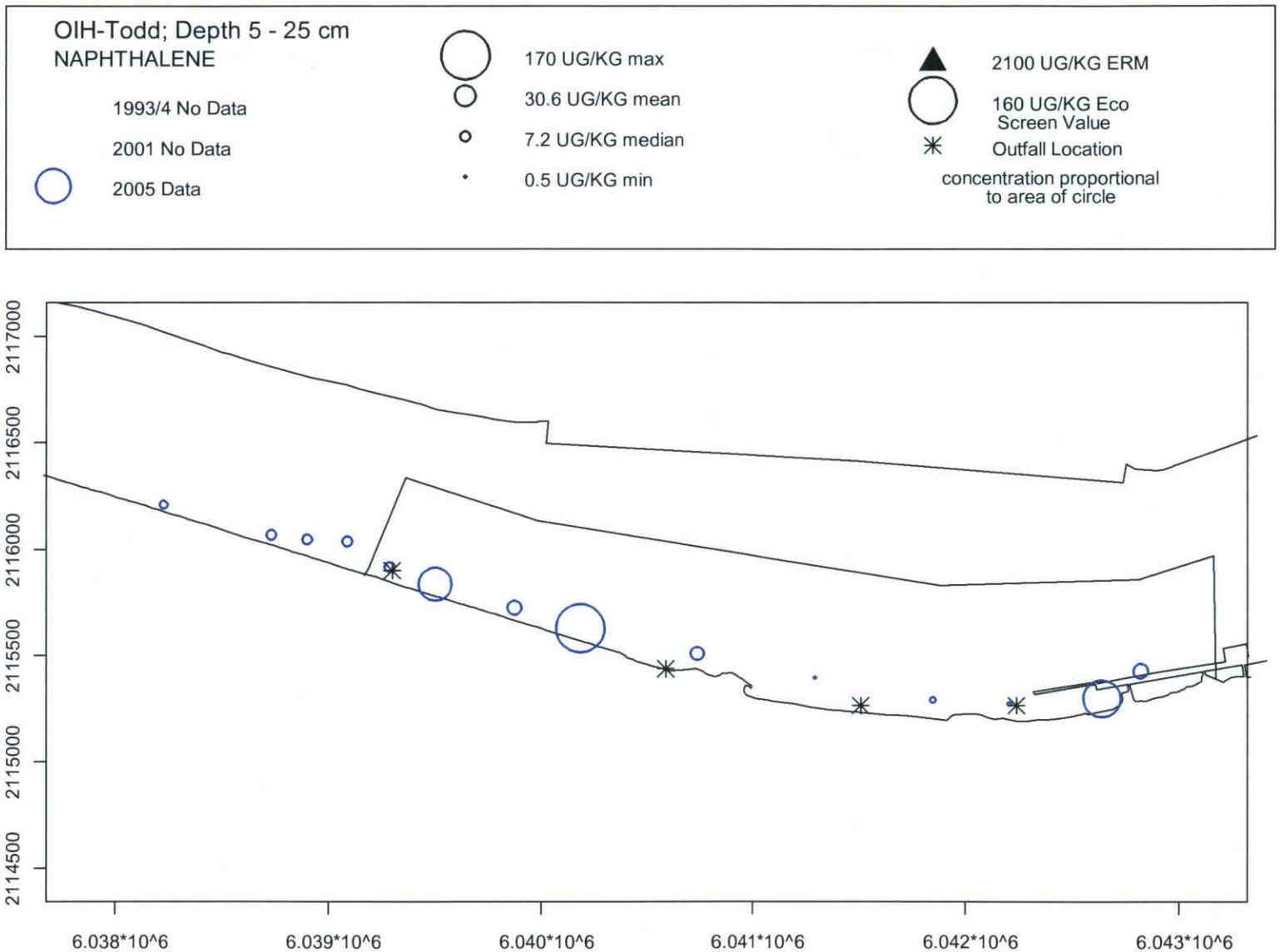

Figure A-199. Bubble Plot of Naphthalene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

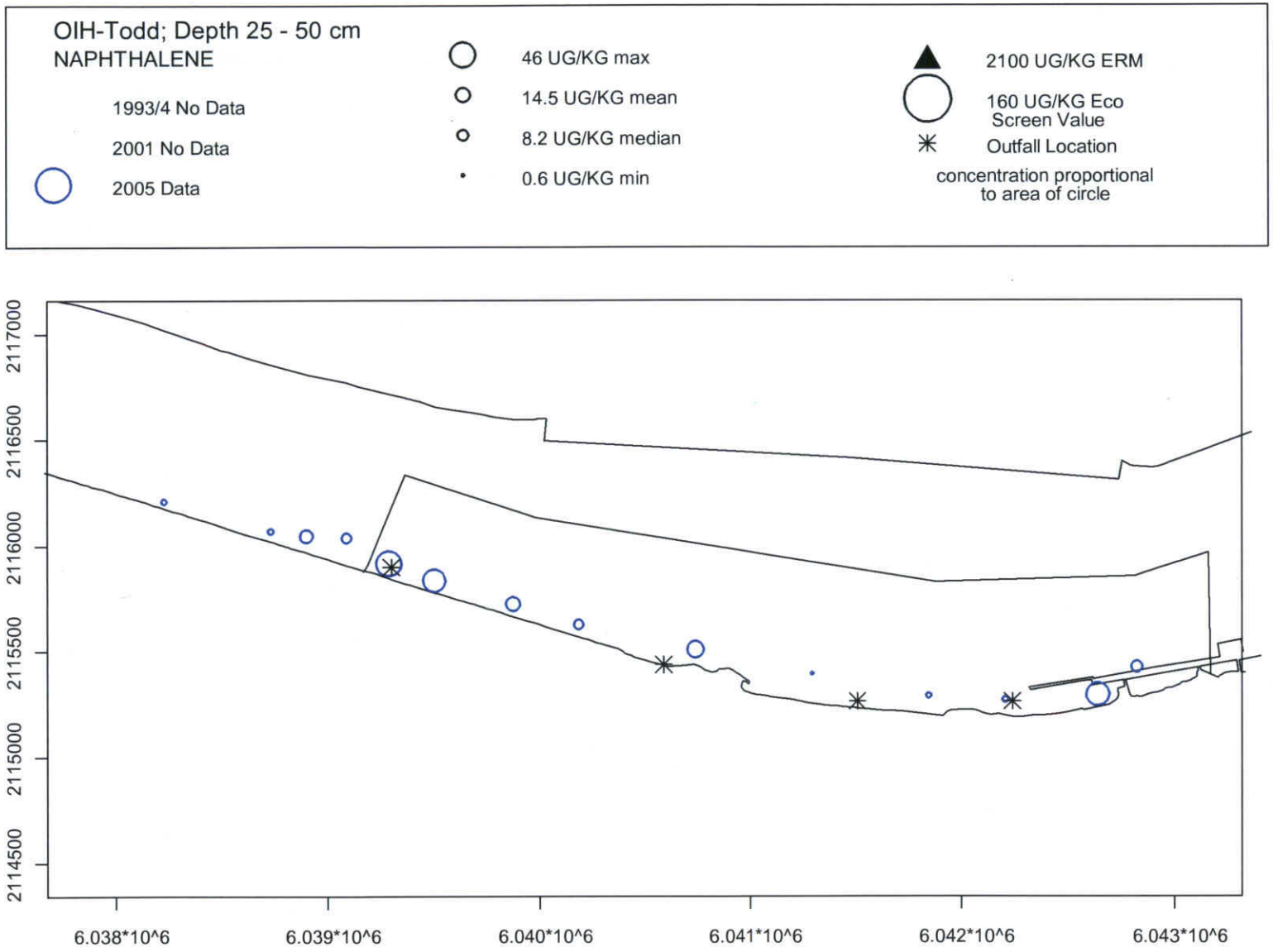

Figure A-200. Bubble Plot of Naphthalene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

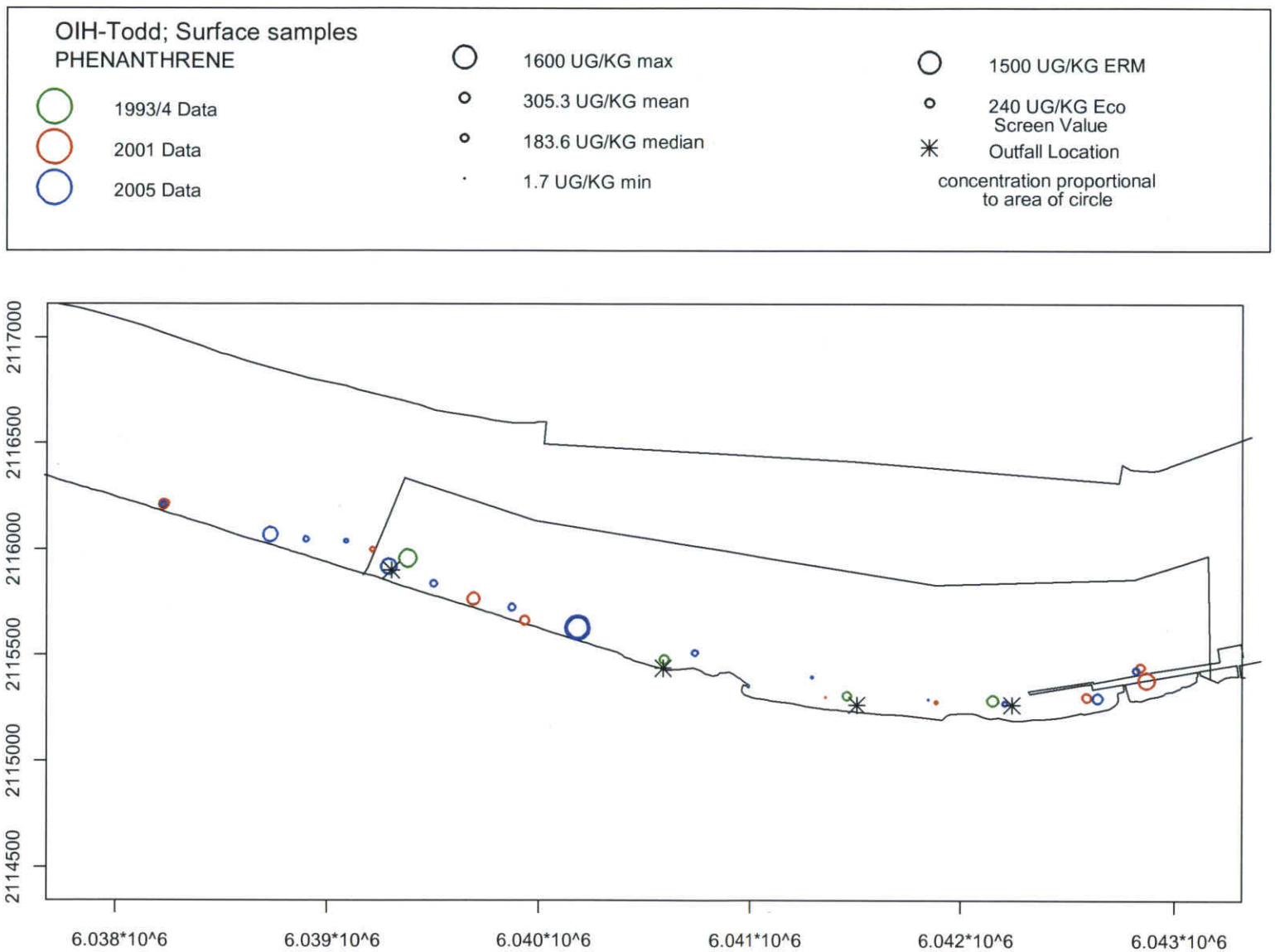

Figure A-201. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment by Year.

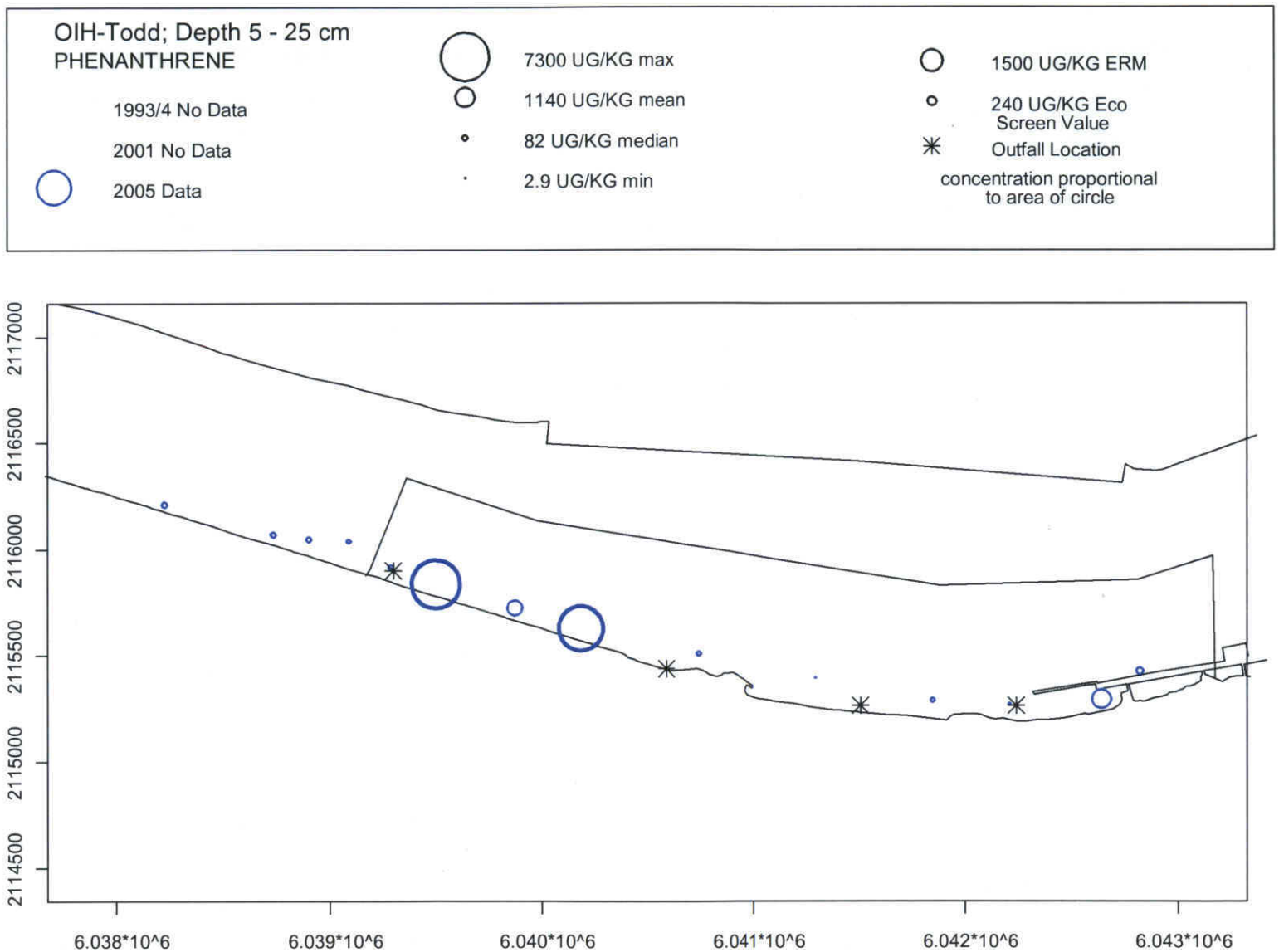

Figure A-202. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

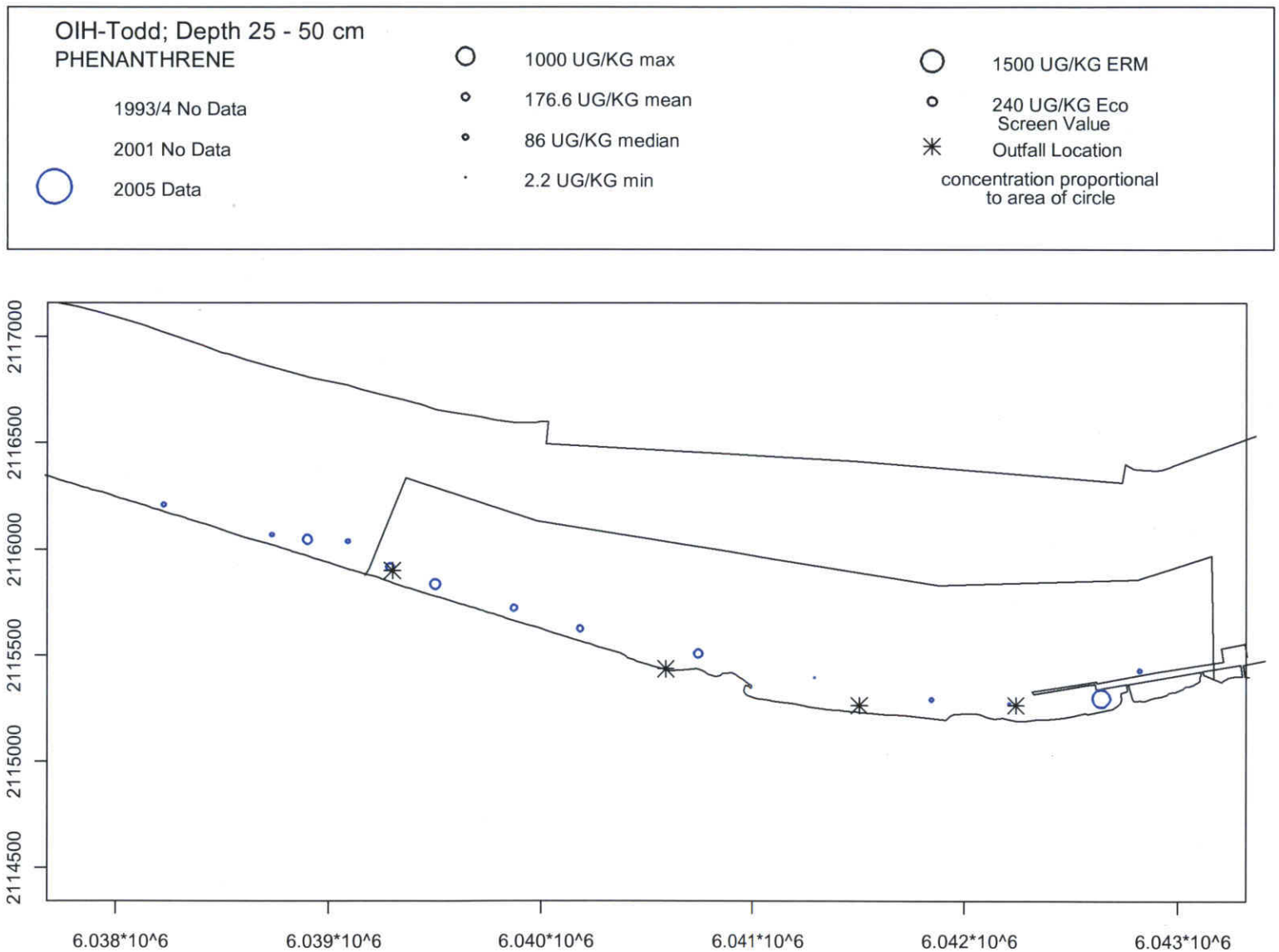

Figure A-203. Bubble Plot of Phenanthrene Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

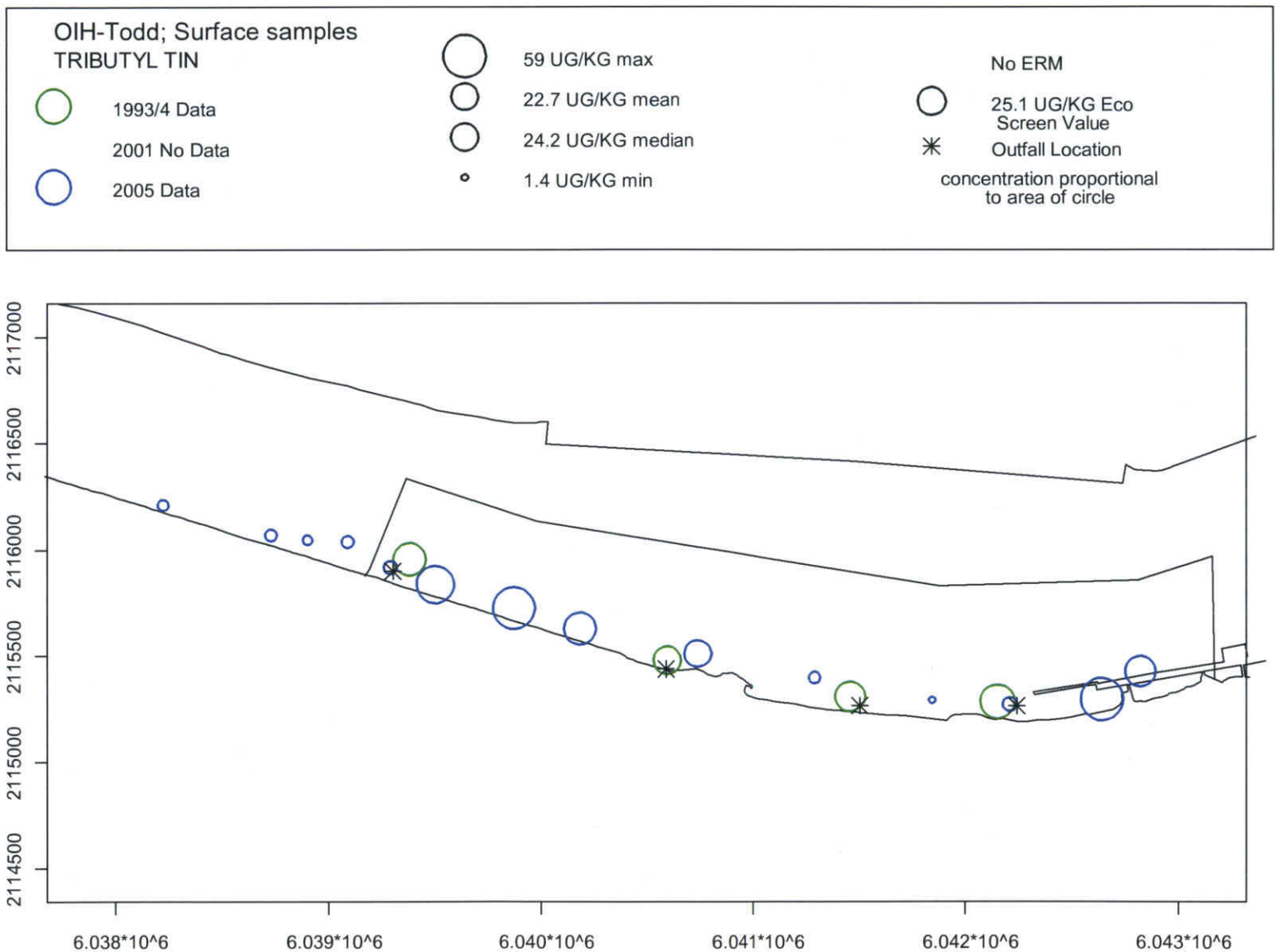

Figure A-204. Bubble Plot of Tributyl Tin Concentrations in IR Site 20 Surface Sediment by Year.

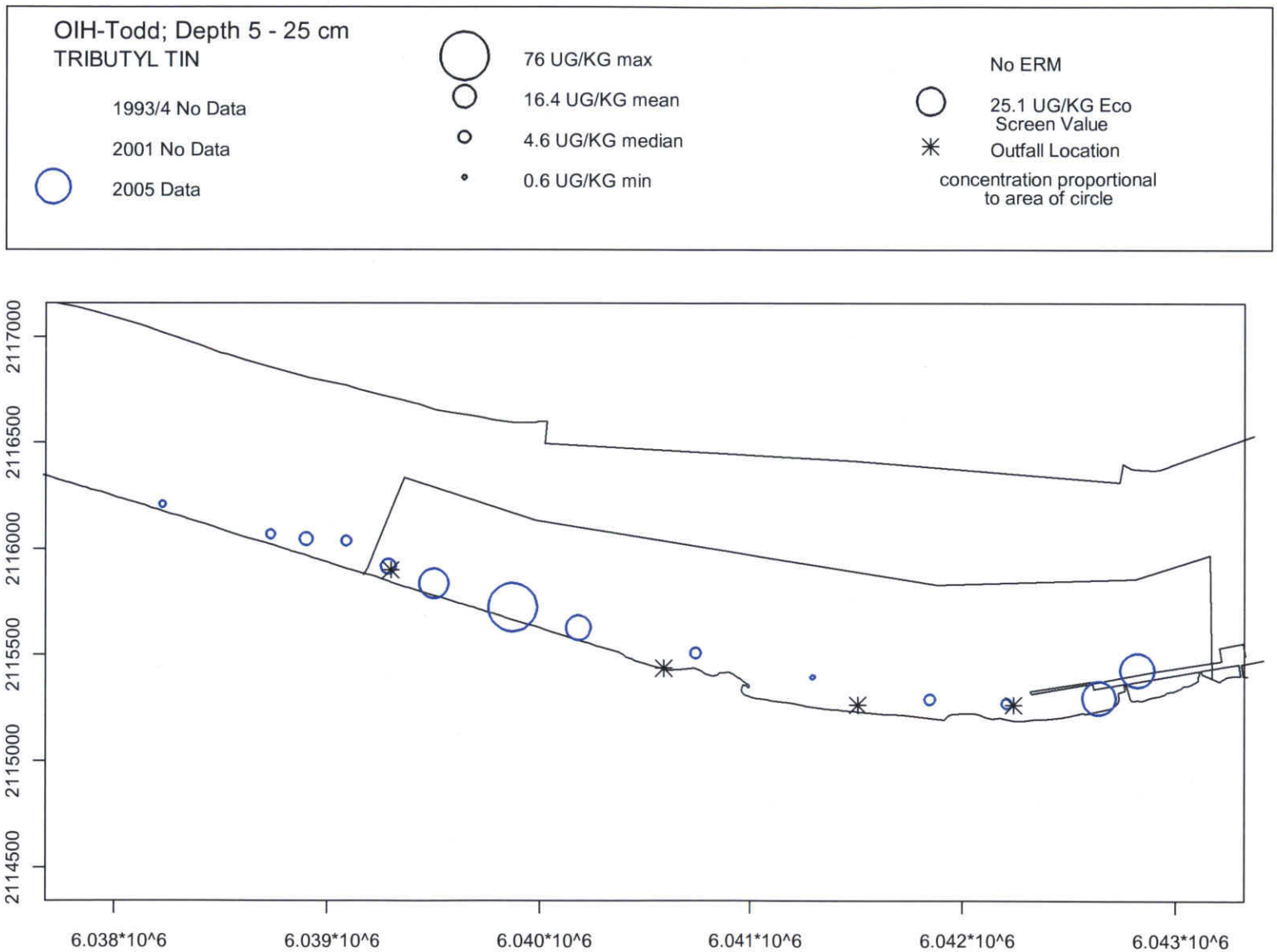

Figure A-205. Bubble Plot of Tributyl Tin Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

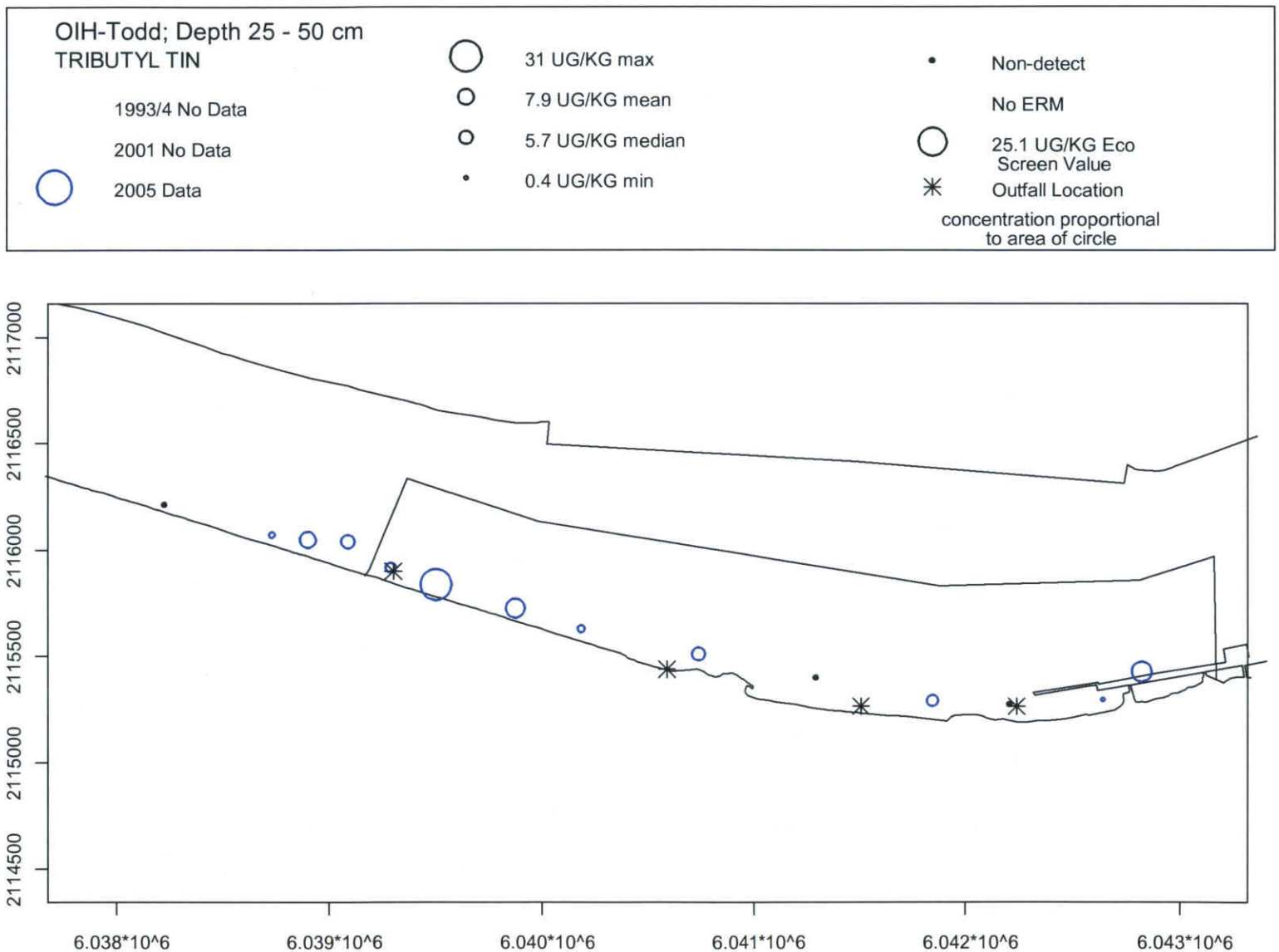

Figure A-206. Bubble Plot of Tributyl Tin Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

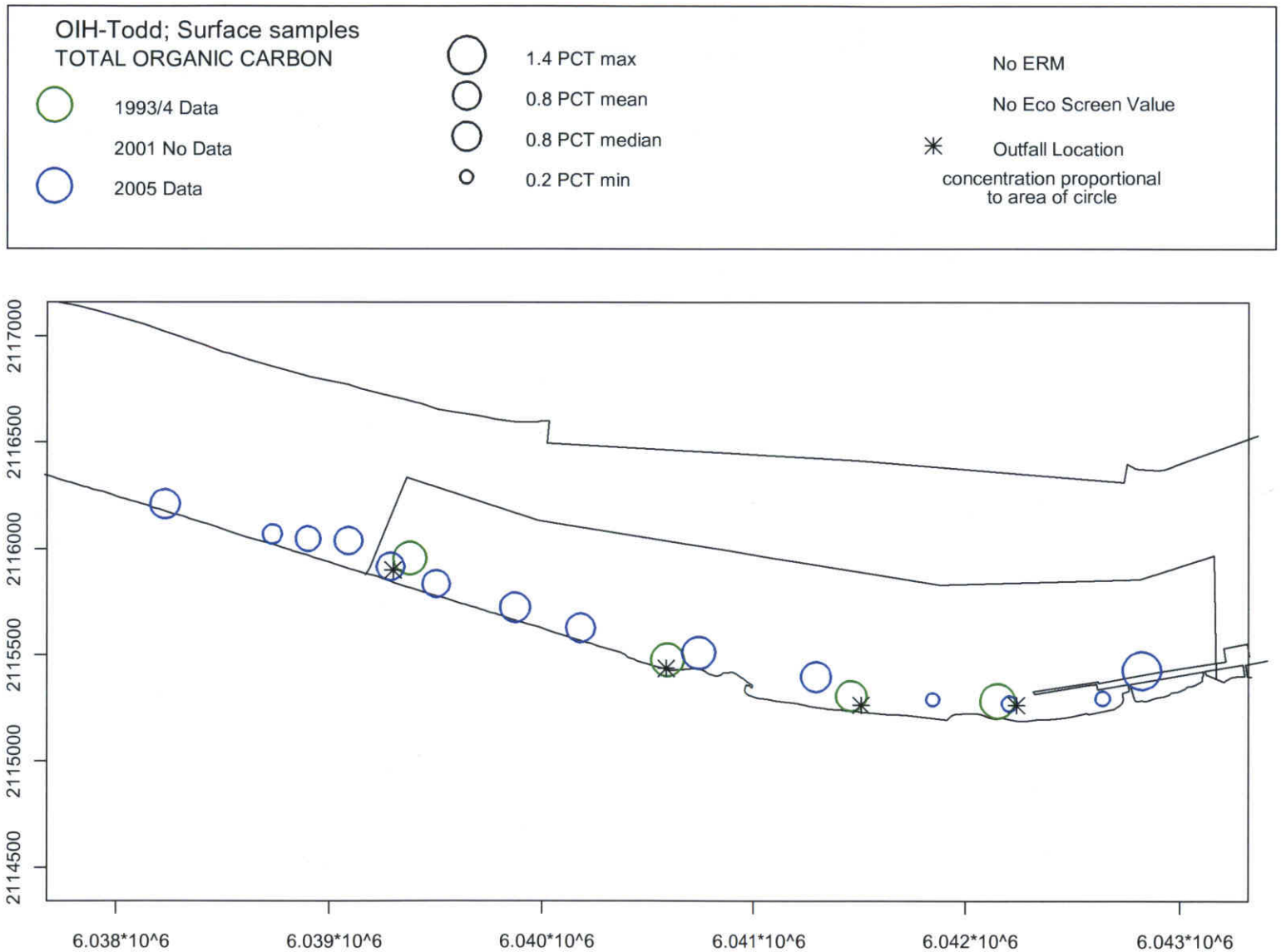

Figure A-207. Bubble Plot of Total Organic Carbon Concentrations in IR Site 20 Surface Sediment by Year.

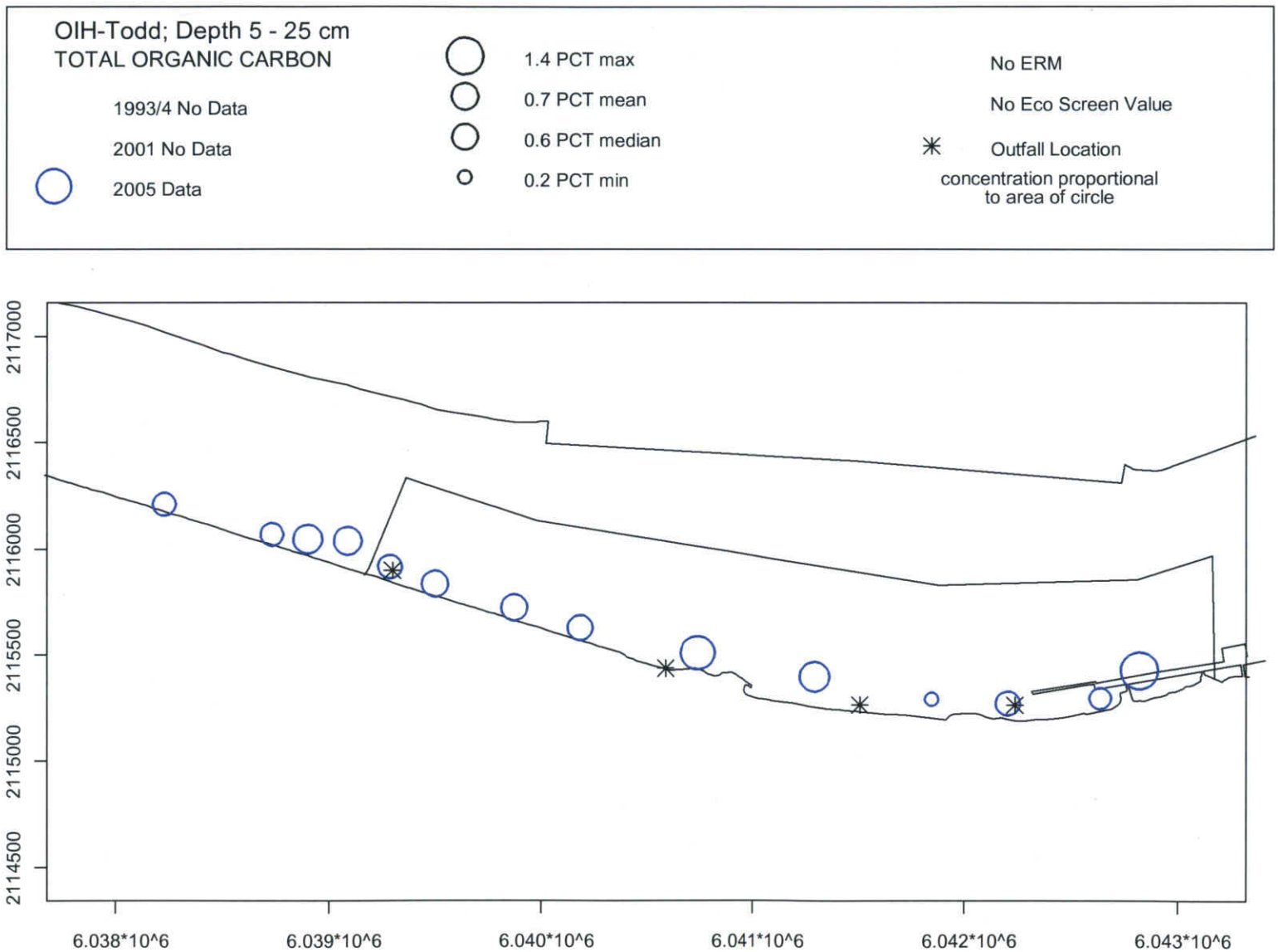

Figure A-208. Bubble Plot of Total Organic Carbon Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

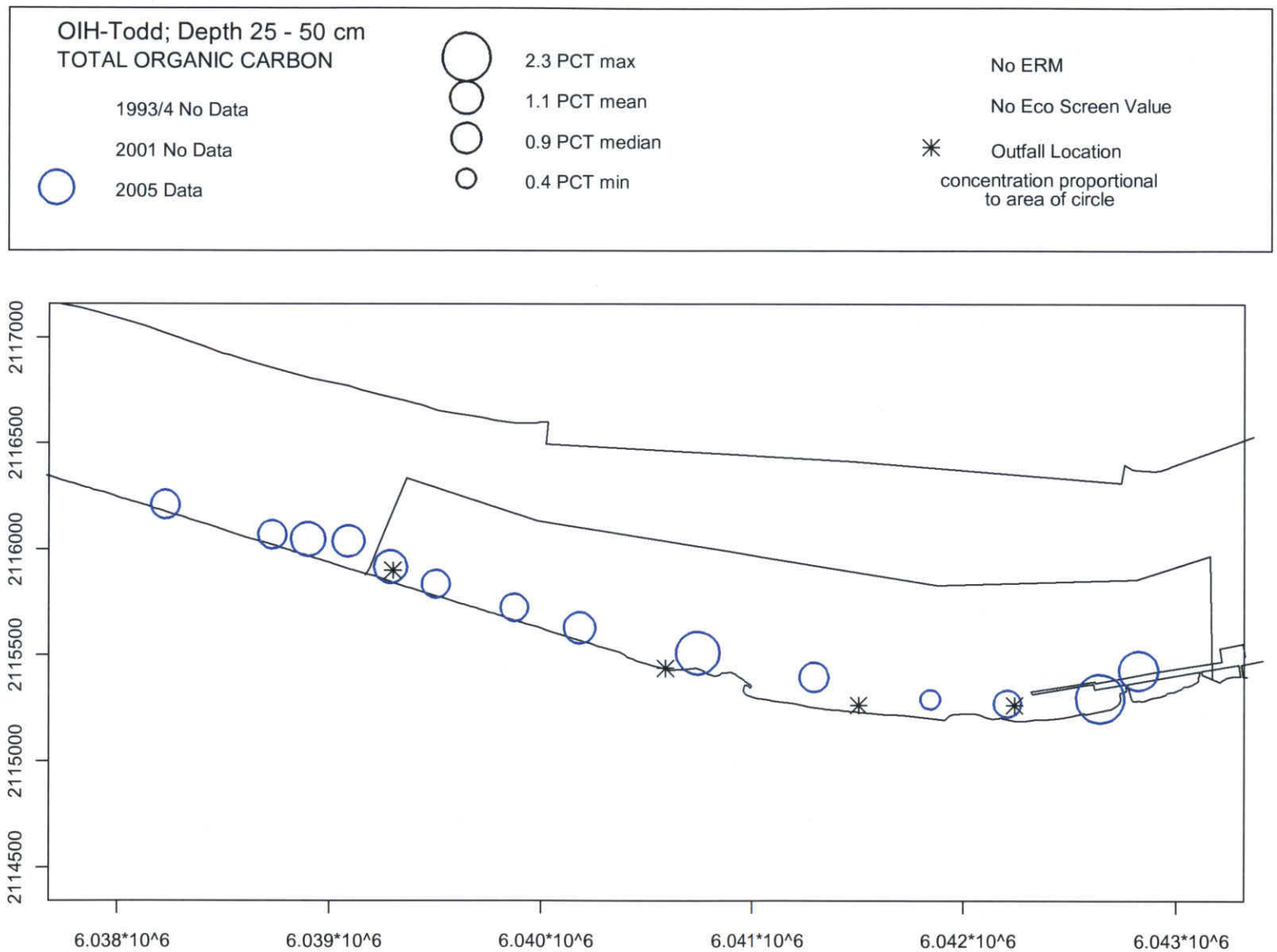

Figure A-209. Bubble Plot of Total Organic Carbon Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

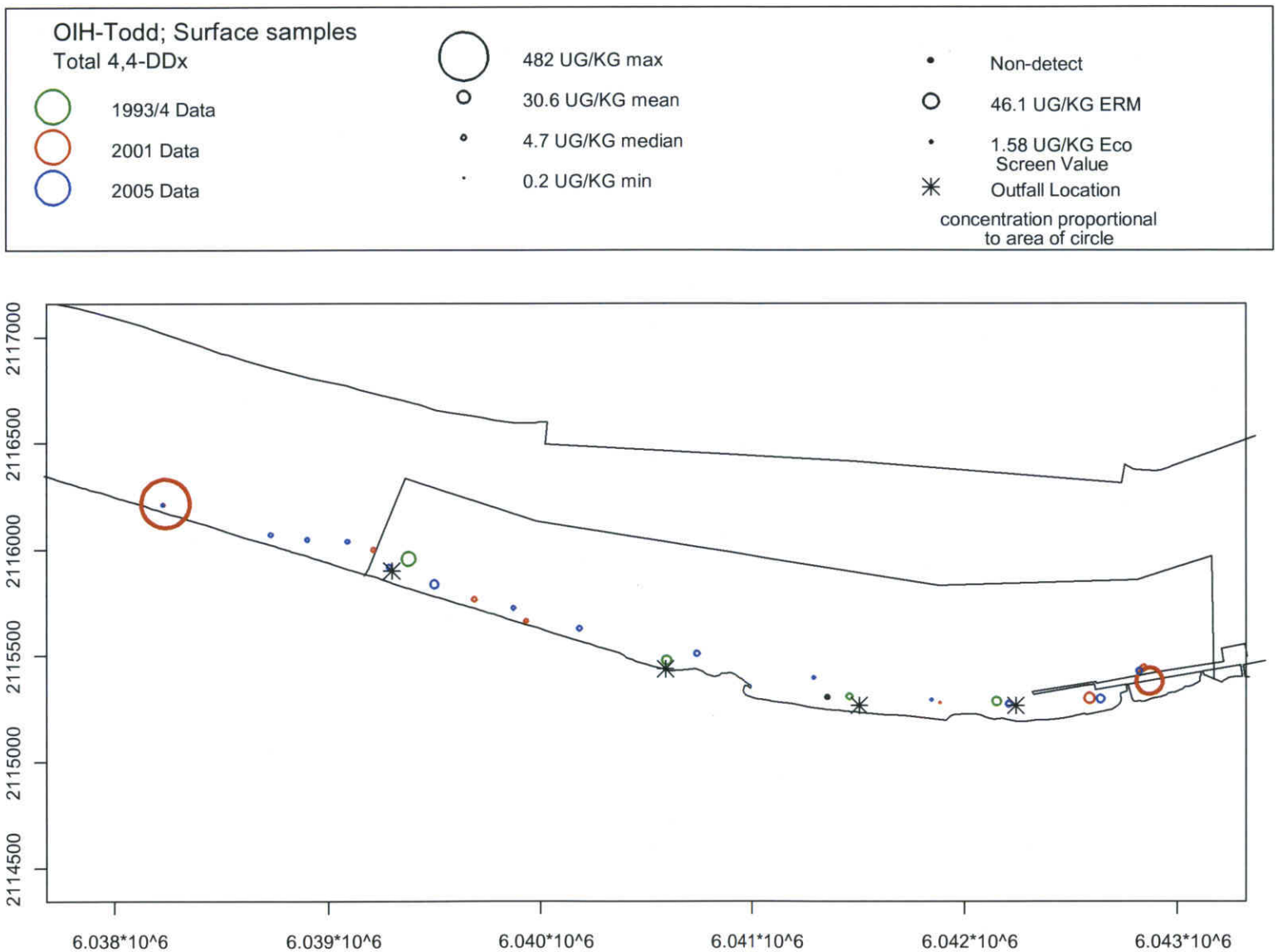

Figure A-210. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 20 Surface Sediment by Year.

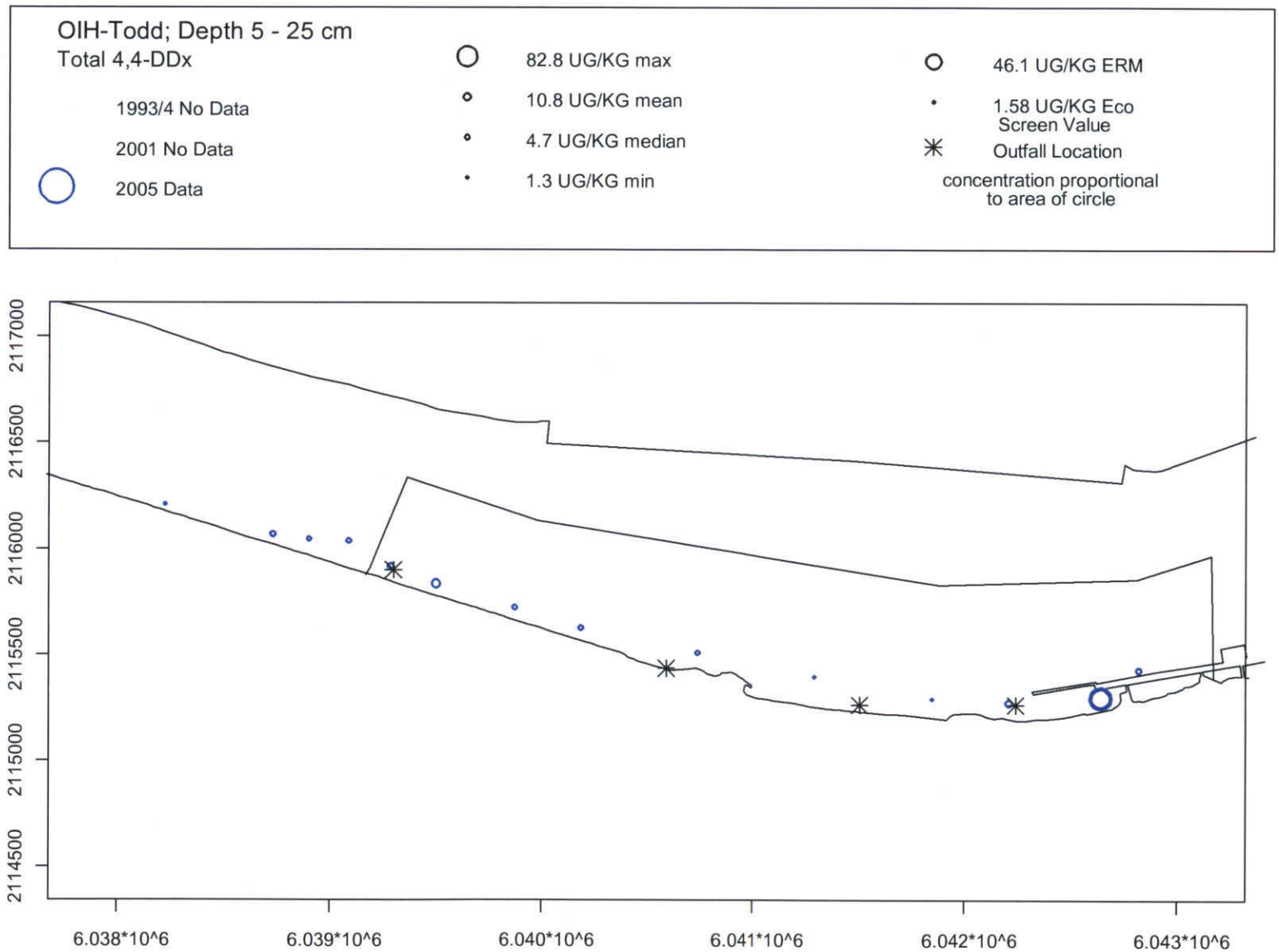

Figure A-211. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

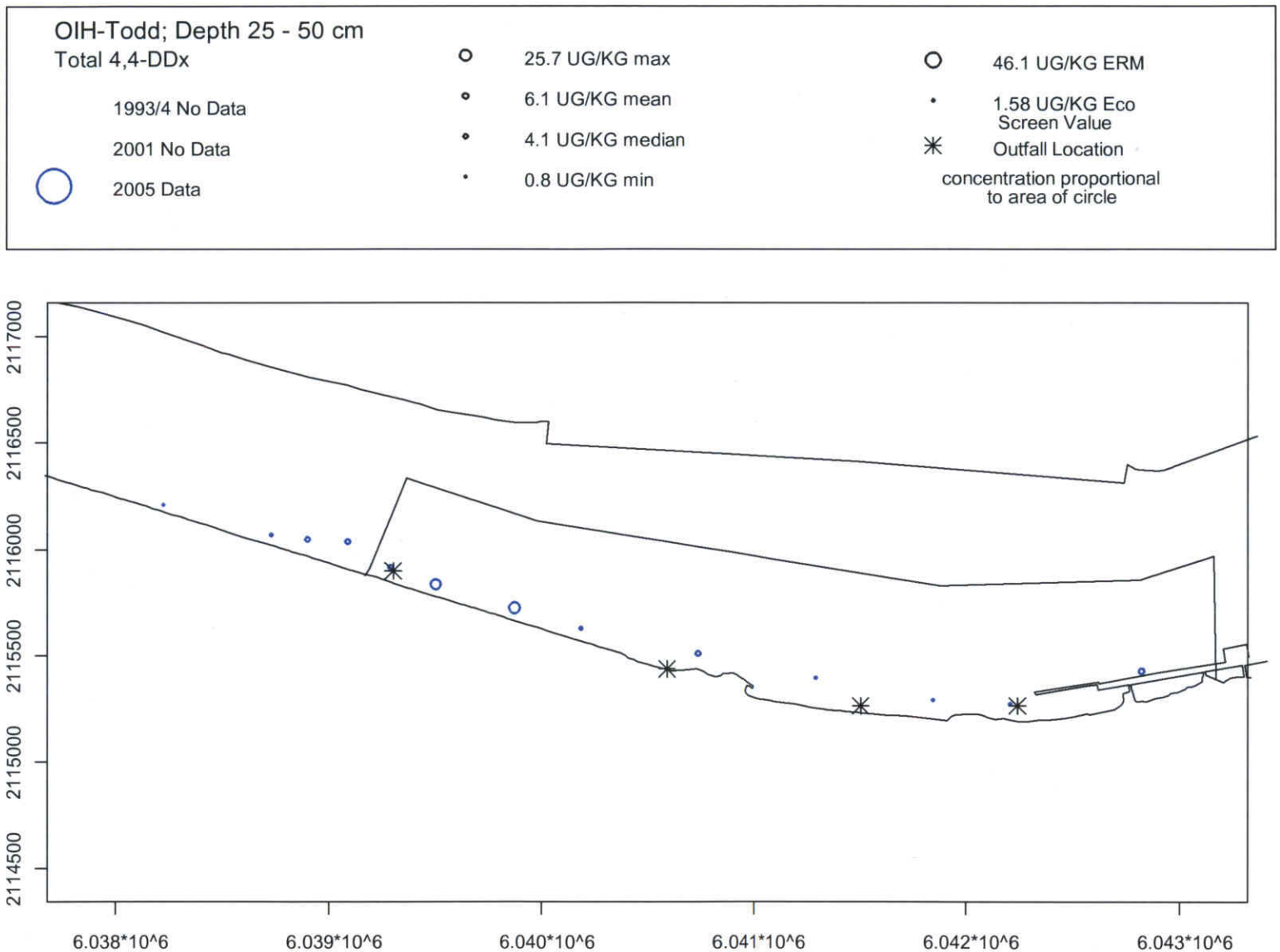

Figure A-212. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

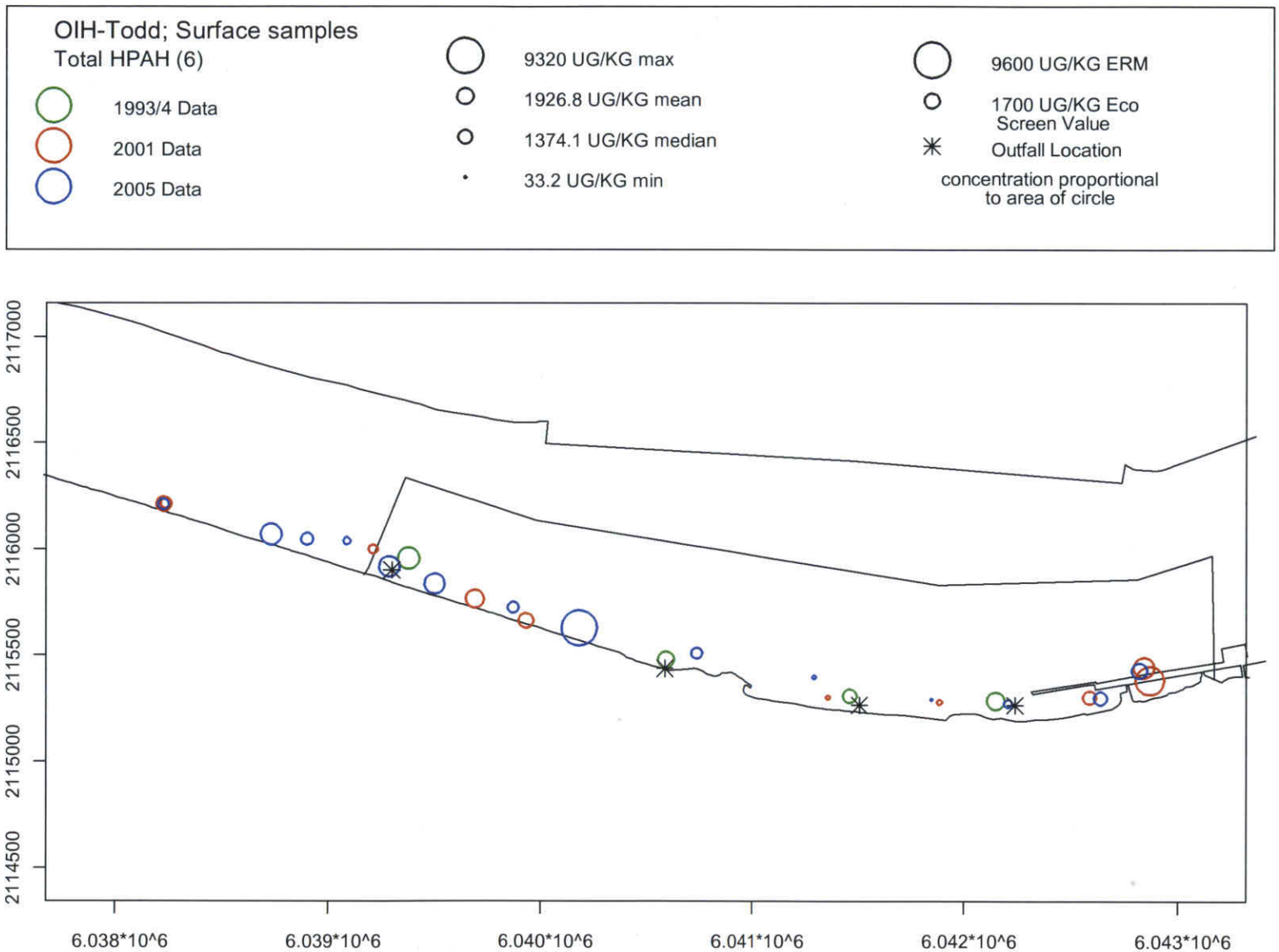

Figure A-213. Bubble Plot of Total HPAH (6) Concentrations in IR Site 20 Surface Sediment by Year.

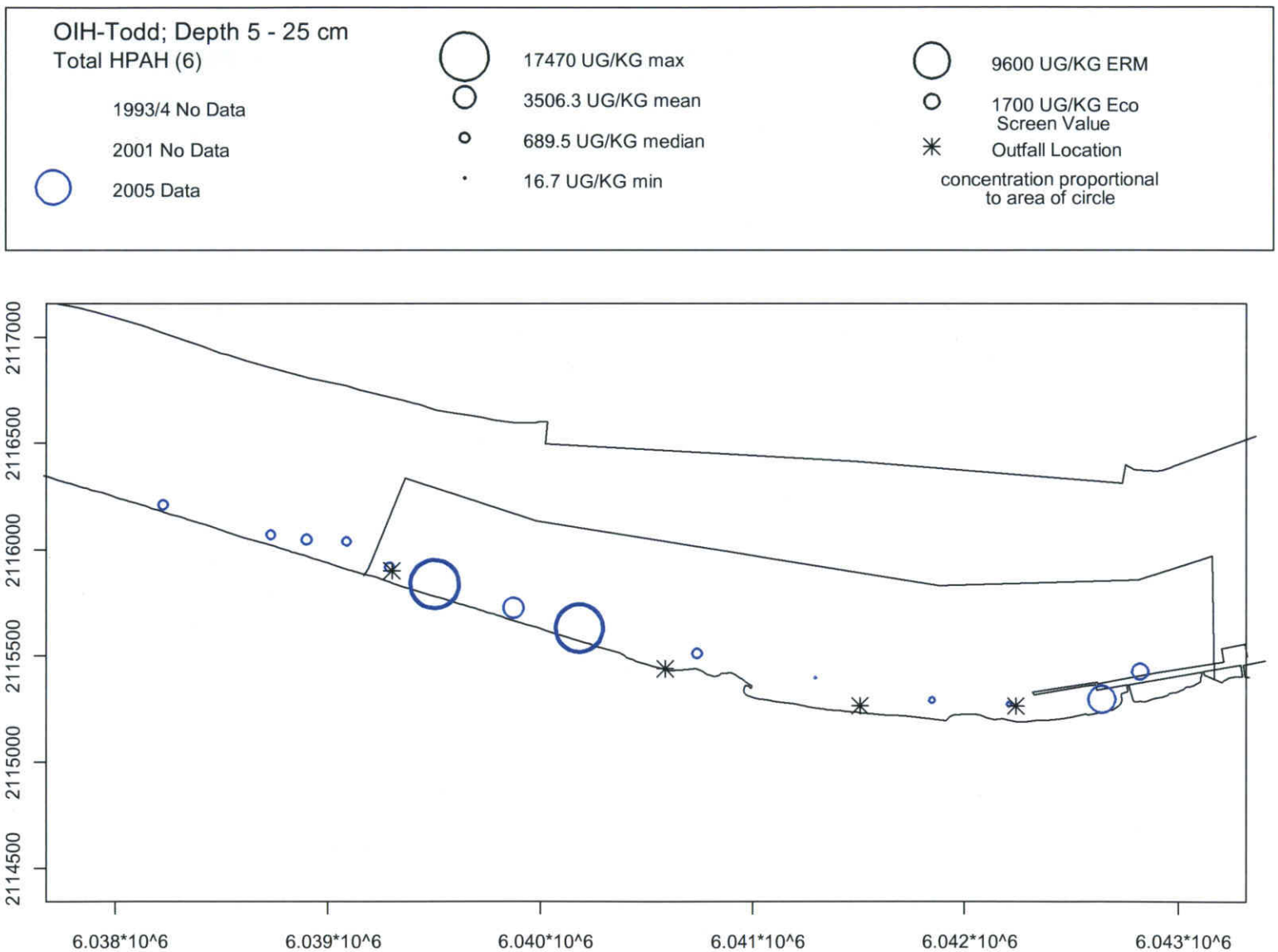

Figure A-214. Bubble Plot of Total HPAH (6) Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

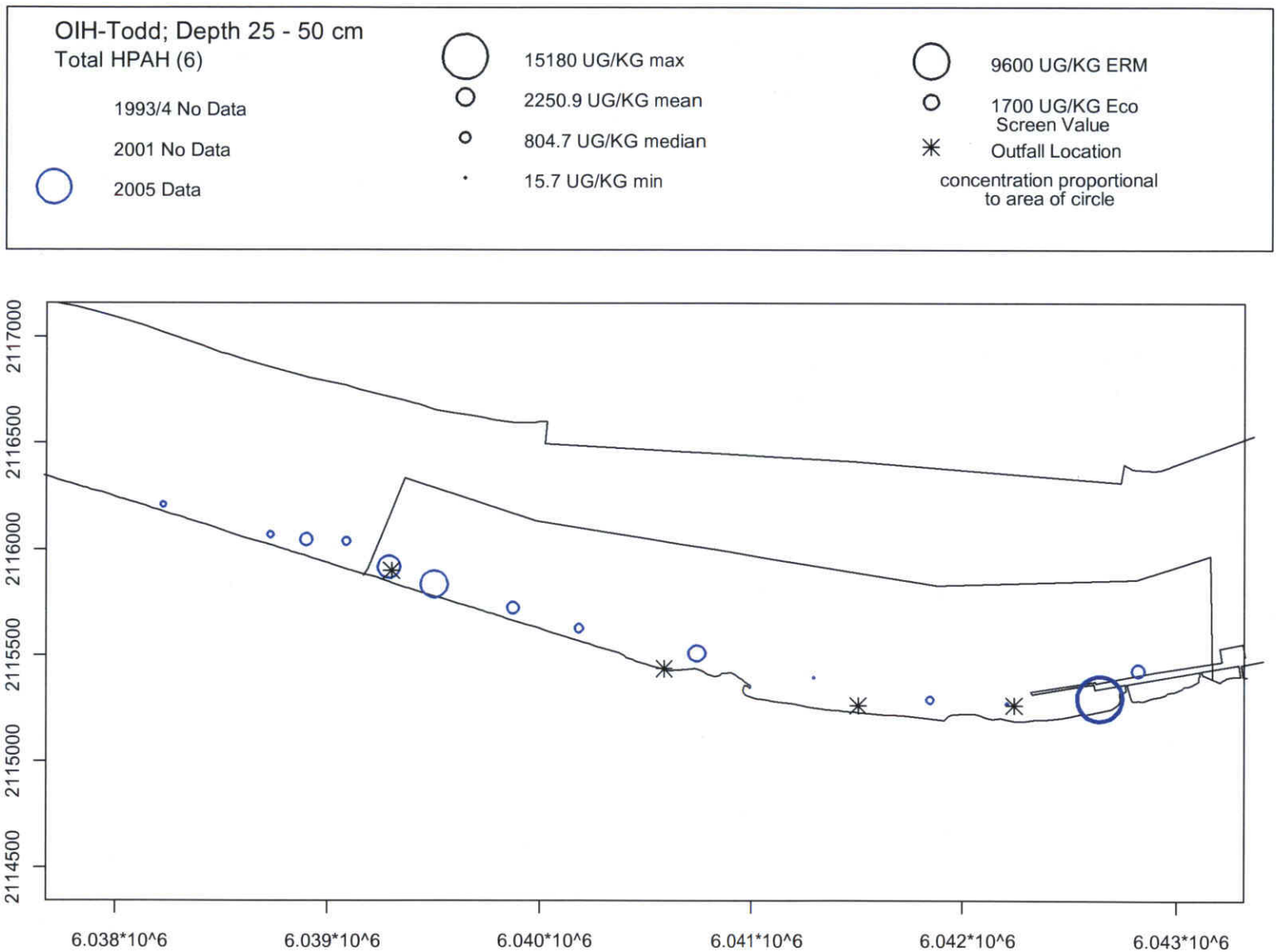

Figure A-215. Bubble Plot of Total HPAH (6) Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

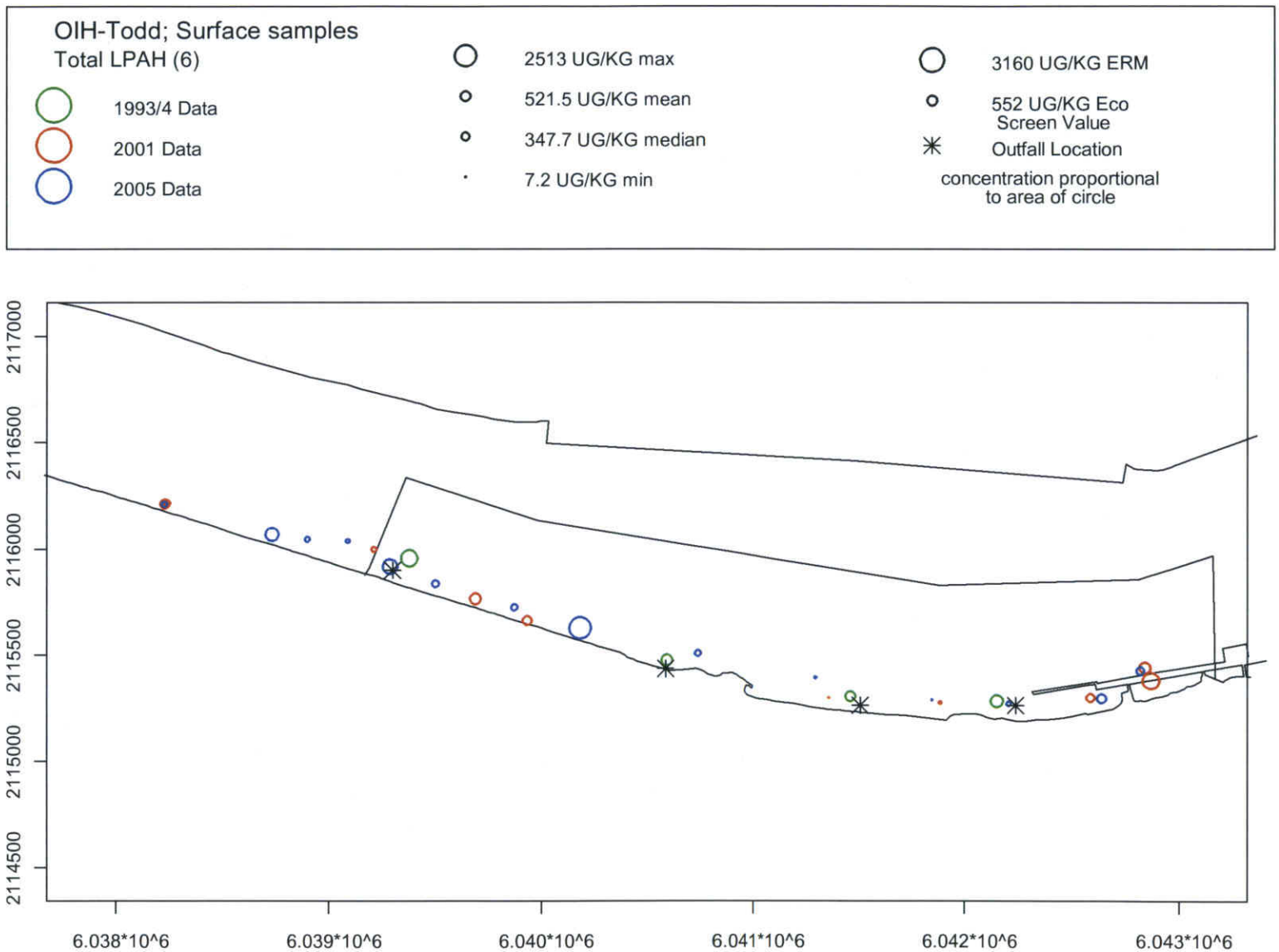

Figure A-216. Bubble Plot of Total LPAH (6) Concentrations in IR Site 20 Surface Sediment by Year.

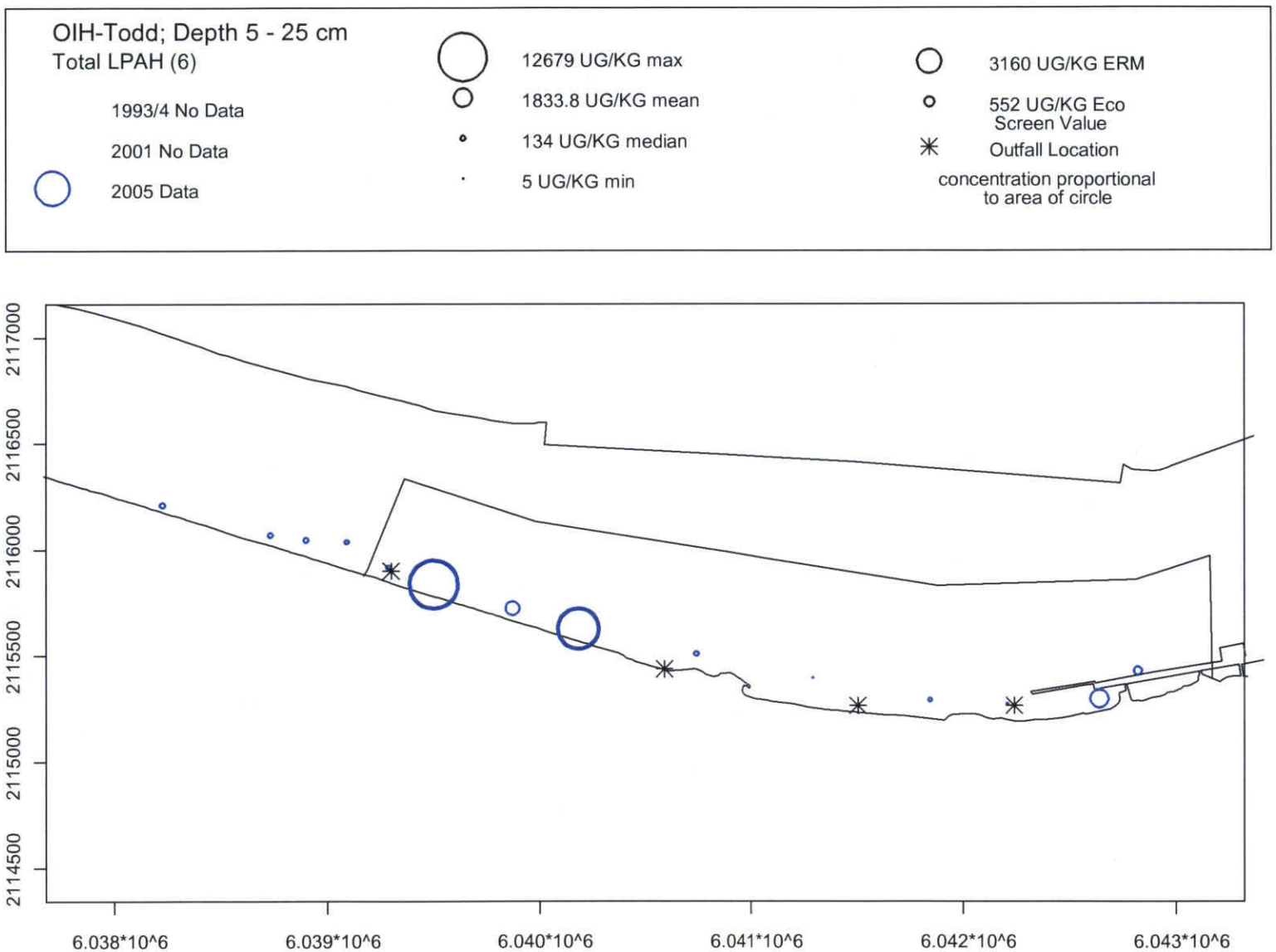

Figure A-217. Bubble Plot of Total LPAH (6) Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

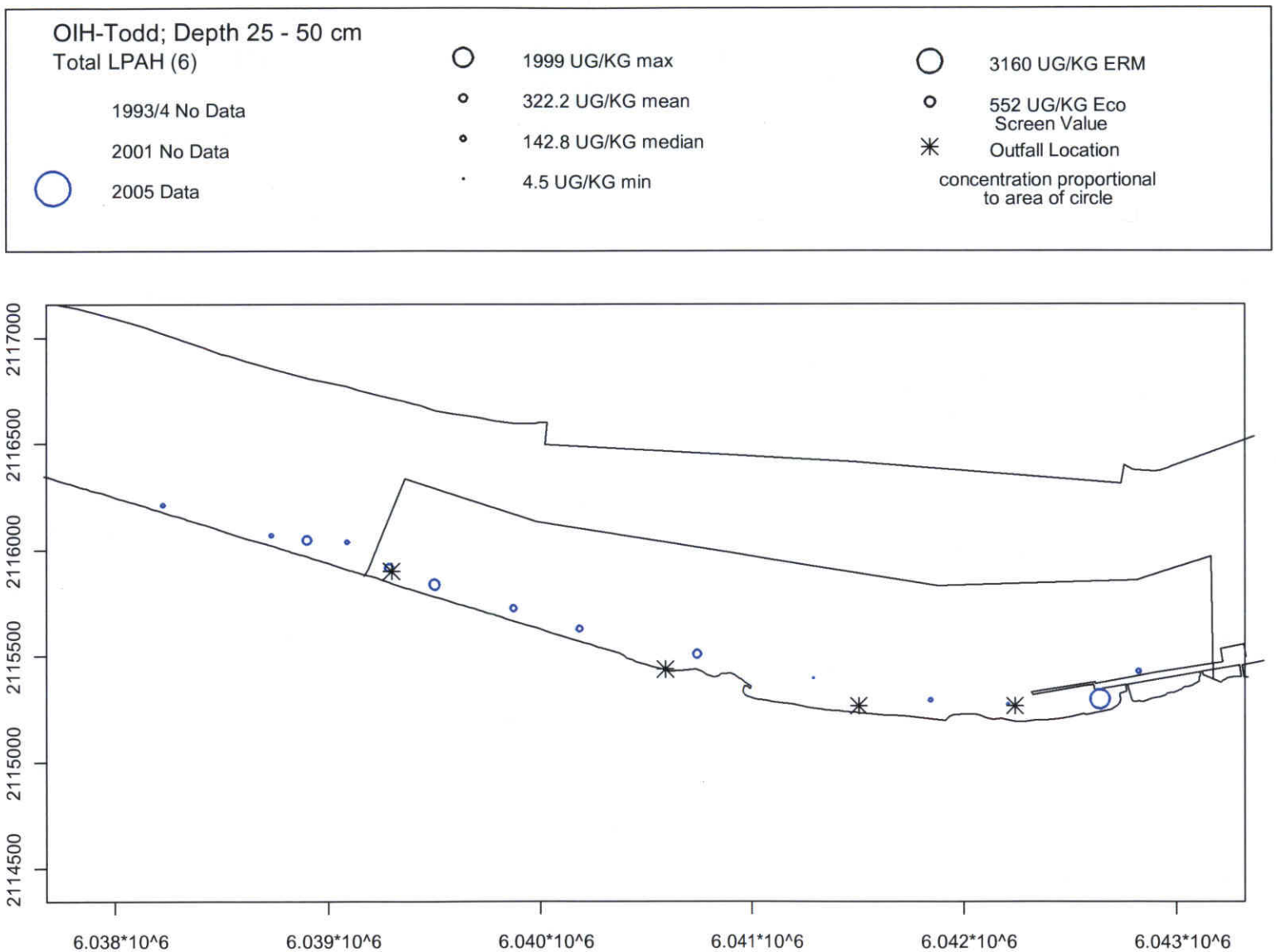

Figure A-218. Bubble Plot of Total LPAH (6) Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

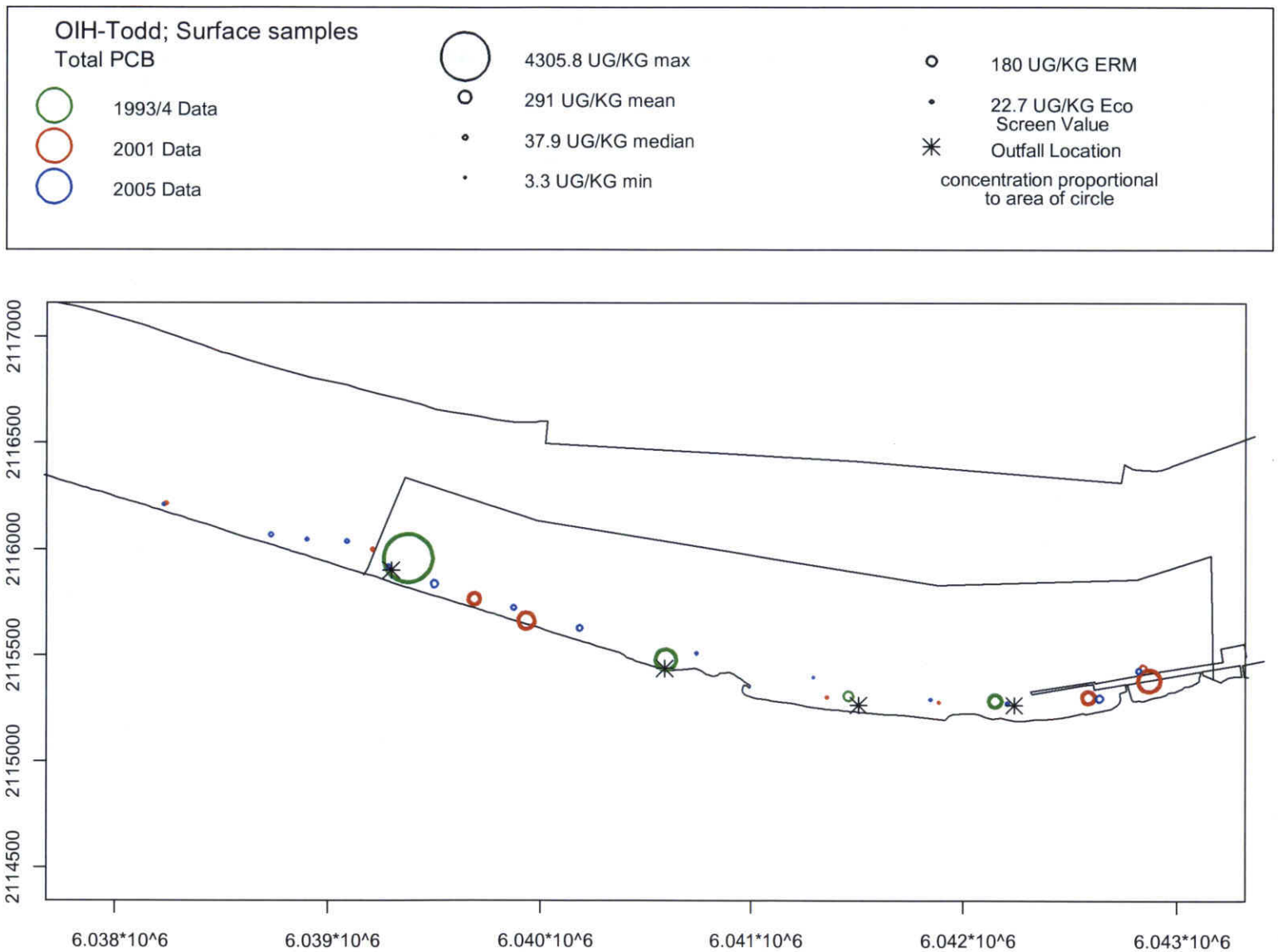

Figure A-219. Bubble Plot of Total PCB Concentrations in IR Site 20 Surface Sediment by Year.

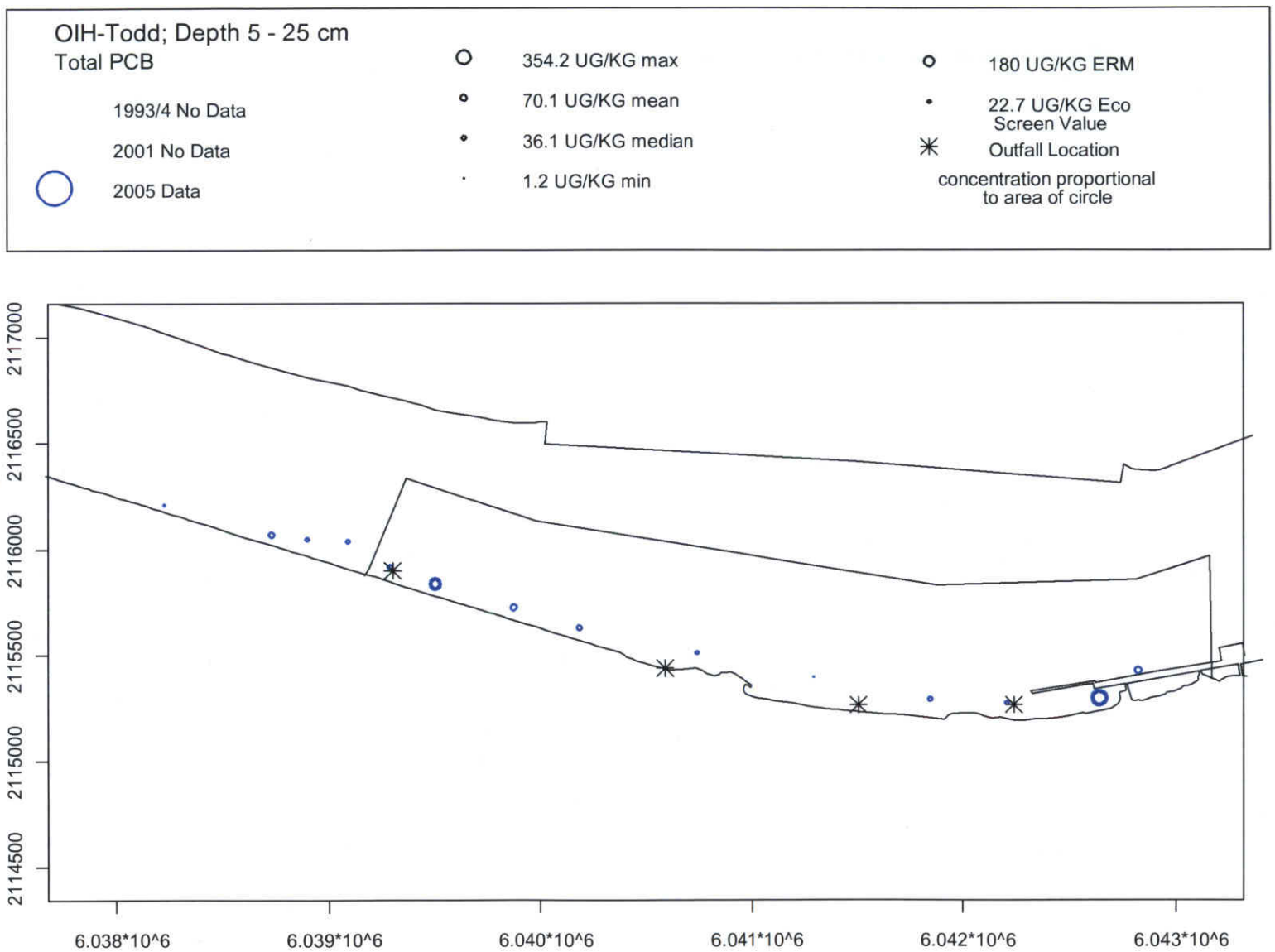

Figure A-220. Bubble Plot of Total PCB Concentrations in IR Site 20 Surface Sediment at 5-25 cm Depth.

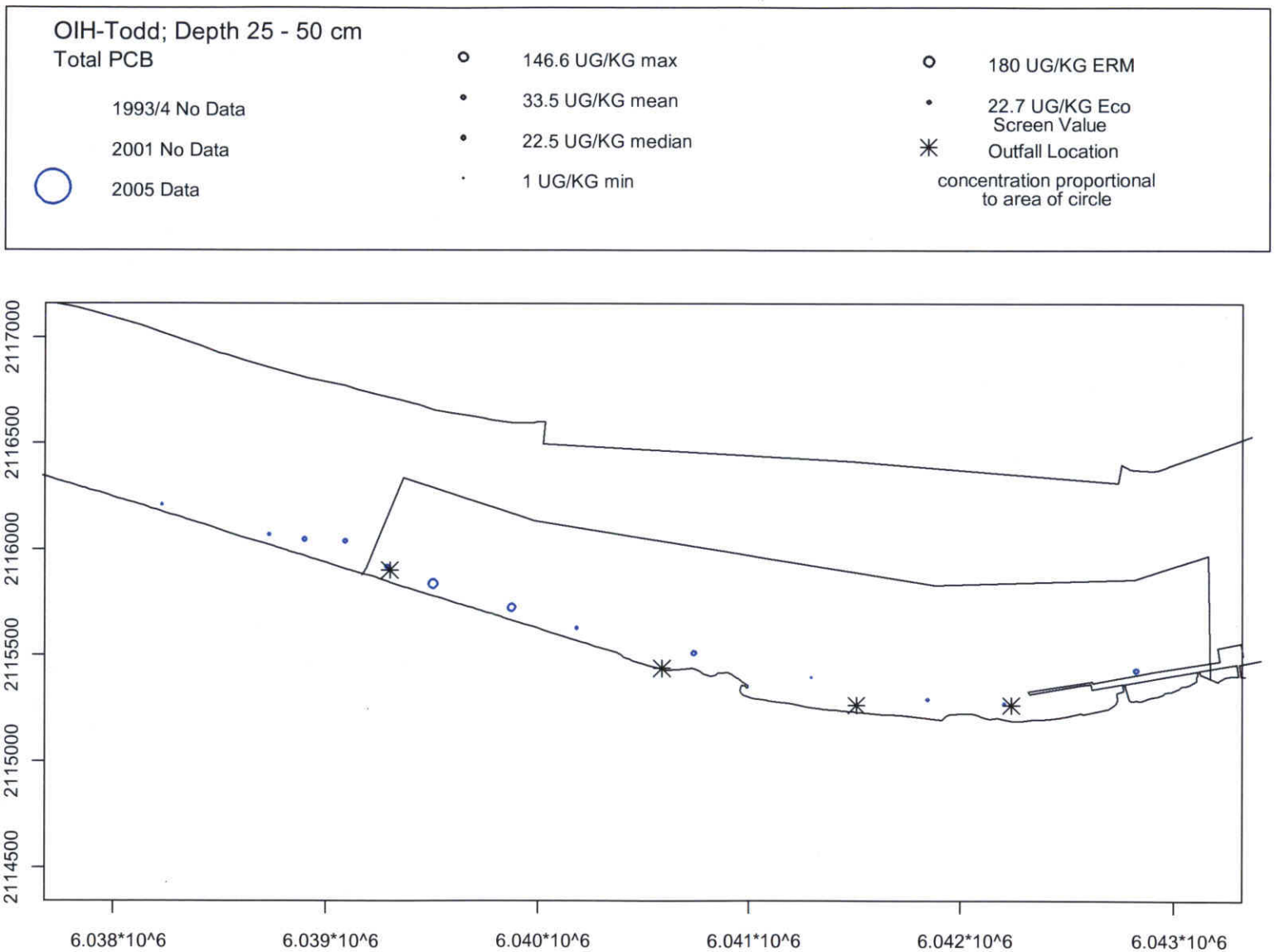

Figure A-221. Bubble Plot of Total PCB Concentrations in IR Site 20 Surface Sediment at 25-50 cm Depth.

IR Site 24 (Pier Area) Box and Bubble Plots

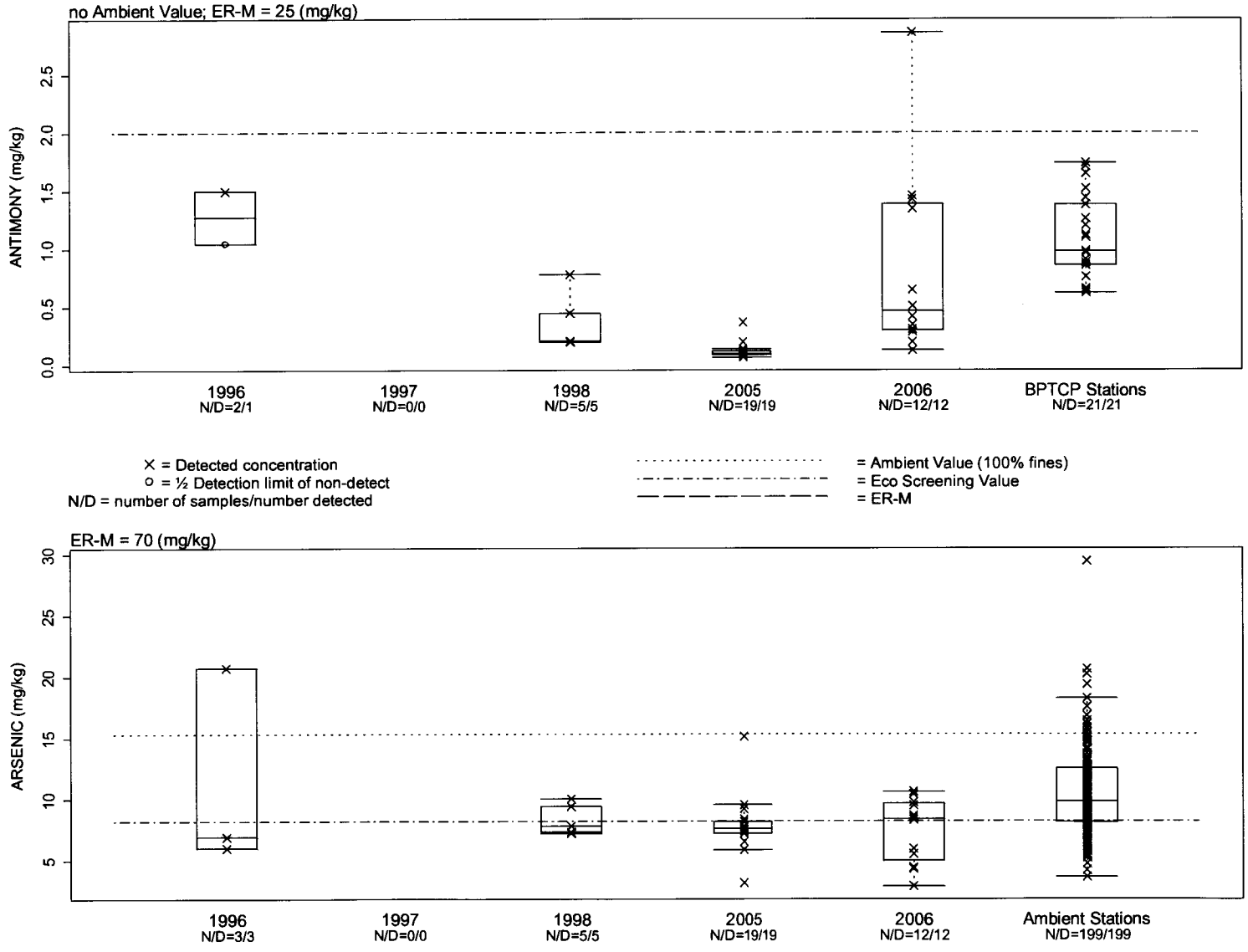

Figure A-222. Box Plots of Antimony and Arsenic Concentrations in IR Site 24 and Reference Surface Sediments by Year.

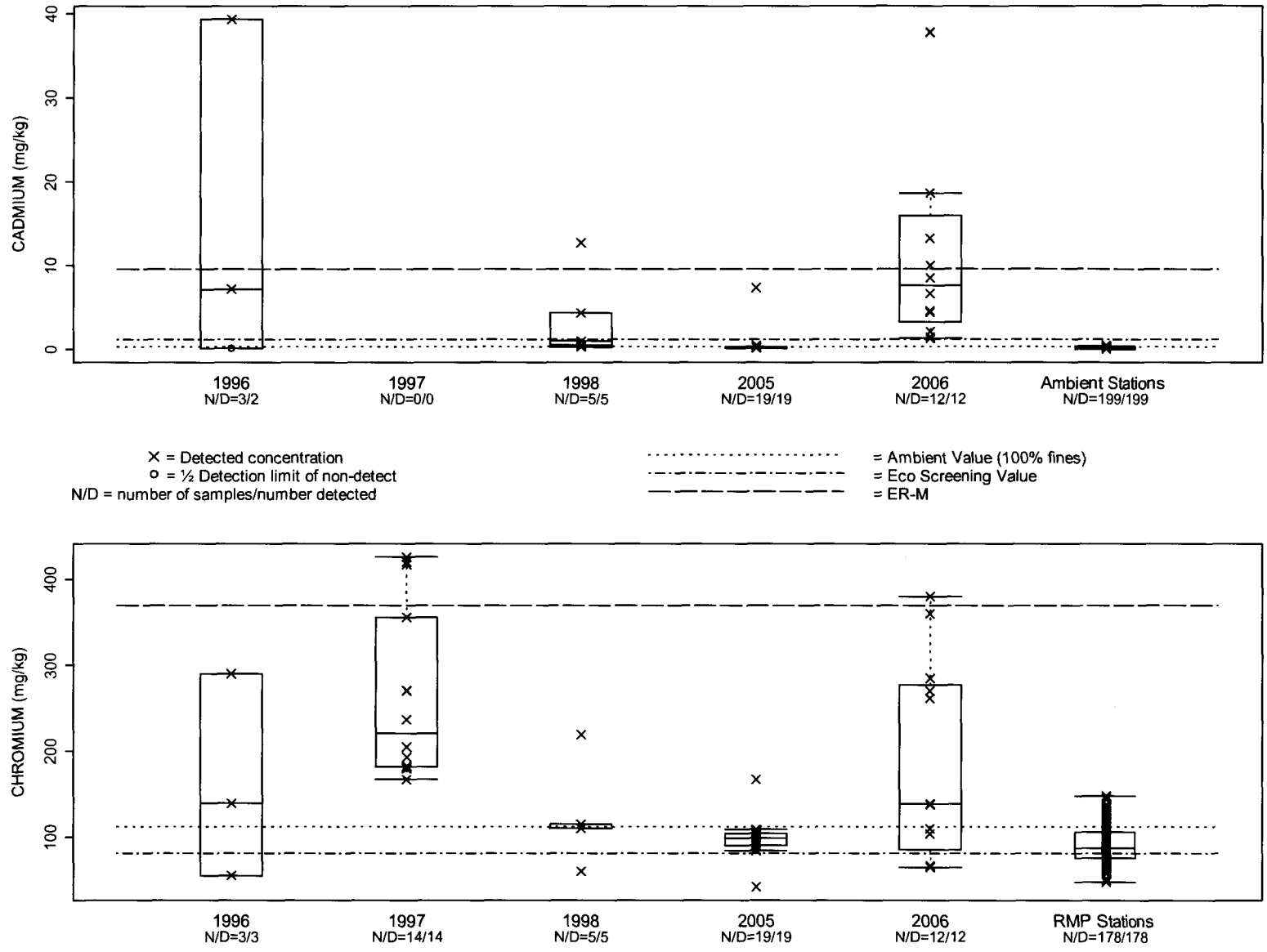

Figure A-223. Box Plots of Cadmium and Chromium Concentrations in IR Site 24 and Reference Surface Sediments by Year.

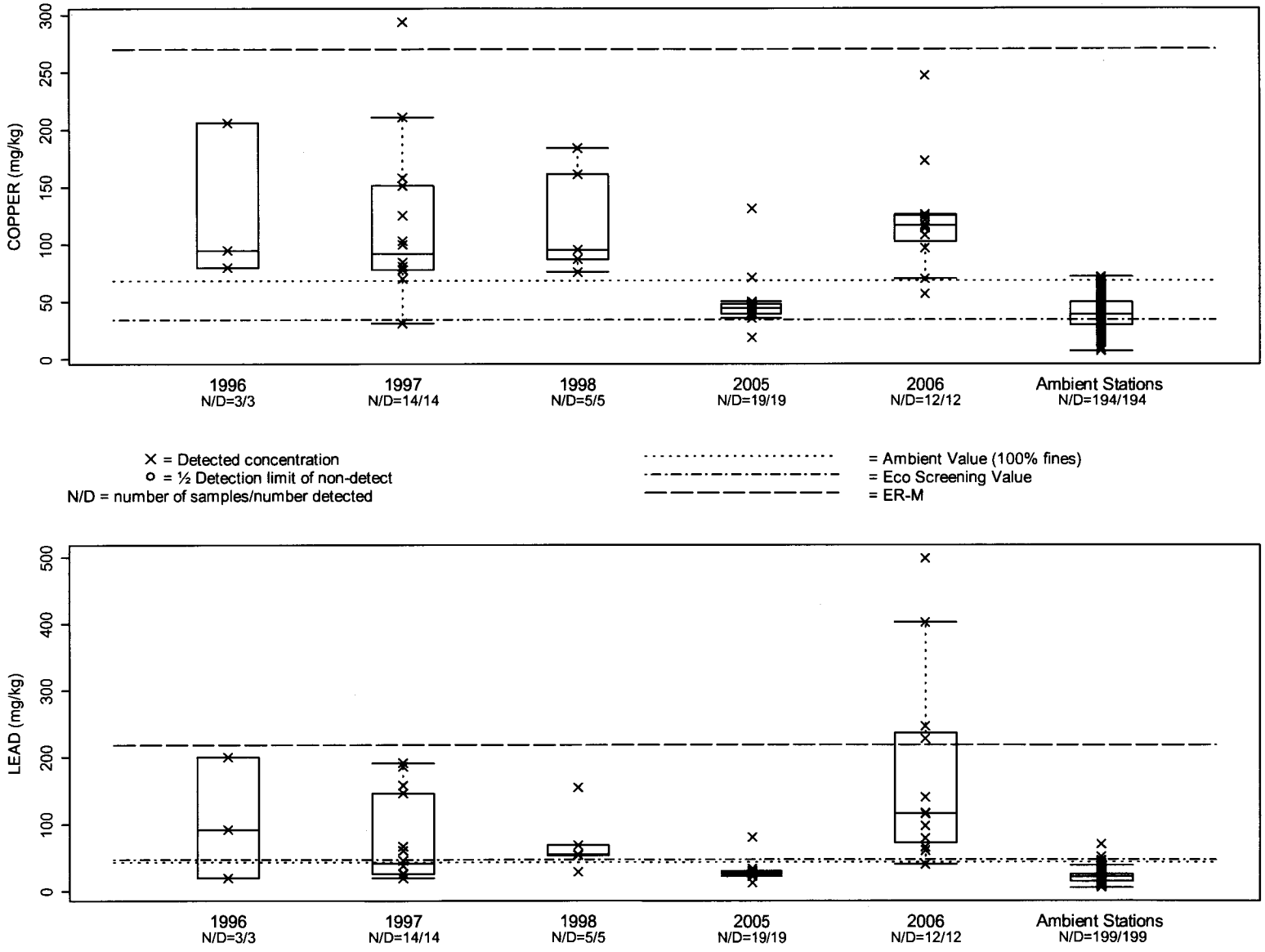

Figure A-224. Box Plots of Copper and Lead Concentrations in IR Site 24 and Reference Surface Sediments by Year.

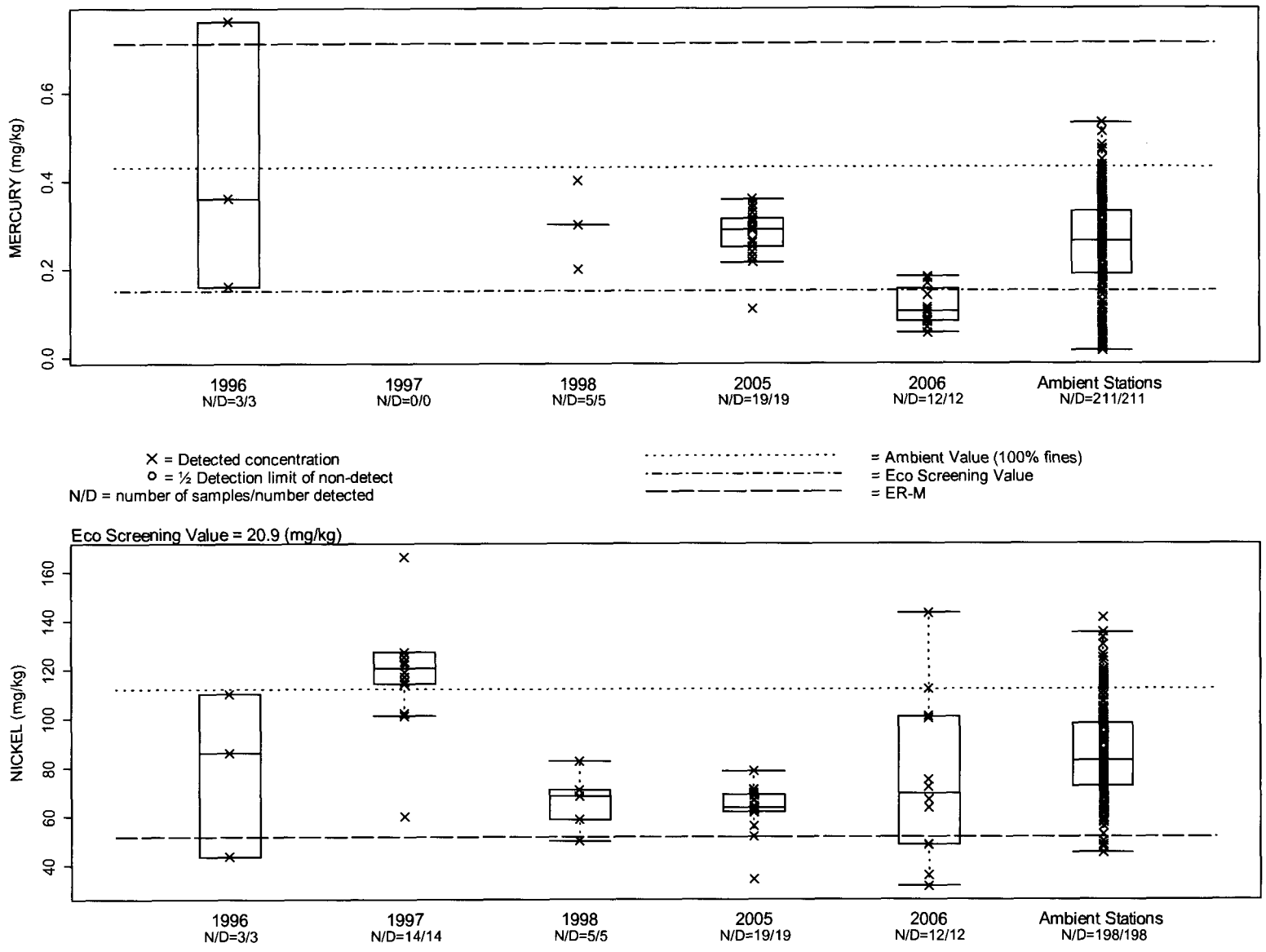

Figure A-225. Box Plots of Mercury and Nickel Concentrations in IR Site 24 and Reference Surface Sediments by Year.

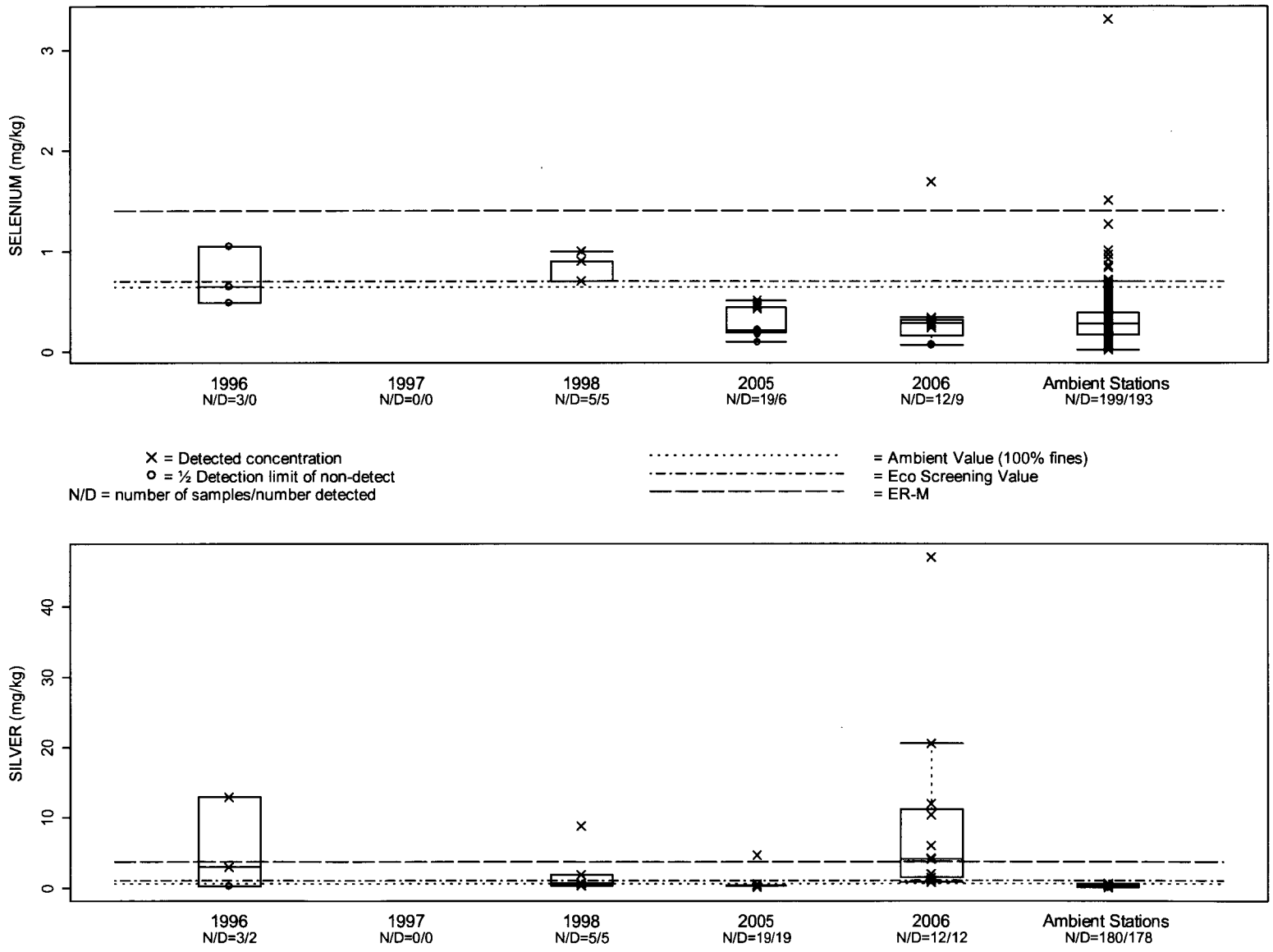

Figure A-226. Box Plots of Selenium and Silver Concentrations in IR Site 24 and Reference Surface Sediments by Year.

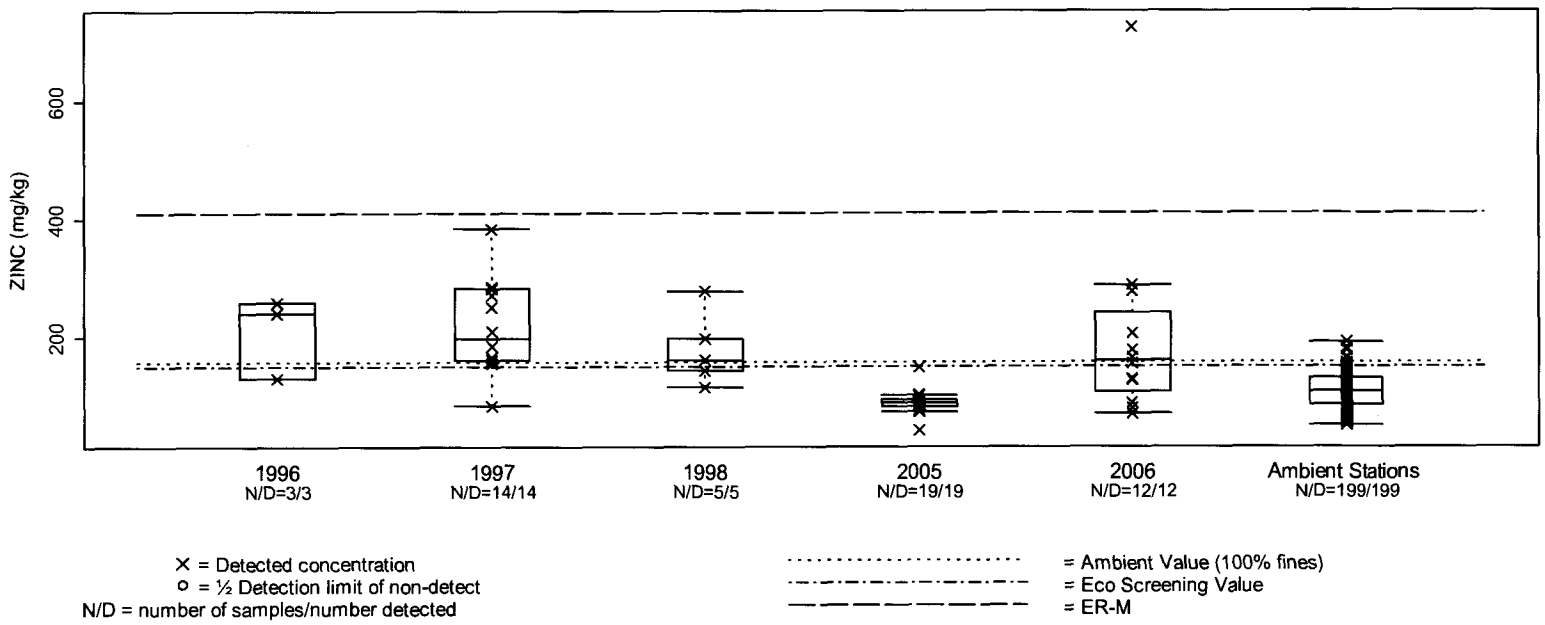

Figure A-227. Box Plots of Zinc Concentrations in IR Site 24 and Reference Surface Sediments by Year.

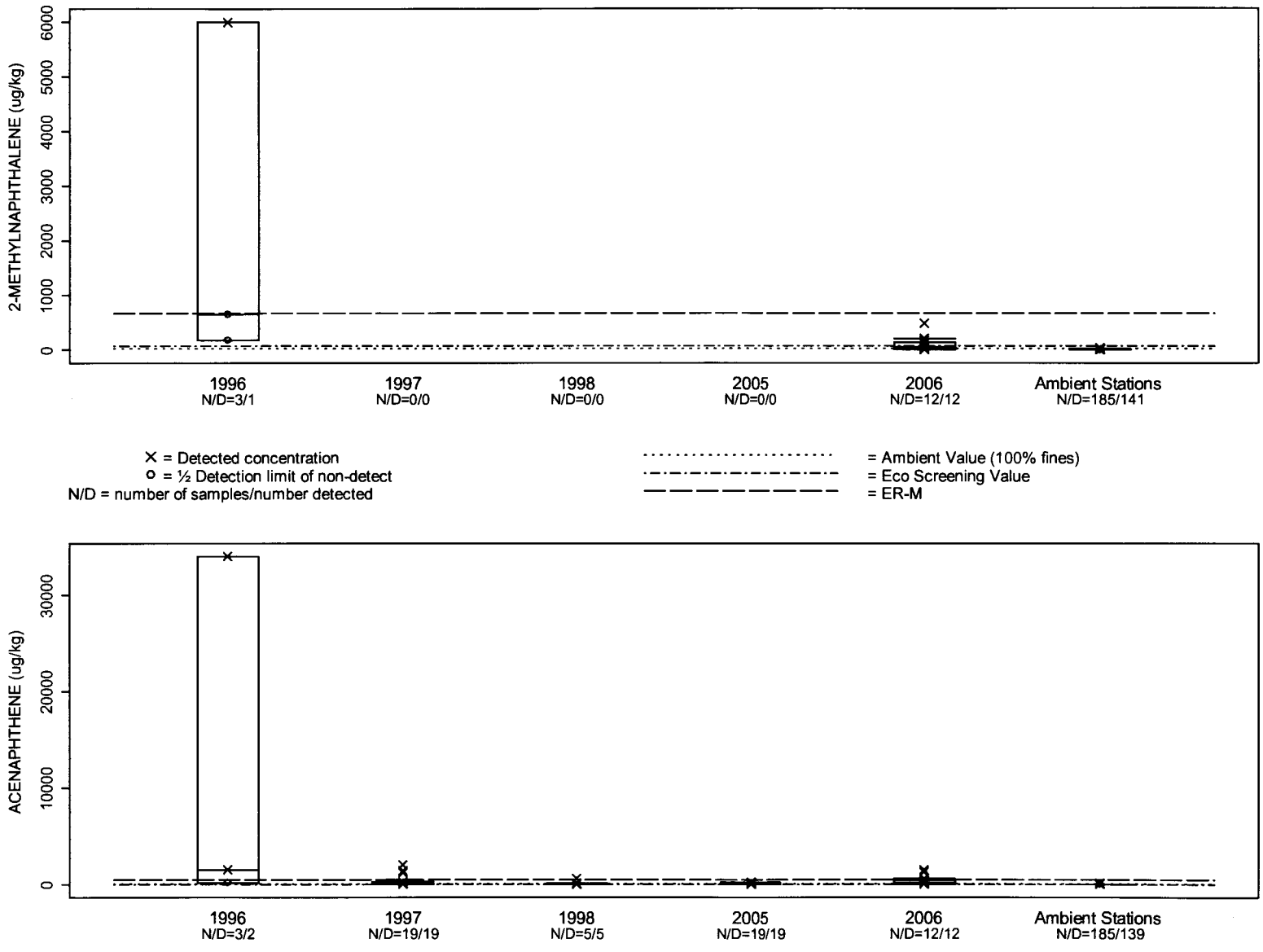

Figure A-228. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

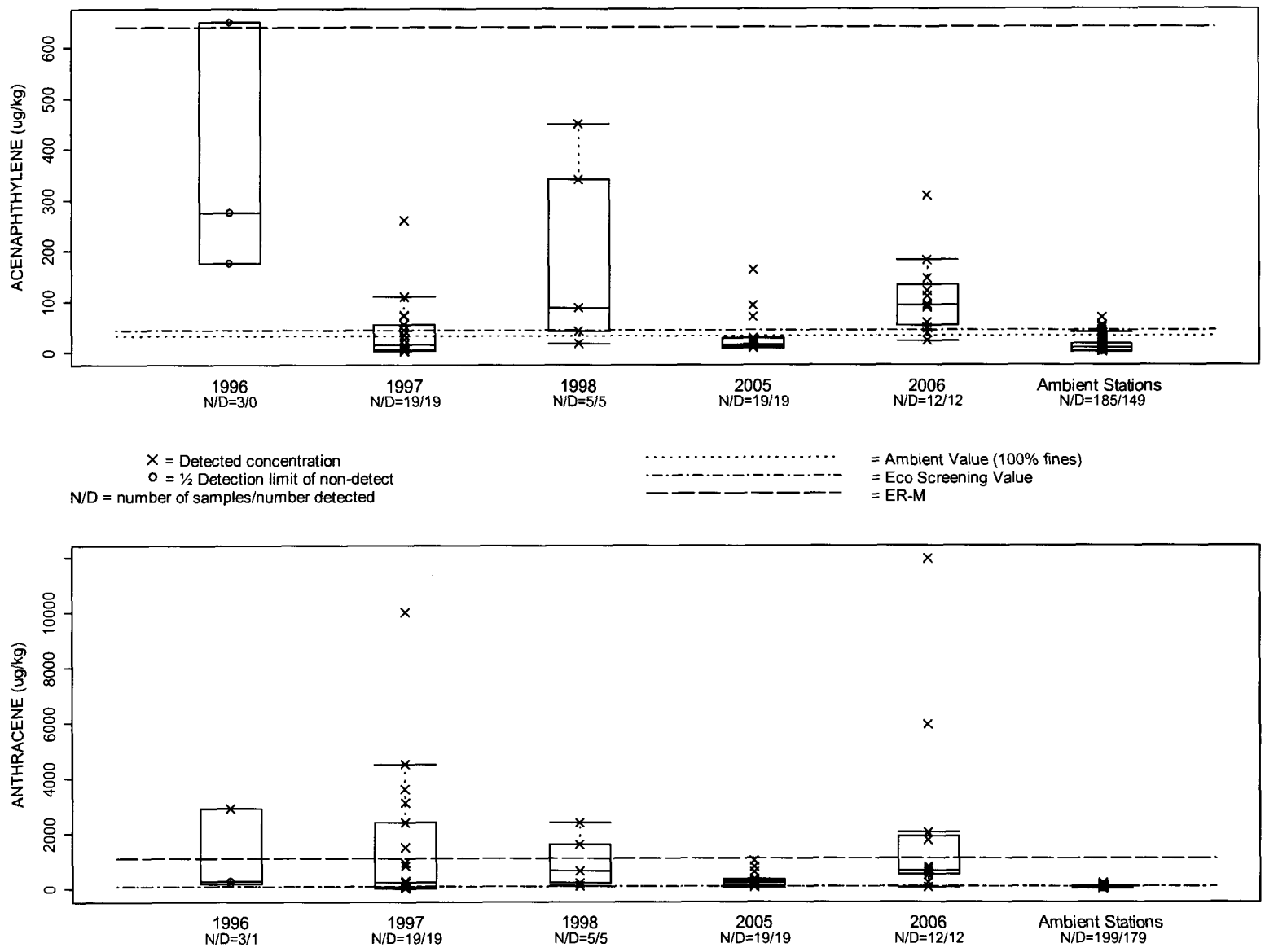

Figure A-229. Box Plots of Acenaphthylene and Anthracene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

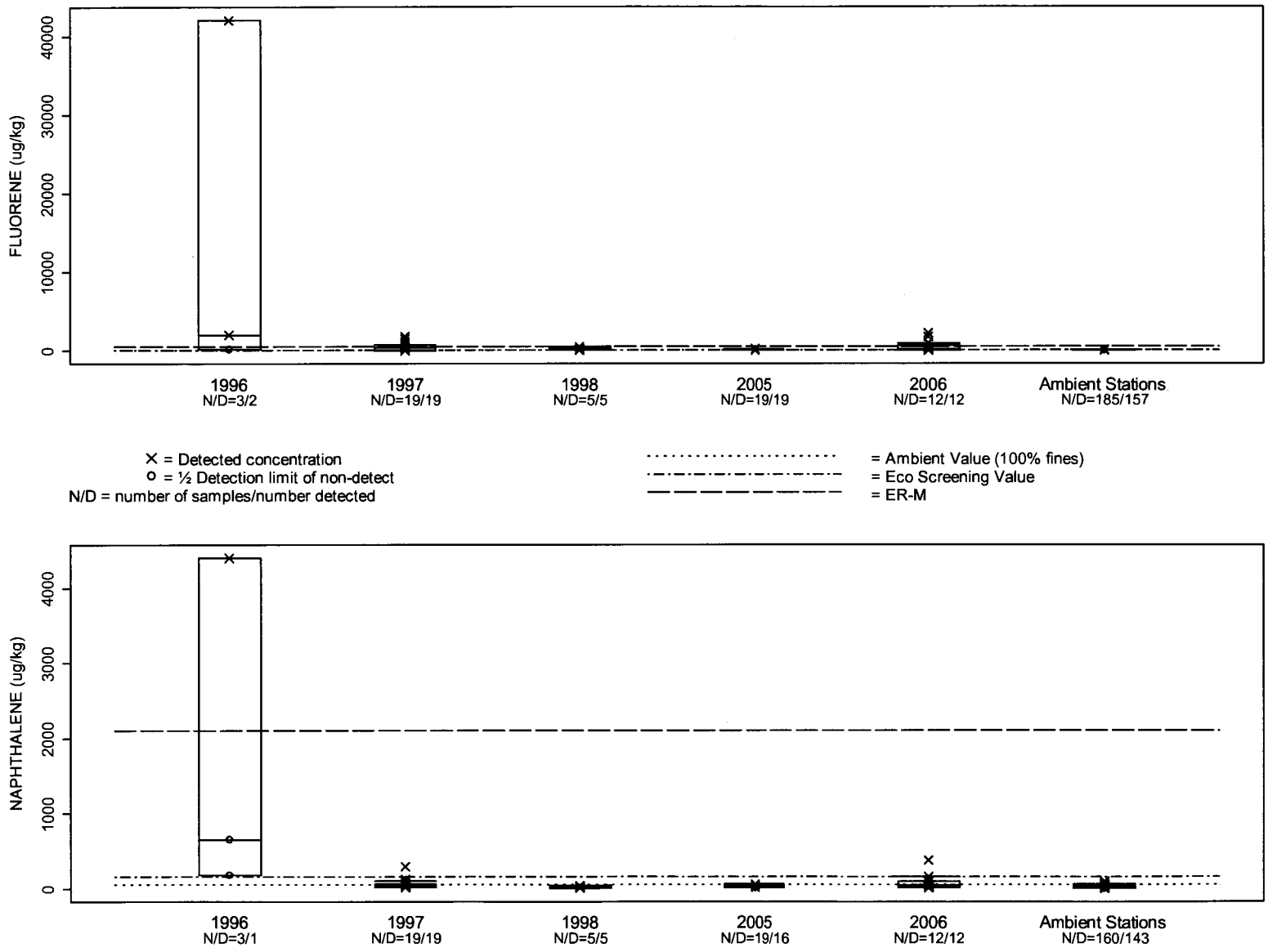

Figure A-230. Box Plots of Fluorene and Naphthalene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

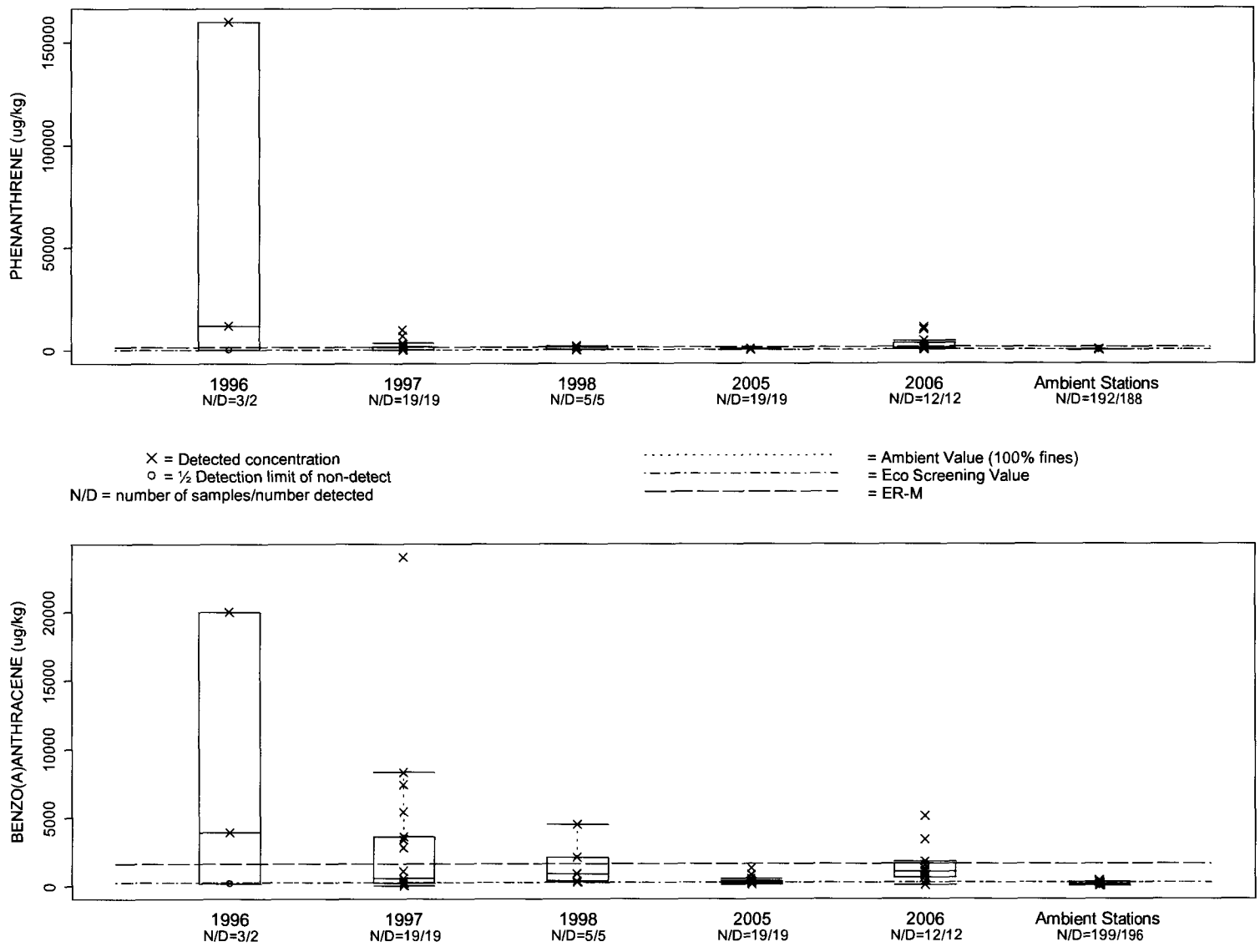

Figure A-231. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

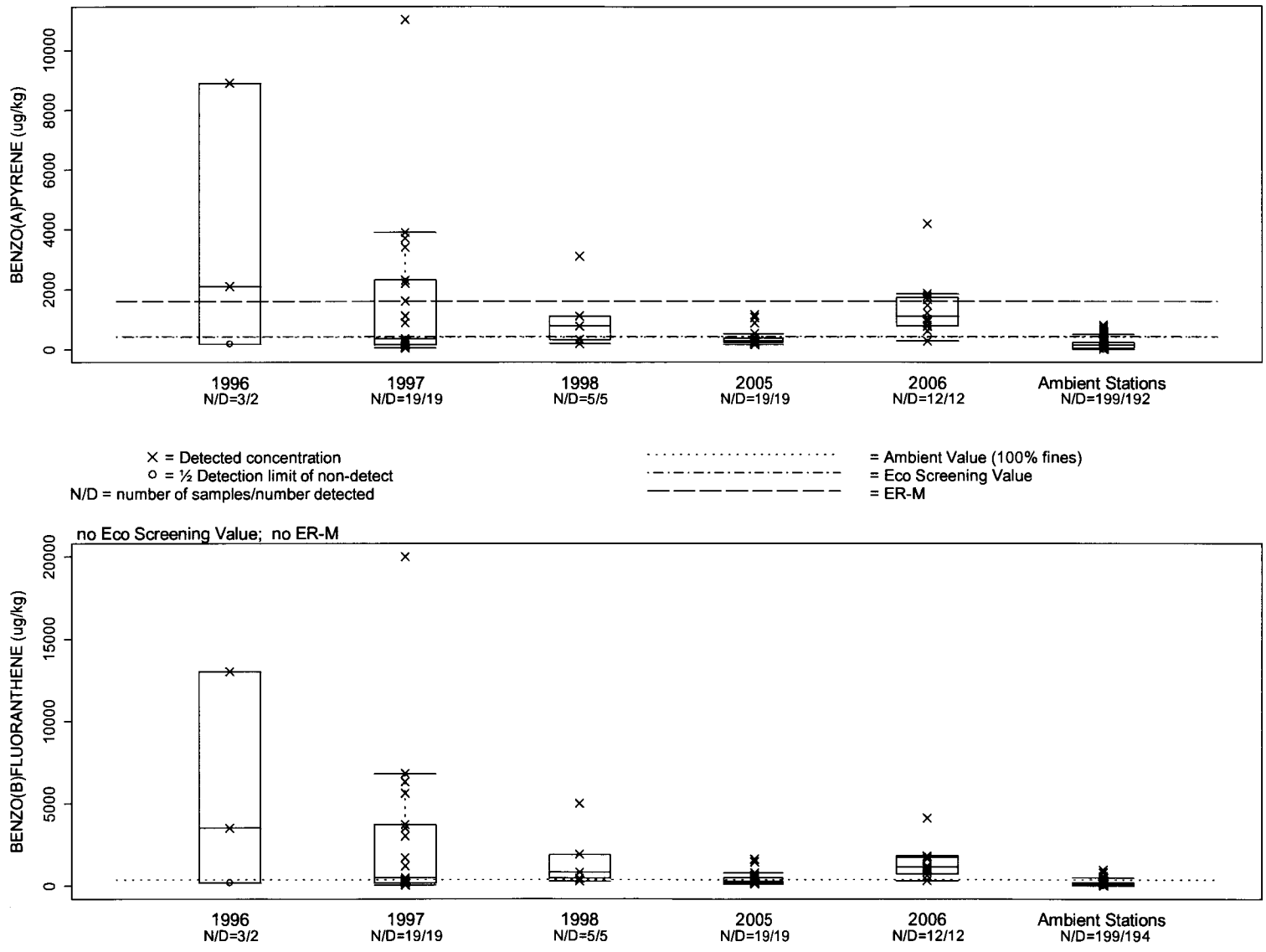

Figure A-232. Box Plots of Benzo(a)pyrene and Benzo(b)fluoranthene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

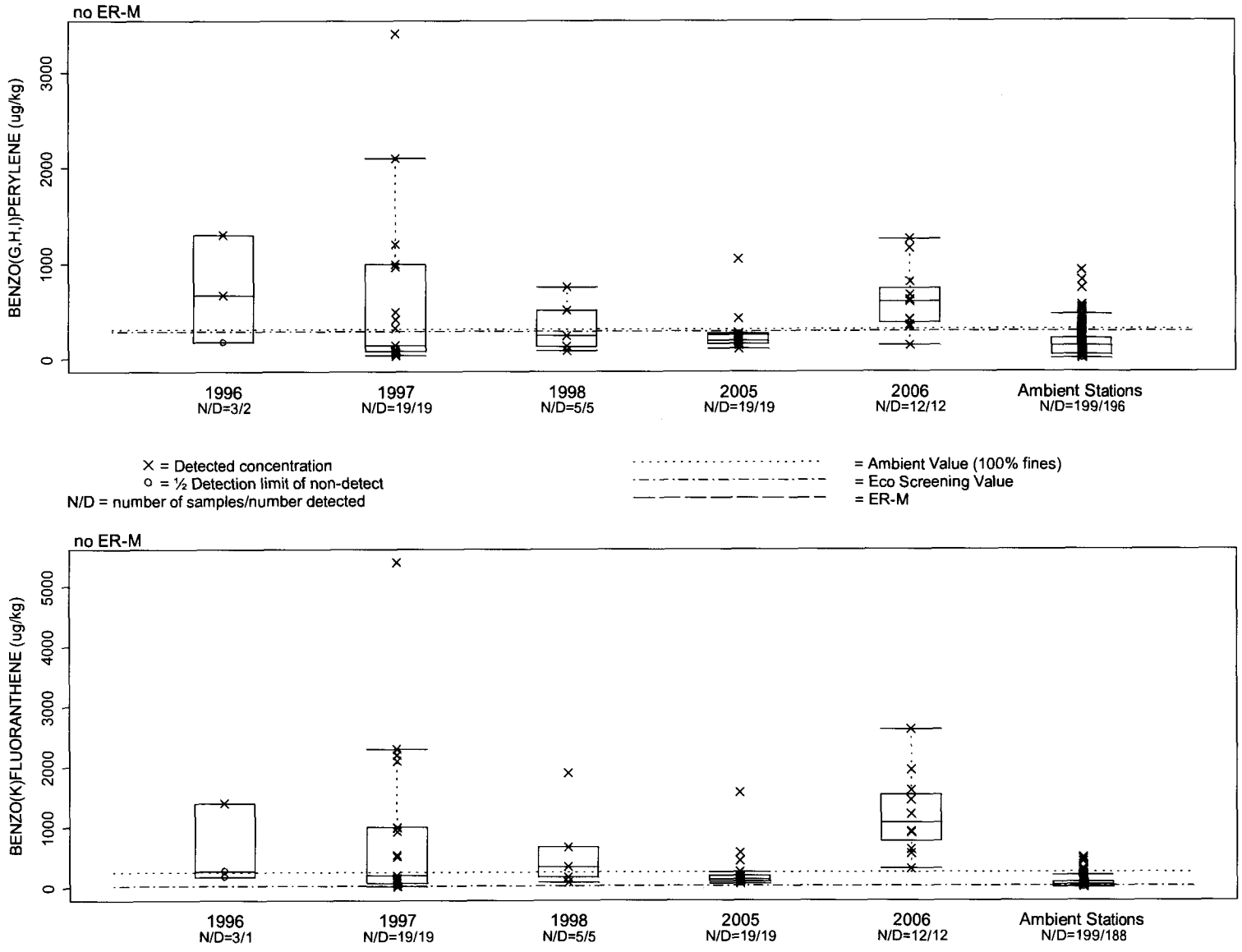

Figure A-233. Box Plots of Benzo(g,h,i)pyrene and Benzo(k)fluoranthene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

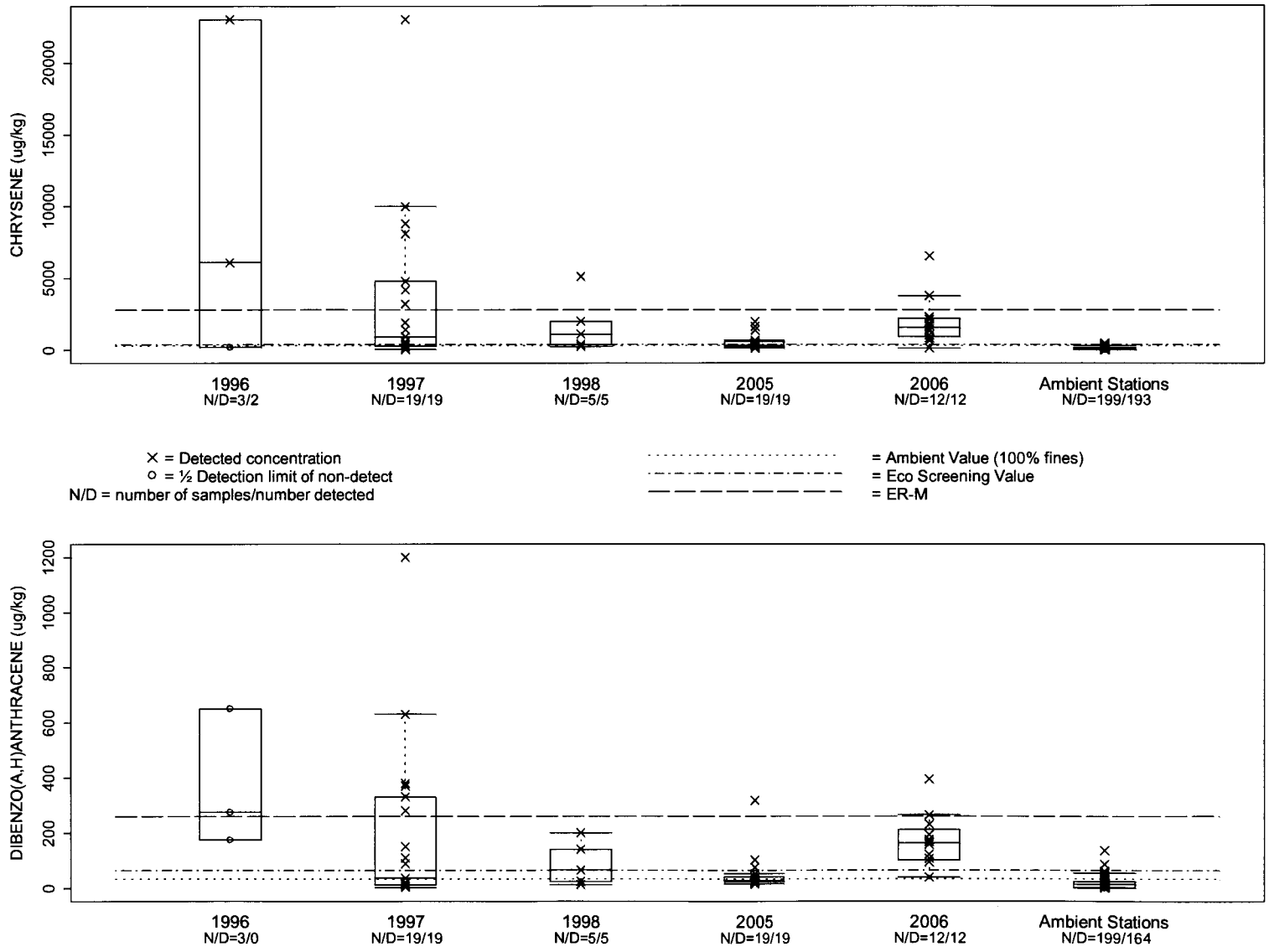

Figure A-234. Box Plots of Chrysene and Dibenzo(a,h)anthracene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

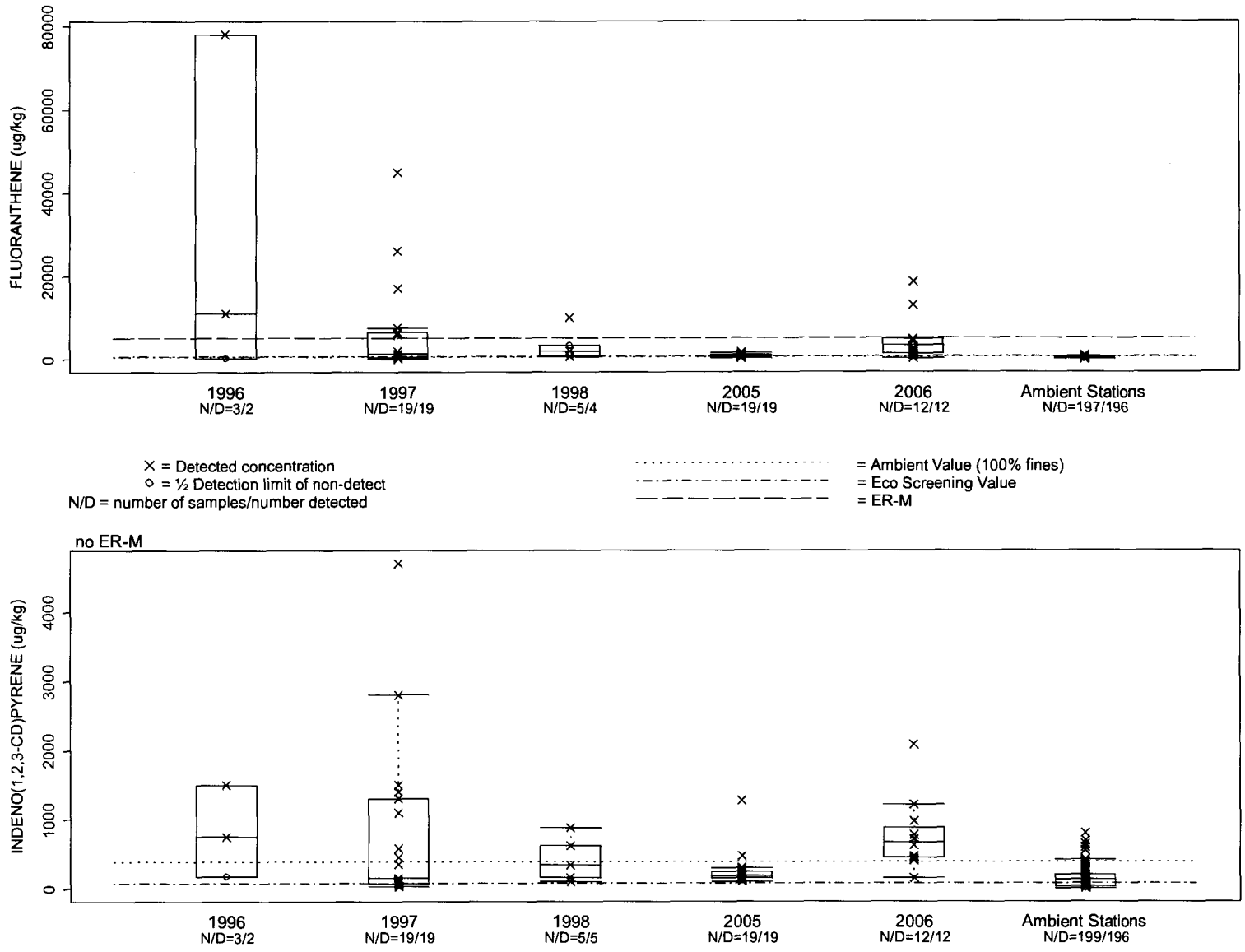

Figure A-235. Box Plots of Fluoranthene and Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 and Reference Surface Sediments by Year.

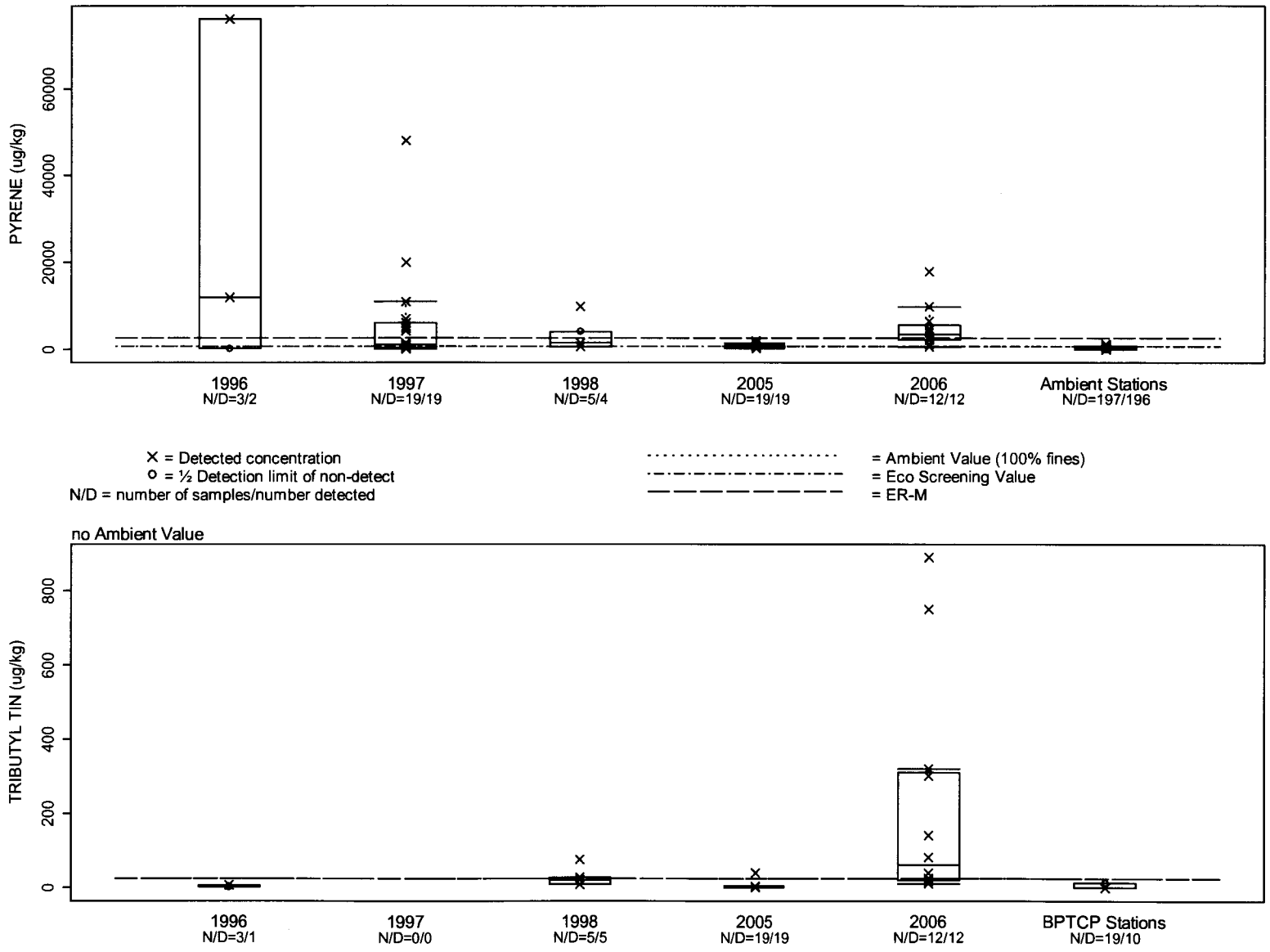

Figure A-236. Box Plots of Pyrene and Tributyltin Concentrations in IR Site 24 and Reference Surface Sediments by Year.

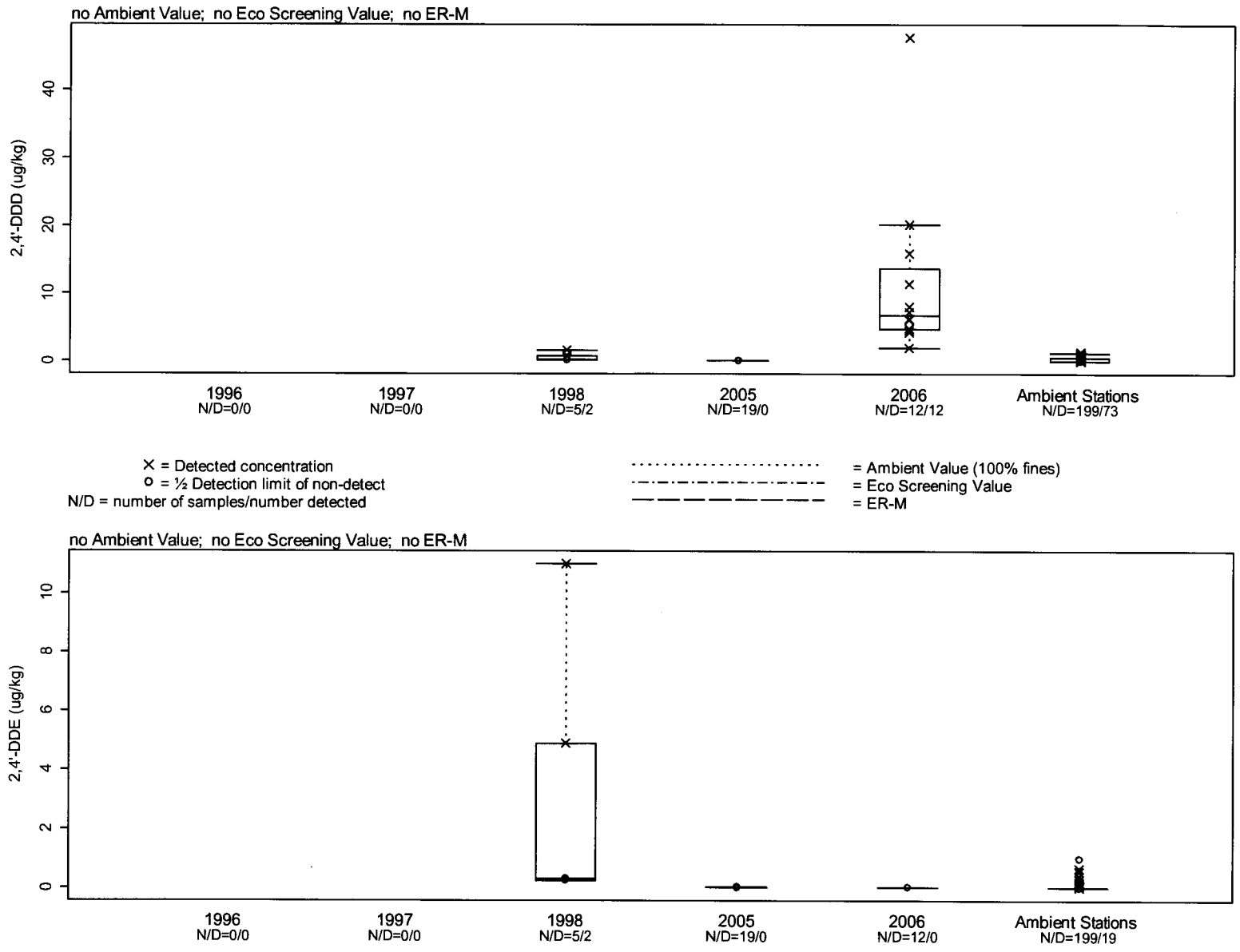

Figure A-237. Box Plots of 2, 4′-DDD and 2, 4′-DDE Concentrations in IR Site 24 and Reference Surface Sediments by Year.

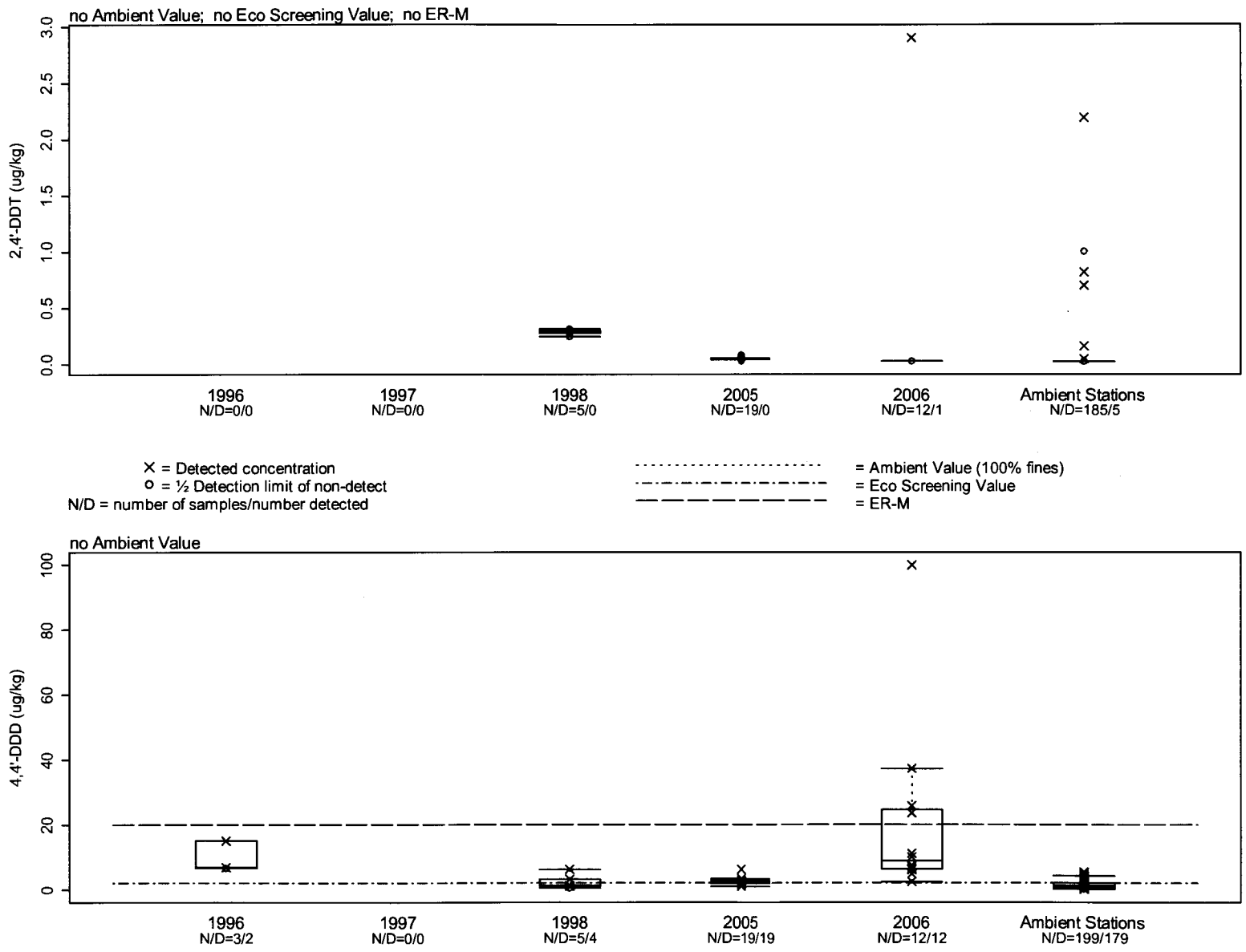

Figure A-238. Box Plots of 2,4′-DDT and 4,4′-DDD Concentrations in IR Site 24 and Reference Surface Sediments by Year.

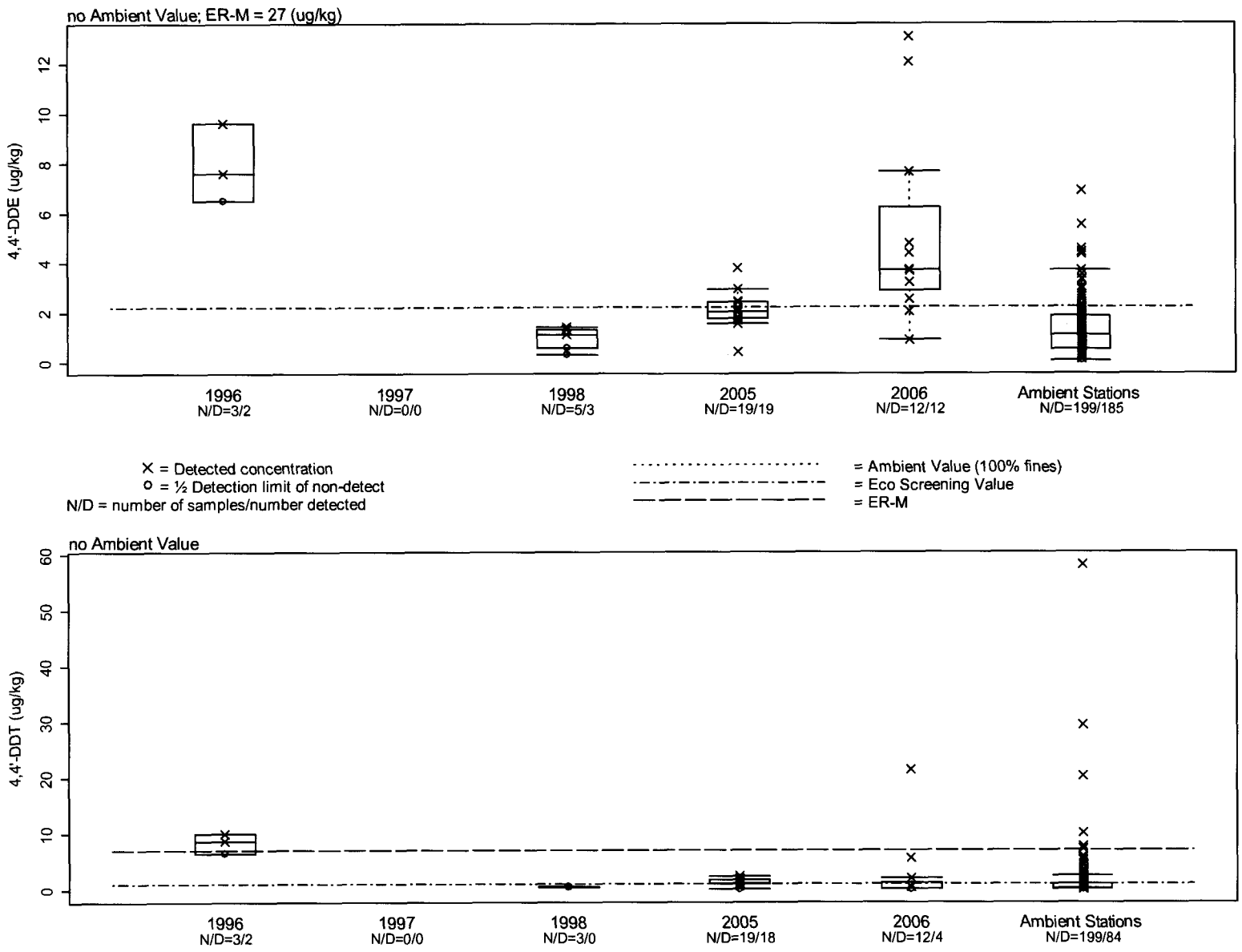

Figure A-239. Box Plots of 4,4′-DDE and 4,4′-DDT Concentrations in IR Site 24 and Reference Surface Sediments by Year.

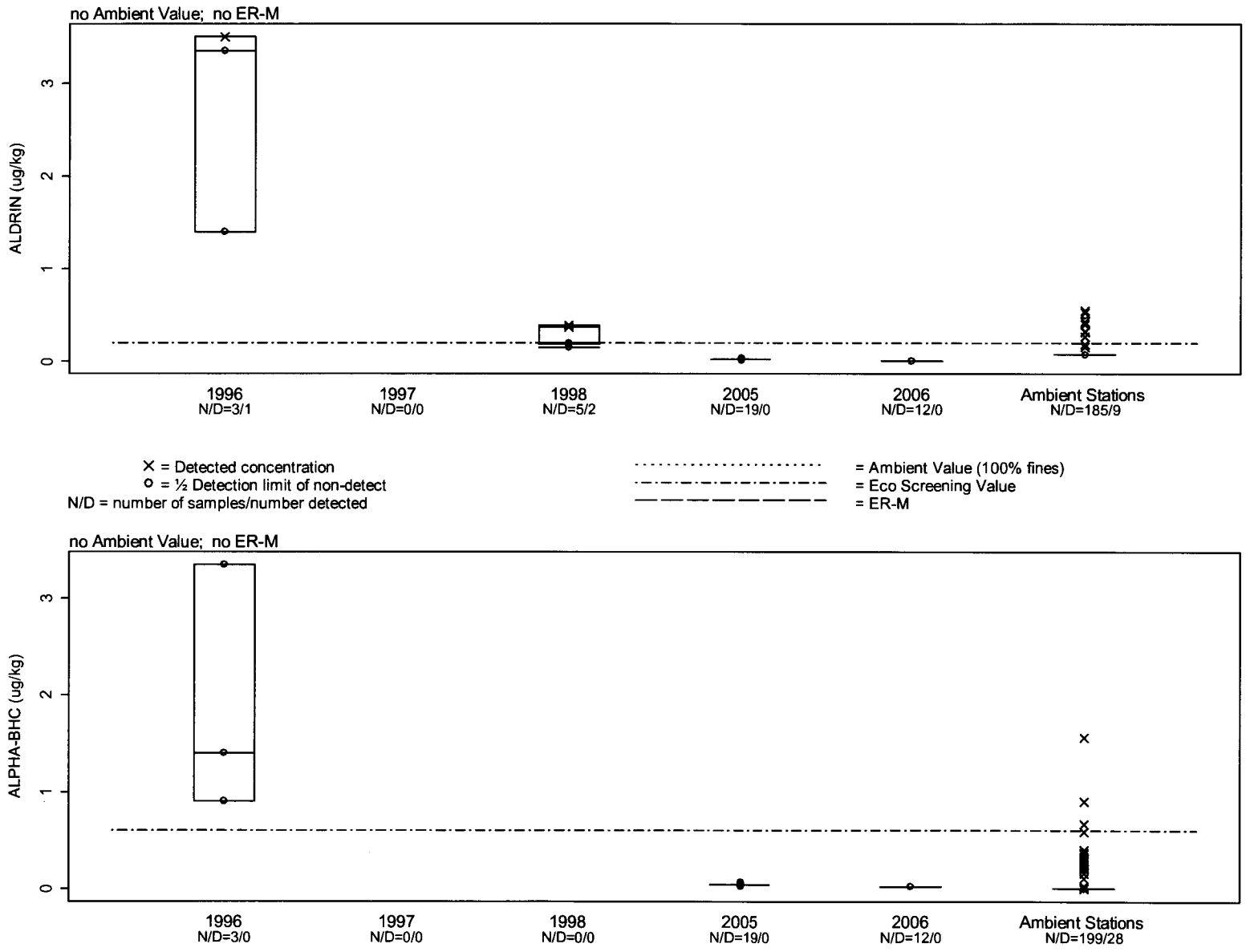

Figure A-240. Box Plots of Aldrin and *alpha*-BHC Concentrations in IR Site 24 and Reference Surface Sediments by Year.

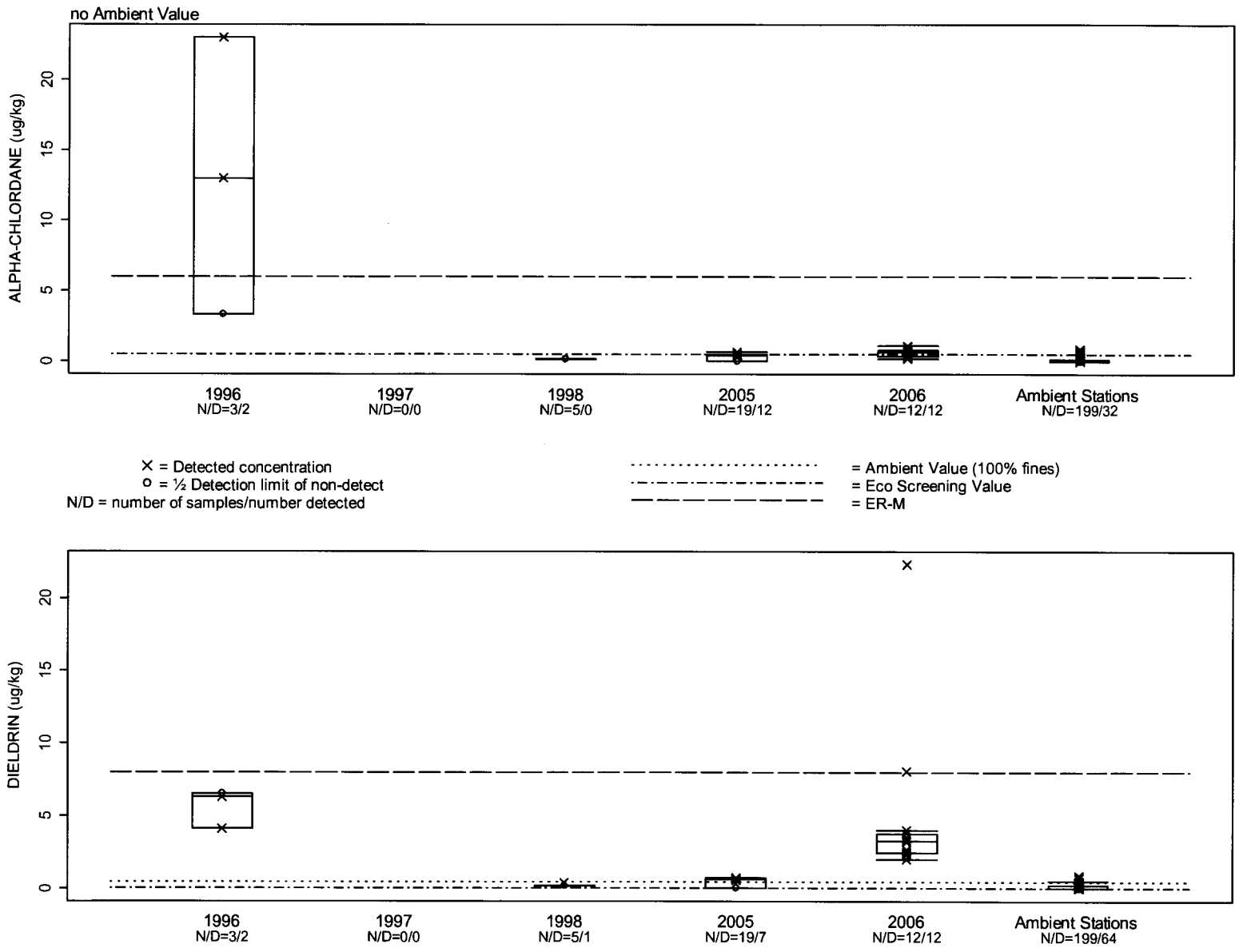

Figure A-241. Box Plots of *alpha*-Chlordane and Dieldrin Concentrations in IR Site 24 and Reference Surface Sediments by Year.

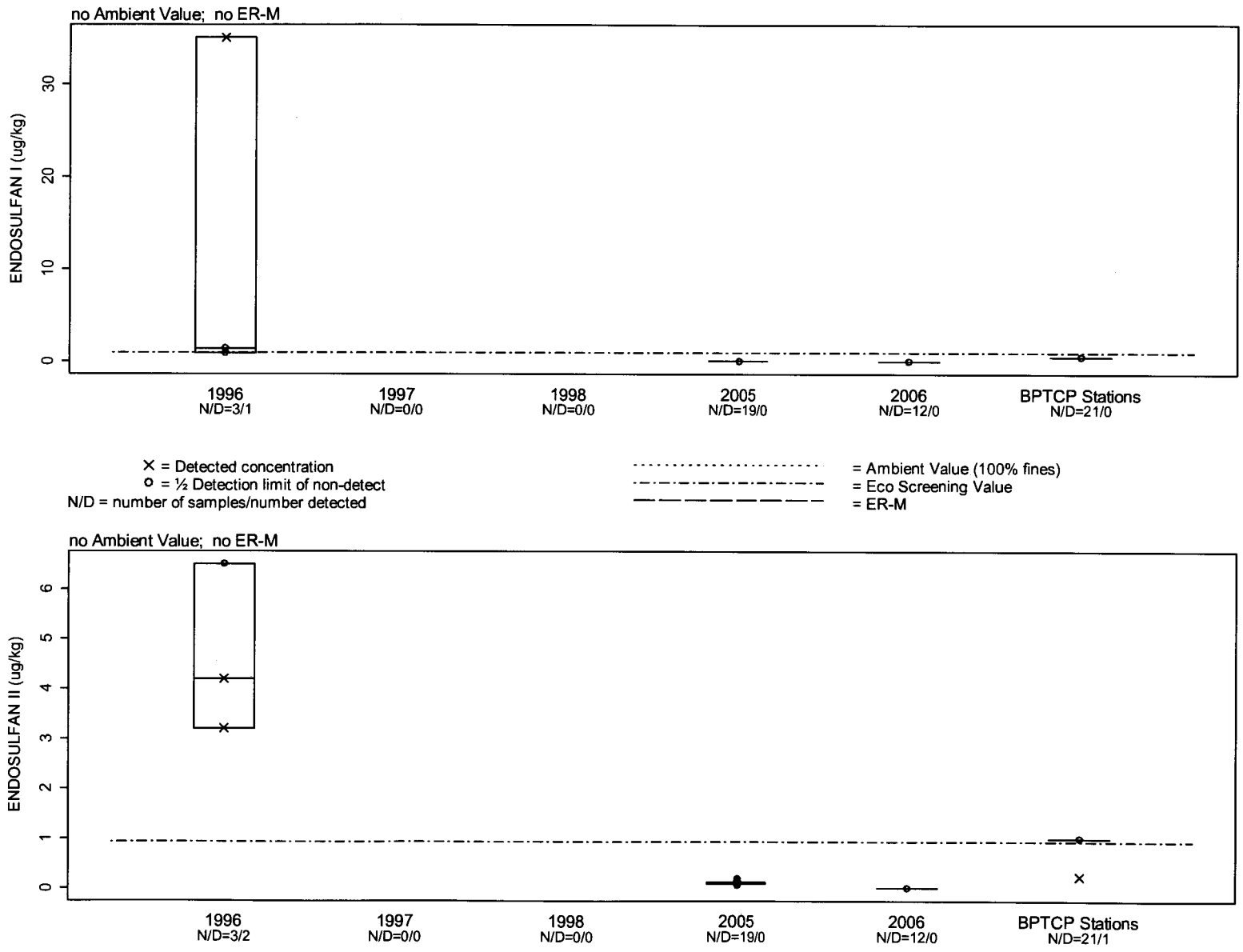

Figure A-242. Box Plots of Endosulfan I and Endosulfan II Concentrations in IR Site 24 and Reference Surface Sediments by Year.

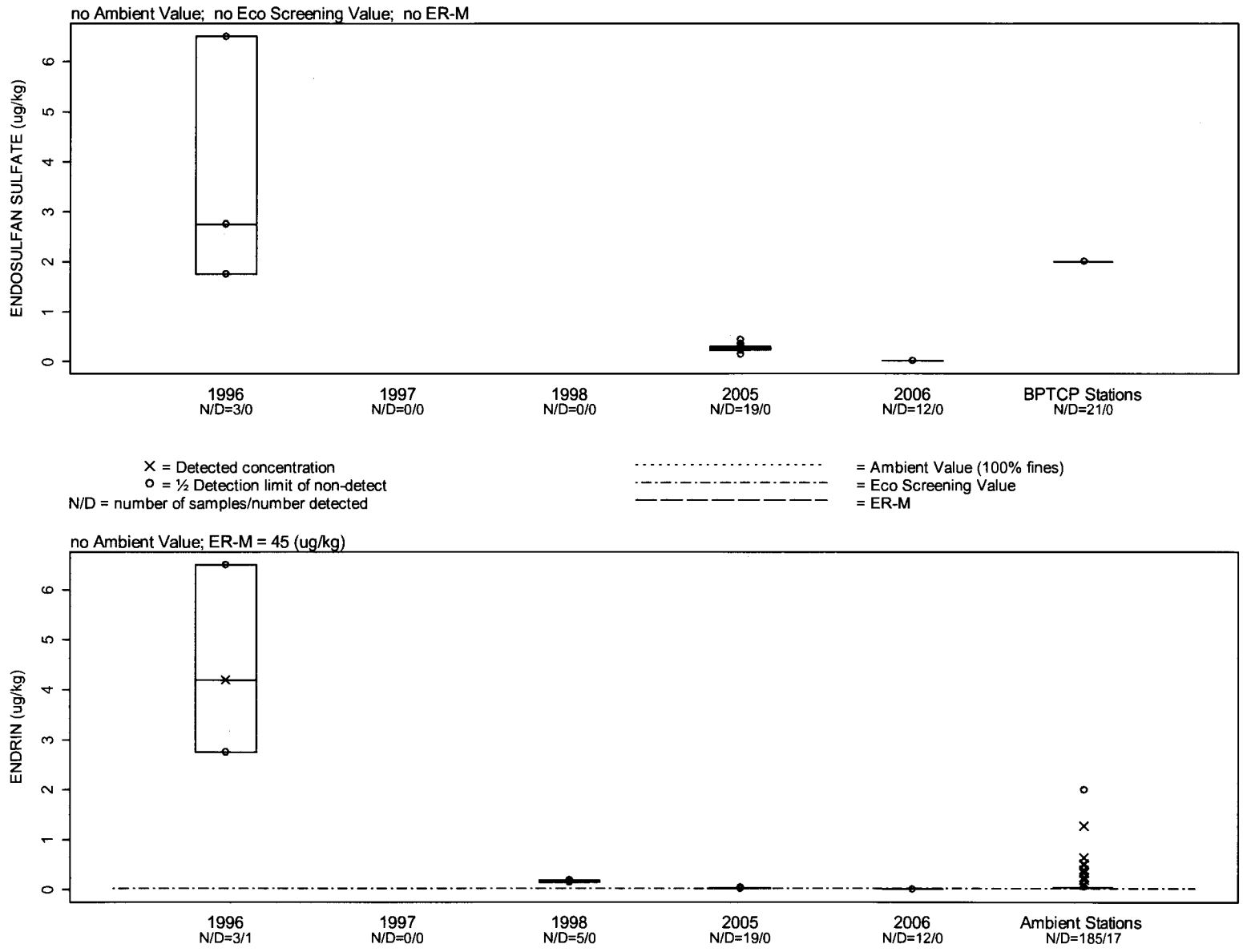

Figure A-243. Box Plots of Endosulfan Sulfate and Endrin Concentrations in IR Site 24 and Reference Surface Sediments by Year.

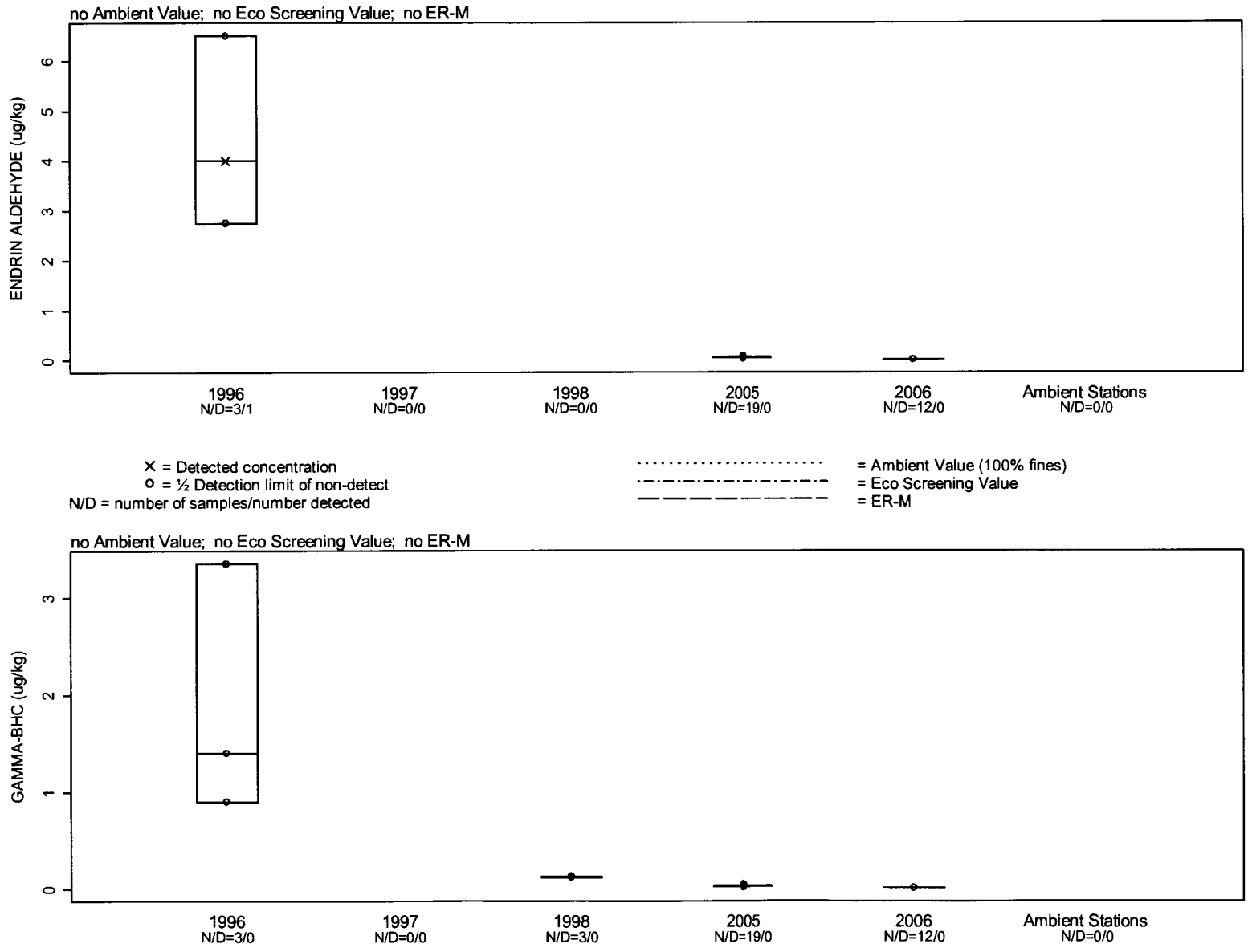

Figure A-244. Box Plots of Endrin Aldehyde and *gamma*-BHC Concentrations in IR Site 24 and Reference Surface Sediments by Year.

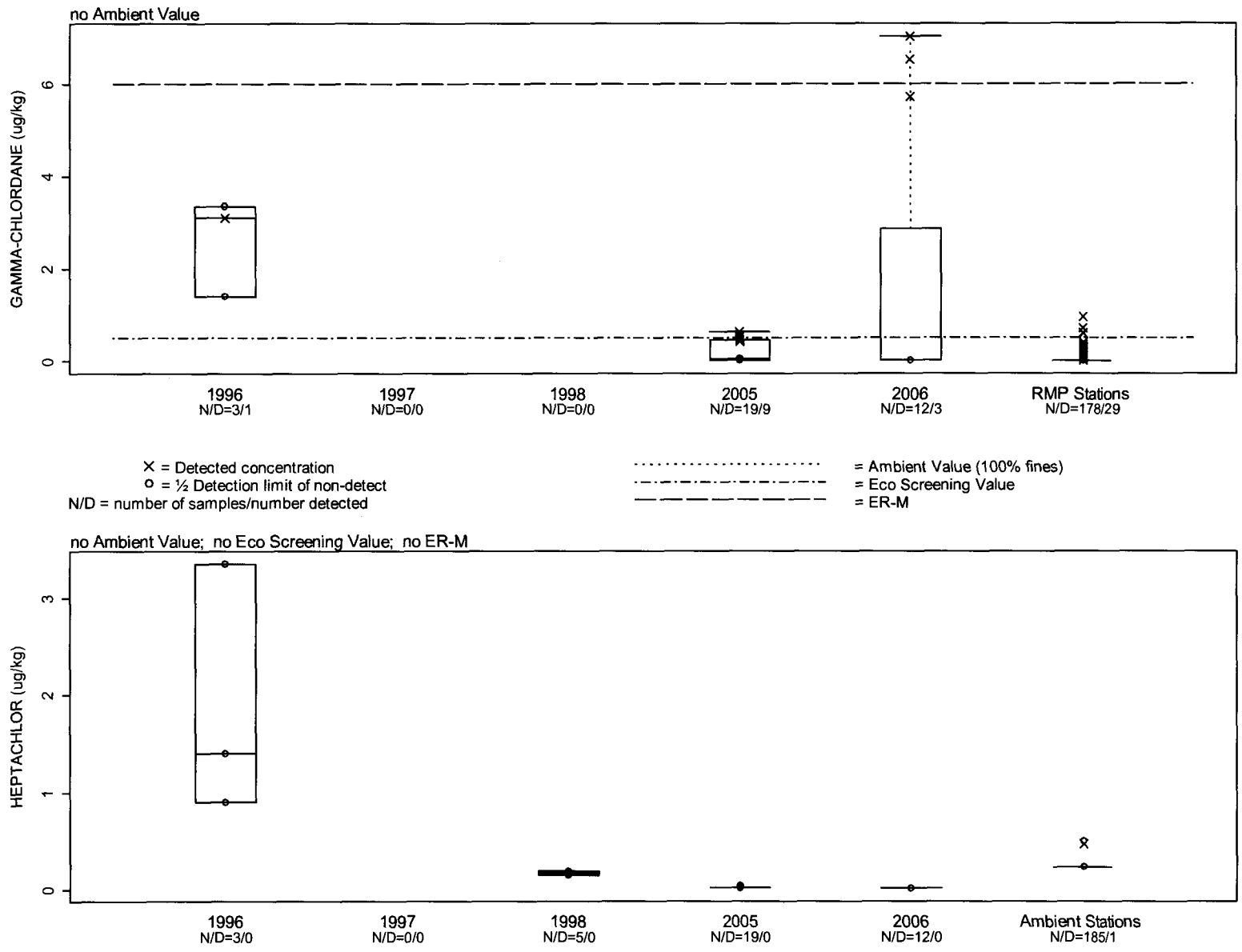

Figure A-245. Box Plots of *gamma*-Chlordane and Heptachlor Concentrations in IR Site 24 and Reference Surface Sediments by Year.

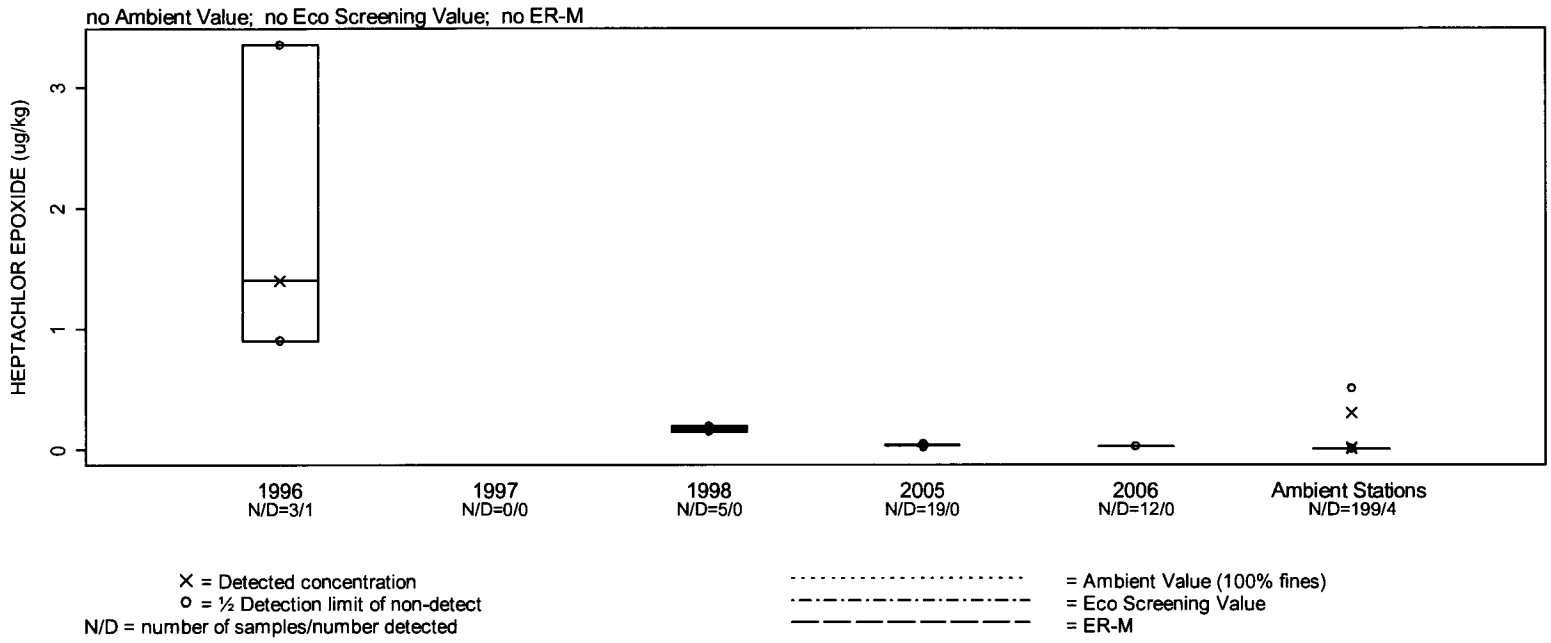

Figure A-246. Box Plots of Heptachlor Epoxide Concentrations in IR Site 24 and Reference Surface Sediments by Year.

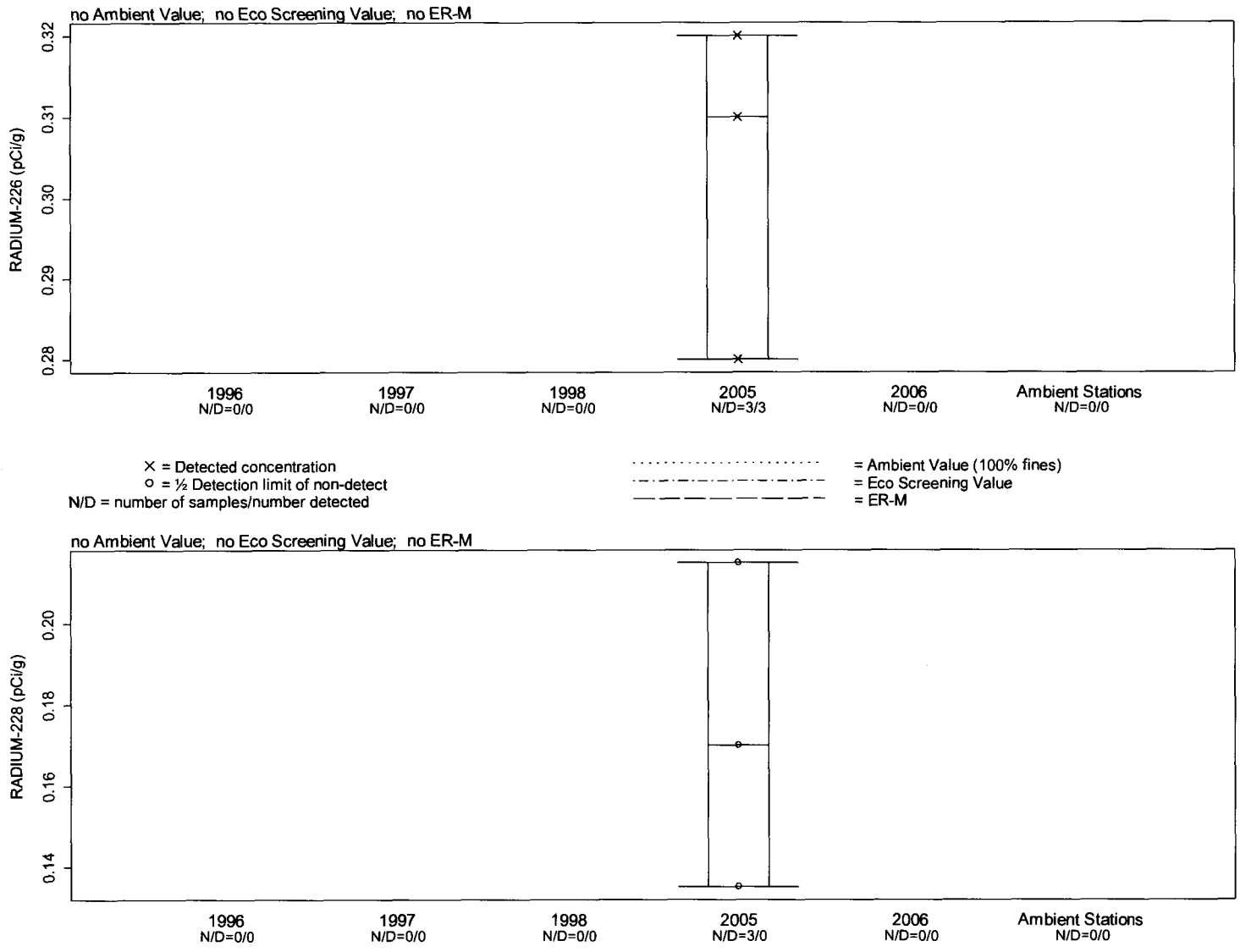

Figure A-247. Box Plots of Radium-226 and Radium-228 Concentrations in IR Site 24 and Reference Surface Sediments by Year.

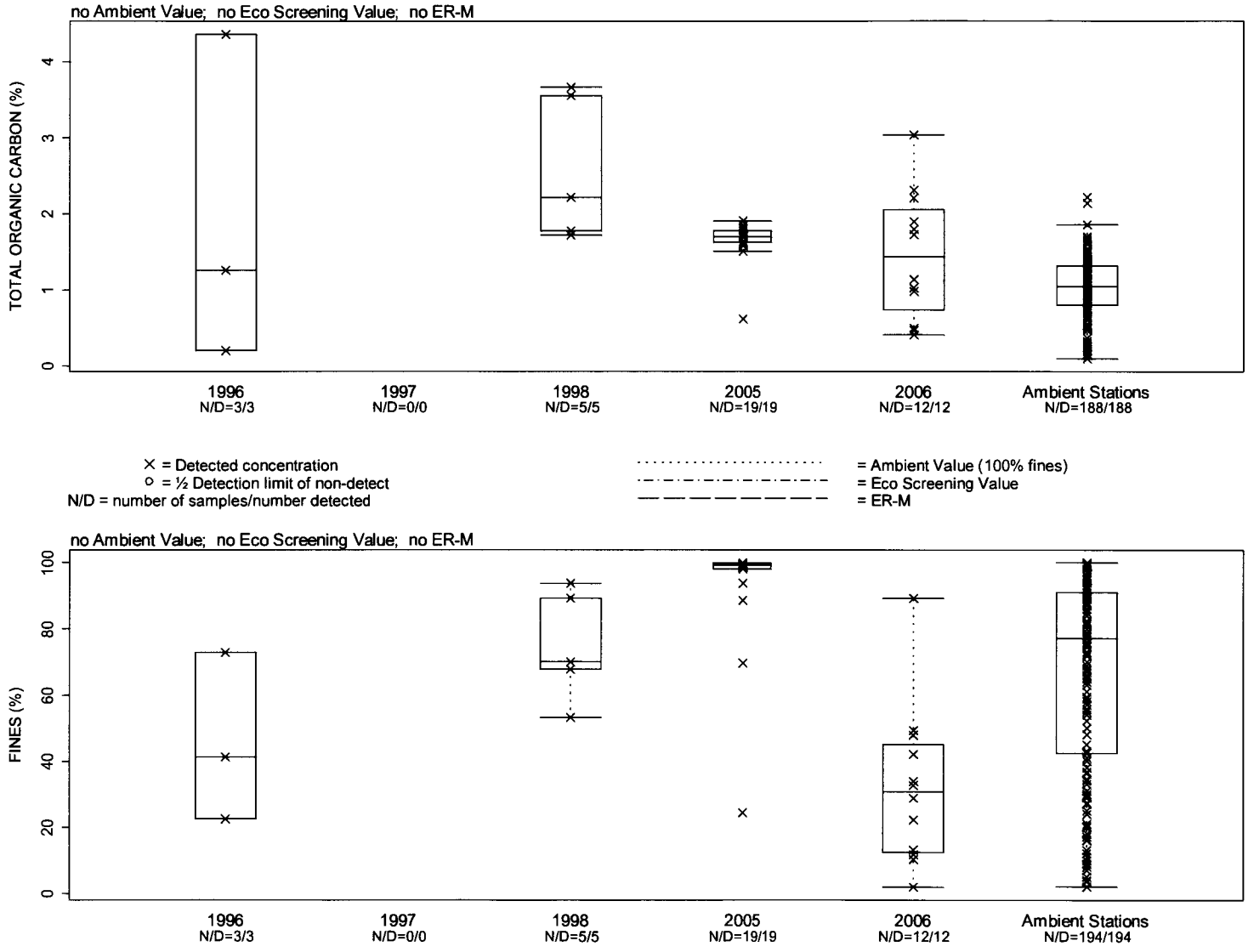

Figure A-248. Box Plots of Total Organic Carbon and Fine Grains Concentrations in IR Site 24 and Reference Surface Sediments by Year.

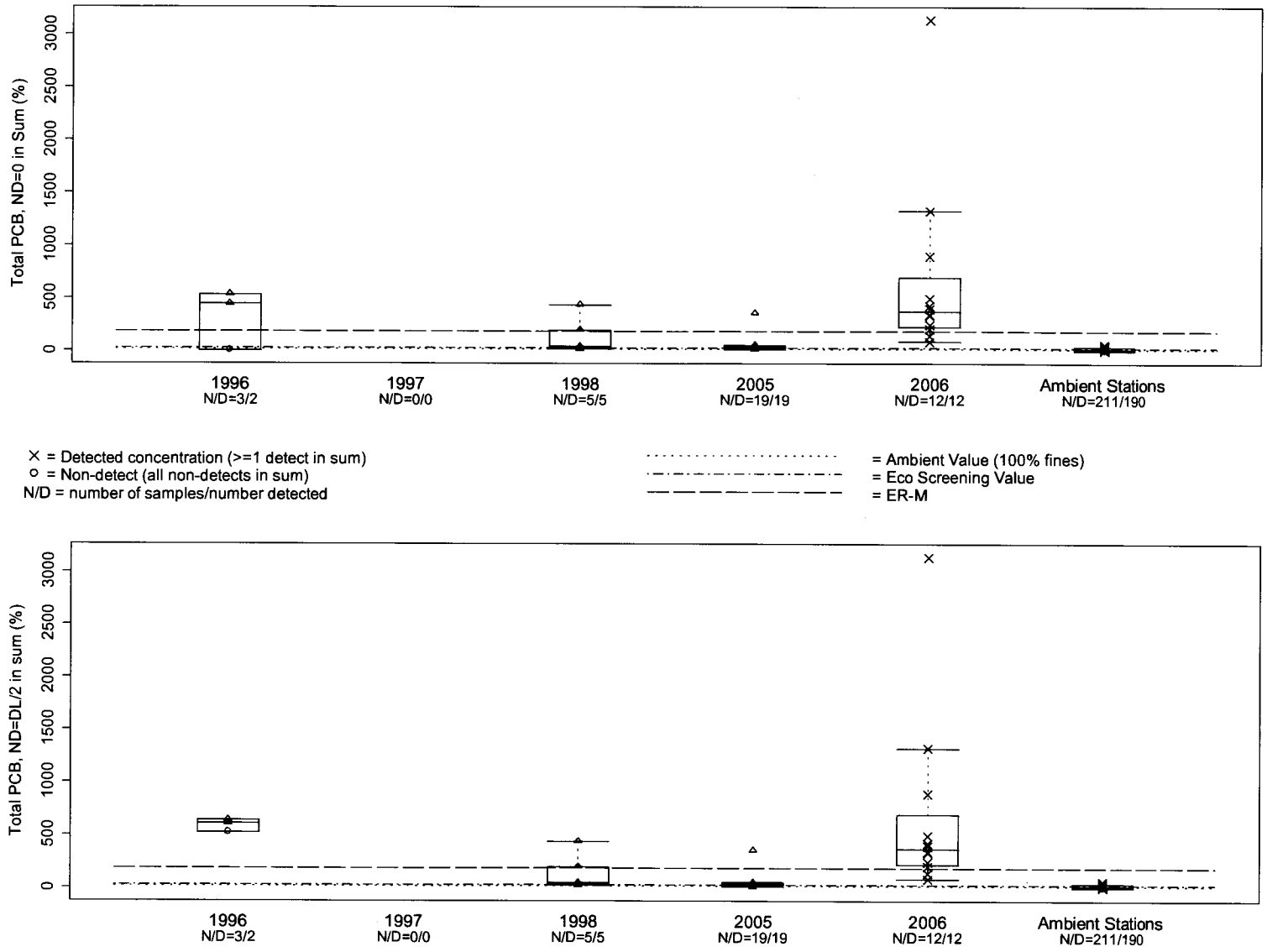

Figure A-249. Box Plots of Total PCB Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

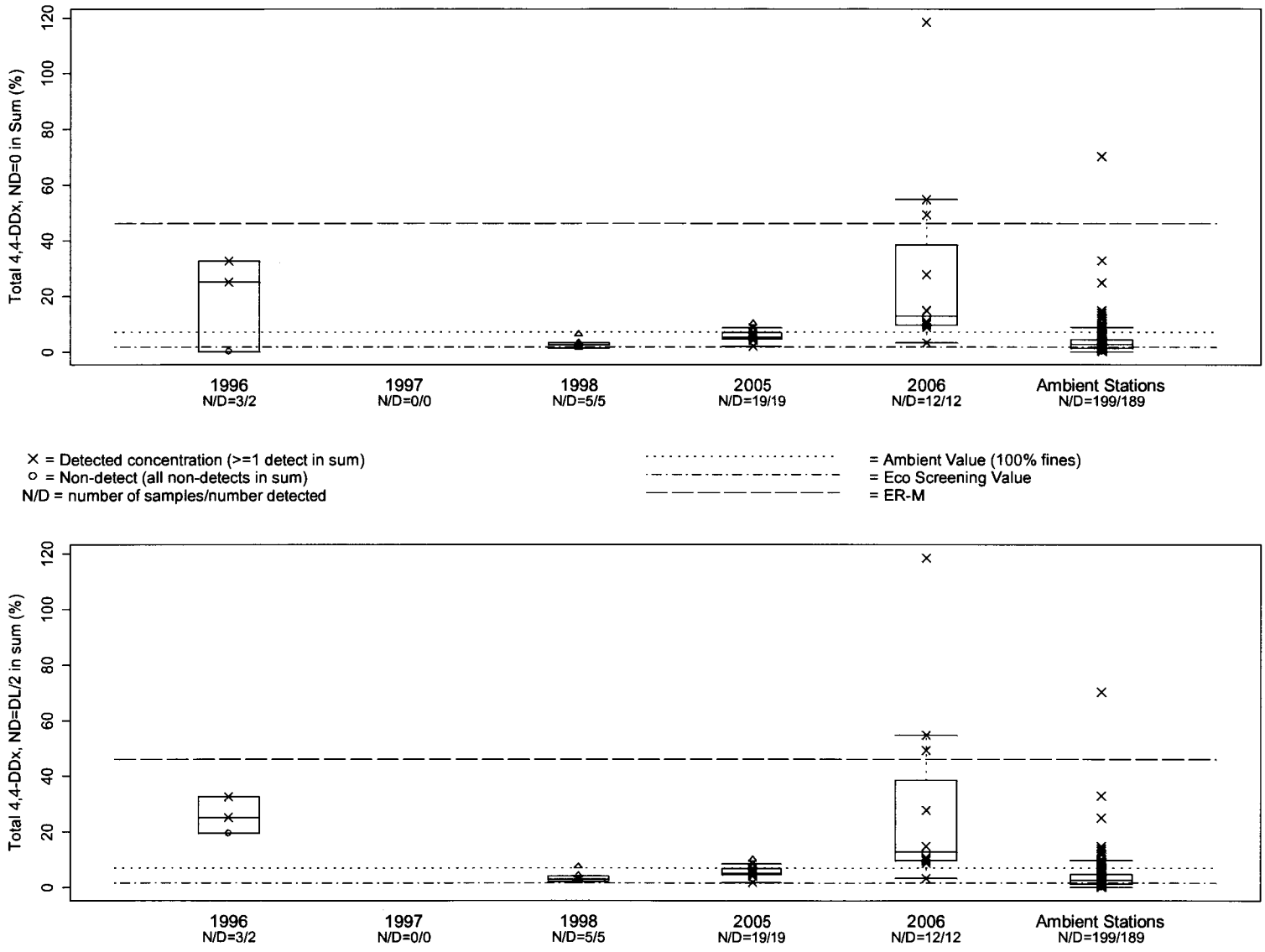

Figure A-250. Box Plots of Total 4,4-DDx Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

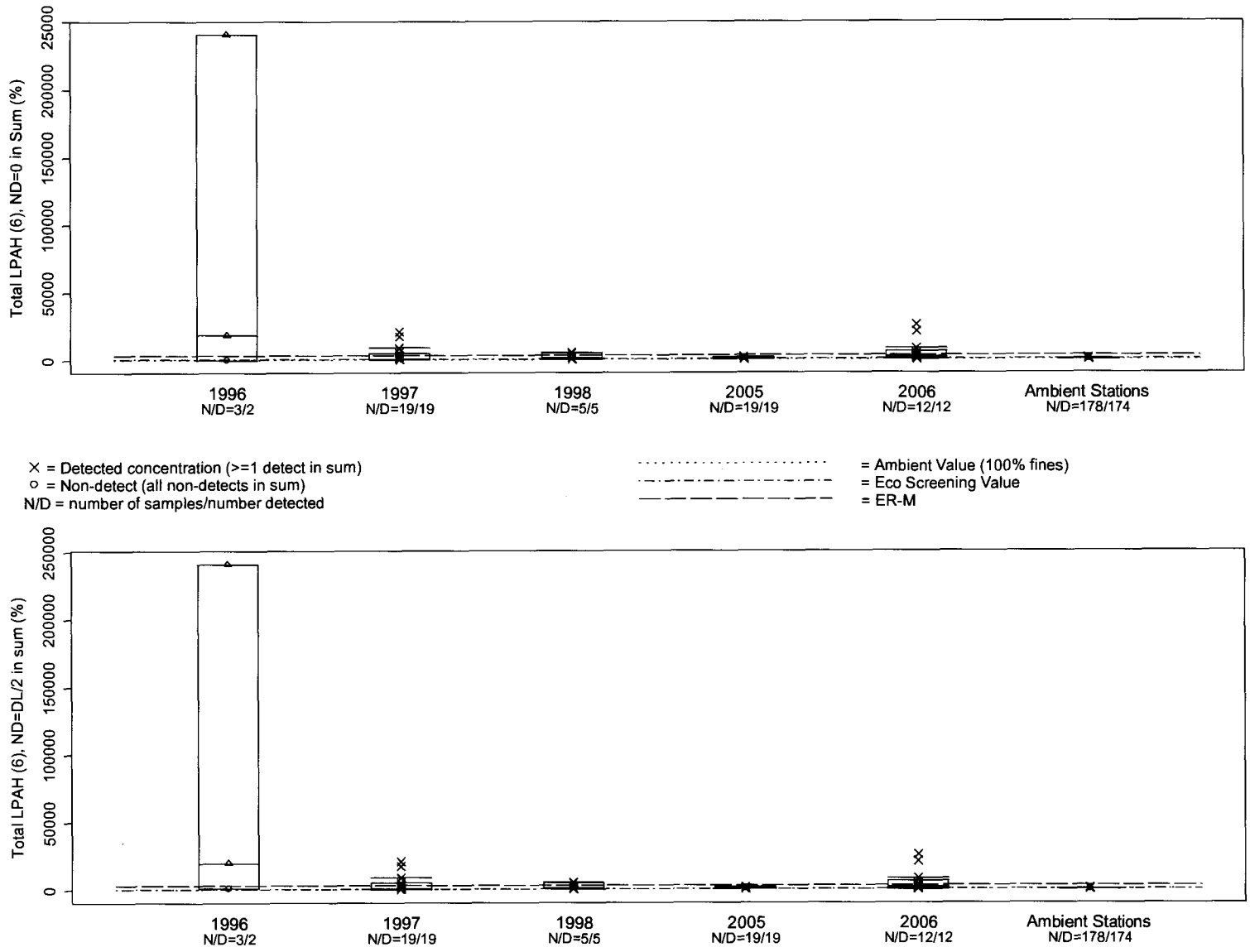

Figure A-251. Box Plots of Total LPAH (sum of 6 analytes) Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

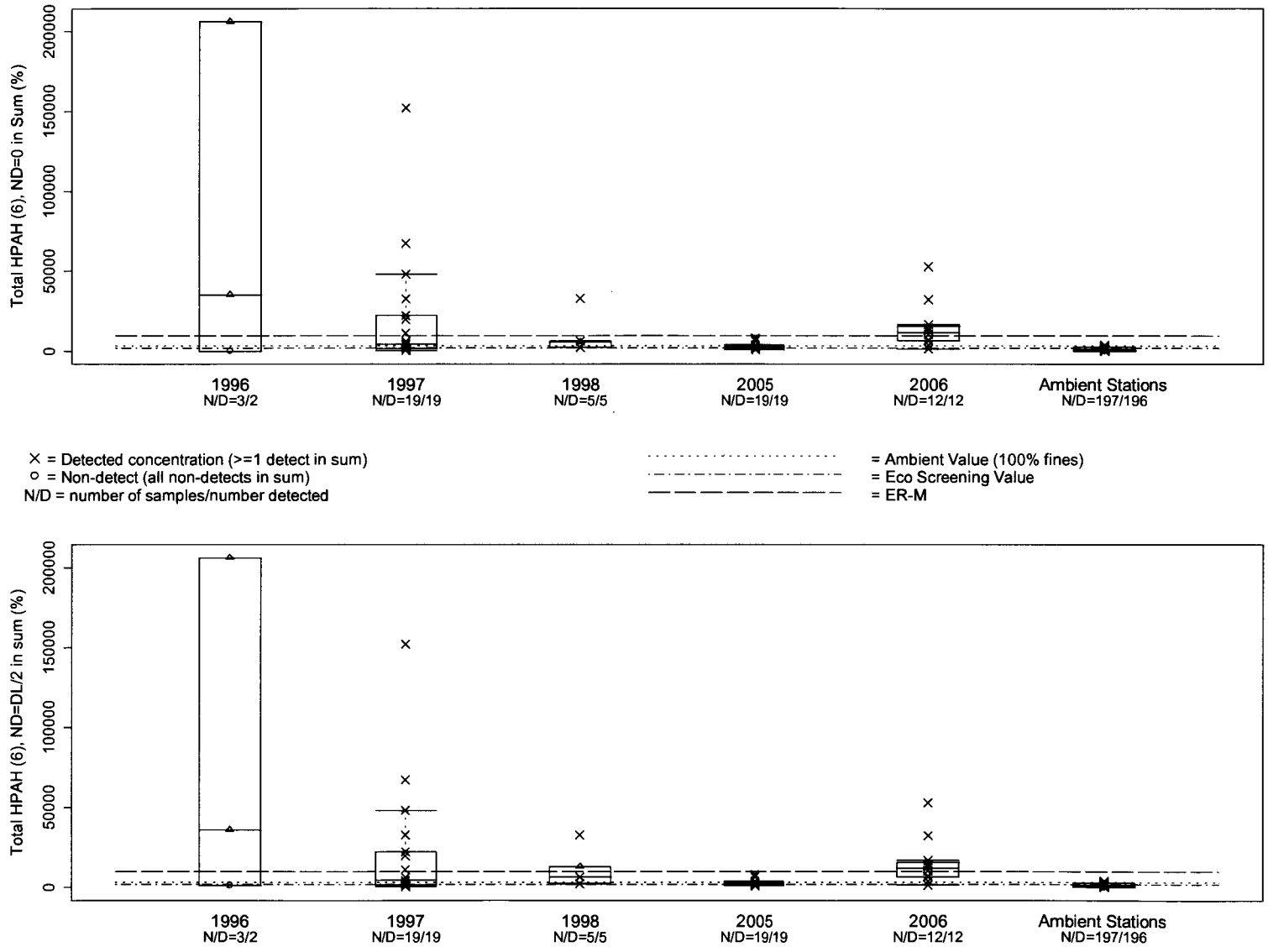

Figure A-252. Box Plots of Total HPAH (sum of 6 analytes) Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

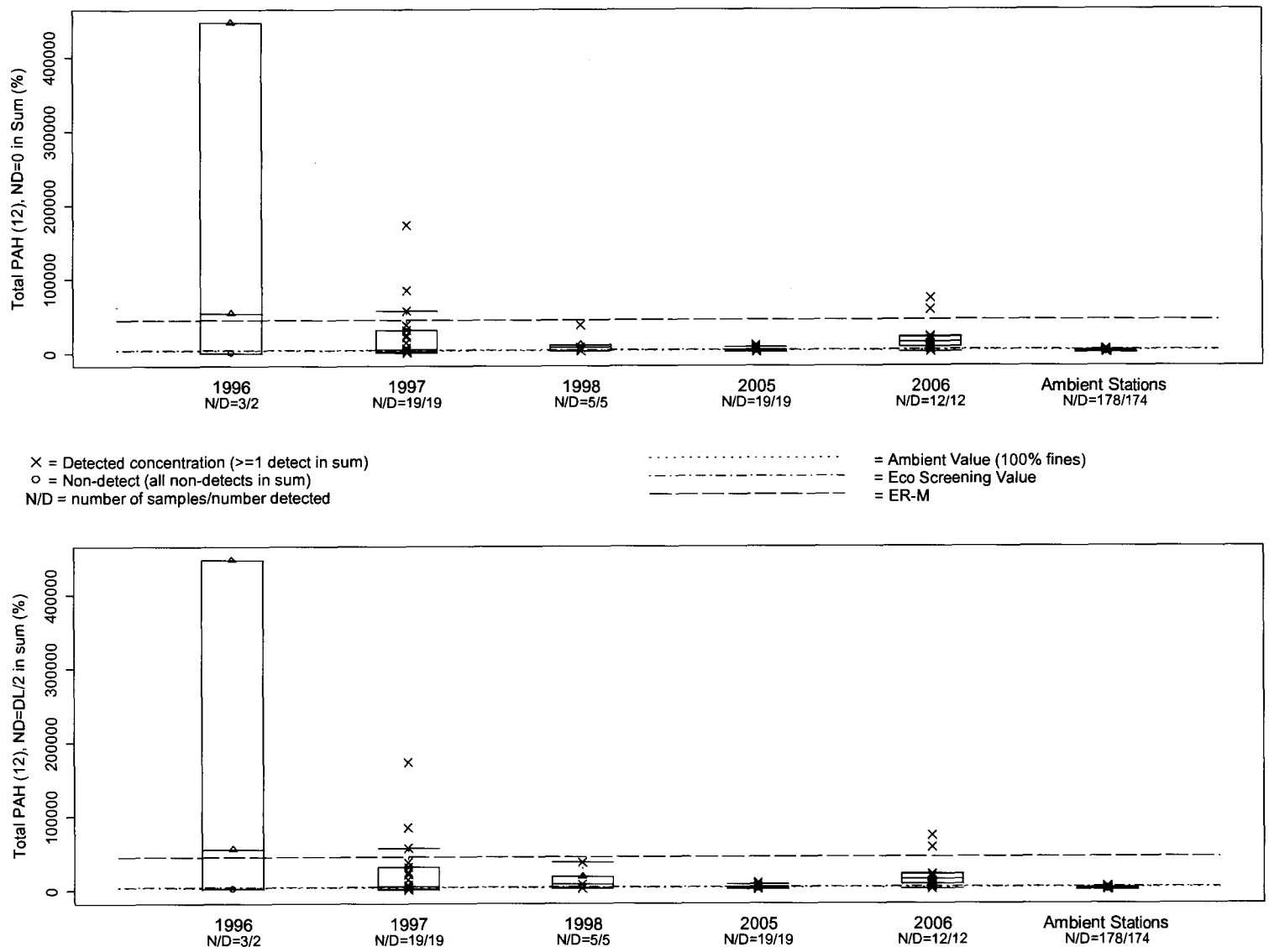

Figure A-253. Box Plots of Total PAH (sum of 12 analytes) Concentrations in IR Site 24 and Reference Surface Sediments by Year (ND=0 in Sum and ND=DL/2 in Sum).

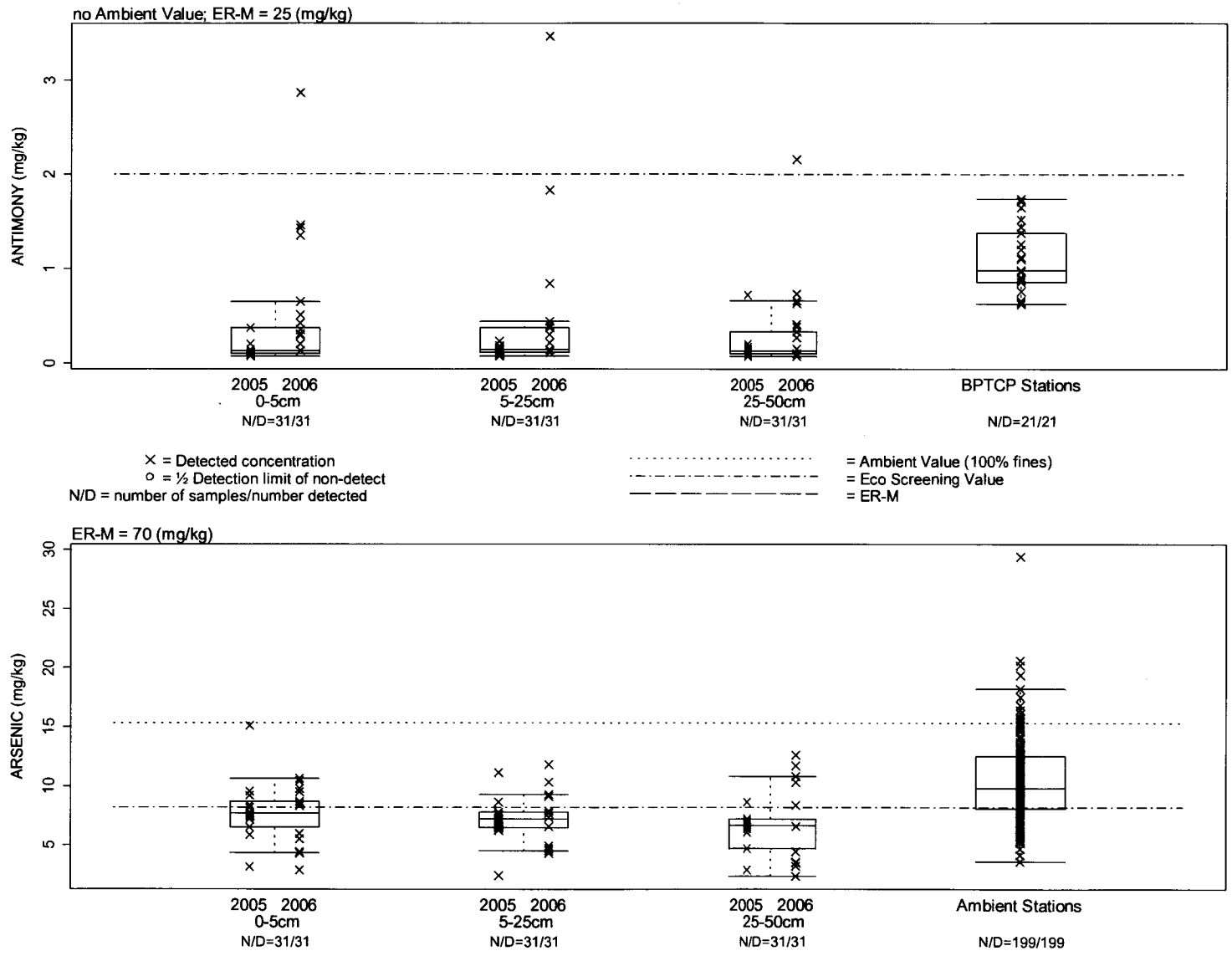

Figure A-254. Box Plots of Antimony and Arsenic Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

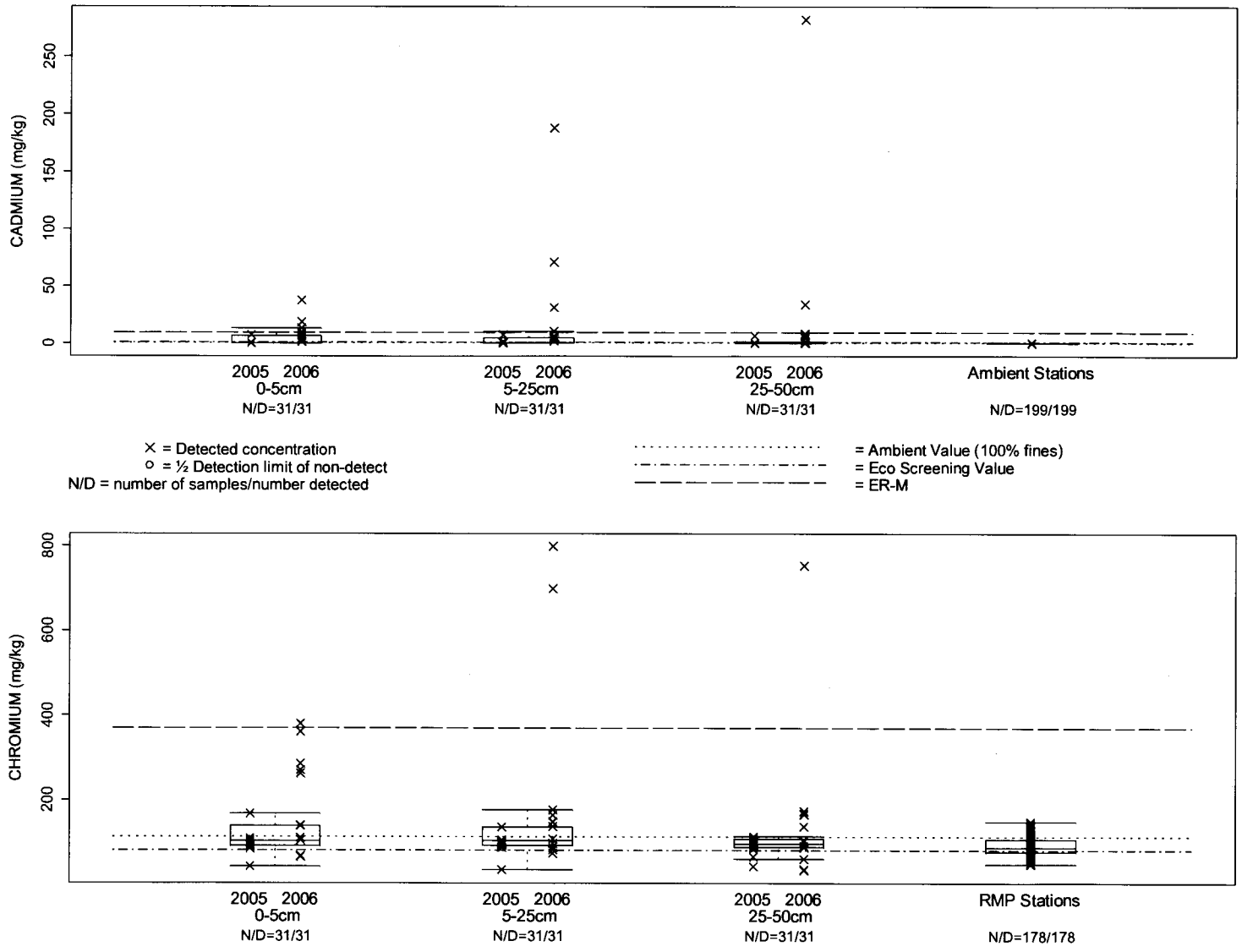

Figure A-255. Box Plots of Cadmium and Chromium Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

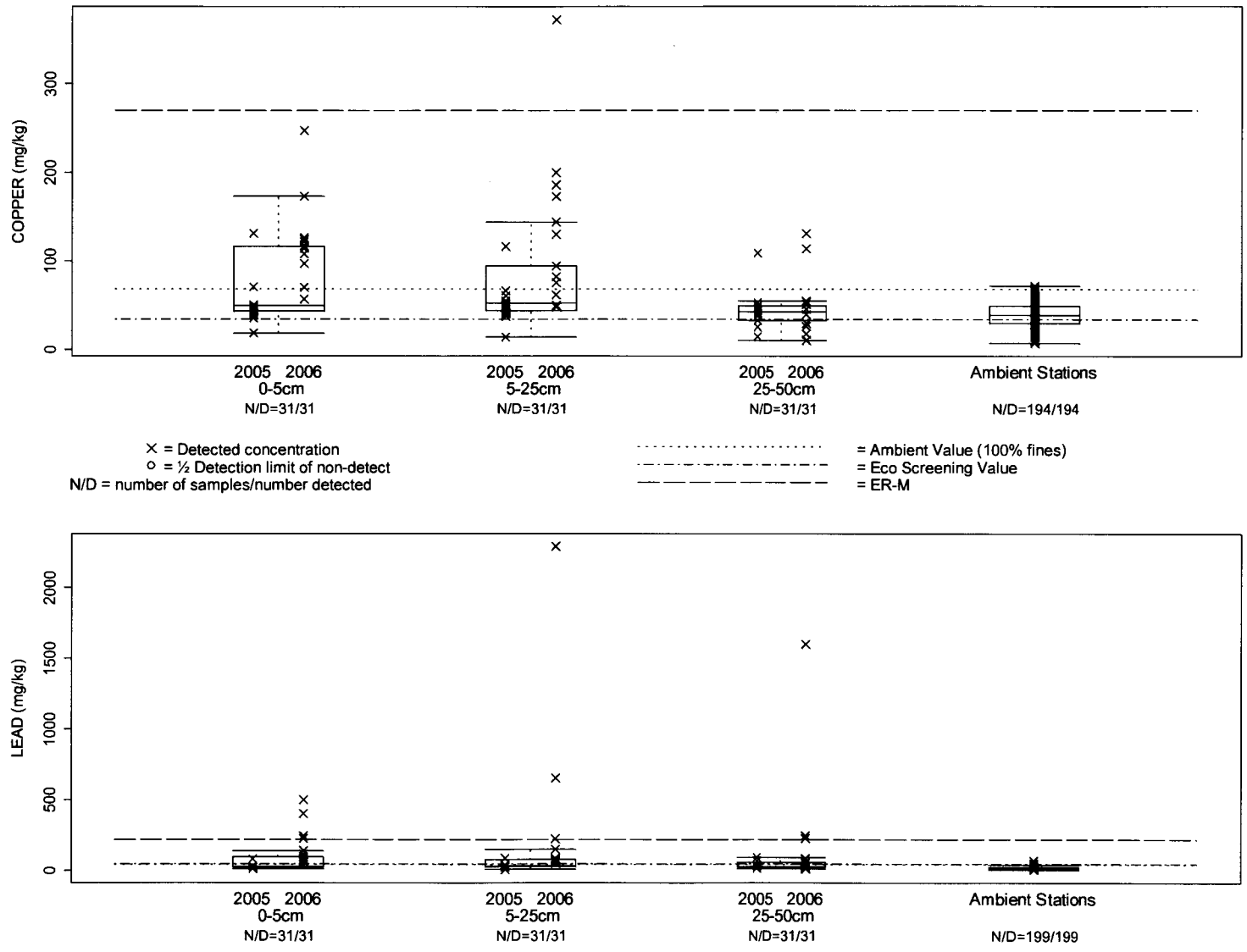

Figure A-256. Box Plots of Copper and Lead Concentrations in 2005-2006 Core Samples by Depth.

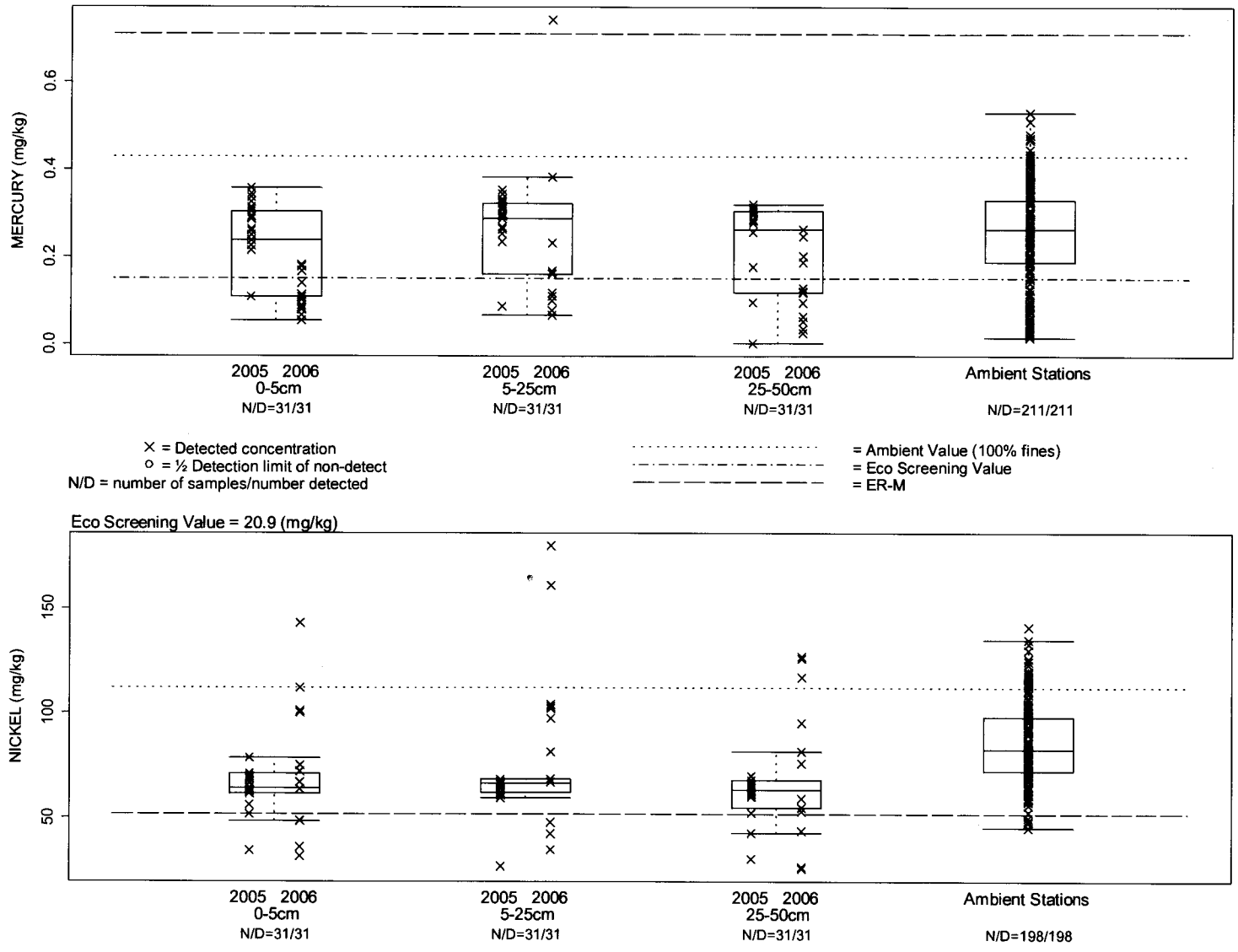

Figure A-257. Box Plots of Mercury and Nickel Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

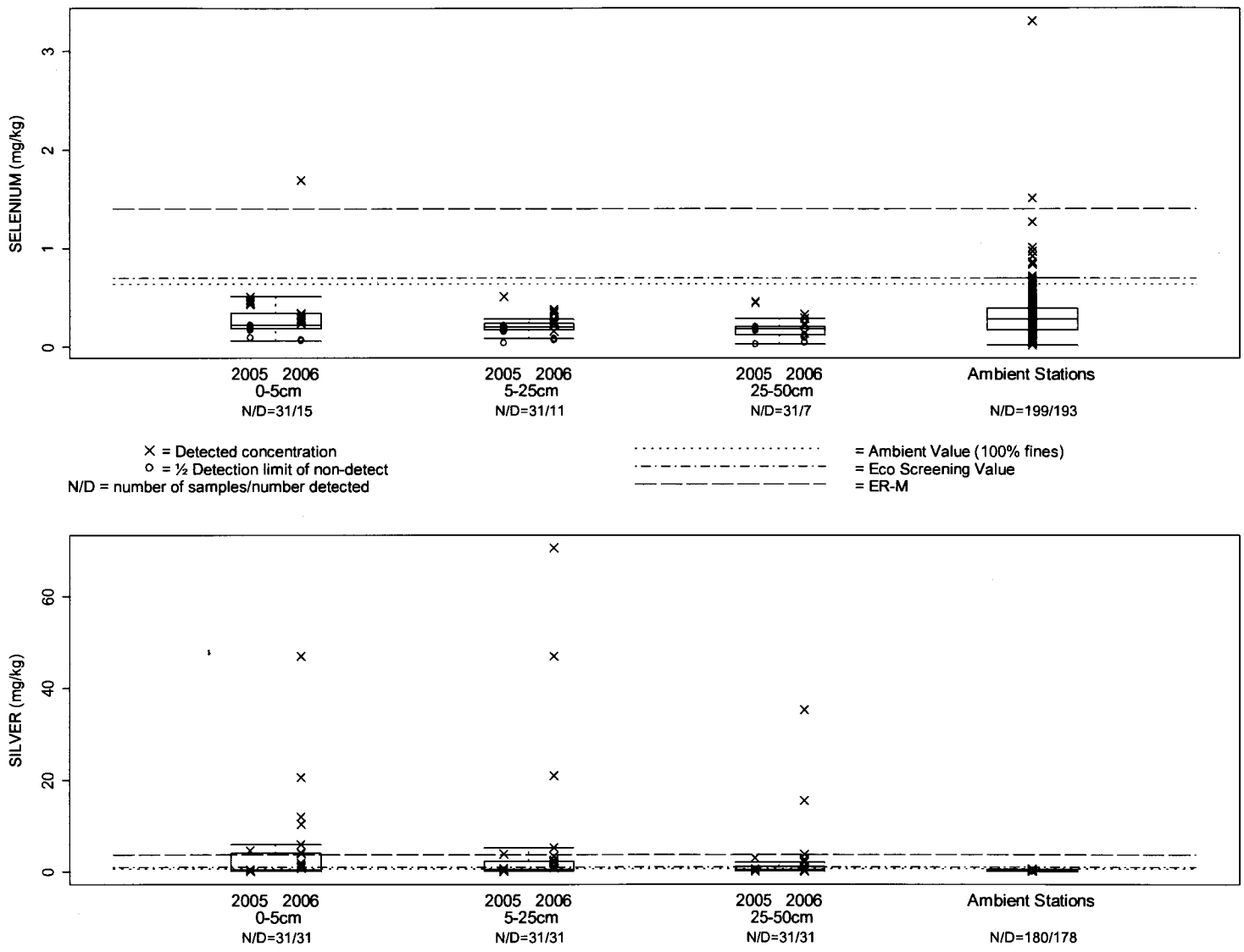

Figure A-258. Box Plots of Selenium and Silver Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

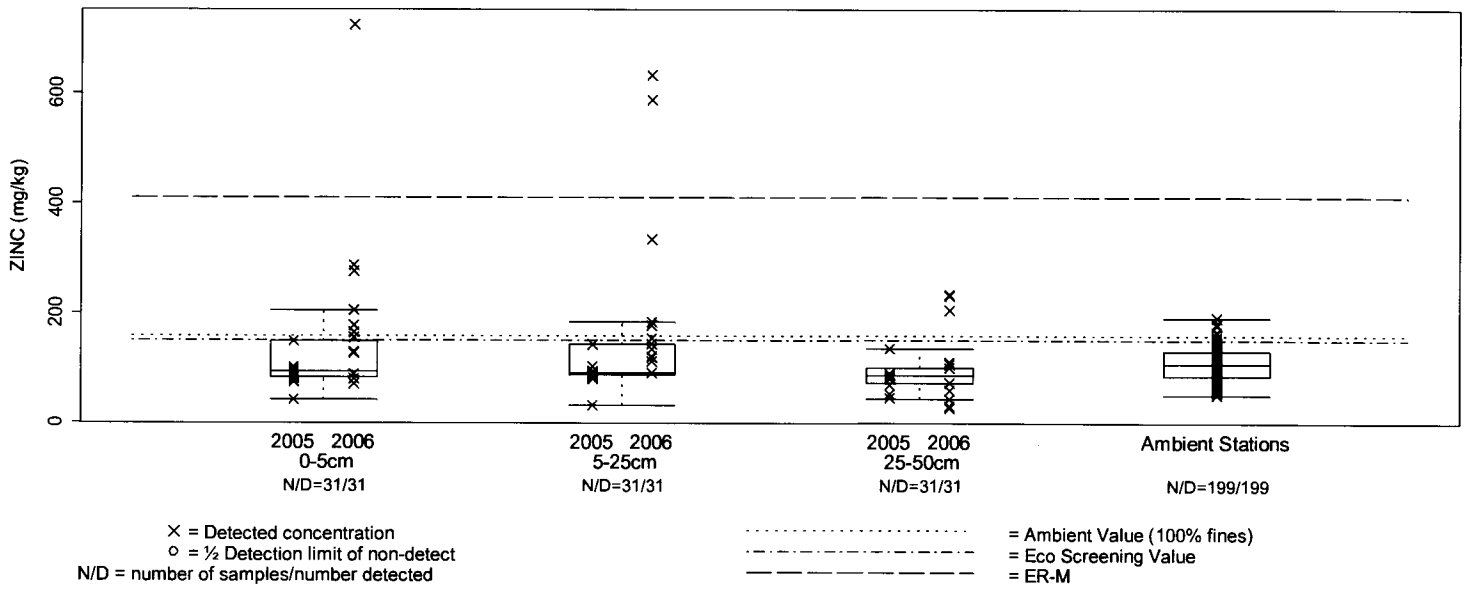

Figure A-259. Box Plots of Zinc Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

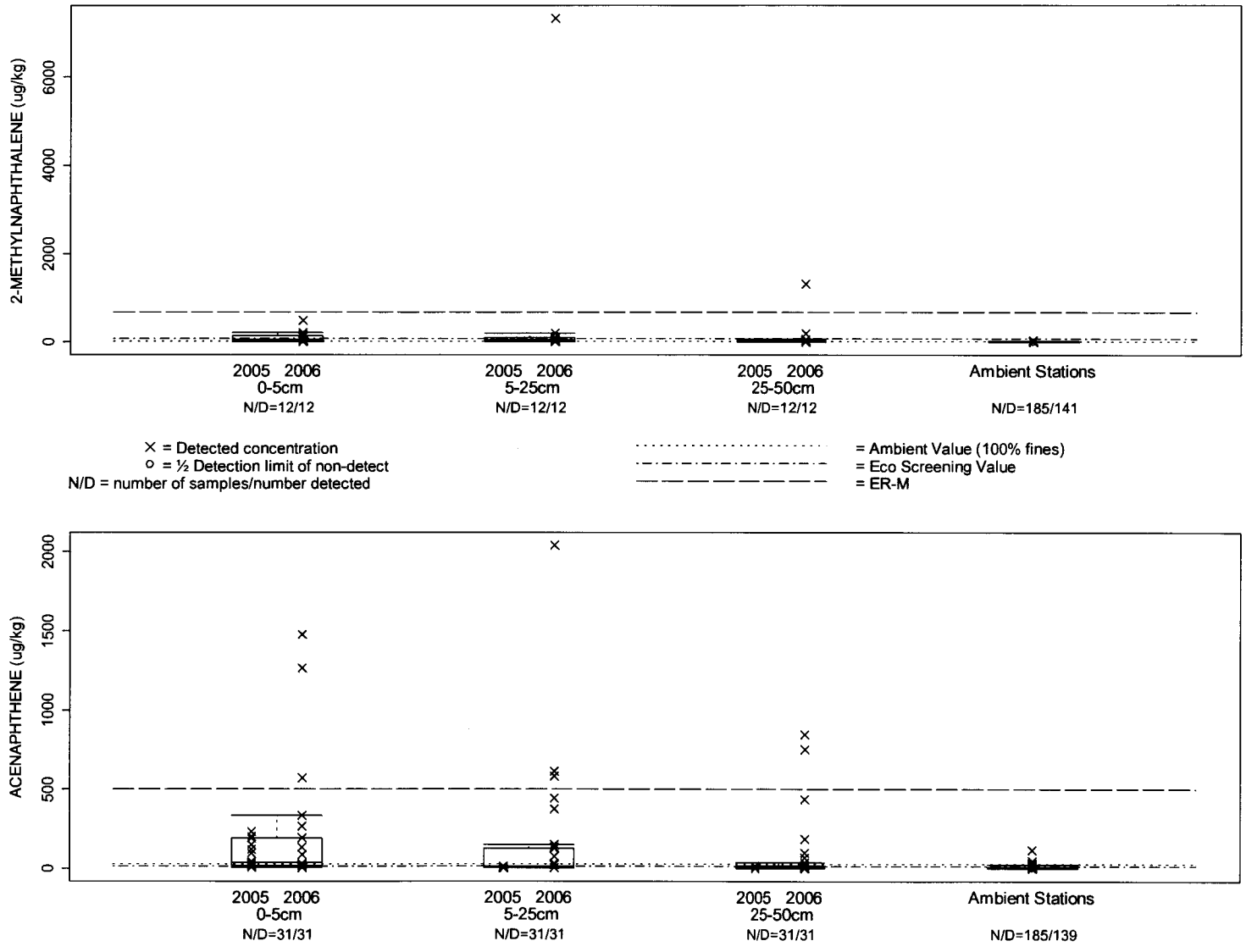

Figure A-260. Box Plots of 2-Methylnaphthalene and Acenaphthene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

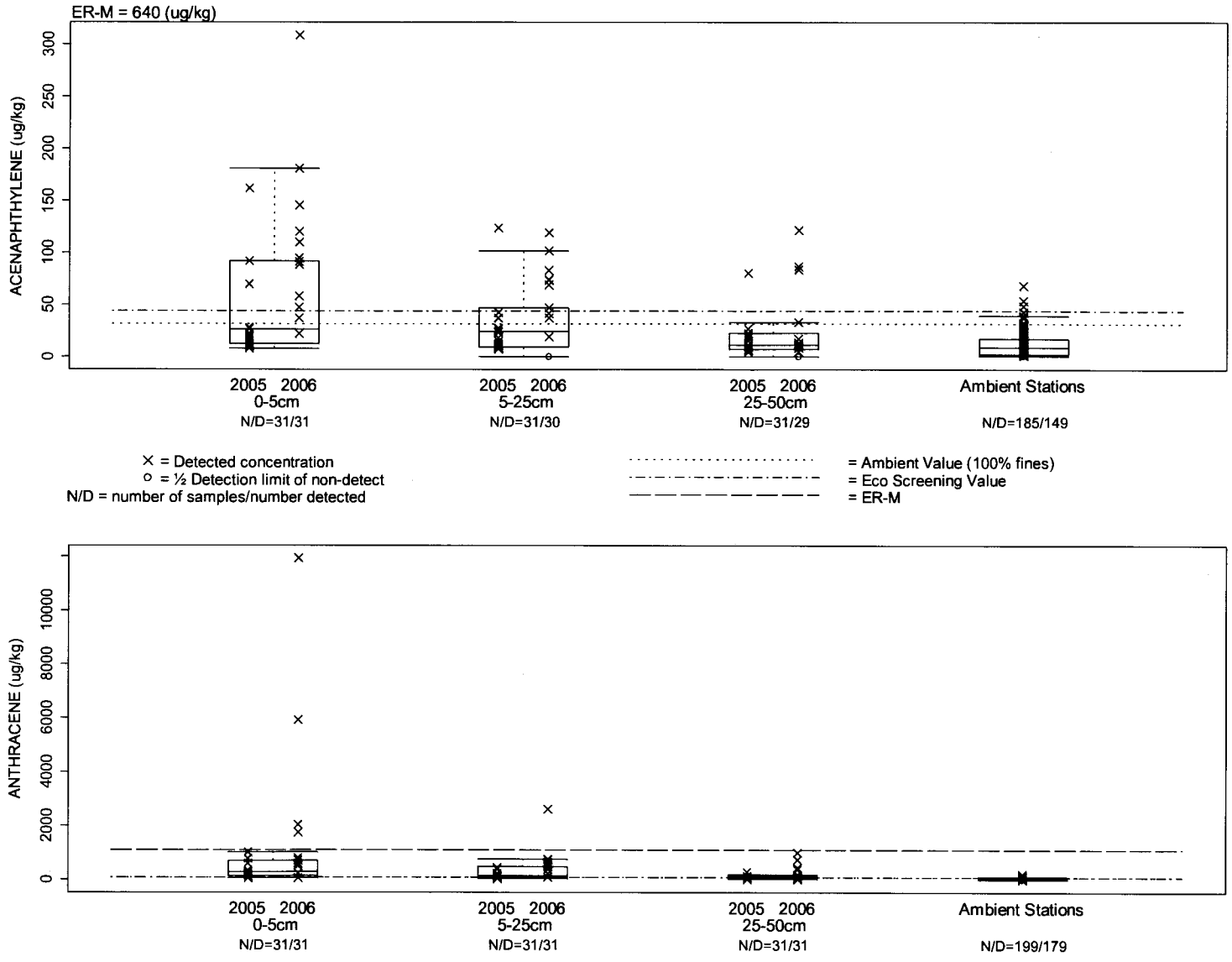

Figure A-261. Box Plots of Acenaphthylene and Anthracene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

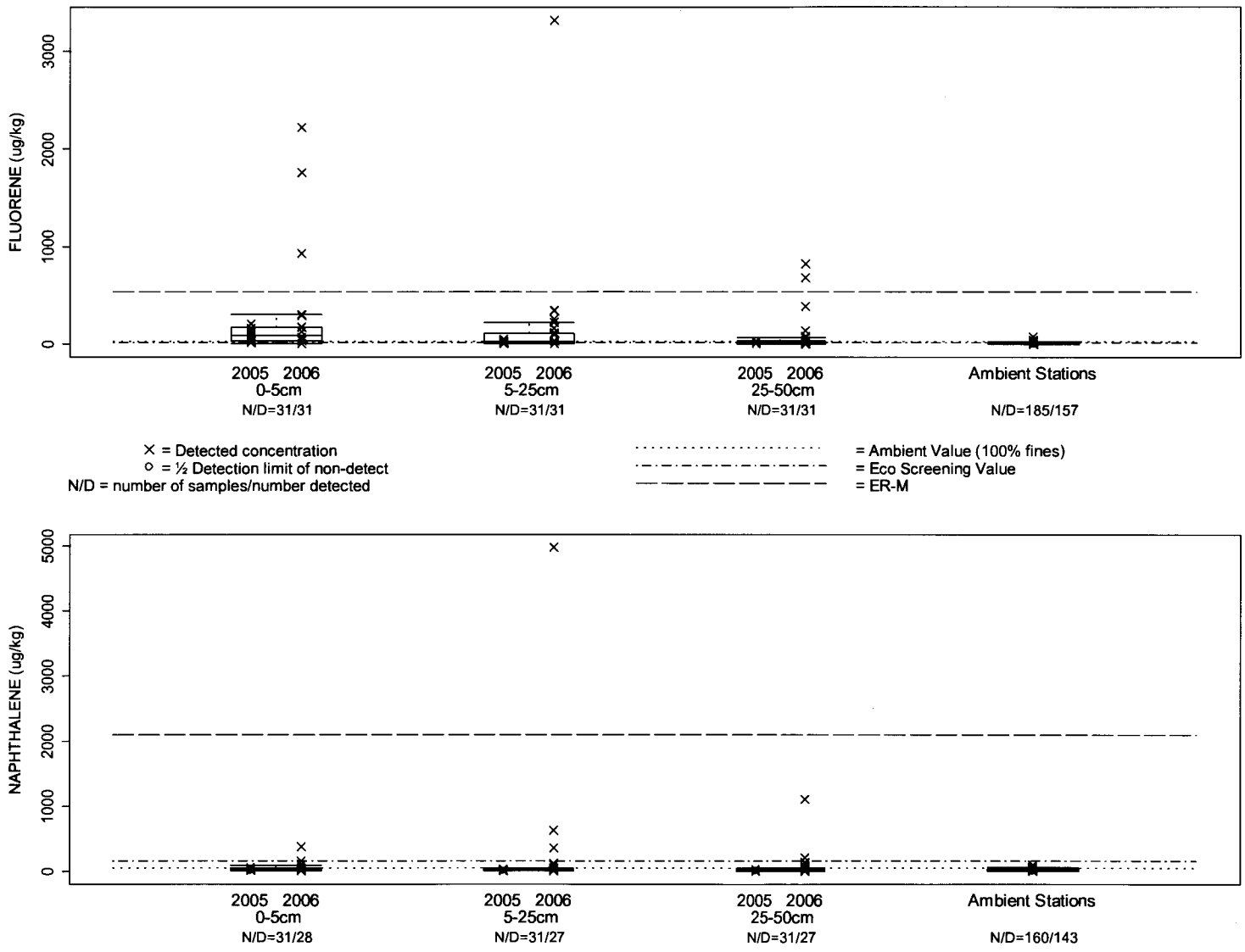

Figure A-262. Box Plots of Fluorene and Naphthalene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

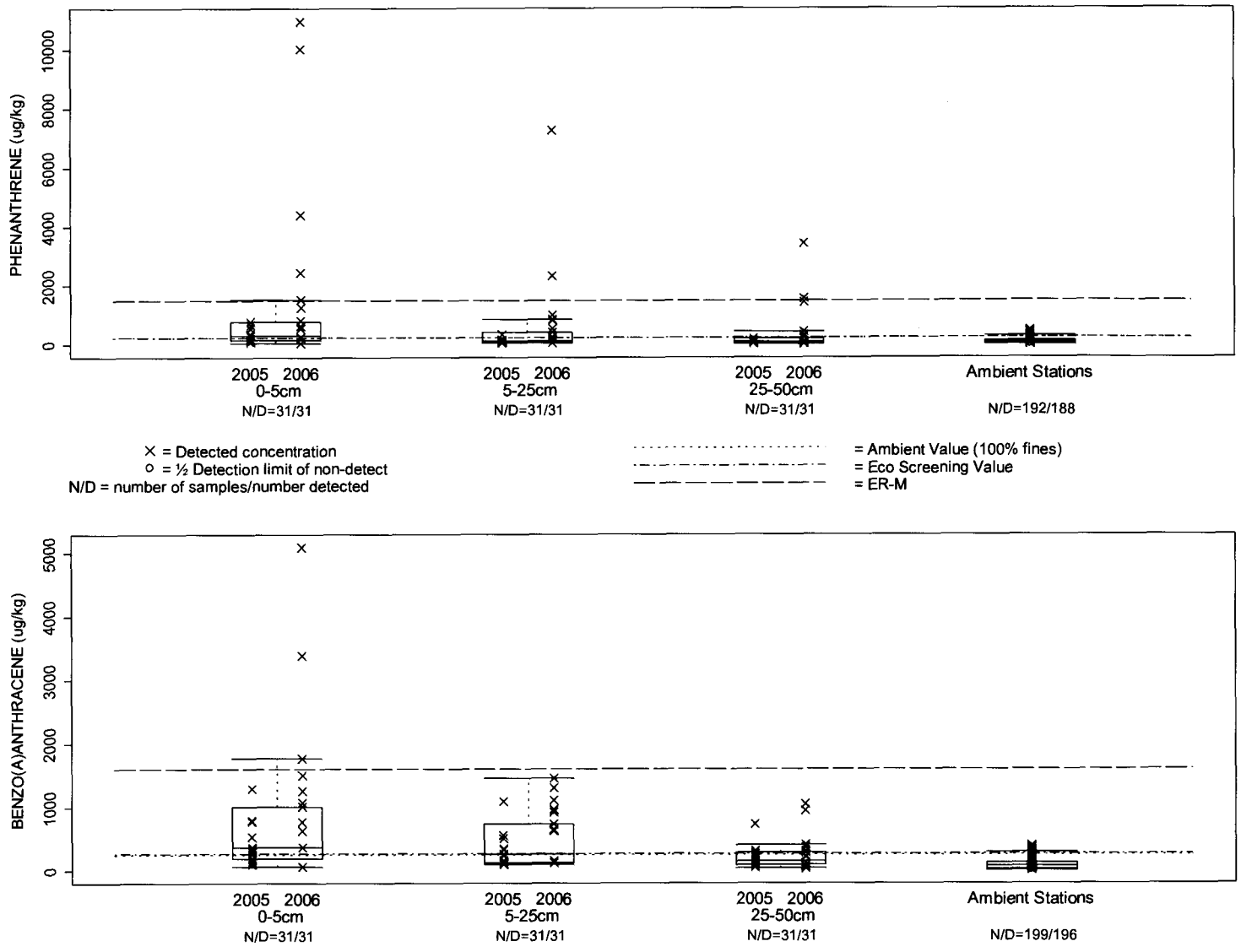

Figure A-263. Box Plots of Phenanthrene and Benzo(a)anthracene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

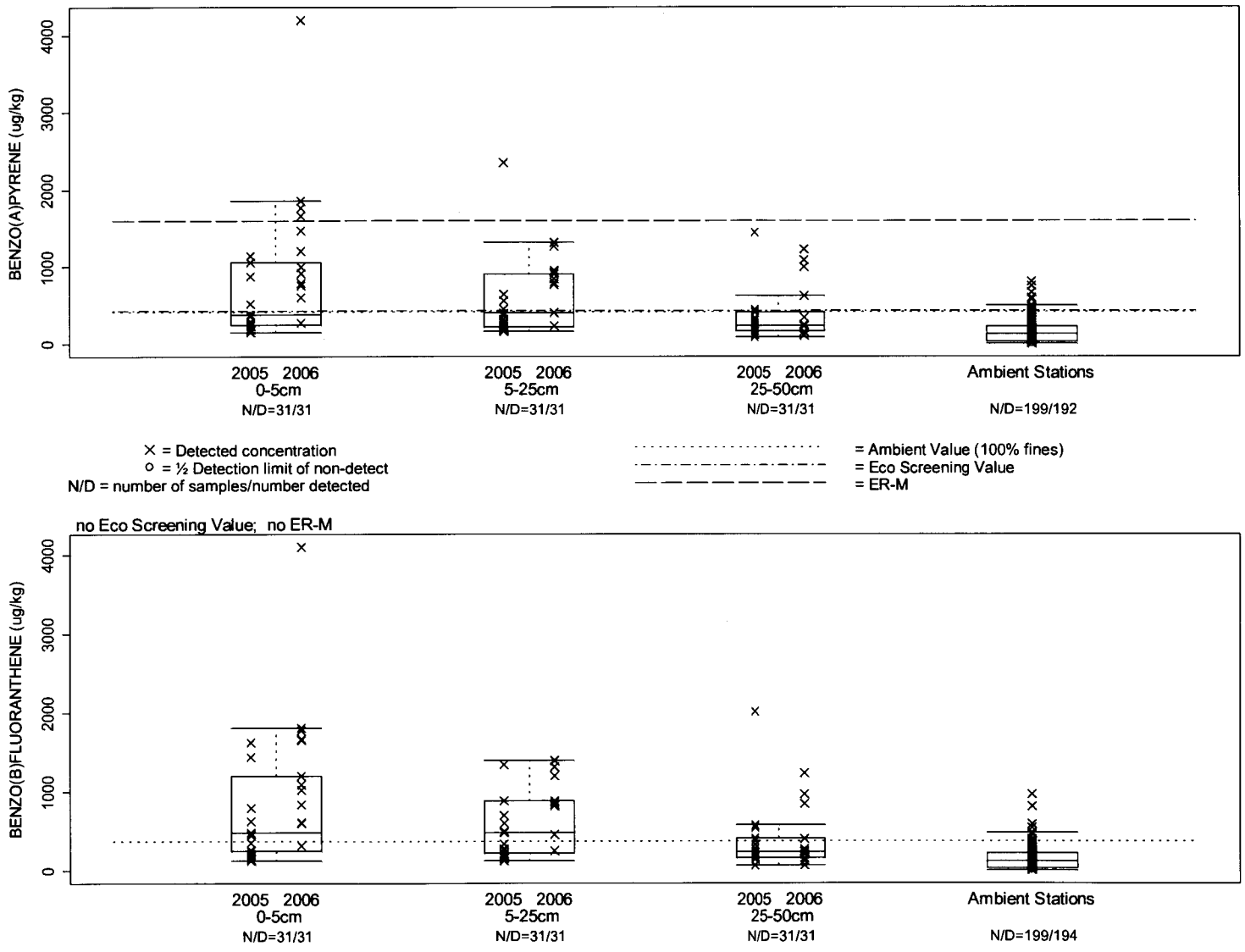

Figure A-264. Box Plots of Benzo(a)pyrene and Benzo(b)fluoranthene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

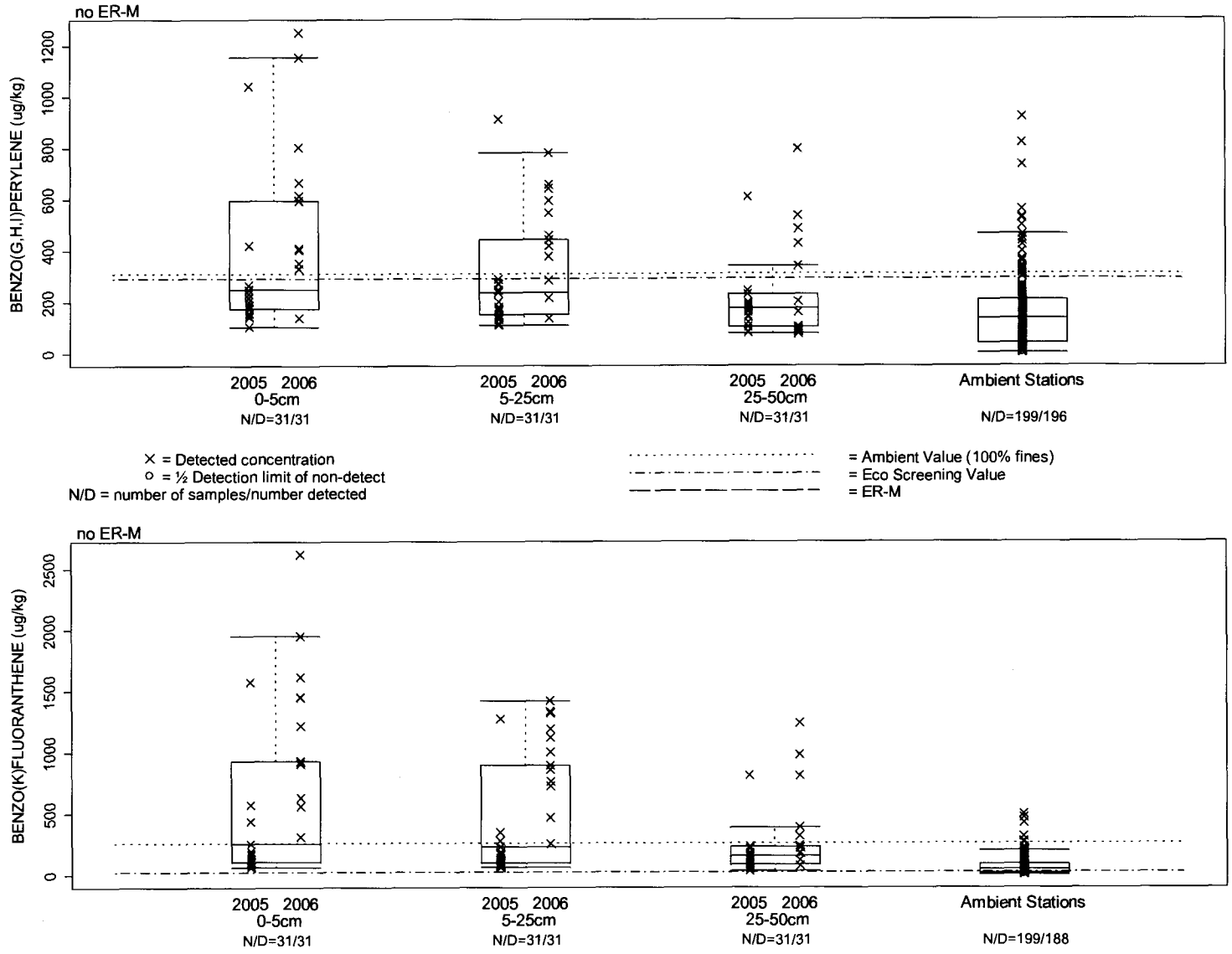

Figure A-265. Box Plots of Benzo(g,h,i)perylene and Benzo(k)fluoranthene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

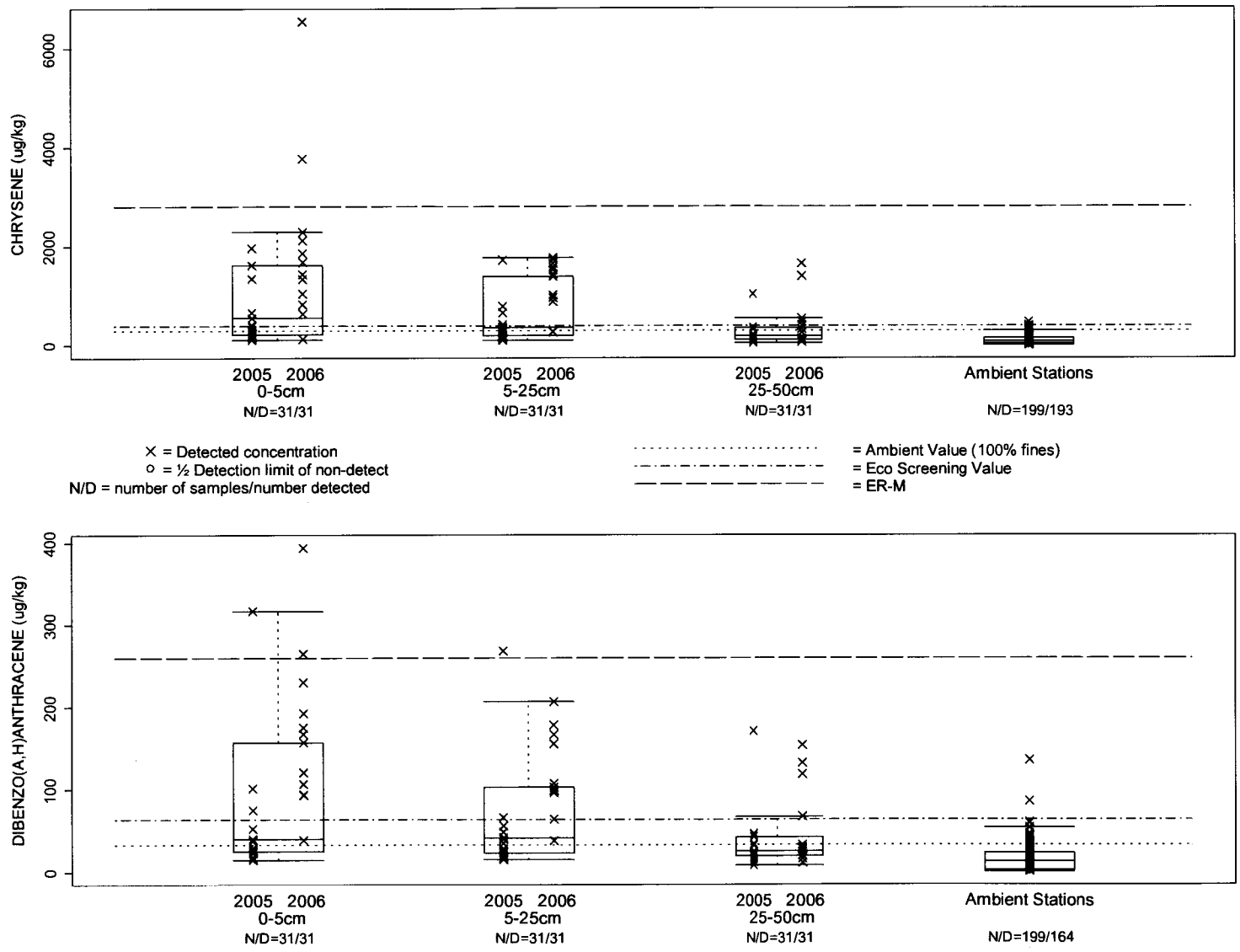

Figure A-266. Box Plots of Chrysene and Dibenzo(a,h)anthracene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

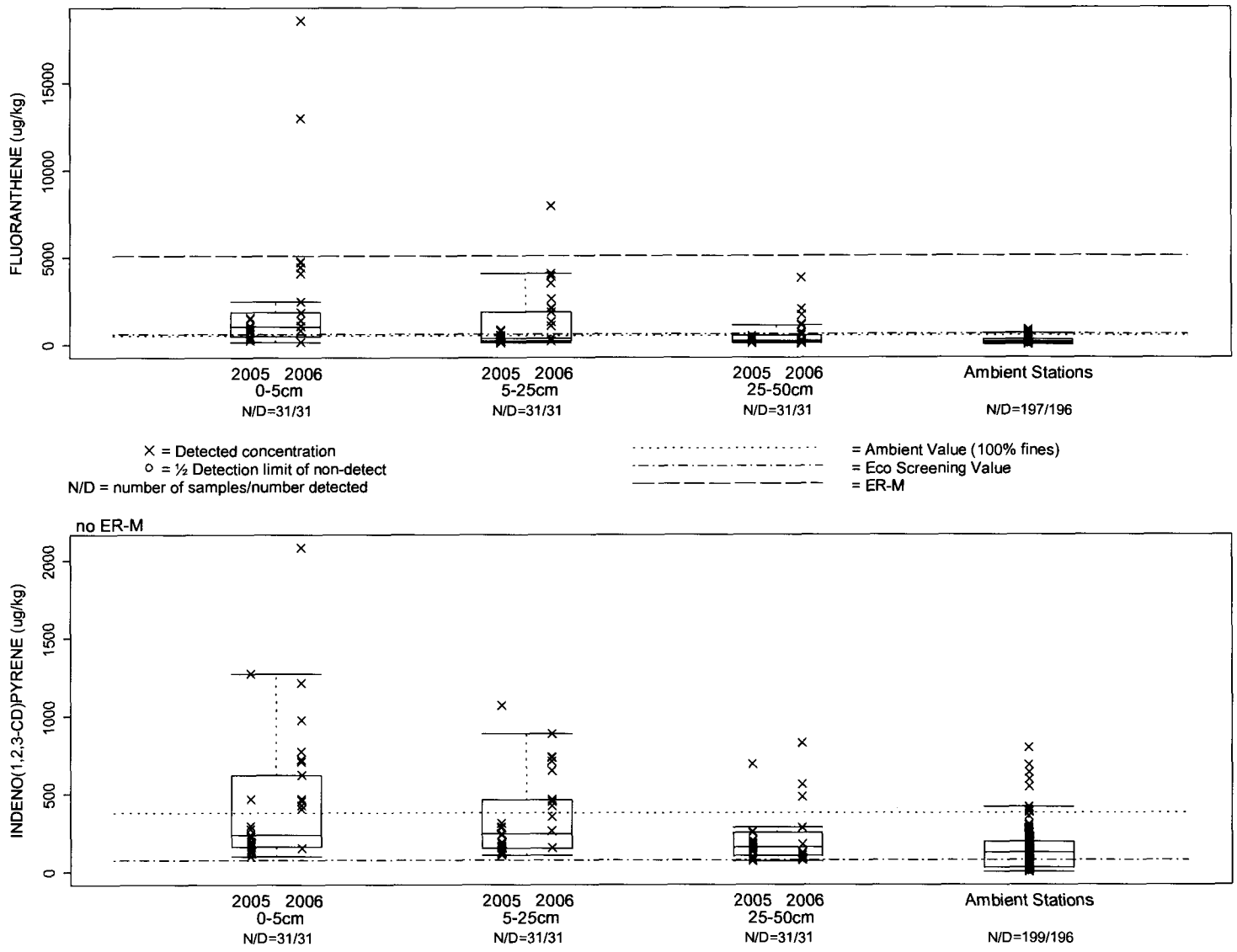

Figure A-267. Box Plots of Fluoranthene and Indeno(1,2,3-cd)pyrene Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

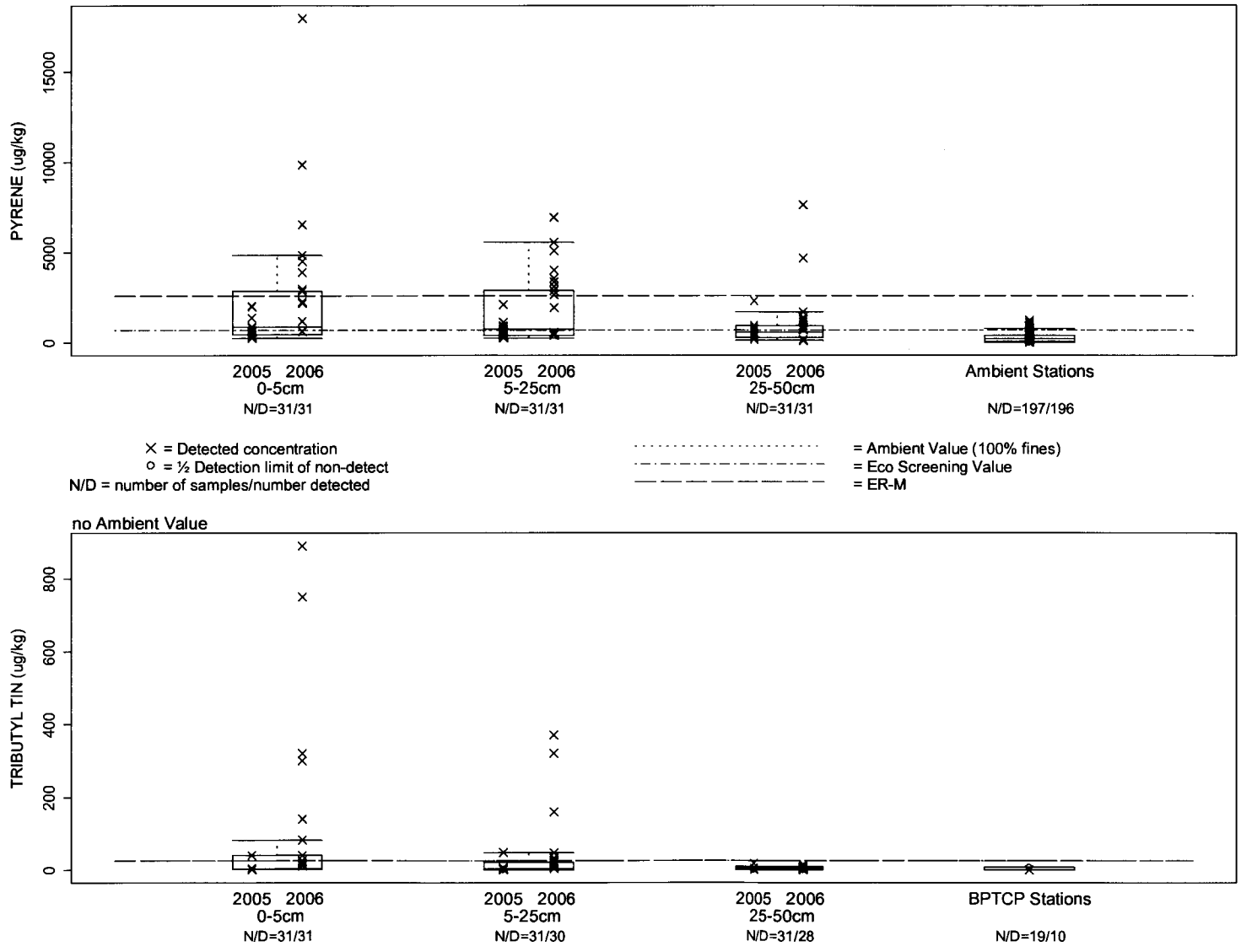

Figure A-268. Box Plots of Pyrene and Tributyl Tin Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

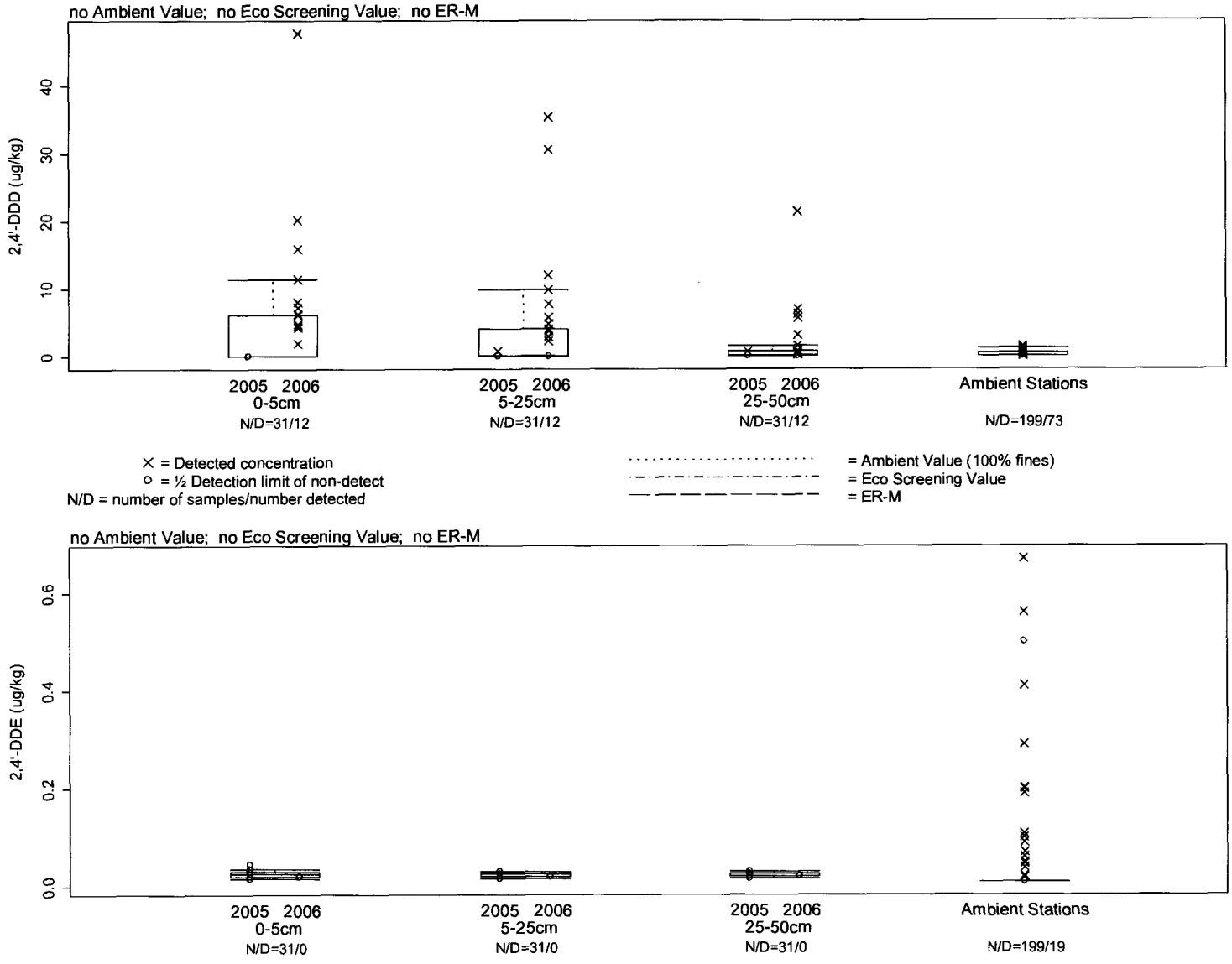

Figure A-269. Box Plots of 2,4'-DDD and 2,4'-DDE Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

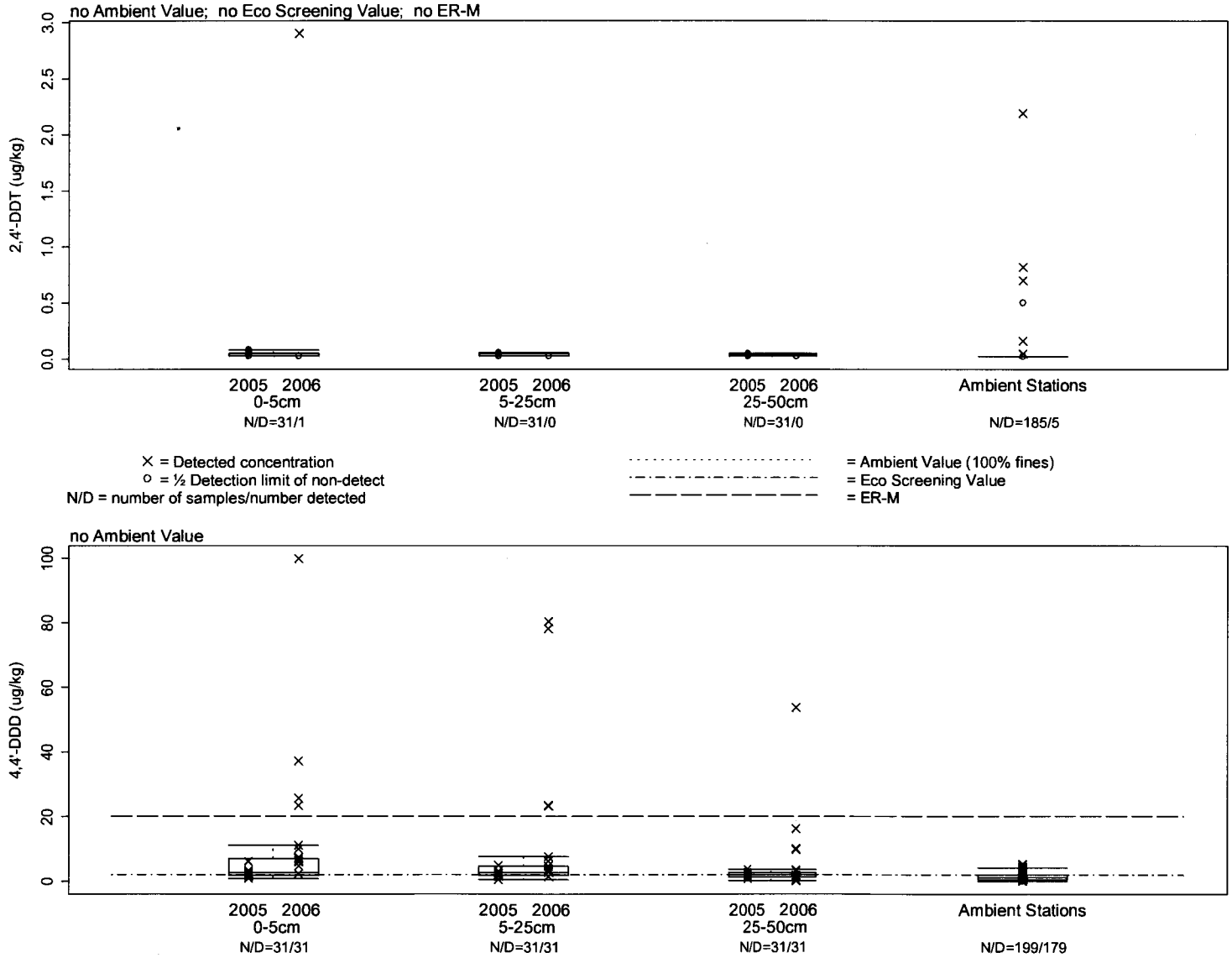

Figure A-270. Box Plots of 2,4′-DDT and 4,4′-DDD Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

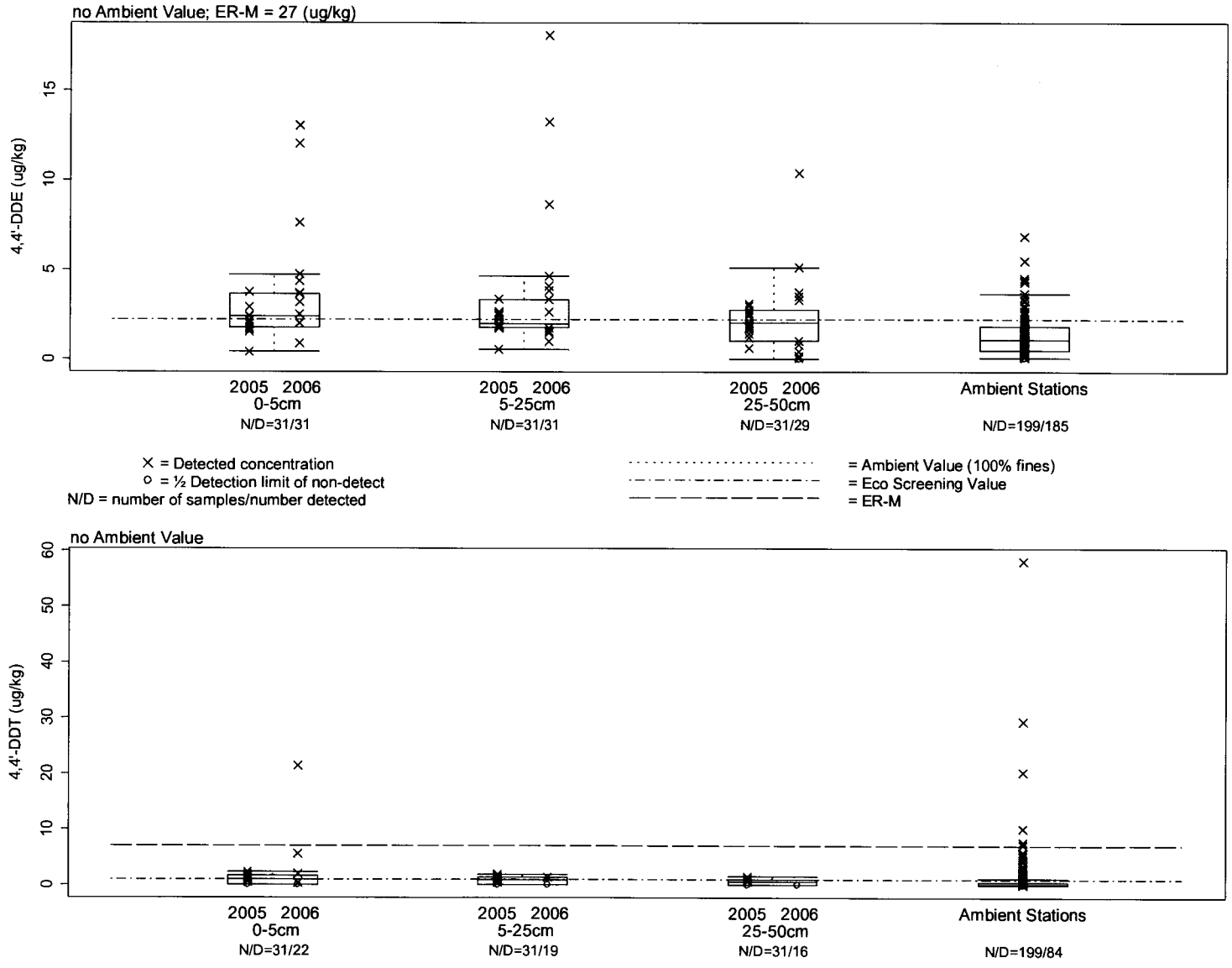

Figure A-271. Box Plots of 4,4′-DDE and 4,4′-DDT Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

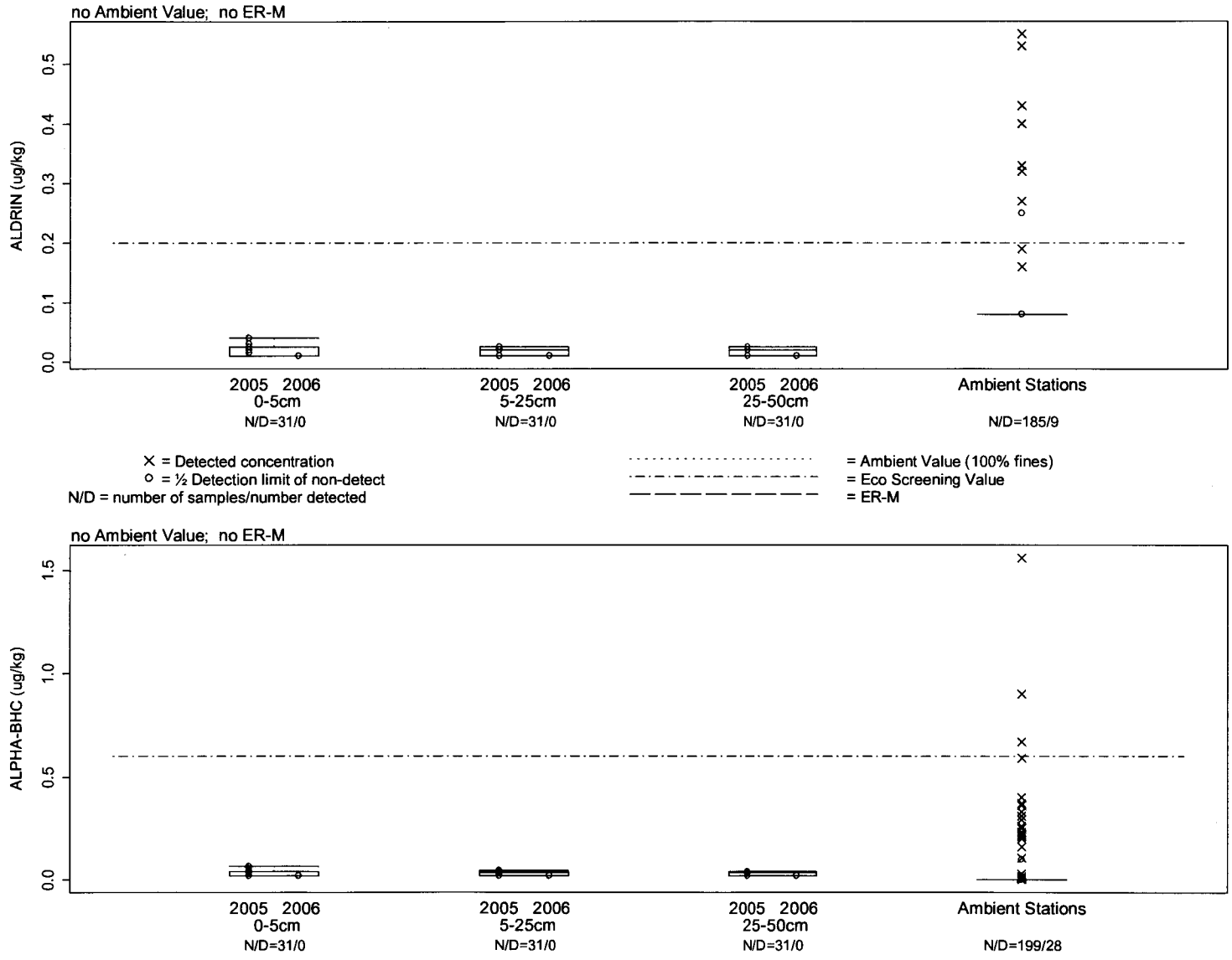

Figure A-272. Box Plots of Aldrin and *alpha*-BHC Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

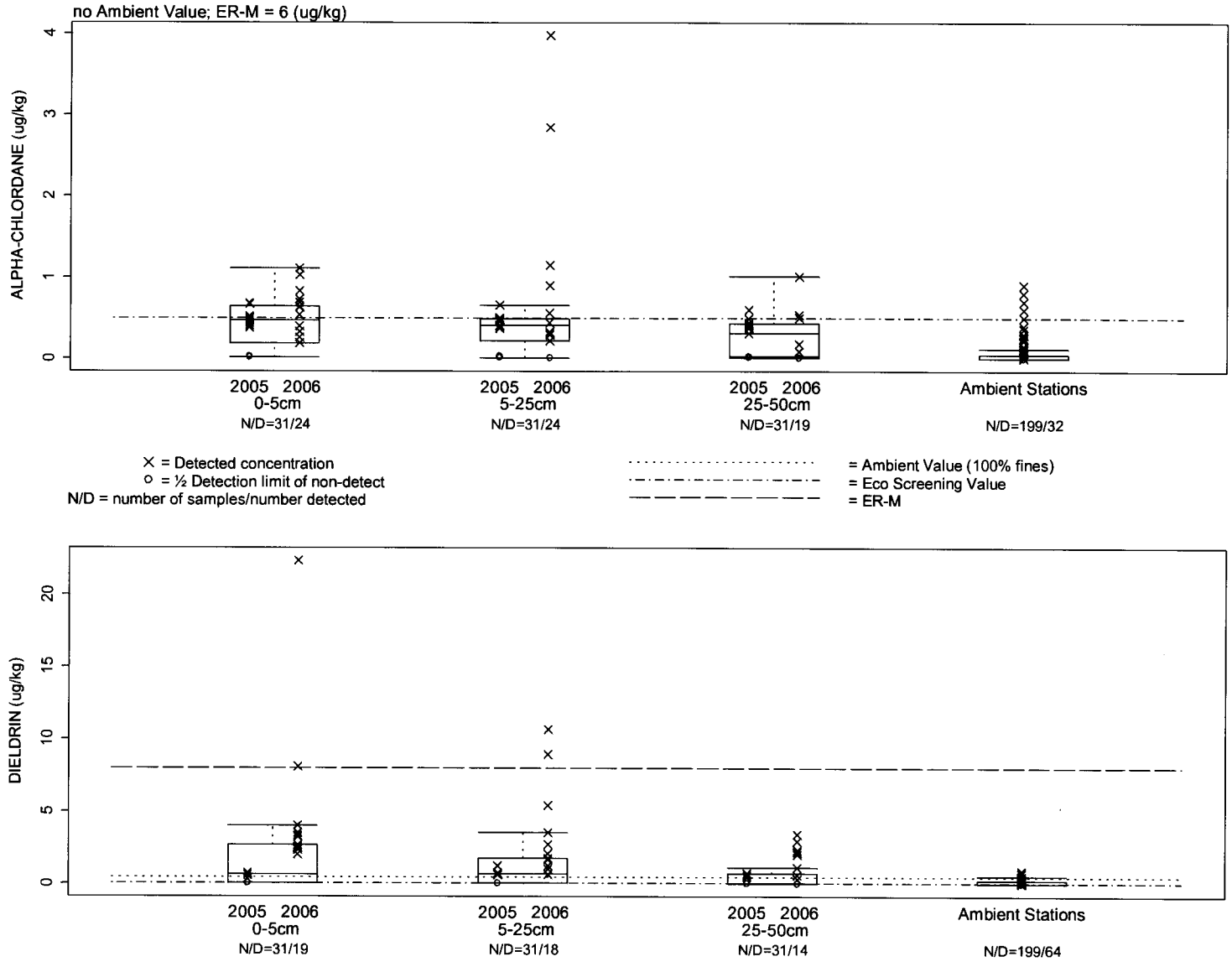

Figure A-273. Box Plots of *alpha*-Chlordane and Dieldrin Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

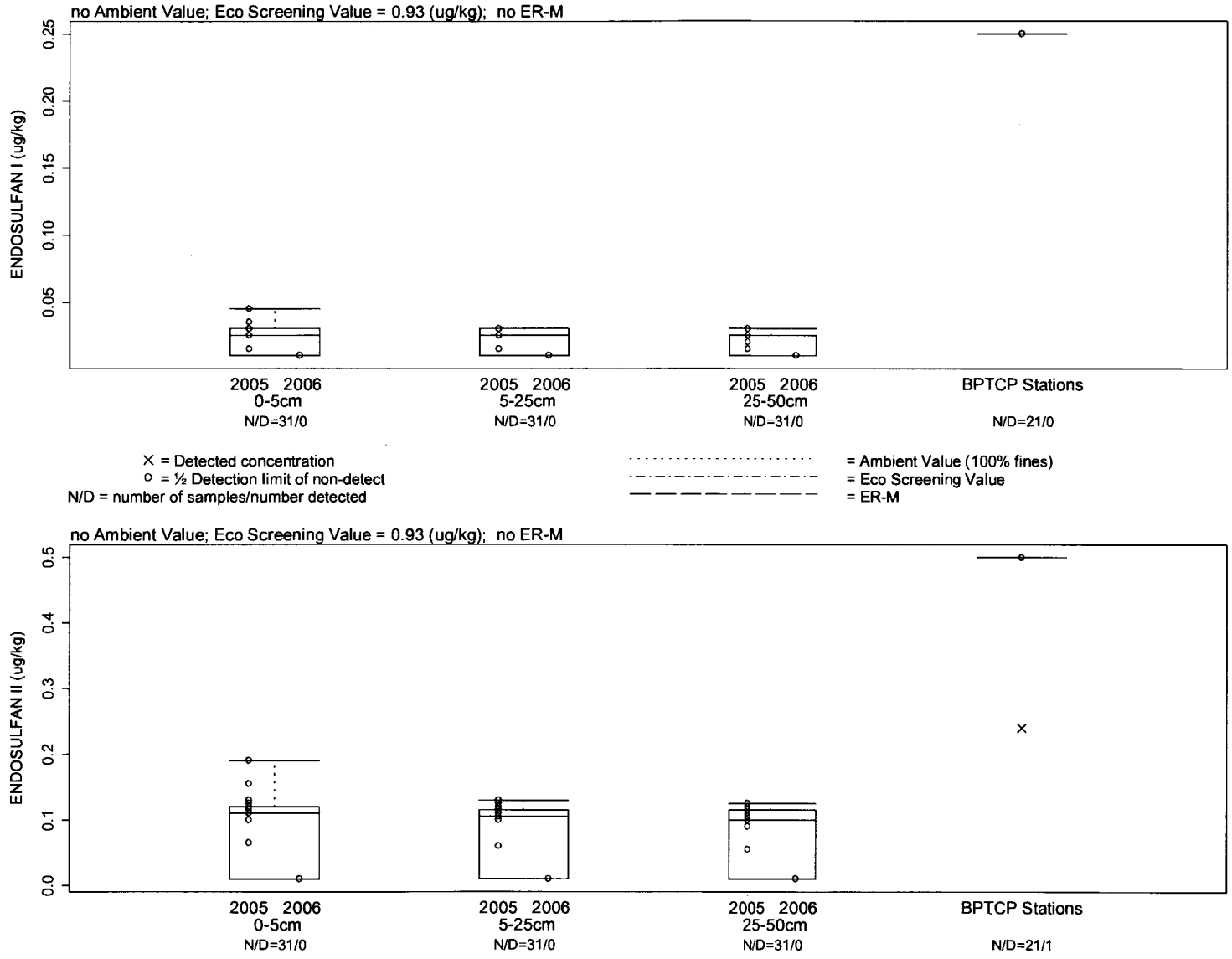

Figure A-274. Box Plots of Endosulfan I and Endosulfan II Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

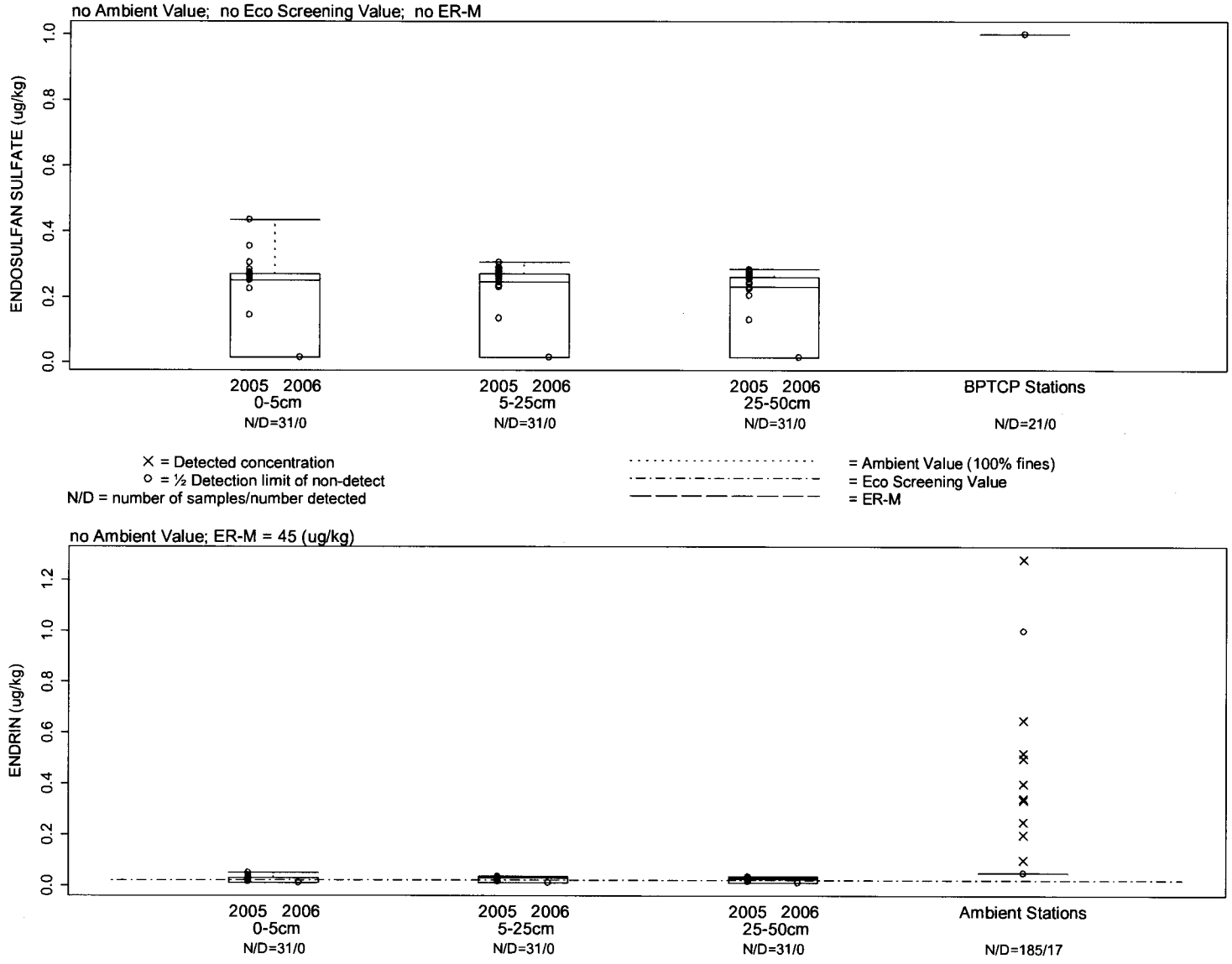

Figure A-275. Box Plots of Endosulfan Sulfate and Endrin Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

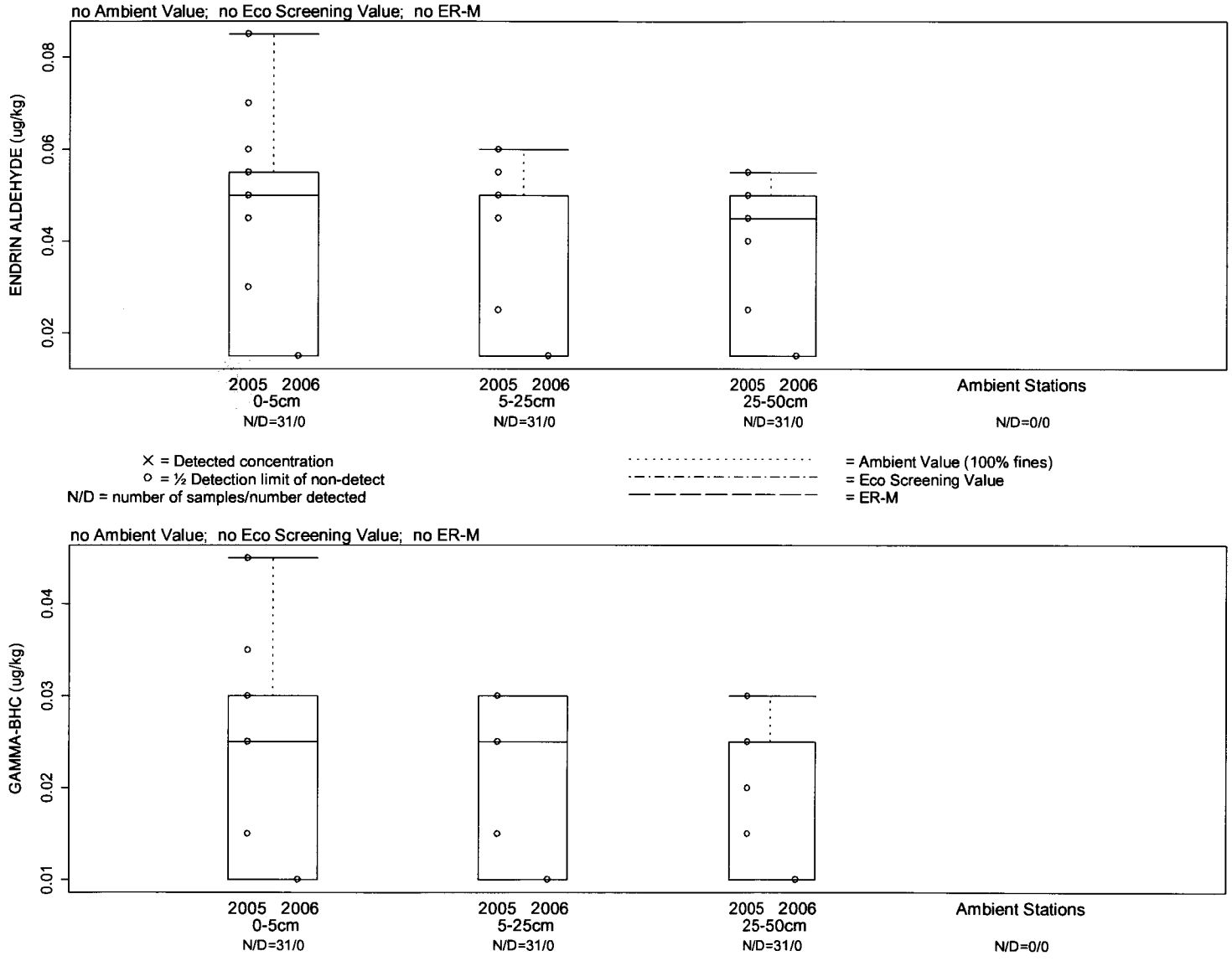

Figure A-276. Box Plots of Endrin Aldehyde and *gamma*-BHC Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

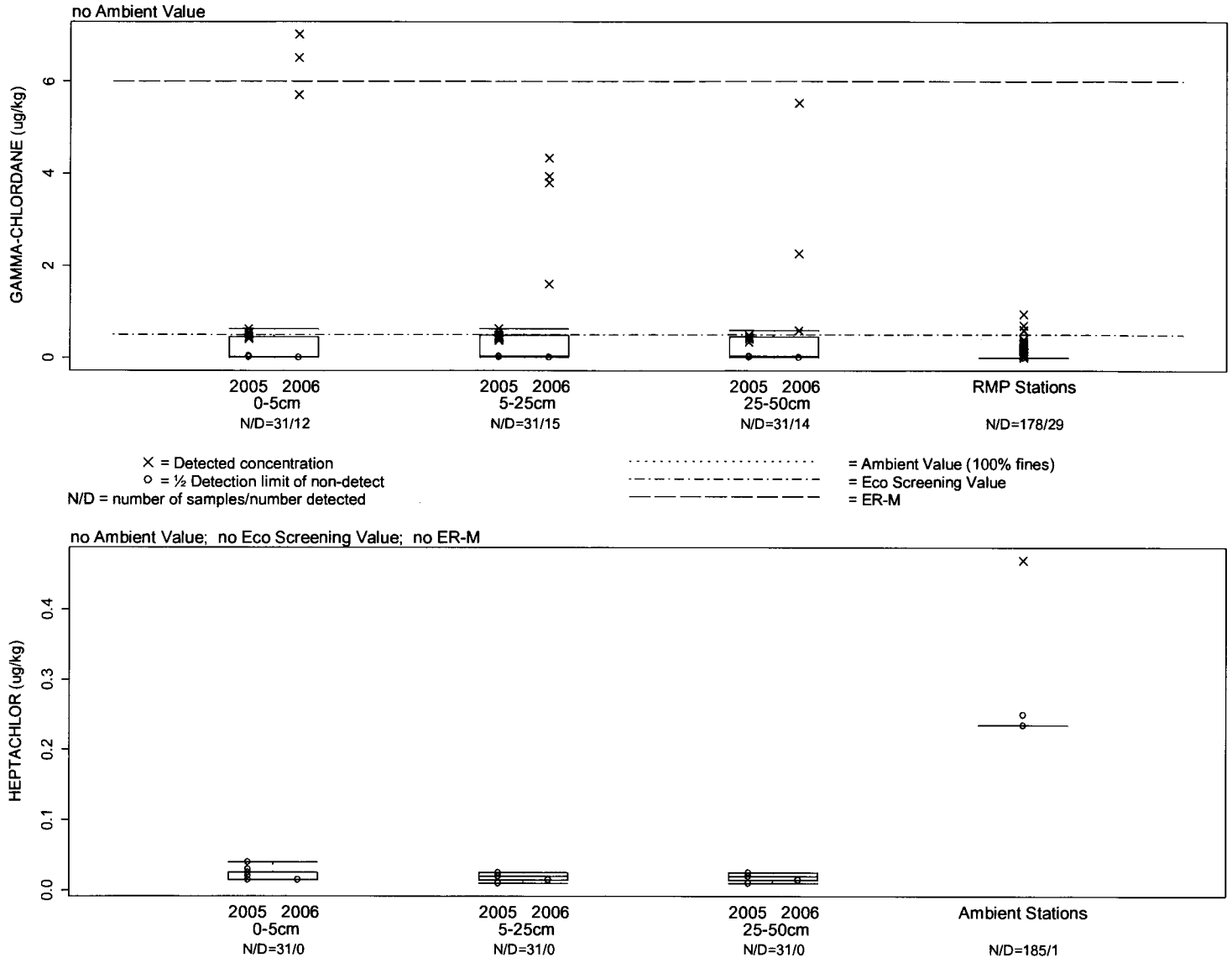

Figure A-277. Box Plots of *gamma*-Chlordane and Heptachlor Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

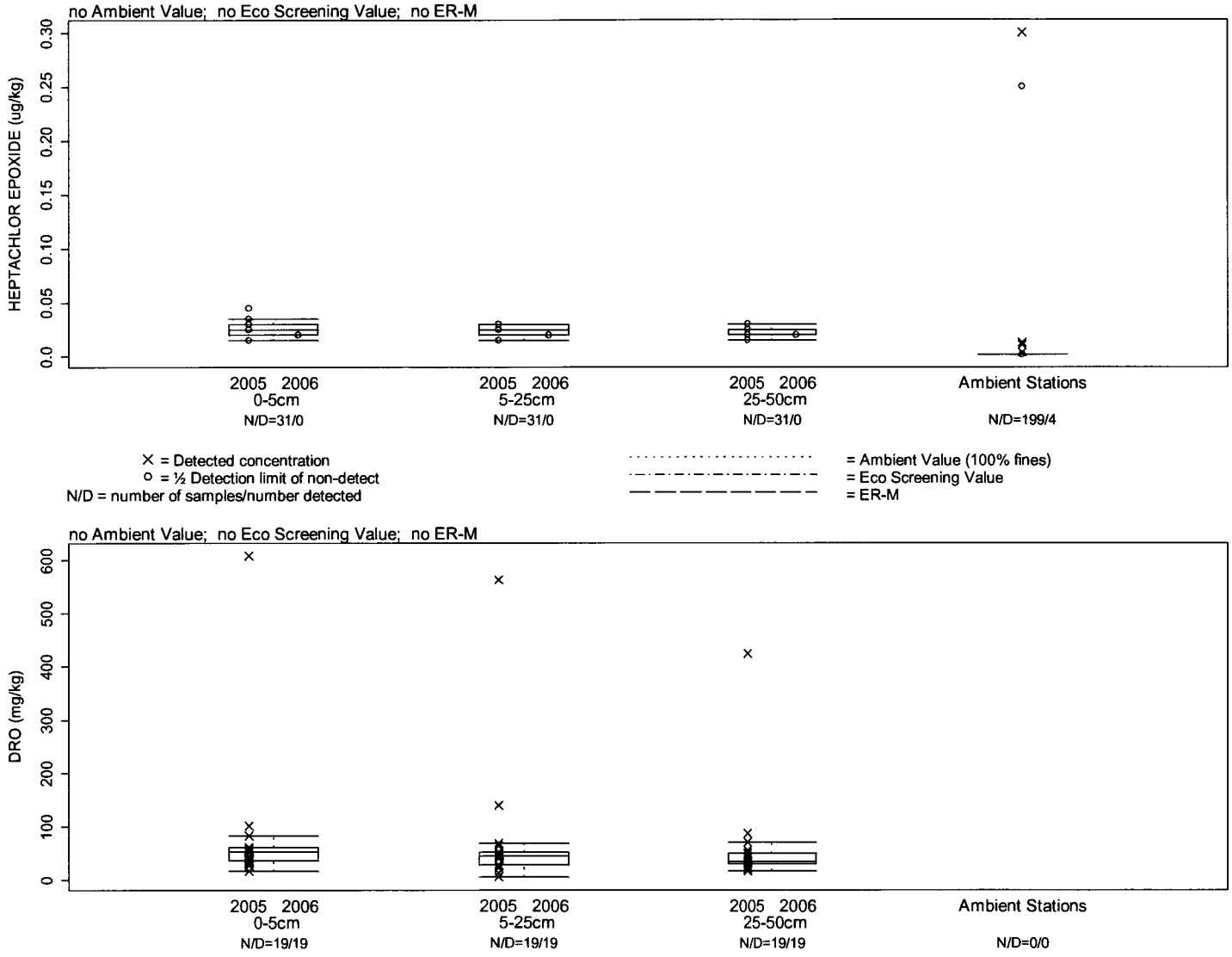

Figure A-278. Box Plots of Heptachlor Epoxide and DRO Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

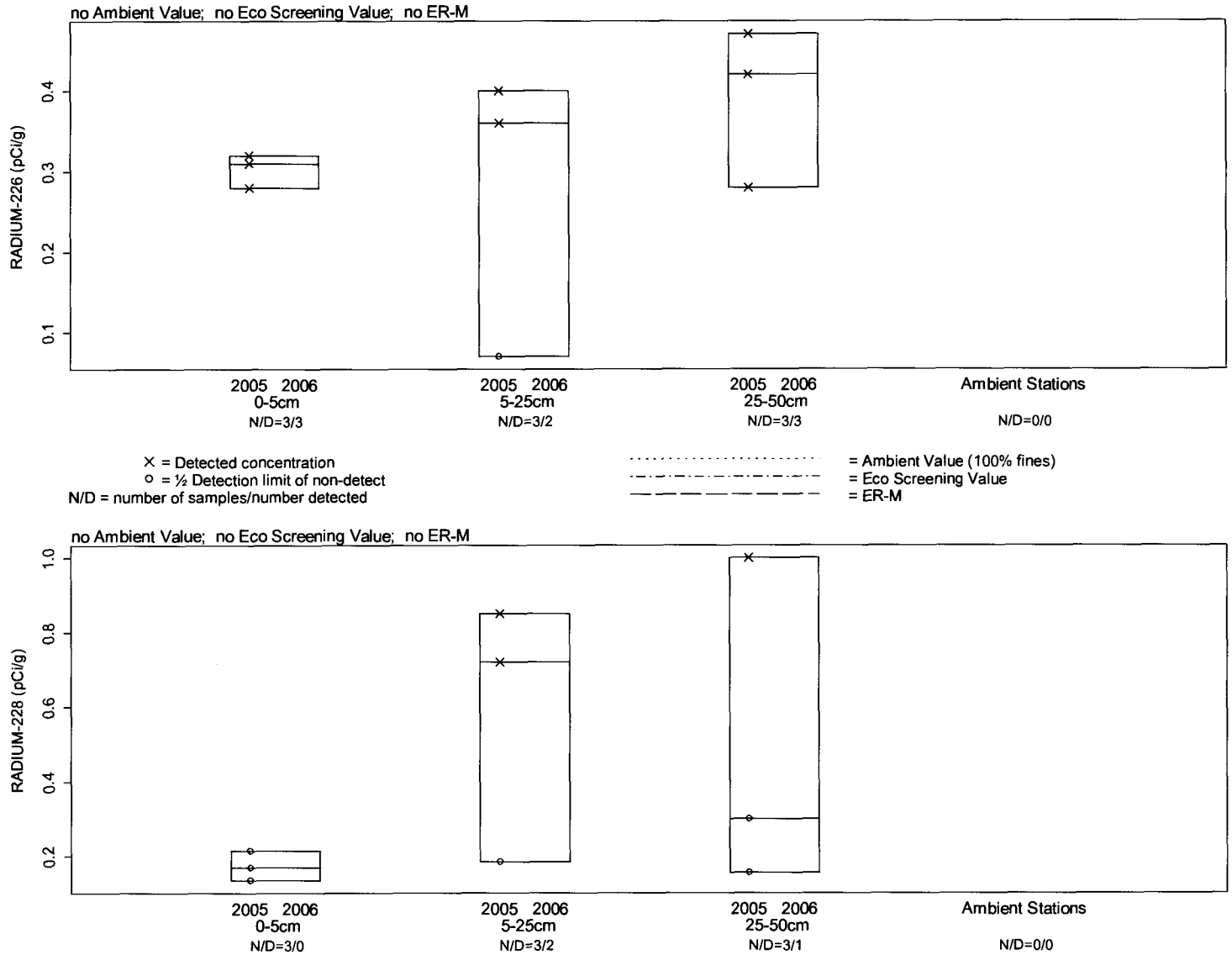

Figure A-279. Box Plots of Radium-226 and Radium-228 Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

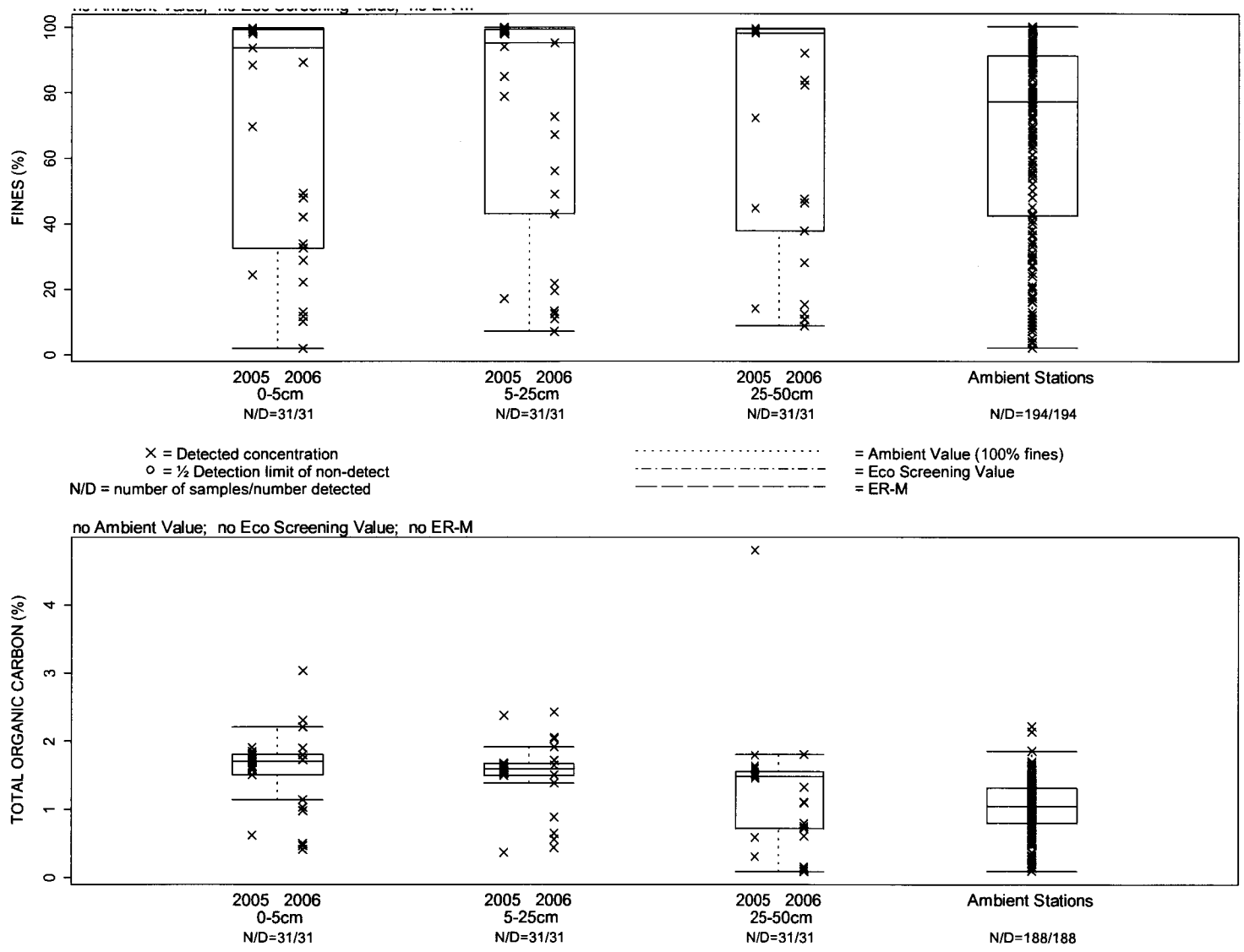

Figure A-280. Box Plots of Fine Grains and Total Organic Carbon Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth.

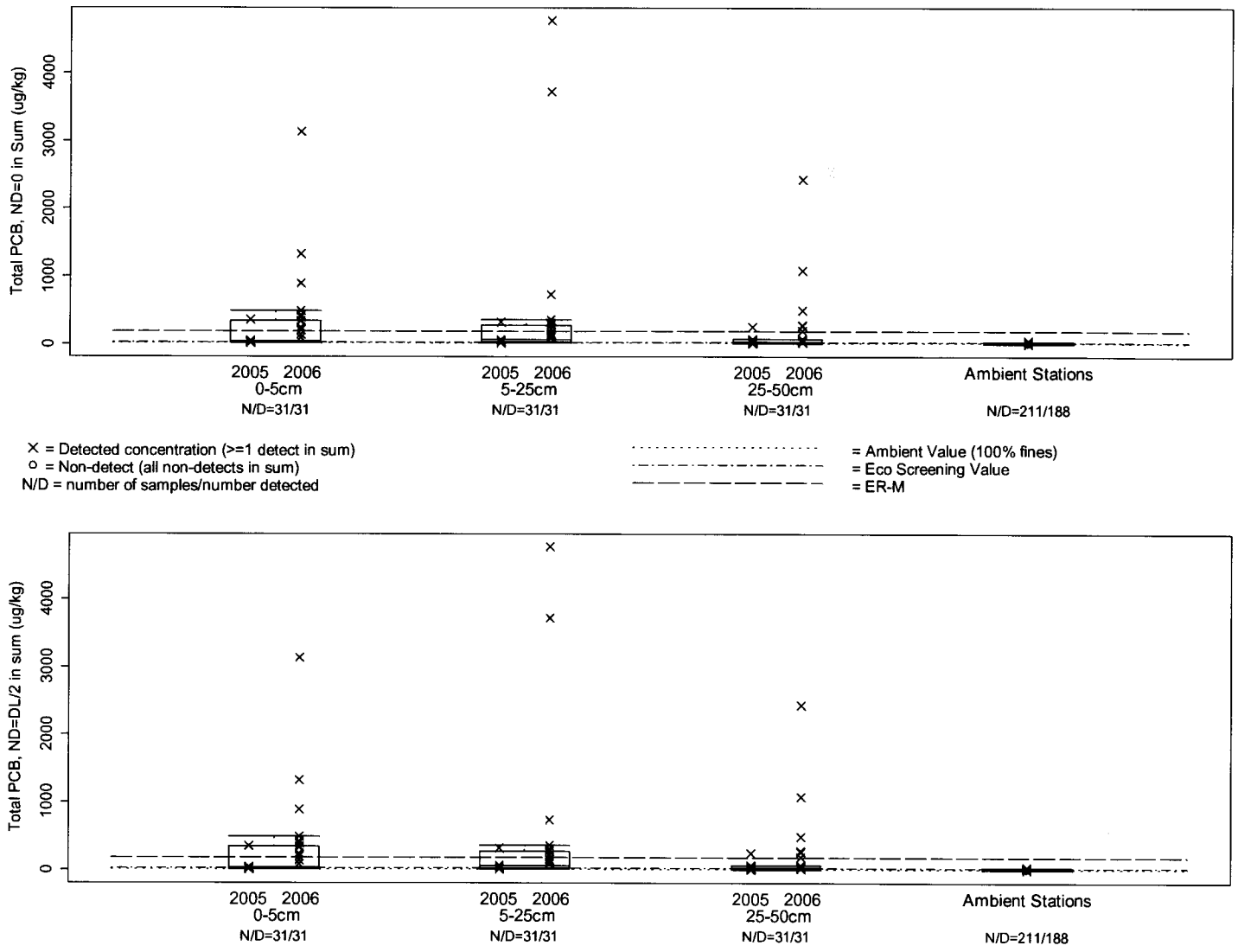

Figure A-281. Box Plots of Total PCB Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

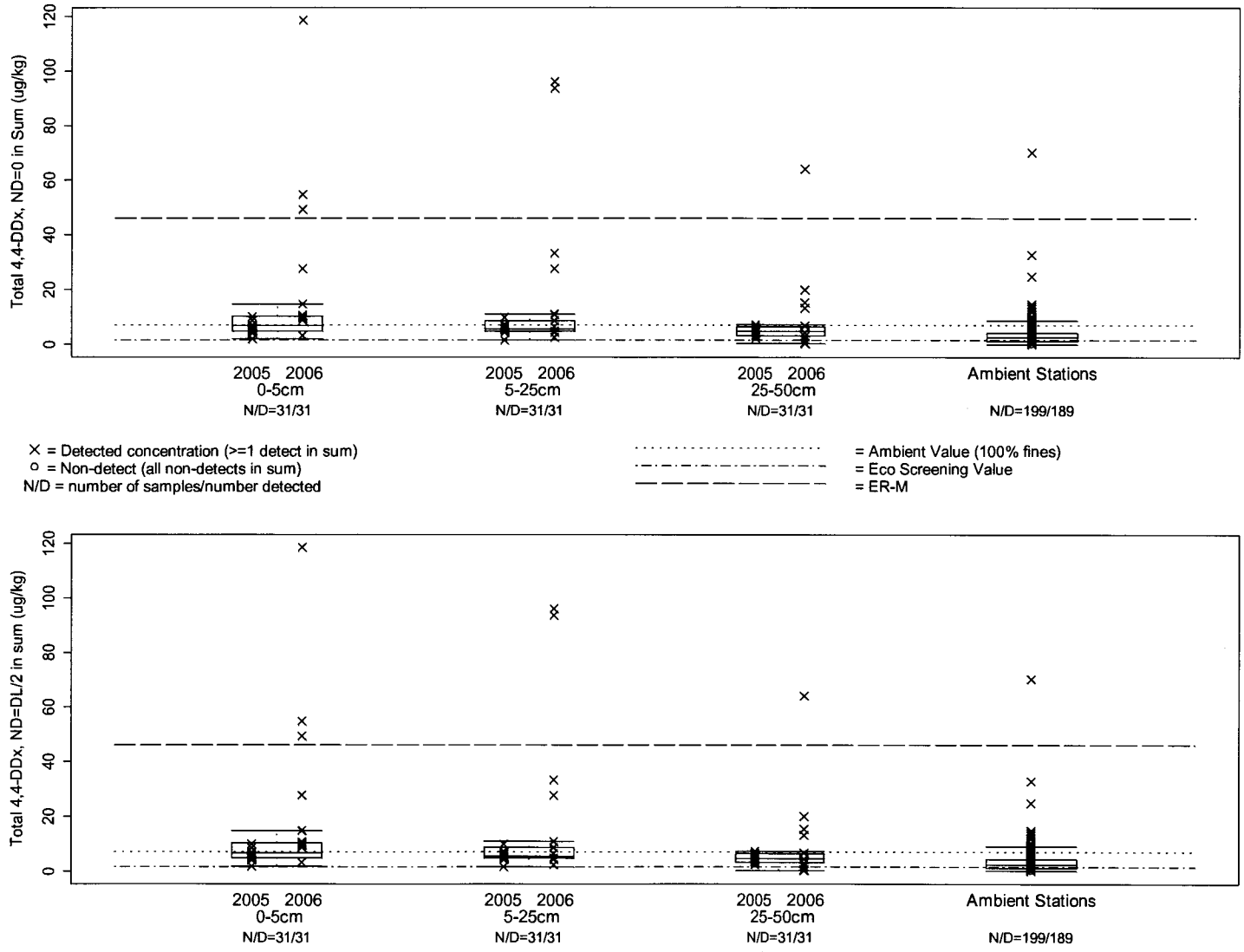

Figure A-282. Box Plots of Total 4,4'-DDx Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

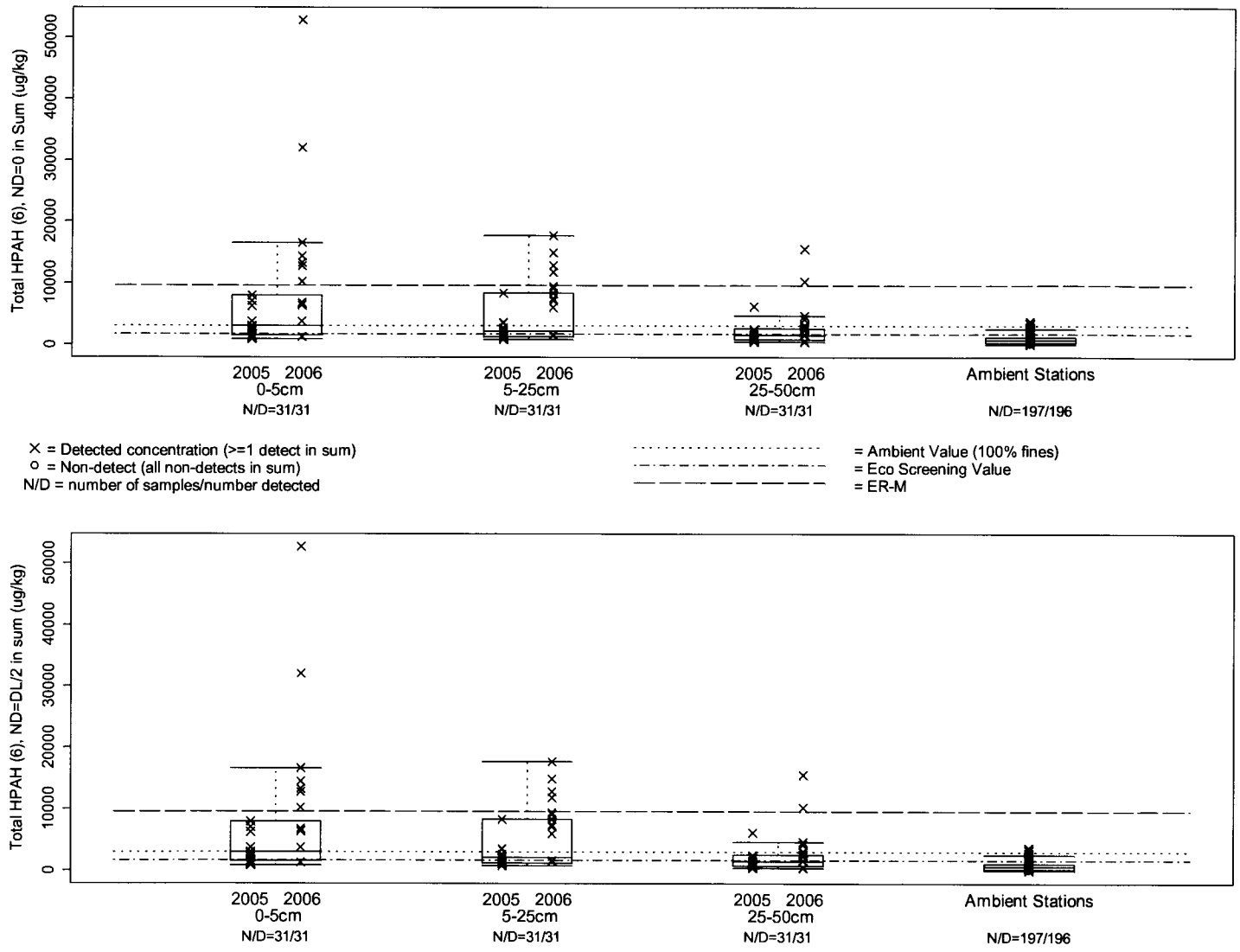

Figure A-283. Box Plots of Total HPAH (Sum of 6 Analytes) Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

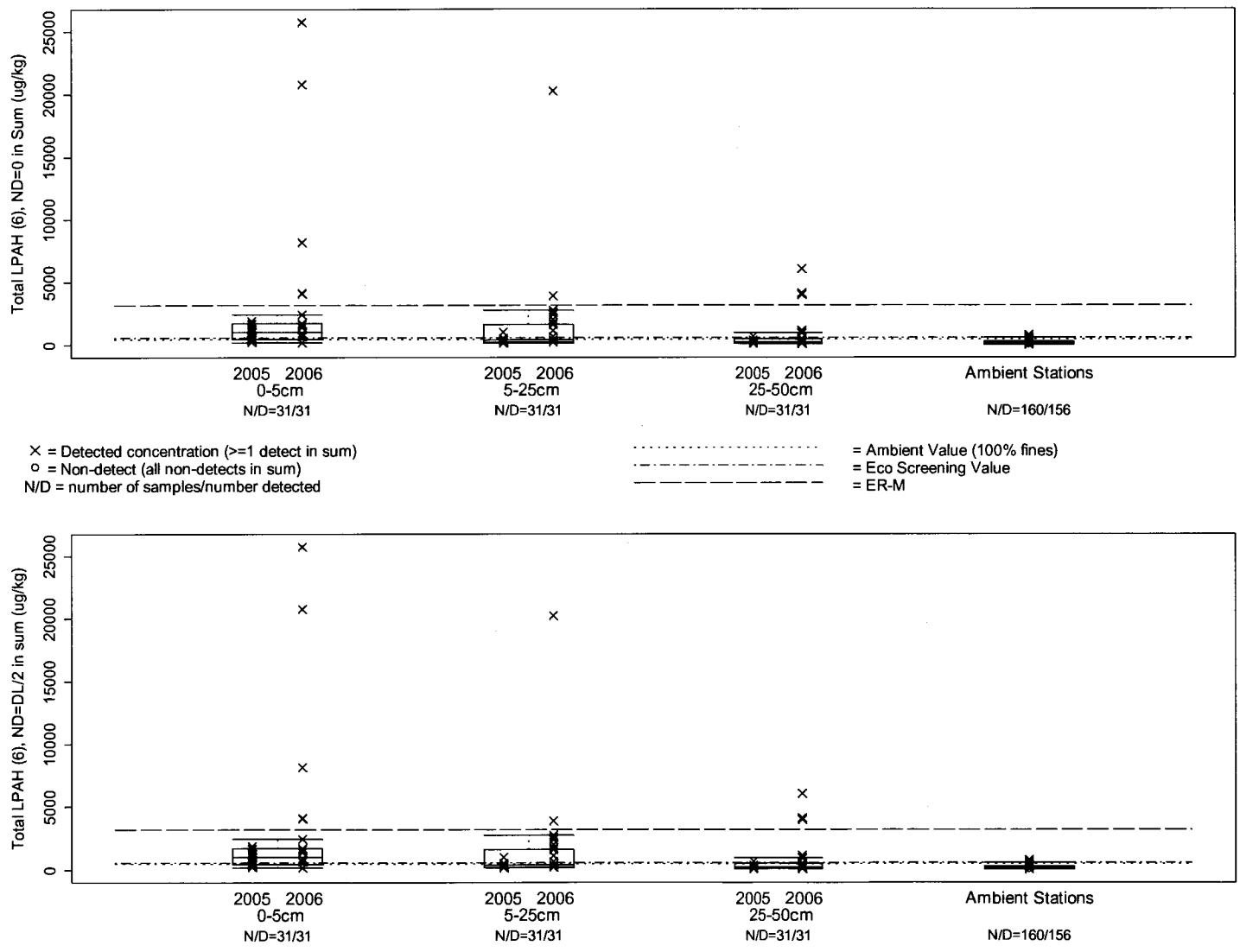

Figure A-284. Box Plots of Total LPAH (Sum of 6 Analytes) Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

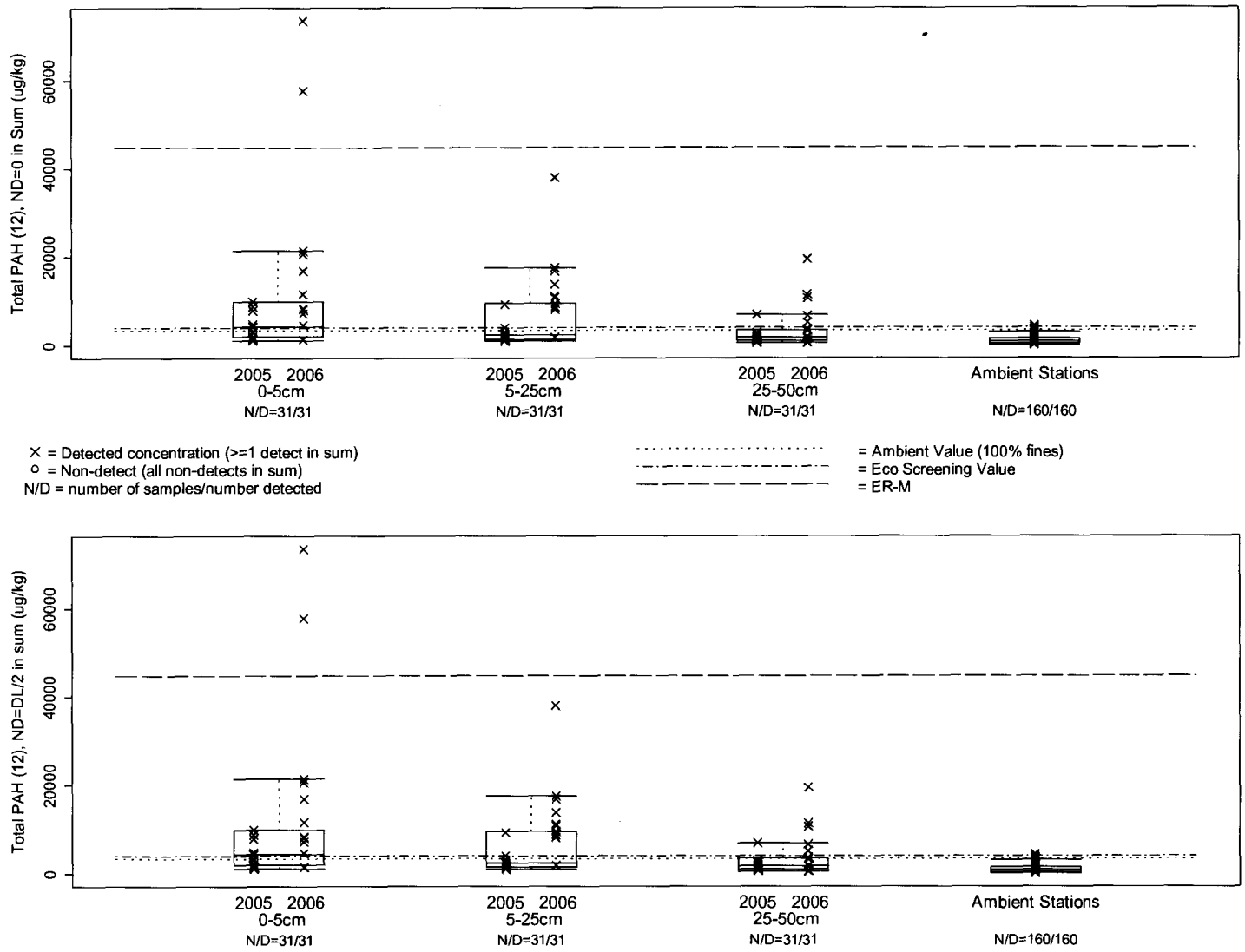

Figure A-285. Box Plots of Total PAH (Sum of 12 Analytes) Concentrations in 2005-2006 Core Samples in IR Site 24 by Depth (ND=0 in Sum and ND=DL/2 in Sum).

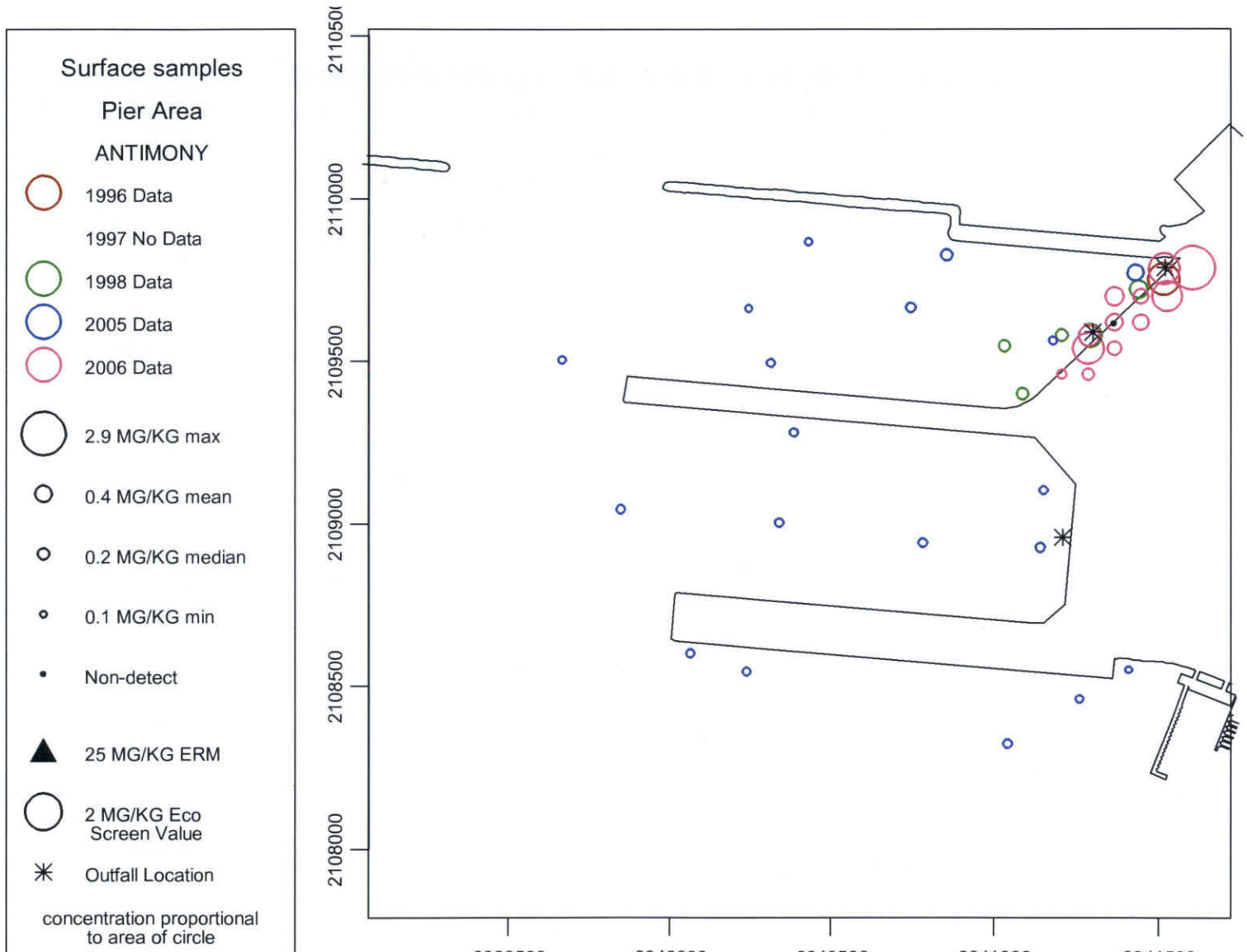

Figure A-286. Bubble Plot of Antimony Concentrations in IR Site 24 Surface Sediment by Year.

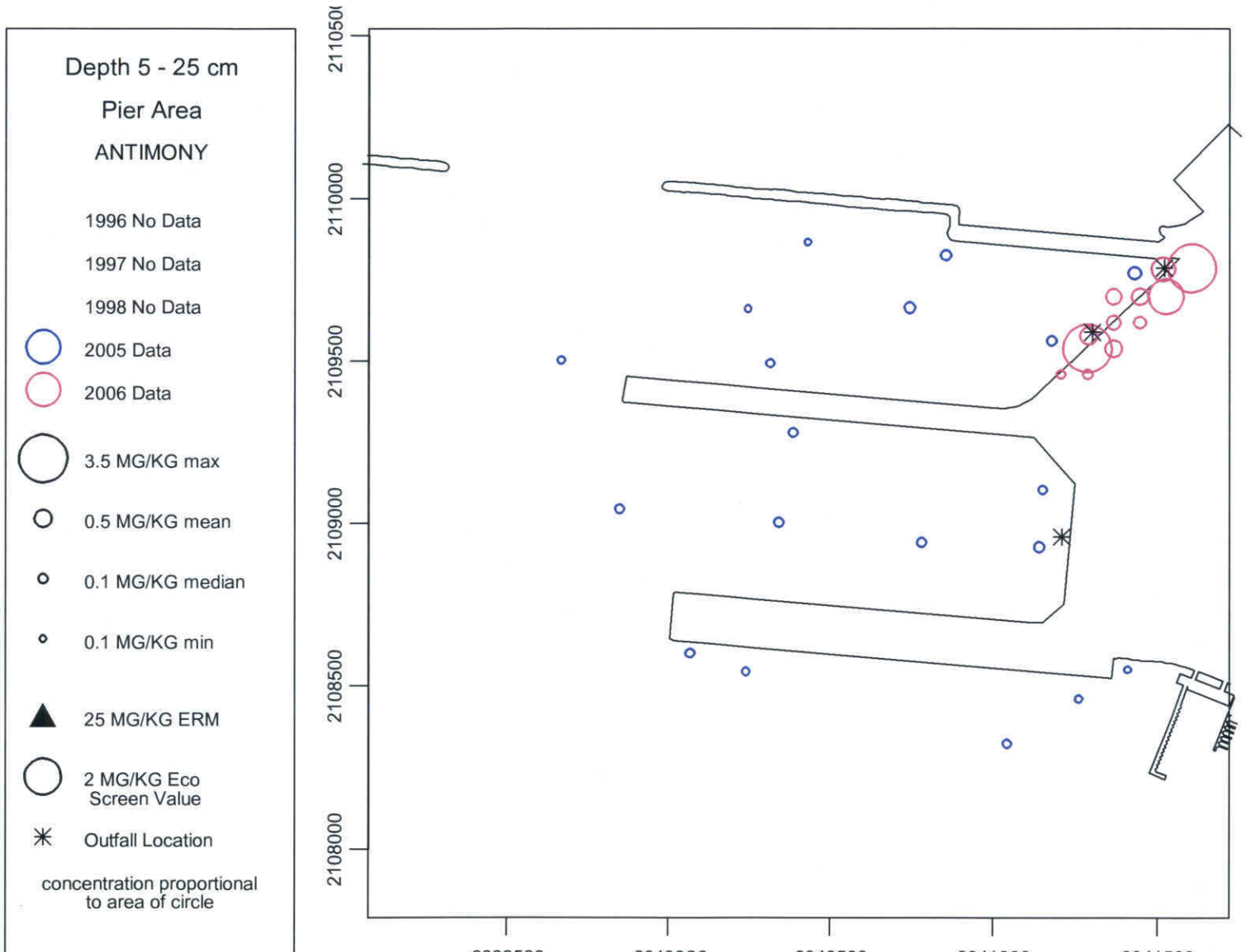

Figure A-287. Bubble Plot of Antimony Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

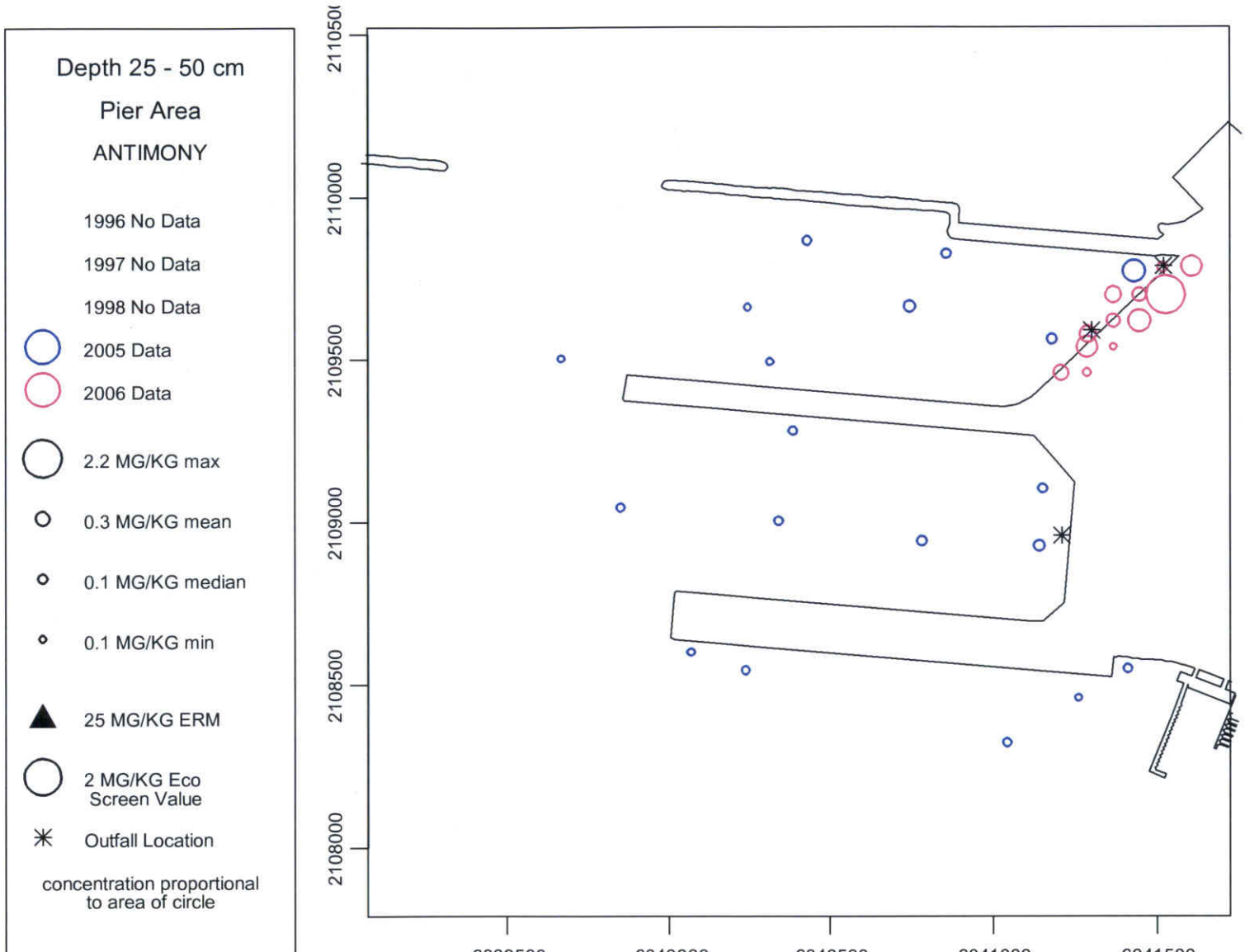

Figure A-288. Bubble Plot of Antimony Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

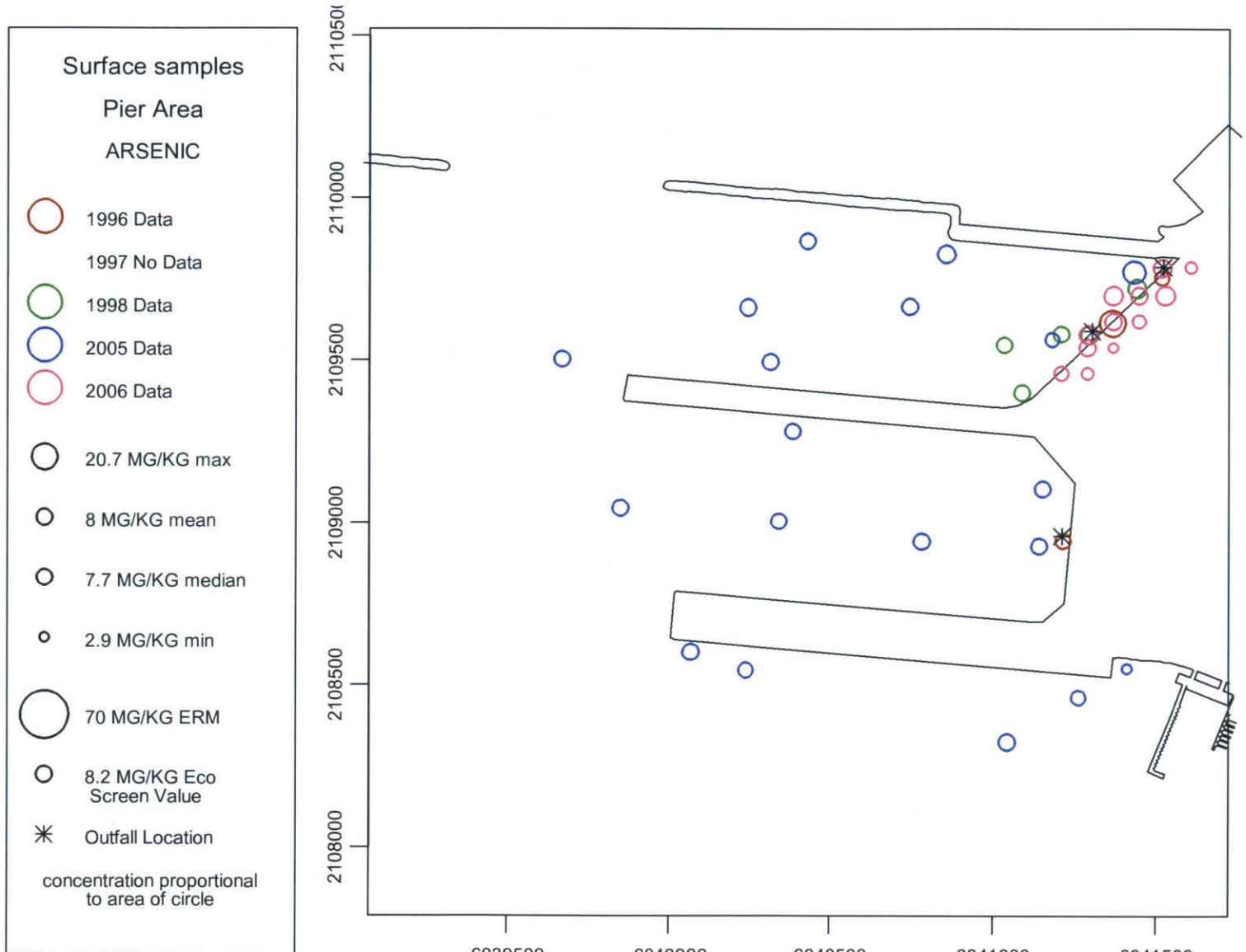

Figure A-289. Bubble Plot of Arsenic Concentrations in IR Site 24 Surface Sediment by Year.

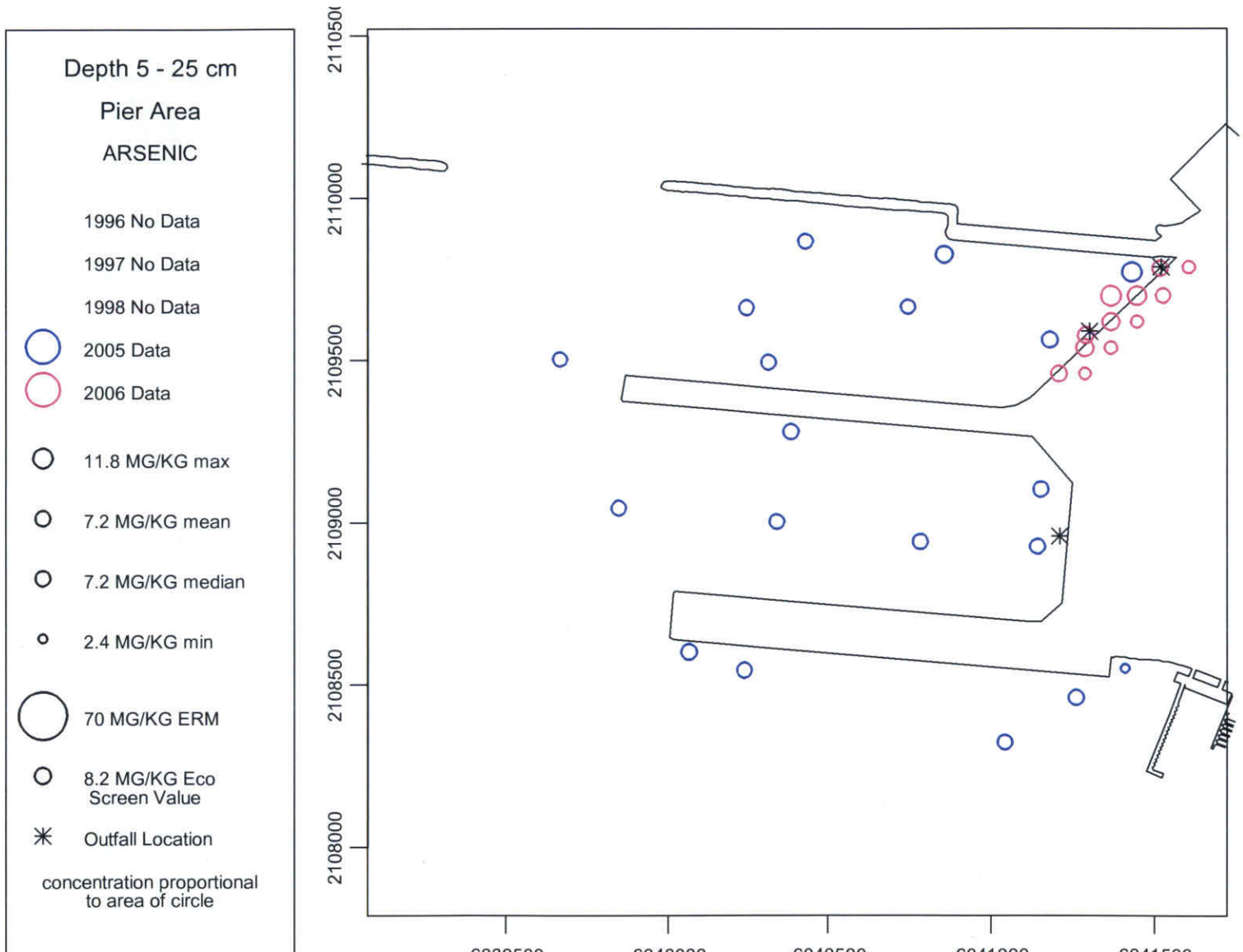

Figure A-290. Bubble Plot of Arsenic Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

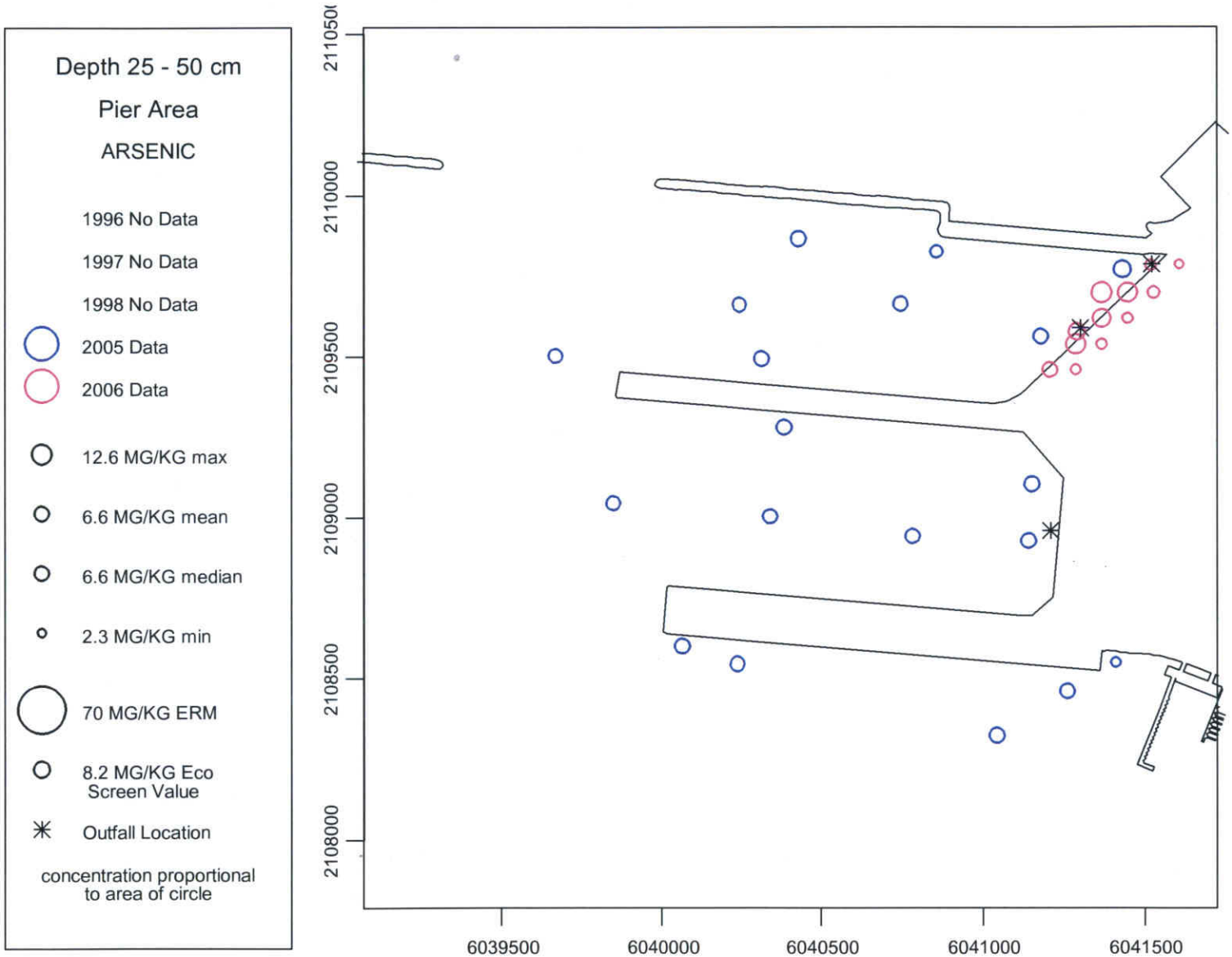

Figure A-291. Bubble Plot of Arsenic Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

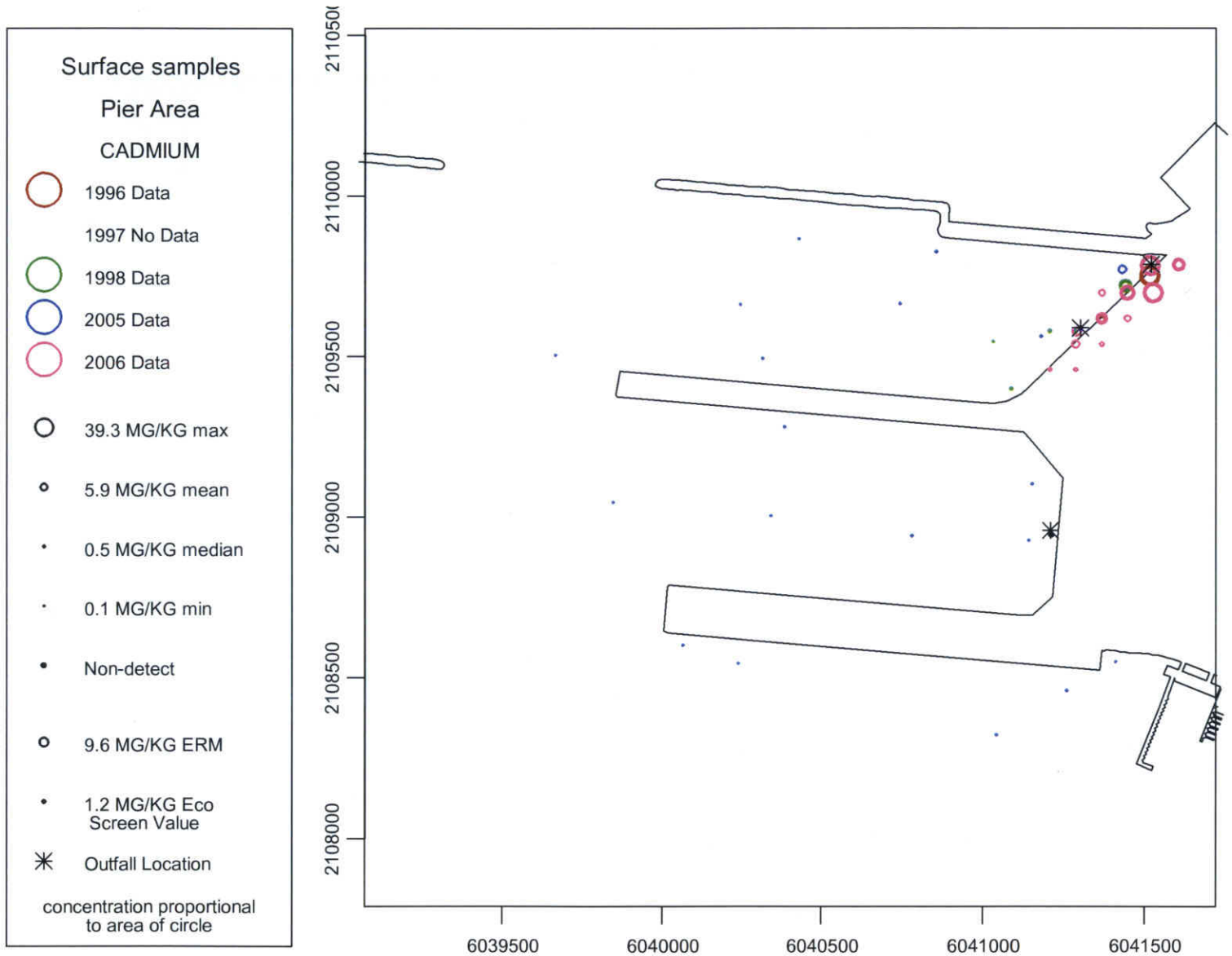

Figure A-292. Bubble Plot of Cadmium Concentrations in IR Site 24 Surface Sediment by Year.

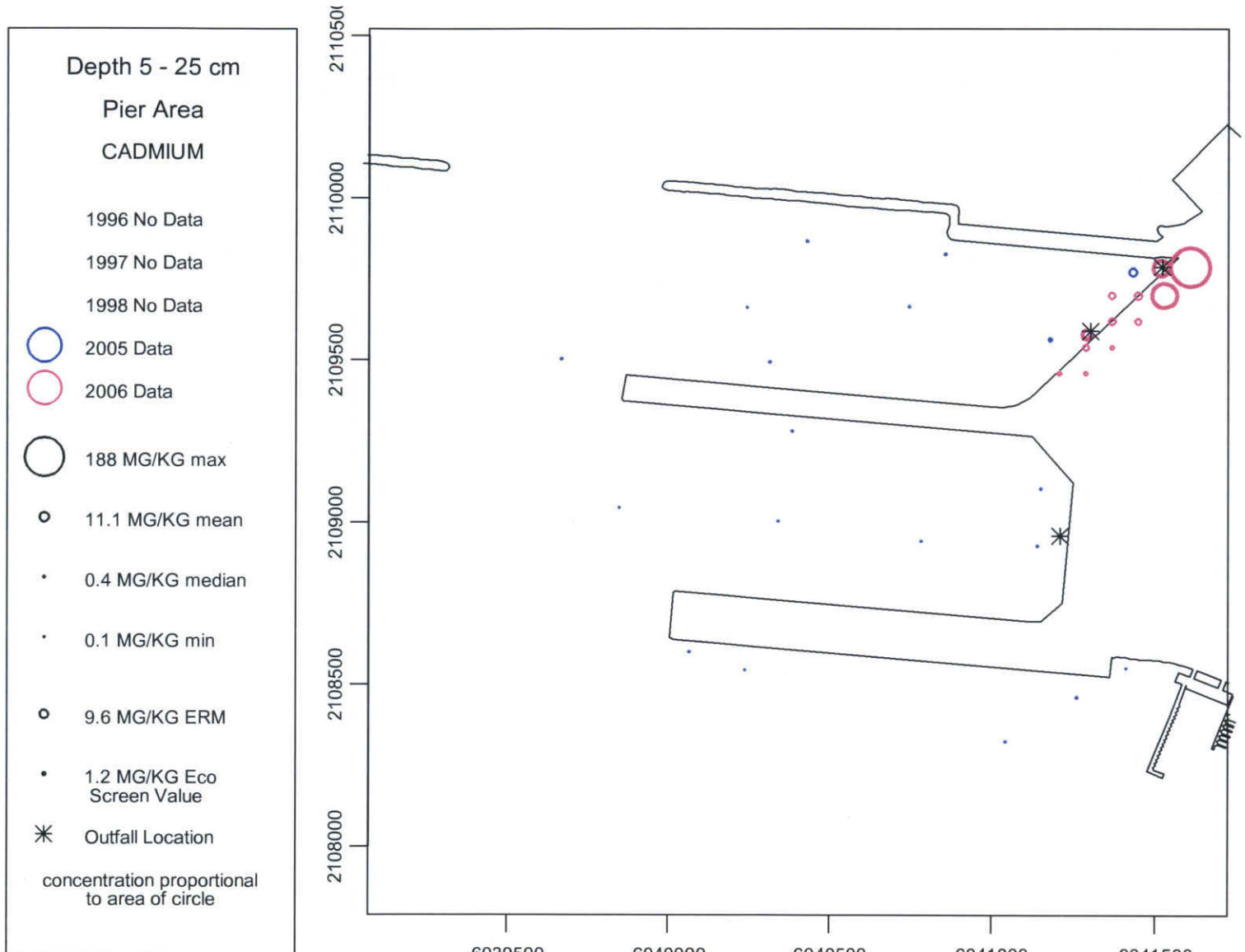

Figure A-293. Bubble Plot of Cadmium Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

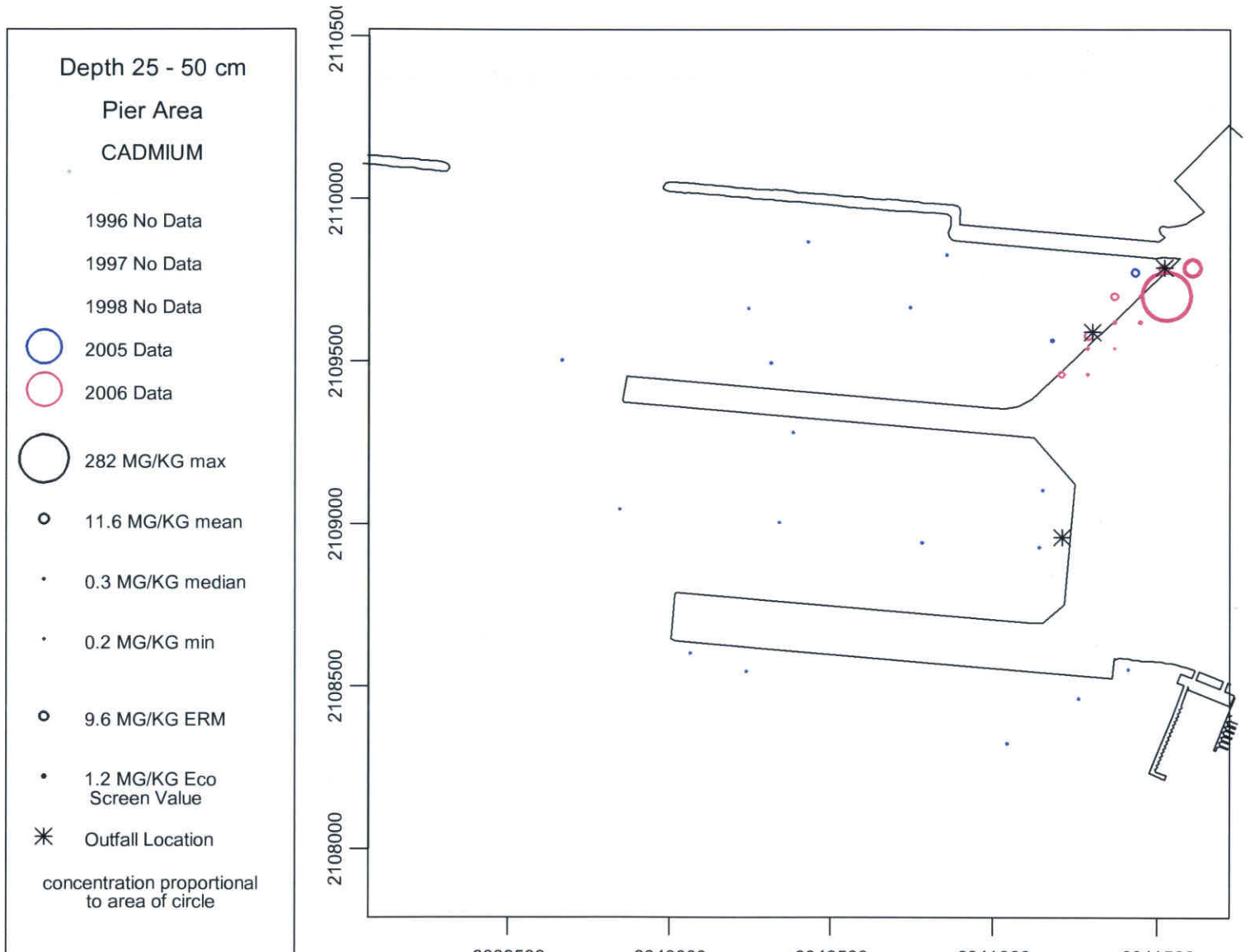

Figure A-294. Bubble Plot of Cadmium Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

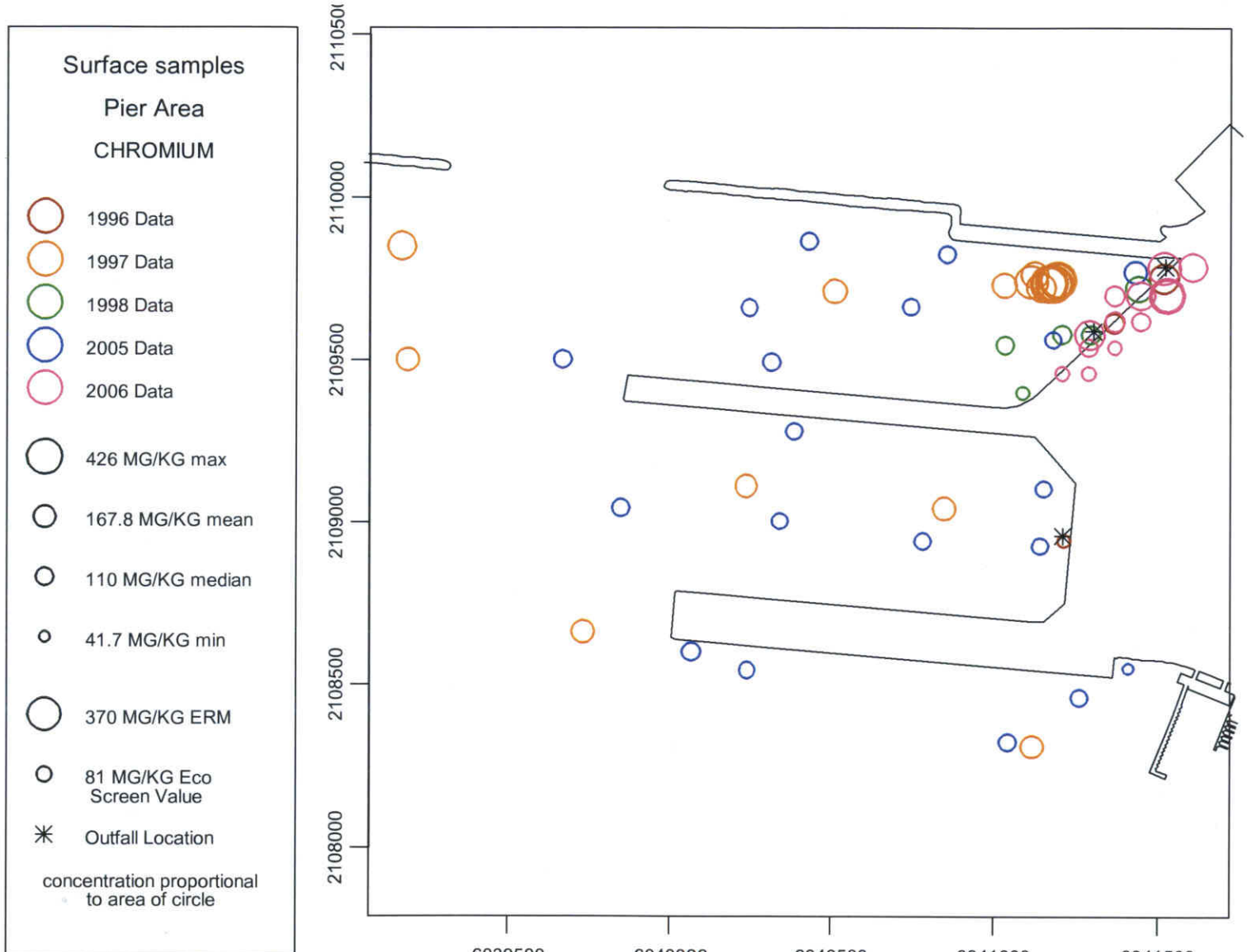

Figure A-295. Bubble Plot of Chromium Concentrations in IR Site 24 Surface Sediment by Year.

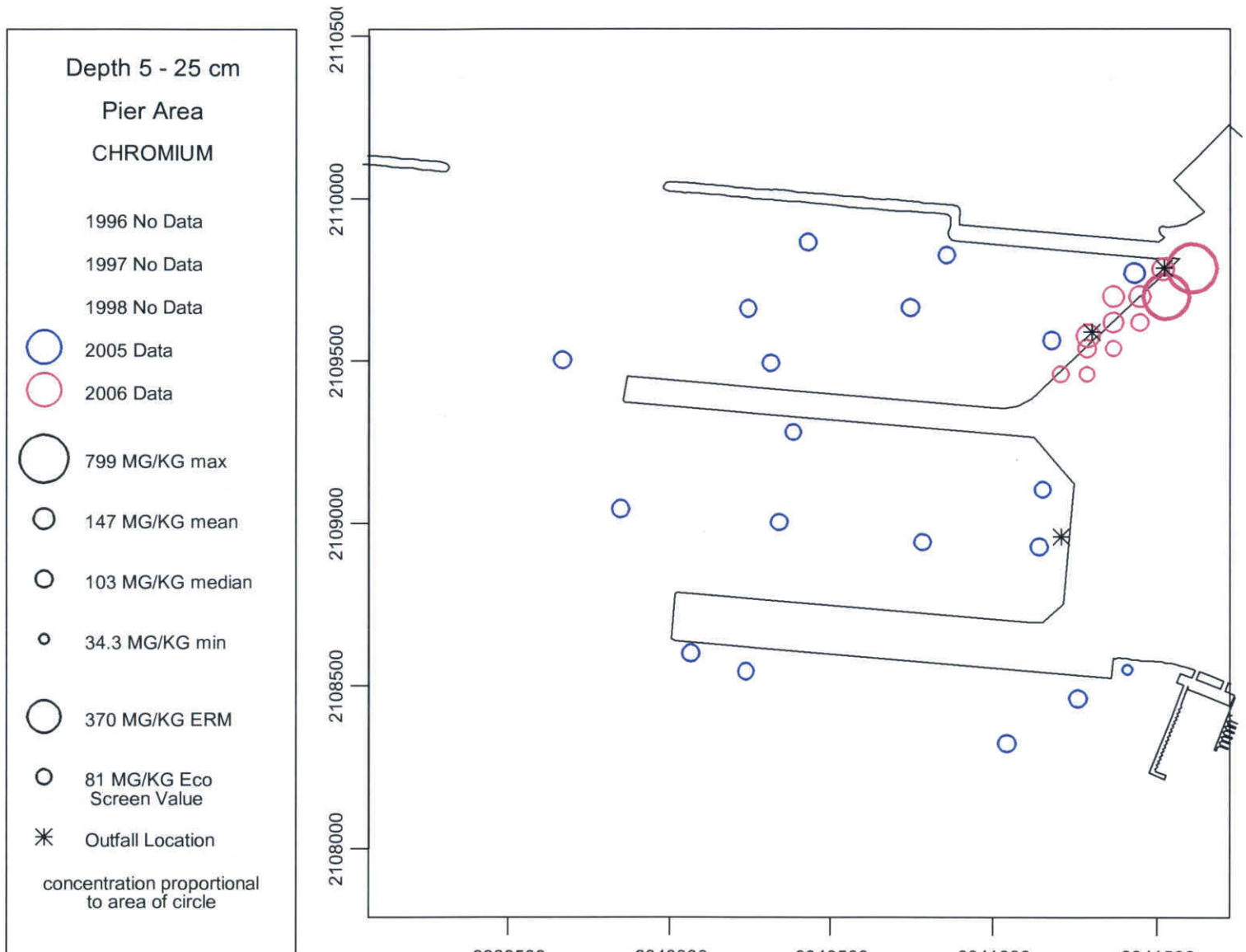

Figure A-296. Bubble Plot of Chromium Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

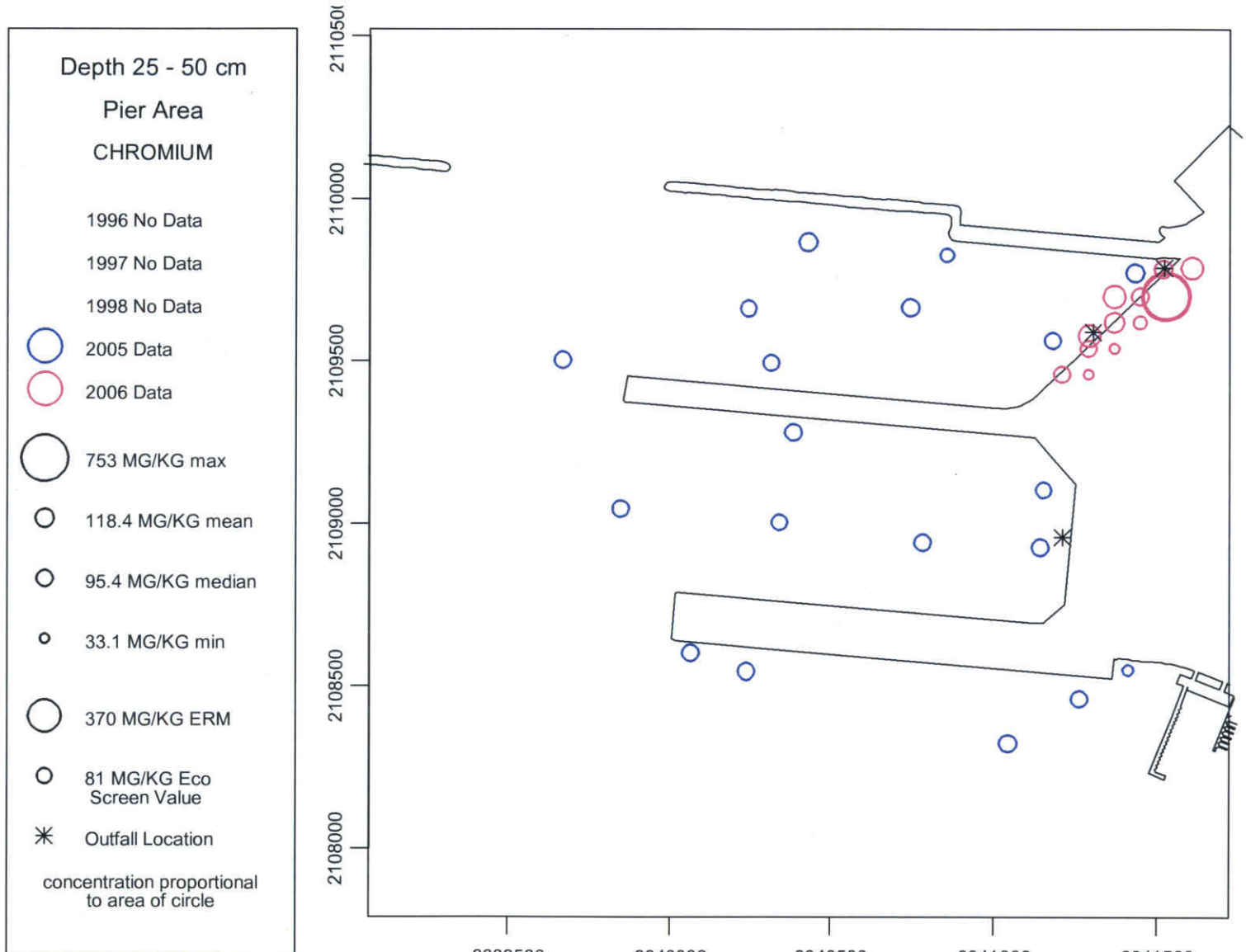

Figure A-297. Bubble Plot of Chromium Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

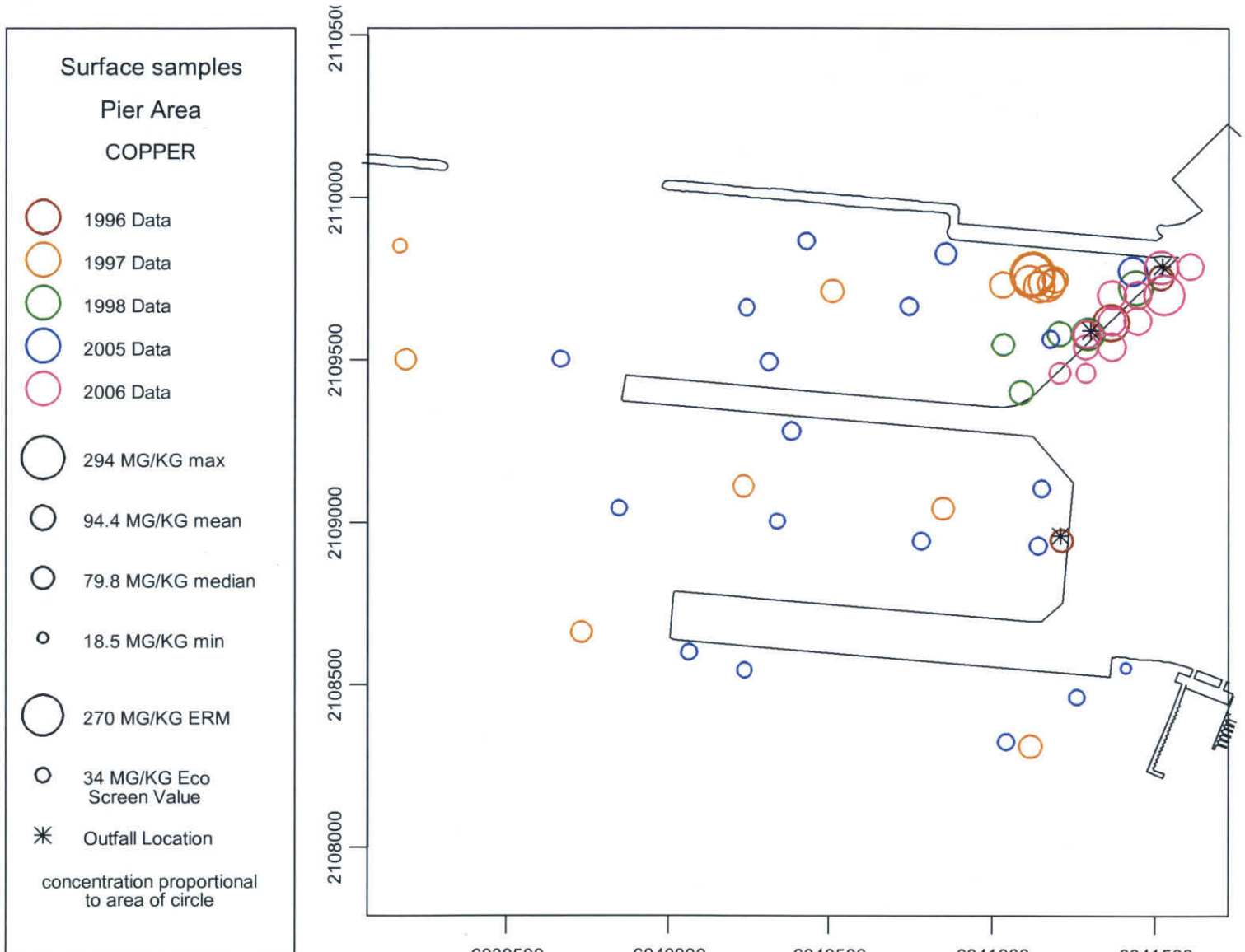

Figure A-298. Bubble Plot of Copper Concentrations in IR Site 24 Surface Sediment by Year.

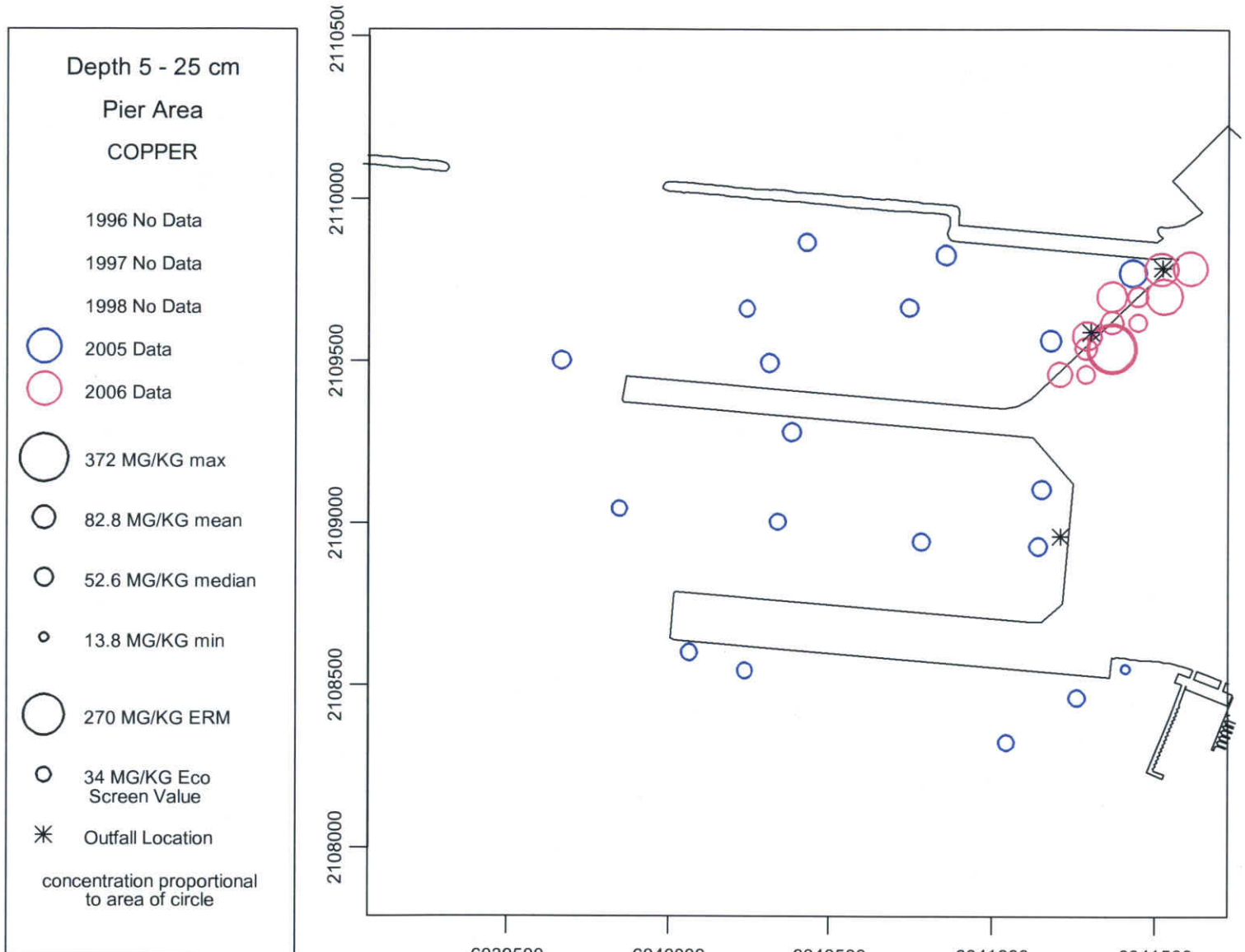

Figure A-299. Bubble Plot of Copper Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

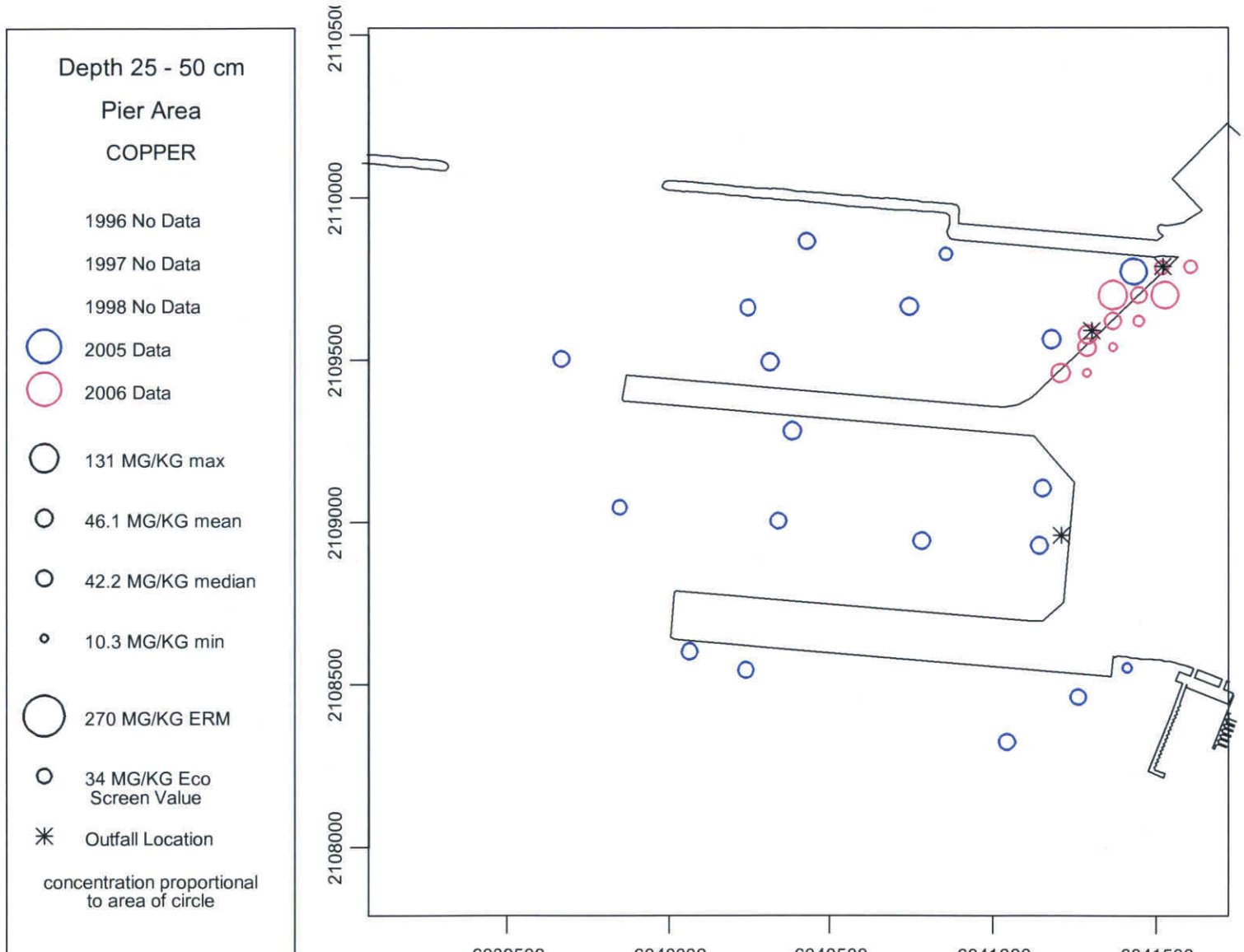

Figure A-300. Bubble Plot of Copper Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

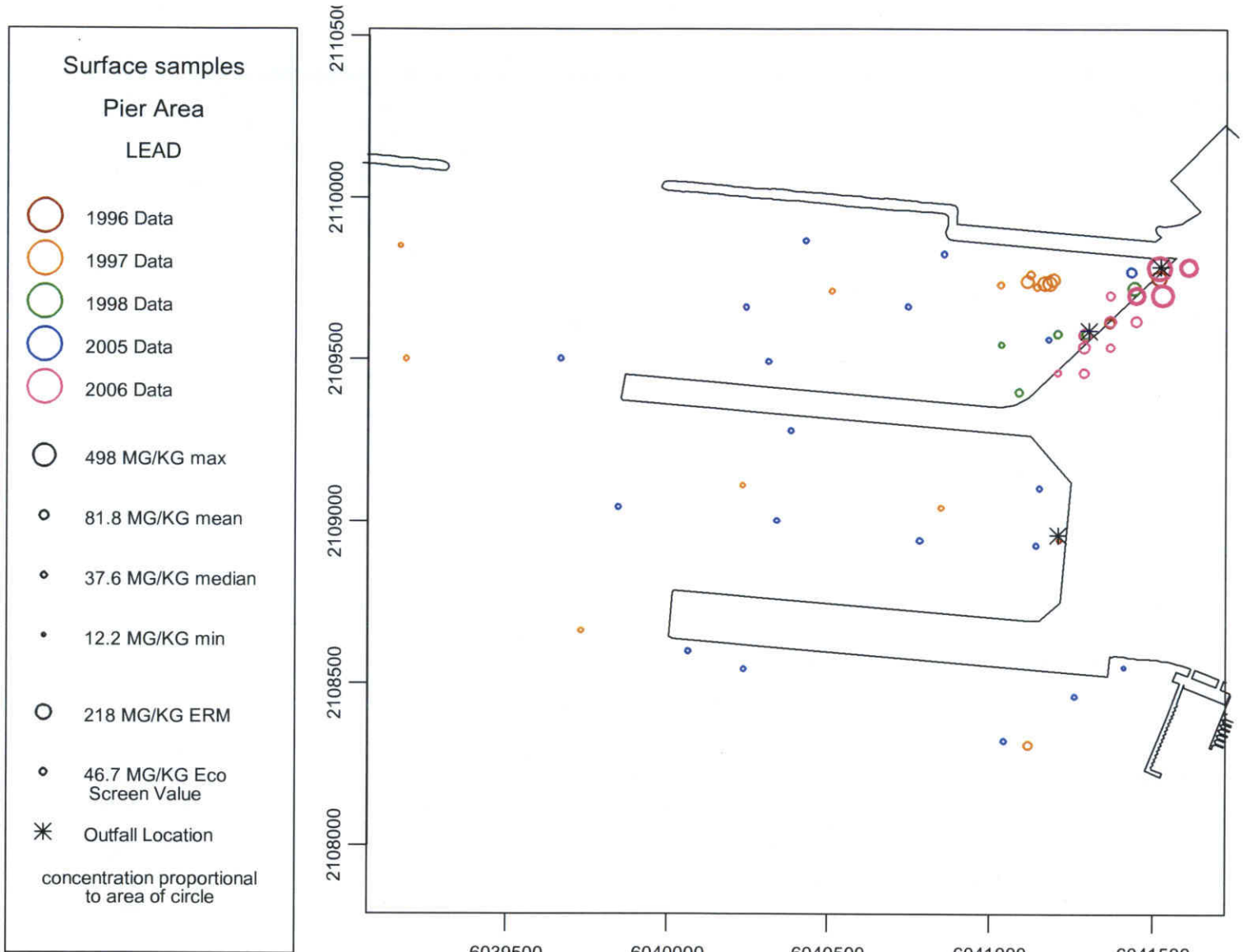

Figure A-301. Bubble Plot of Lead Concentrations in IR Site 24 Surface Sediment by Year.

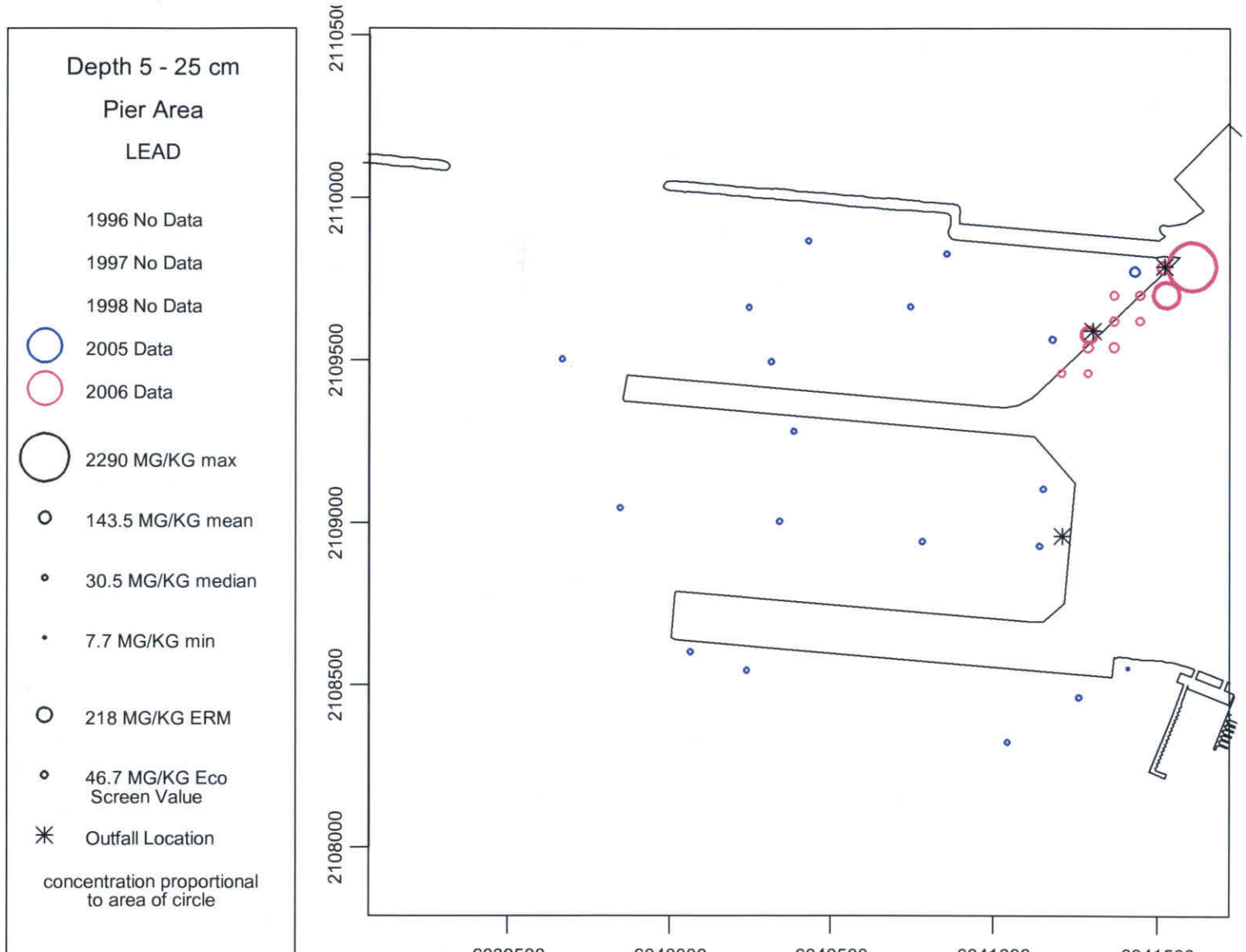

Figure A-302. Bubble Plot of Lead Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

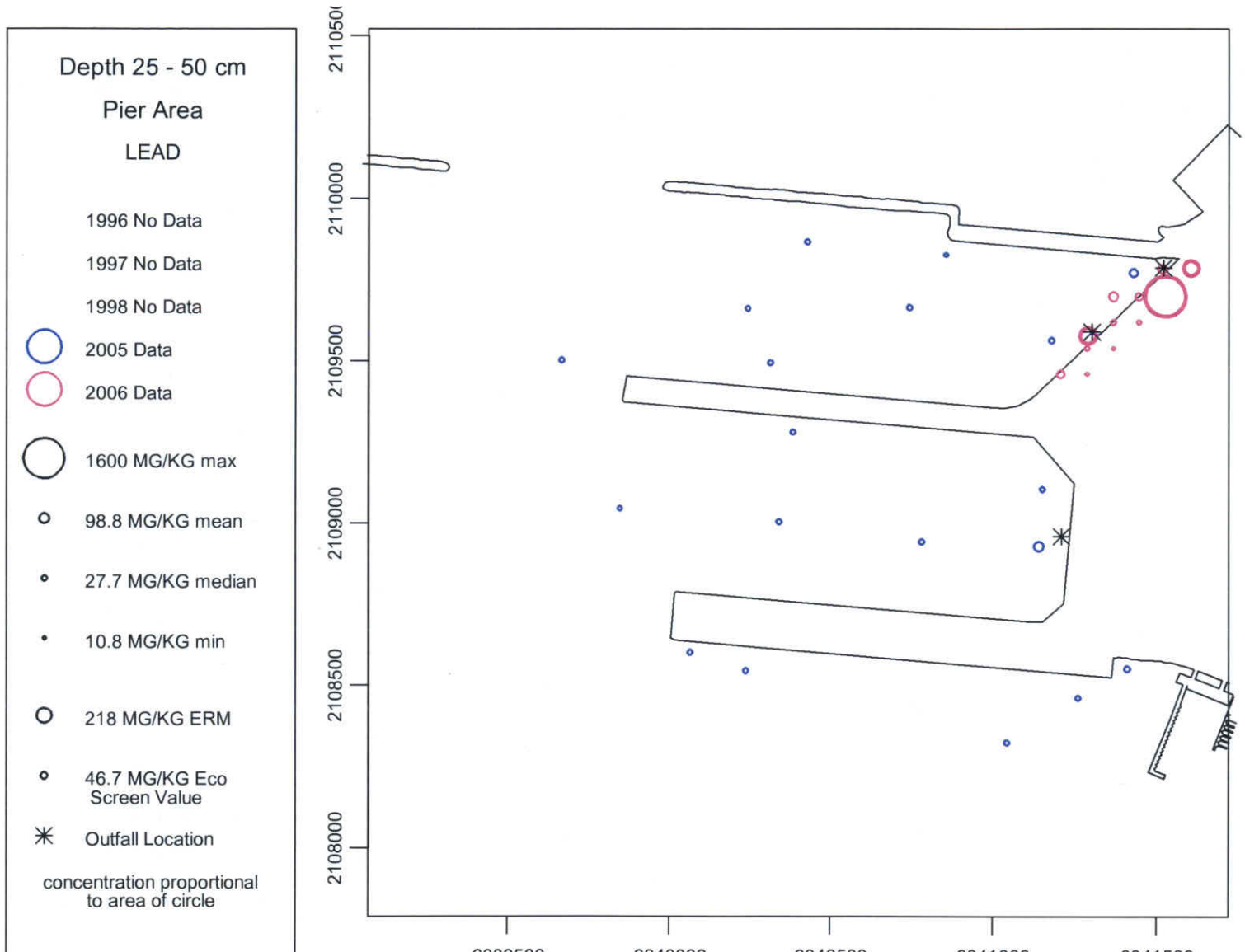

Figure A-303. Bubble Plot of Lead Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

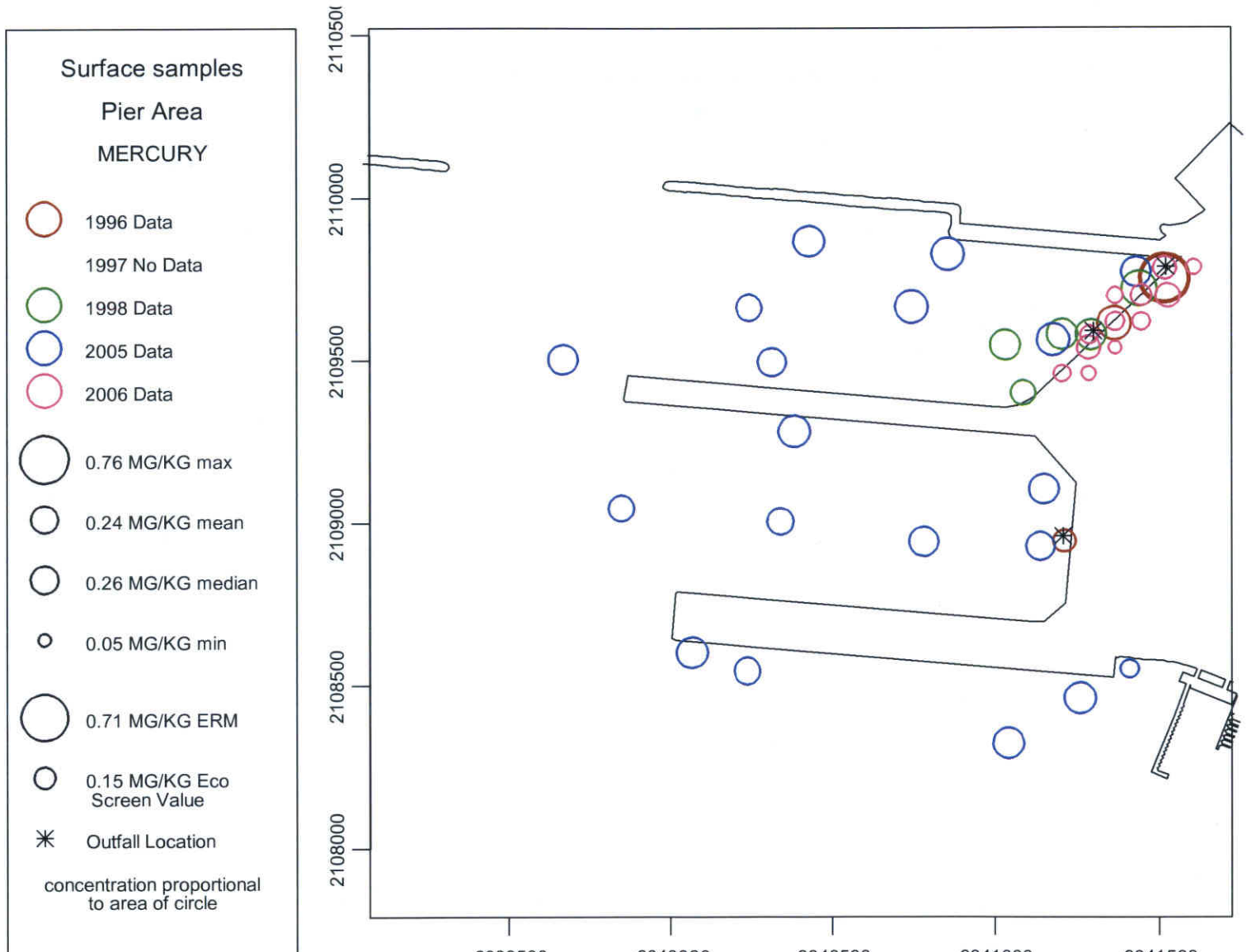

Figure A-304. Bubble Plot of Mercury Concentrations in IR Site 24 Surface Sediment by Year.

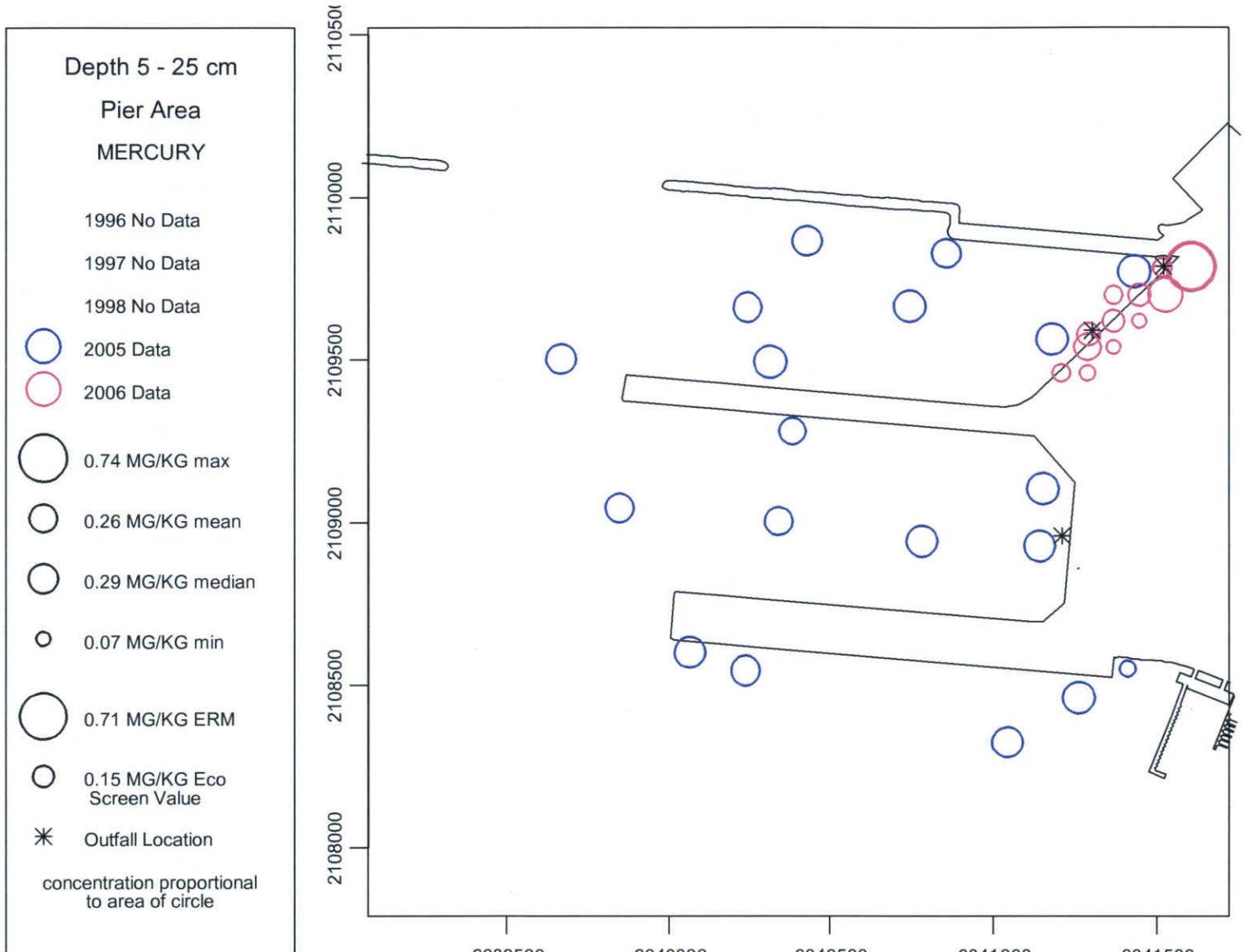

Figure A-305. Bubble Plot of Mercury Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

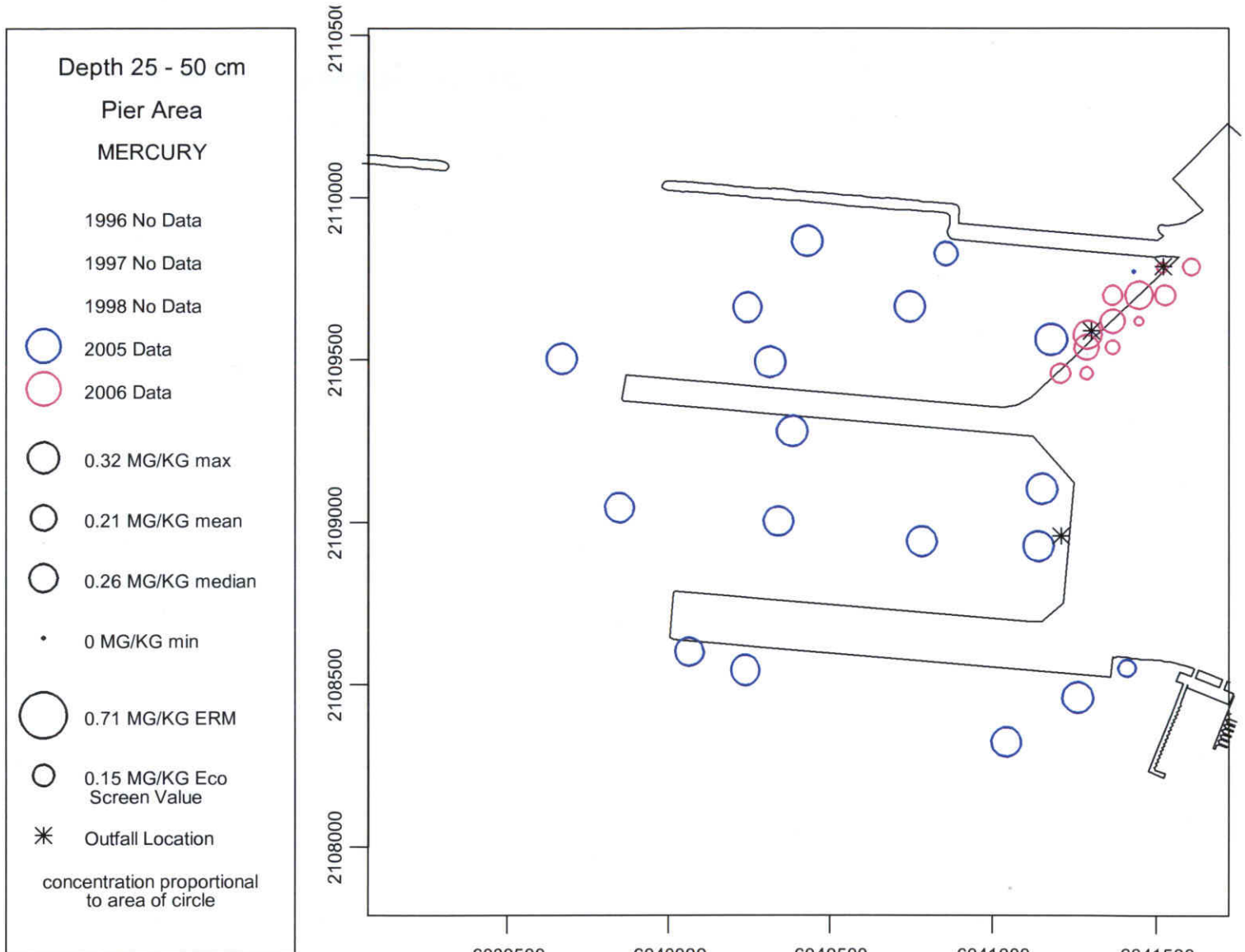

Figure A-306. Bubble Plot of Mercury Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

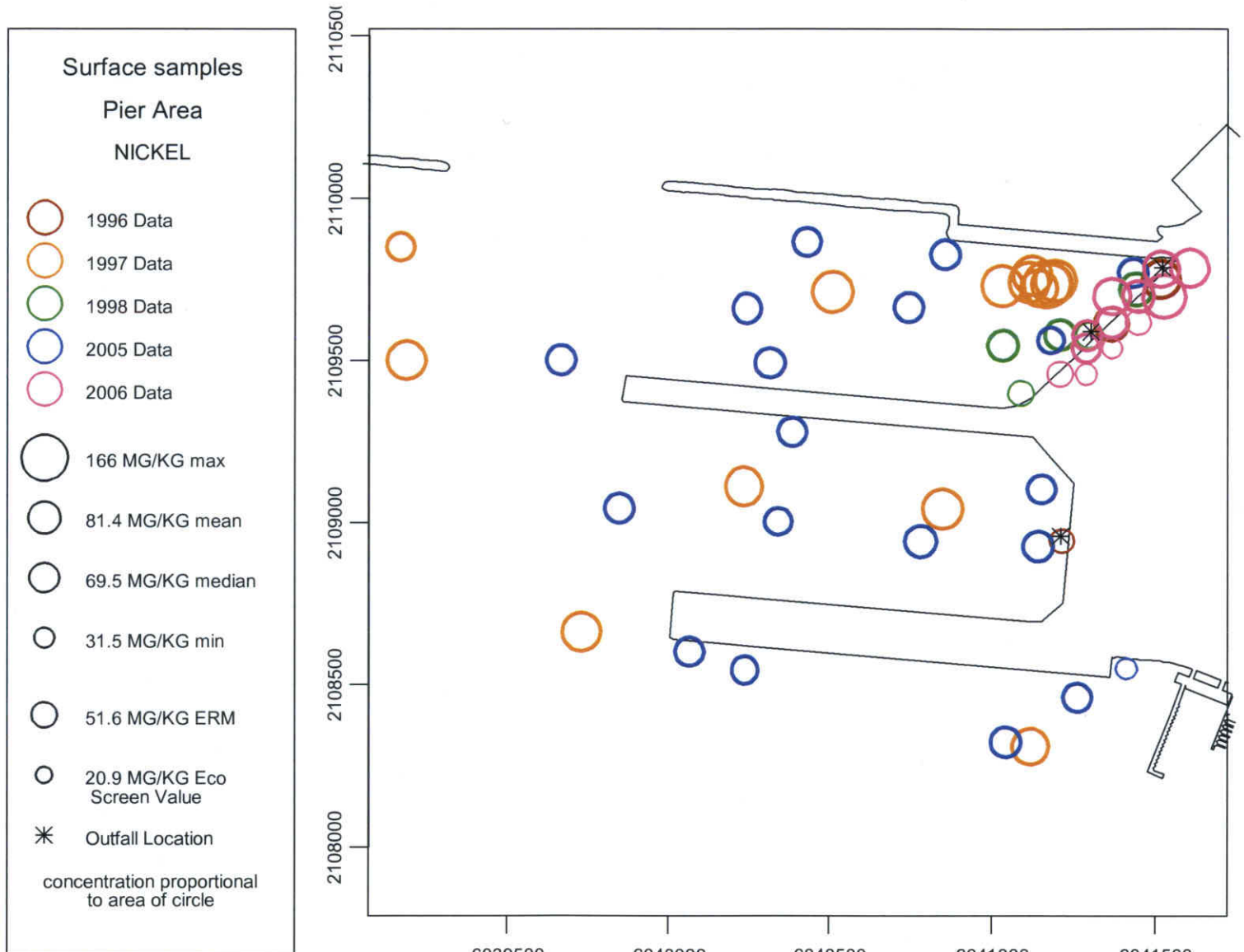

Figure A-307. Bubble Plot of Nickel Concentrations in IR Site 24 Surface Sediment by Year.

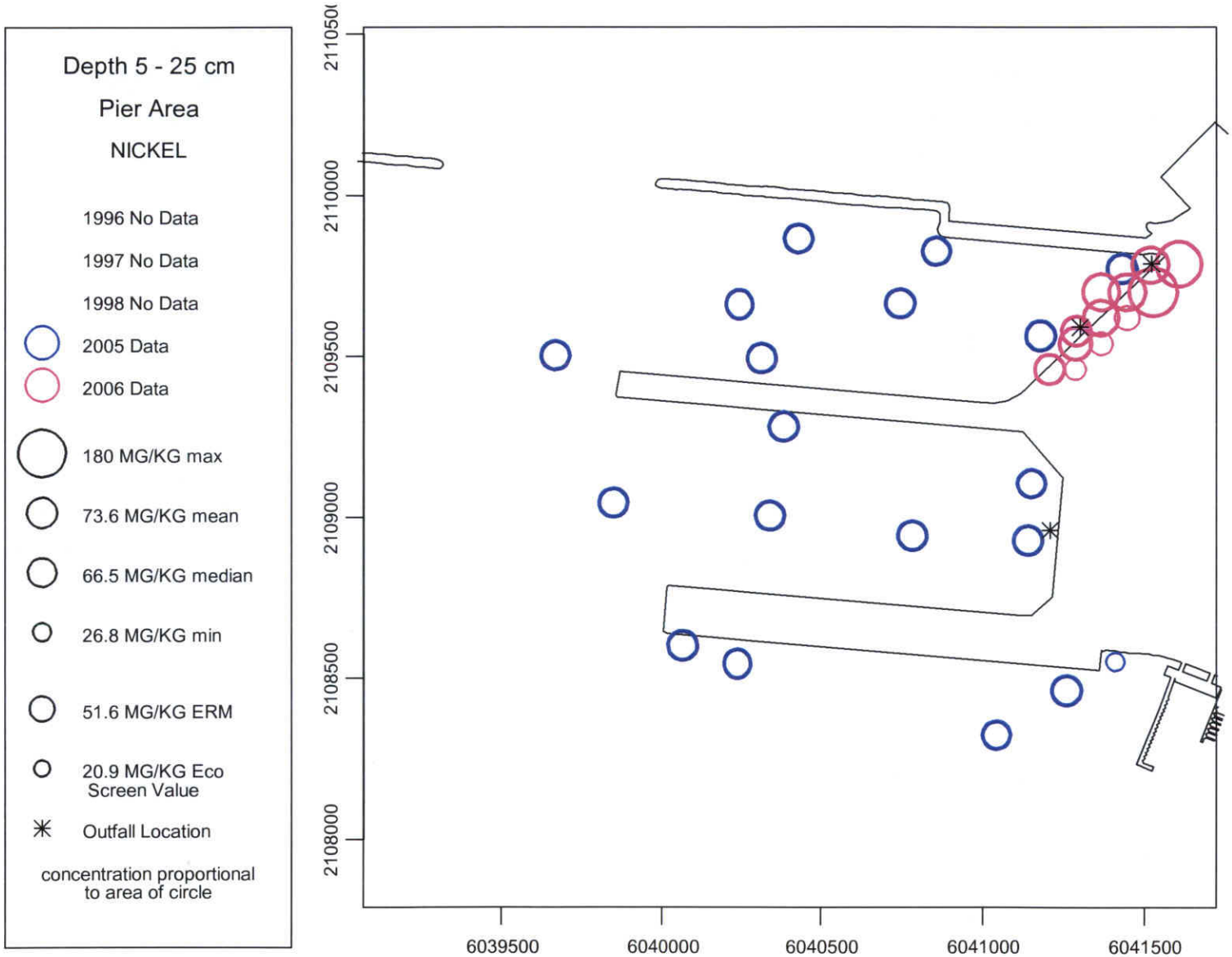

Figure A-308. Bubble Plot of Nickel Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

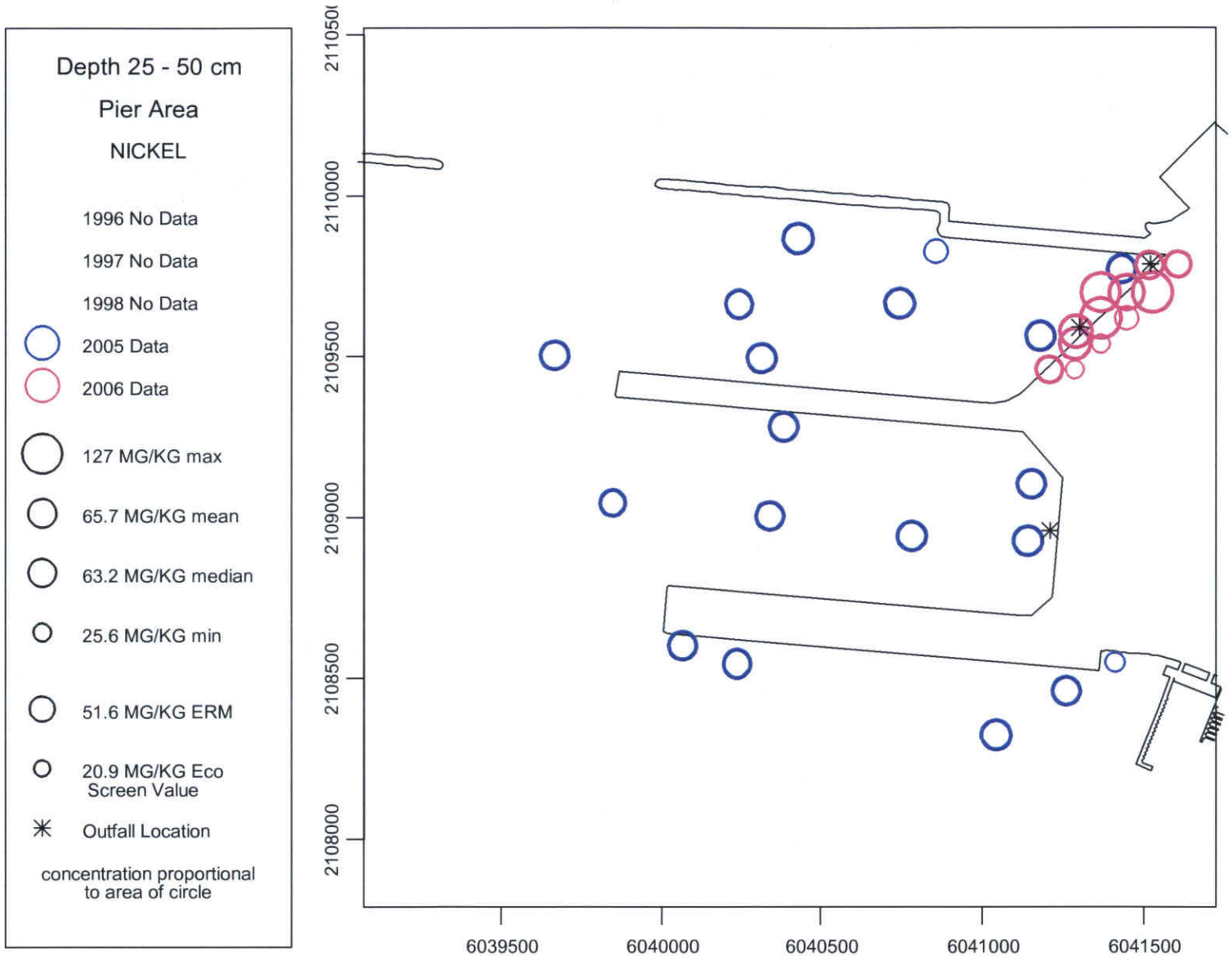

Figure A-309. Bubble Plot of Nickel Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

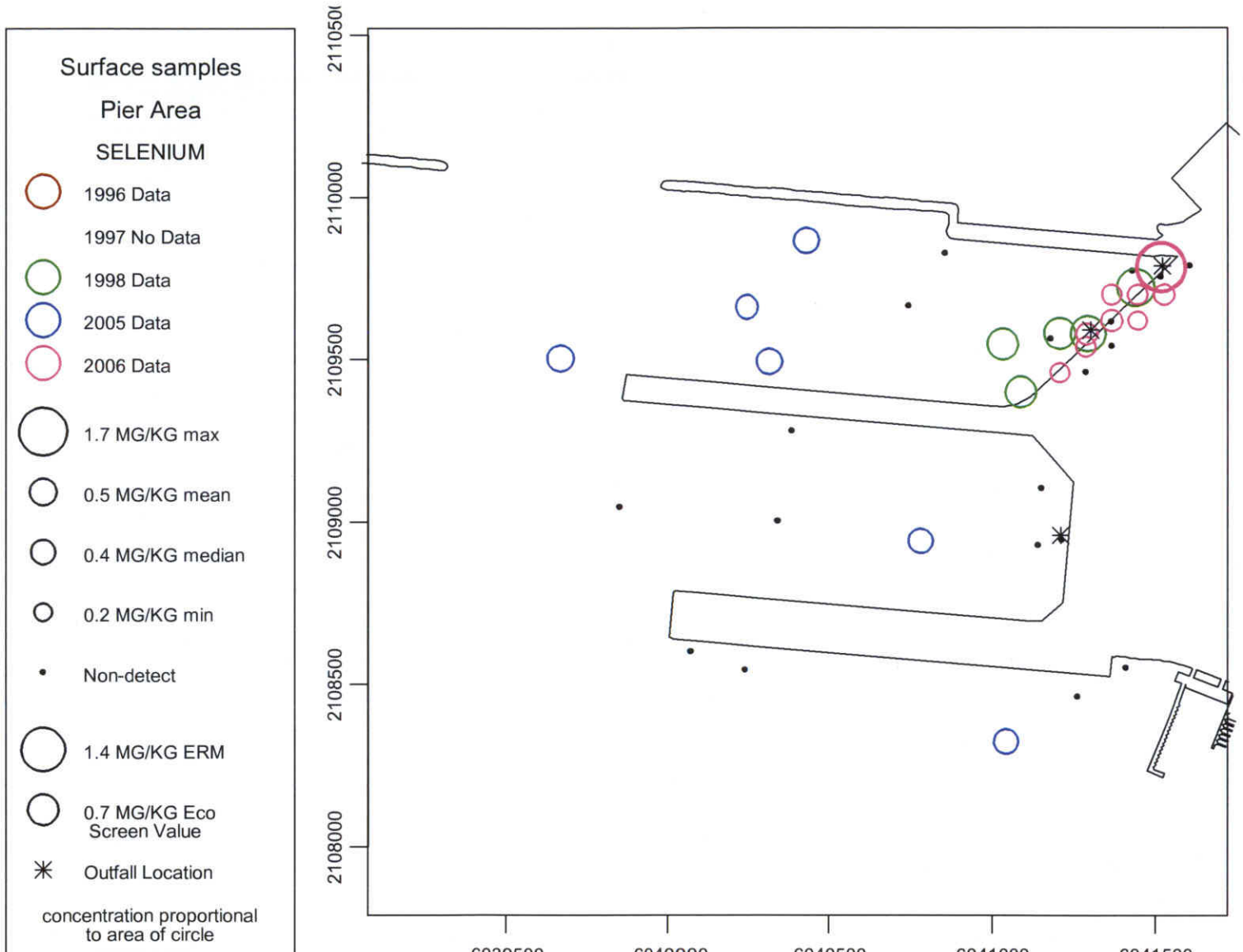

Figure A-310. Bubble Plot of Selenium Concentrations in IR Site 24 Surface Sediment by Year.

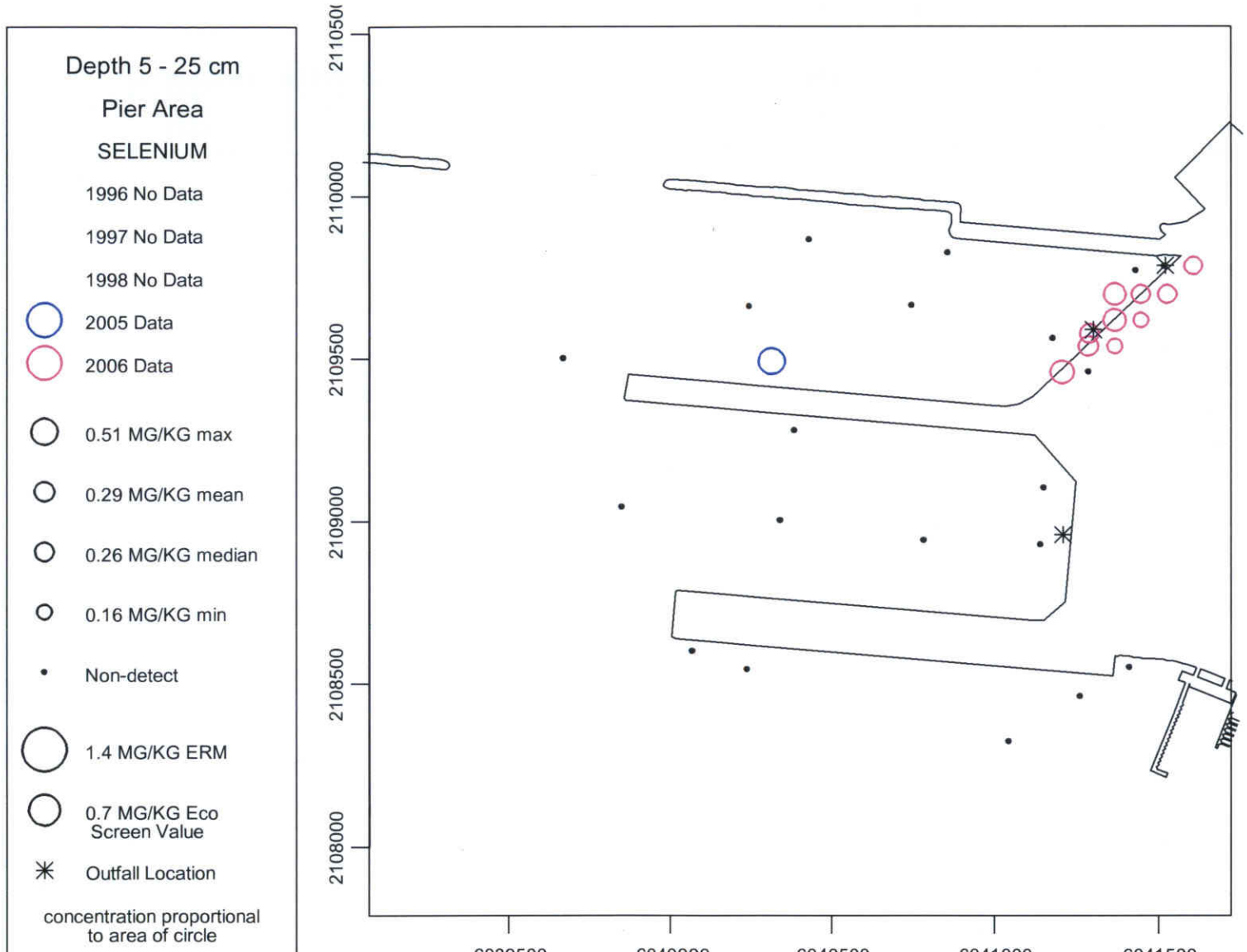

Figure A-311. Bubble Plot of Selenium Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

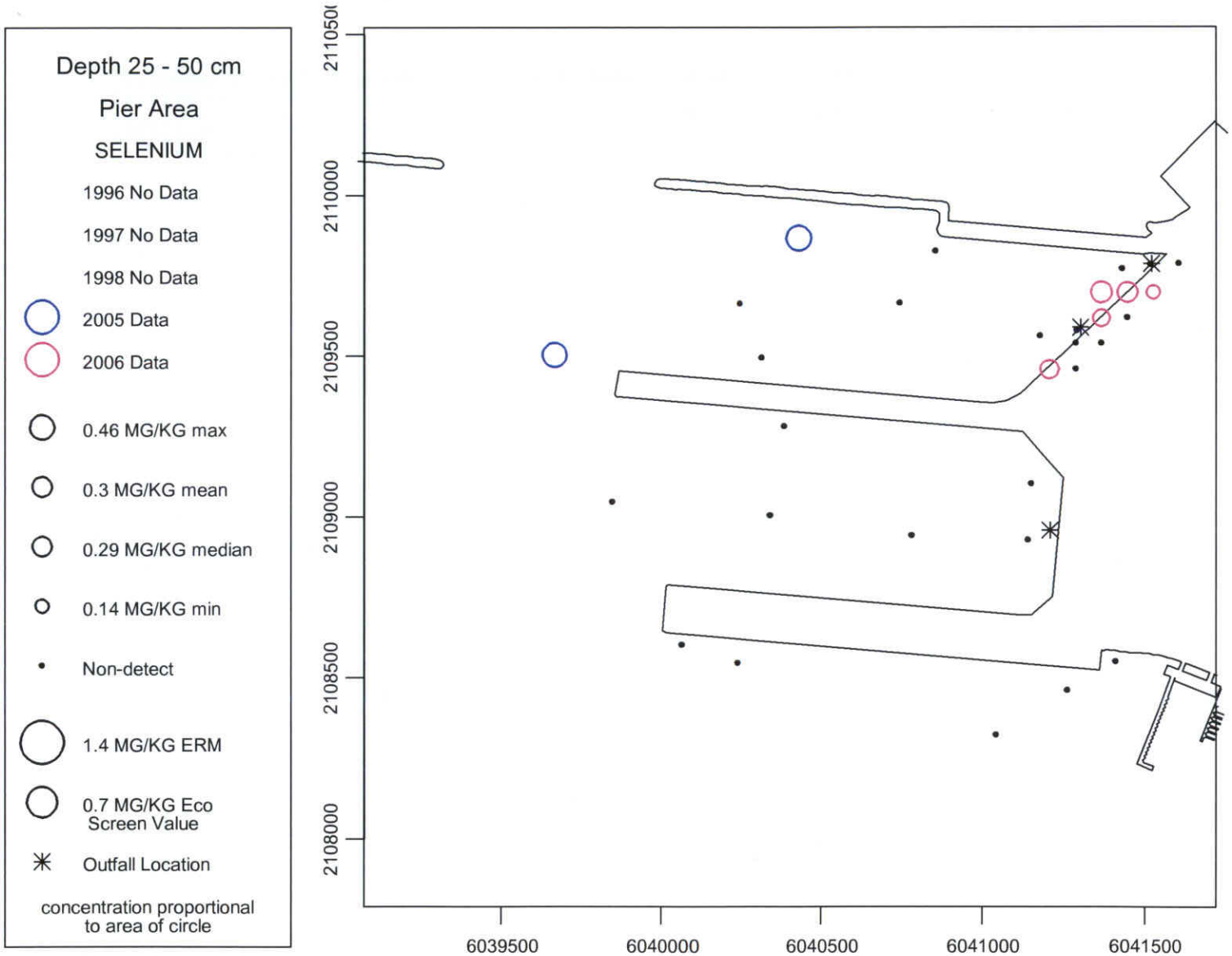

Figure A-312. Bubble Plot of Selenium Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

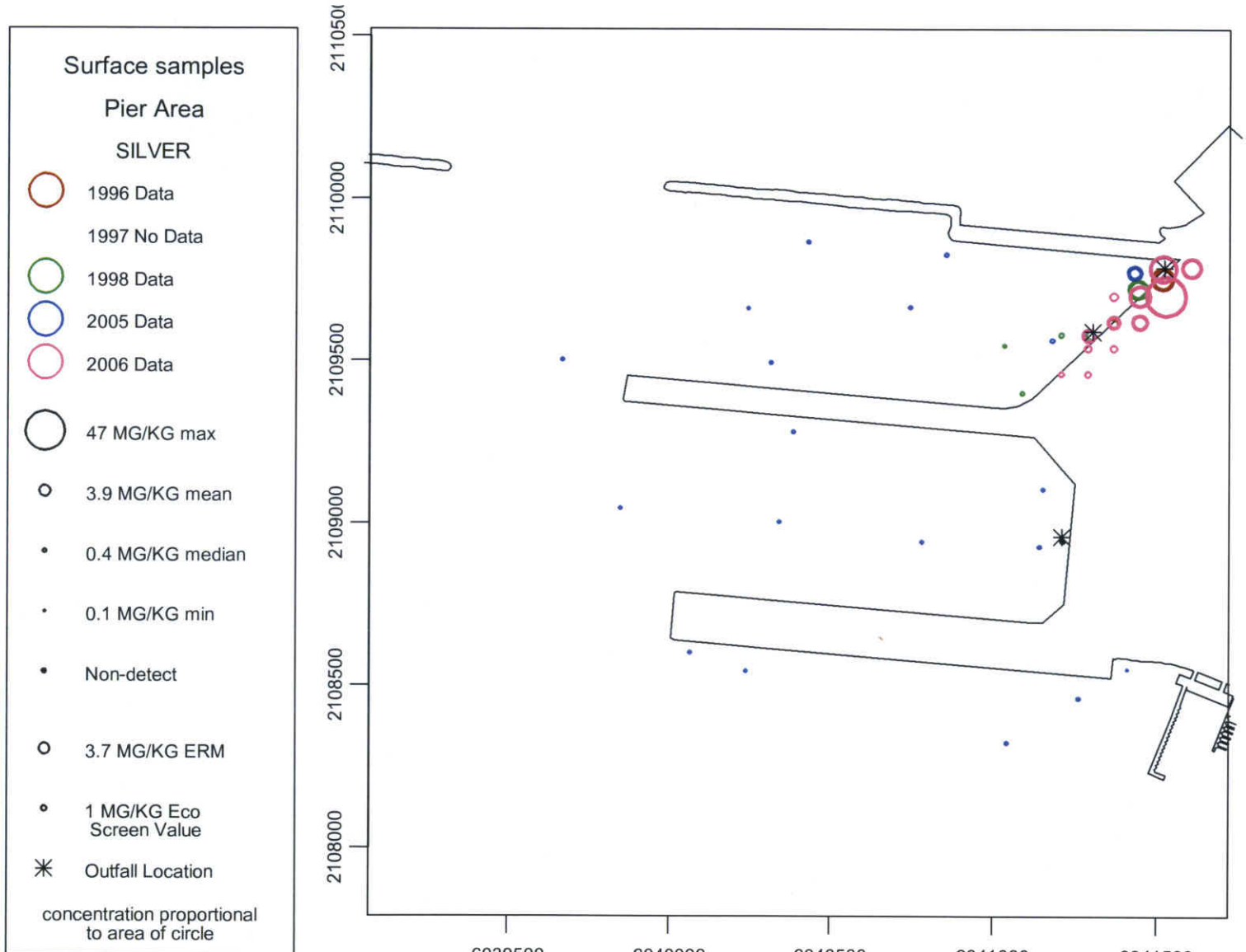

Figure A-313. Bubble Plot of Silver Concentrations in IR Site 24 Surface Sediment by Year.

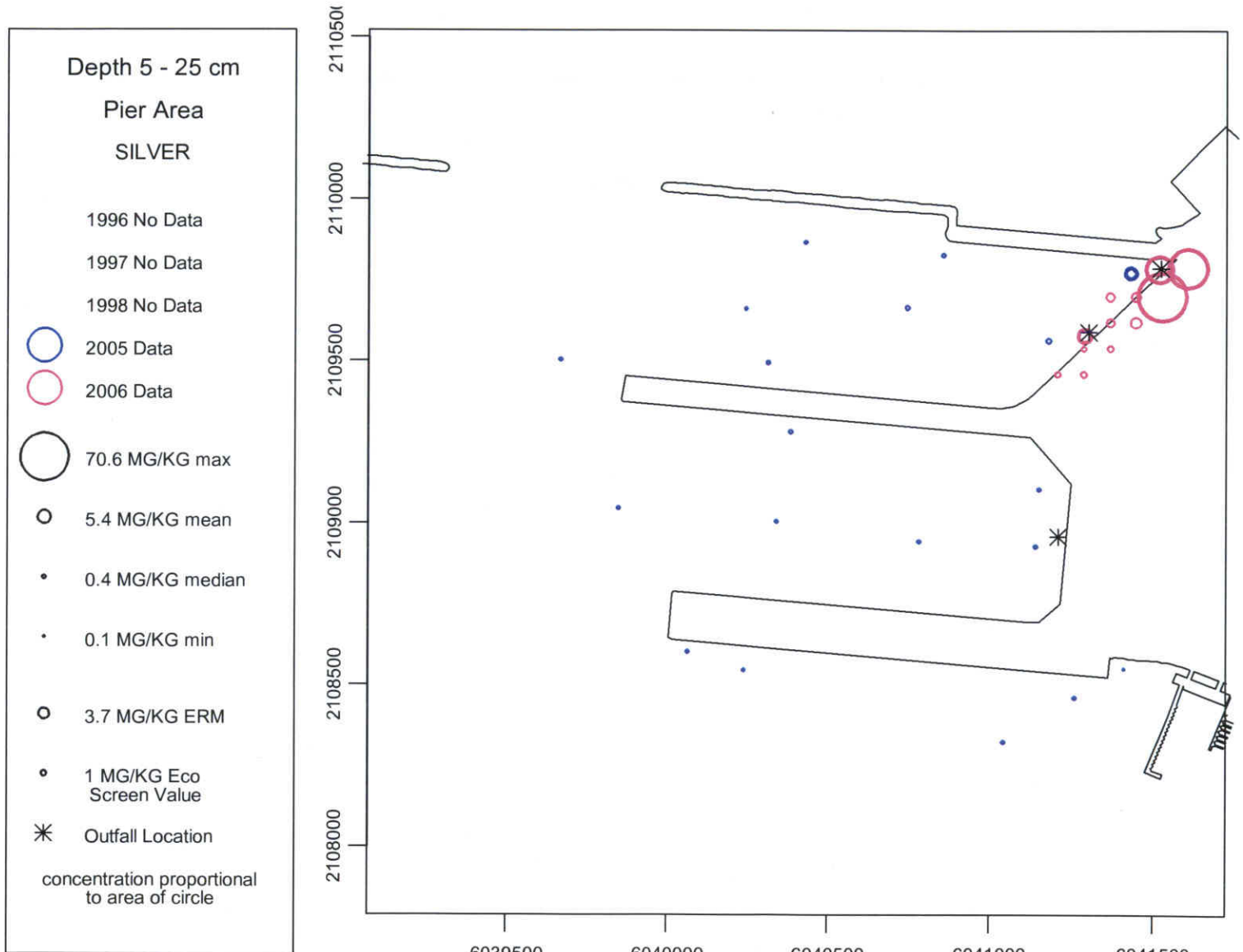

Figure A-314. Bubble Plot of Silver Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

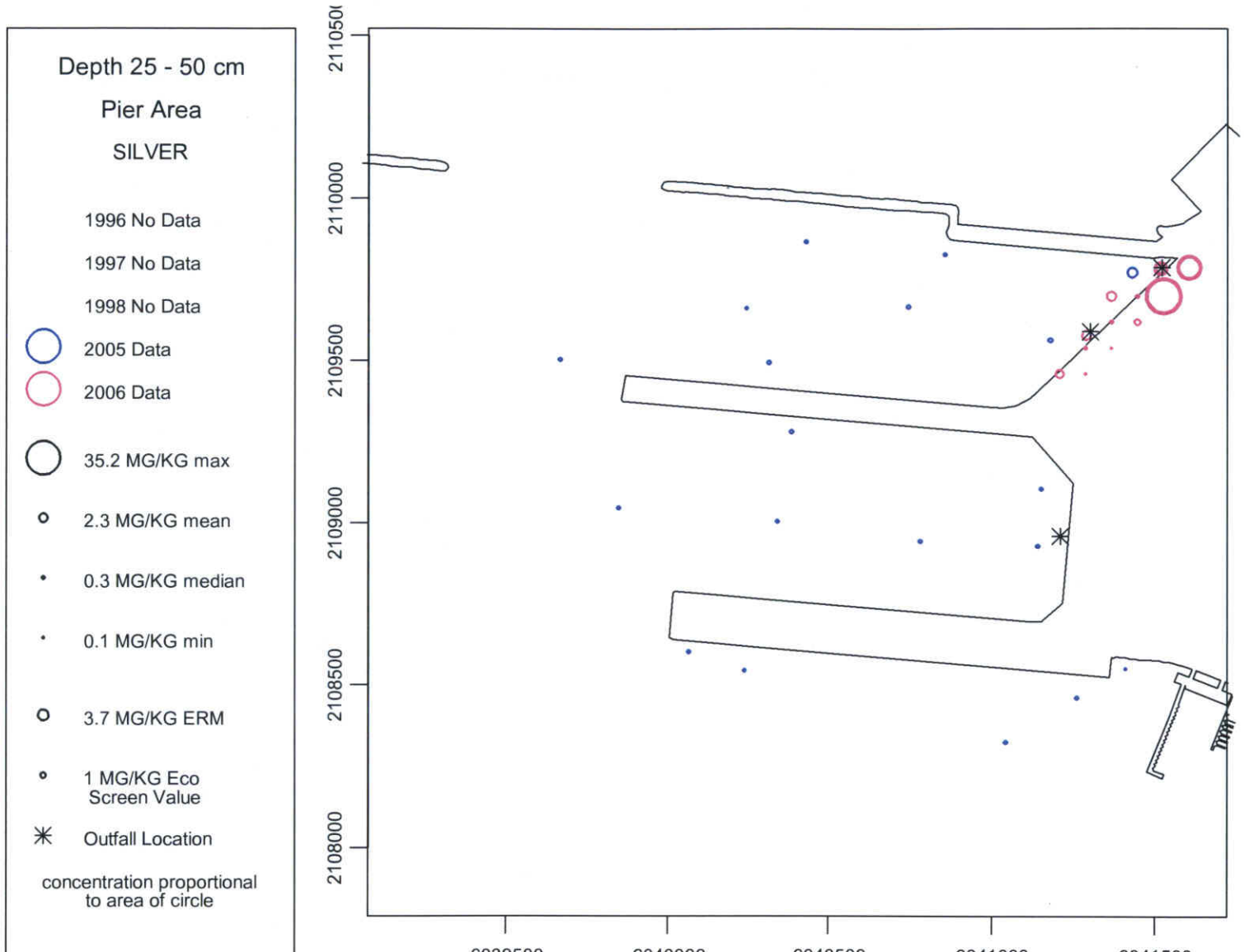

Figure A-315. Bubble Plot of Silver Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

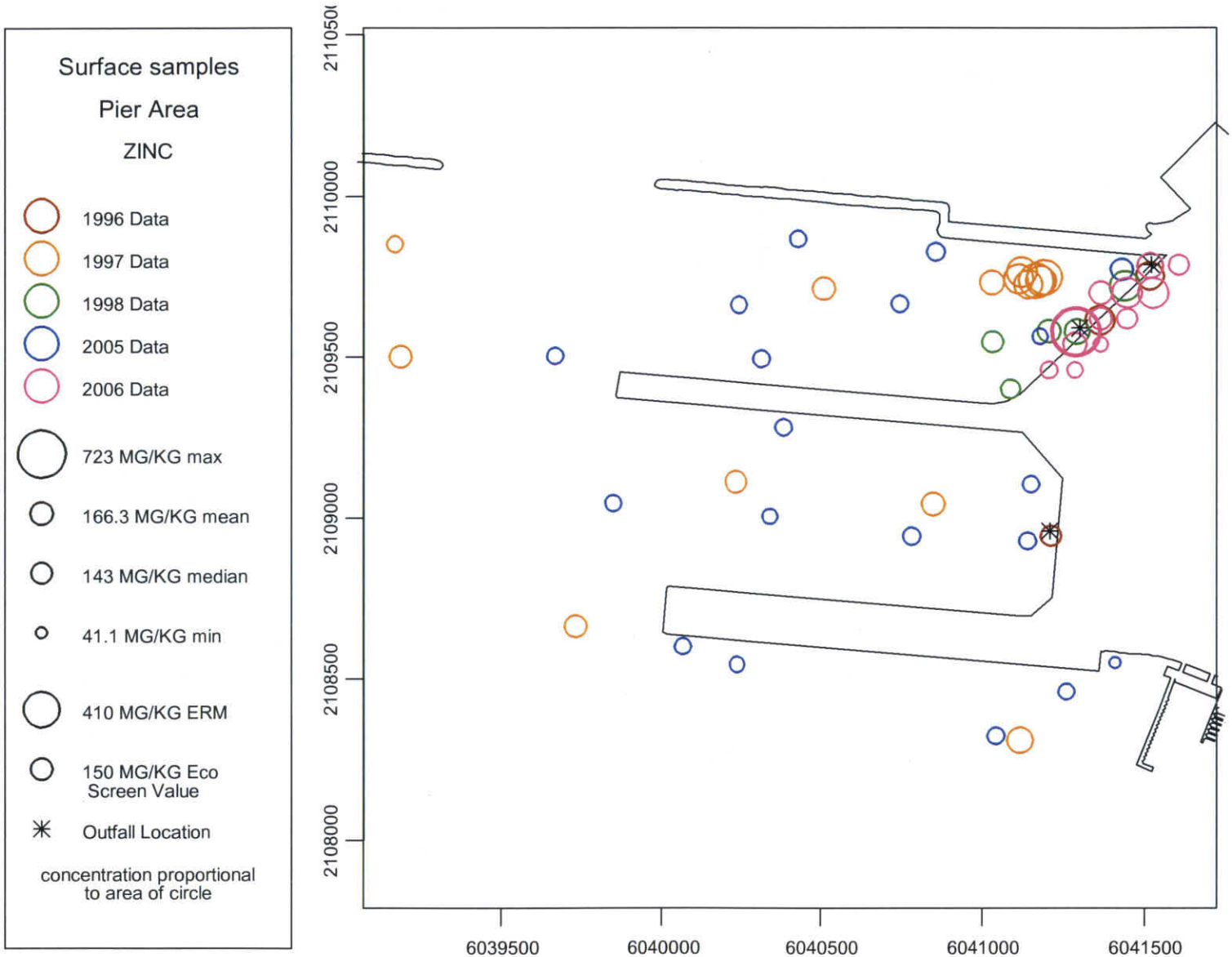

Figure A-316. Bubble Plot of Zinc Concentrations in IR Site 24 Surface Sediment by Year.

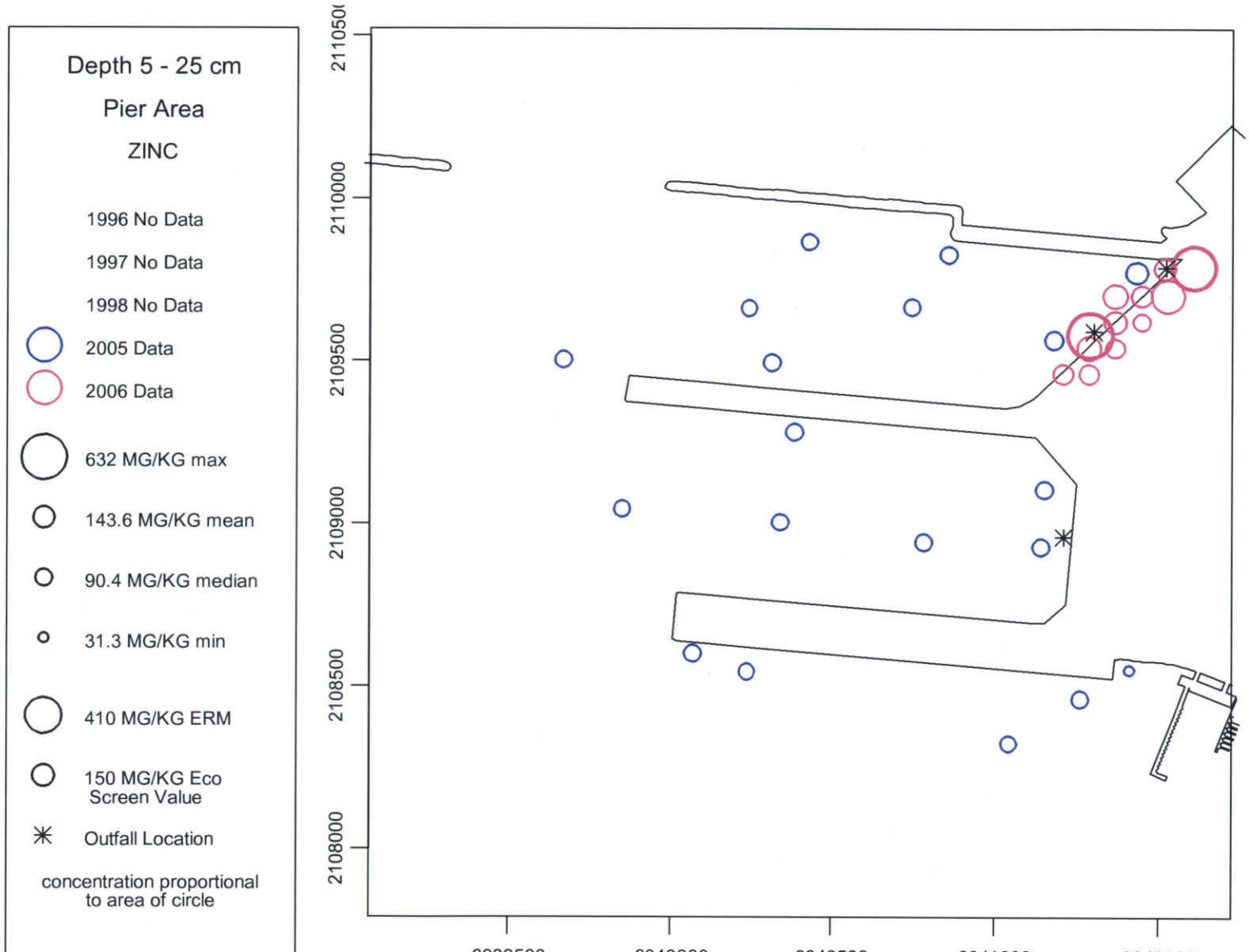

Figure A-317. Bubble Plot of Zinc Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

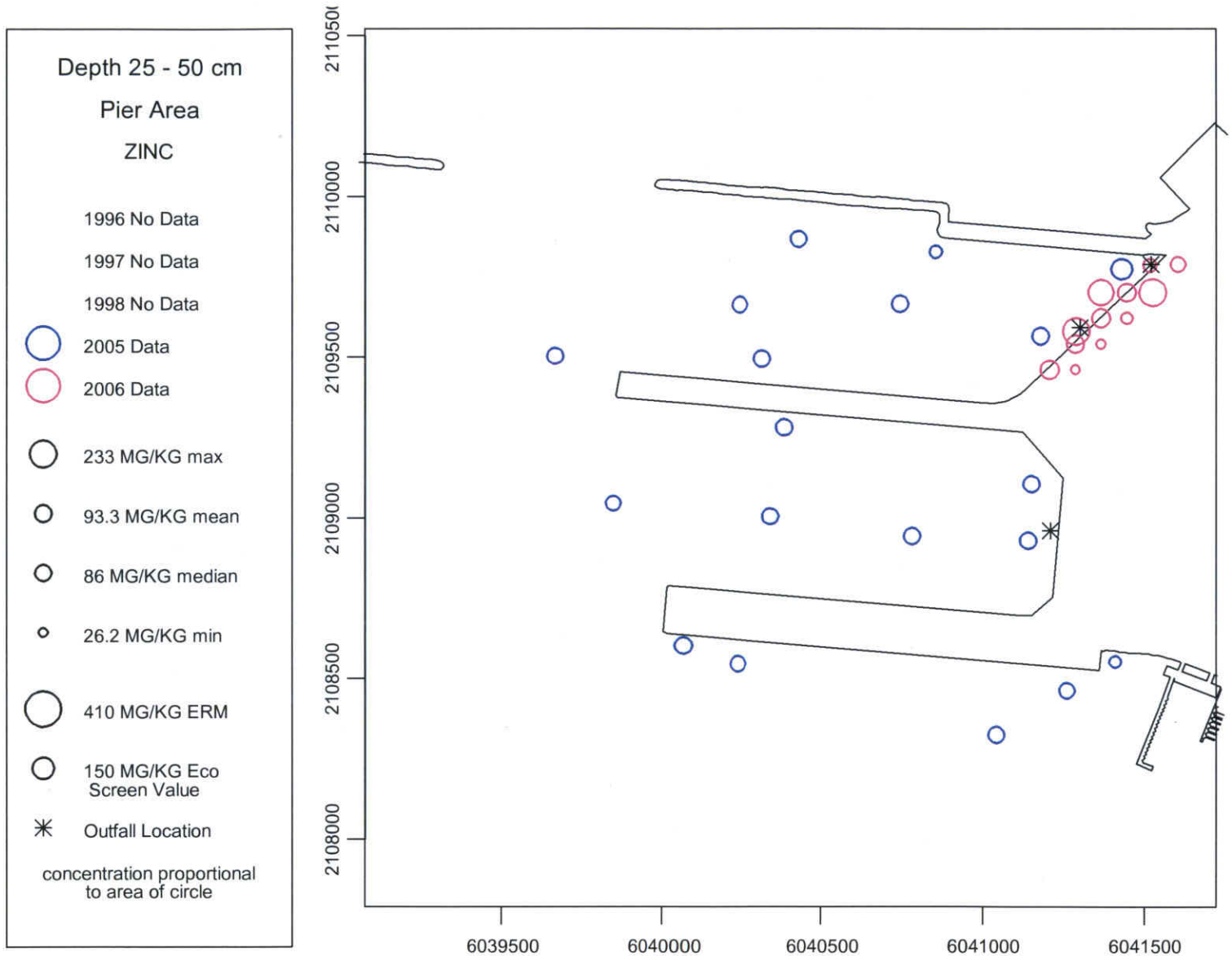

Figure A-318. Bubble Plot of Zinc Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

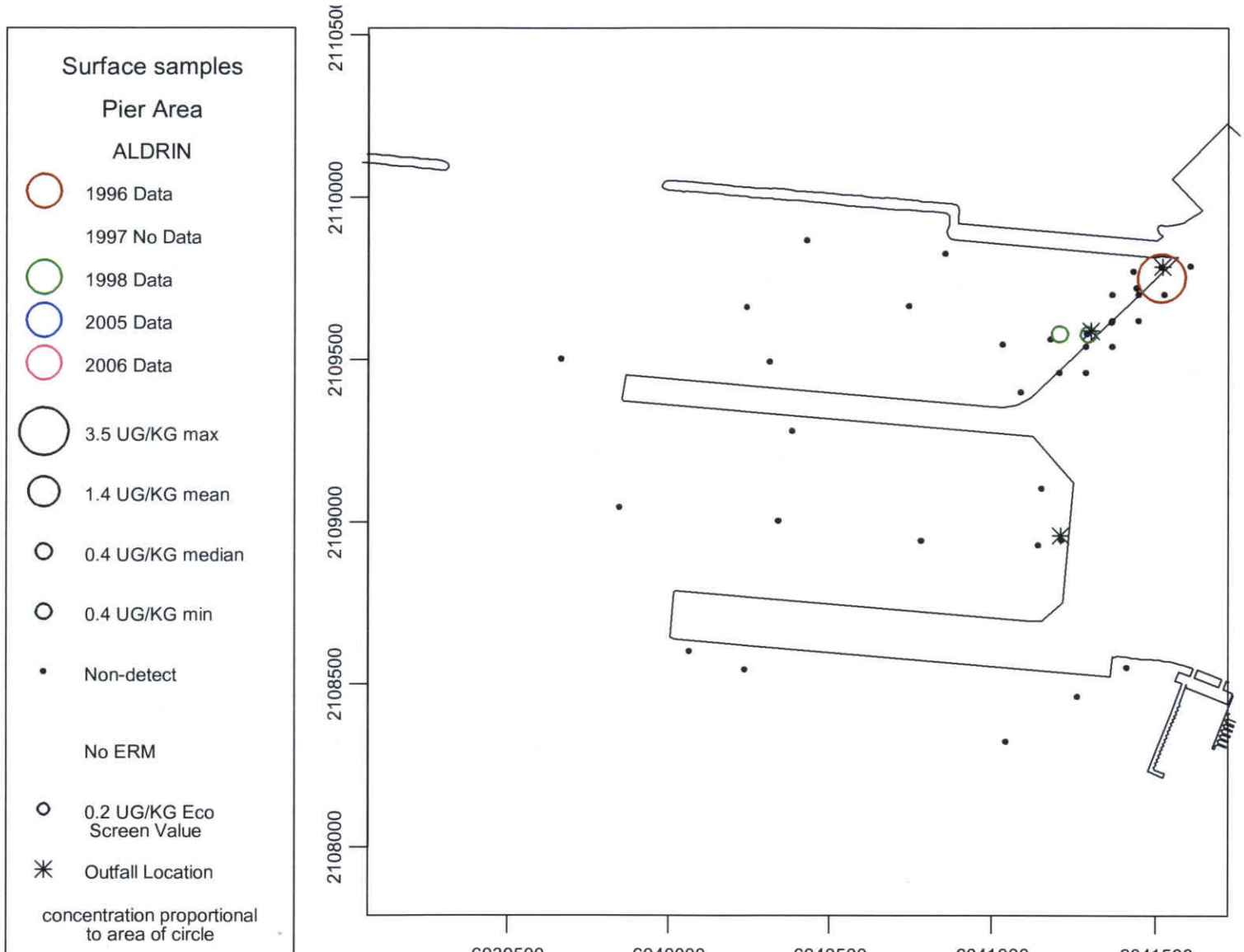

Figure A-319. Bubble Plot of Aldrin Concentrations in IR Site 24 Surface Sediment by Year.

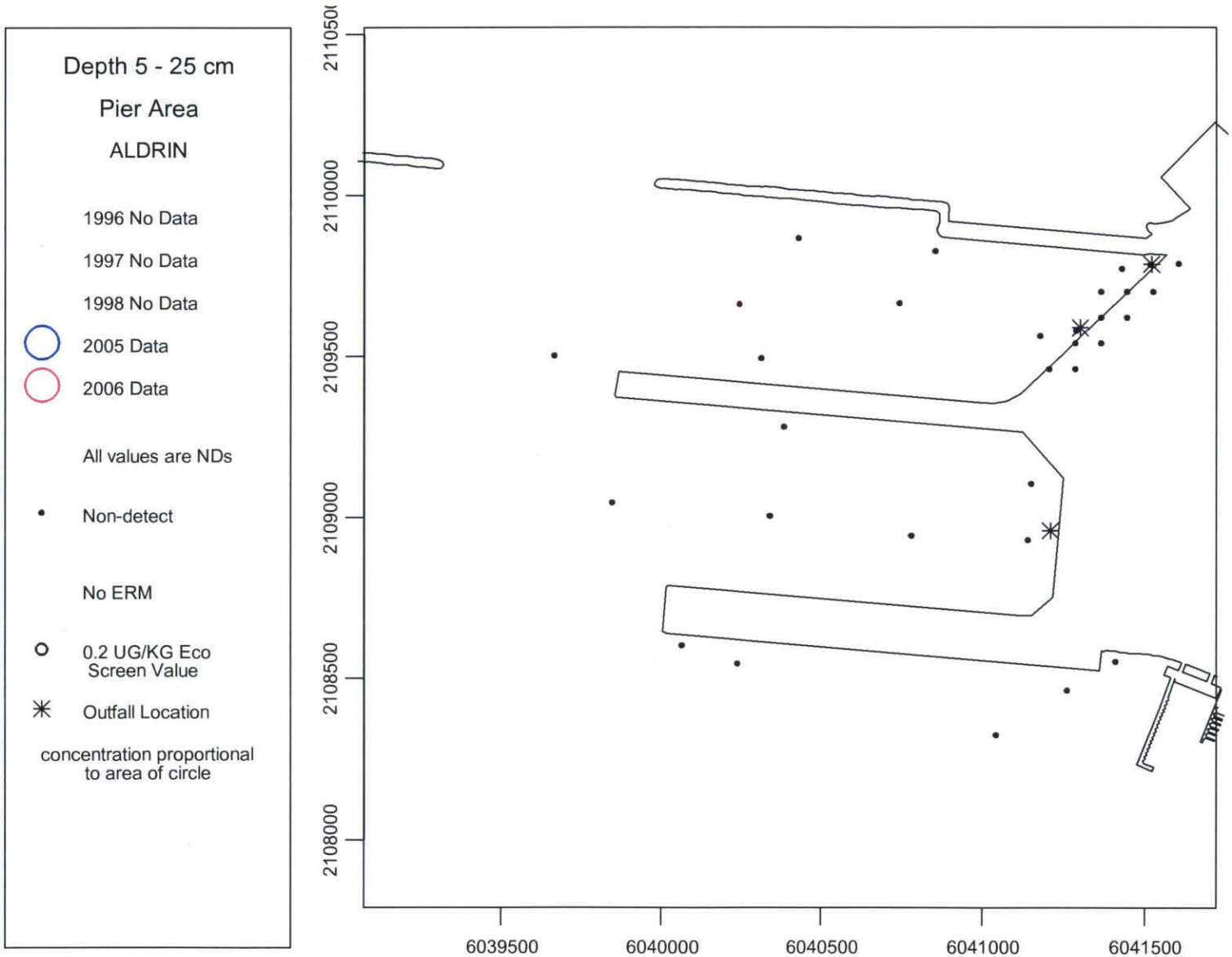

Figure A-320. Bubble Plot of Aldrin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

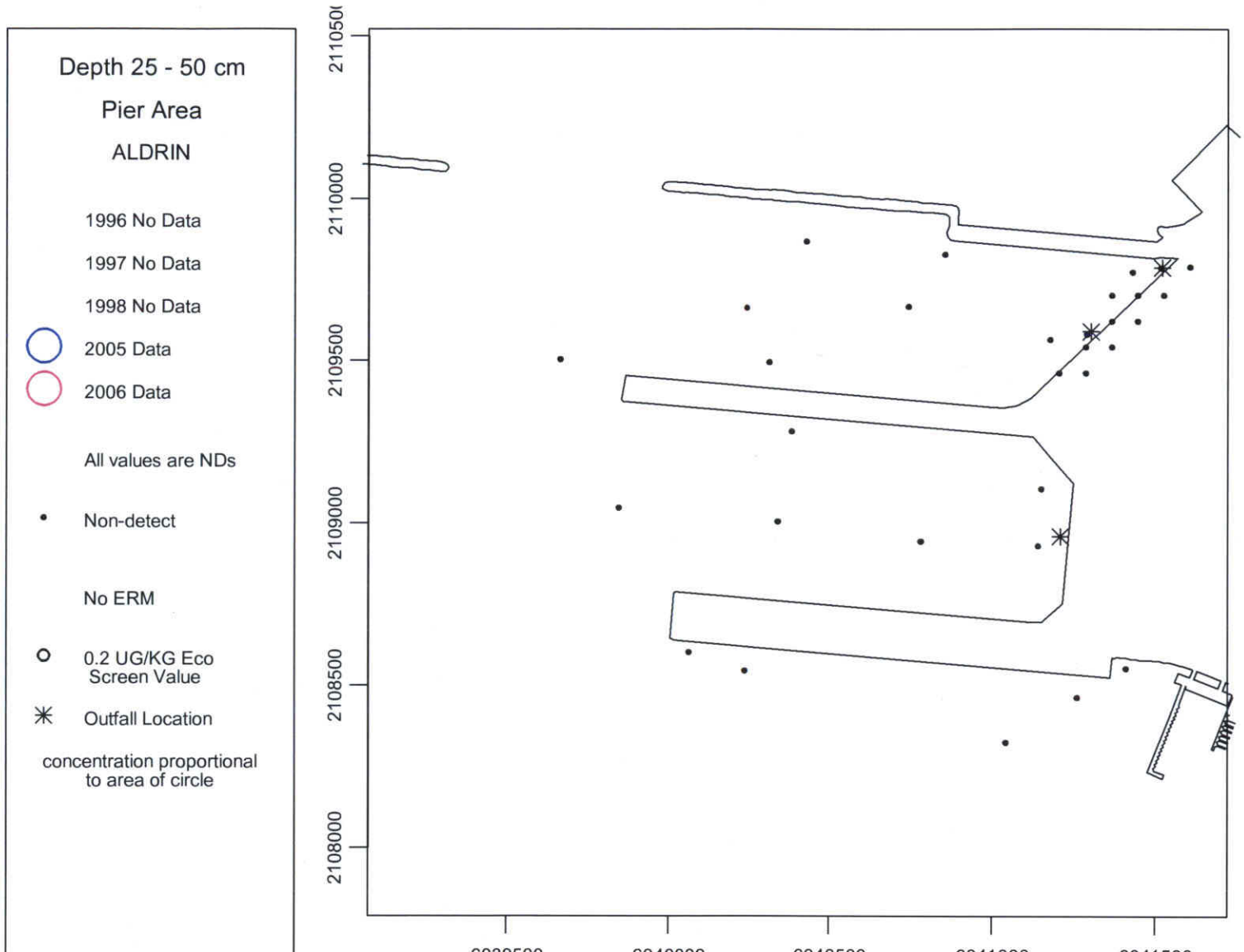

Figure A-321. Bubble Plot of Aldrin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

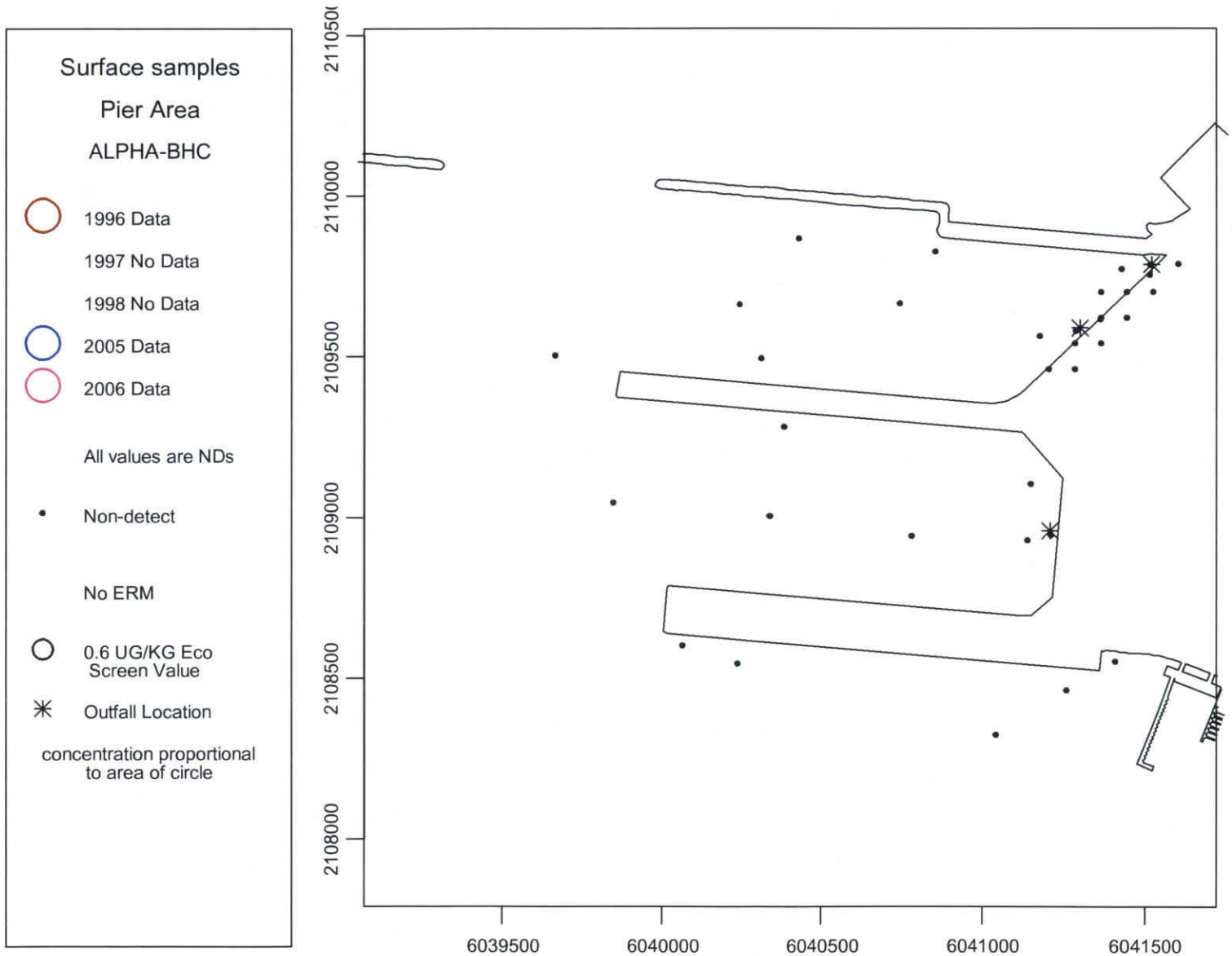

Figure A-322. Bubble Plot of Alpha-BHC Concentrations in IR Site 24 Surface Sediment by Year.

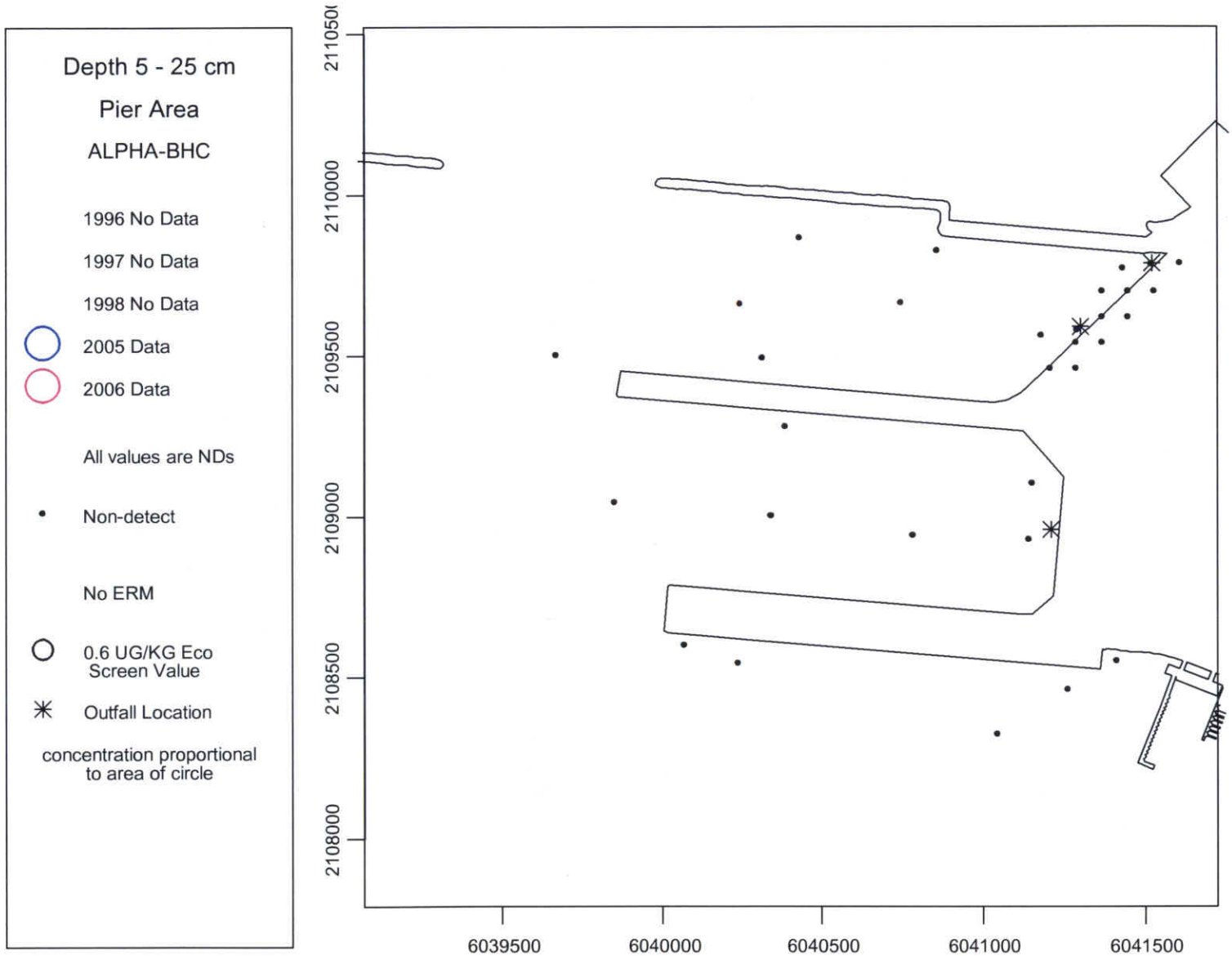

Figure A-323. Bubble Plot of Alpha-BHC Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

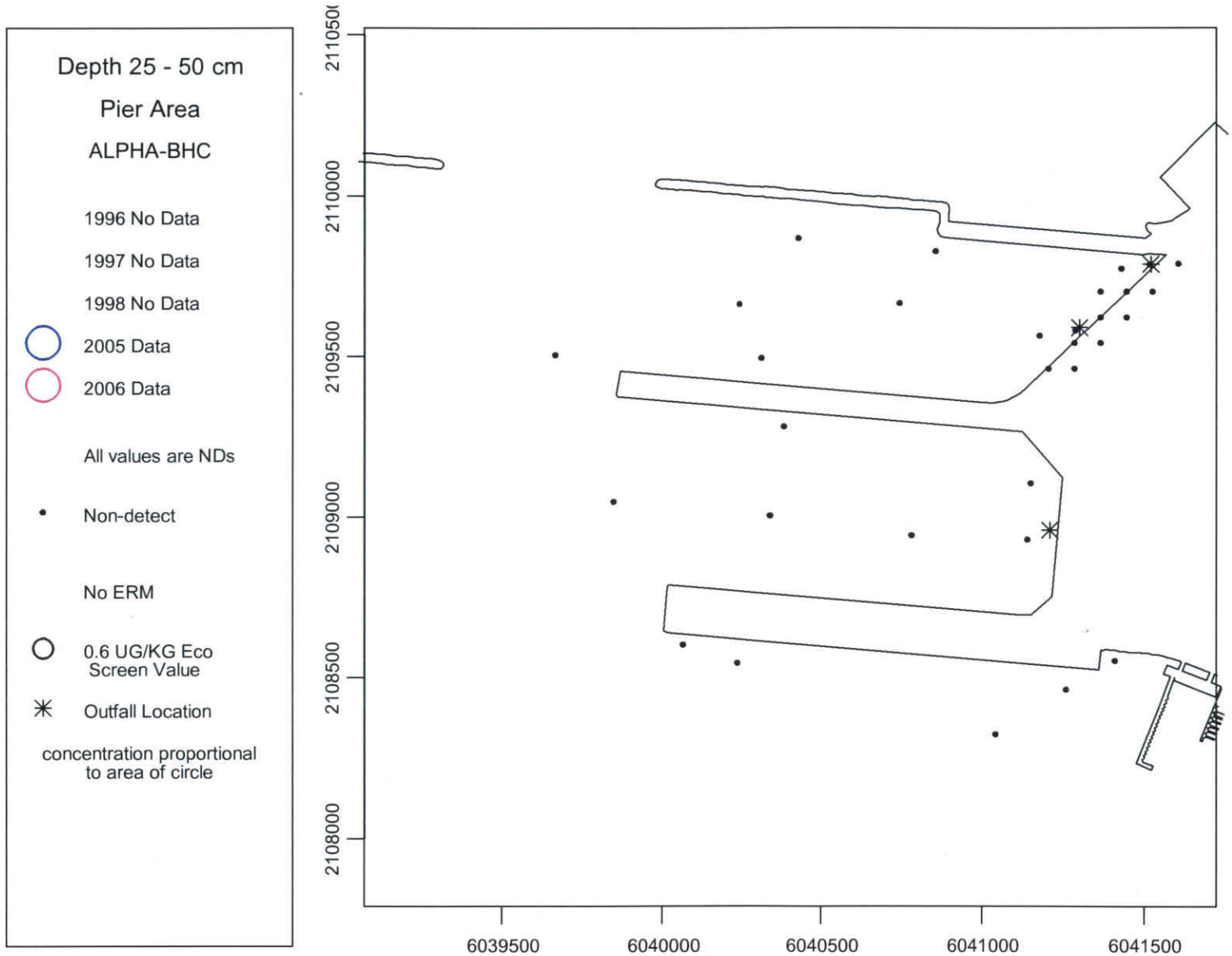

Figure 324. Bubble Plot of Alpha-BHC Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

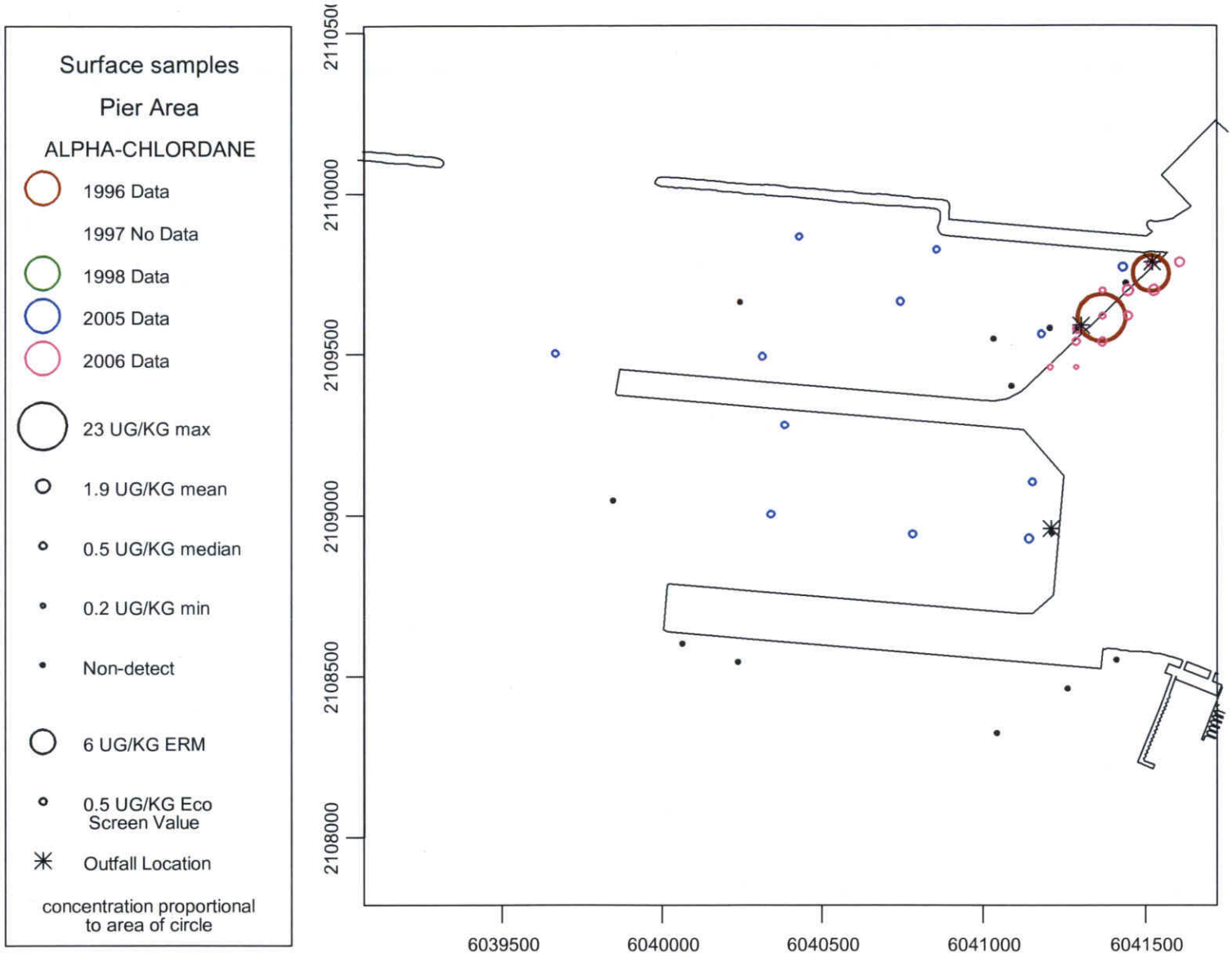

Figure A-325. Bubble Plot of Alpha-Chlordane Concentrations in IR Site 24 Surface Sediment by Year.

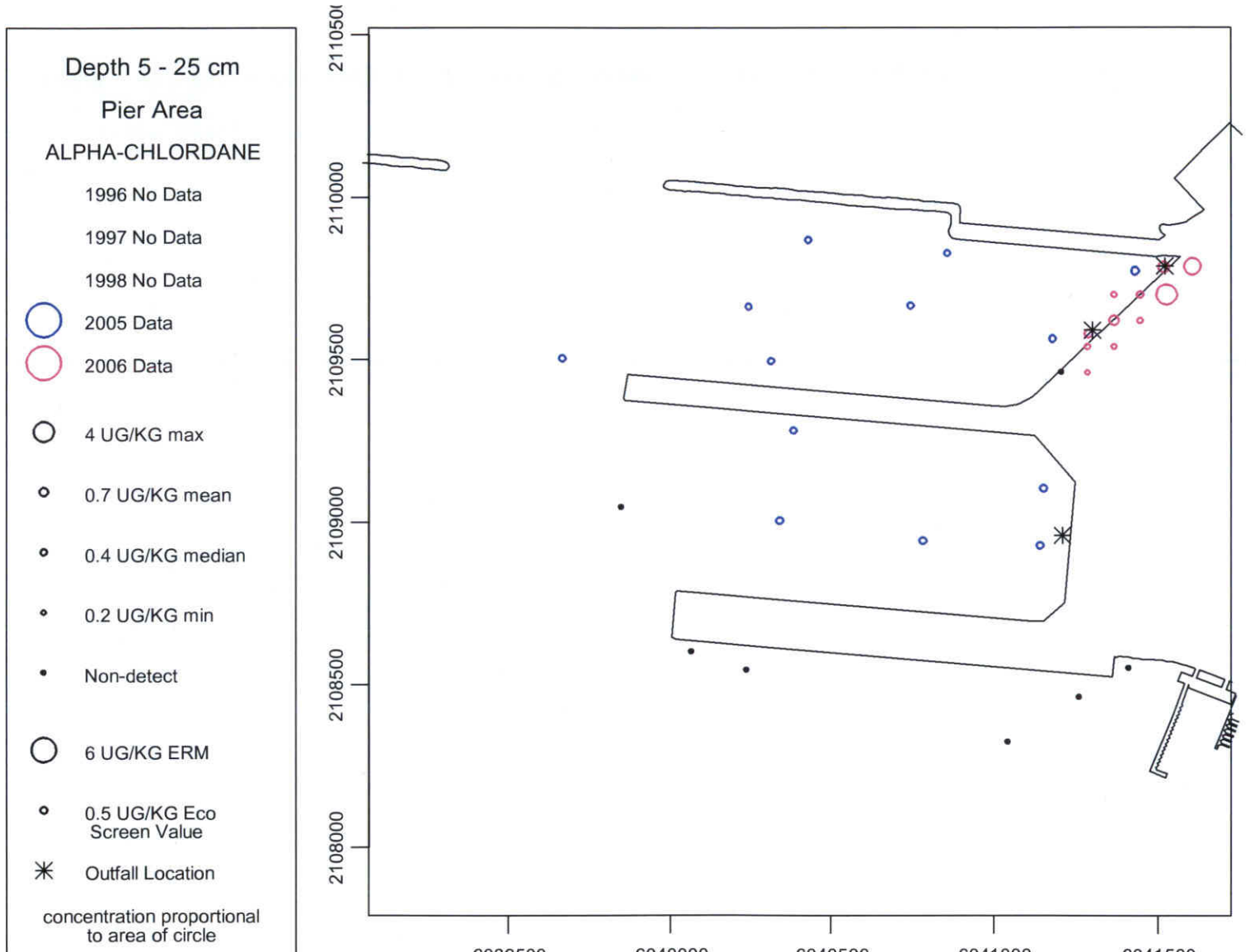

Figure A-326. Bubble Plot of Alpha-Chlordane Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

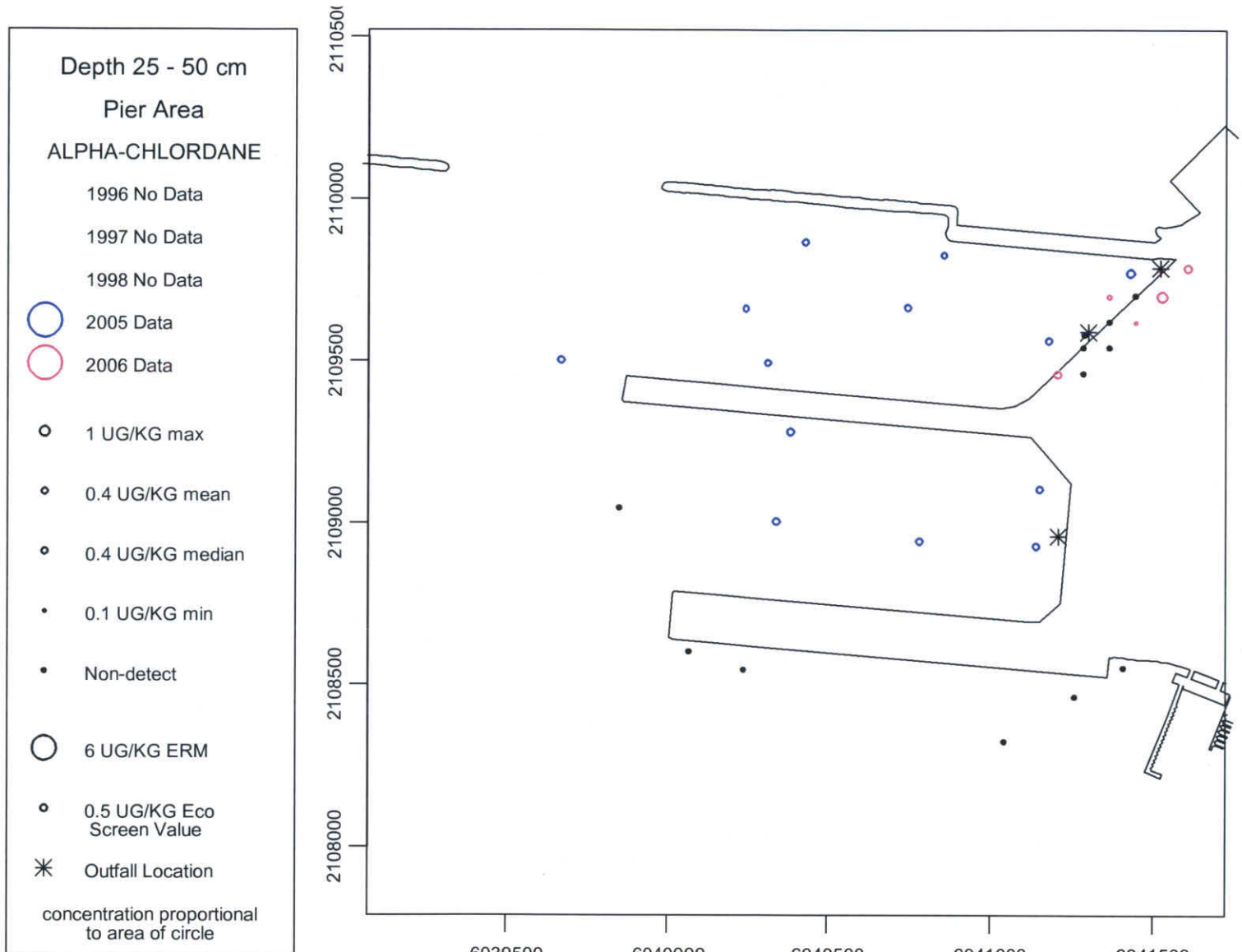

Figure A-327. Bubble Plot of Alpha-Chlordane Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

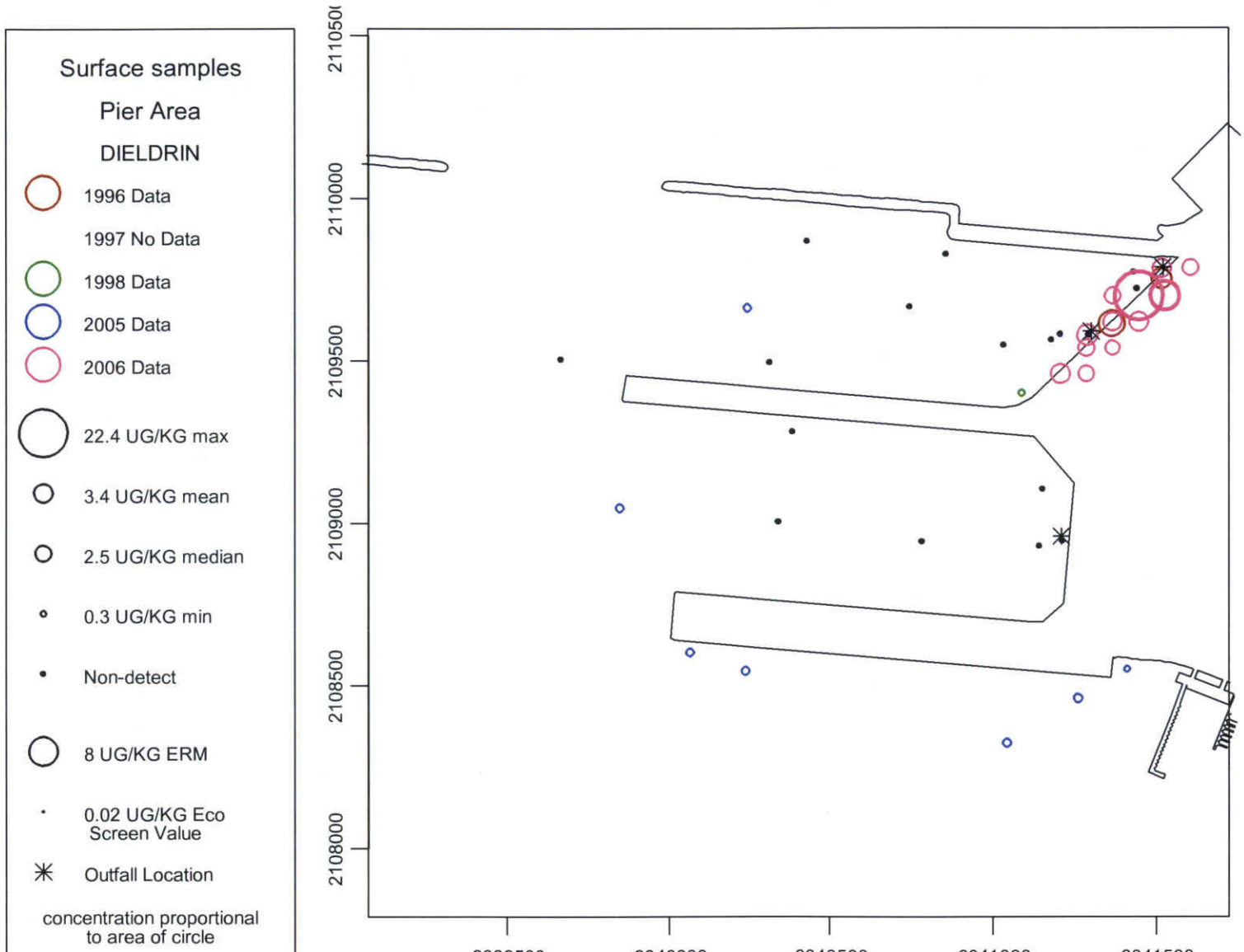

Figure A-328. Bubble Plot of Dieldrin Concentrations in IR Site 24 Surface Sediment by Year.

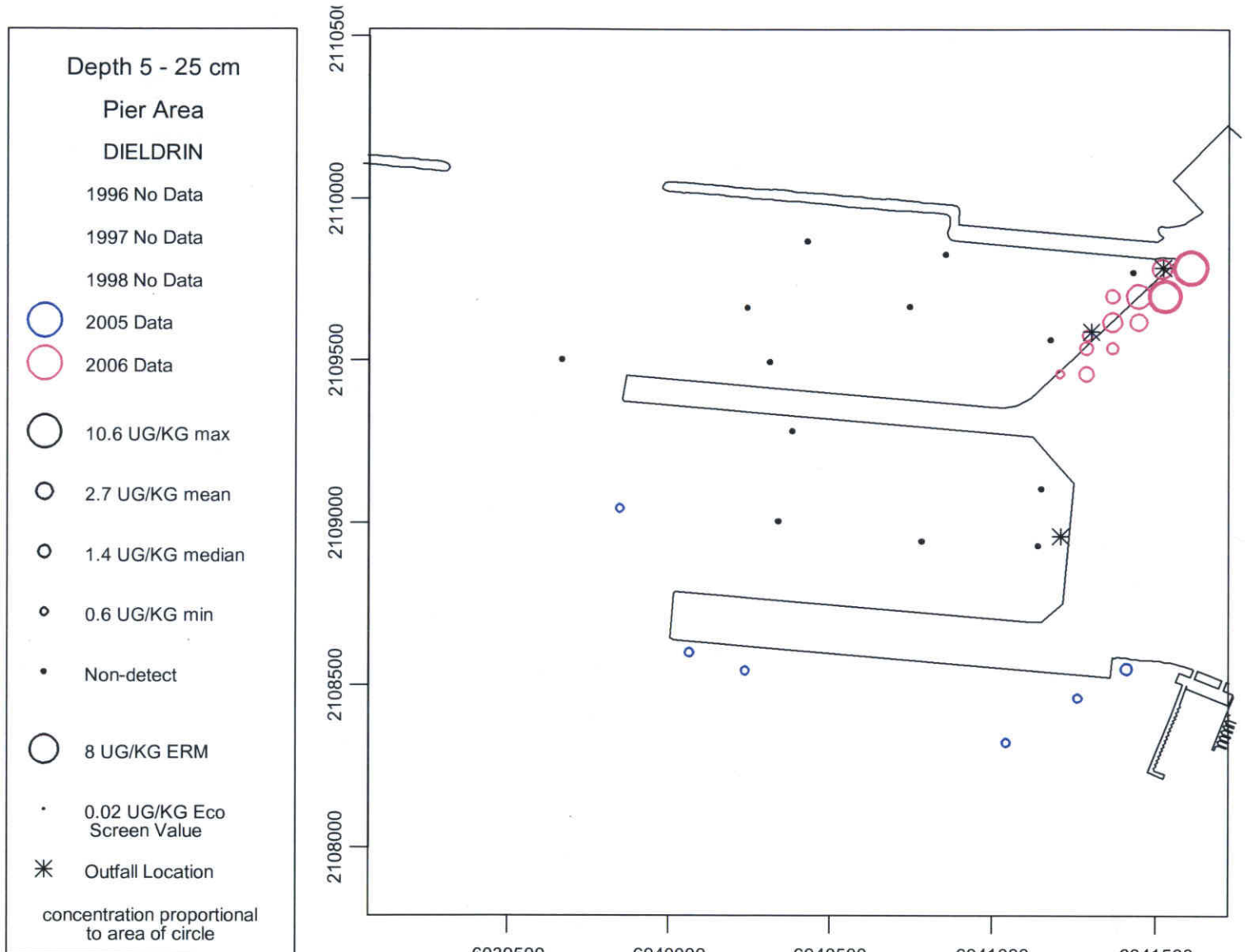

Figure A-329. Bubble Plot of Dieldrin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

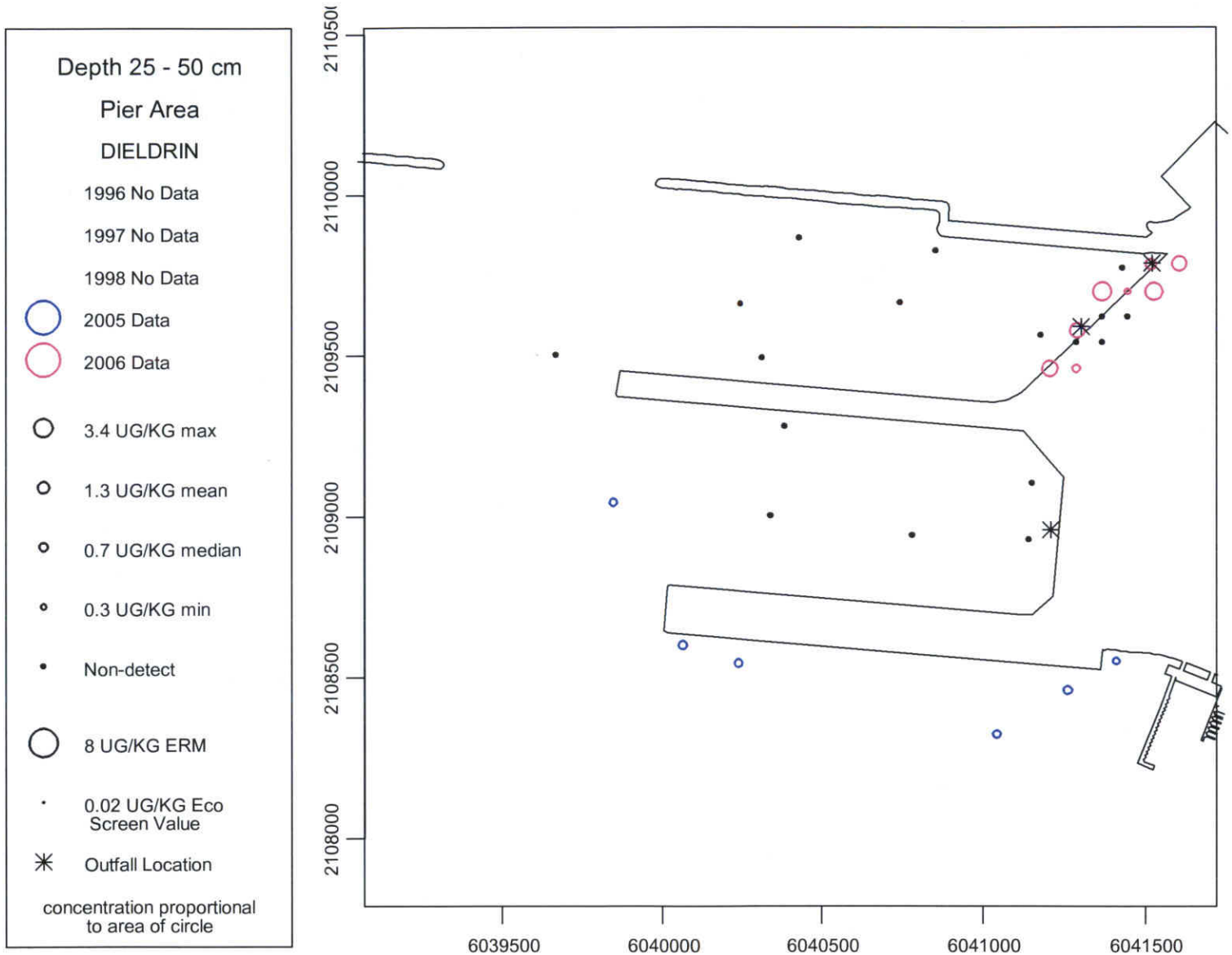

Figure A-330. Bubble Plot of Dieldrin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

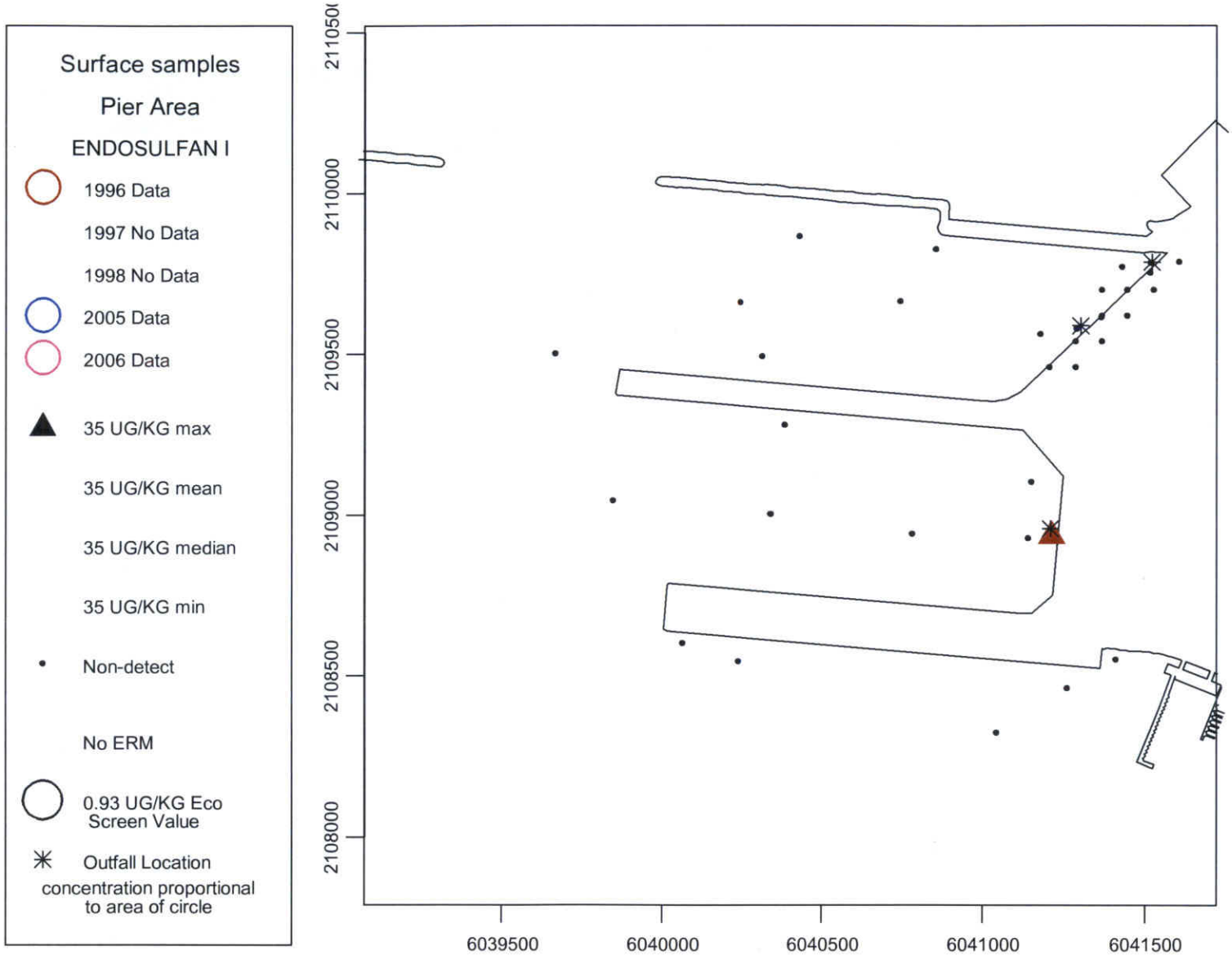

Figure A-331. Bubble Plot of Endosulfan I Concentrations in IR Site 24 Surface Sediment by Year.

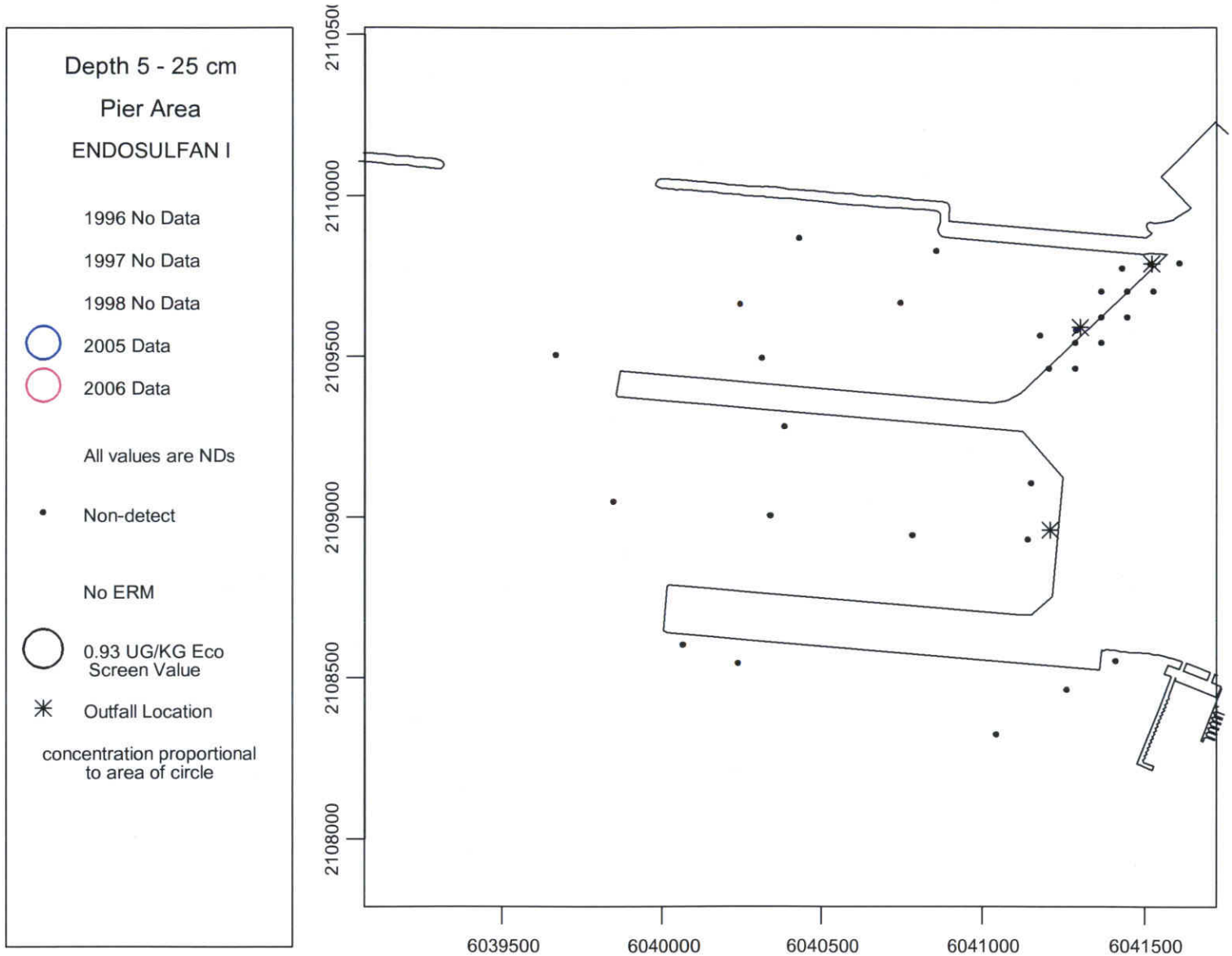

Figure A-332. Bubble Plot of Endosulfan I Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

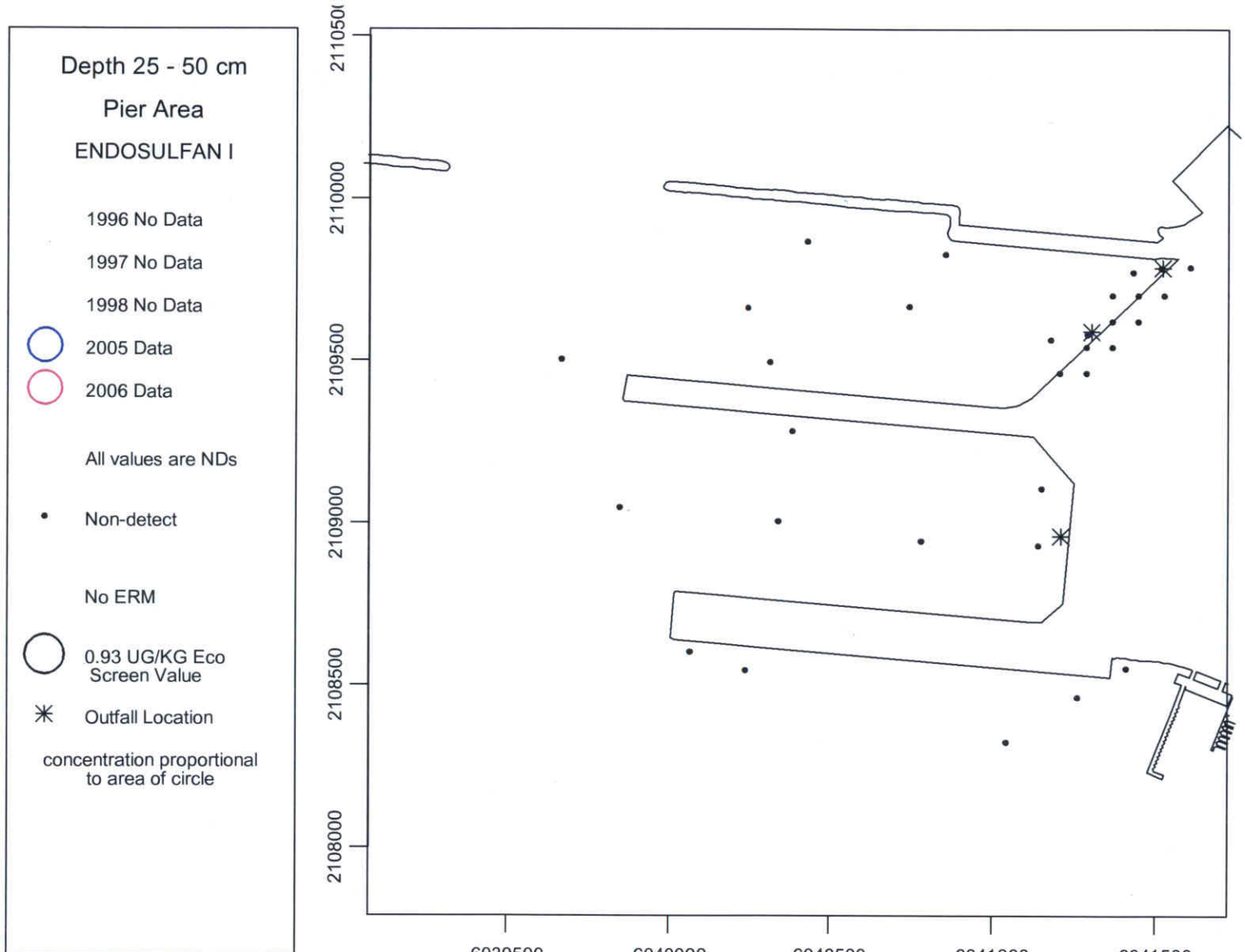

Figure A-333. Bubble Plot of Endosulfan I Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

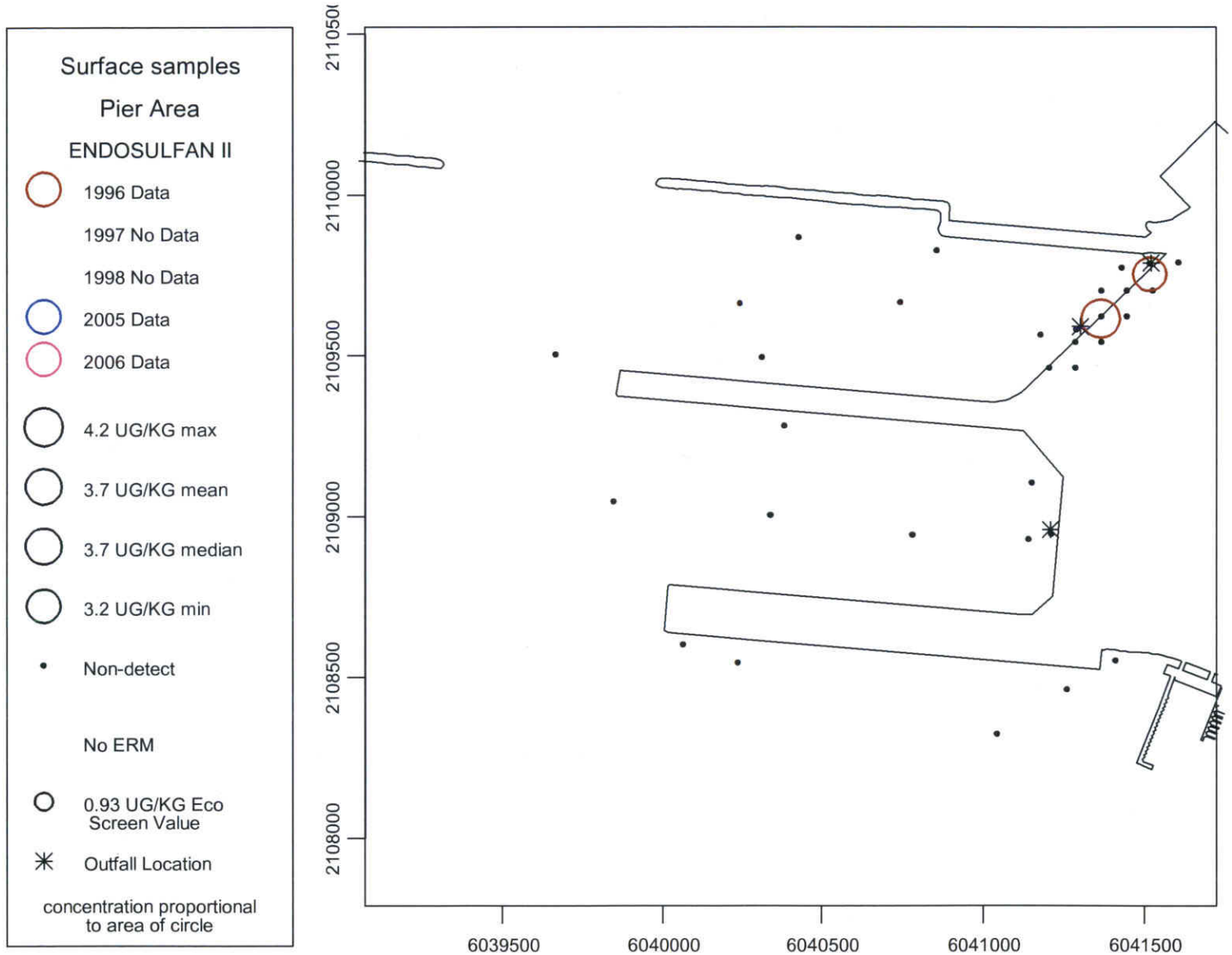

Figure A-334. Bubble Plot of Endosulfan II Concentrations in IR Site 24 Surface Sediment by Year.

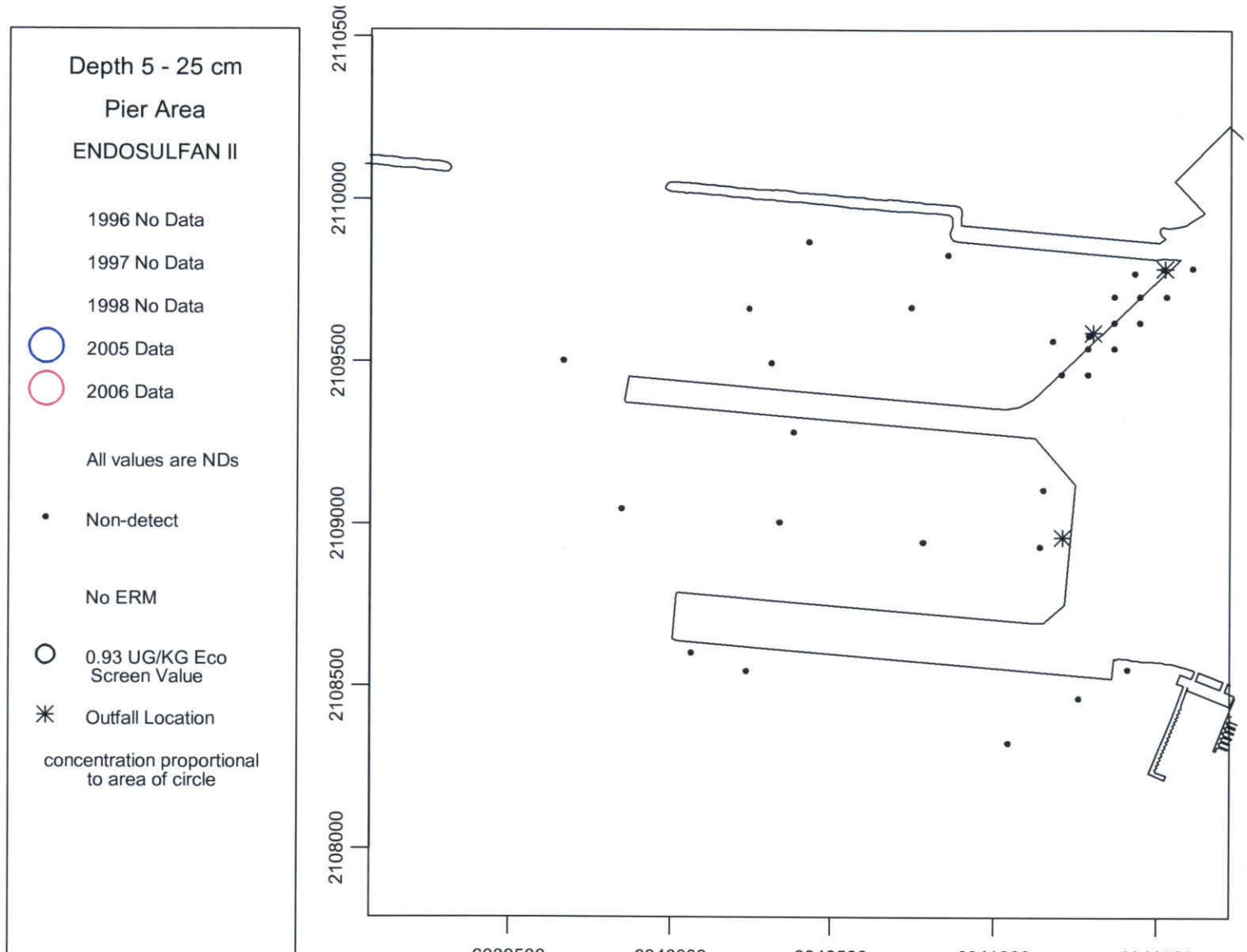

Figure A-335. Bubble Plot of Endosulfan II Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

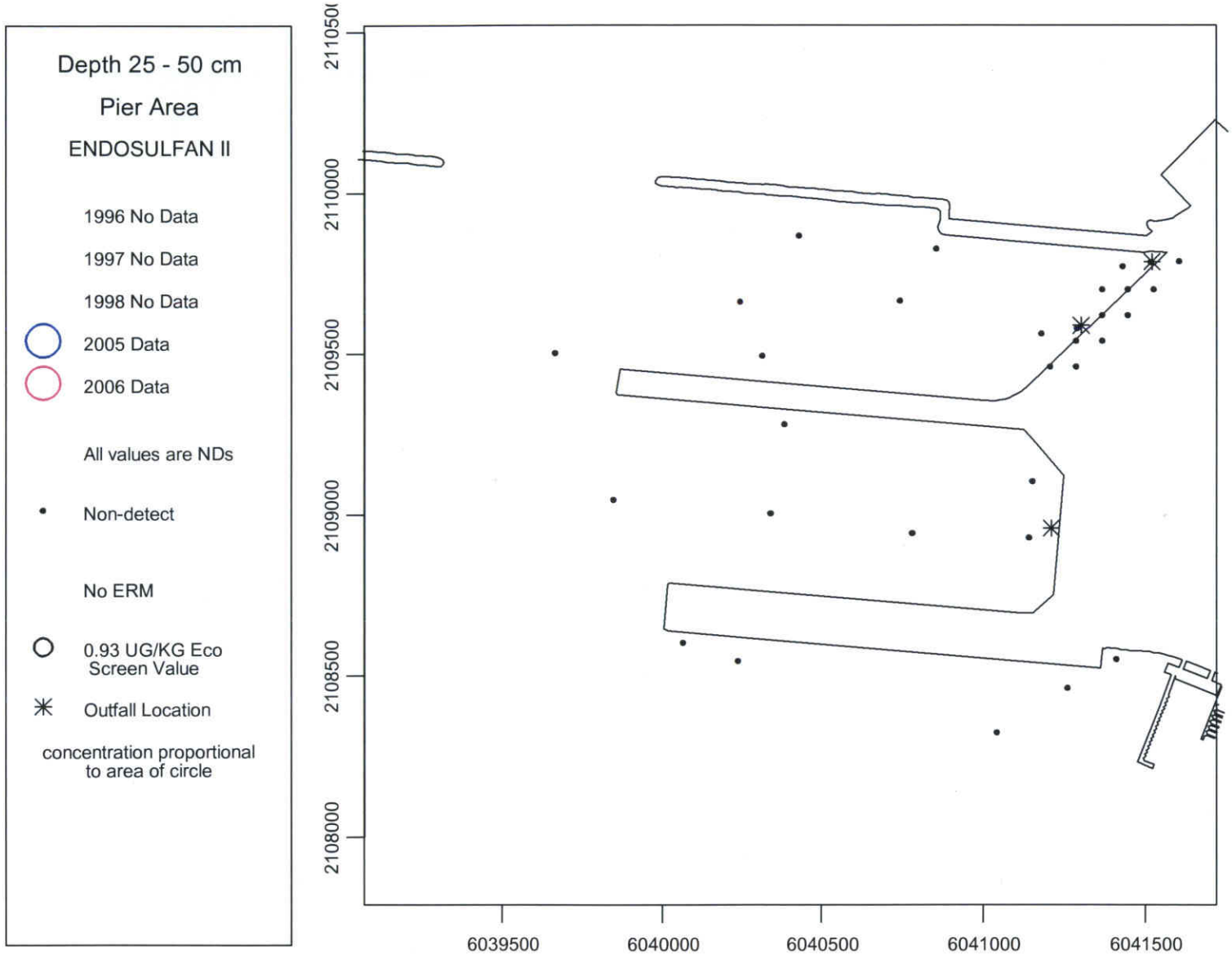

Figure A-336. Bubble Plot of Endosulfan II Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

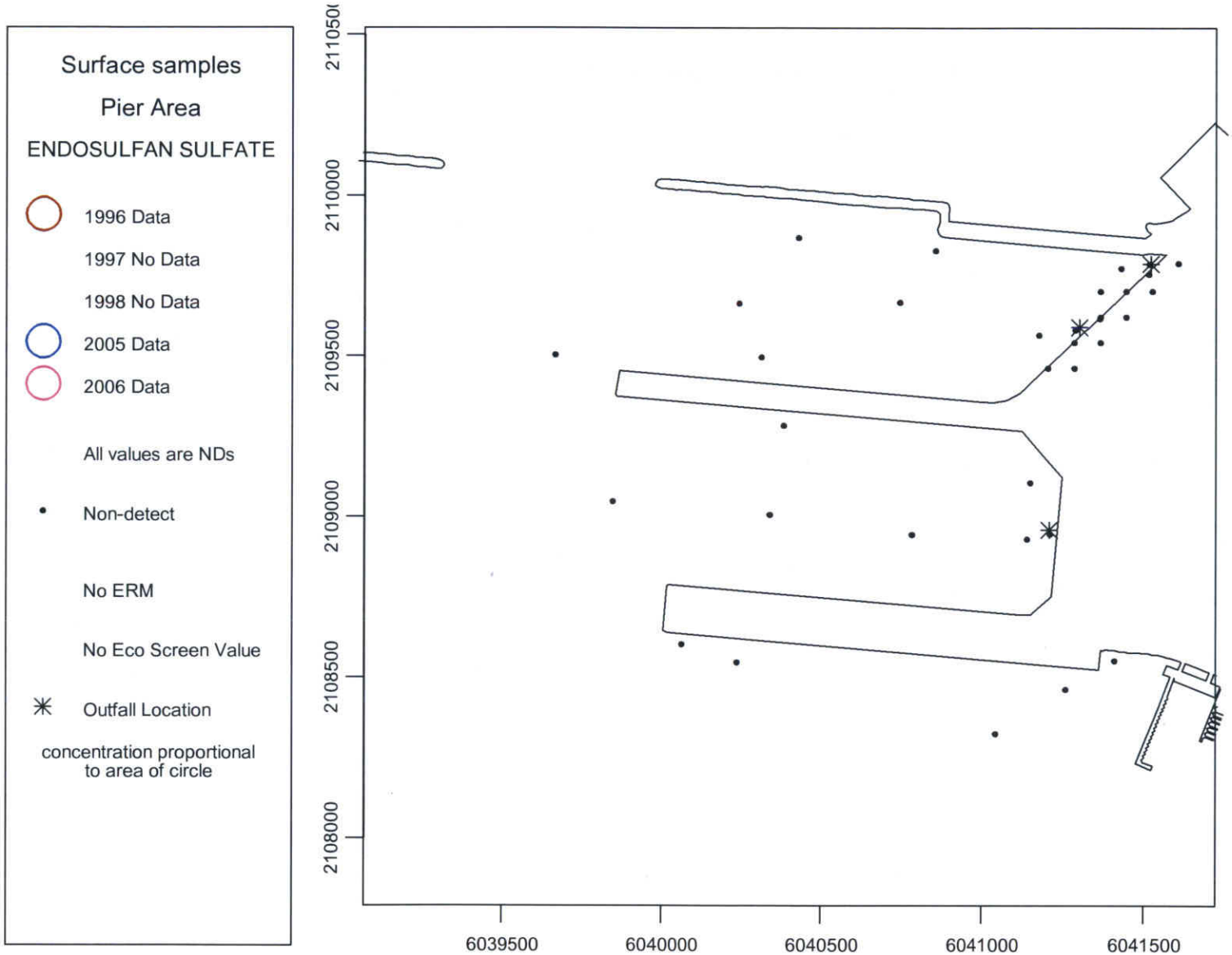

Figure A-337. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 24 Surface Sediment by Year.

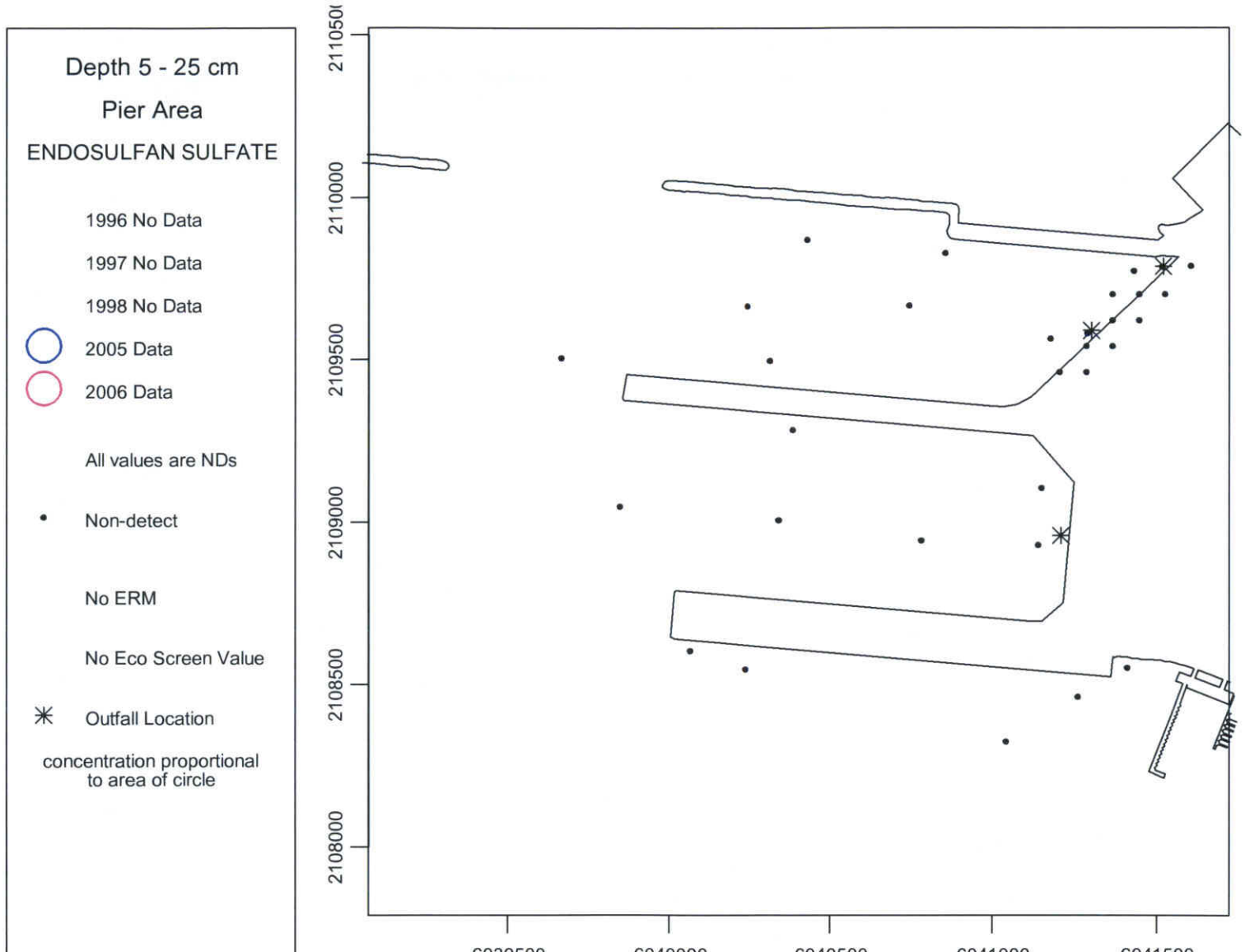

Figure A-338. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

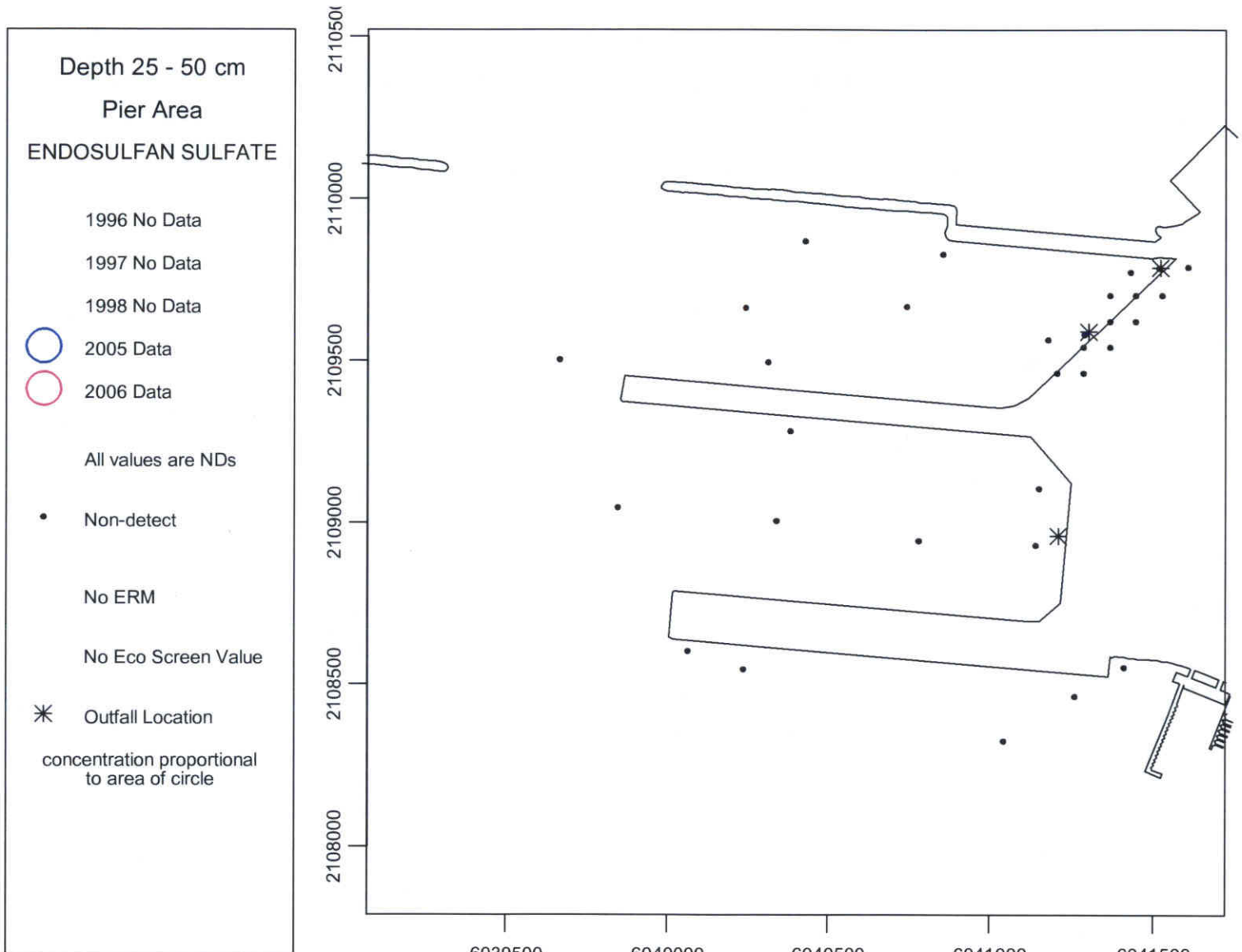

Figure A-339. Bubble Plot of Endosulfan Sulfate Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

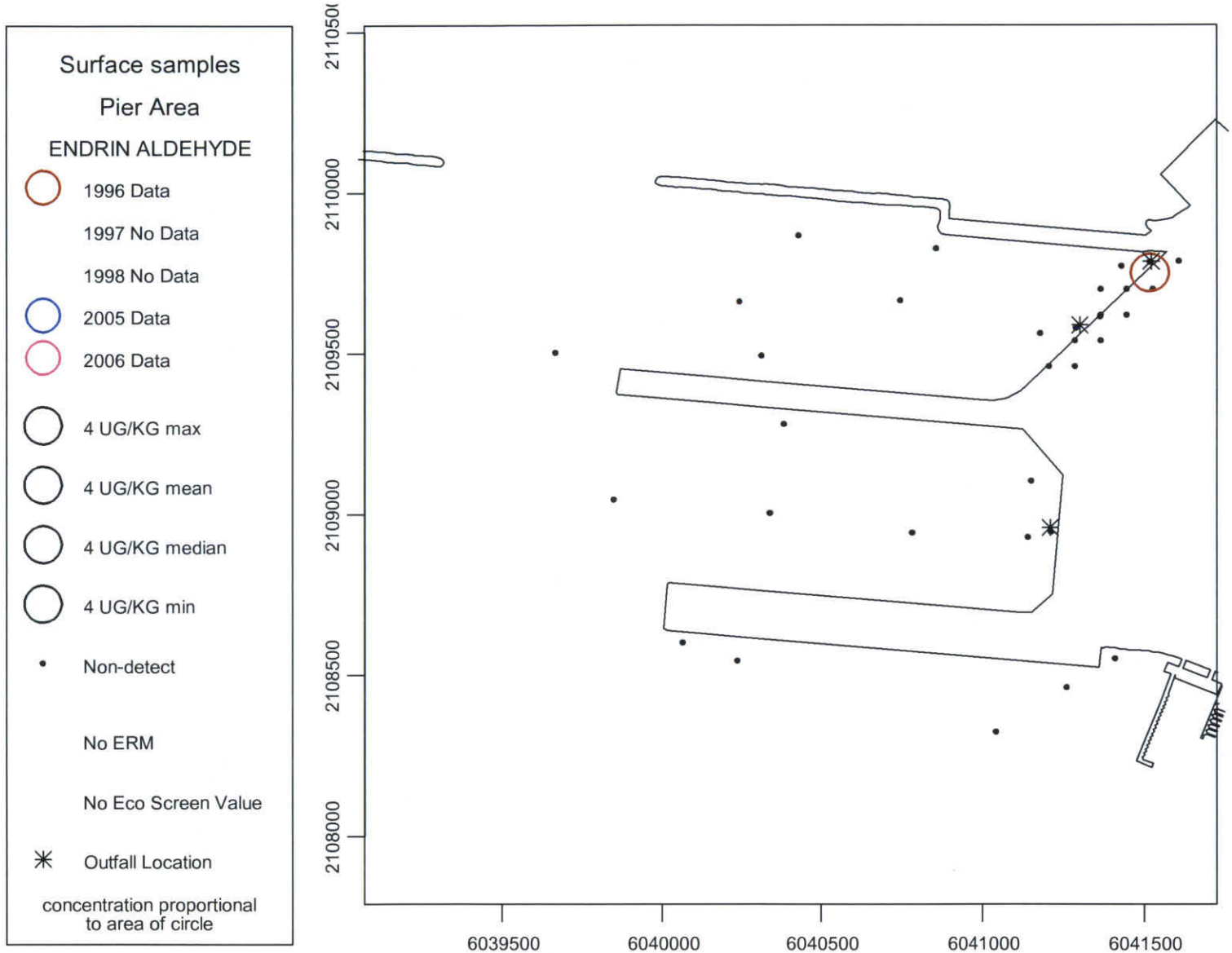

Figure A-340. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 24 Surface Sediment by Year.

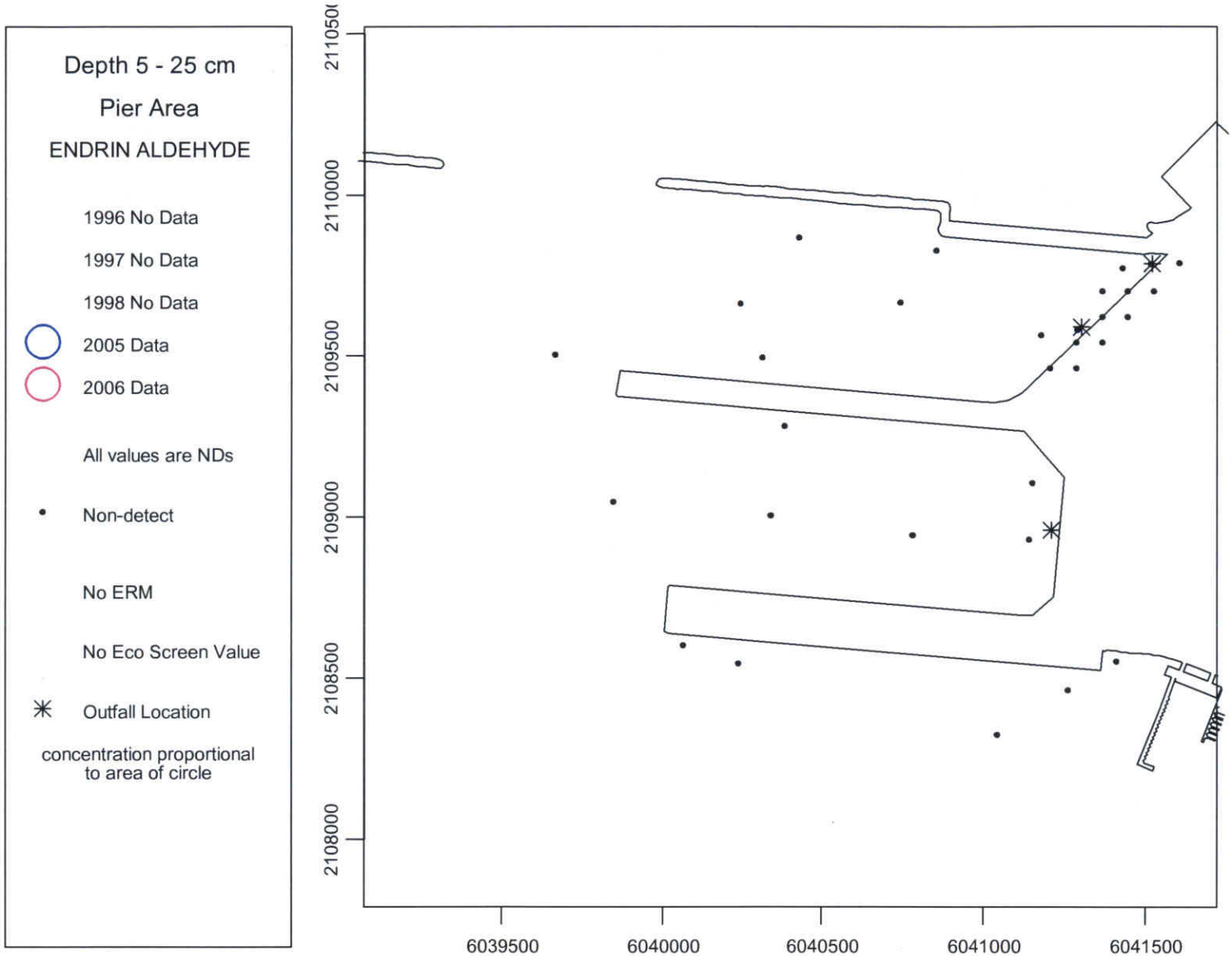

Figure A-341. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

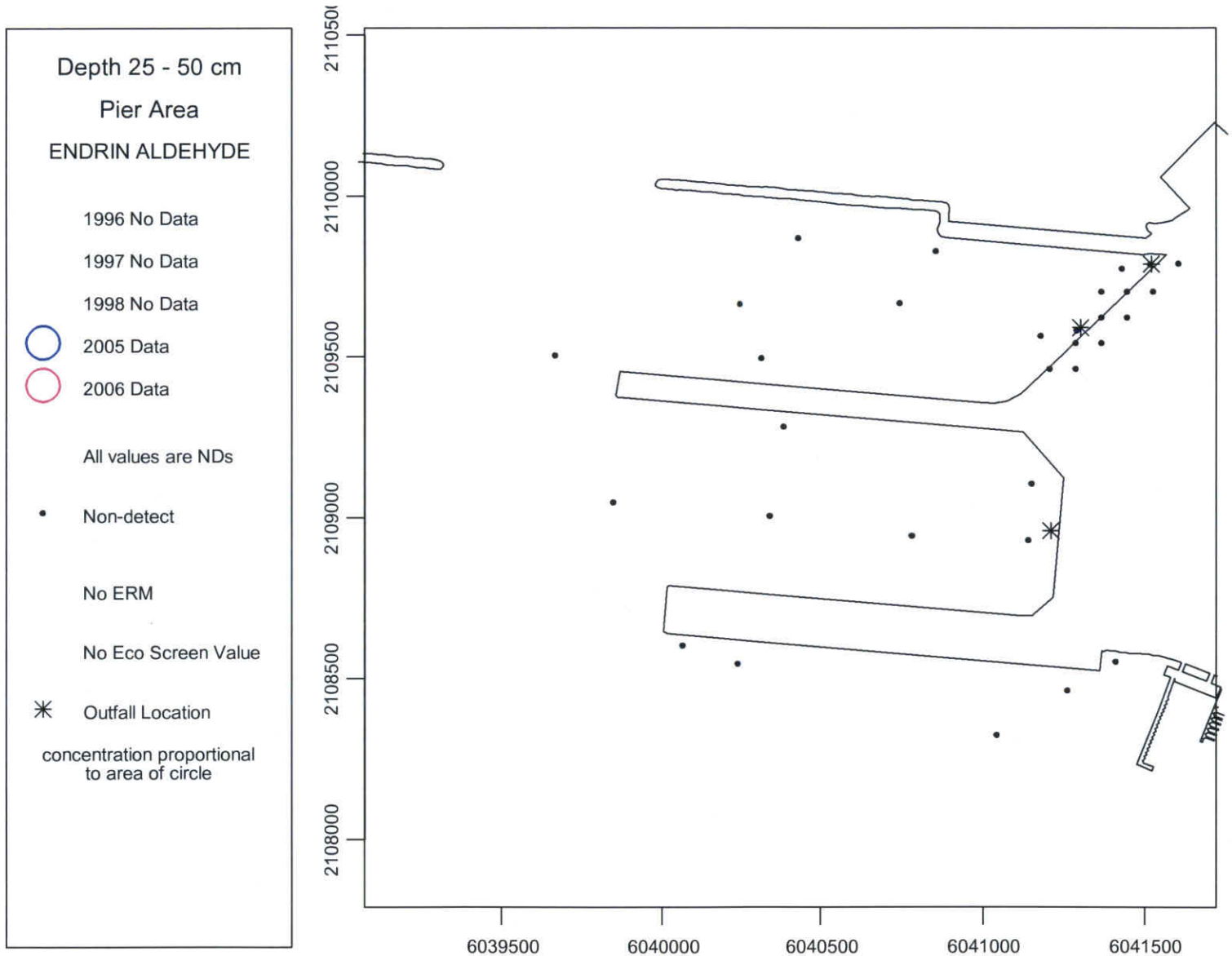

Figure A-342. Bubble Plot of Endrin Aldehyde Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

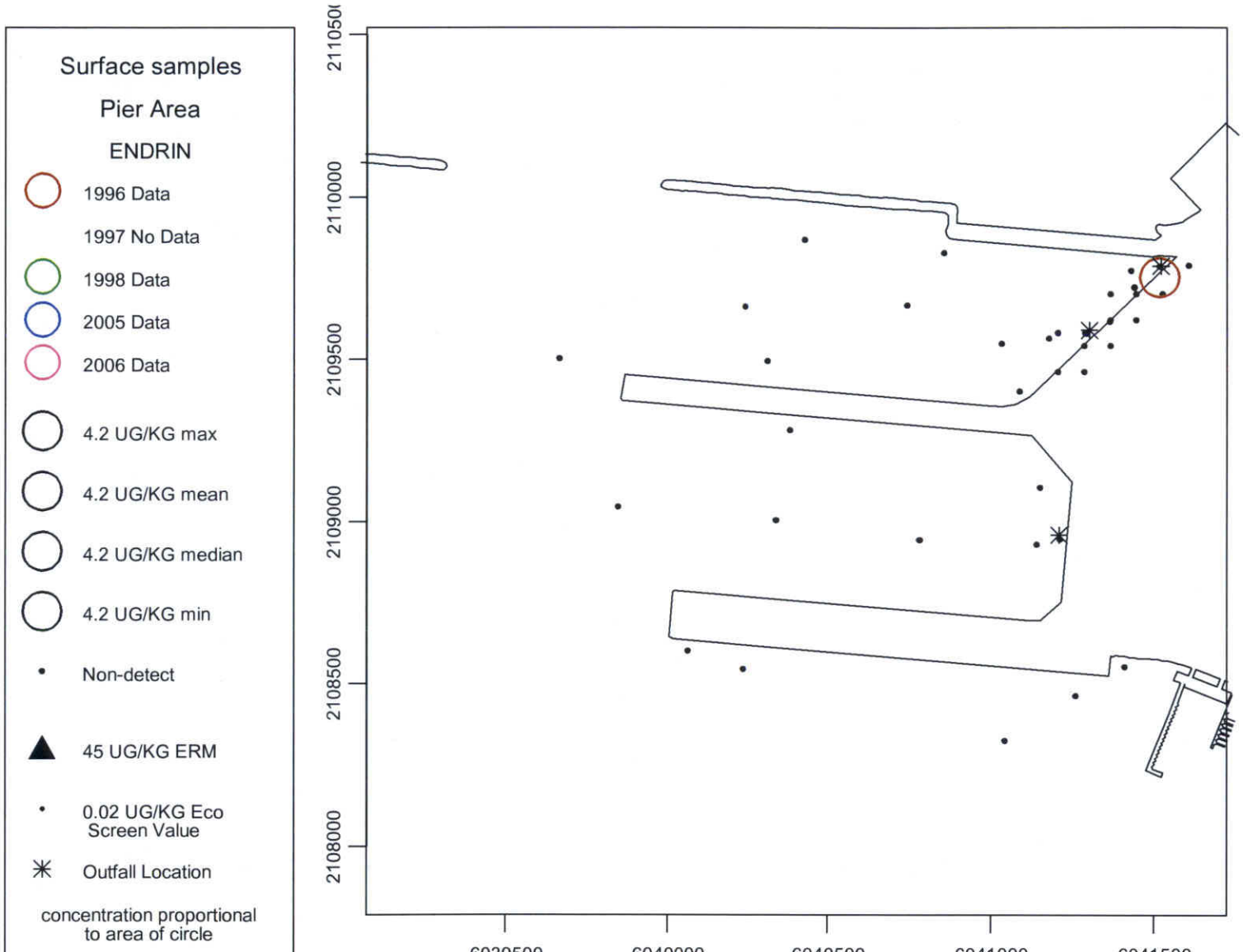

Figure A-343. Bubble Plot of Endrin Concentrations in IR Site 24 Surface Sediment by Year.

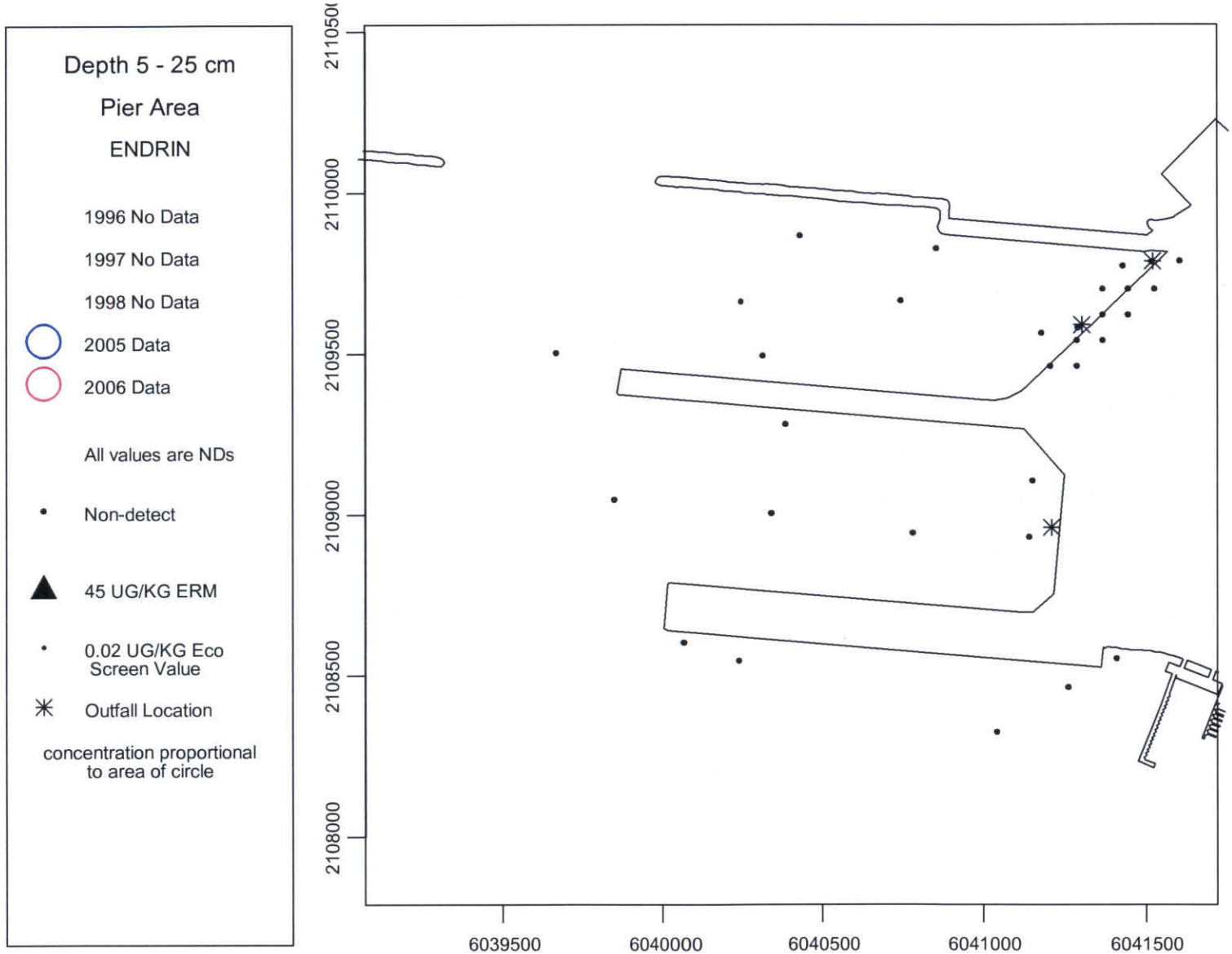

Figure A-344. Bubble Plot of Endrin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

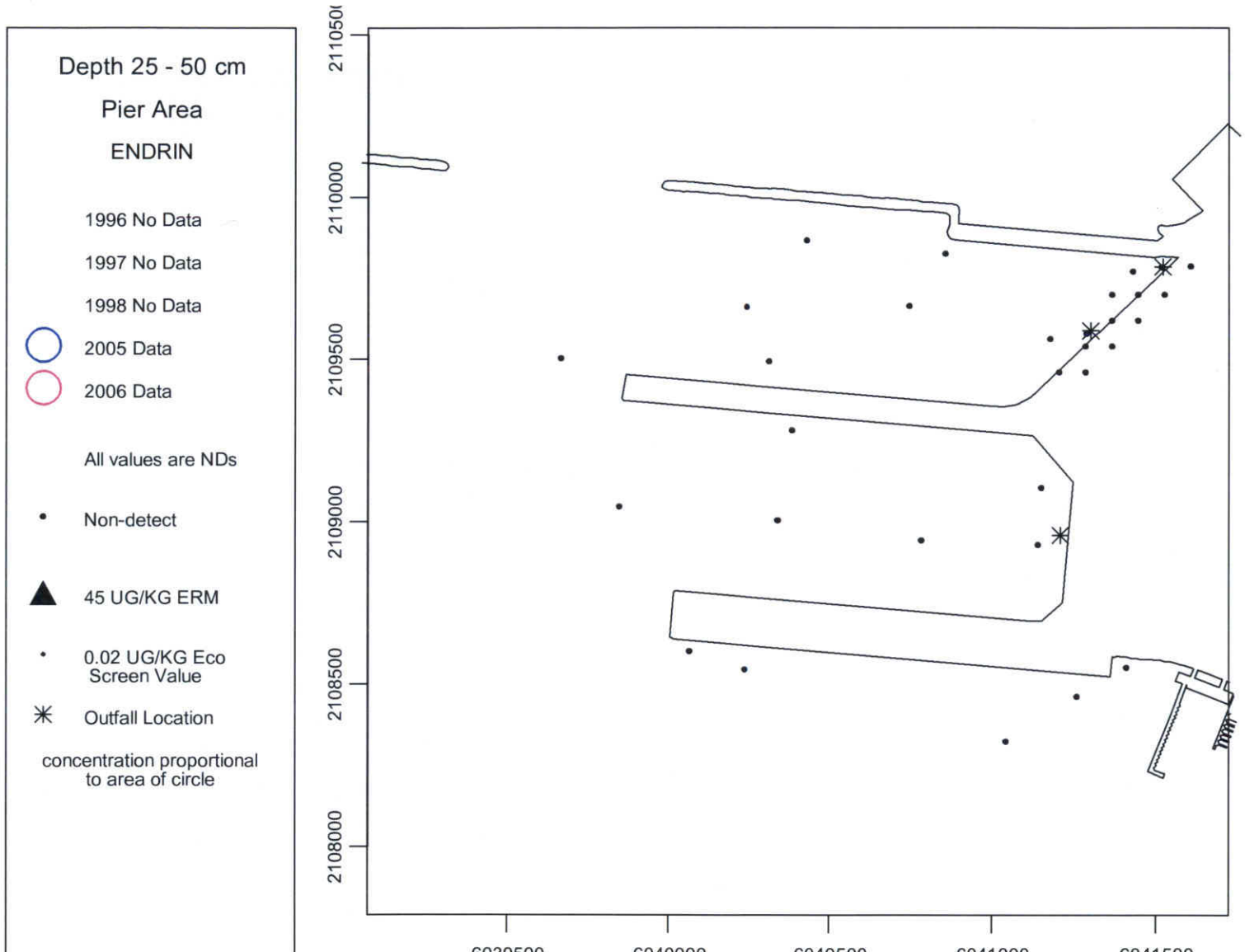

Figure A-345. Bubble Plot of Endrin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

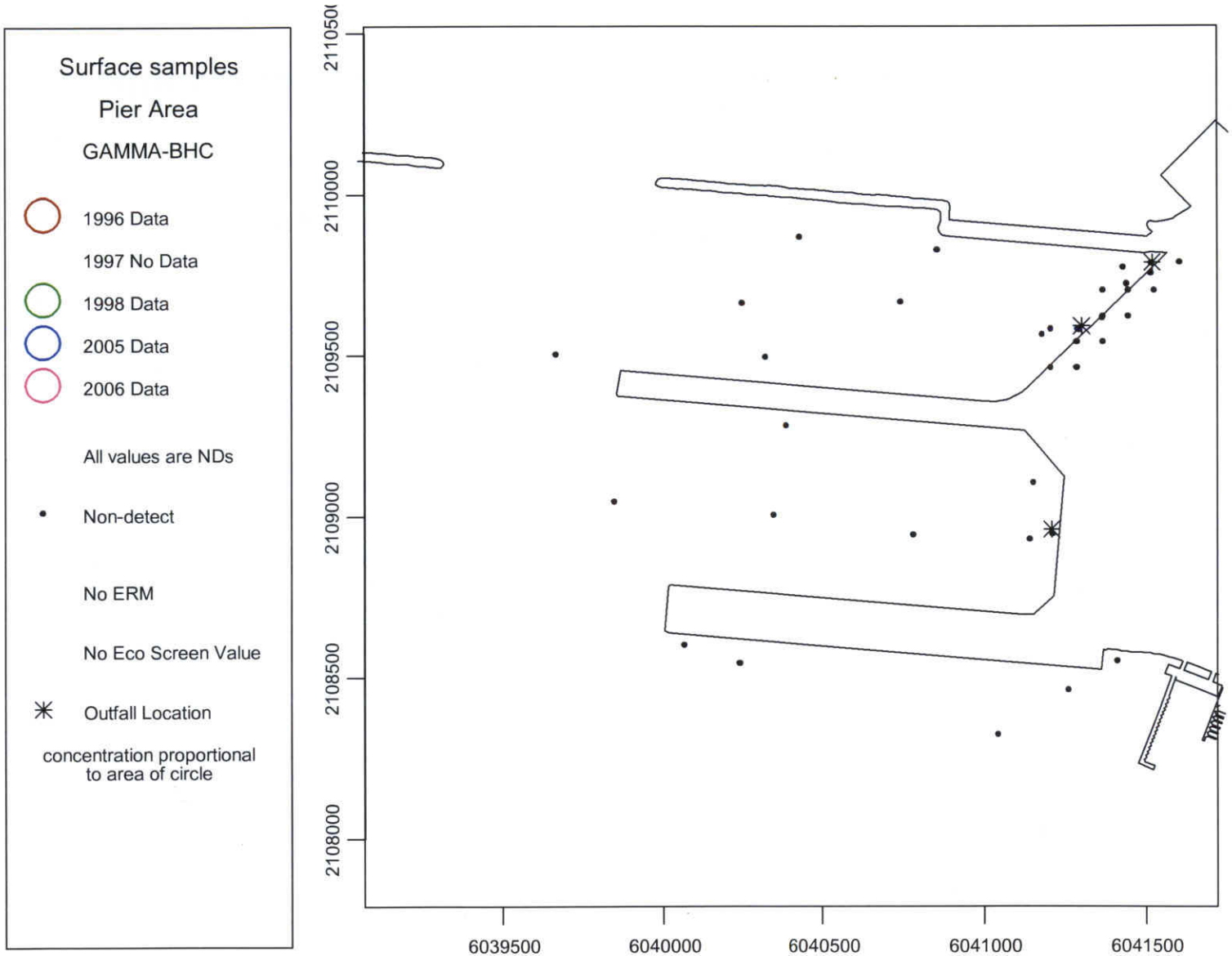

Figure A-346. Bubble Plot of Gamma-BHC Concentrations in IR Site 24 Surface Sediment by Year.

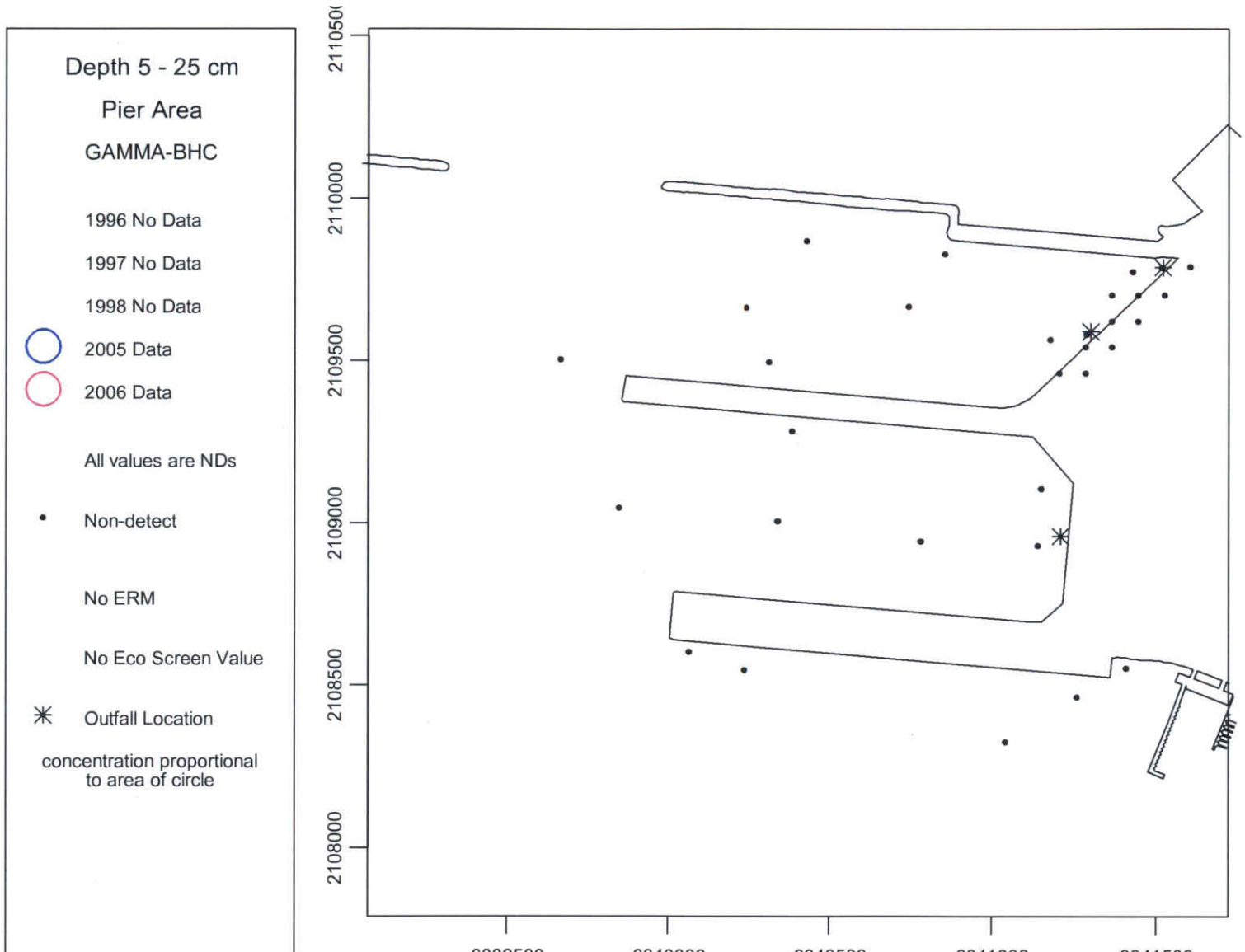

Figure A-347. Bubble Plot of Gamma-BHC Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

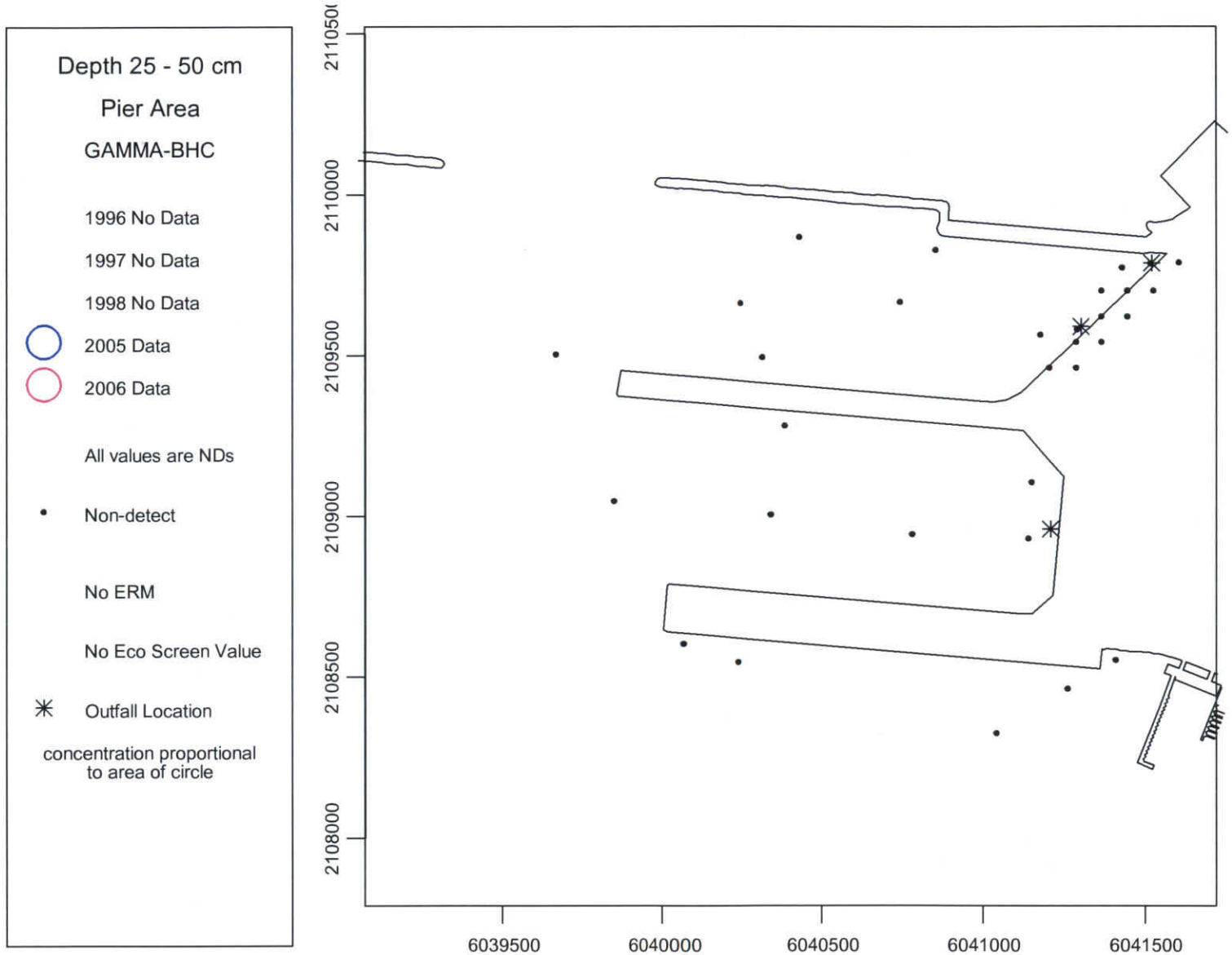

Figure A-348. Bubble Plot of Gamma-BHC Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

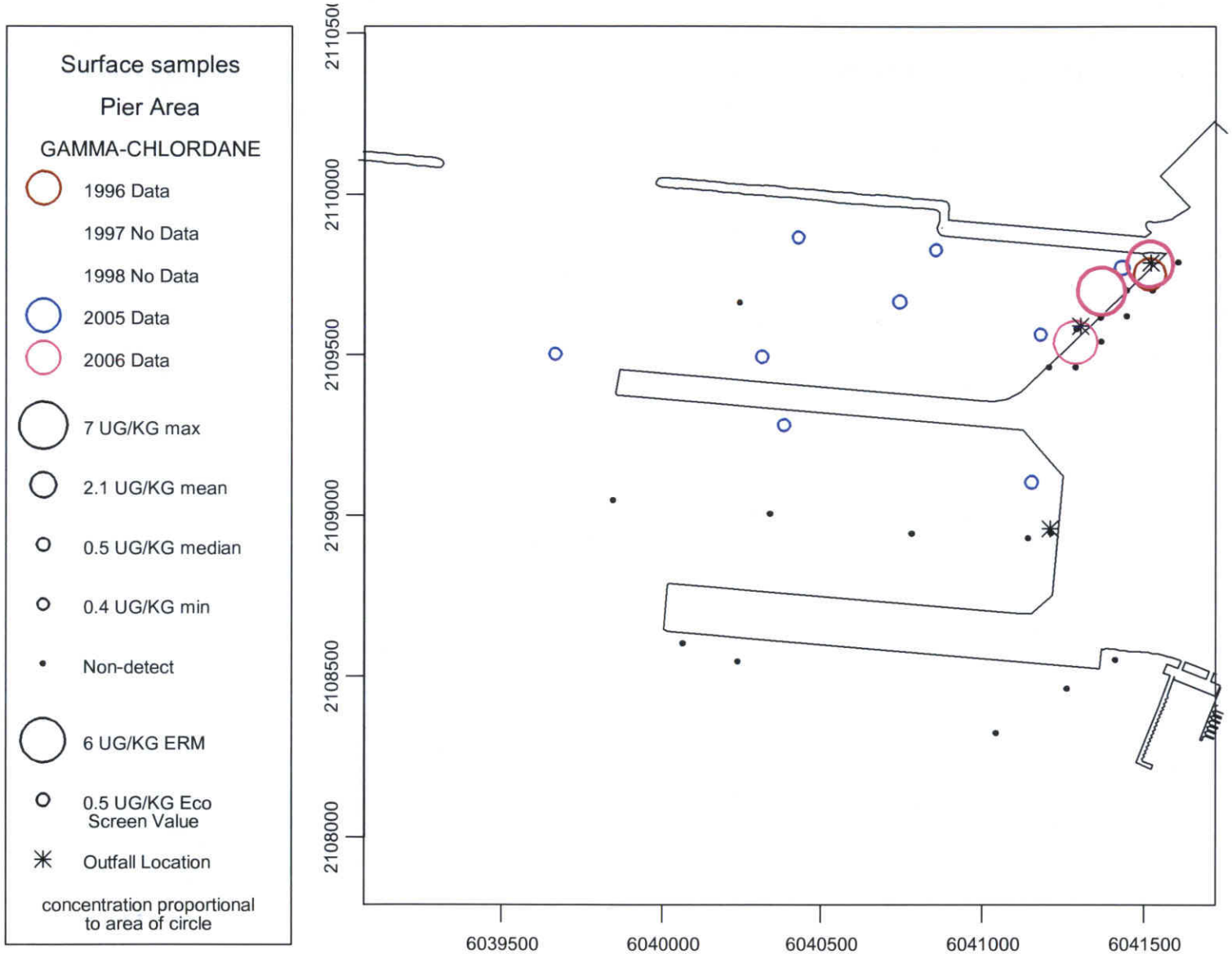

Figure A-349. Bubble Plot of Gamma-Chlordane Concentrations in IR Site 24 Surface Sediment by Year.

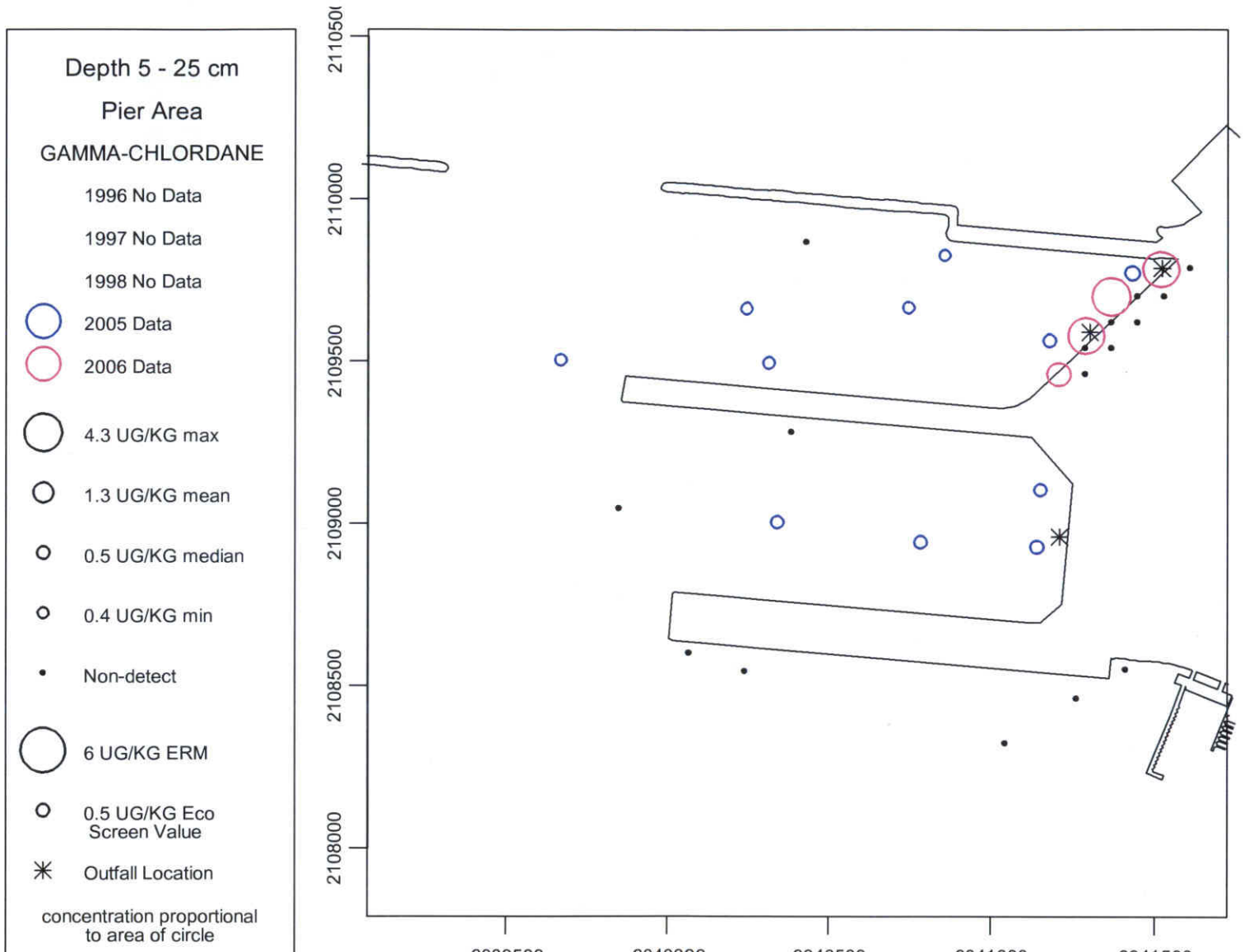

Figure A-350. Bubble Plot of Gamma-Chlordane Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

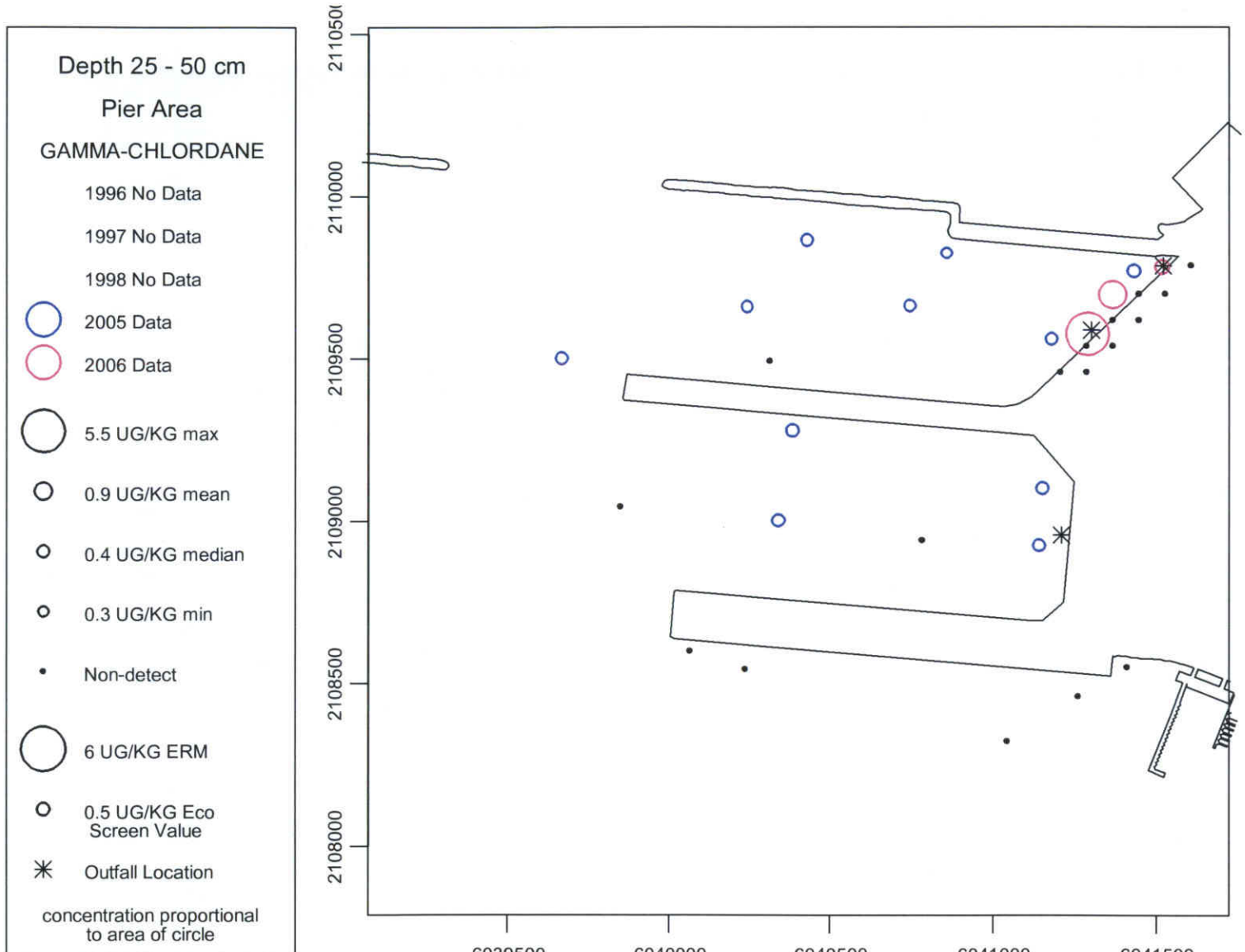

Figure A-351. Bubble Plot of Gamma-Chlordane Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

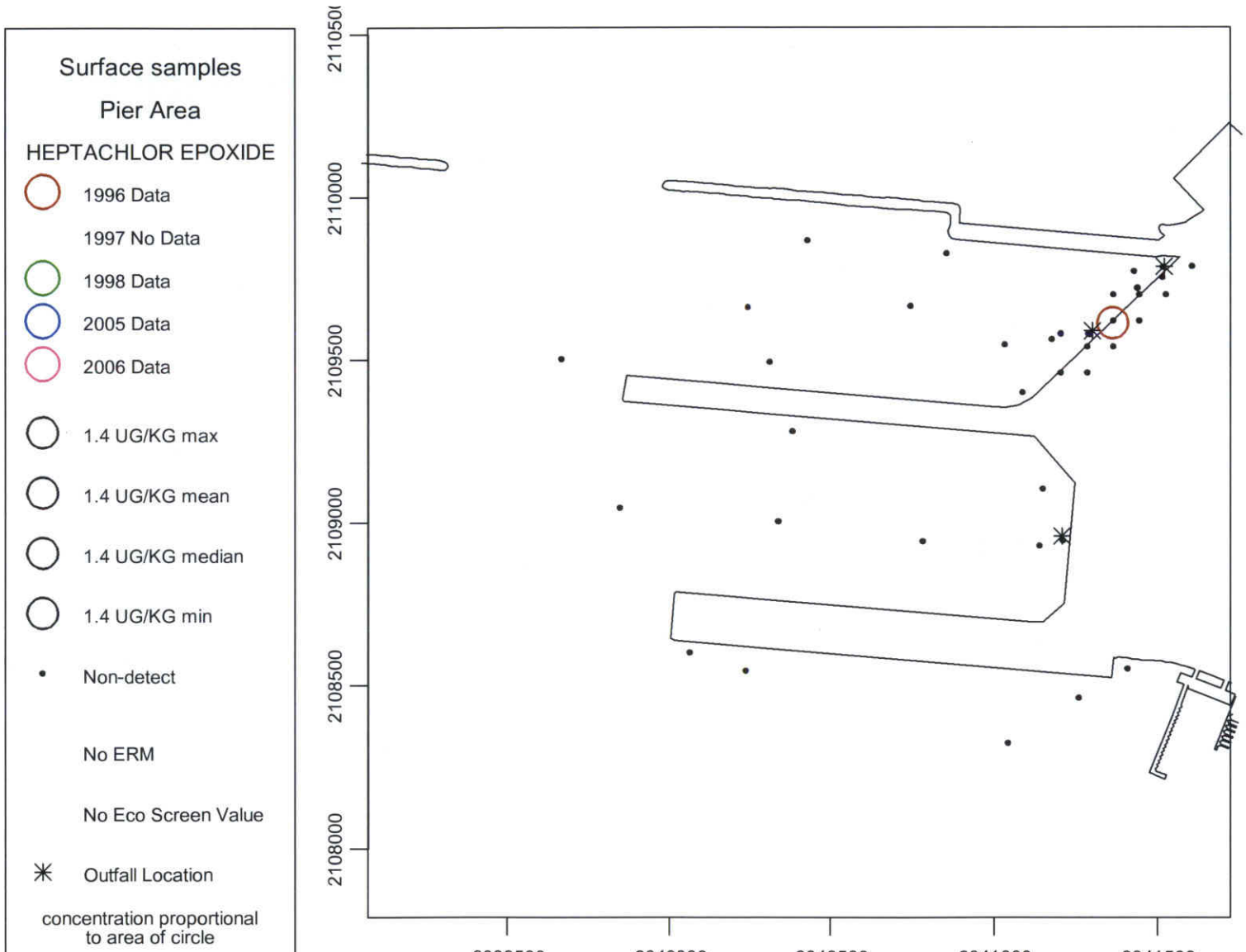

Figure A-352. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 24 Surface Sediment by Year.

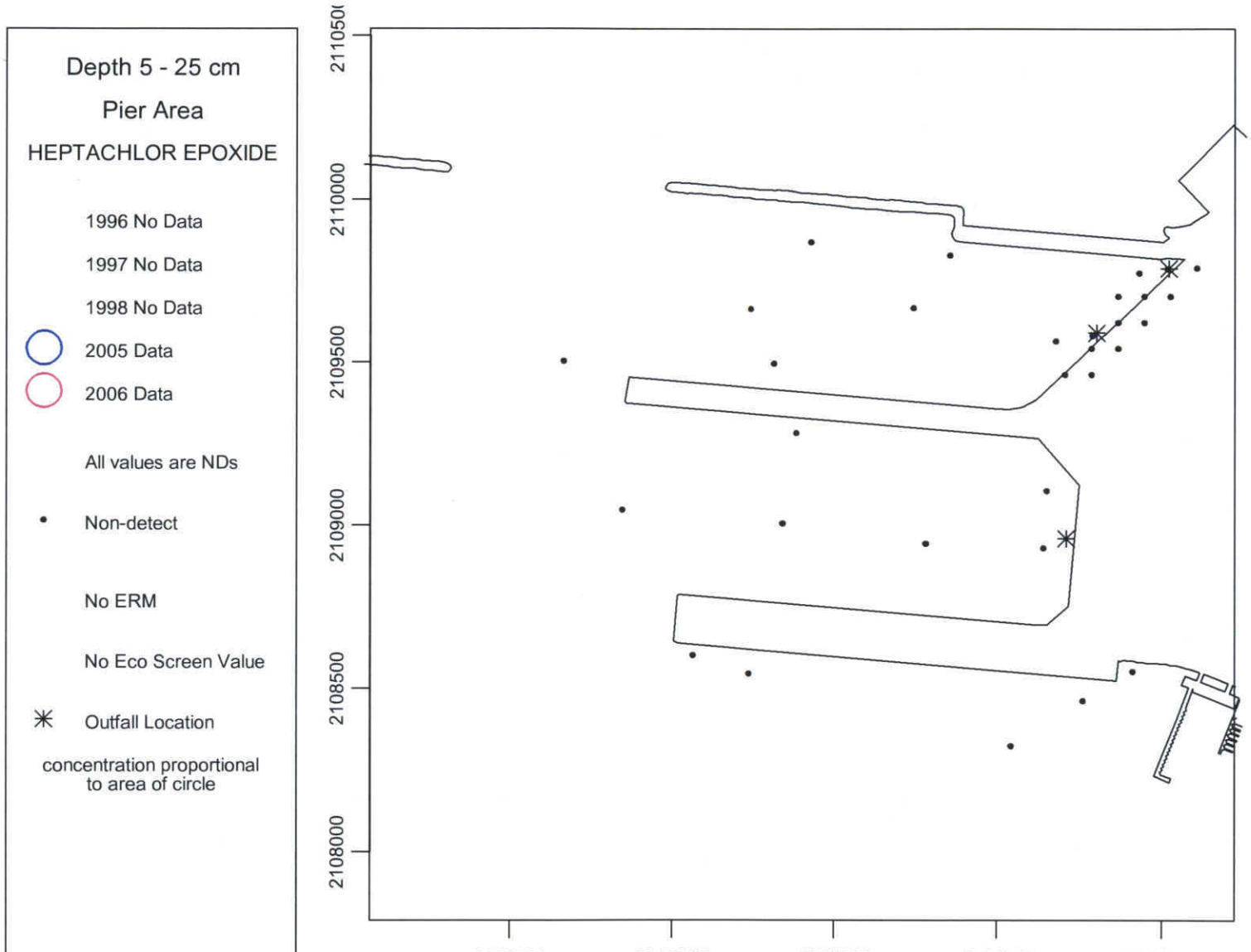

Figure A-353. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

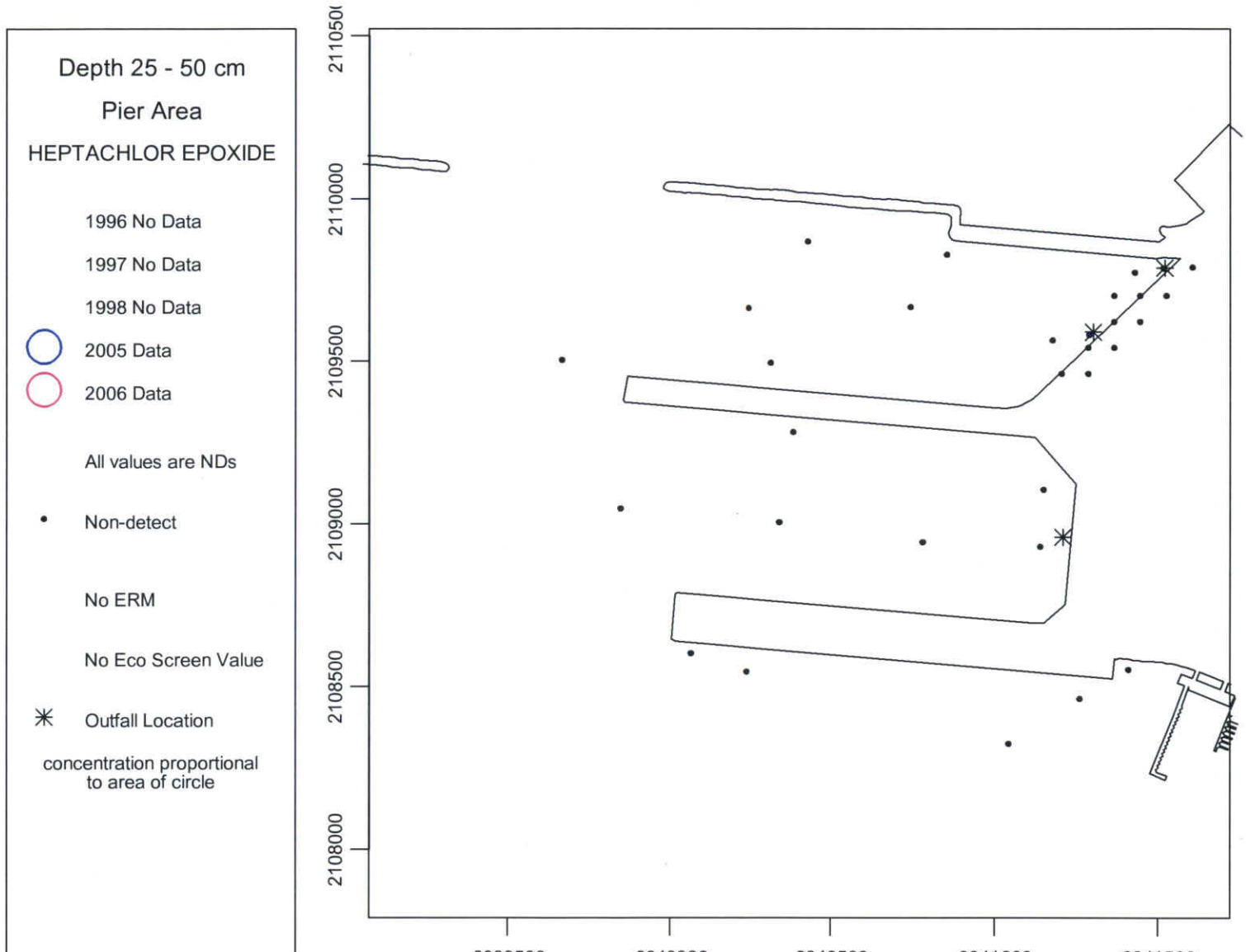

Figure A-354. Bubble Plot of Heptachlor Epoxide Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

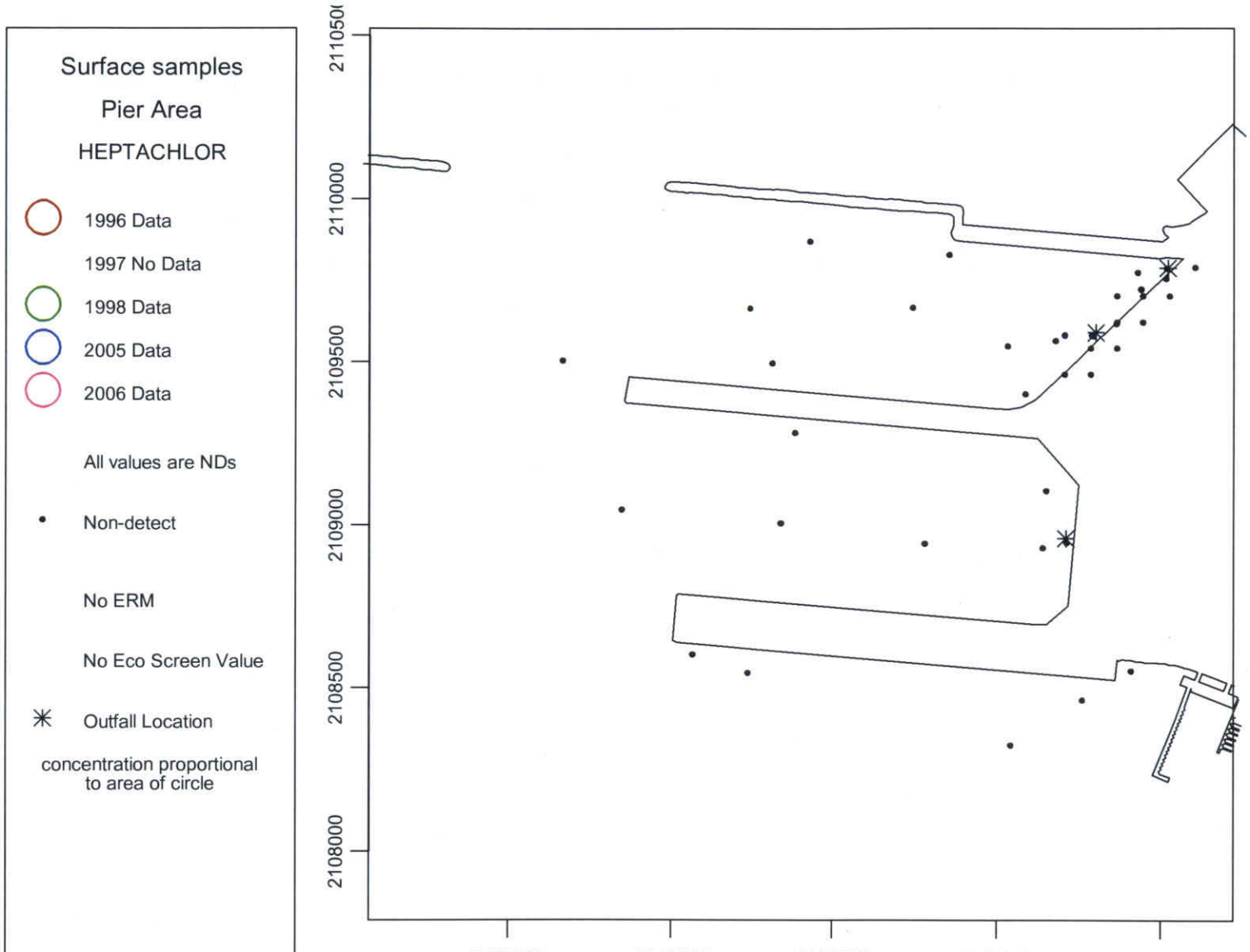

Figure A-355. Bubble Plot of Heptachlor Concentrations in IR Site 24 Surface Sediment by Year.

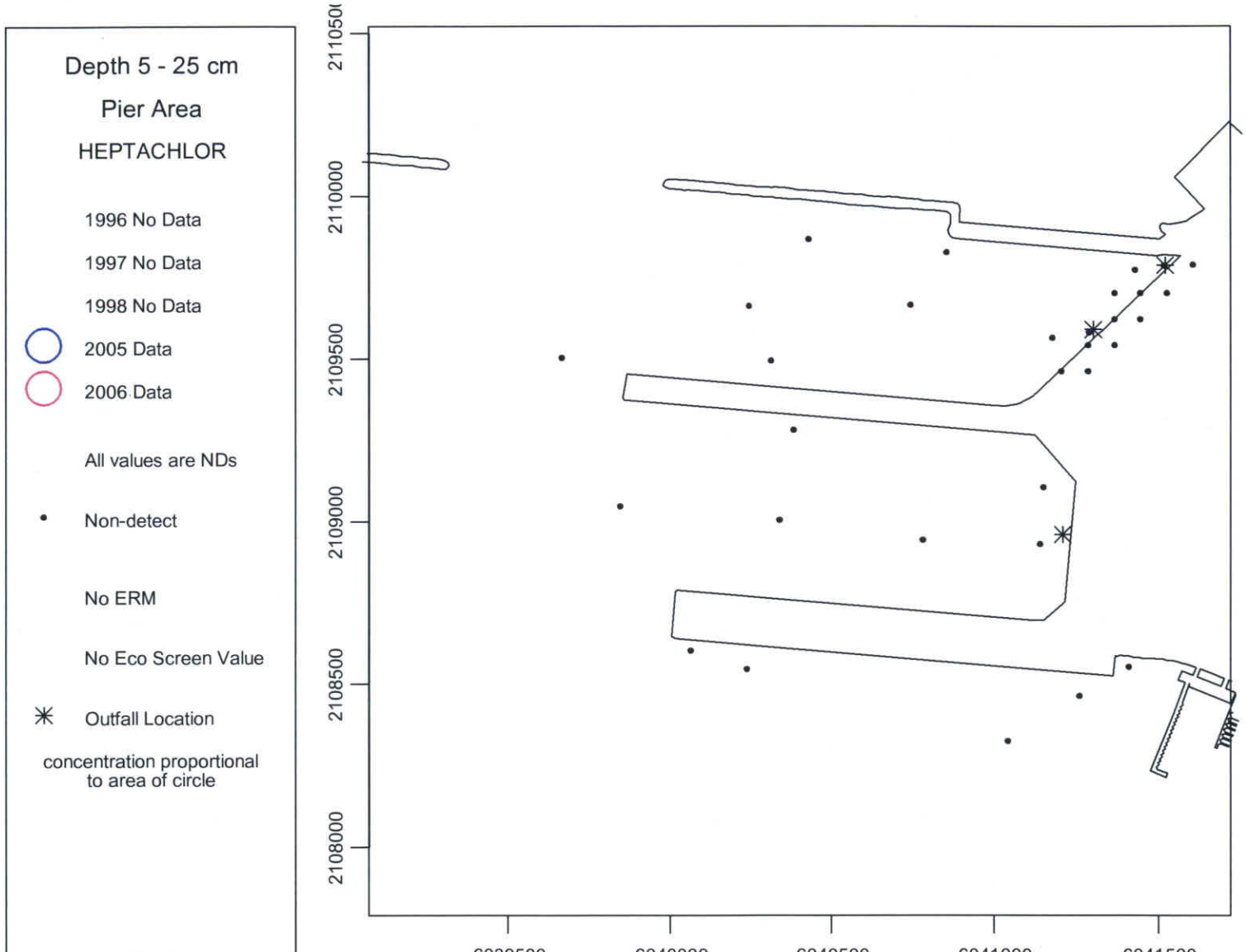

Figure A-356. Bubble Plot of Heptachlor Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

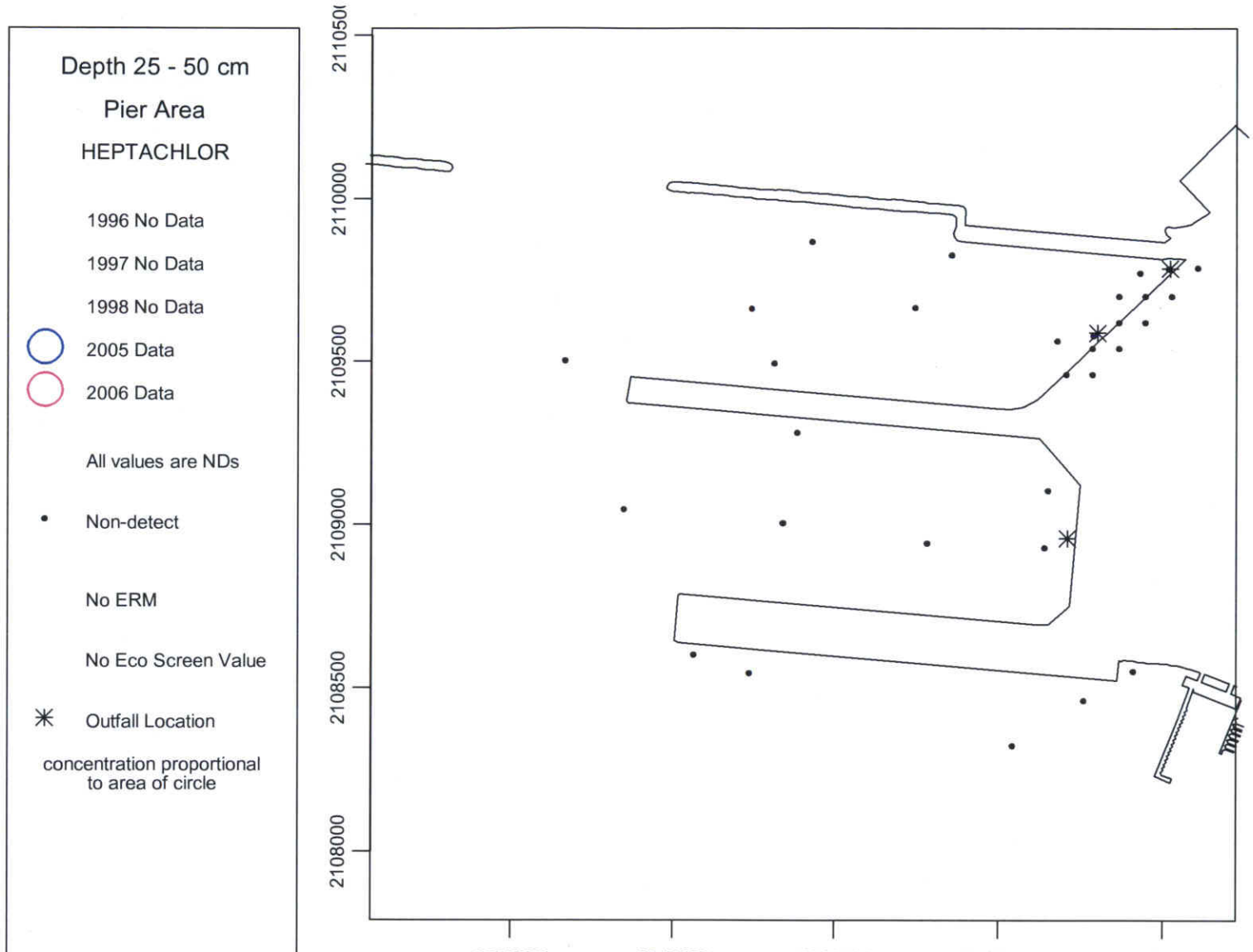

Figure A-357. Bubble Plot of Heptachlor Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

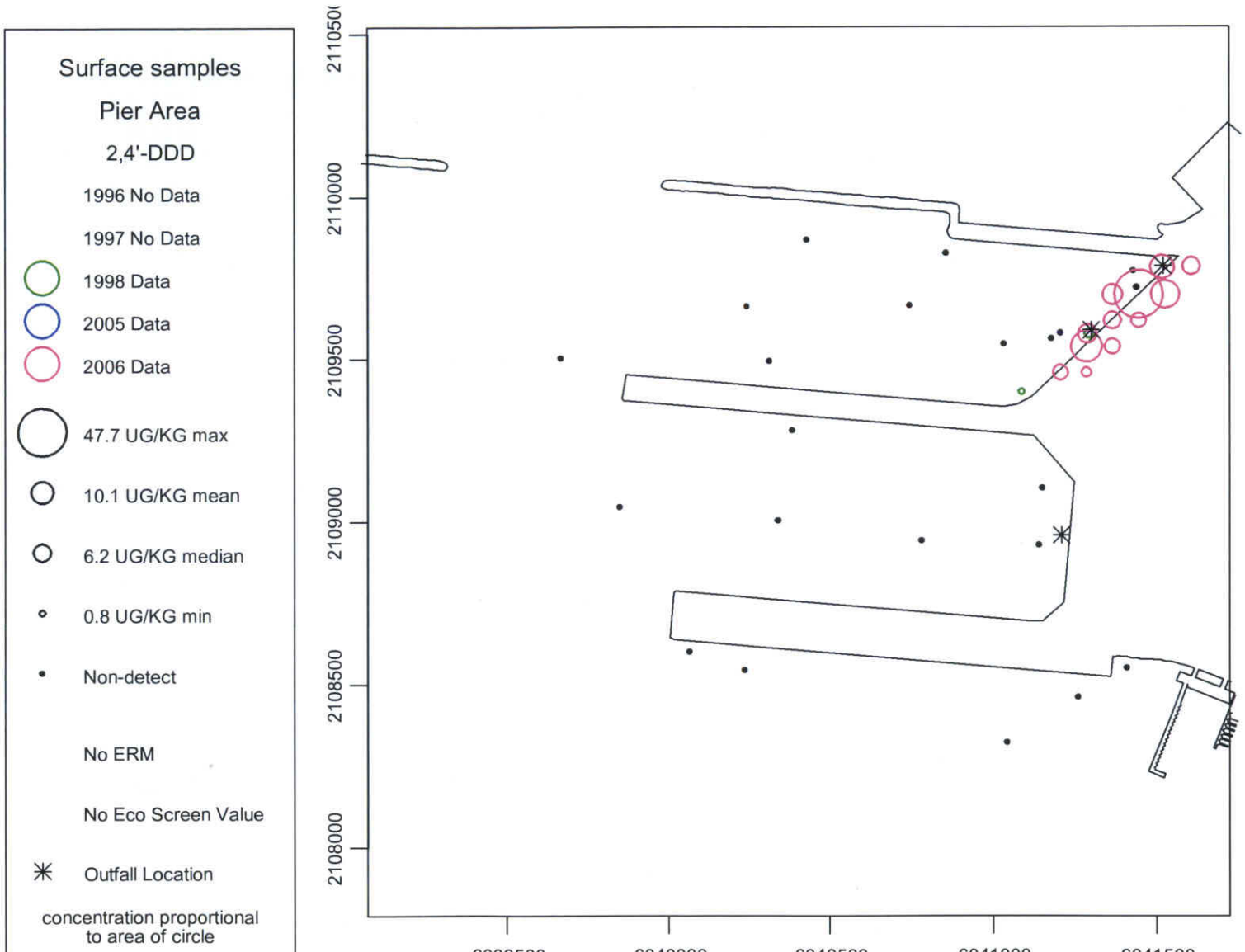

Figure A-358. Bubble Plot of 2,4'-DDD Concentrations in IR Site 24 Surface Sediment by Year.

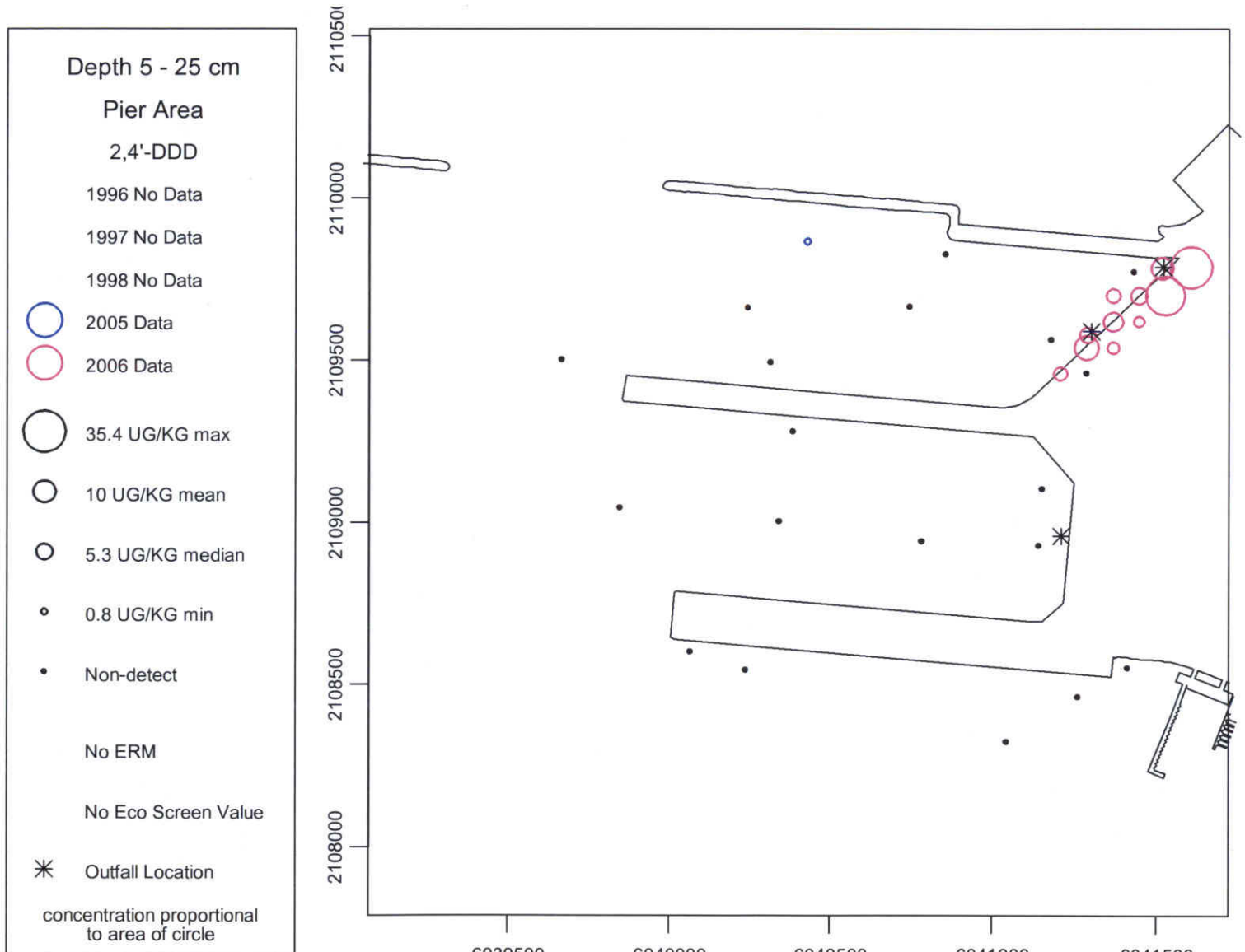

Figure A-359. Bubble Plot of 2,4'-DDD Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

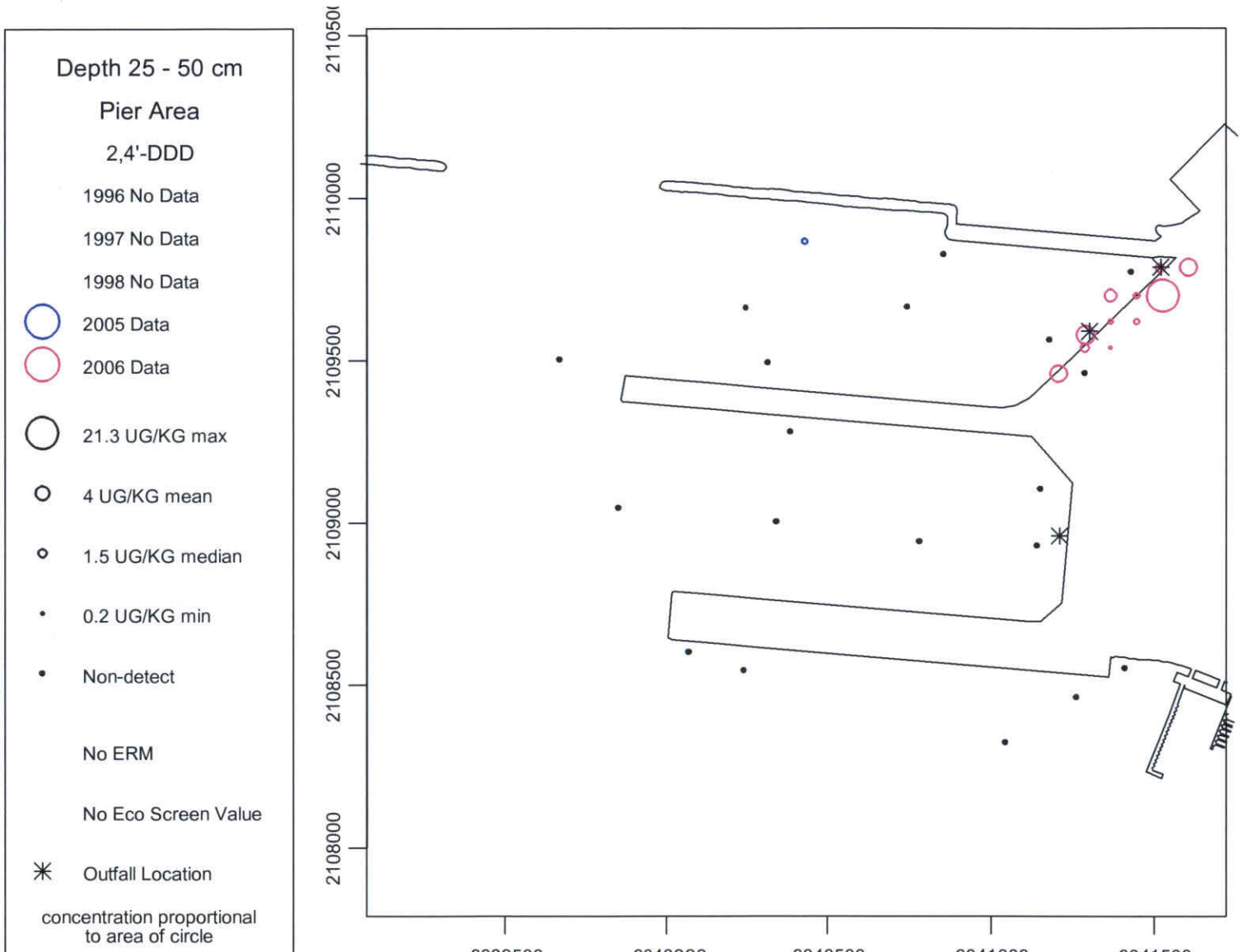

Figure A-360. Bubble Plot of 2,4'-DDD Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

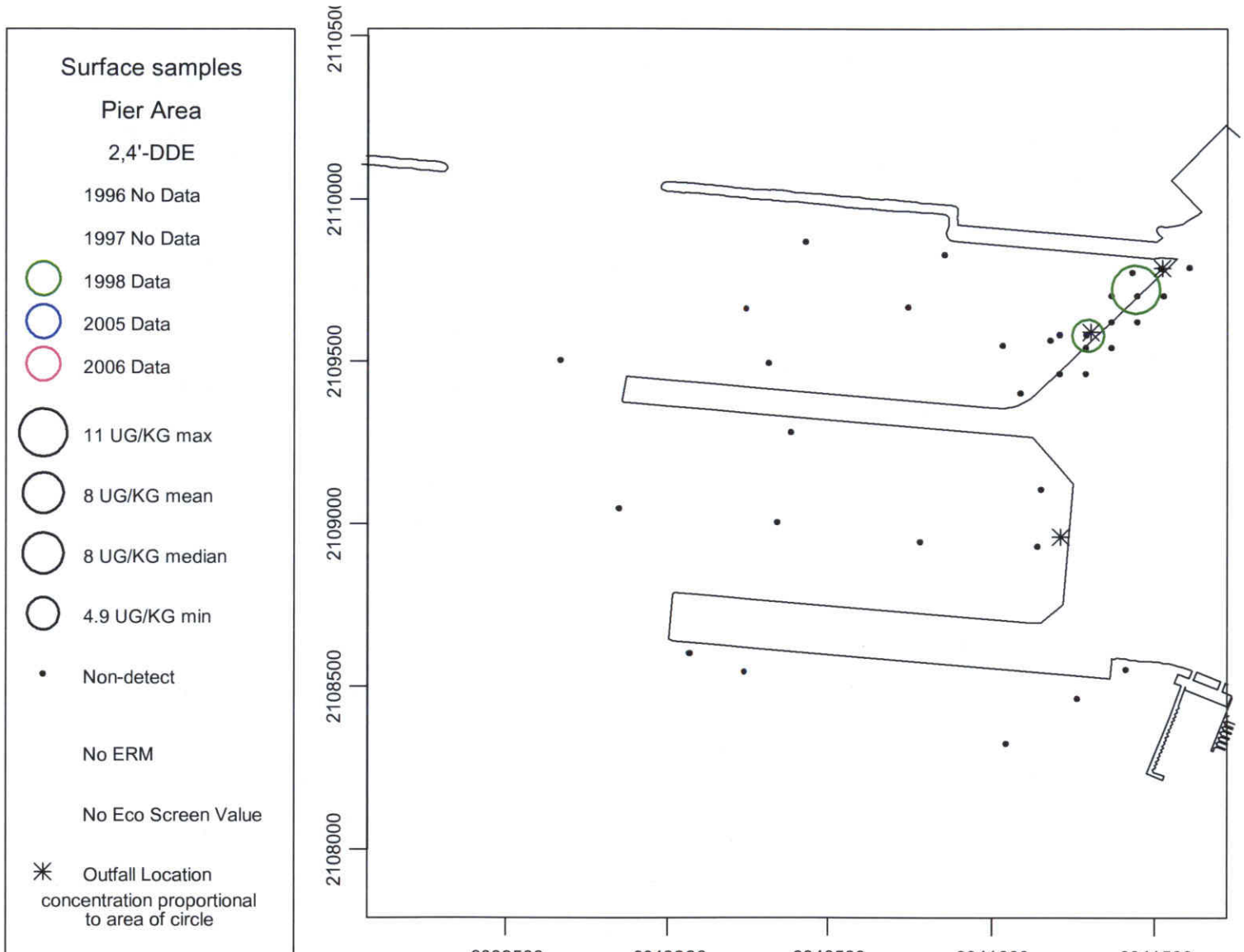

Figure A-361. Bubble Plot of 2,4'-DDE Concentrations in IR Site 24 Surface Sediment by Year.

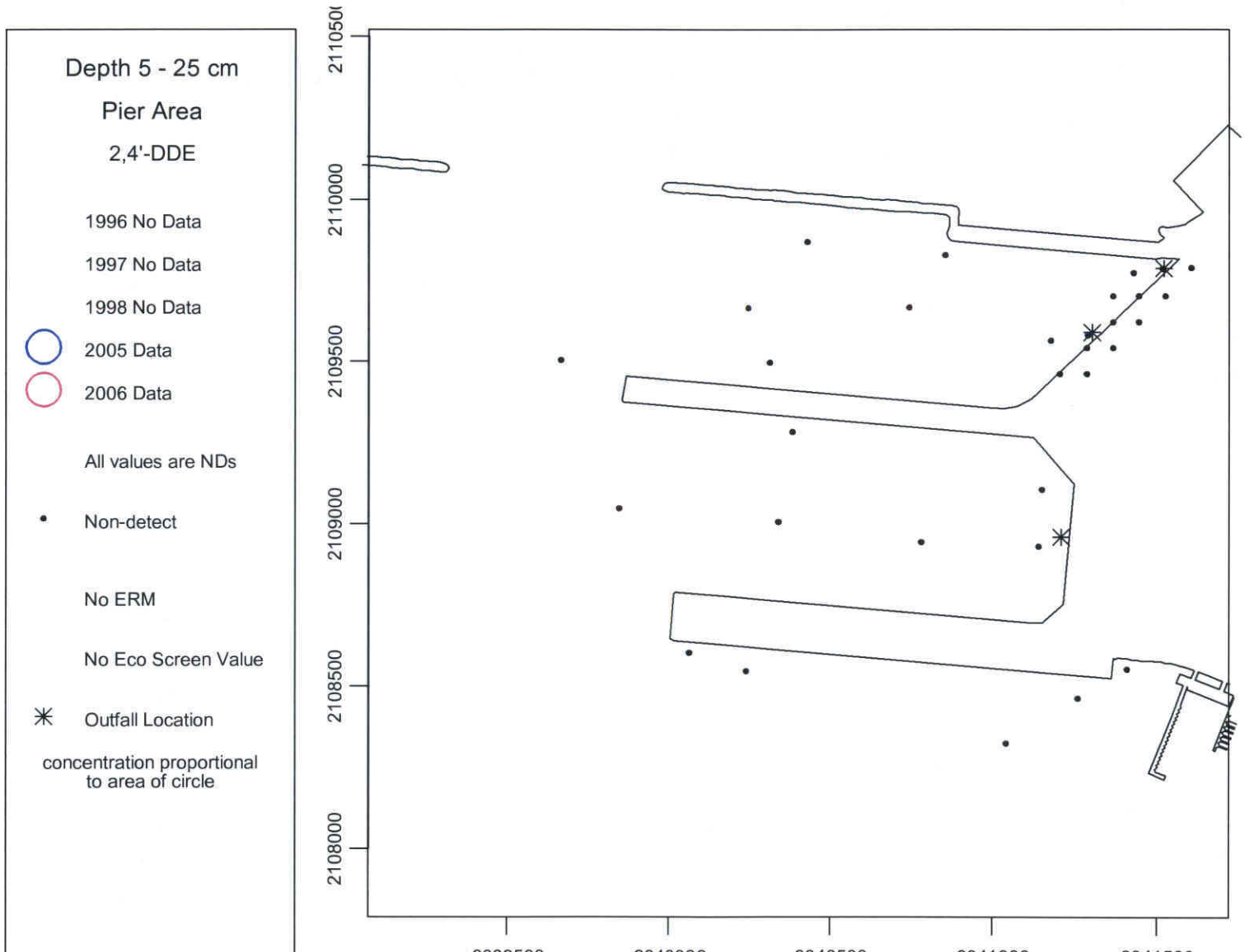

Figure A-362. Bubble Plot of 2,4'-DDE Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

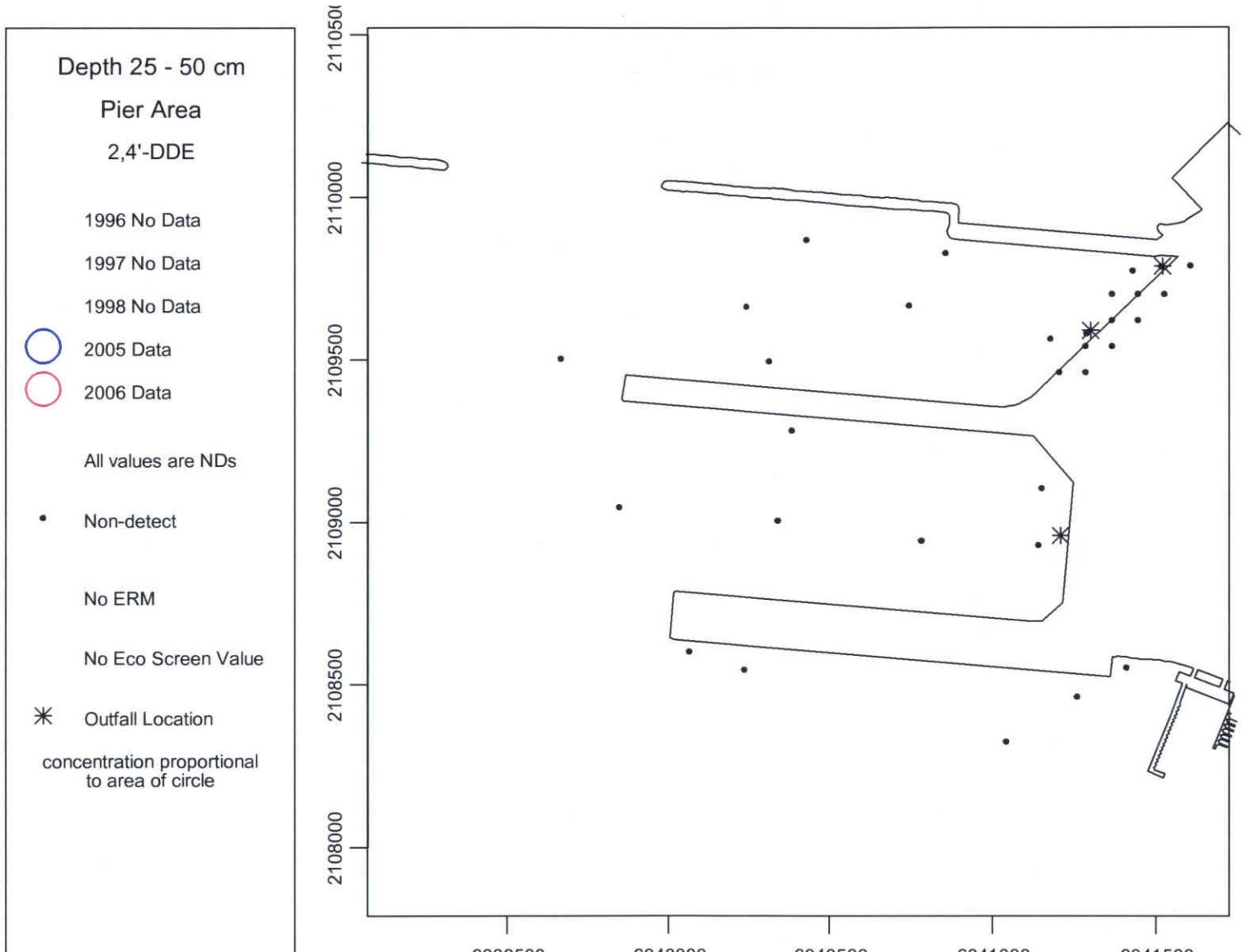

Figure A-363. Bubble Plot of 2,4'-DDE Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

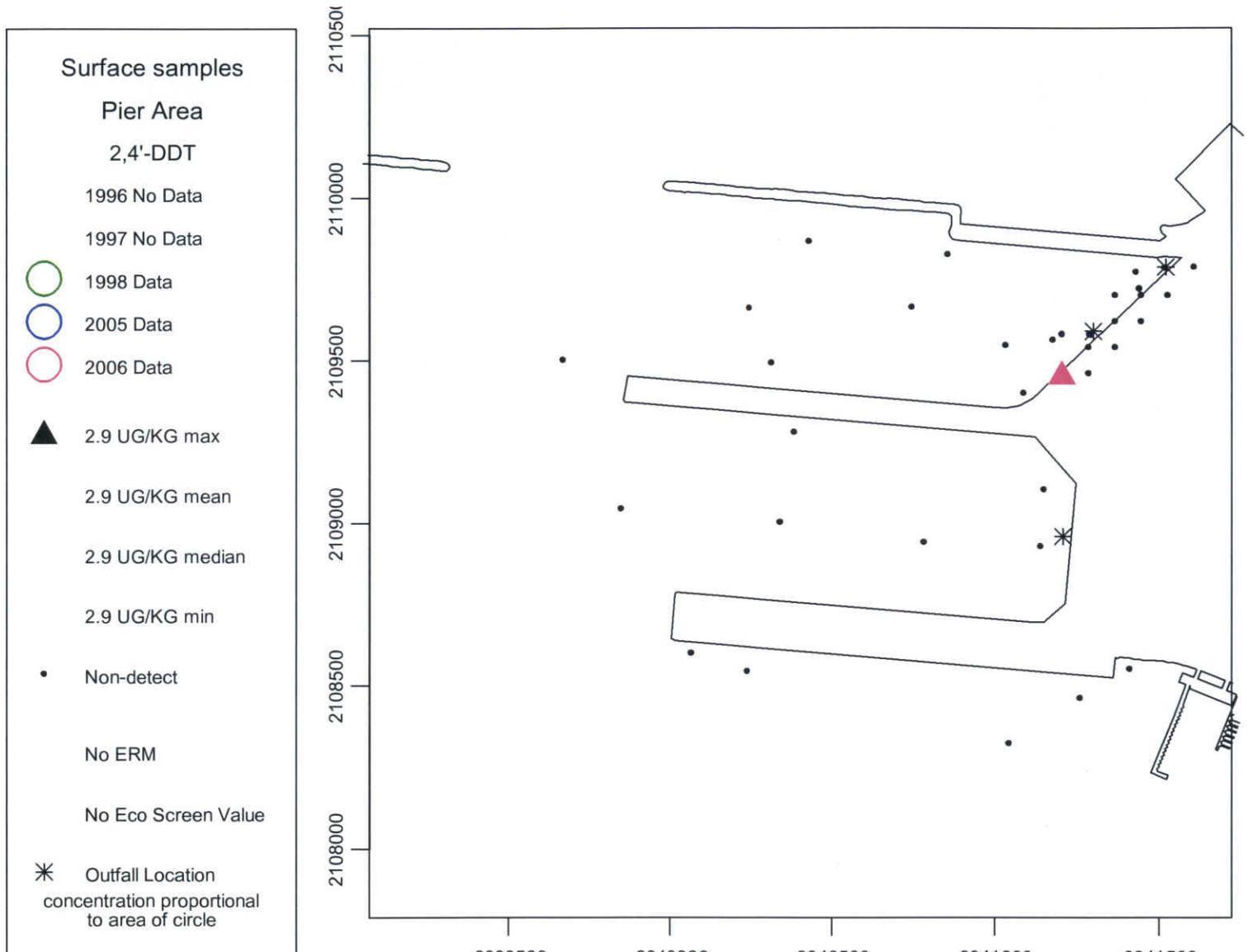

Figure A-364. Bubble Plot of 2,4'-DDT Concentrations in IR Site 24 Surface Sediment by Year.

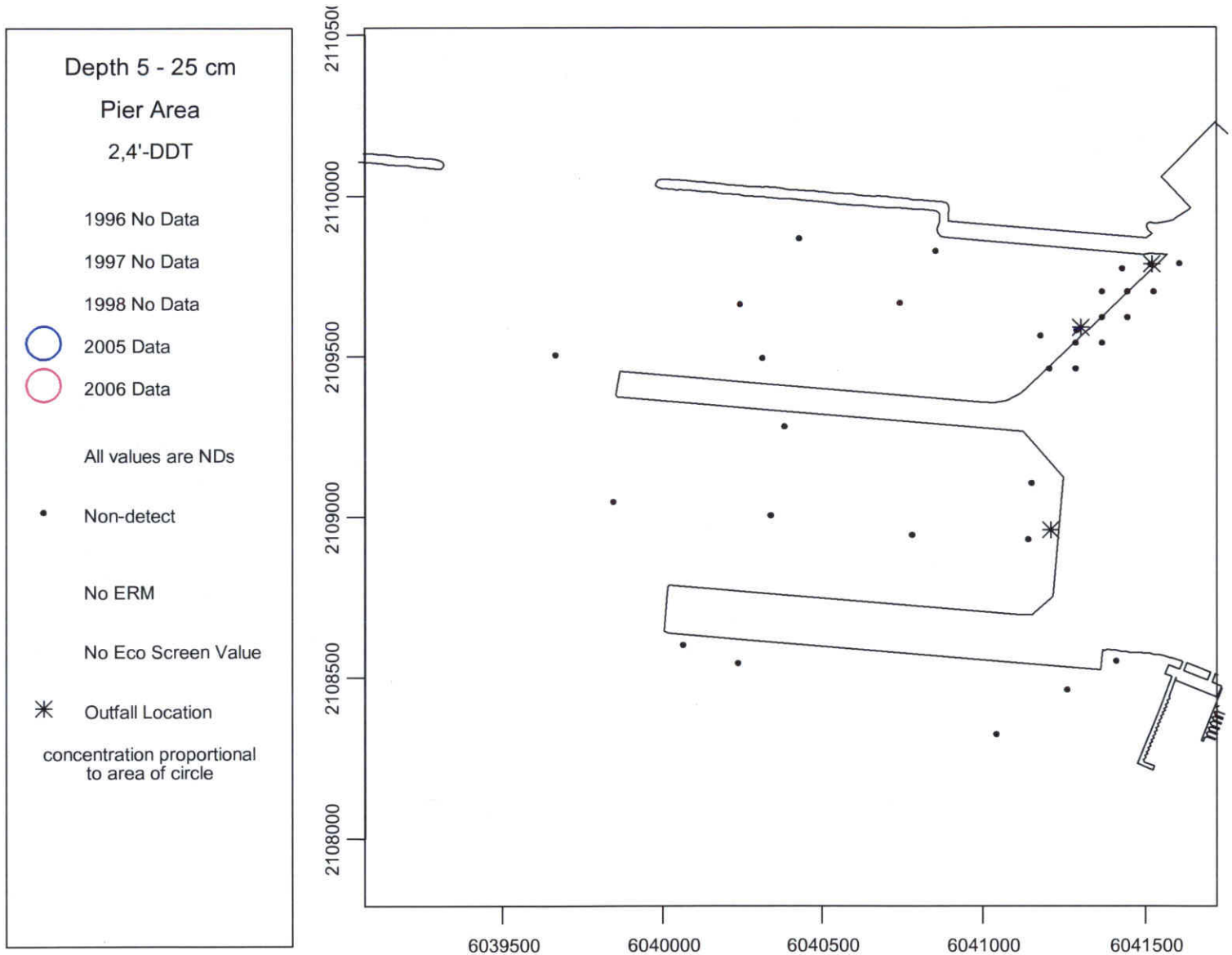

Figure A-365. Bubble Plot of 2,4'-DDT Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

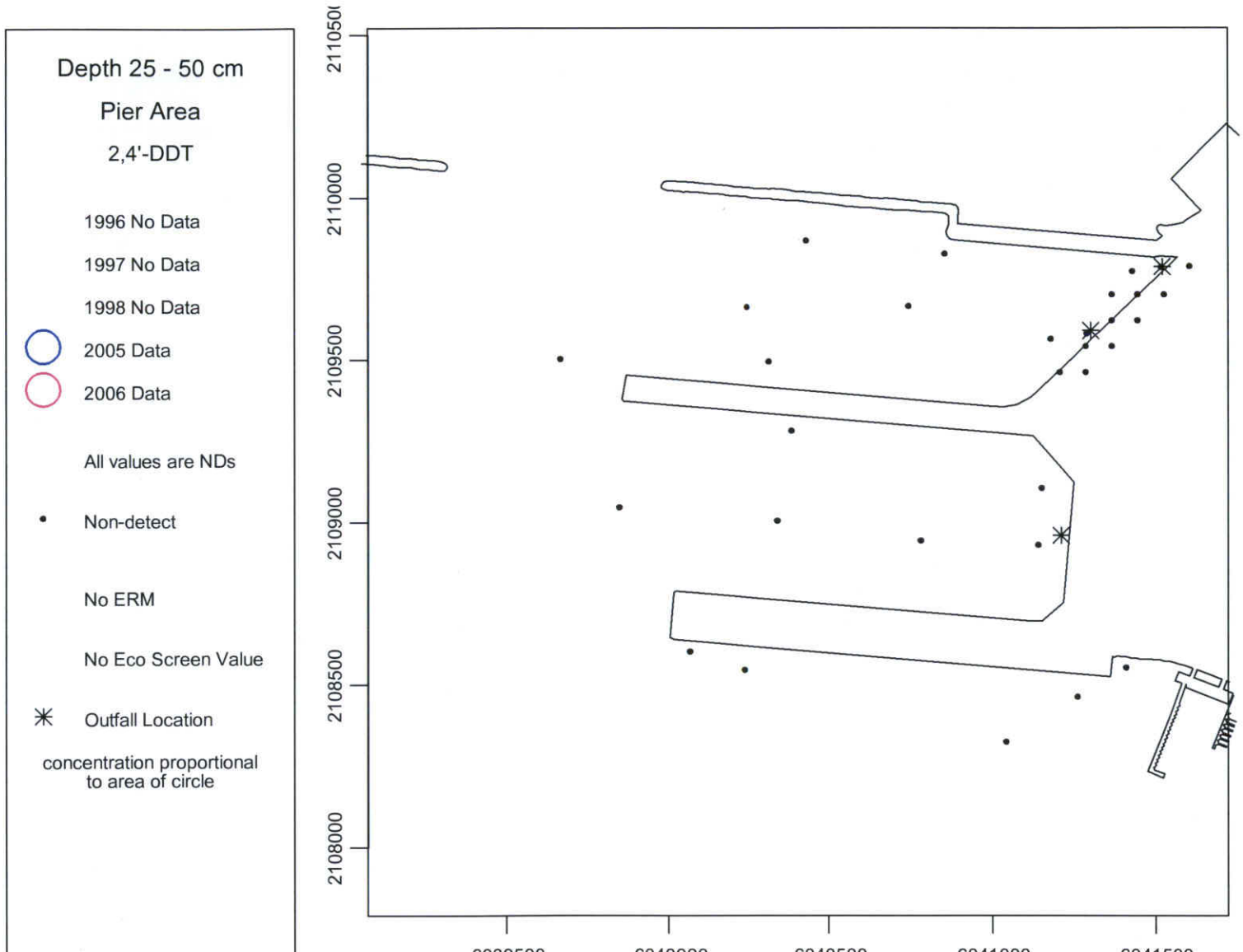

Figure A-366. Bubble Plot of 2,4'-DDT Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

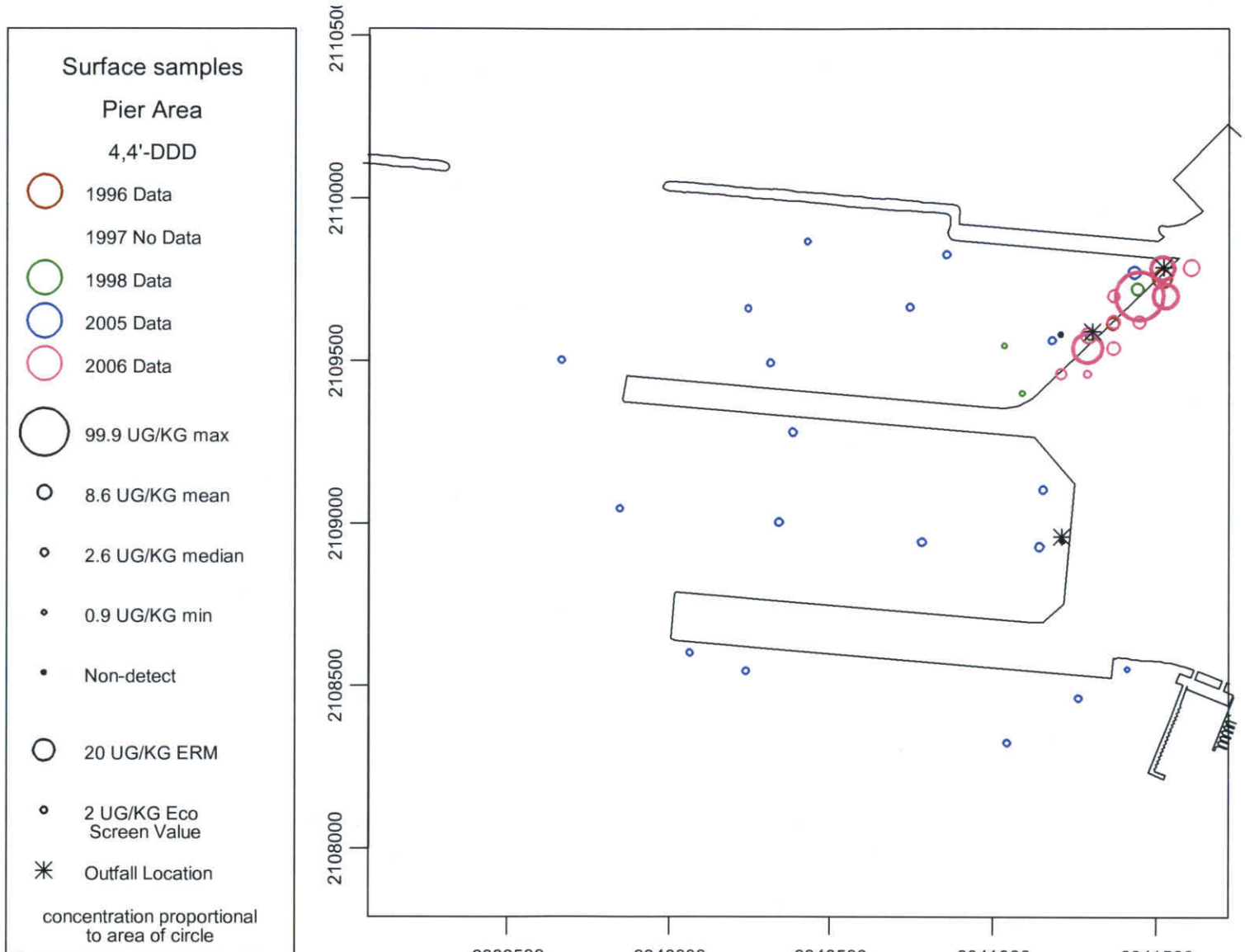

Figure A-367. Bubble Plot of 4,4'-DDD Concentrations in IR Site 24 Surface Sediment by Year.

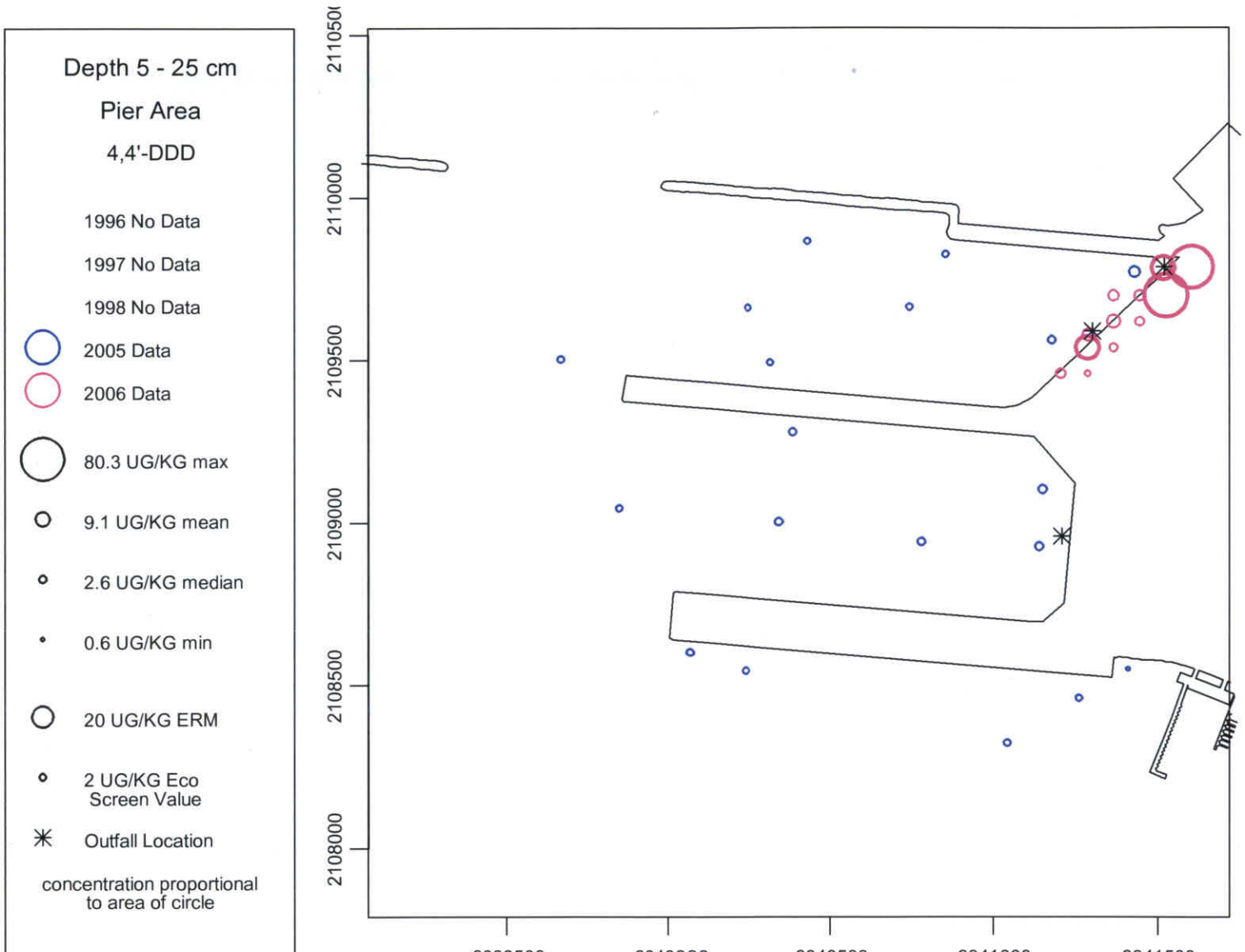

Figure A-368. Bubble Plot of 4,4'-DDD Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

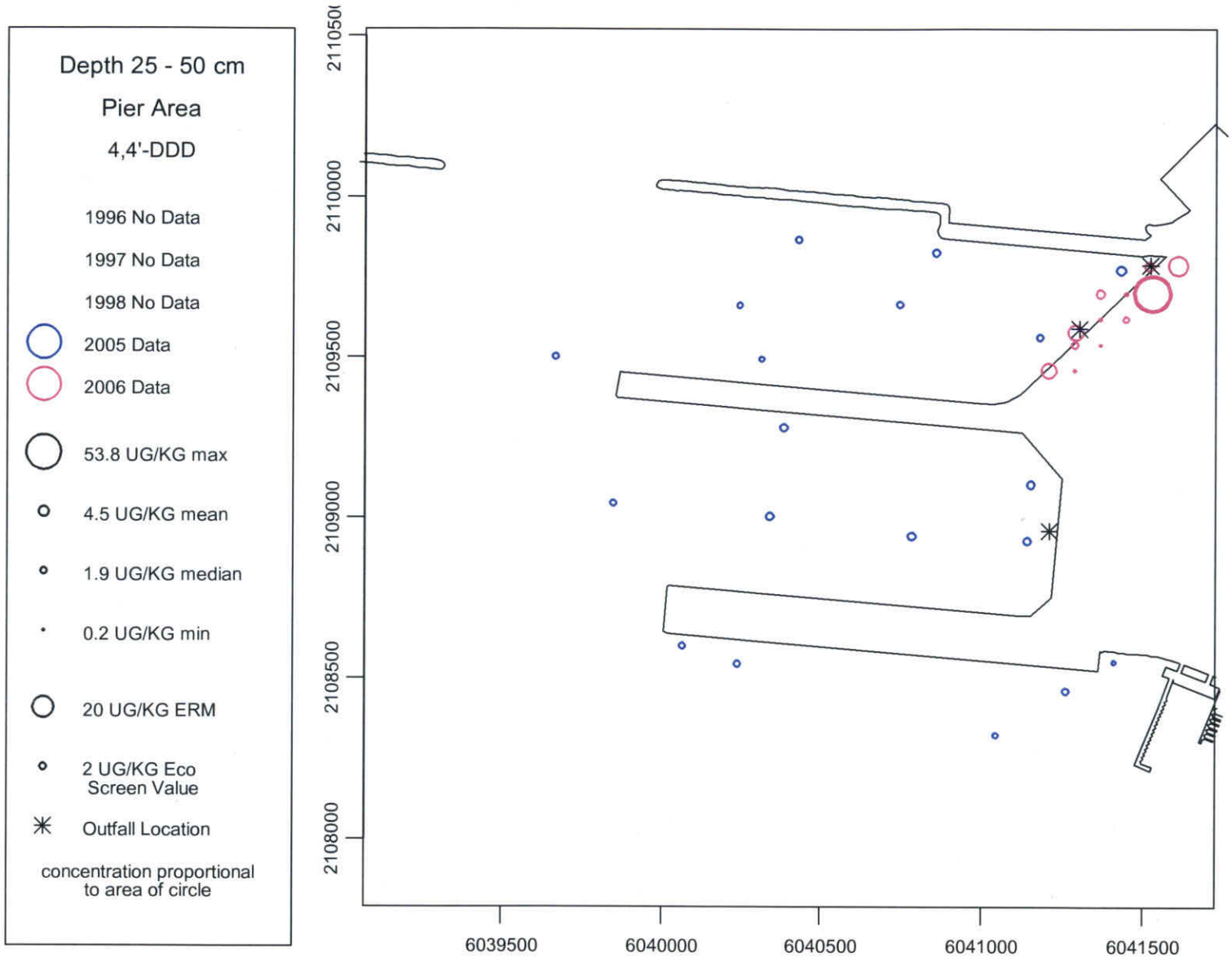

Figure A-369. Bubble Plot of 4,4'-DDD Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

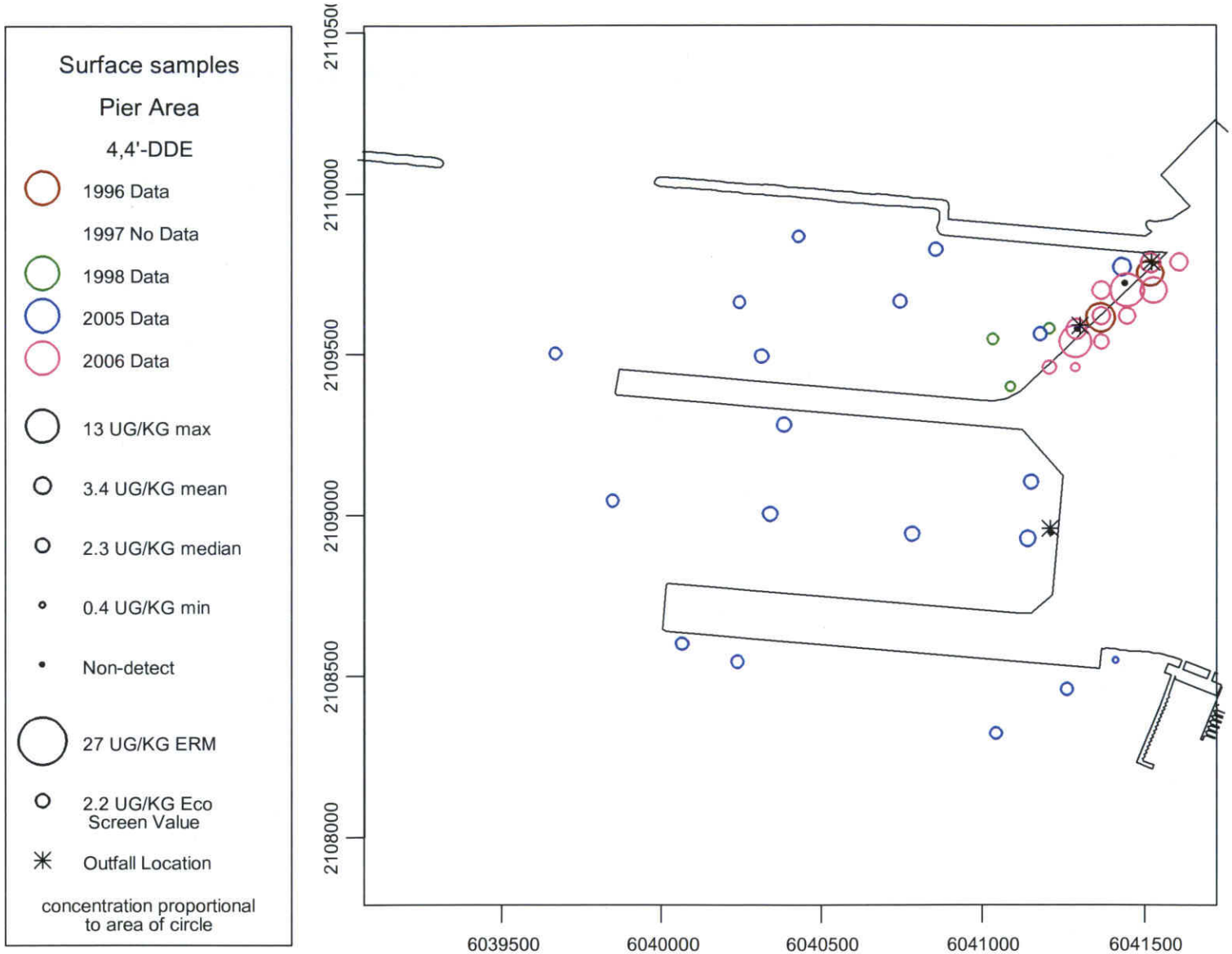

Figure A-370. Bubble Plot of 4,4'-DDE Concentrations in IR Site 24 Surface Sediment by Year.

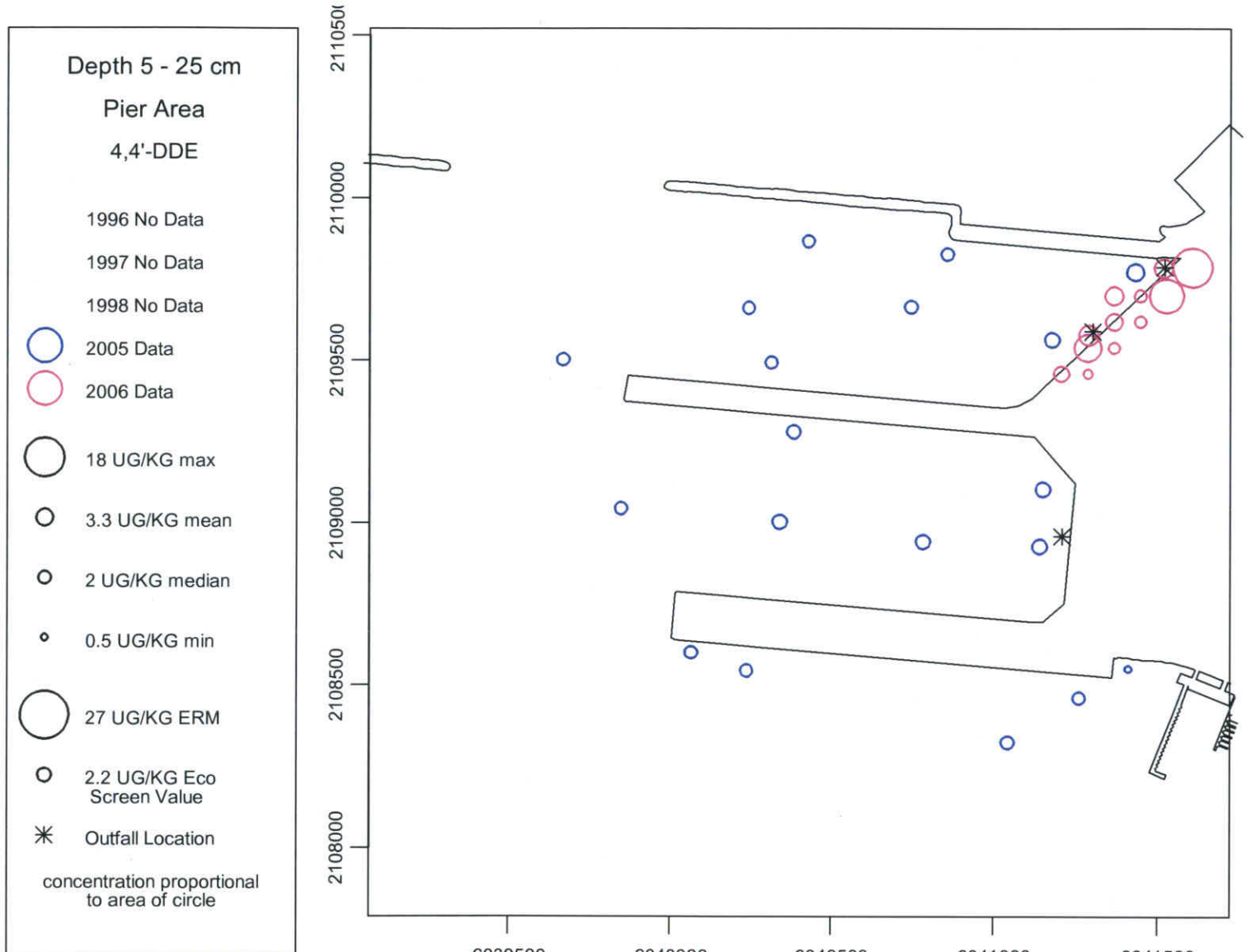

Figure A-371. Bubble Plot of 4,4'-DDE Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

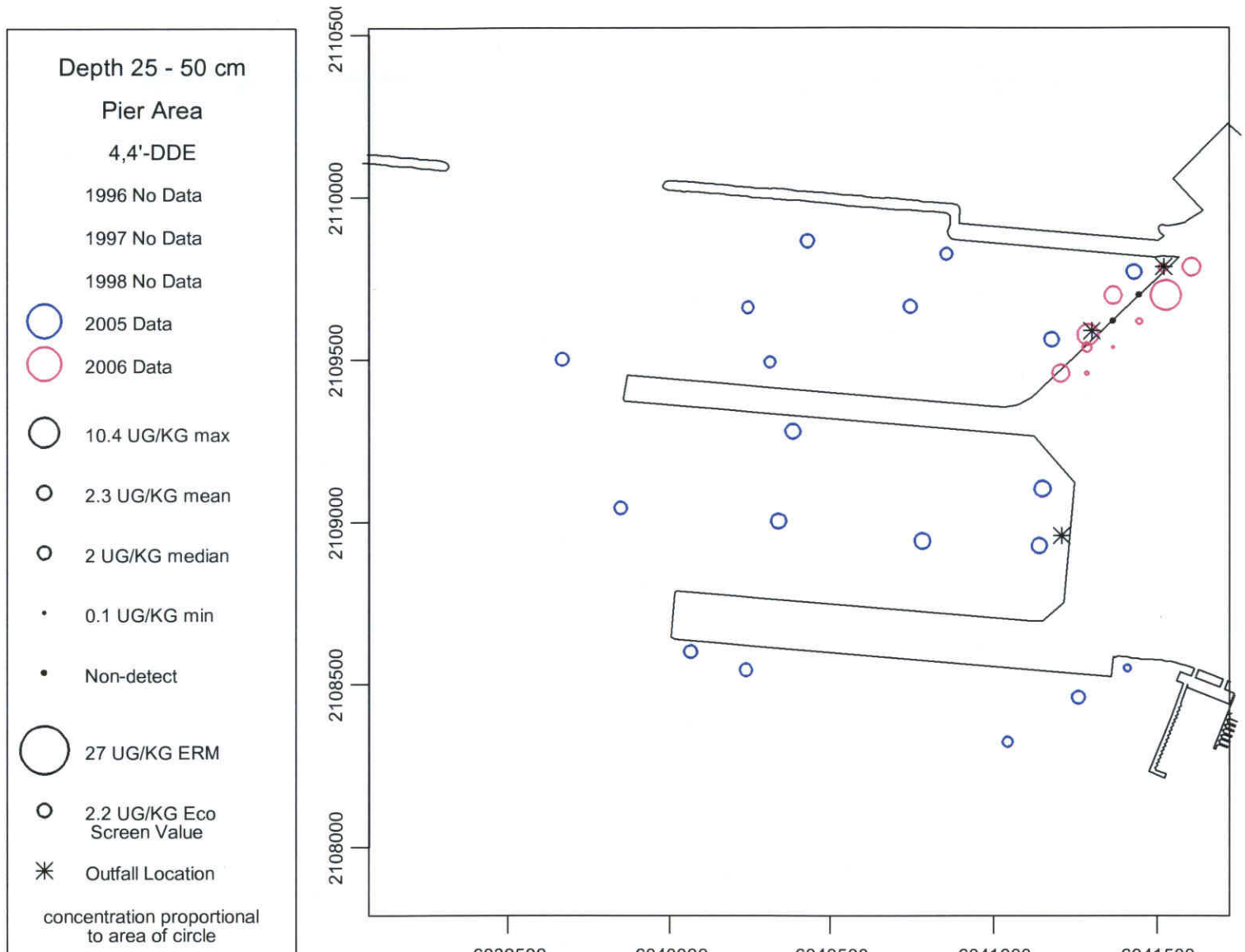

Figure A-372. Bubble Plot of 4,4'-DDE Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

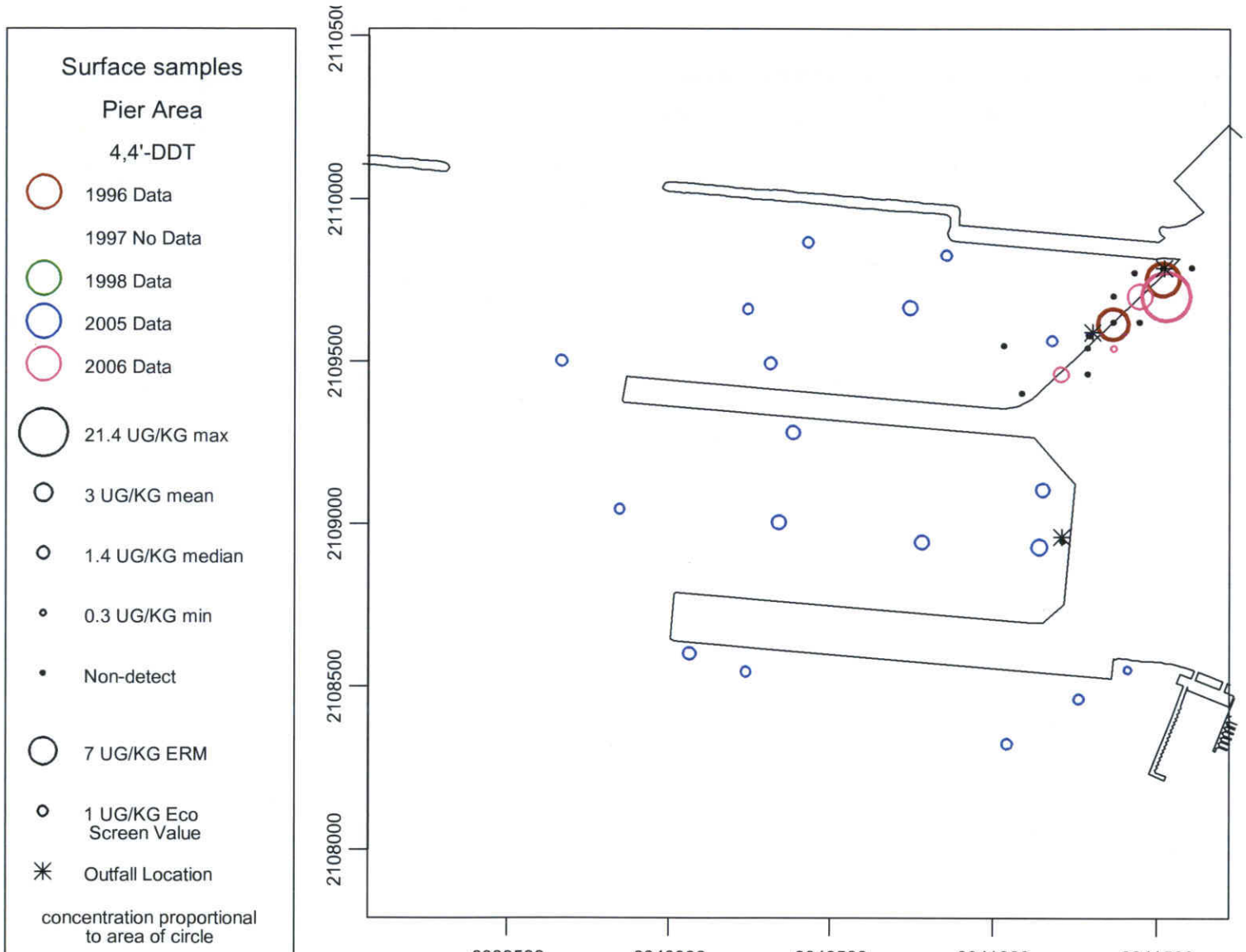

Figure A-373. Bubble Plot of 4,4'-DDT Concentrations in IR Site 24 Surface Sediment by Year.

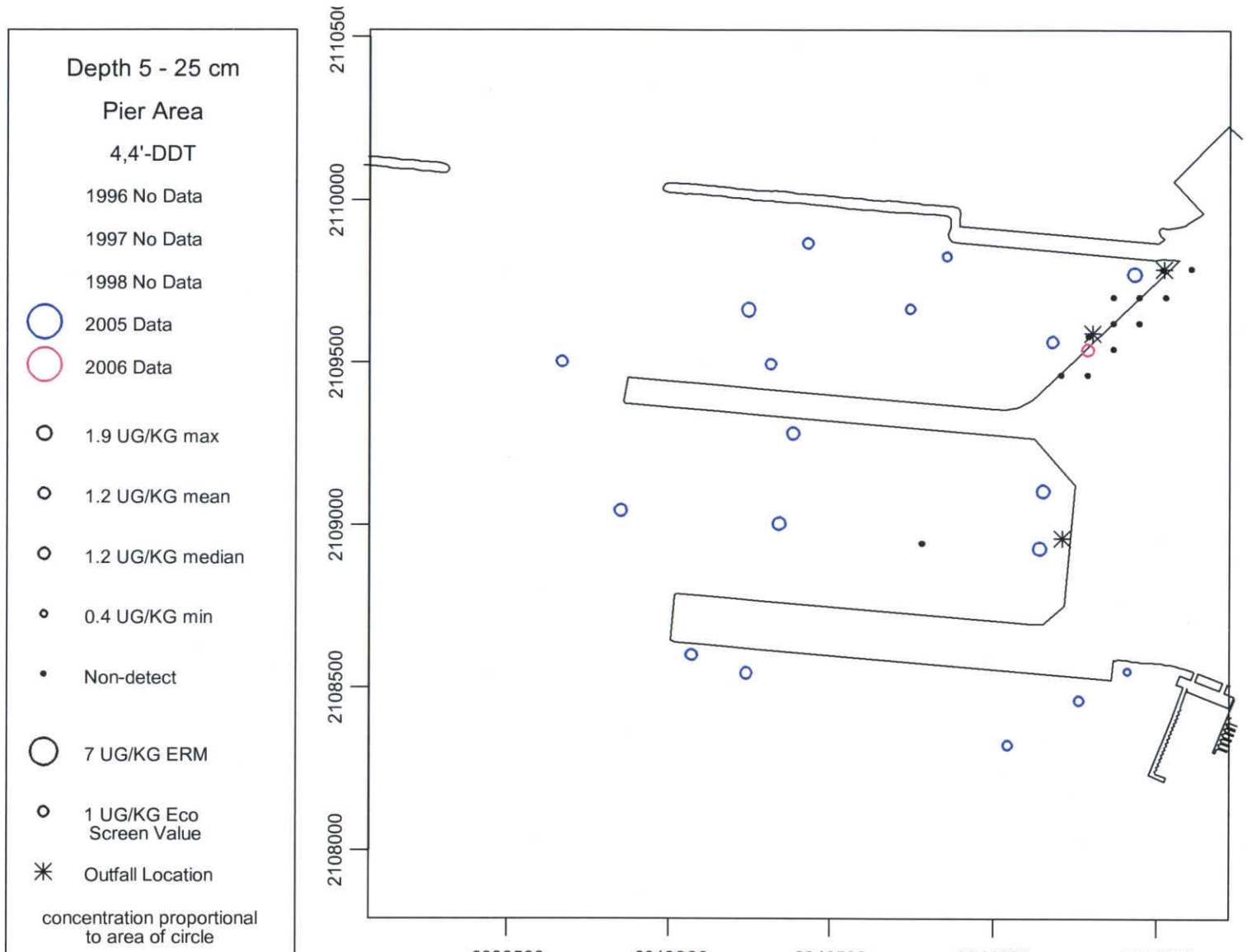

Figure A-374. Bubble Plot of 4,4'-DDT Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

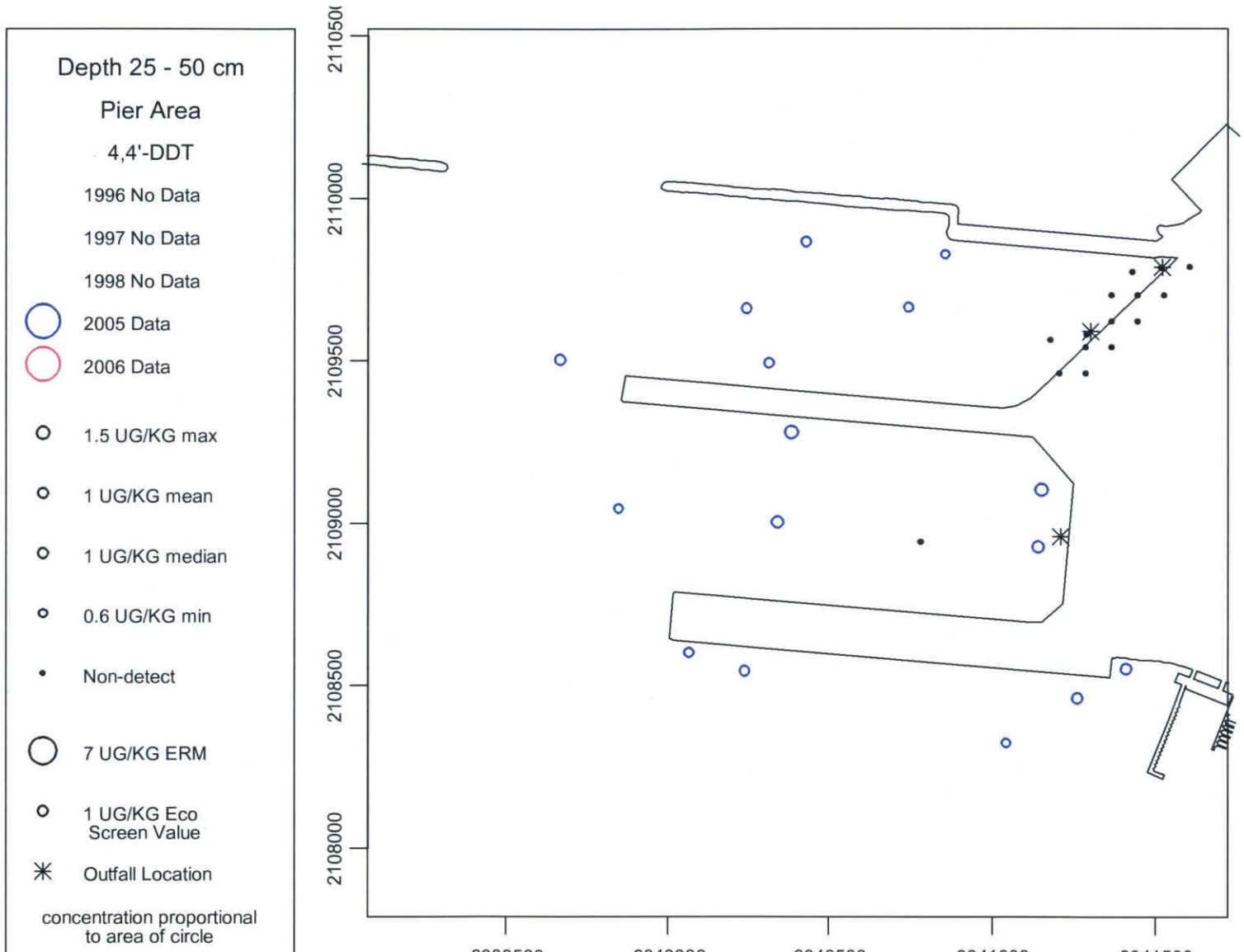

Figure A-375. Bubble Plot of 4,4'-DDT Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

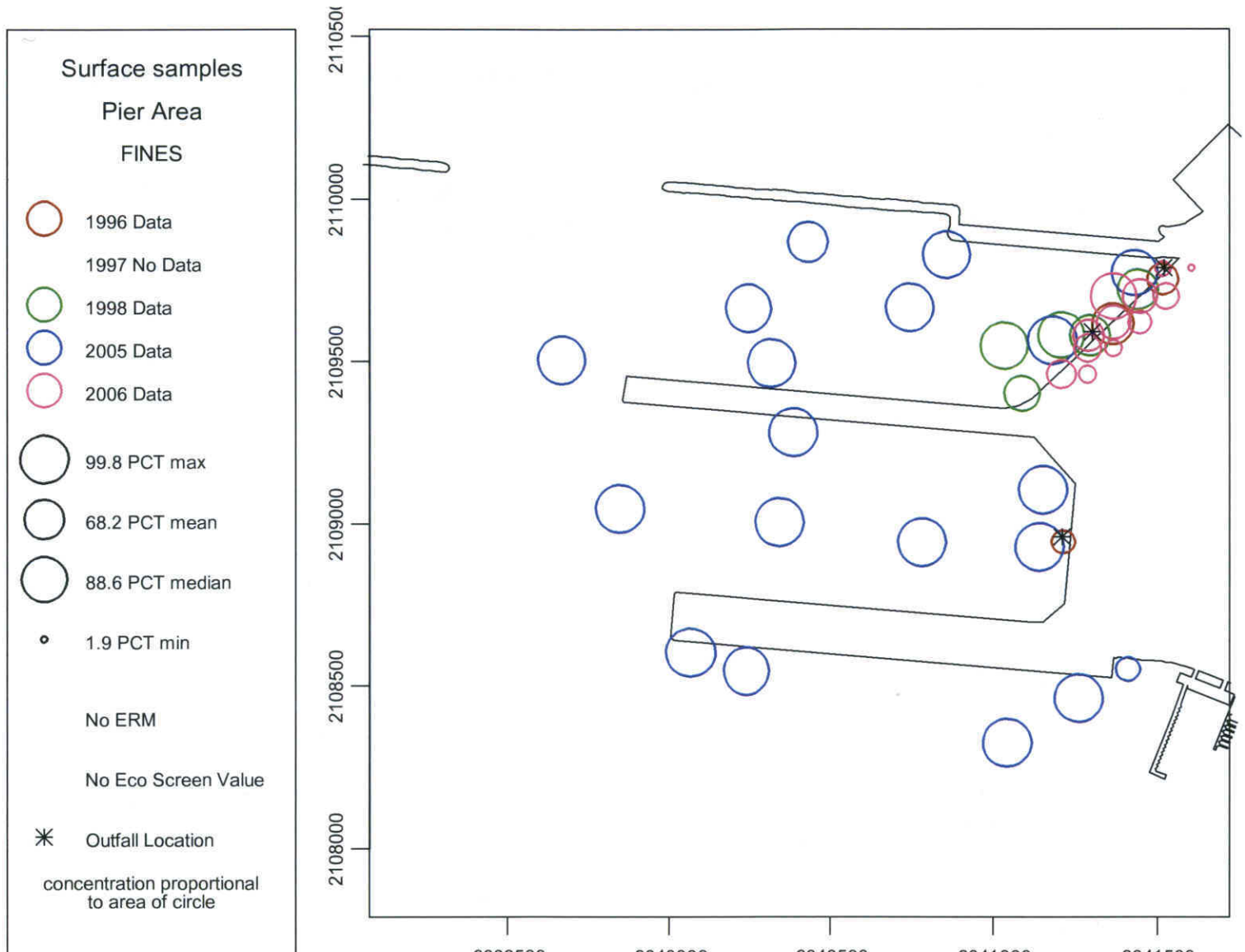

Figure A-376. Bubble Plot of Fine Grains Concentrations in IR Site 24 Surface Sediment by Year.

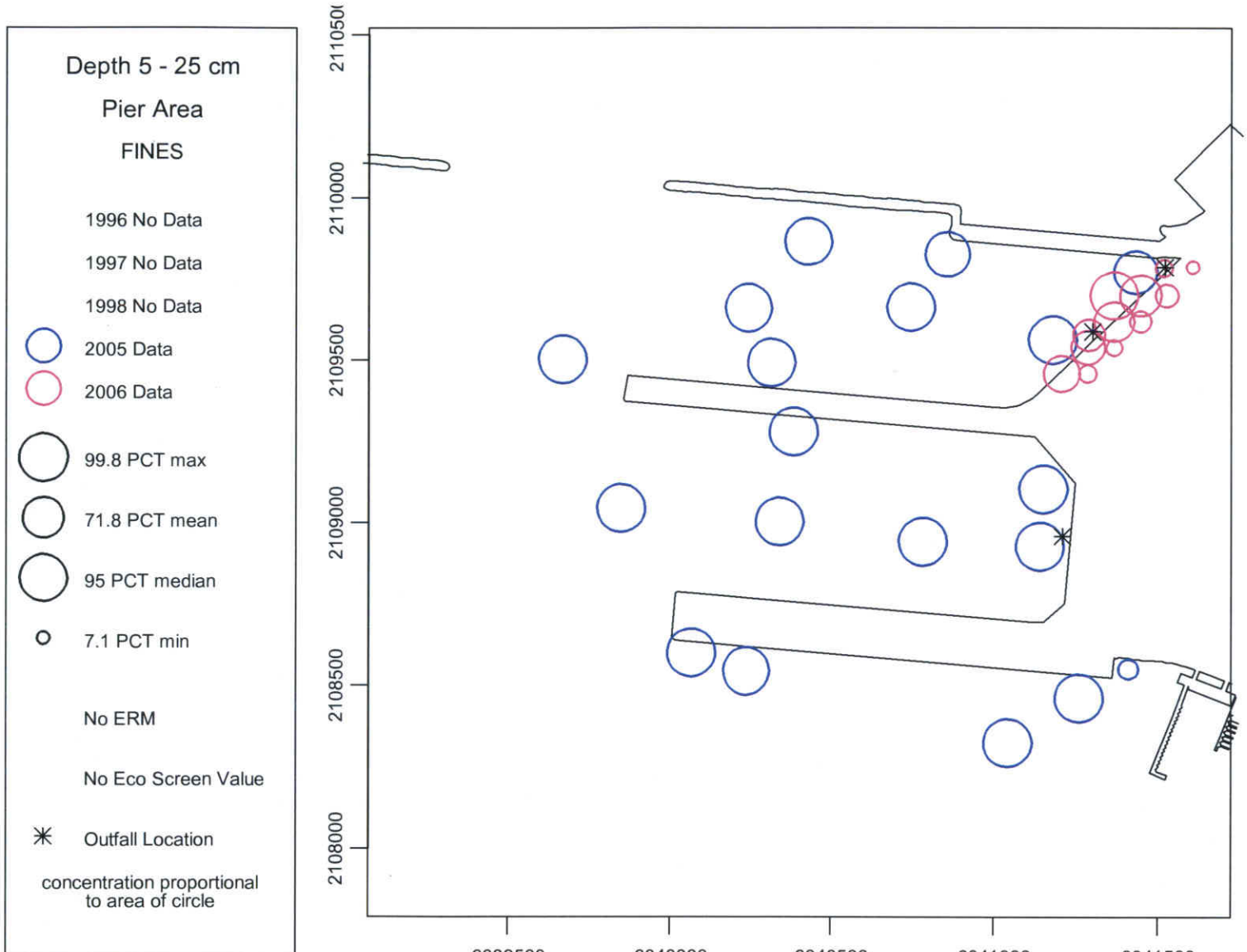

Figure A-377. Bubble Plot of Fine Grains Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

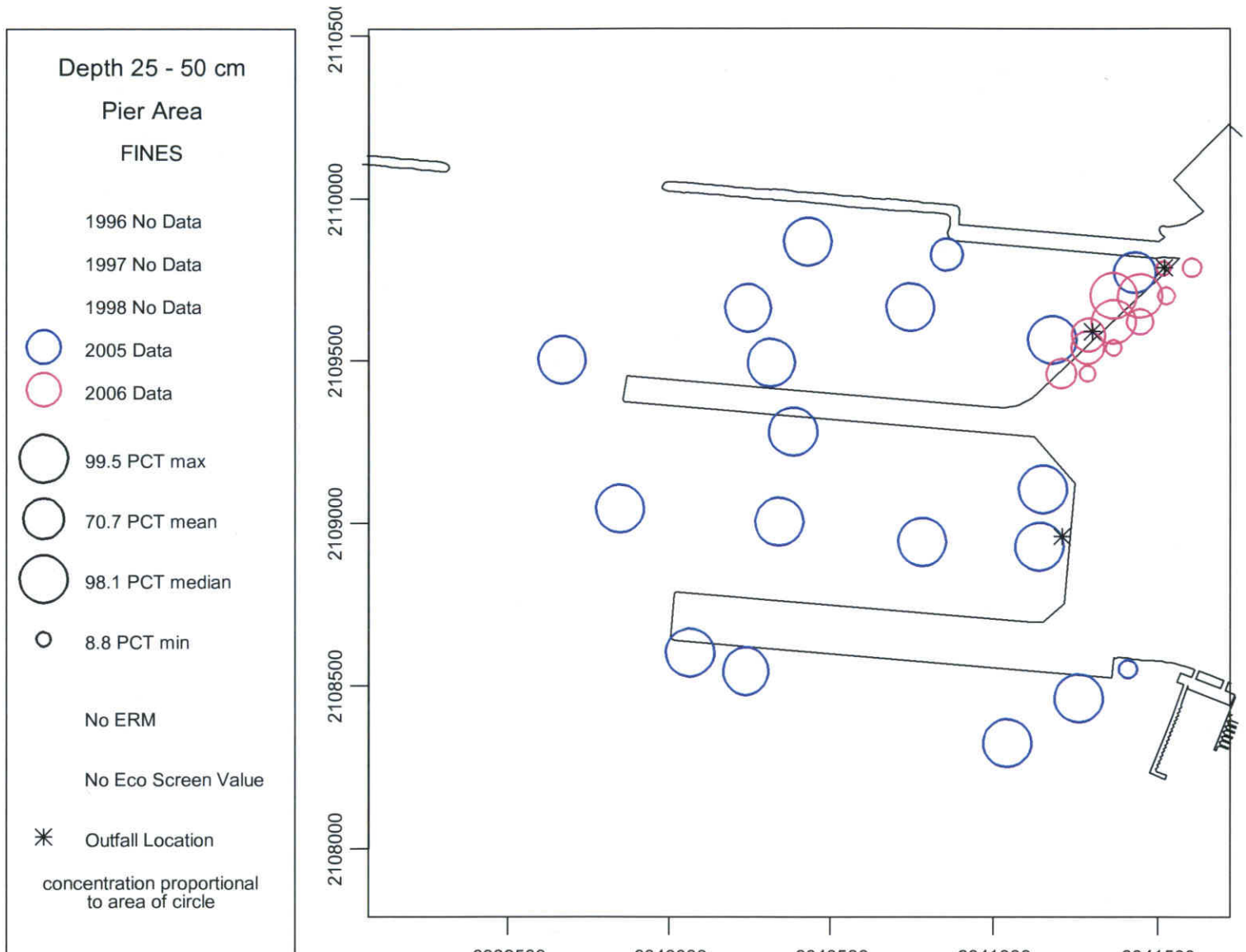

Figure A-378. Bubble Plot of Fine Grains Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

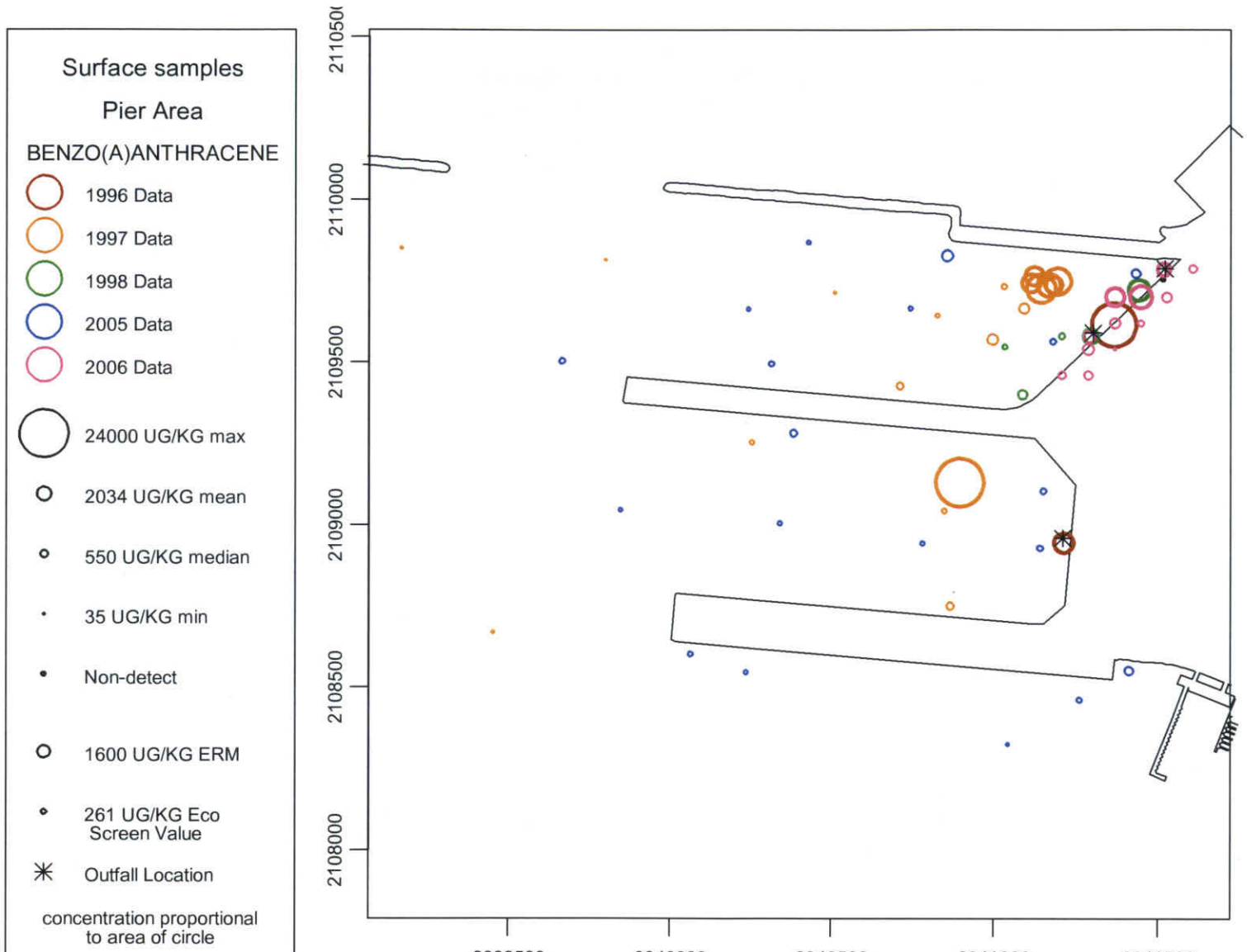

Figure A-379. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 24 Surface Sediment by Year.

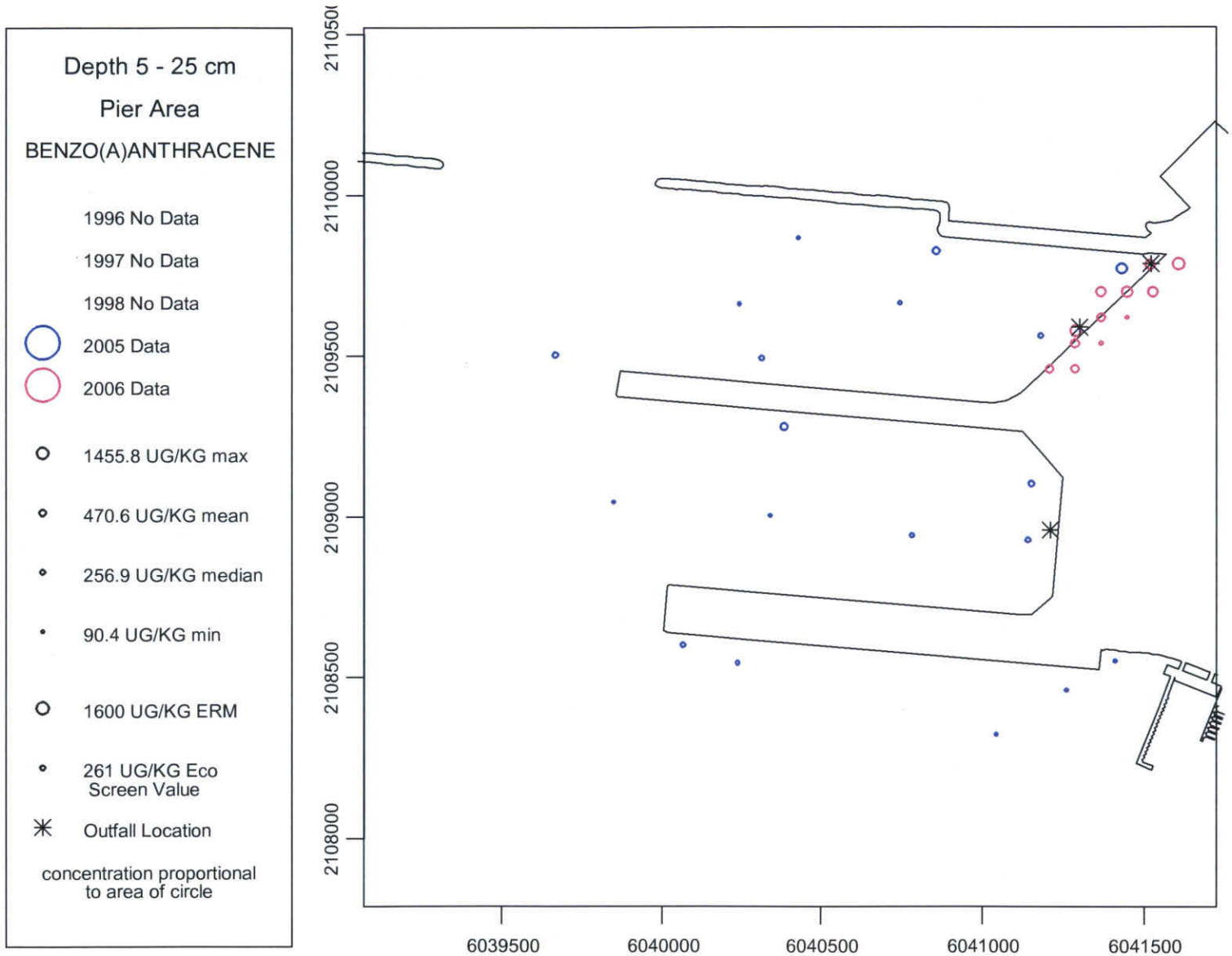

Figure A-380. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

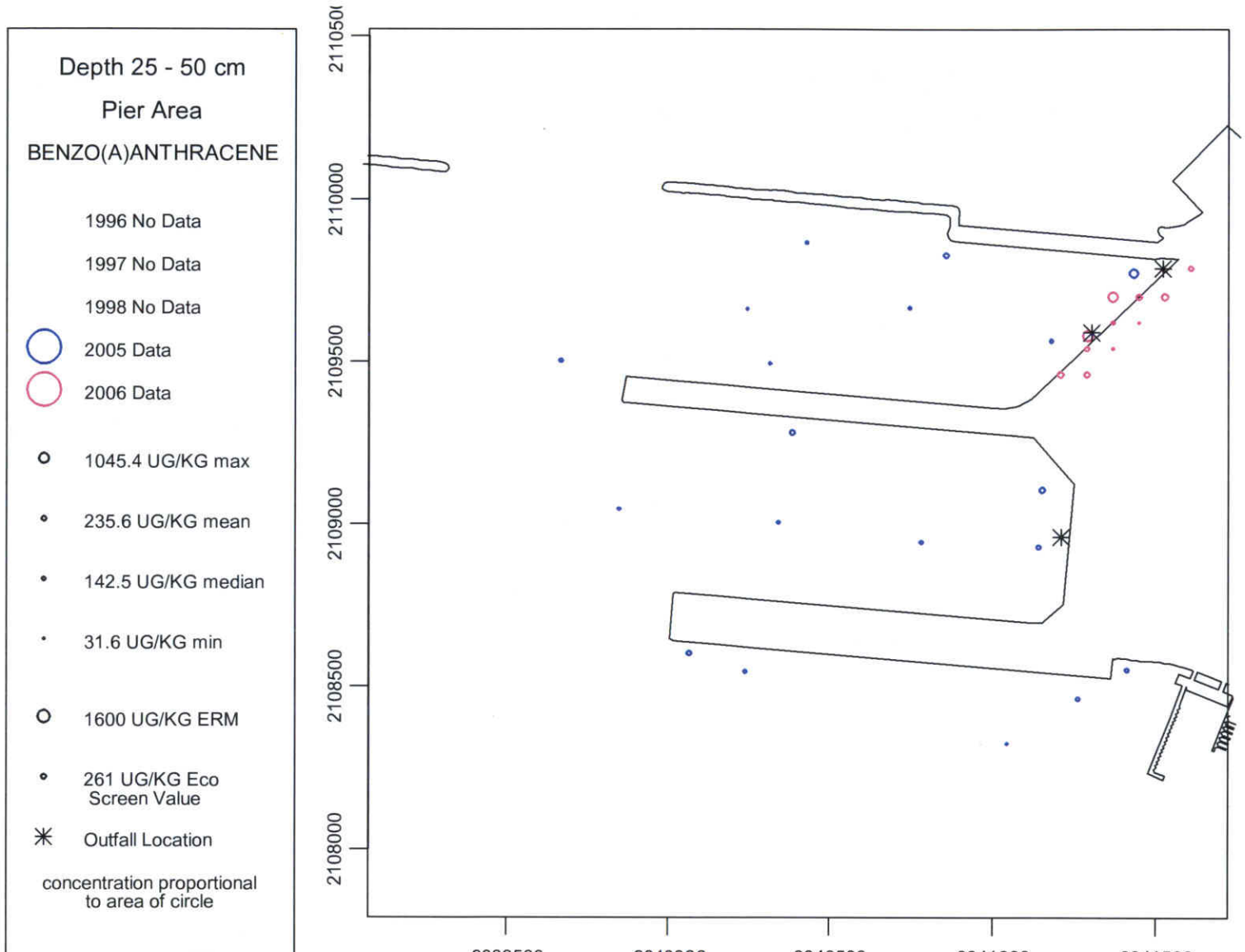

Figure A-381. Bubble Plot of Benzo(a)anthracene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

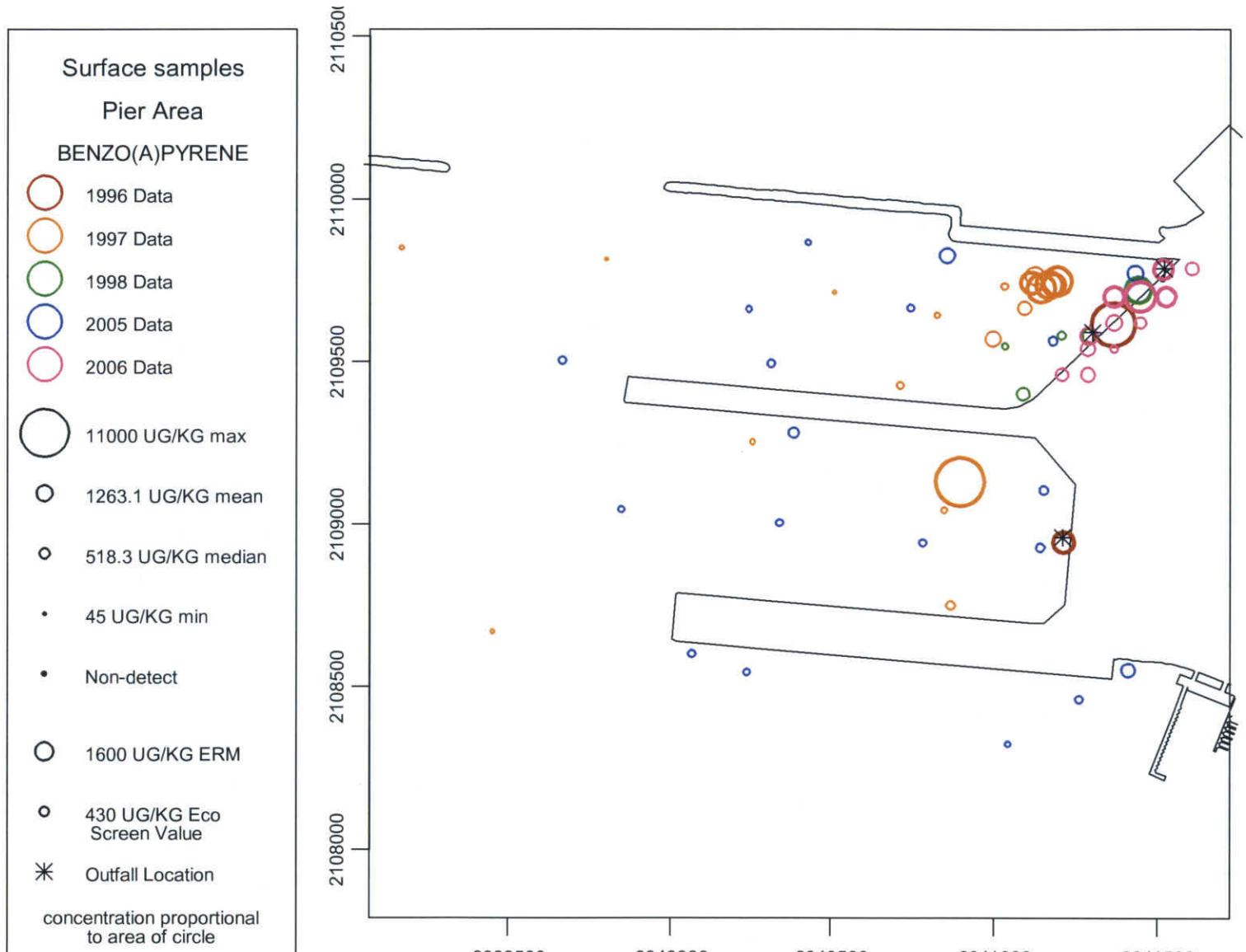

Figure A-382. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 24 Surface Sediment by Year.

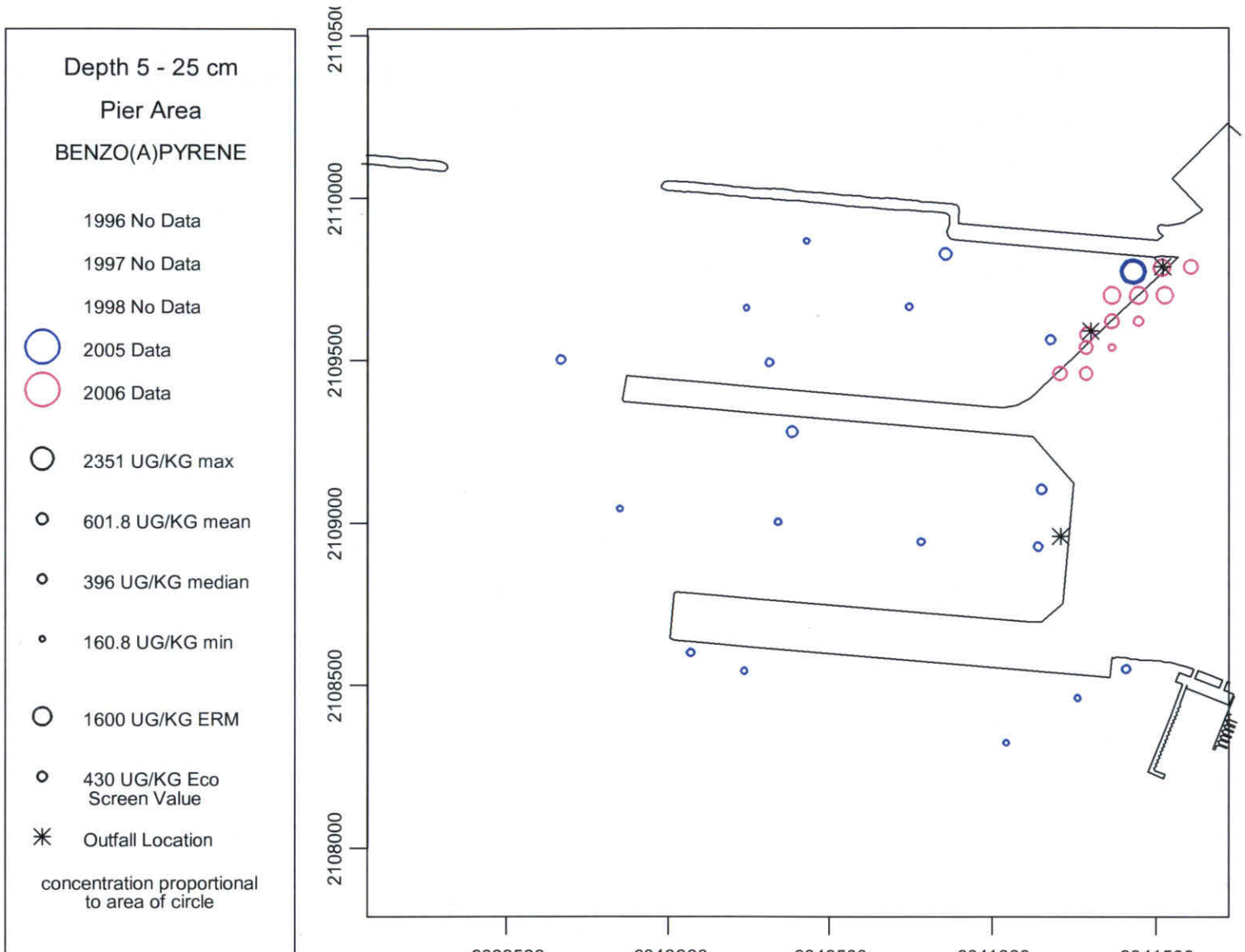

Figure A-383. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

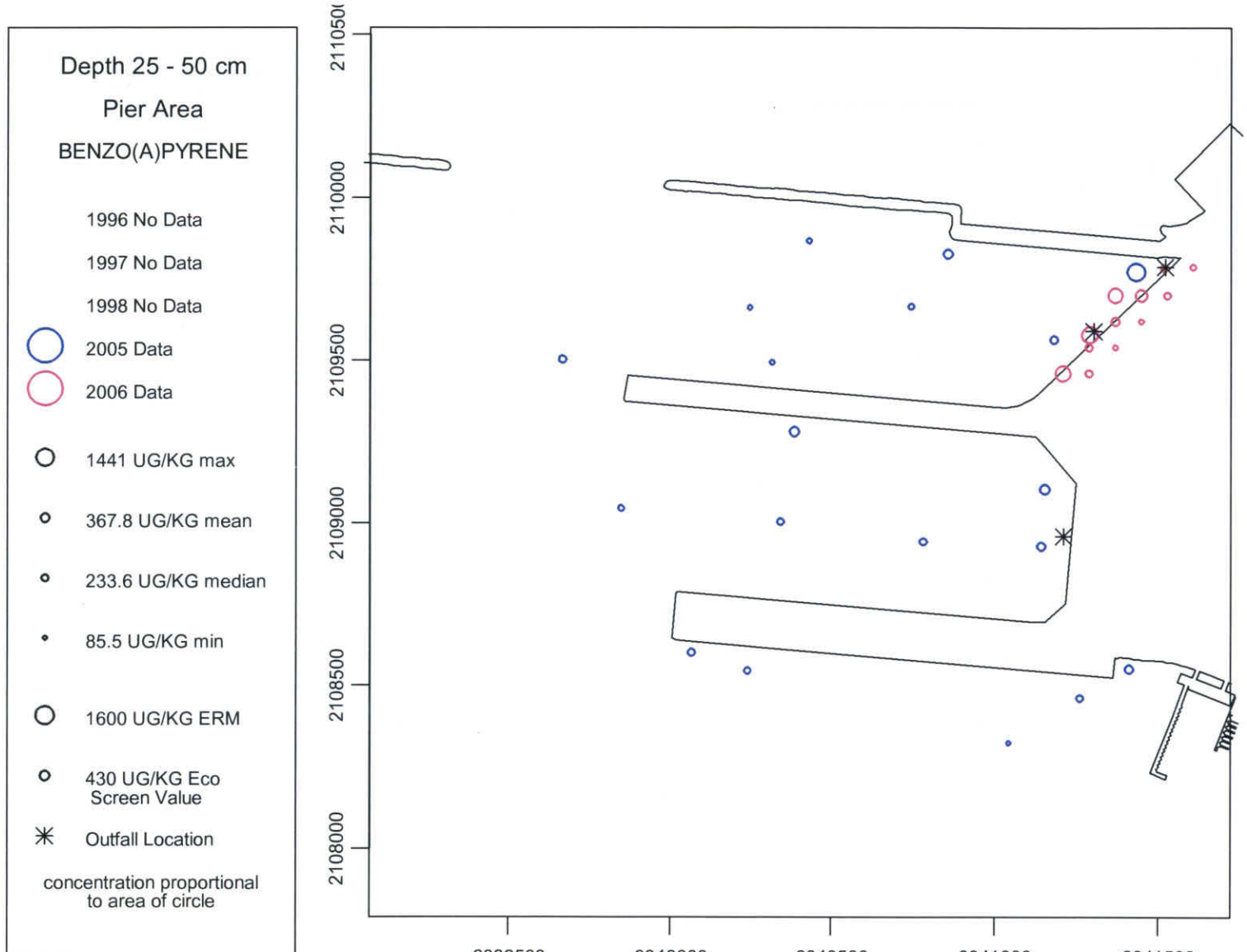

Figure A-384. Bubble Plot of Benzo(a)pyrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

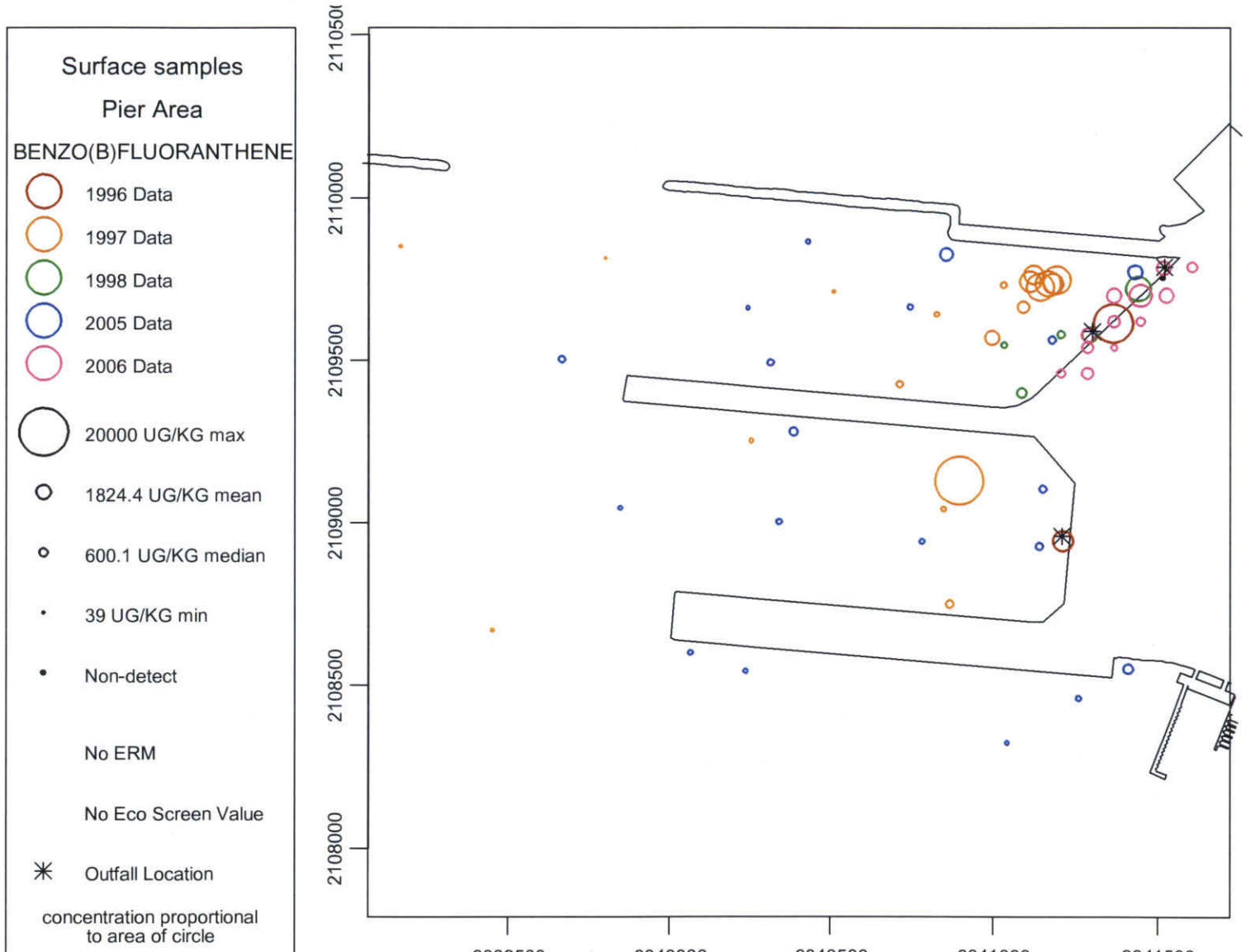

Figure A-385. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 24 Surface Sediment by Year.

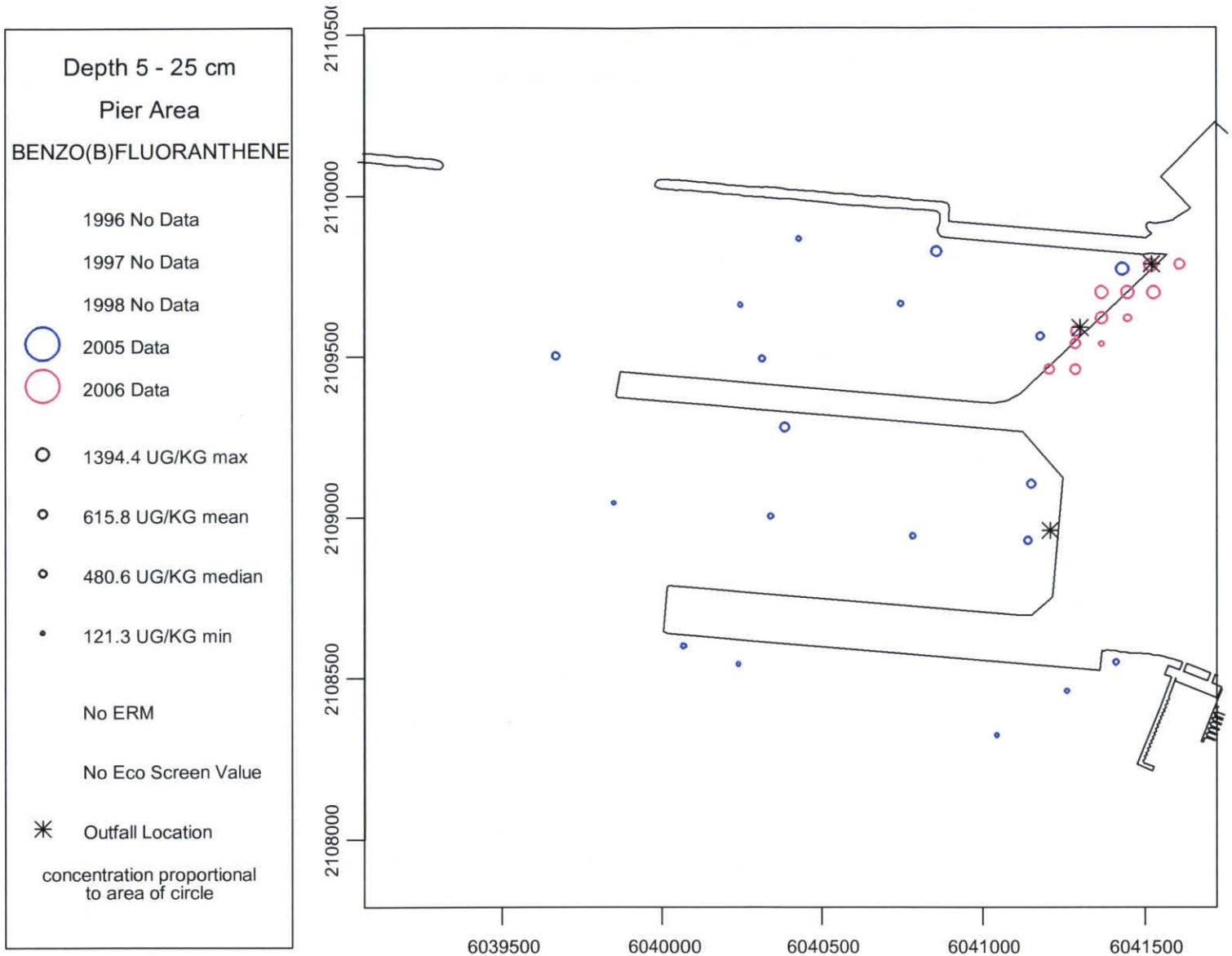

Figure A-386. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

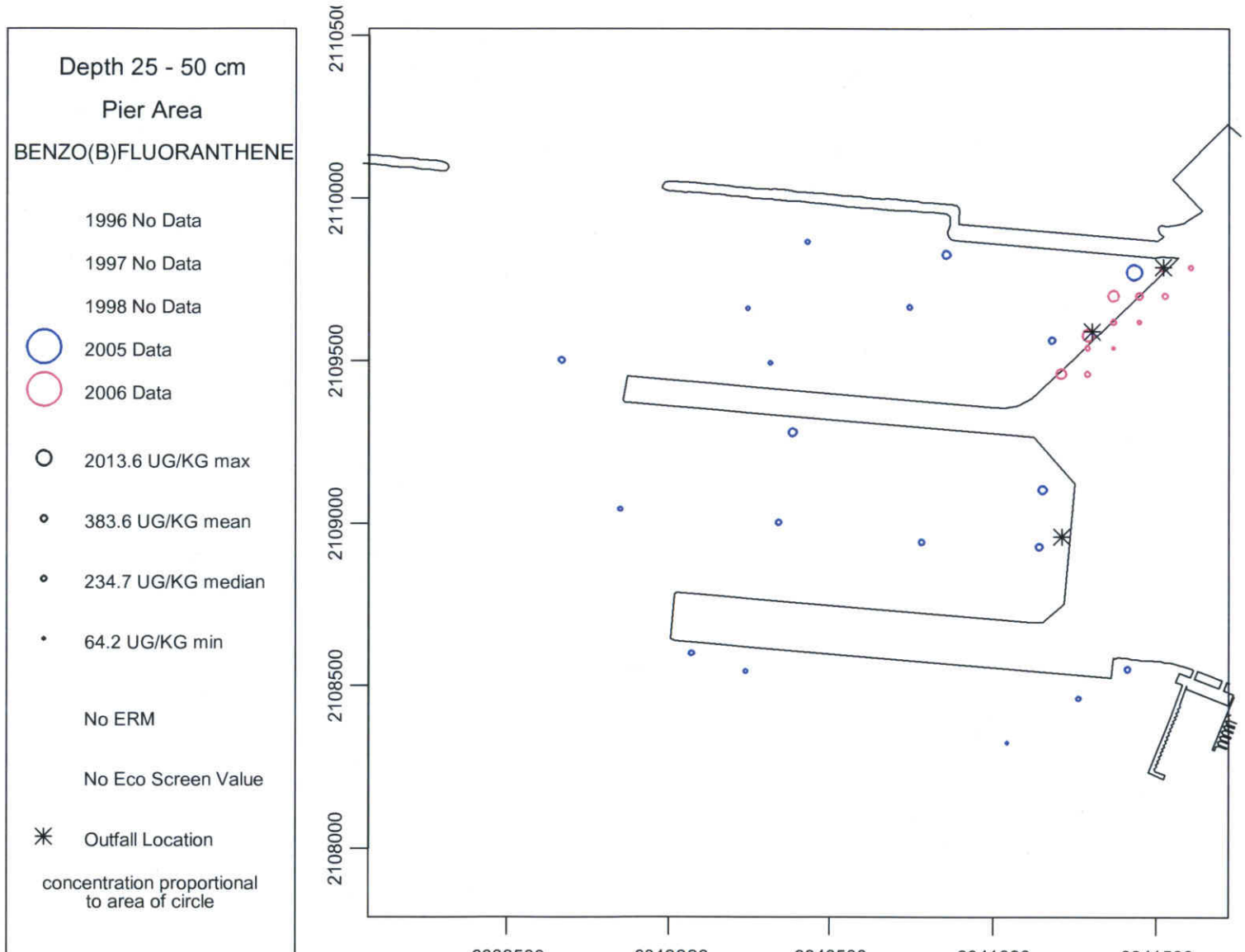

Figure A-387. Bubble Plot of Benzo(b)fluoranthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

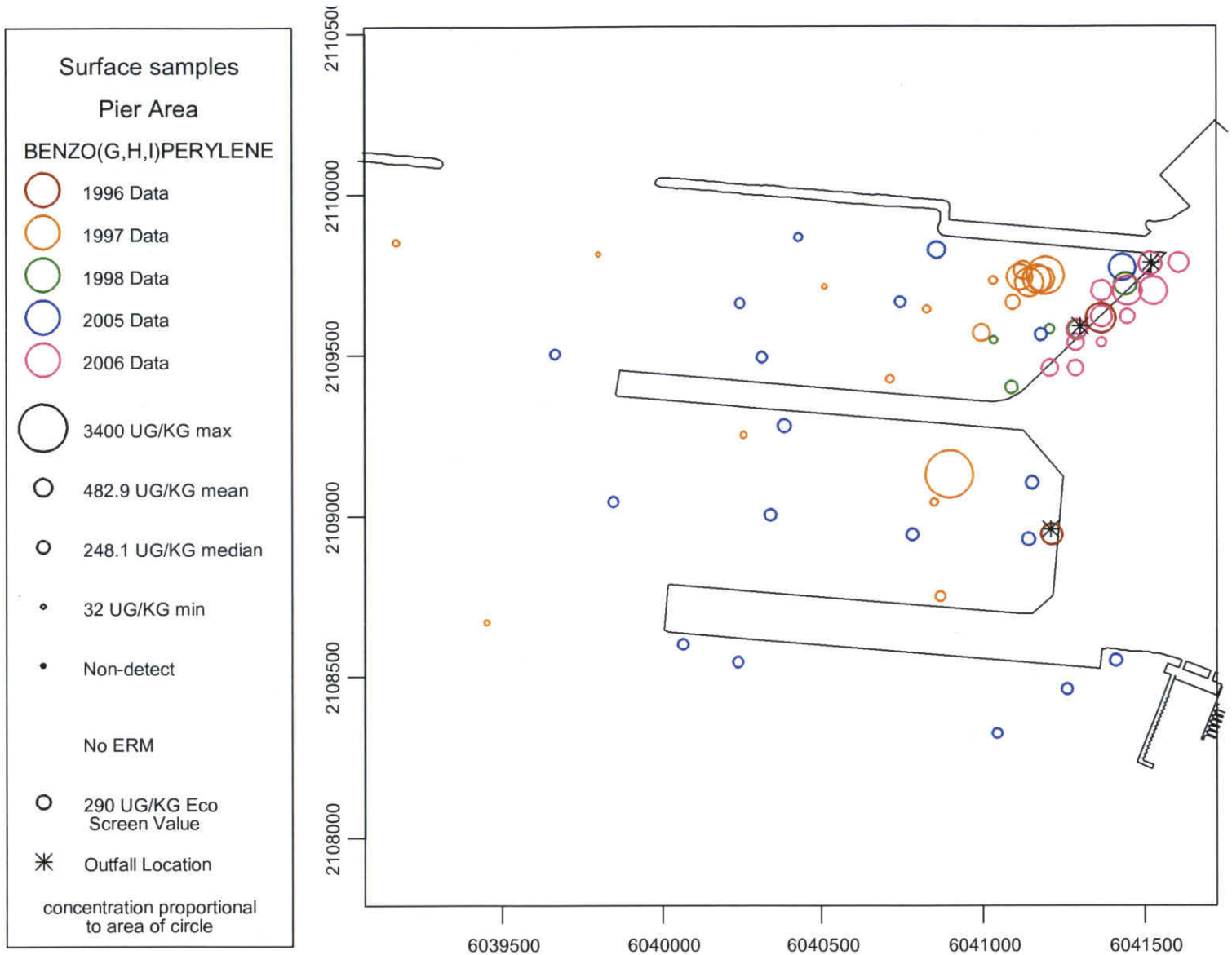

Figure A-388. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 24 Surface Sediment by Year.

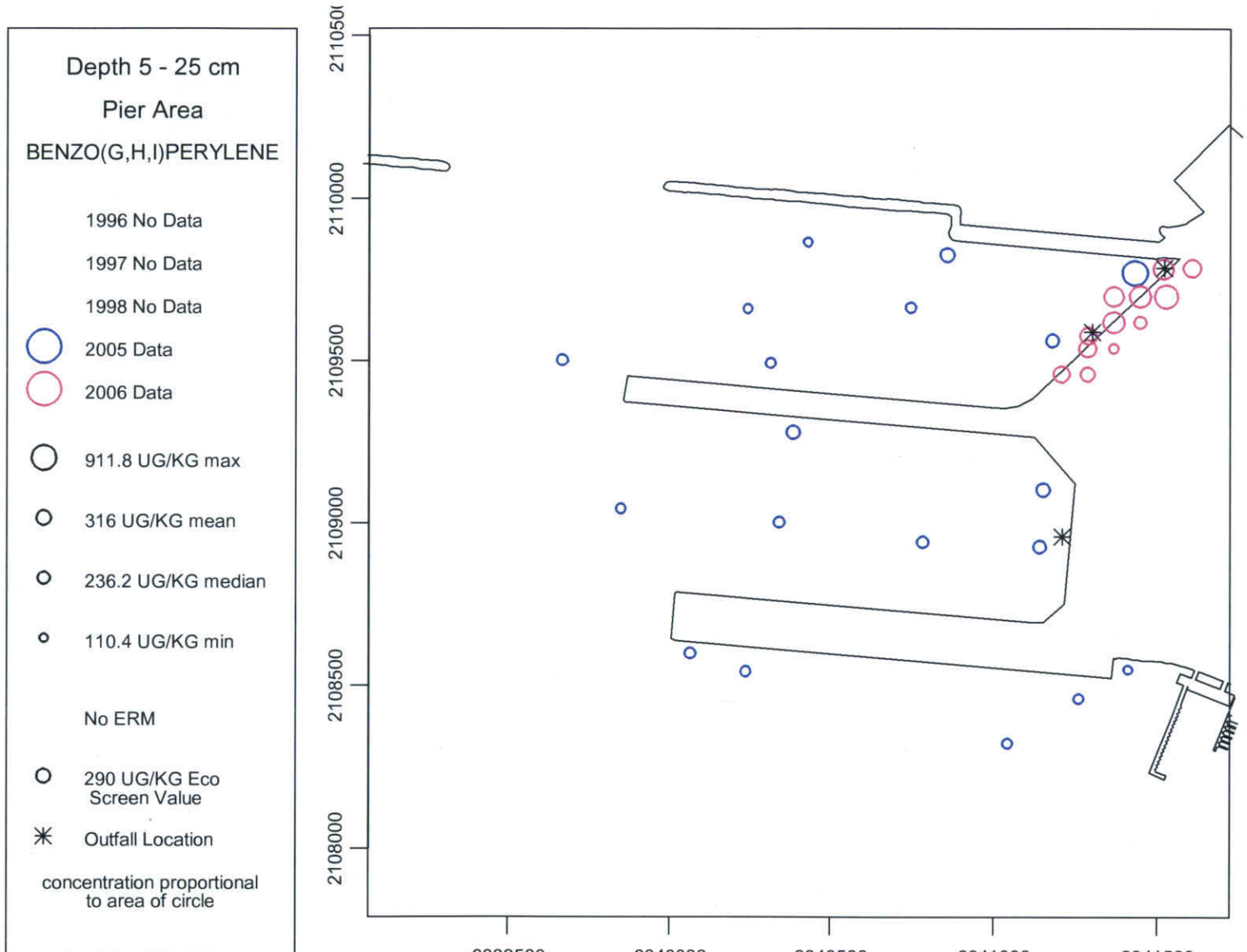

Figure 389. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

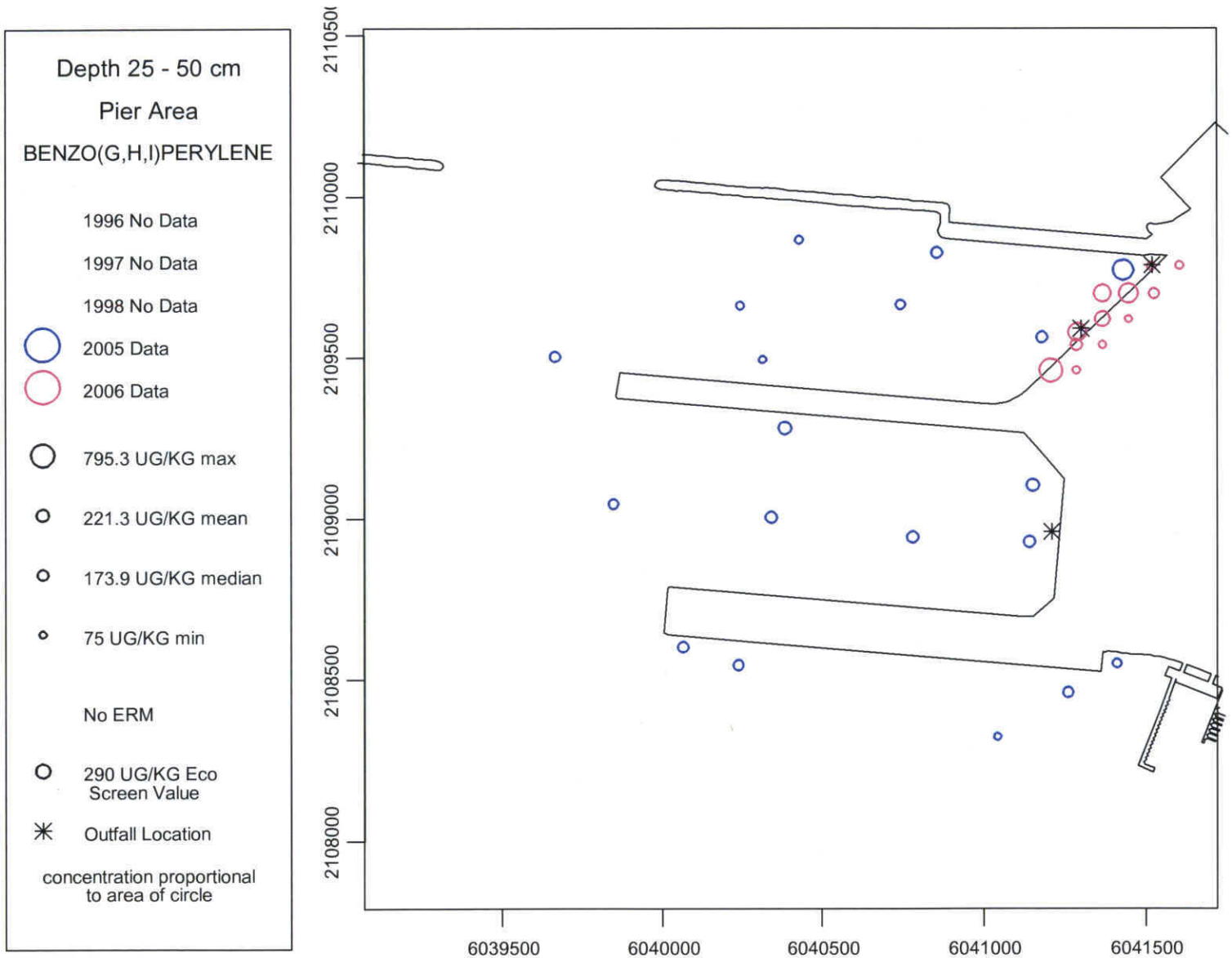

Figure A-390. Bubble Plot of Benzo(g,h,i)perylene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

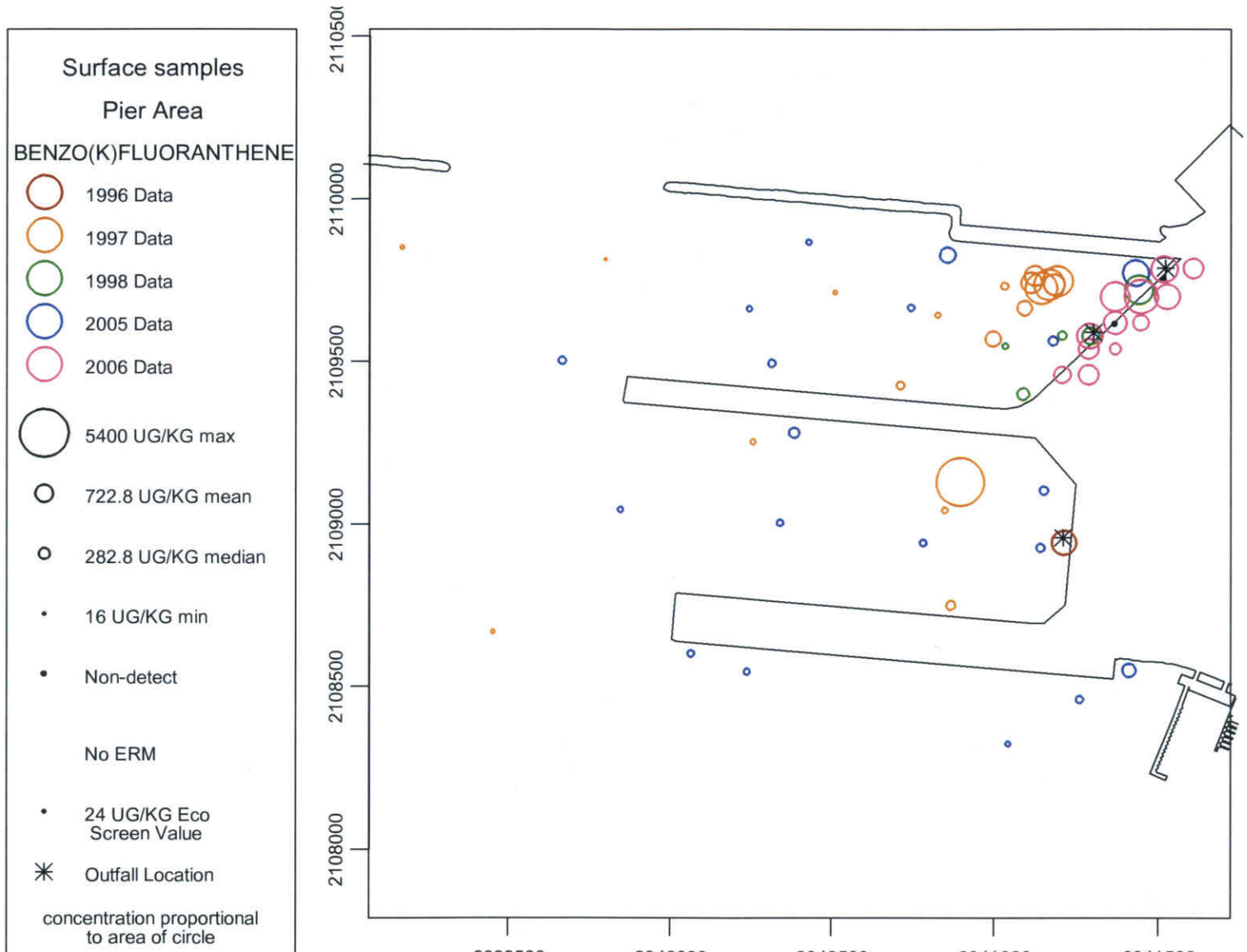

Figure A-391. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 24 Surface Sediment by Year.

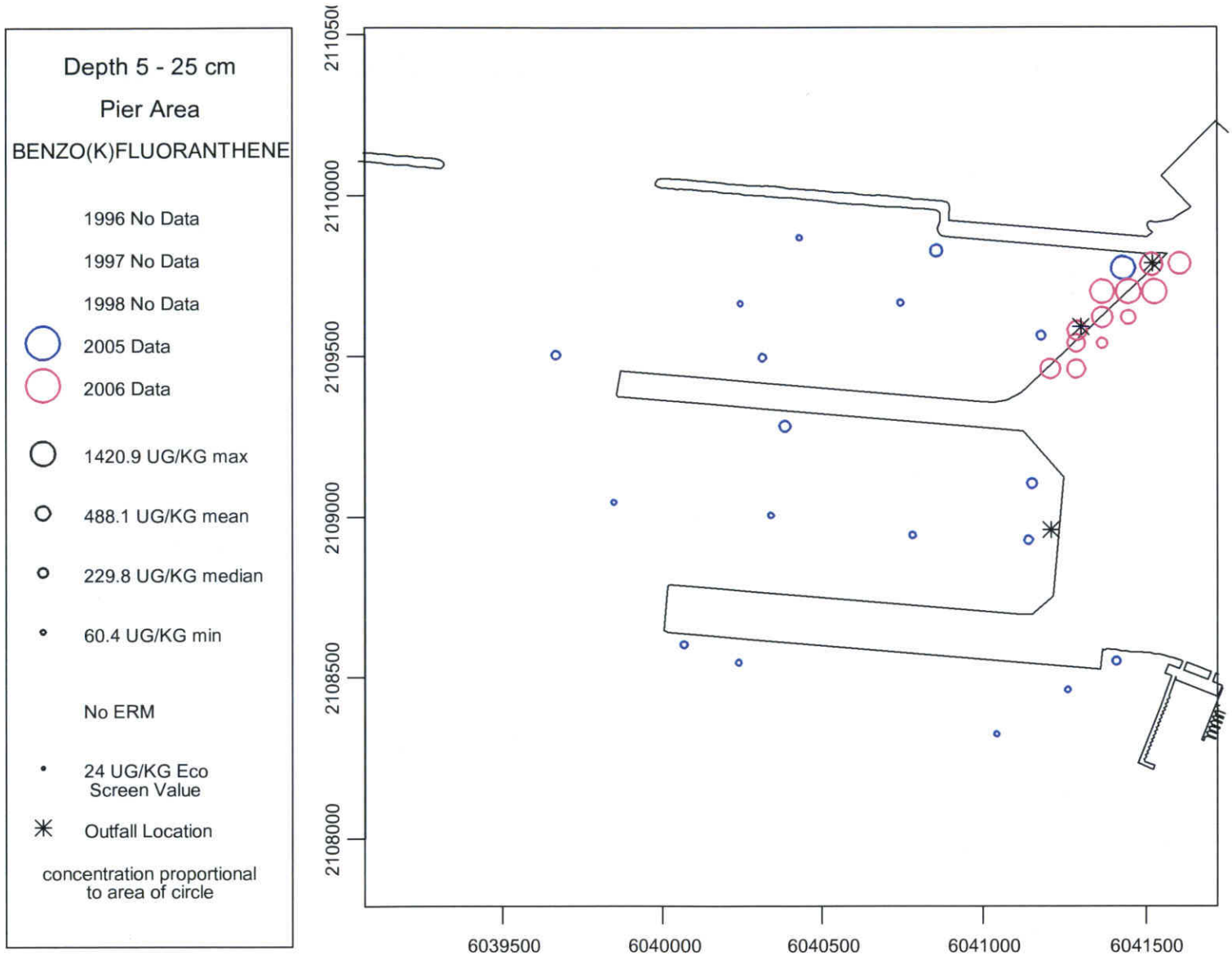

Figure A-392. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

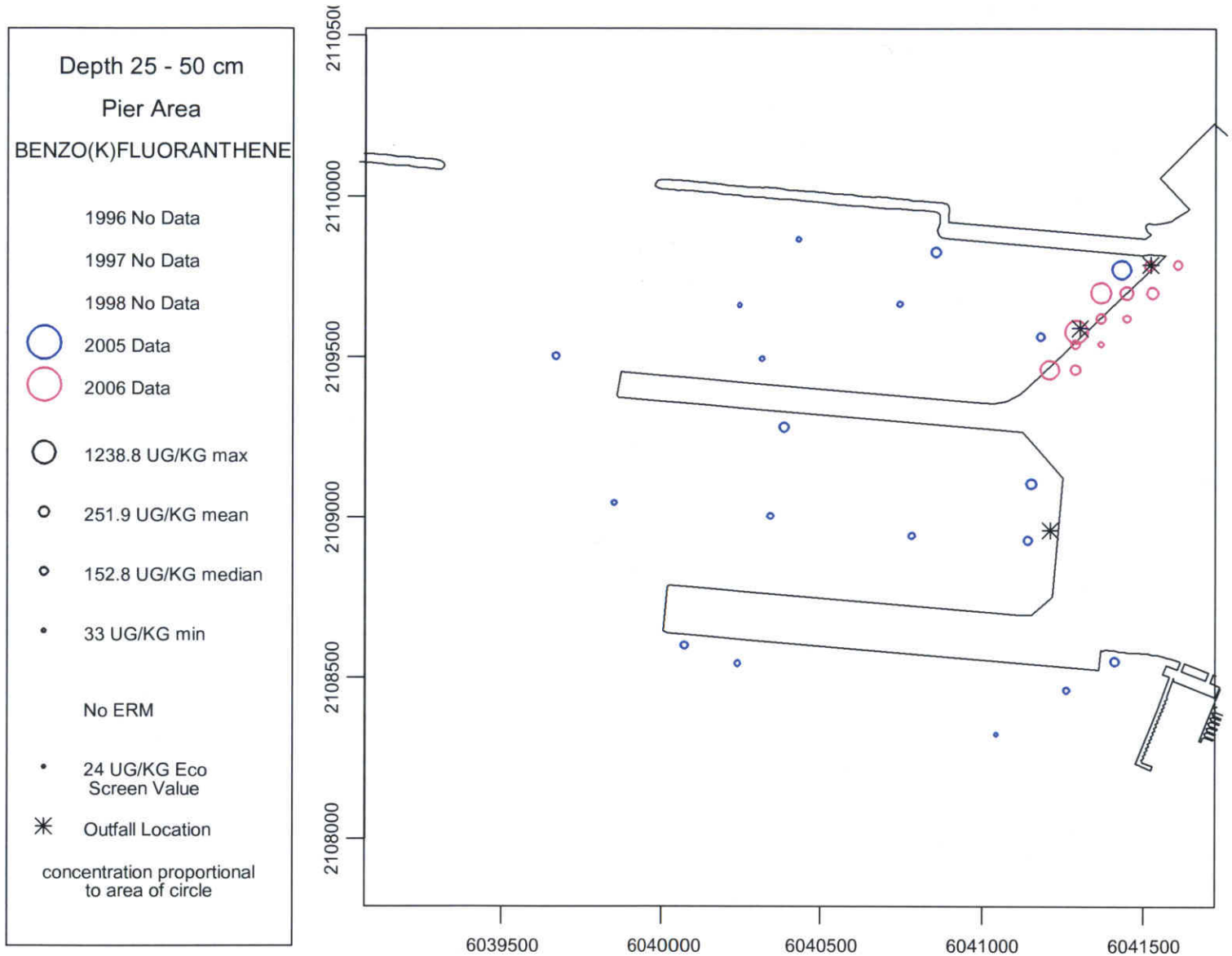

Figure A-393. Bubble Plot of Benzo(k)fluoranthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

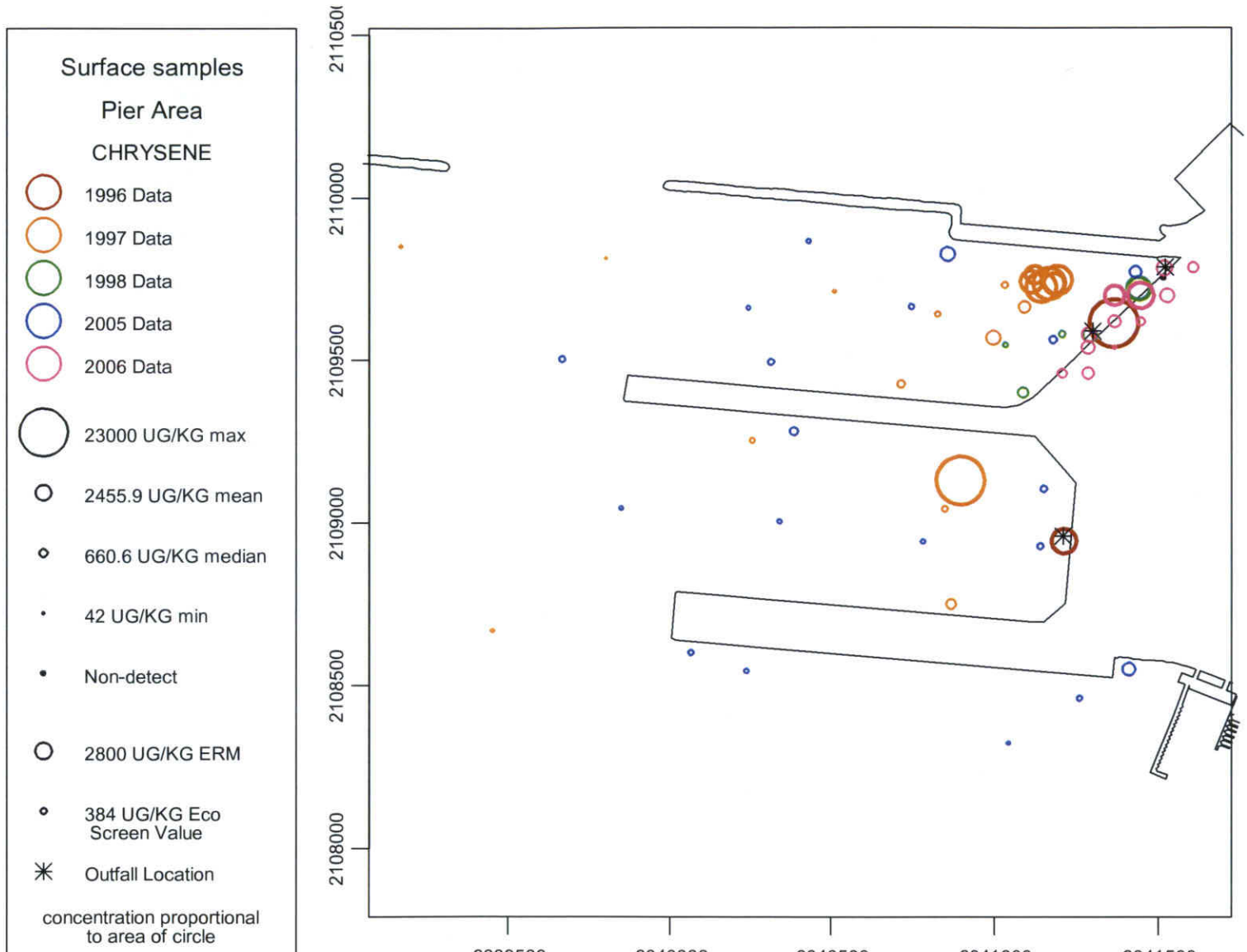

Figure A-394. Bubble Plot of Chrysene Concentrations in IR Site 24 Surface Sediment by Year.

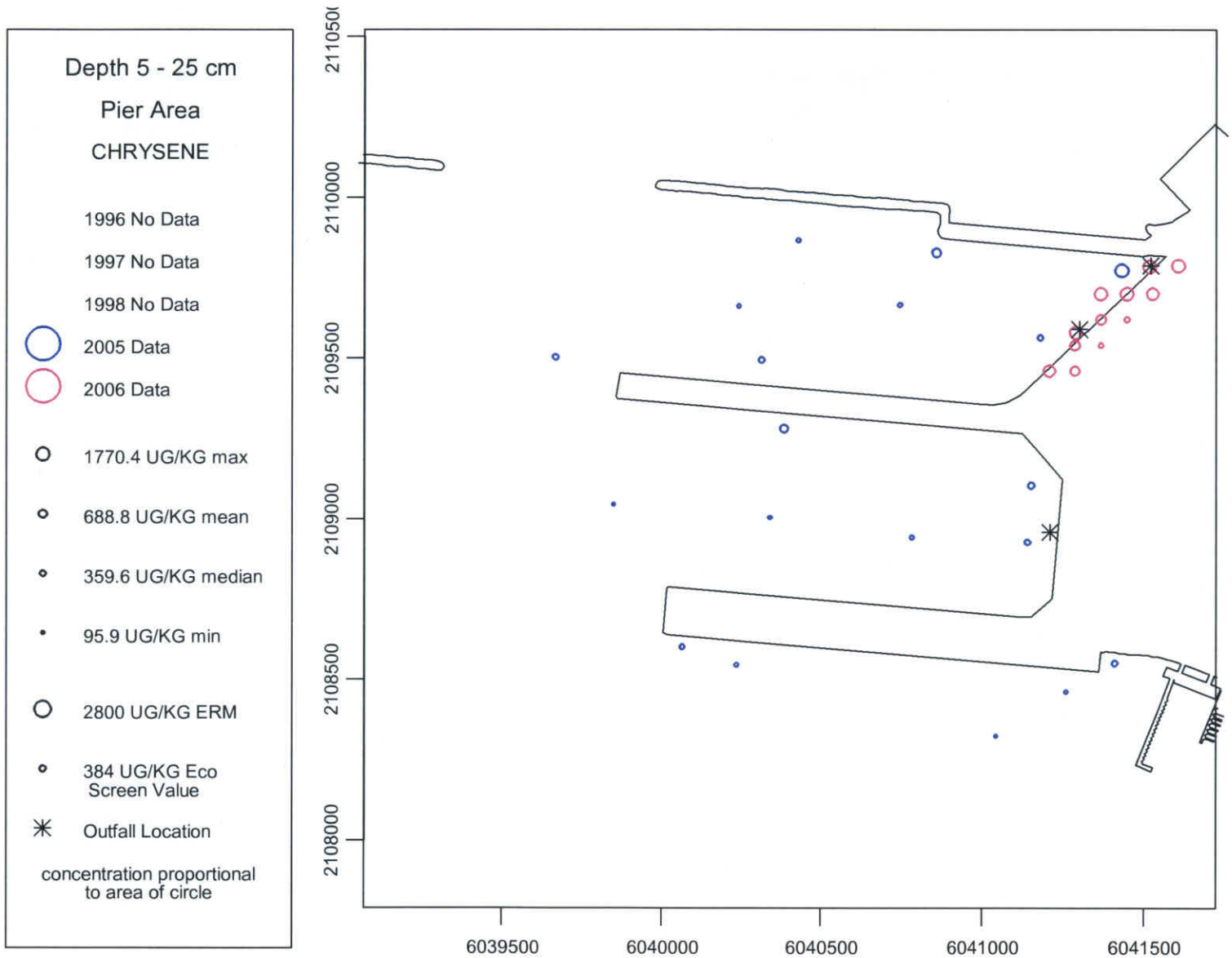

Figure A-395. Bubble Plot of Chrysene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

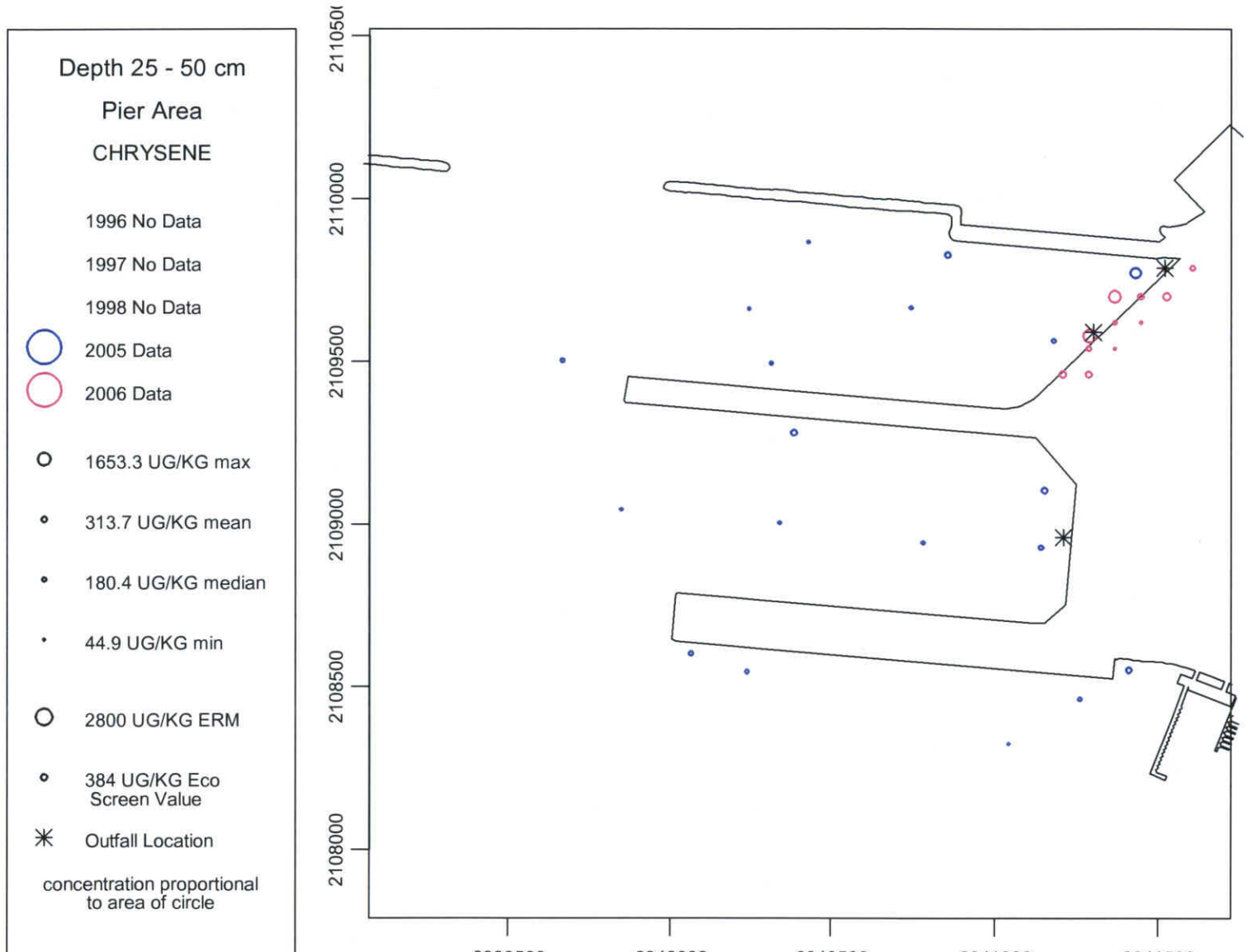

Figure A-396. Bubble Plot of Chrysene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

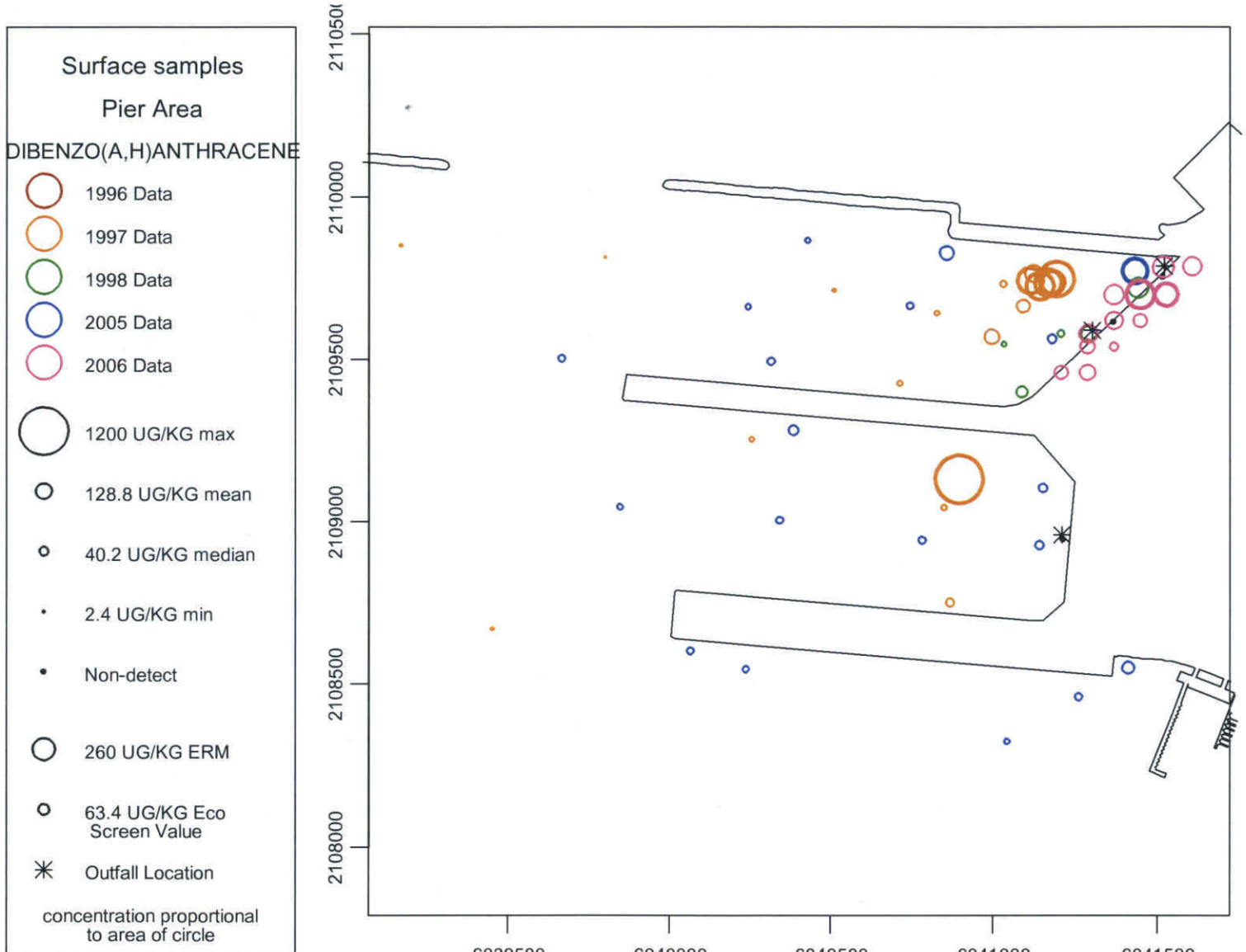

Figure A-397. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 24 Surface Sediment by Year.

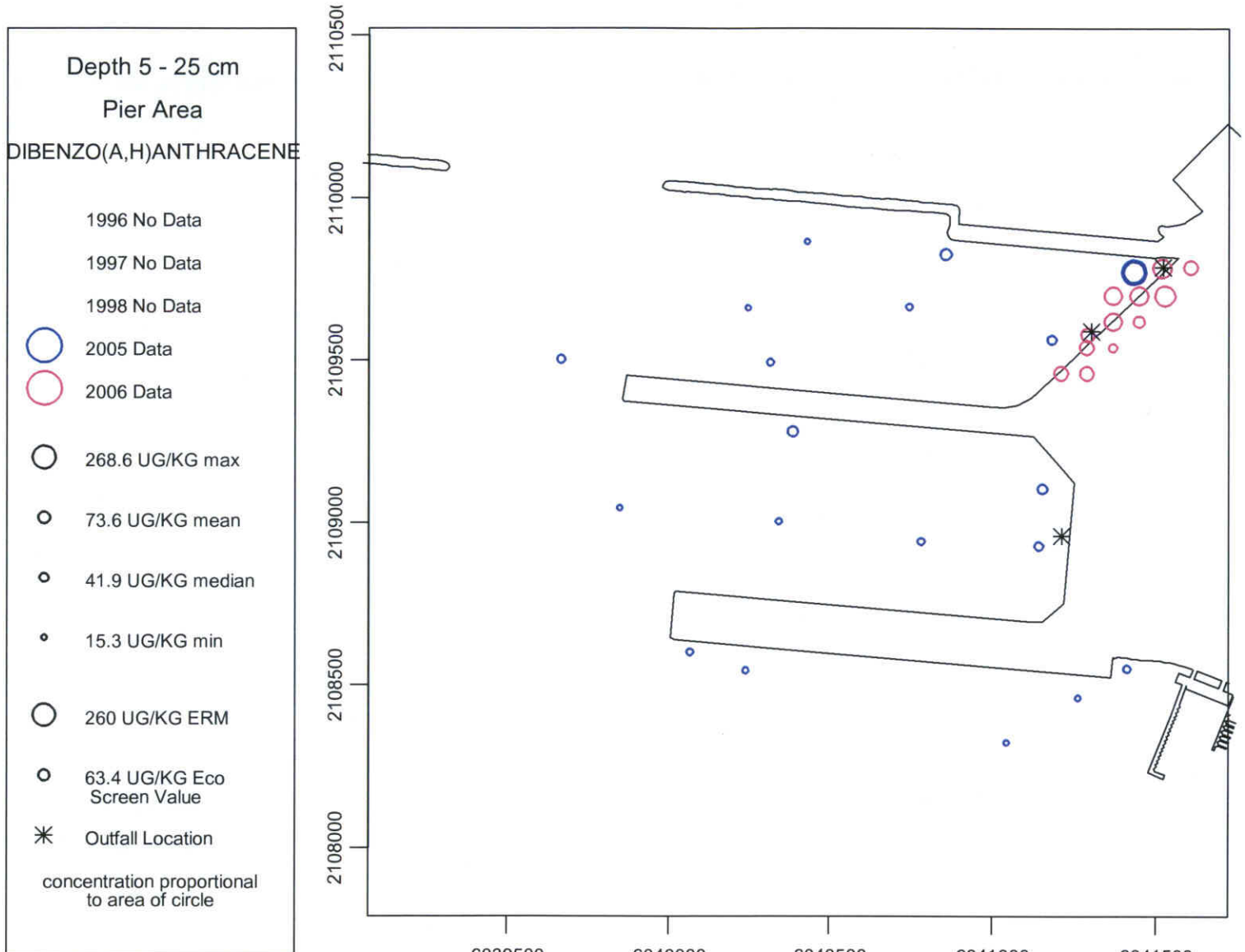

Figure A-398. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

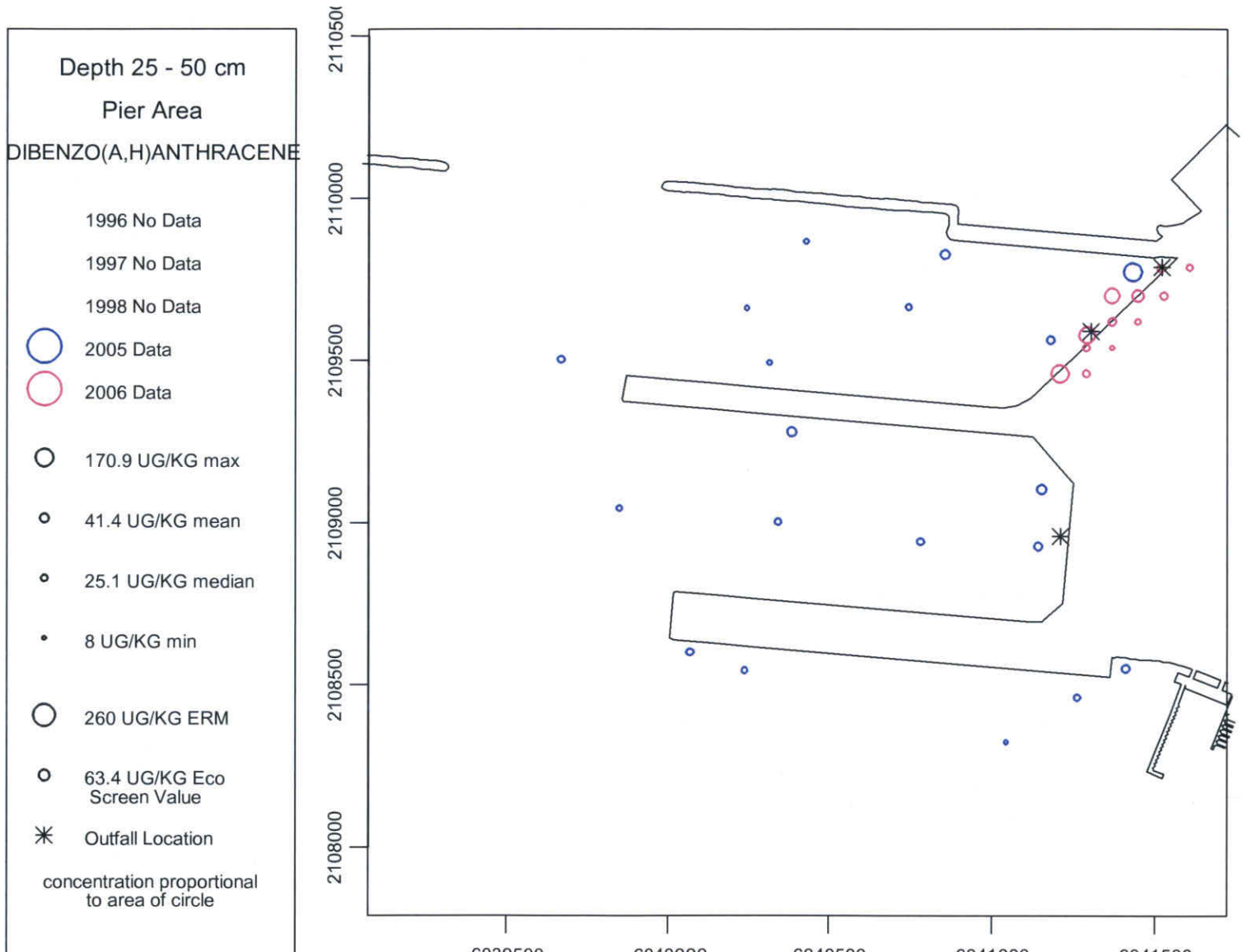

Figure A-399. Bubble Plot of Dibenzo(a,h)anthracene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

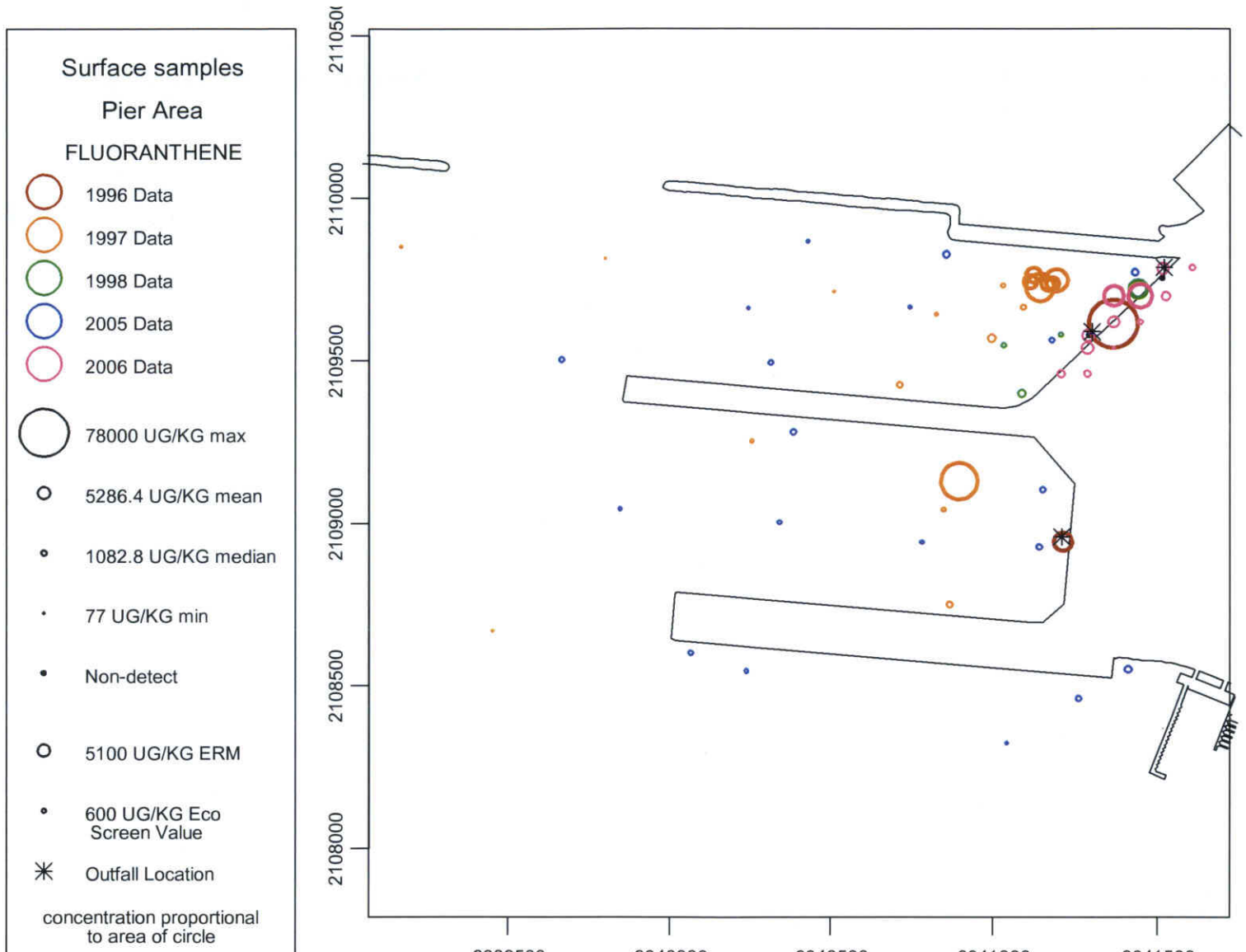

Figure A-400. Bubble Plot of Fluoranthene Concentrations in IR Site 24 Surface Sediment by Year.

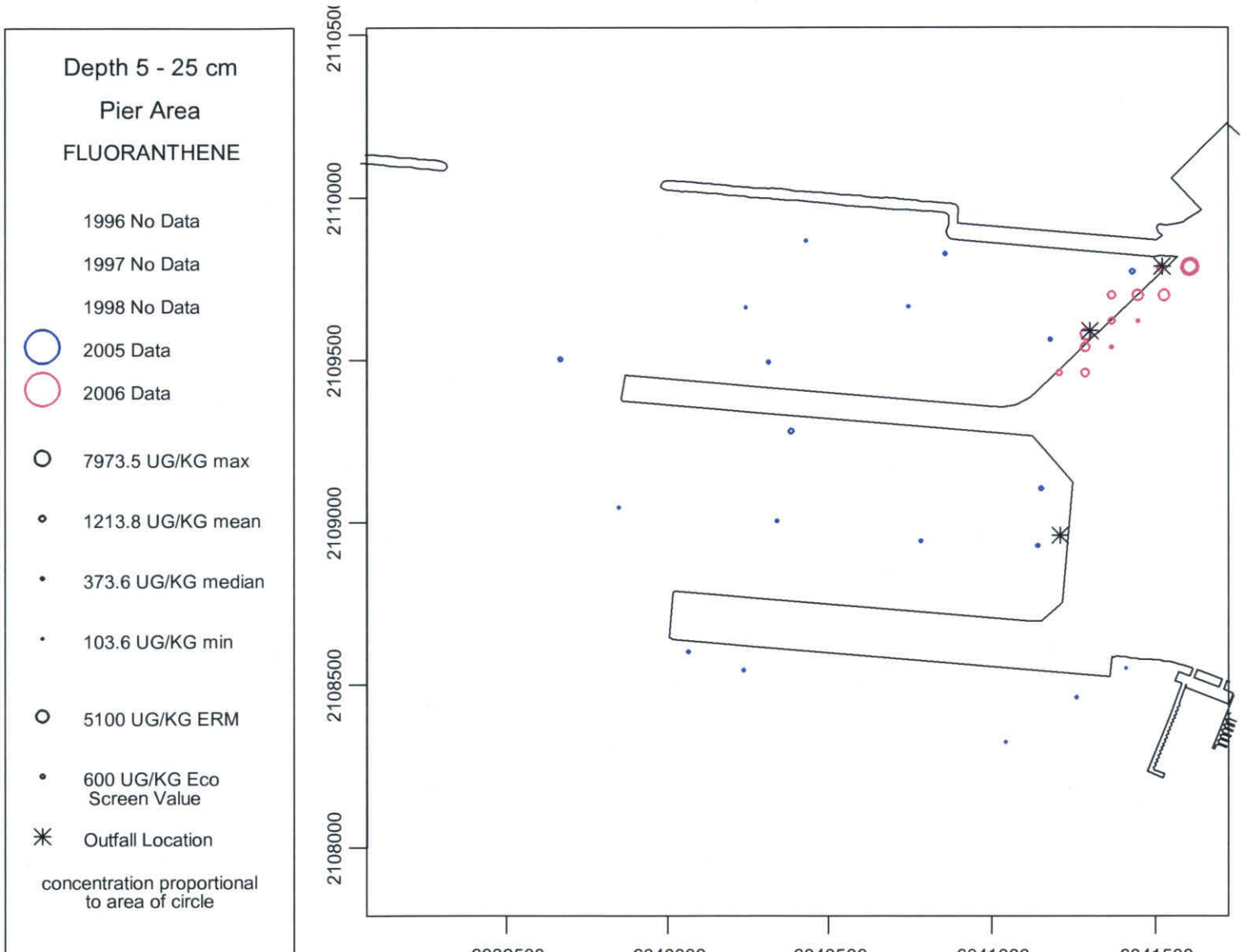

Figure A-401. Bubble Plot of Fluoranthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

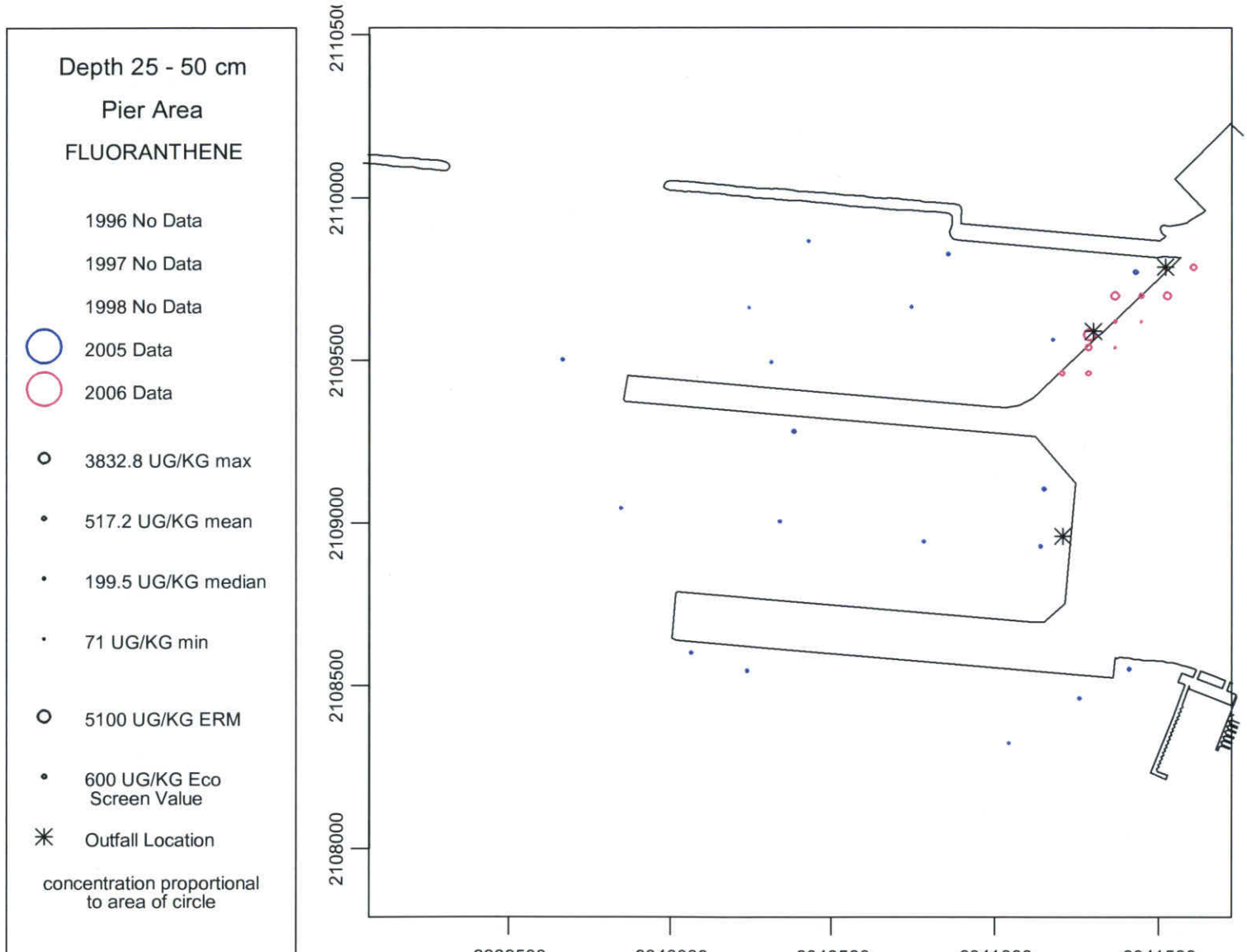

Figure A-402. Bubble Plot of Fluoranthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

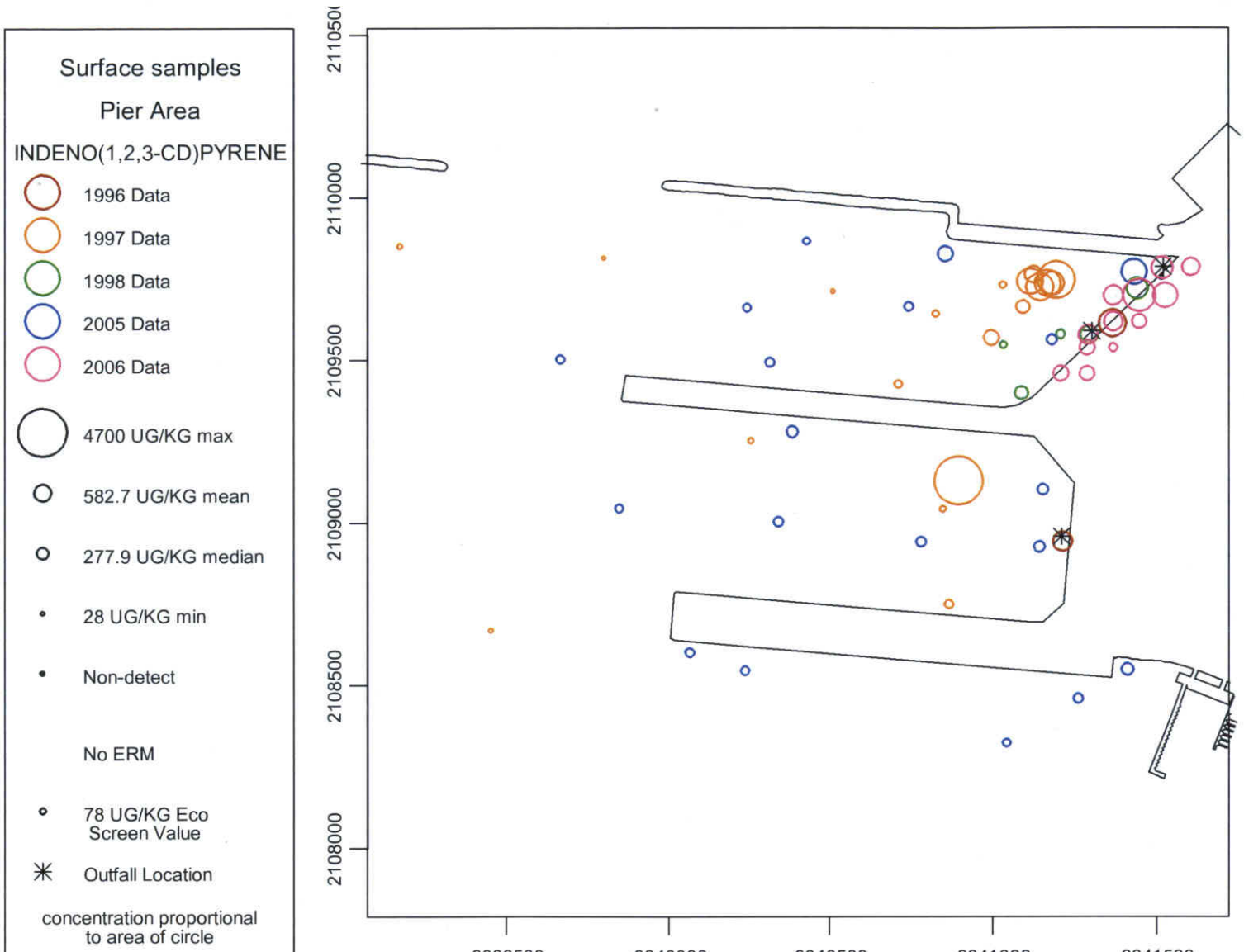

Figure A-403. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 Surface Sediment by Year.

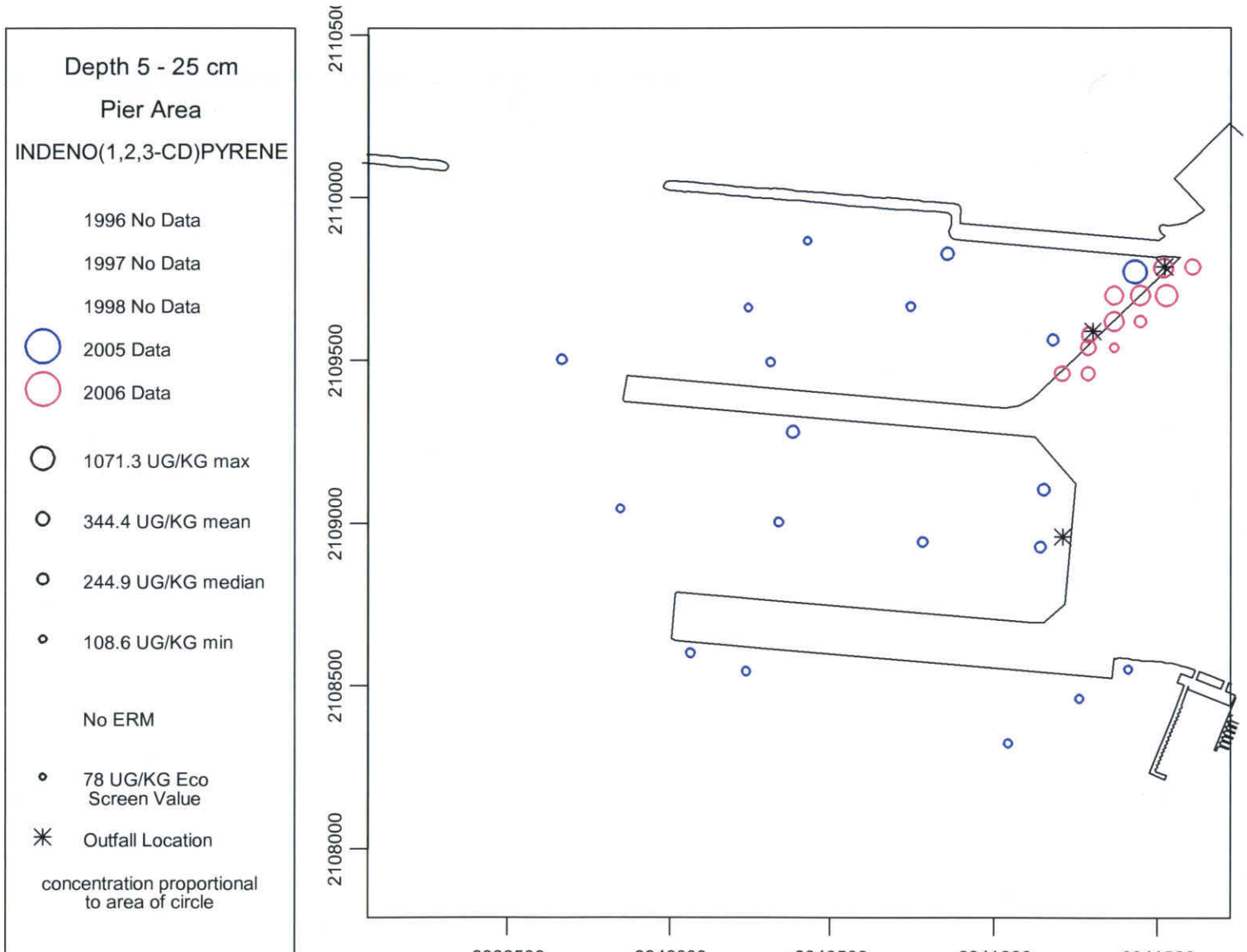

Figure A-404. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

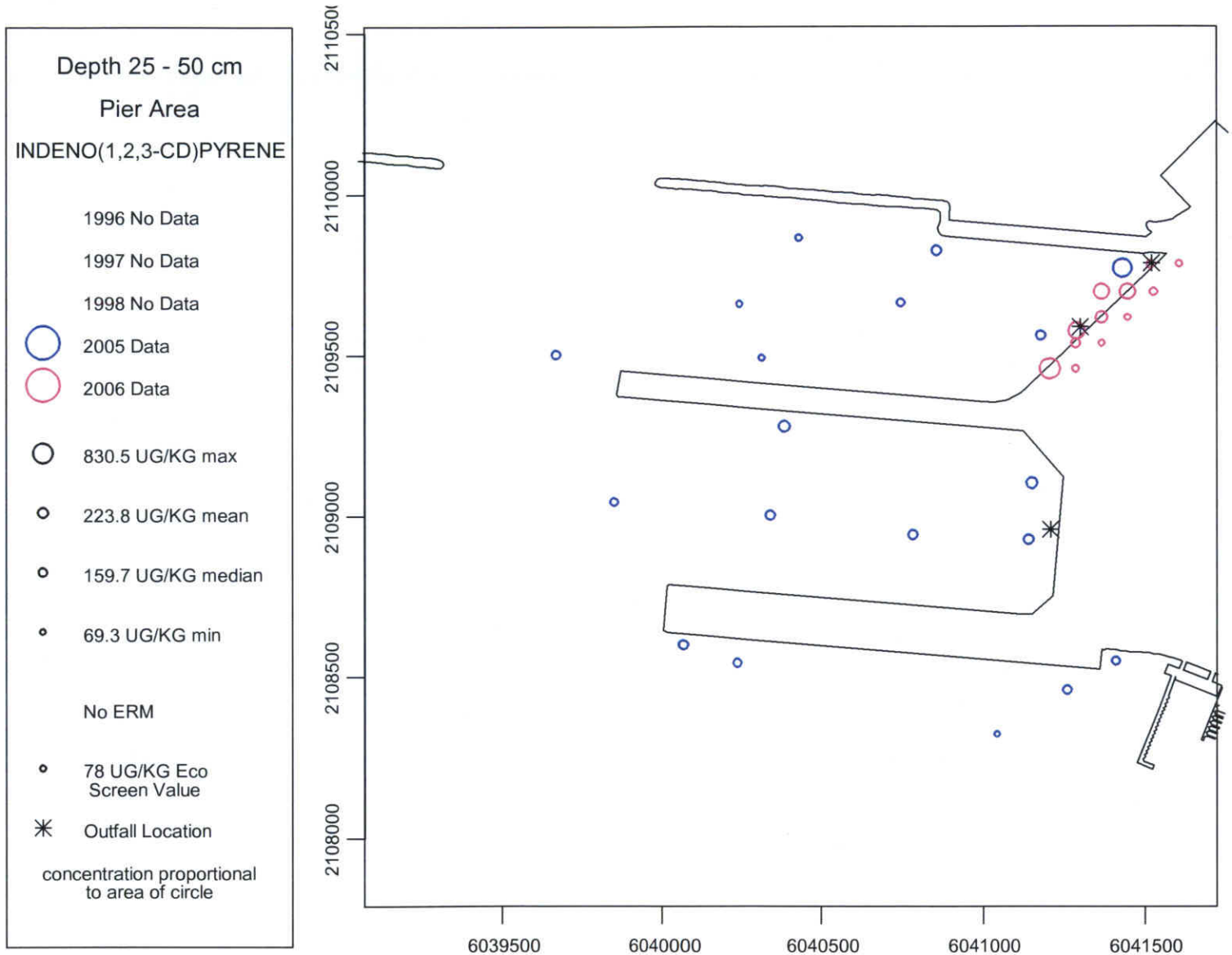

Figure A-405. Bubble Plot of Indeno(1,2,3-cd)pyrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

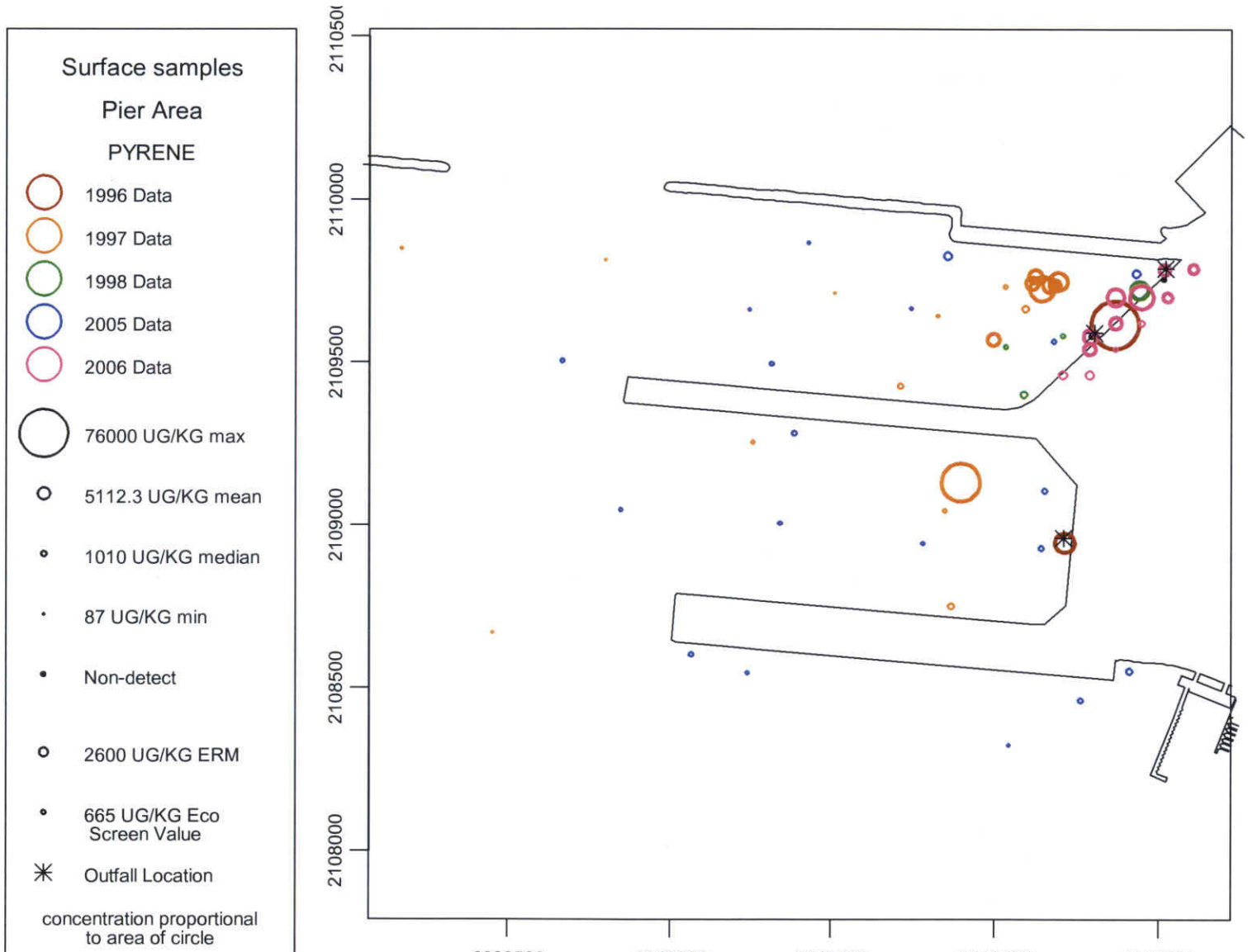

Figure A-406. Bubble Plot of Pyrene Concentrations in IR Site 24 Surface Sediment by Year.

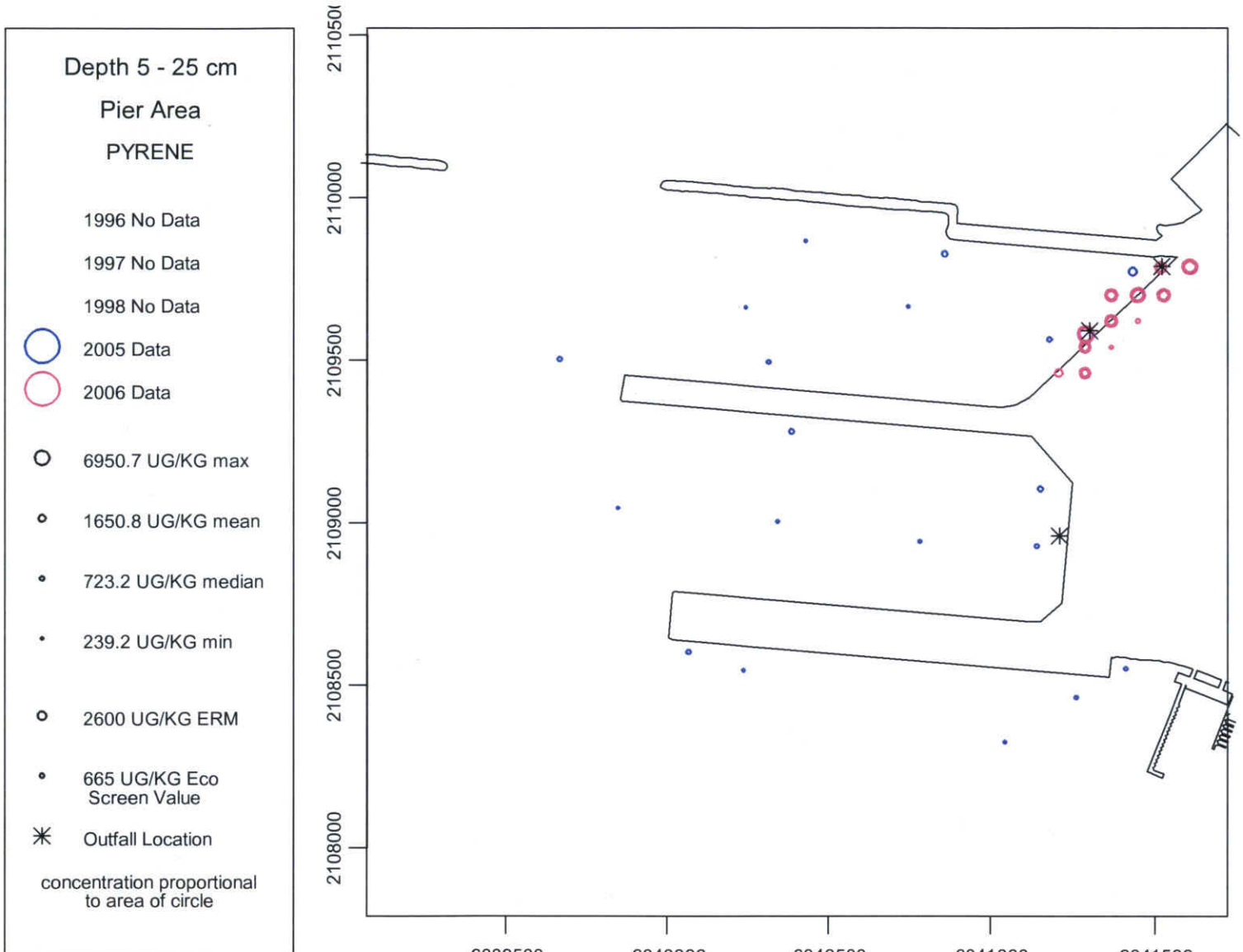

Figure A-407. Bubble Plot of Pyrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

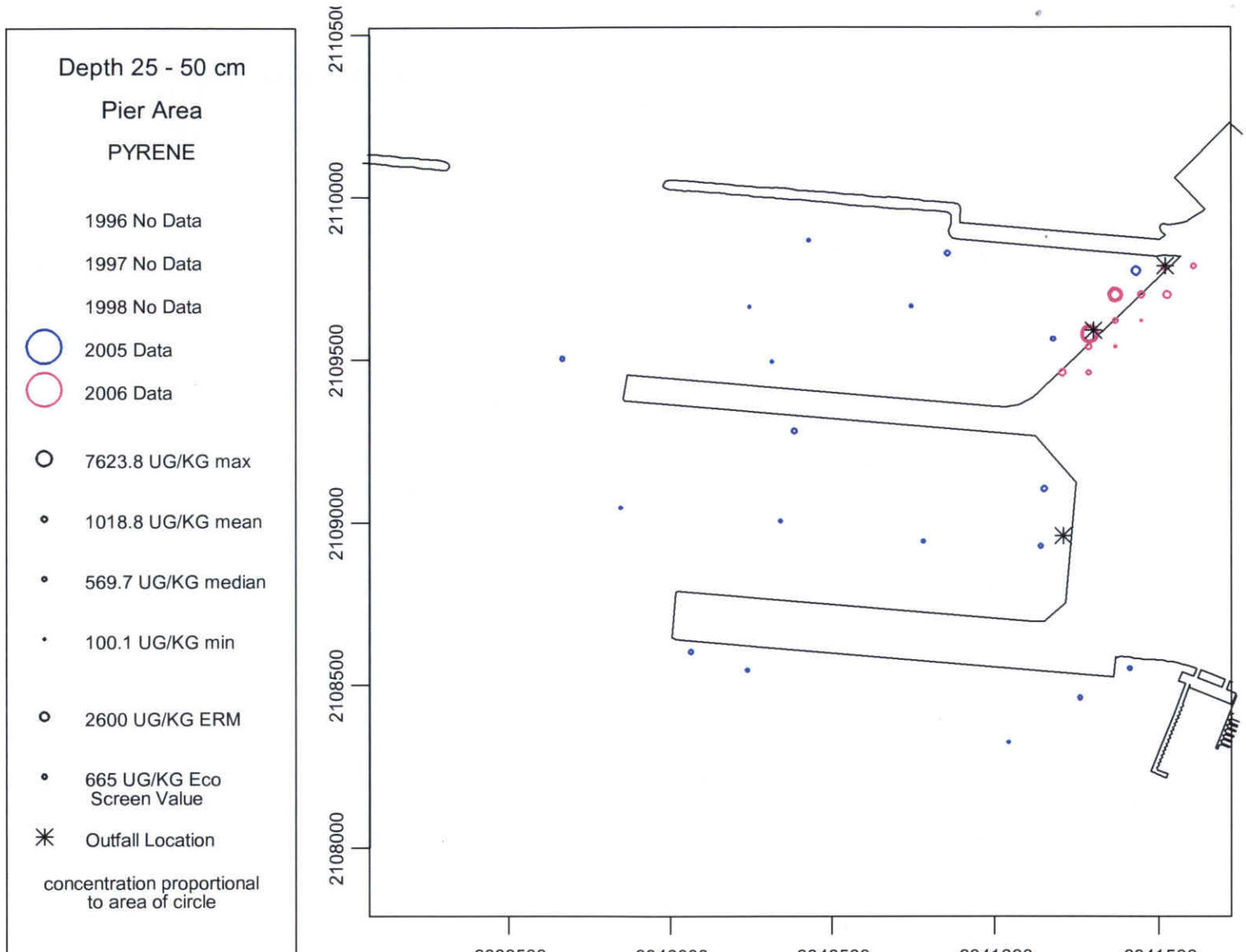

Figure A-408. Bubble Plot of Pyrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

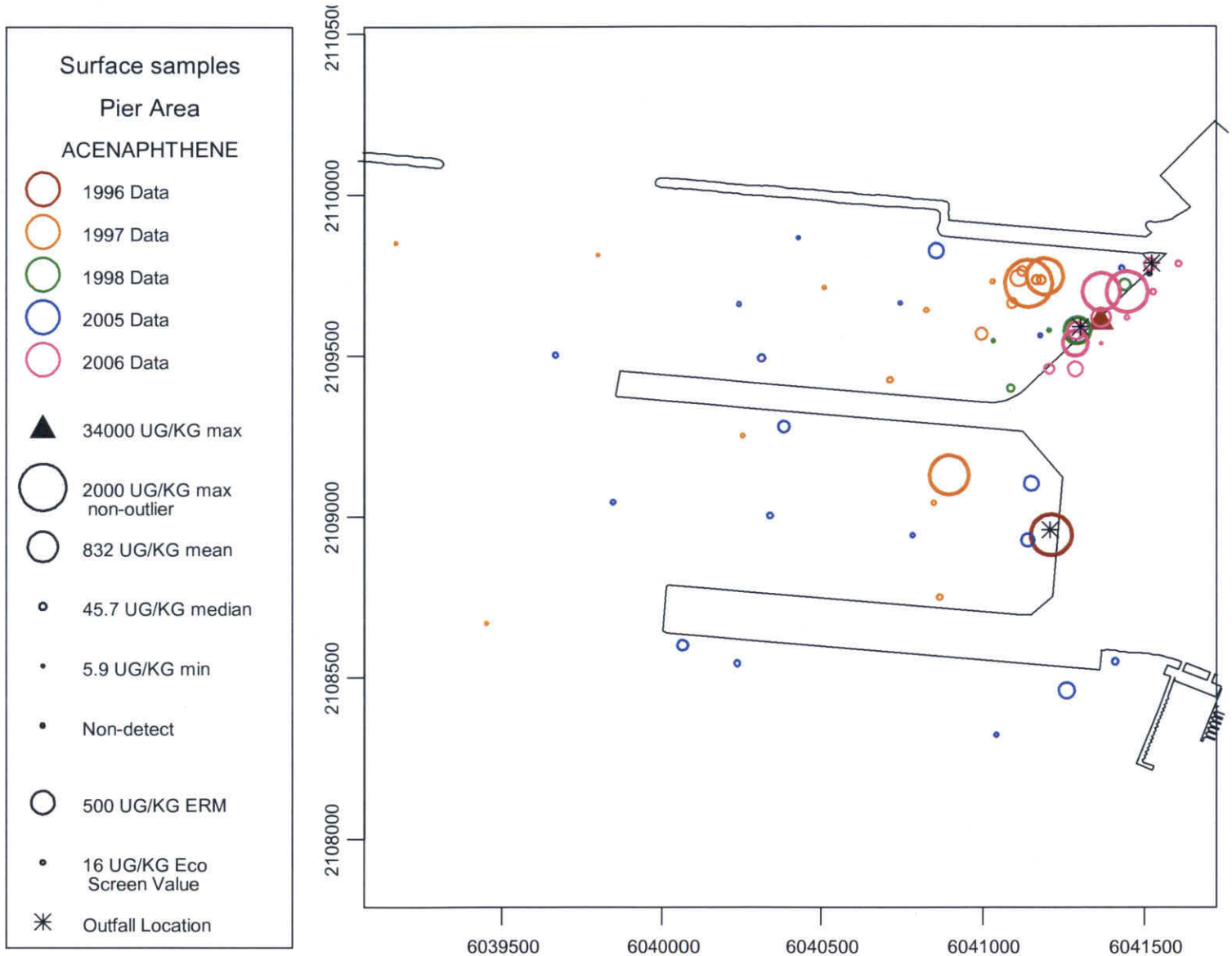

Figure A-409. Bubble Plot of Acenaphthene Concentrations in IR Site 24 Surface Sediment by Year.

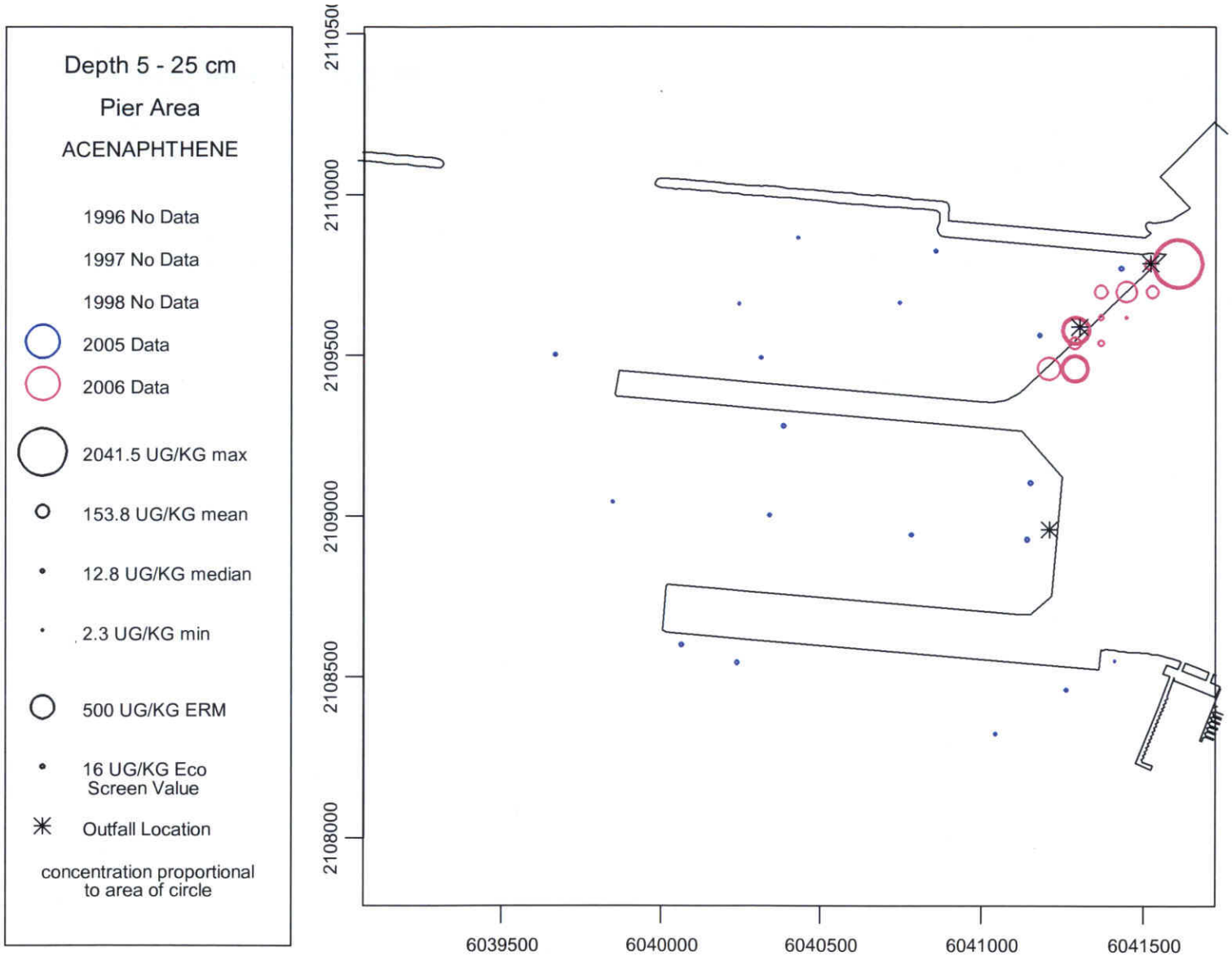

Figure A-410. Bubble Plot of Acenaphthene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

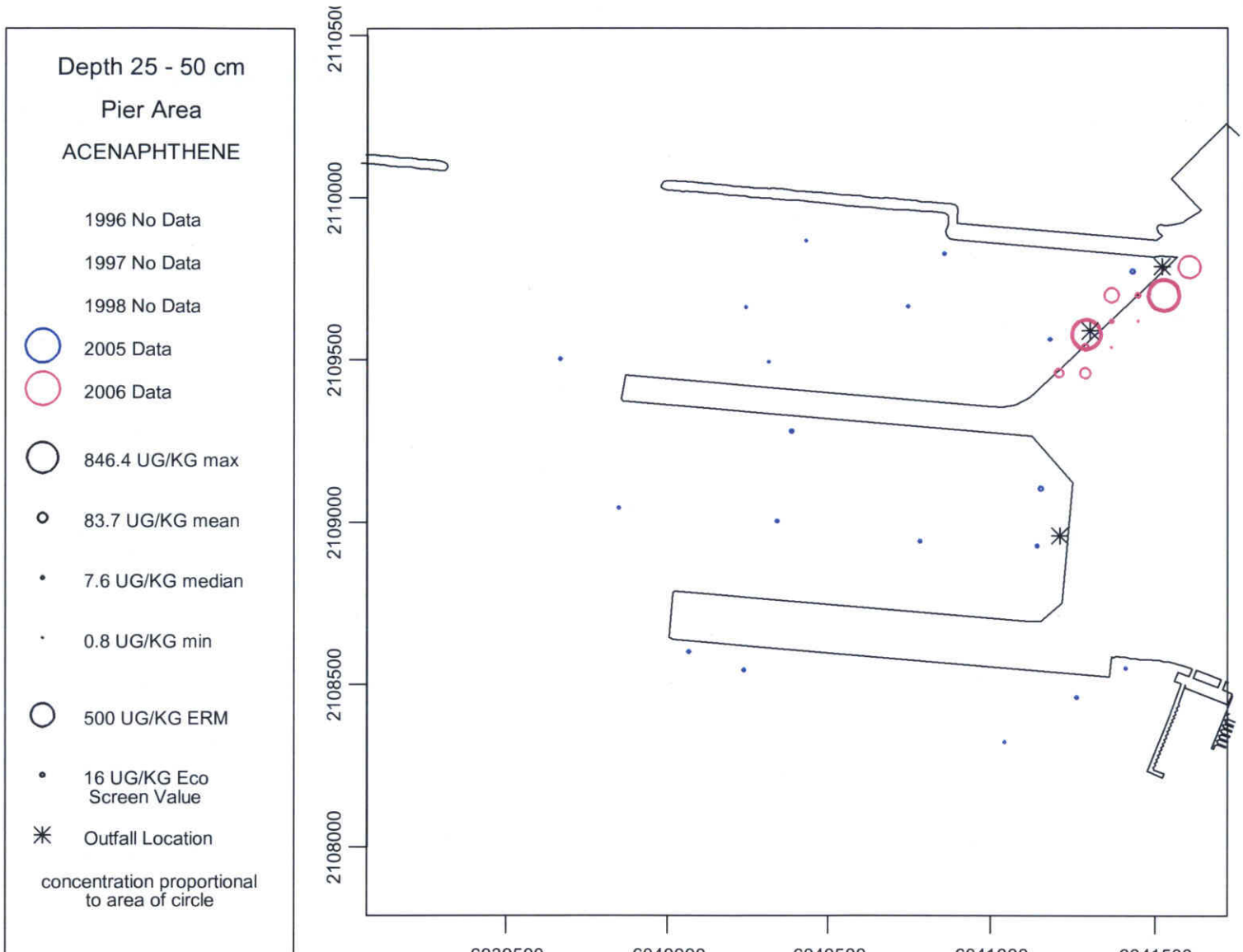

Figure A-411. Bubble Plot of Acenaphthene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

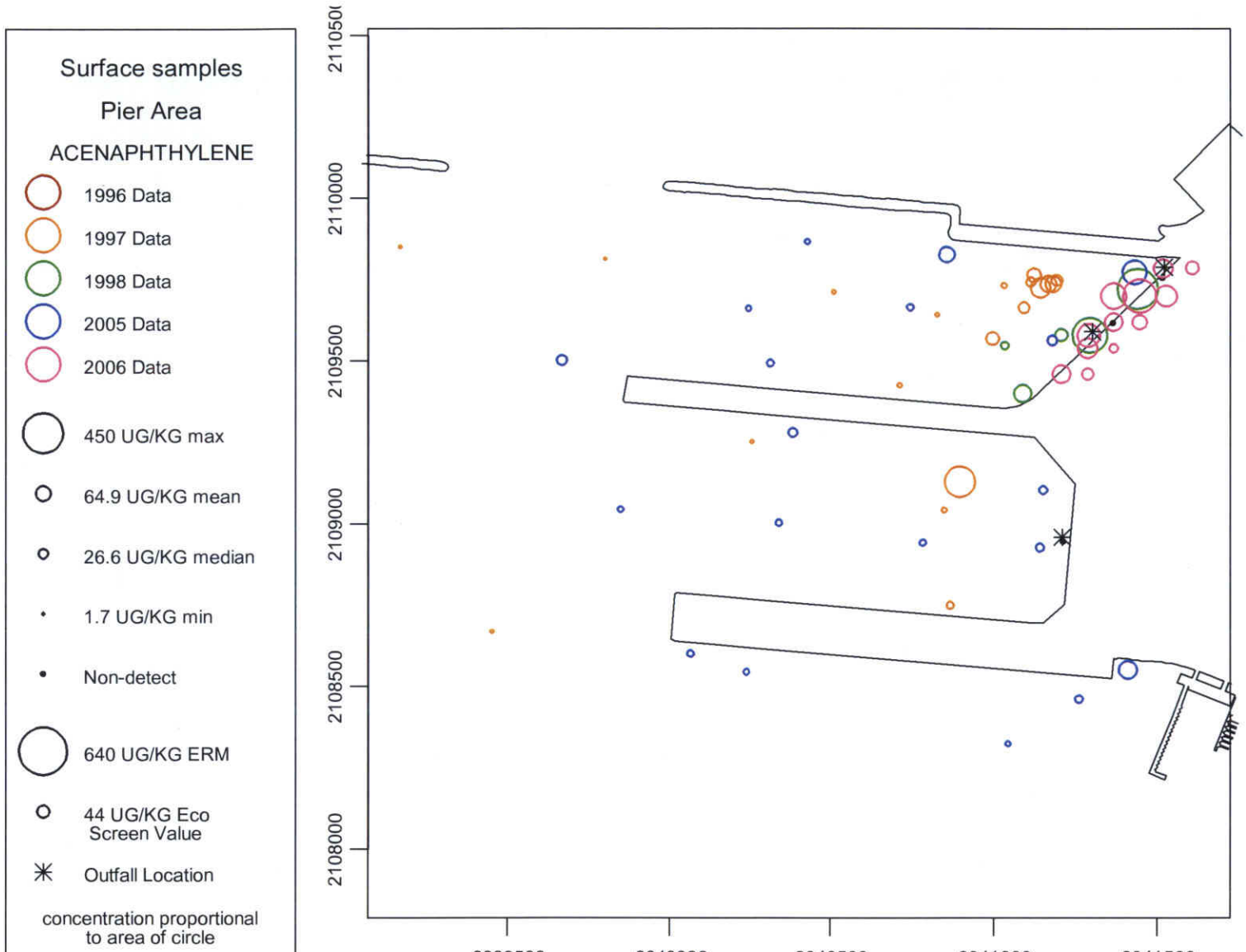

Figure A-412. Bubble Plot of Acenaphthylene Concentrations in IR Site 24 Surface Sediment by Year.

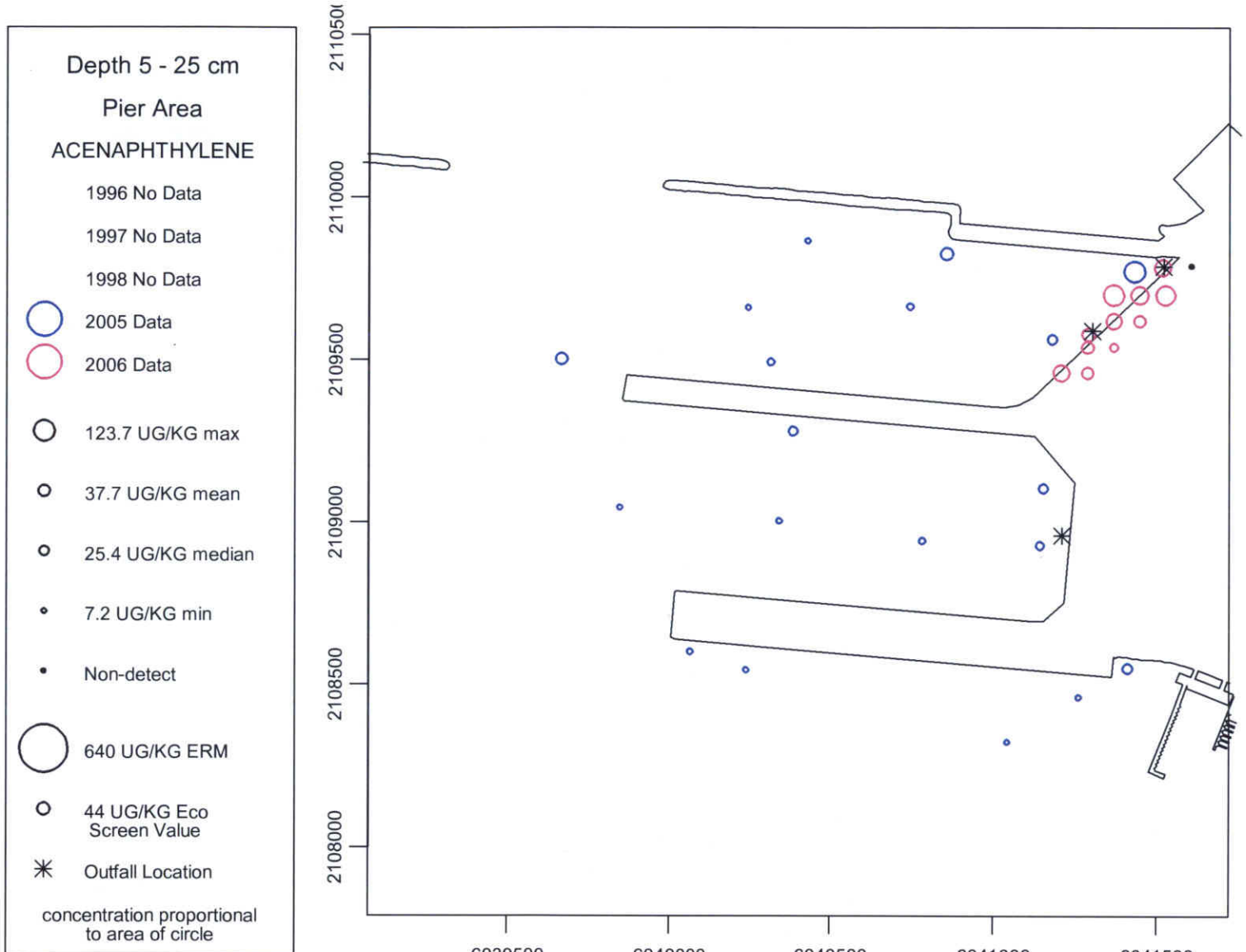

Figure A-413. Bubble Plot of Acenaphthylene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

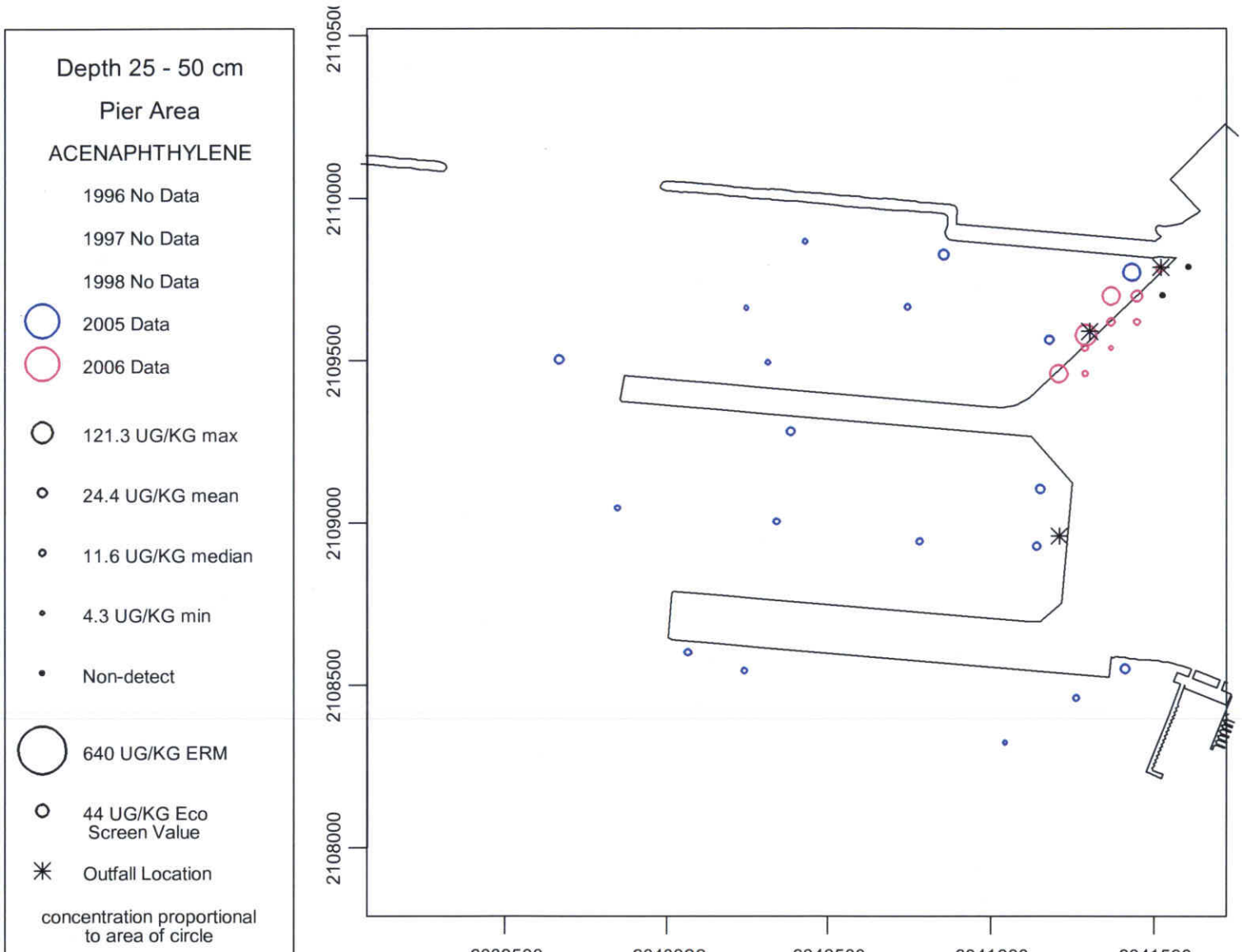

Figure A-414. Bubble Plot of Acenaphthylene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

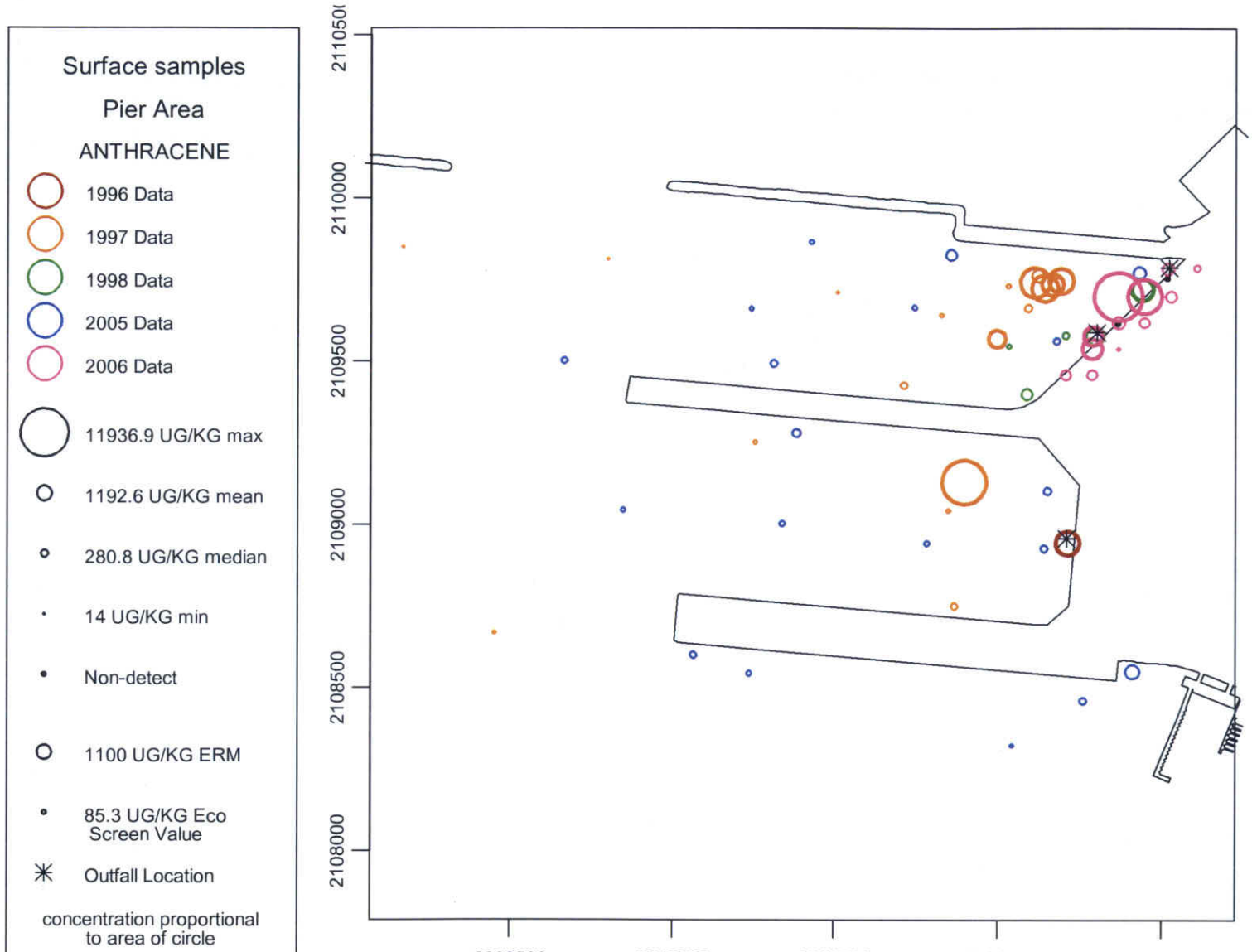

Figure A-415. Bubble Plot of Anthracene Concentrations in IR Site 24 Surface Sediment by Year.

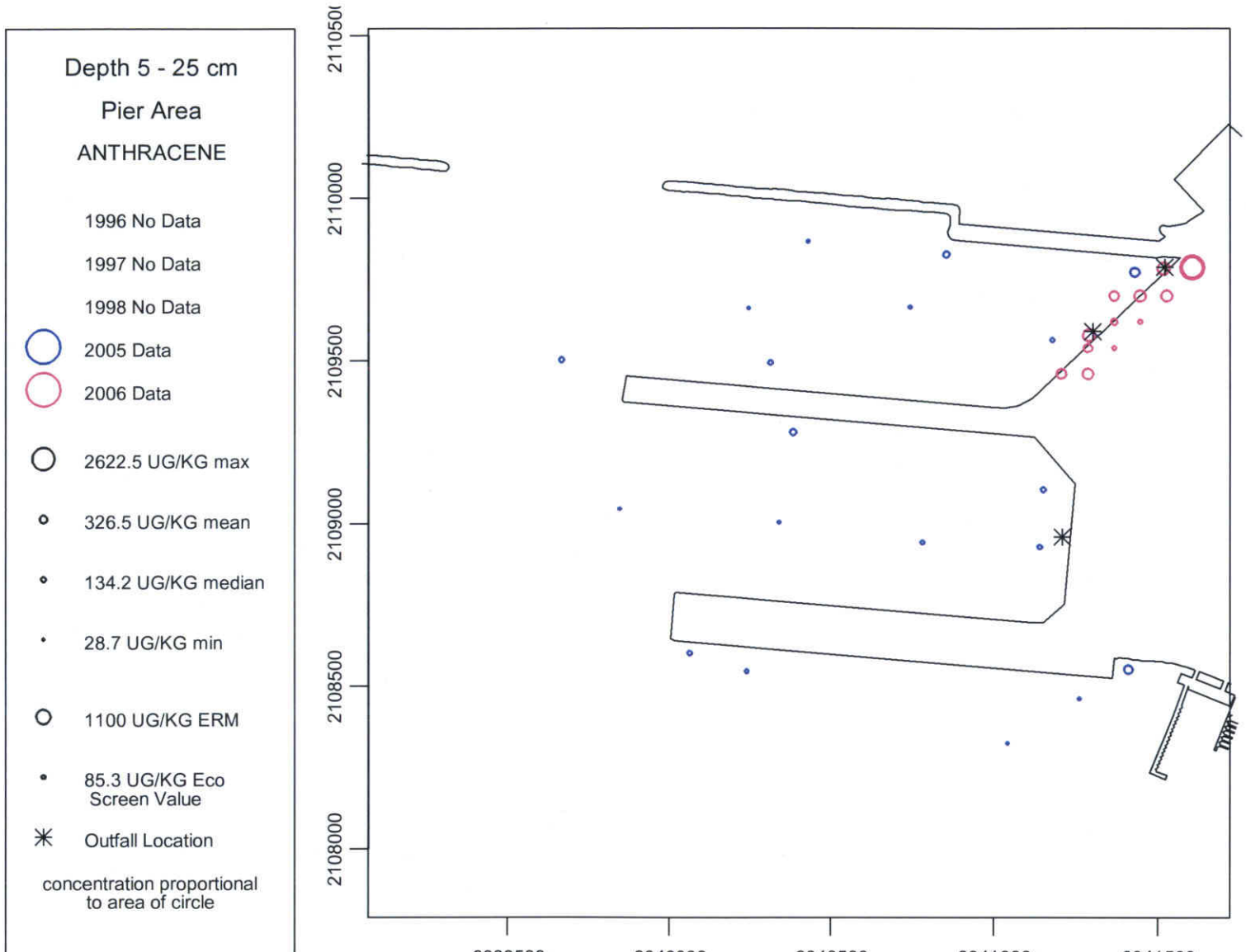

Figure A-416. Bubble Plot of Anthracene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

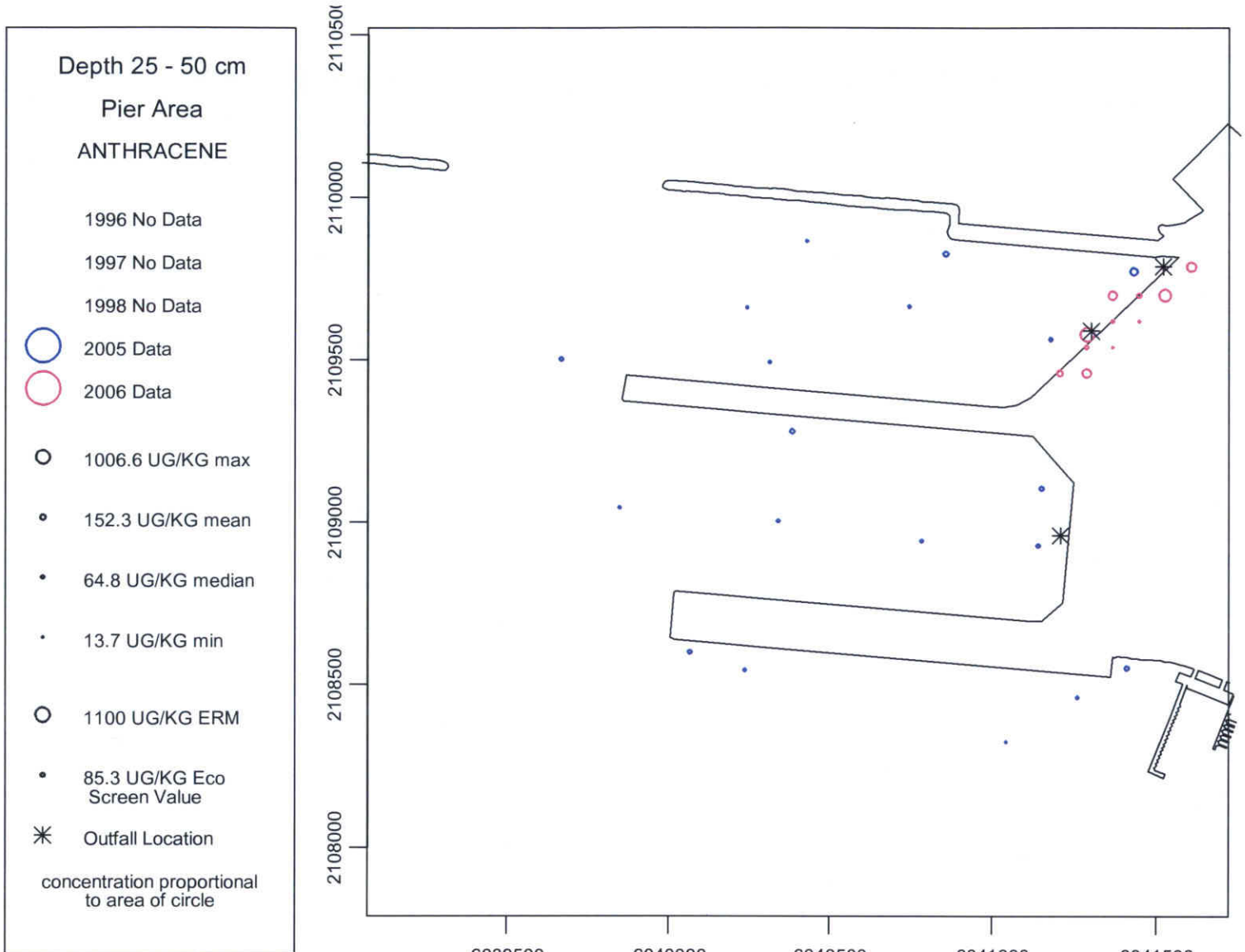

Figure A-417. Bubble Plot of Anthracene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

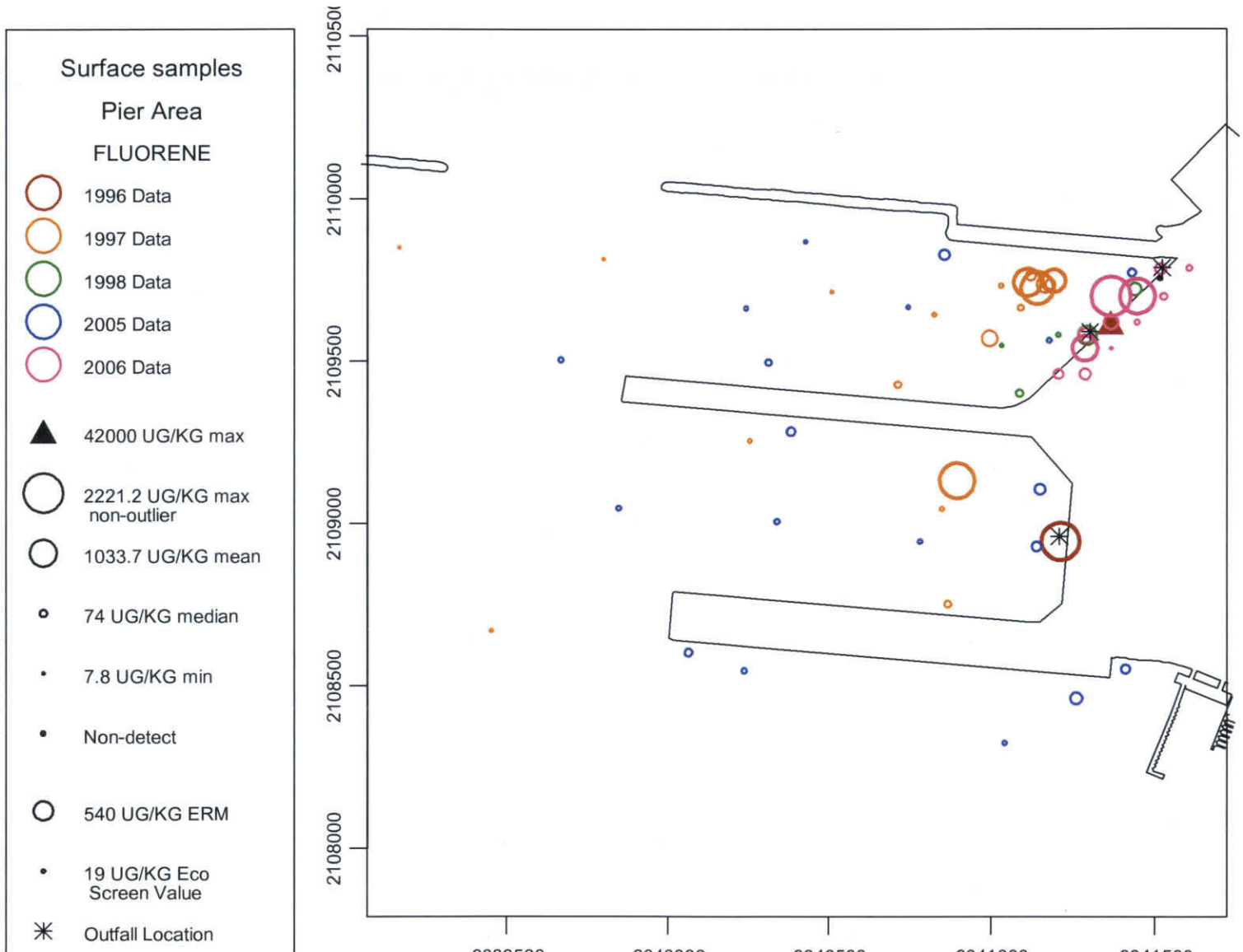

Figure A-418. Bubble Plot of Fluorene Concentrations in IR Site 24 Surface Sediment by Year.

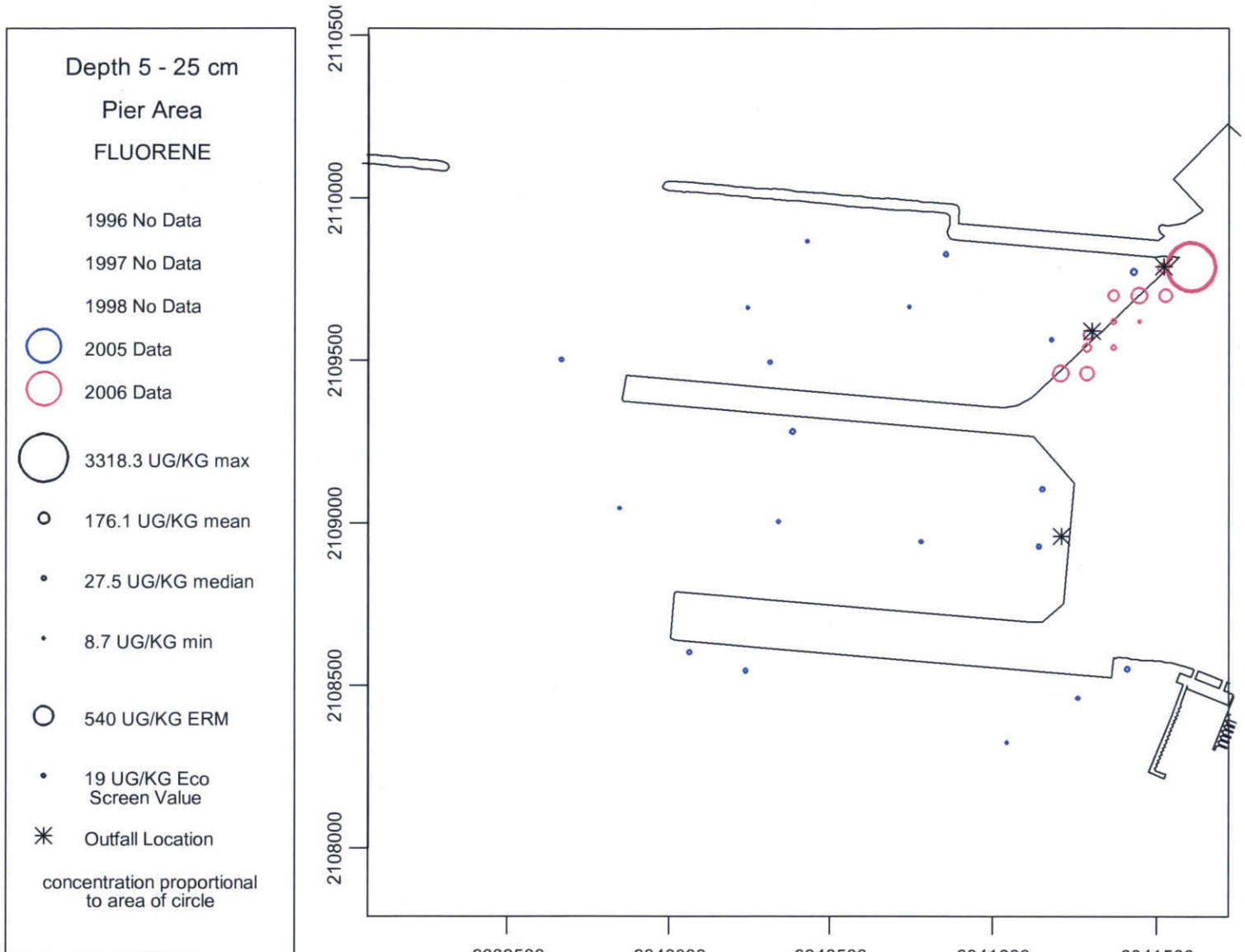

Figure A-419. Bubble Plot of Fluorene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

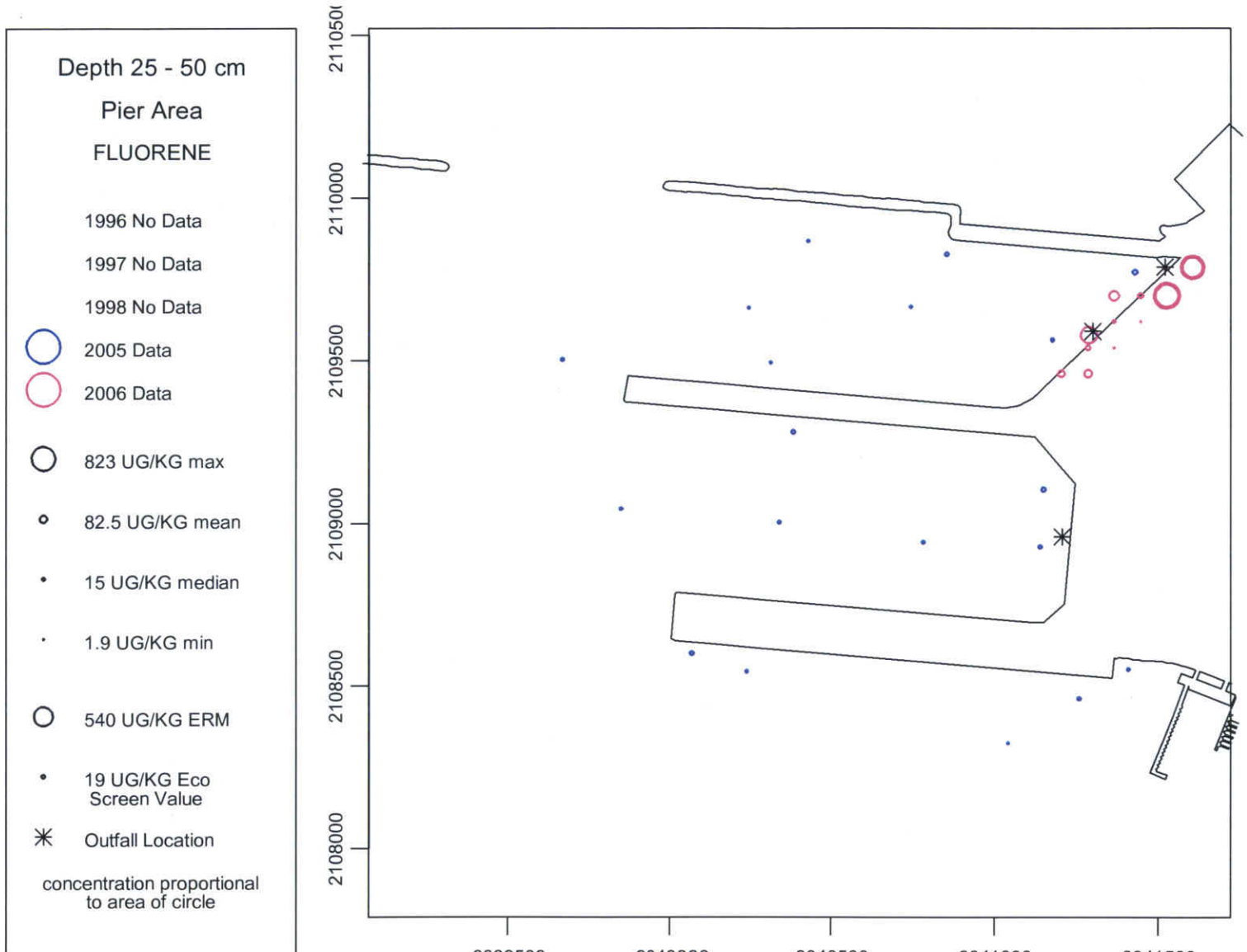

Figure A-420. Bubble Plot of Fluorene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

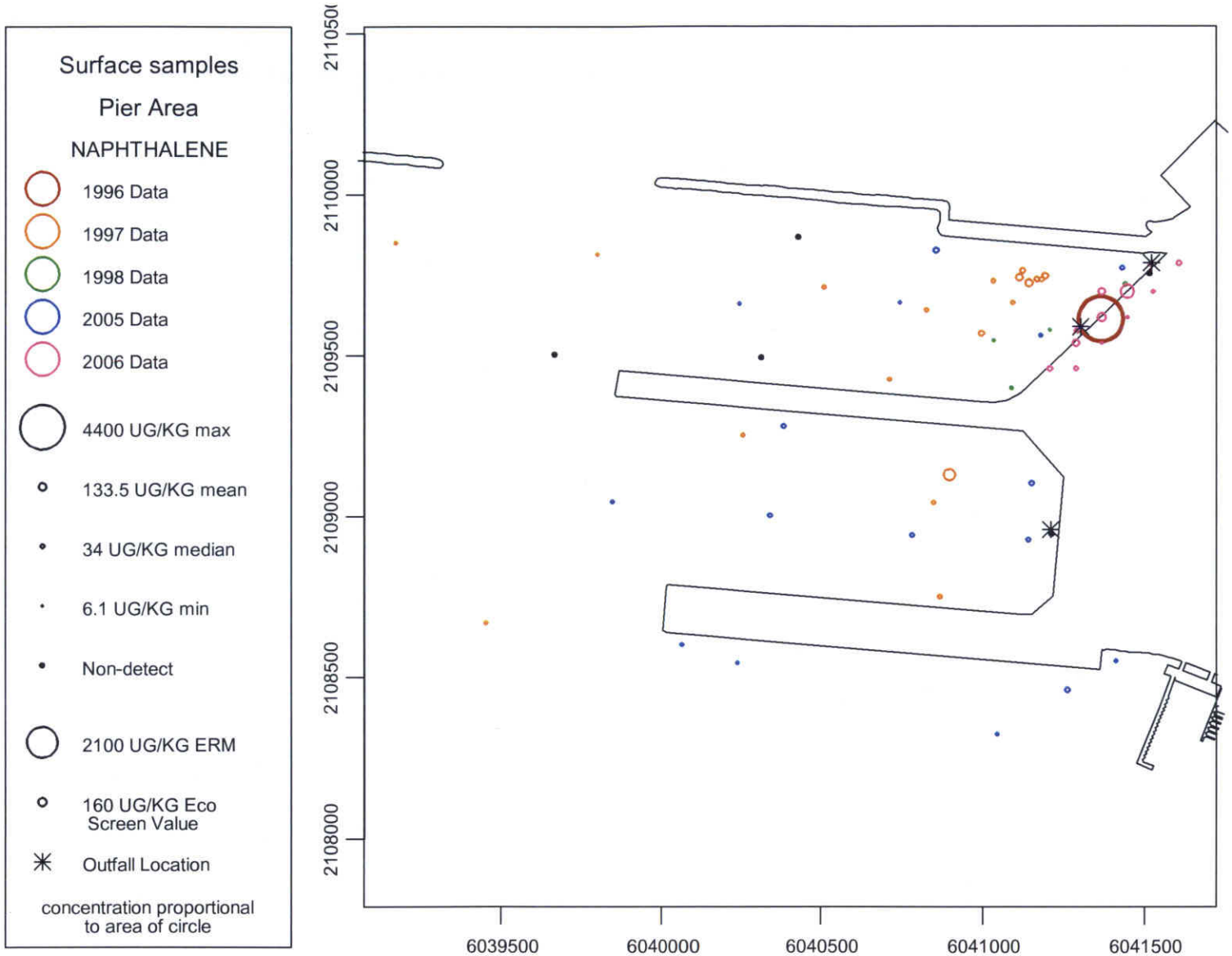

Figure A-421. Bubble Plot of Naphthalene Concentrations in IR Site 24 Surface Sediment by Year.

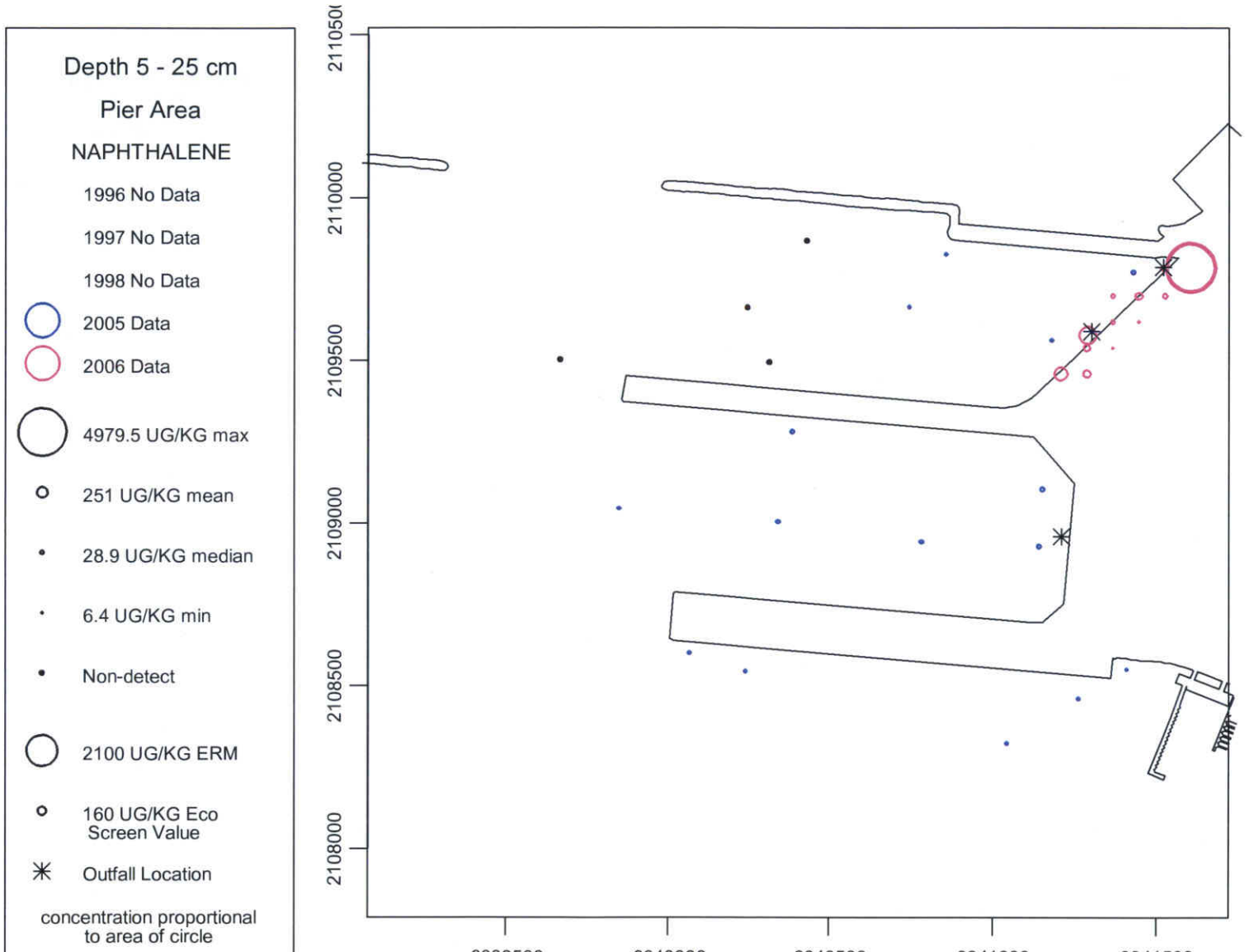

Figure A-422. Bubble Plot of Naphthalene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

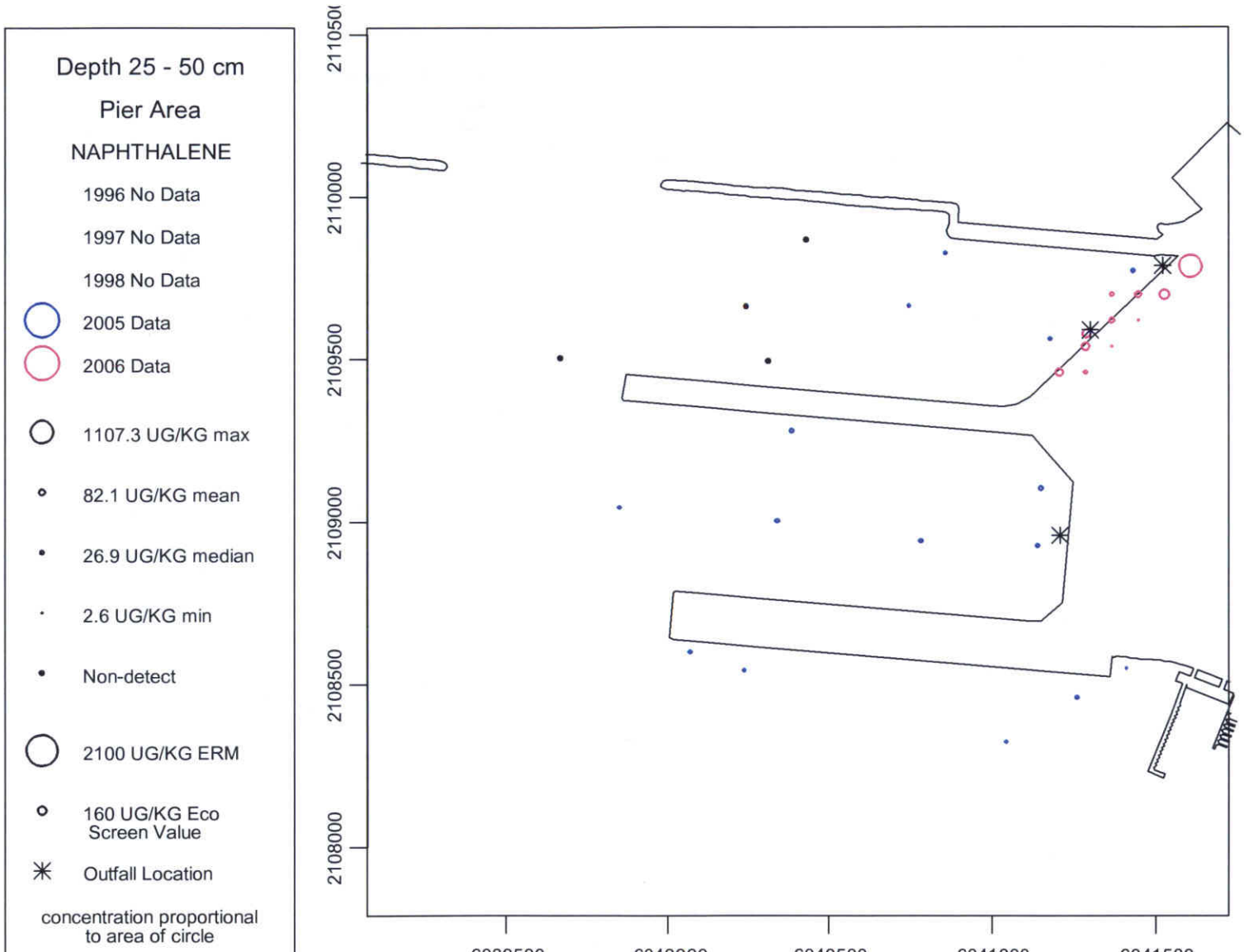

Figure A-423. Bubble Plot of Naphthalene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

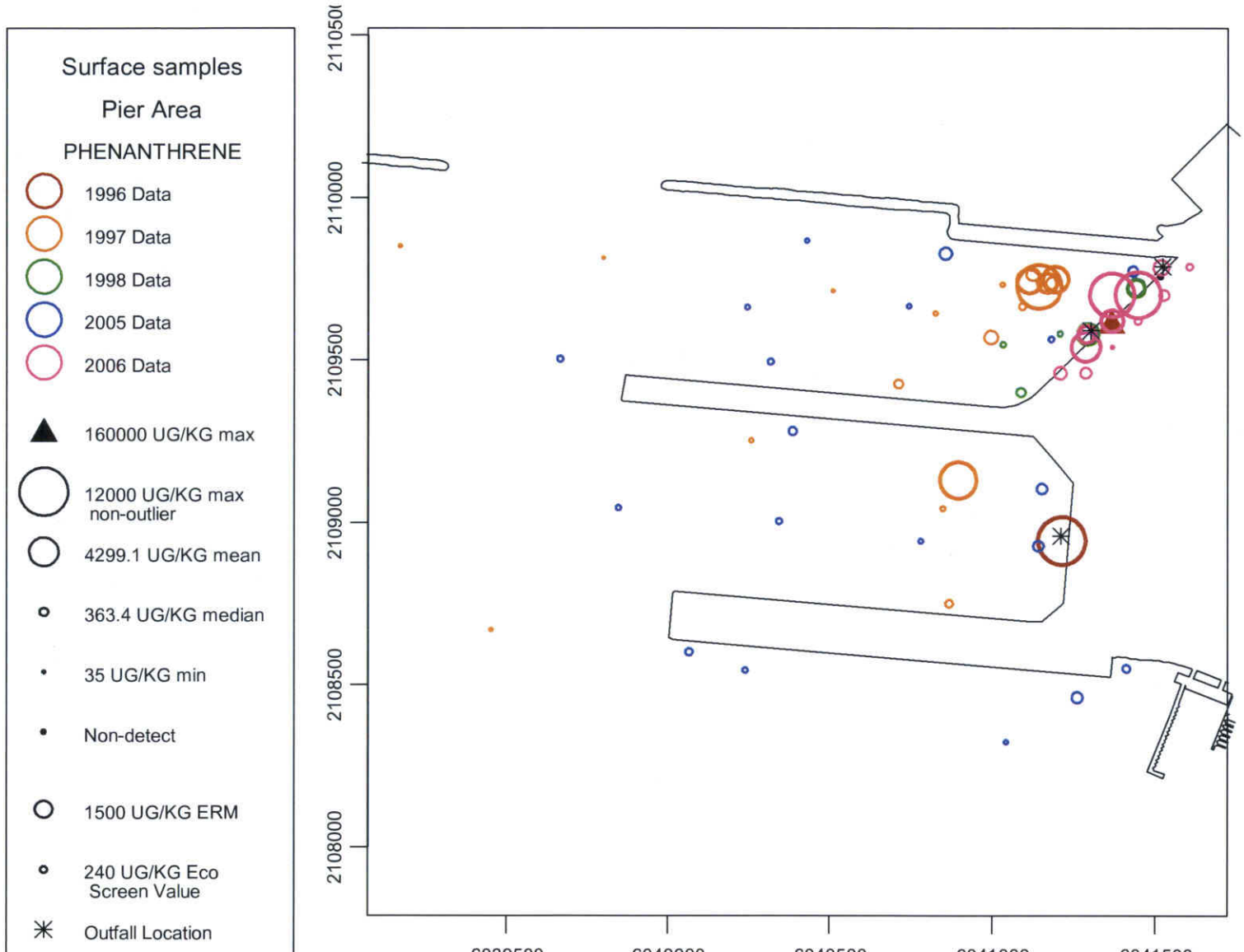

Figure A-424. Bubble Plot of Phenanthrene Concentrations in IR Site 24 Surface Sediment by Year.

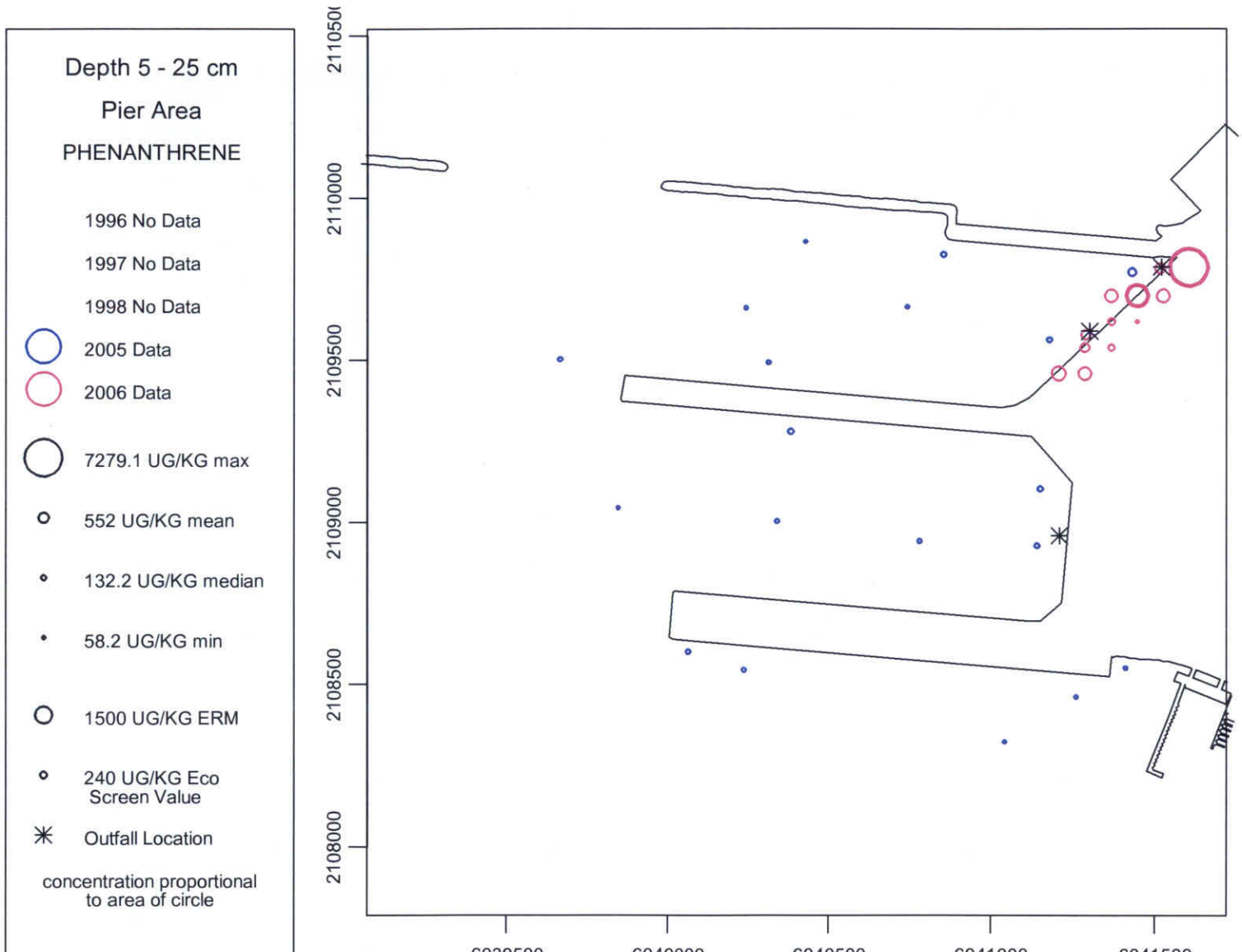

Figure A-425. Bubble Plot of Phenanthrene Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

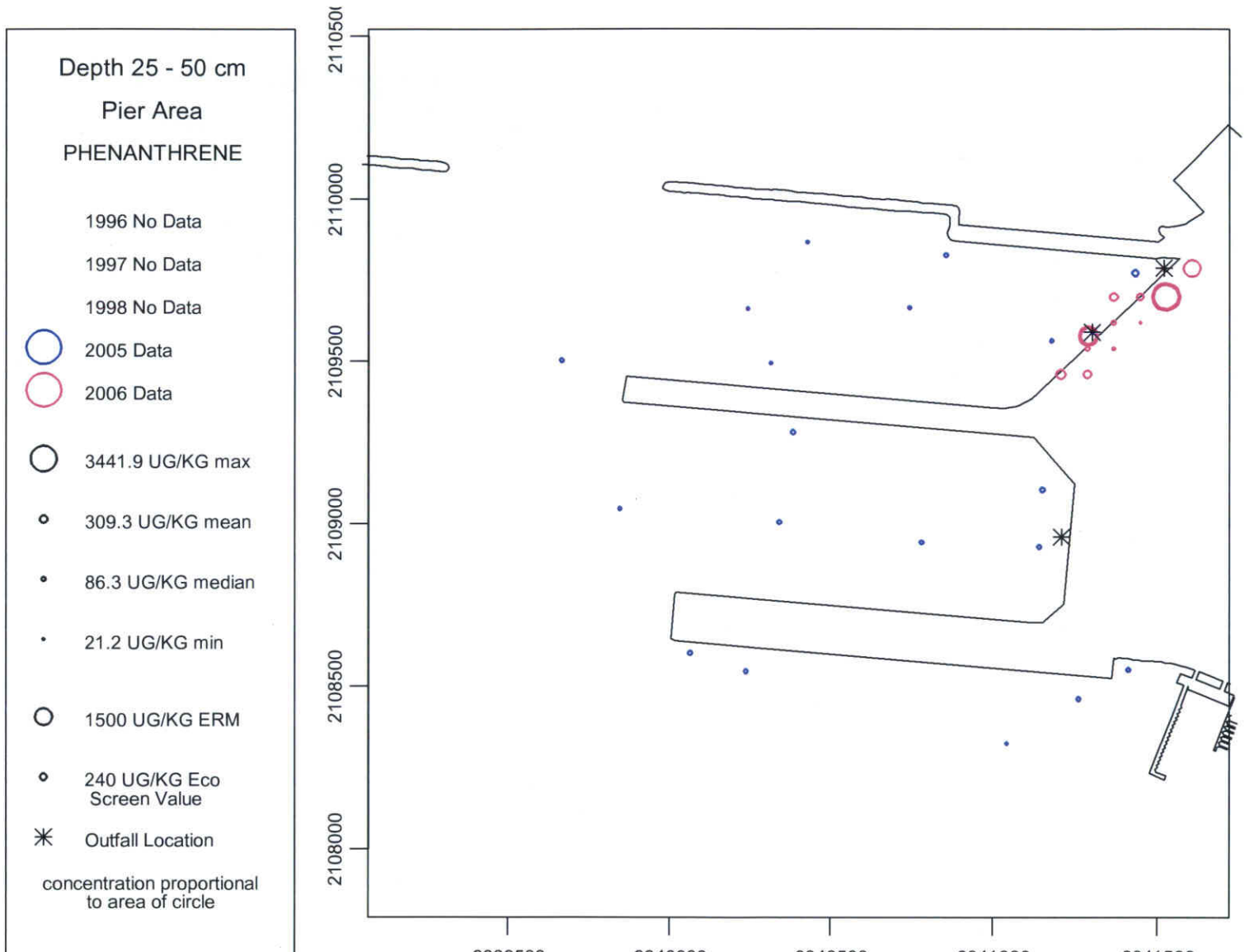

Figure A-426. Bubble Plot of Phenanthrene Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

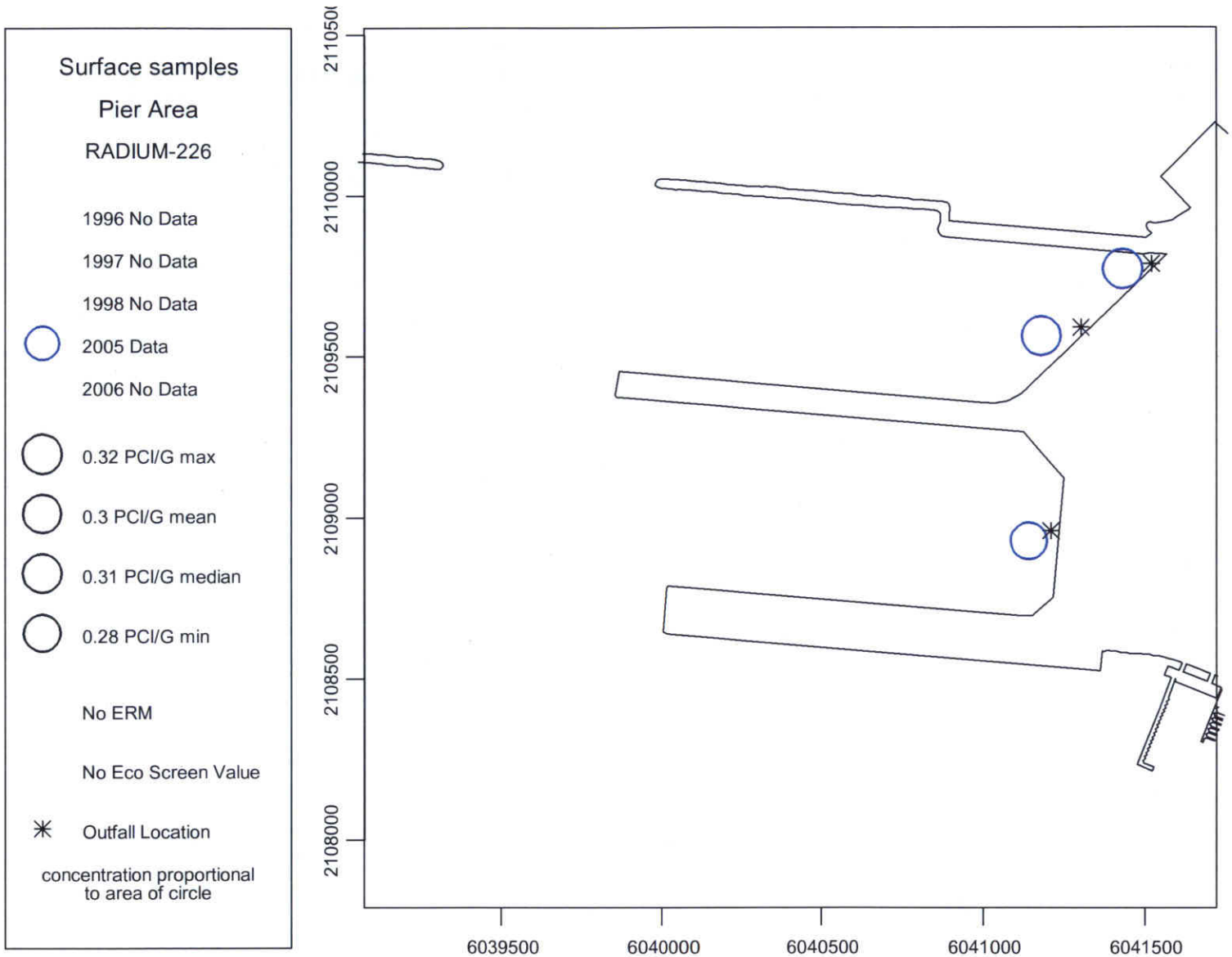

Figure A-427. Bubble Plot of Radium-226 Concentrations in IR Site 24 Surface Sediment by Year.

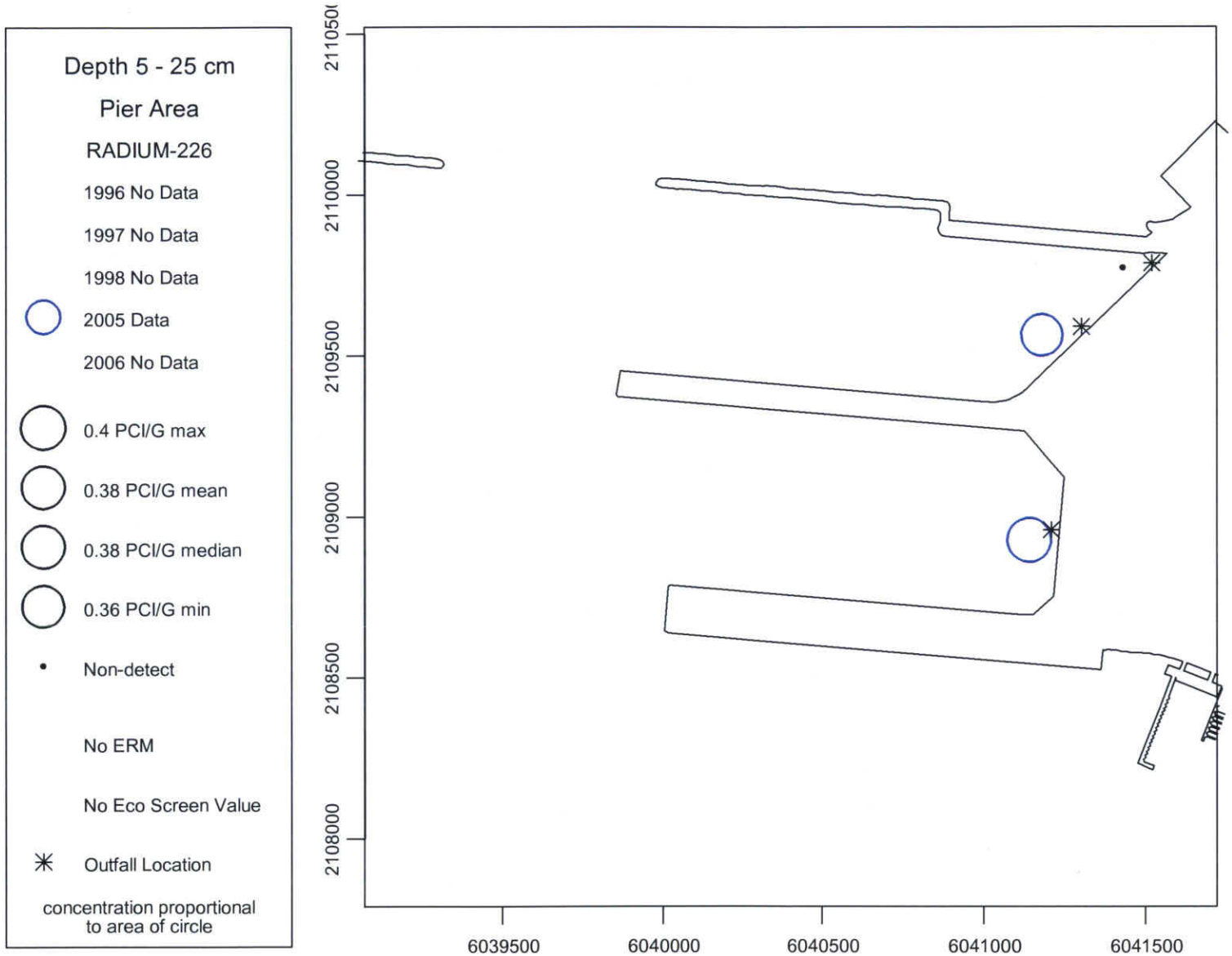

Figure A-428. Bubble Plot of Radium-226 Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

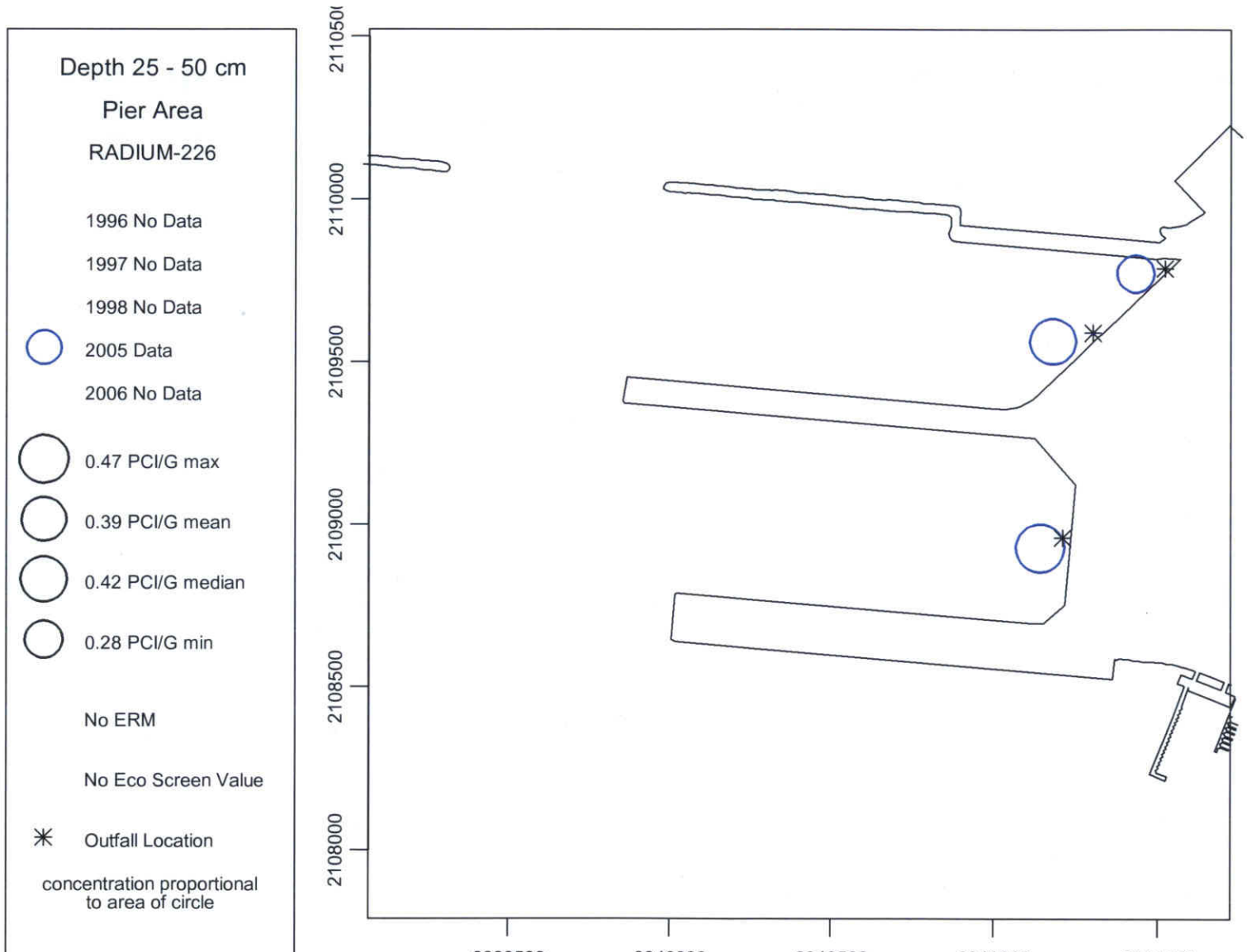

Figure A-429. Bubble Plot of Radium-226 Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

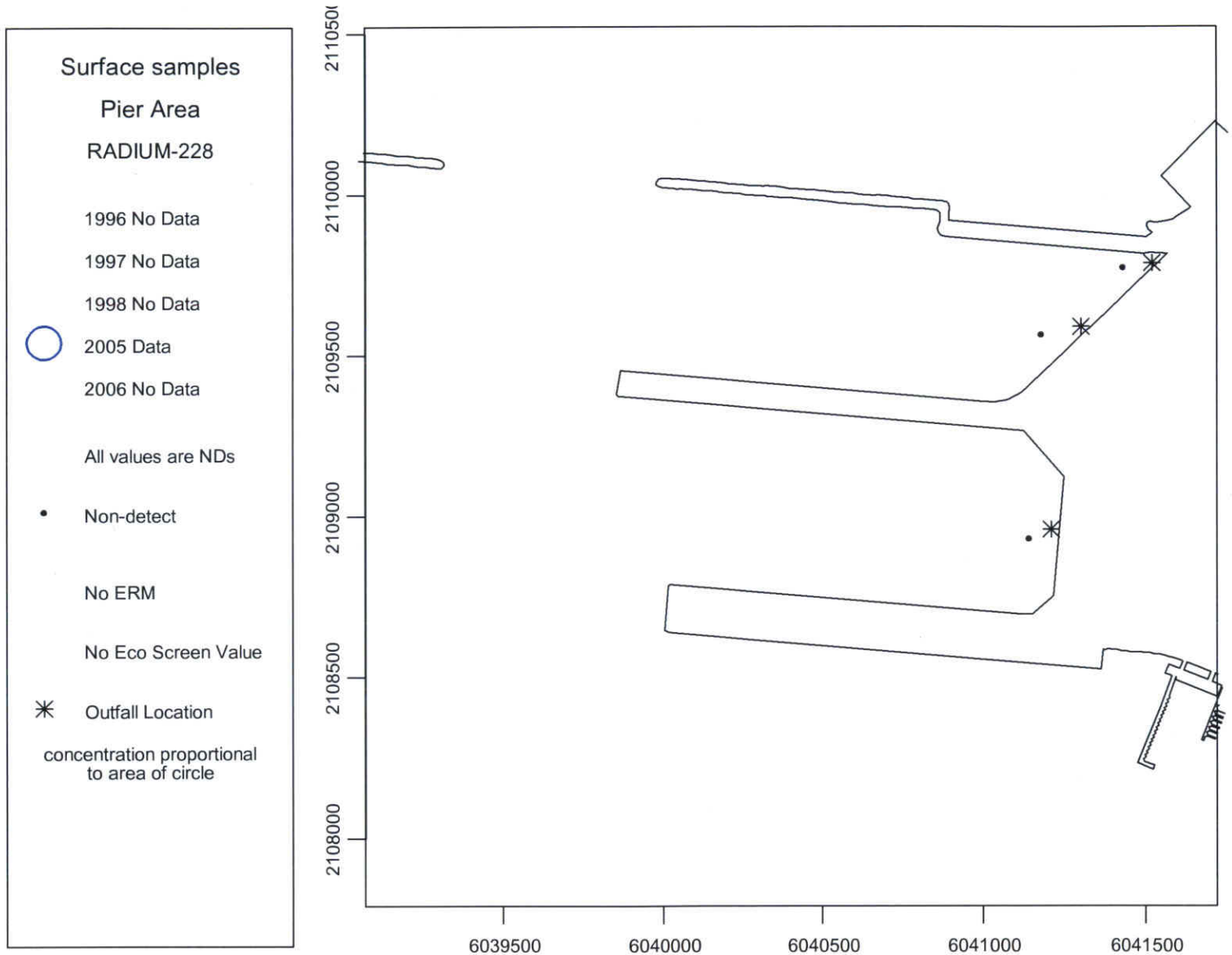

Figure A-430. Bubble Plot of Radium-228 Concentrations in IR Site 24 Surface Sediment by Year.

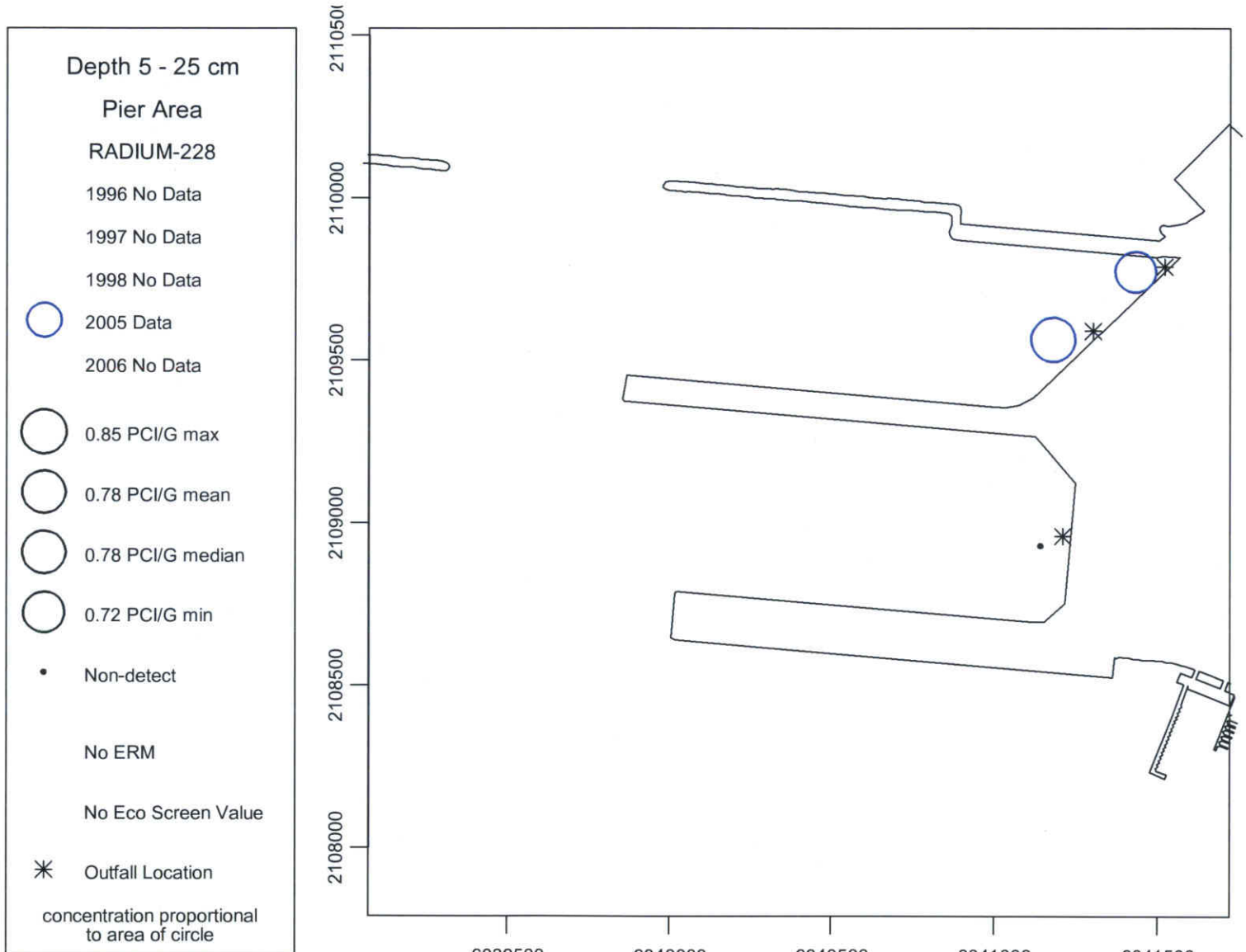

Figure A-431. Bubble Plot of Radium-228 Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

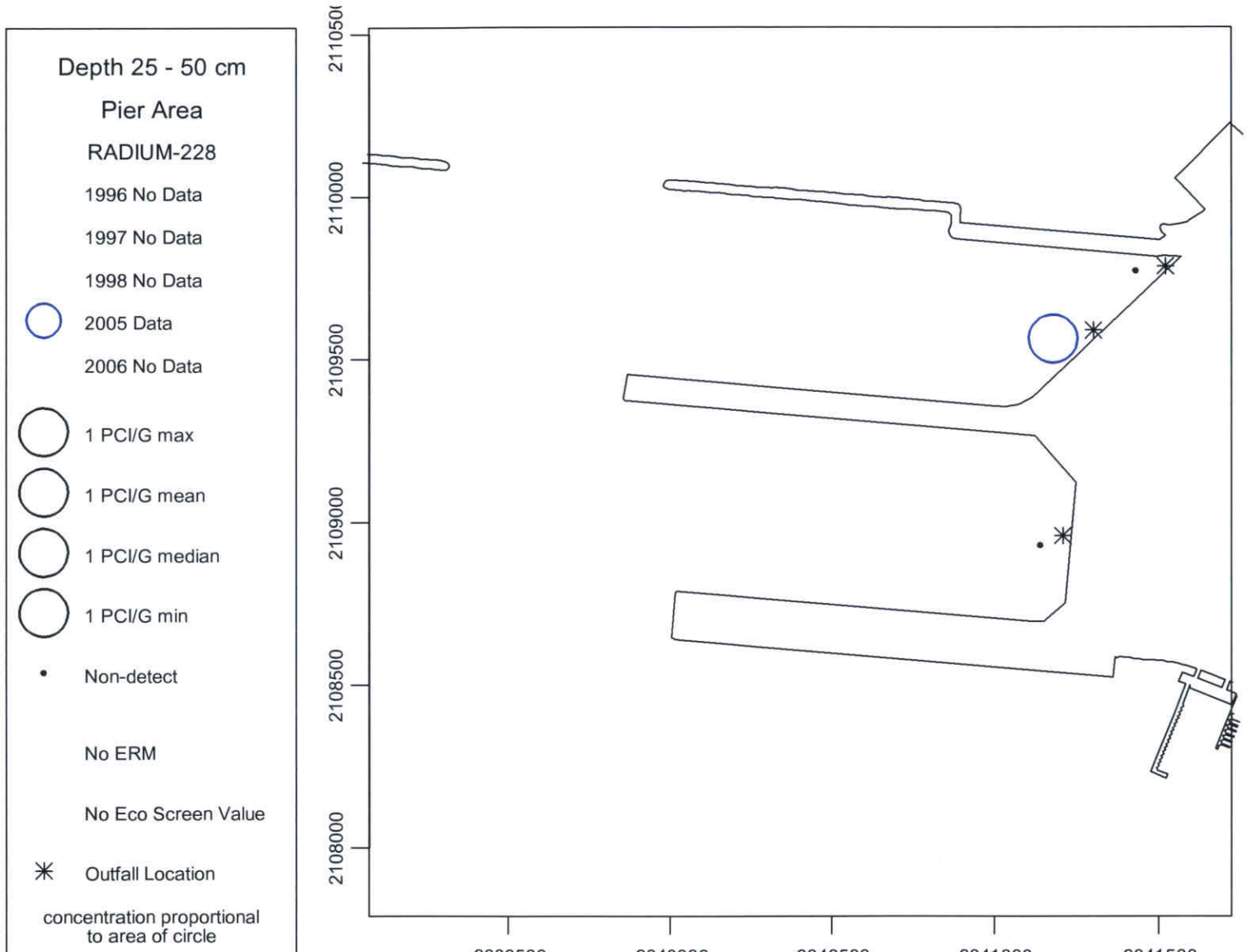

Figure A-432. Bubble Plot of Radium-228 Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

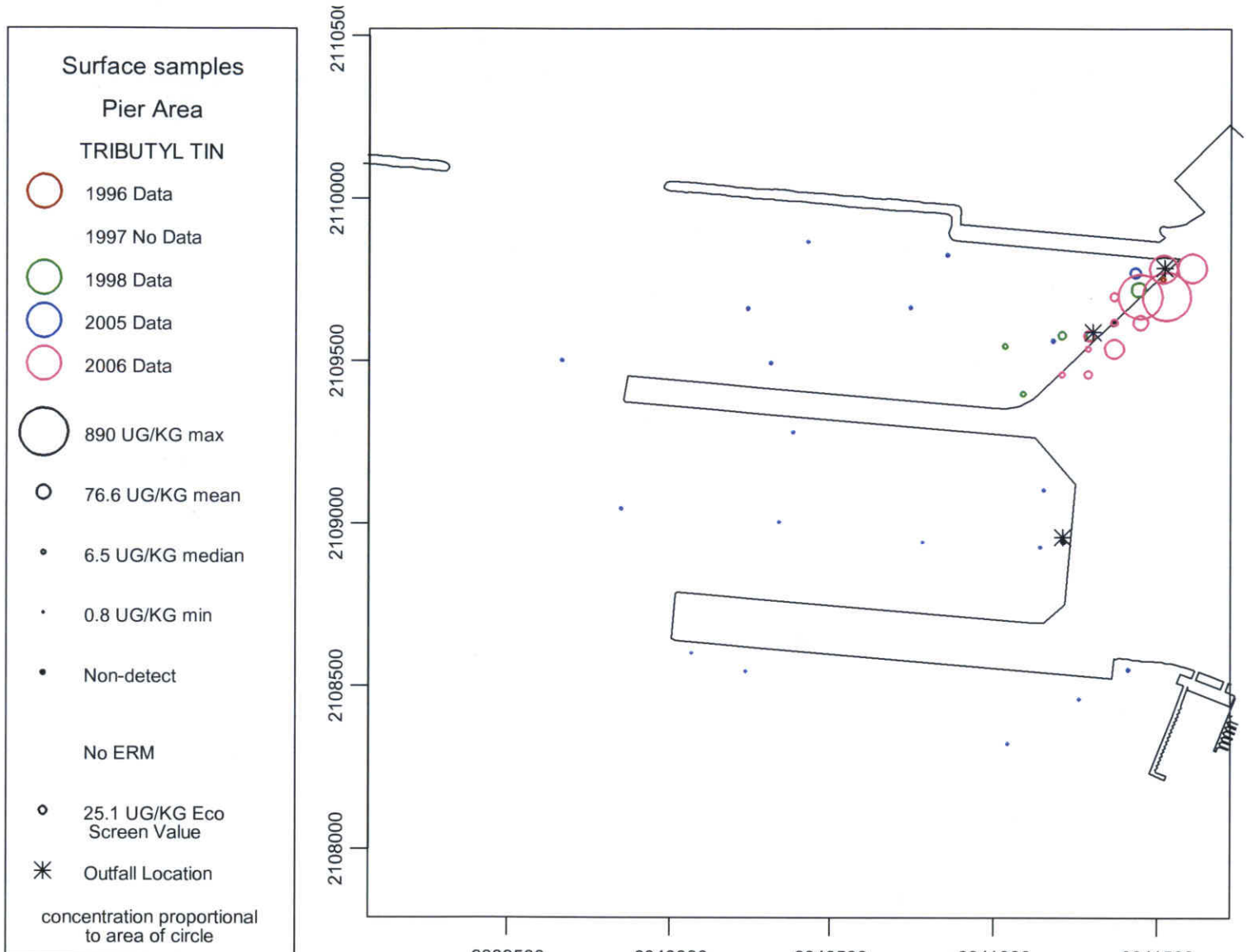

Figure A-433. Bubble Plot of Tributyl Tin Concentrations in IR Site 24 Surface Sediment by Year.

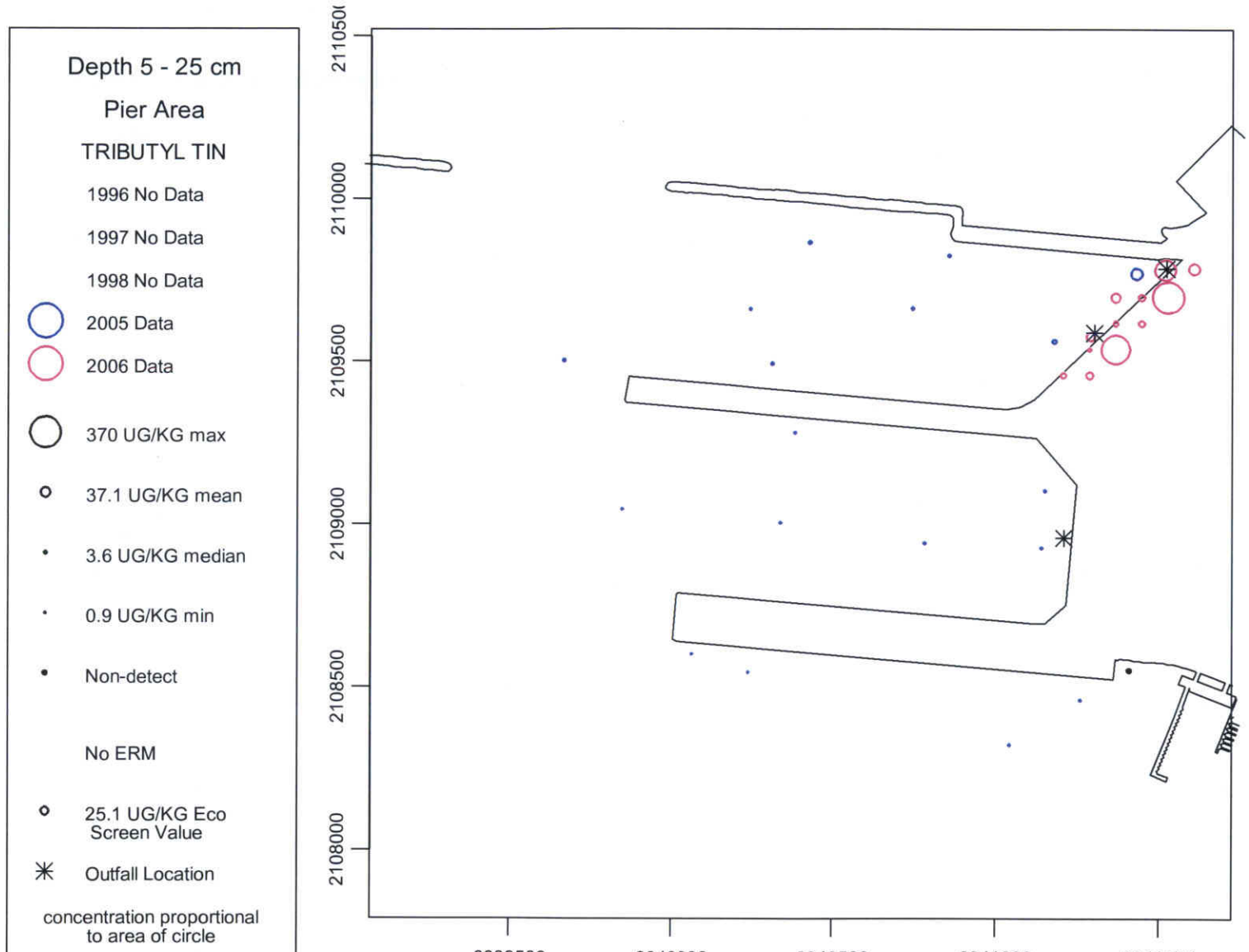

Figure A-434. Bubble Plot of Tributyl Tin Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

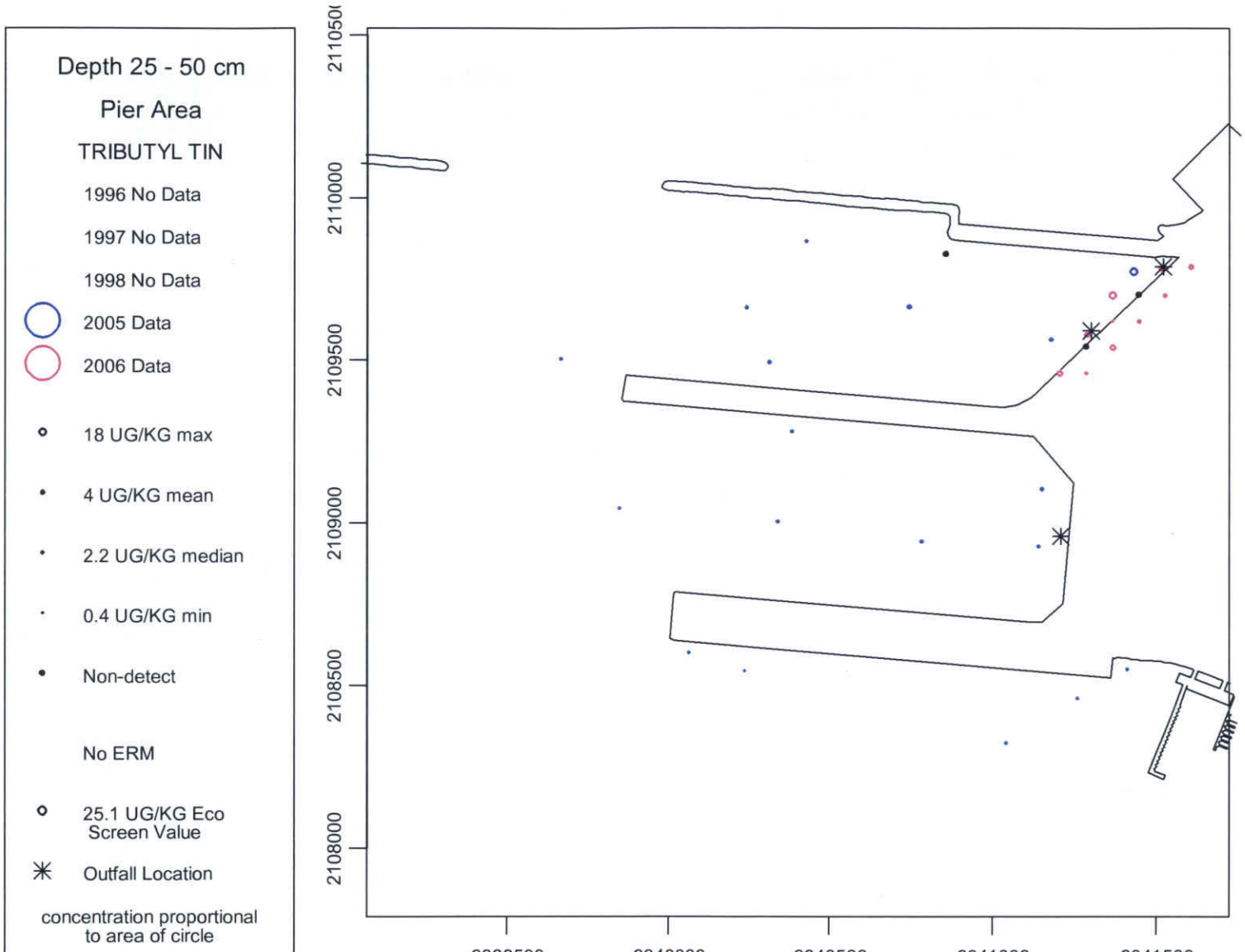

Figure A-435. Bubble Plot of Tributyl Tin Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

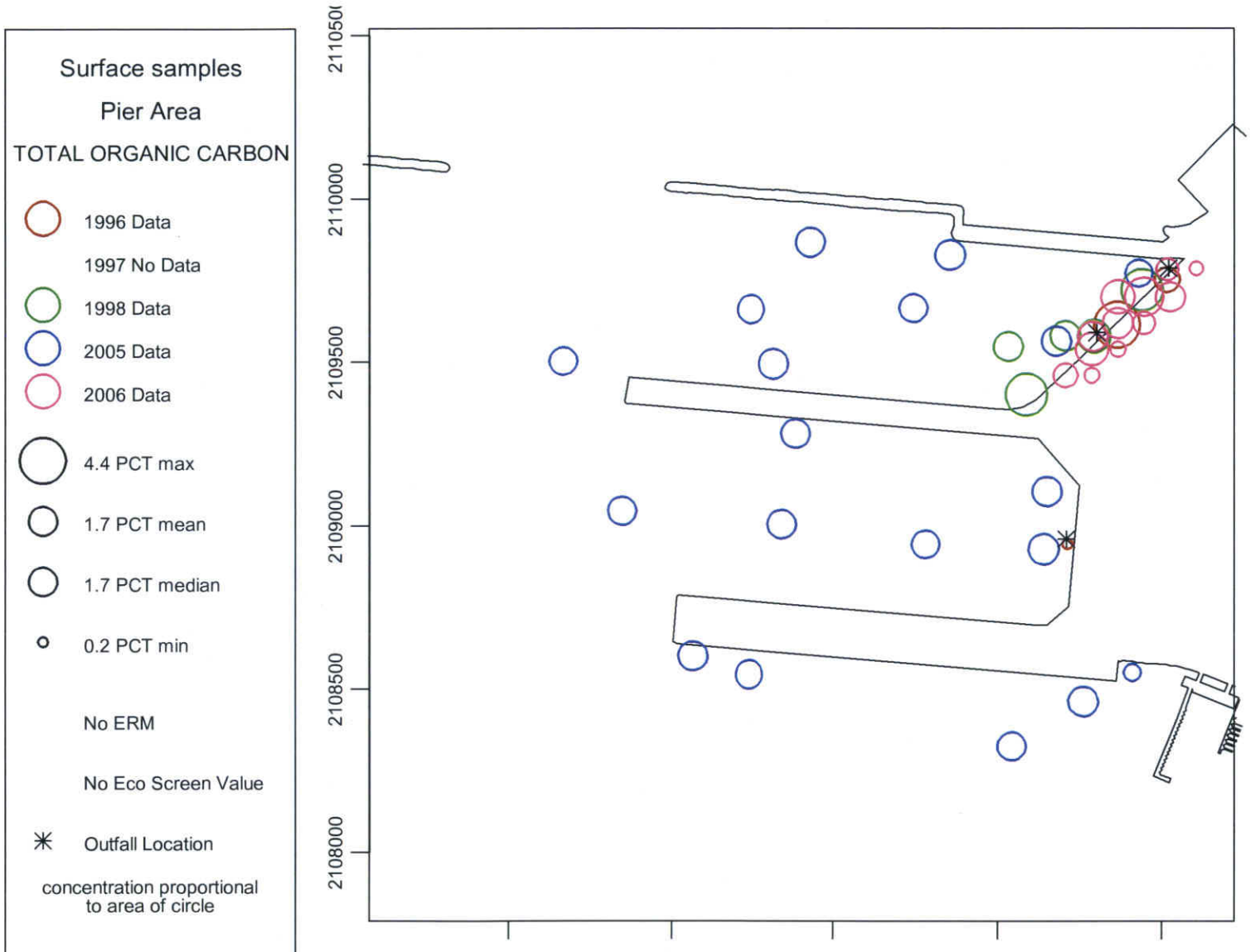

Figure A-436. Bubble Plot of Total Organic Carbon Concentrations in IR Site 24 Surface Sediment by Year.

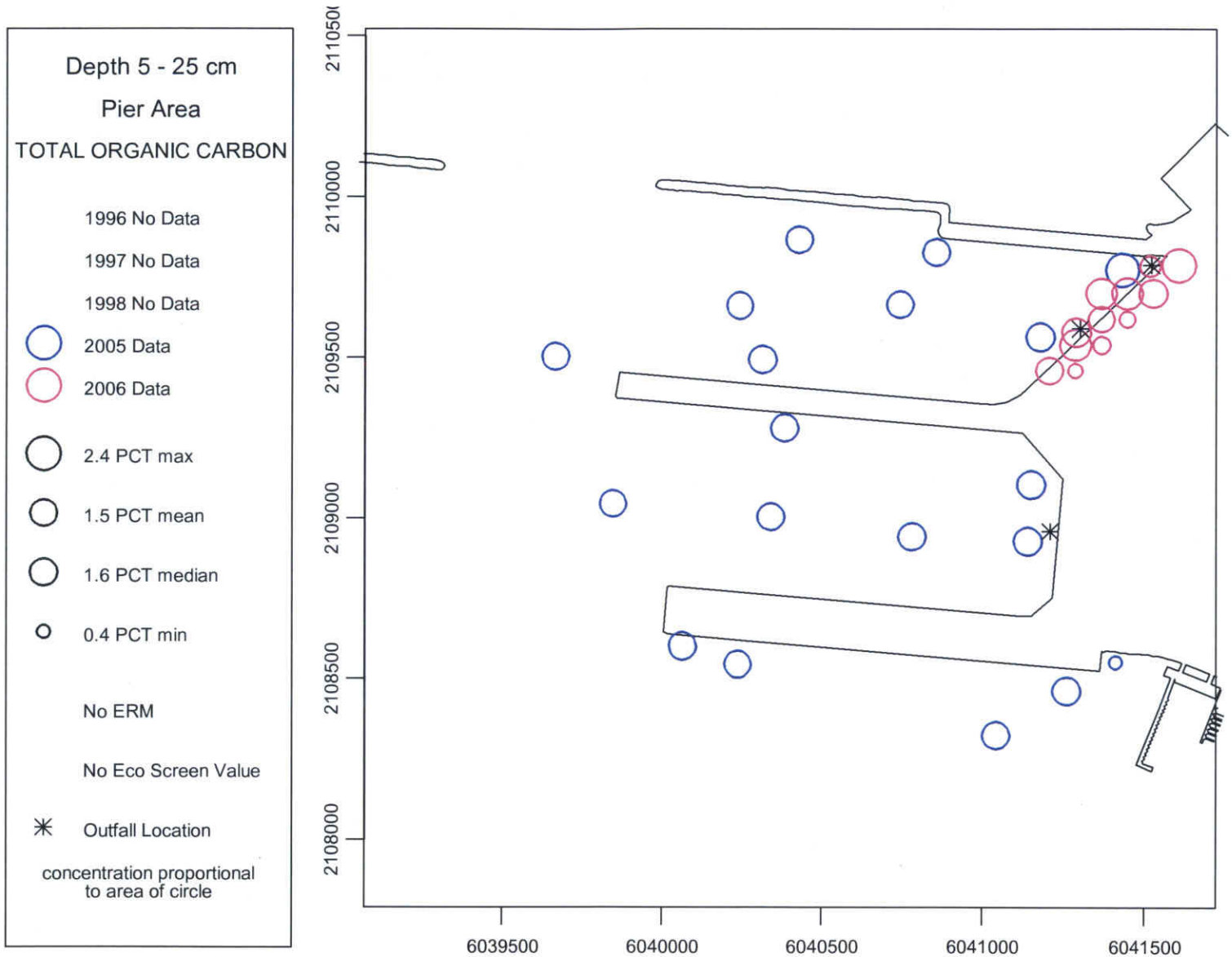

Figure A-437. Bubble Plot of Total Organic Carbon Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

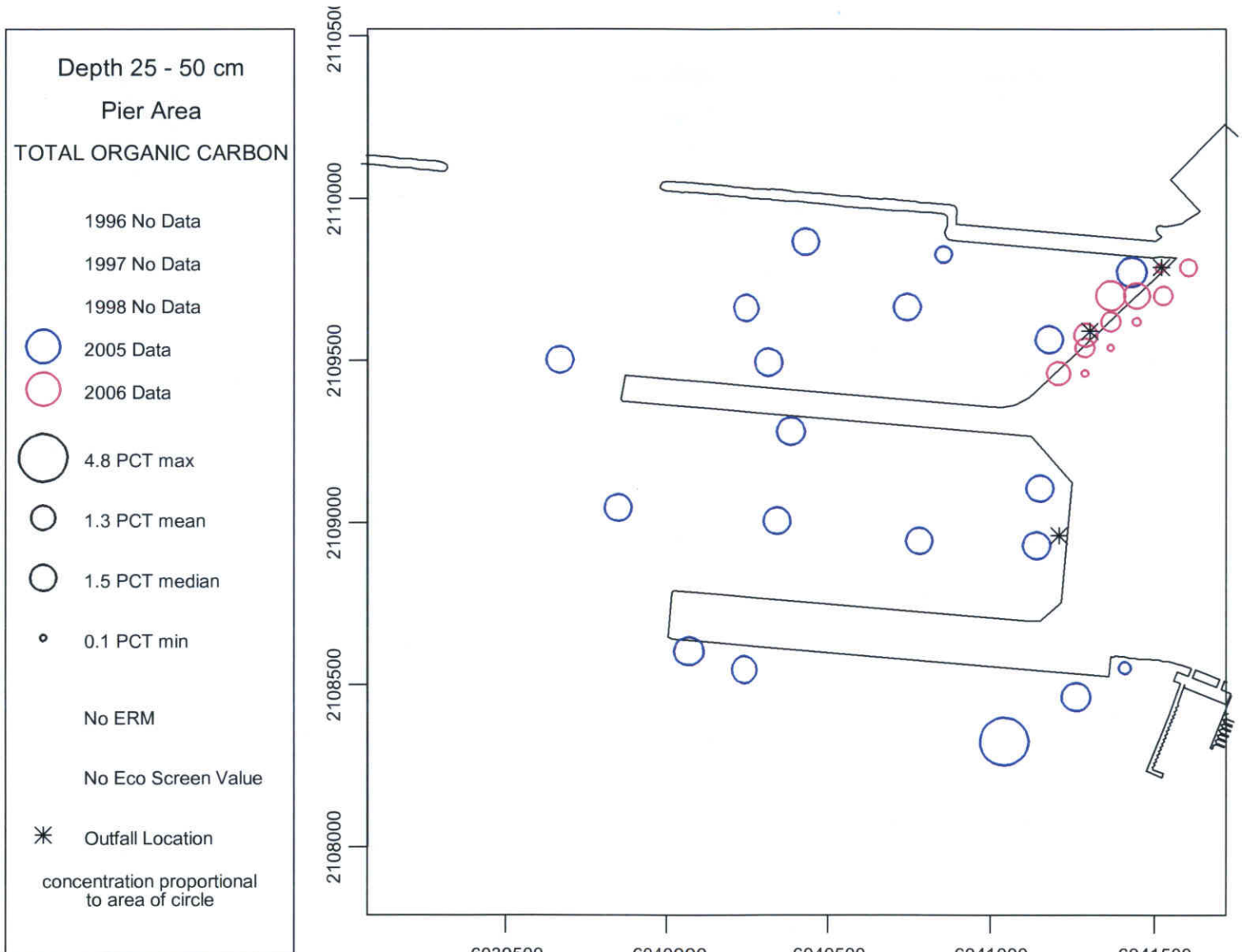

Figure A-438. Bubble Plot of Total Organic Carbon Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

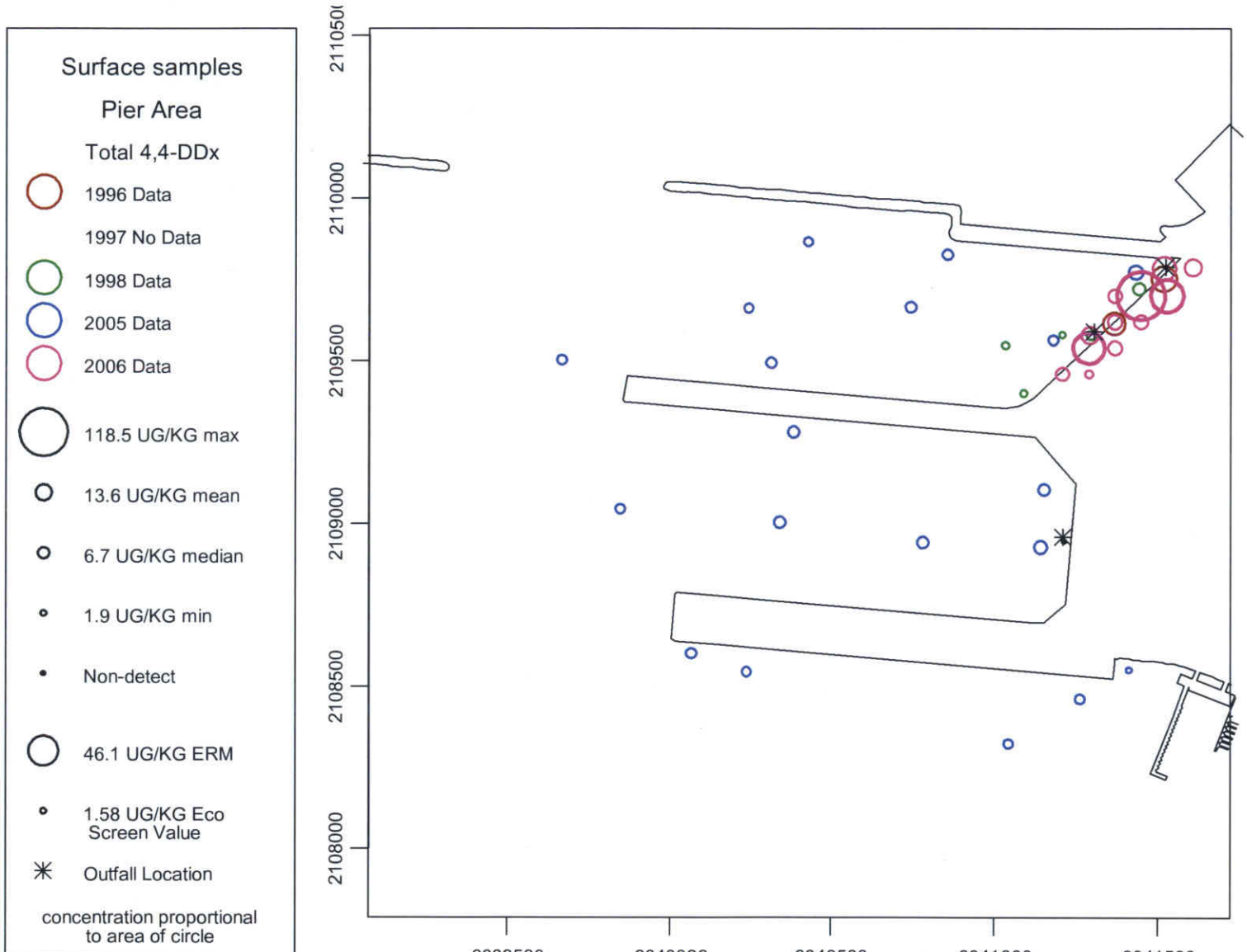

Figure A-439. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 24 Surface Sediment by Year.

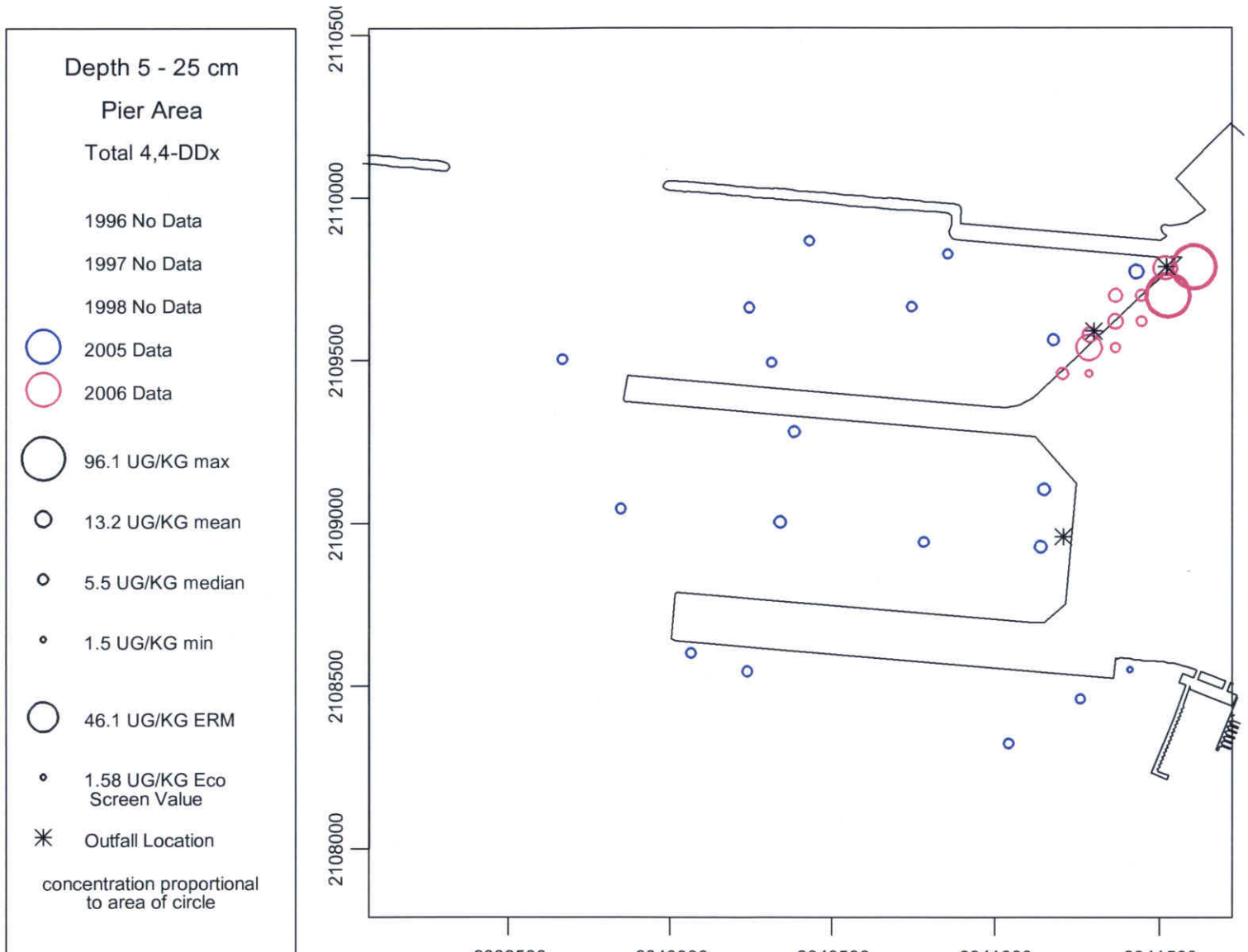

Figure A-440. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

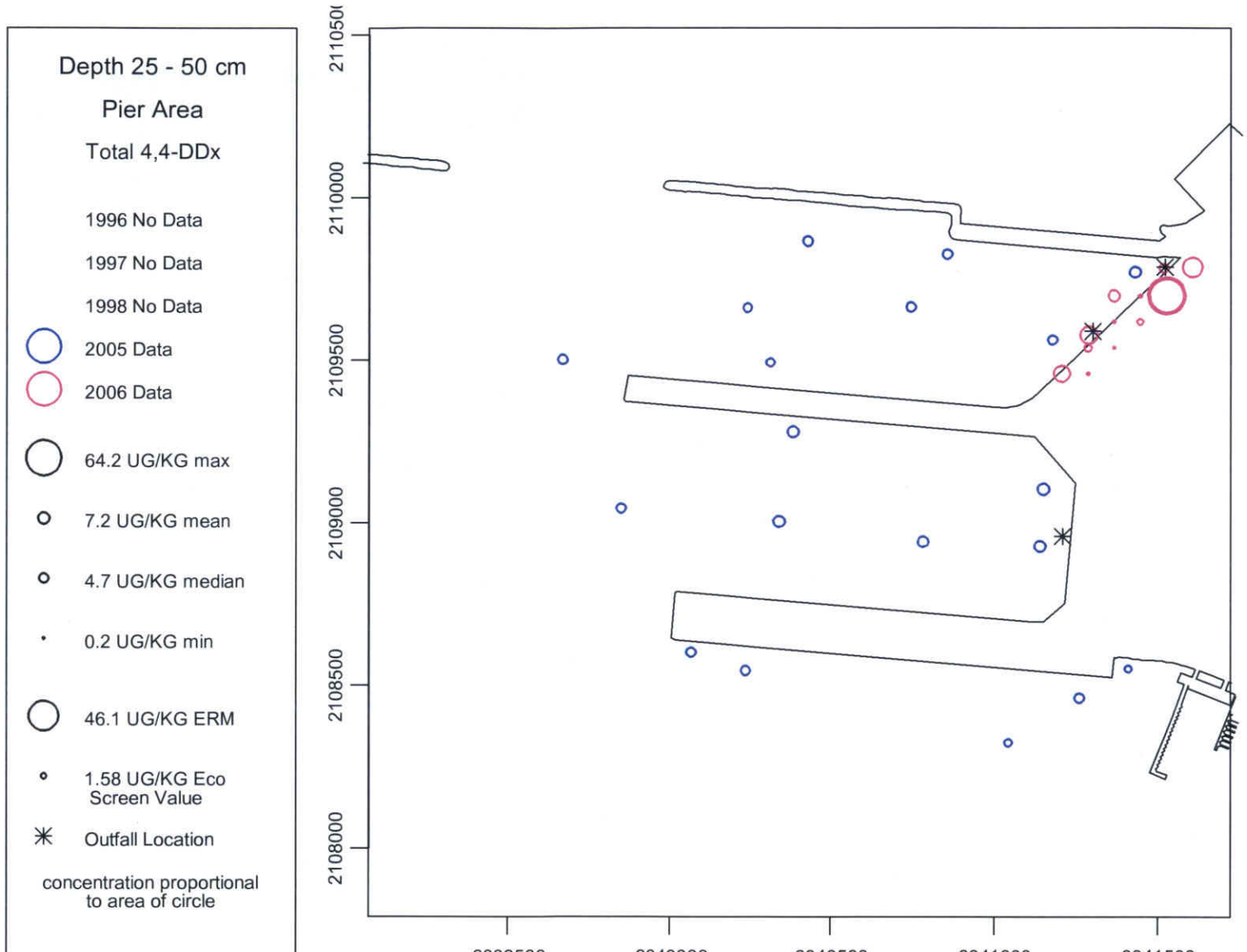

Figure A-441. Bubble Plot of Total 4,4'-DDx Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

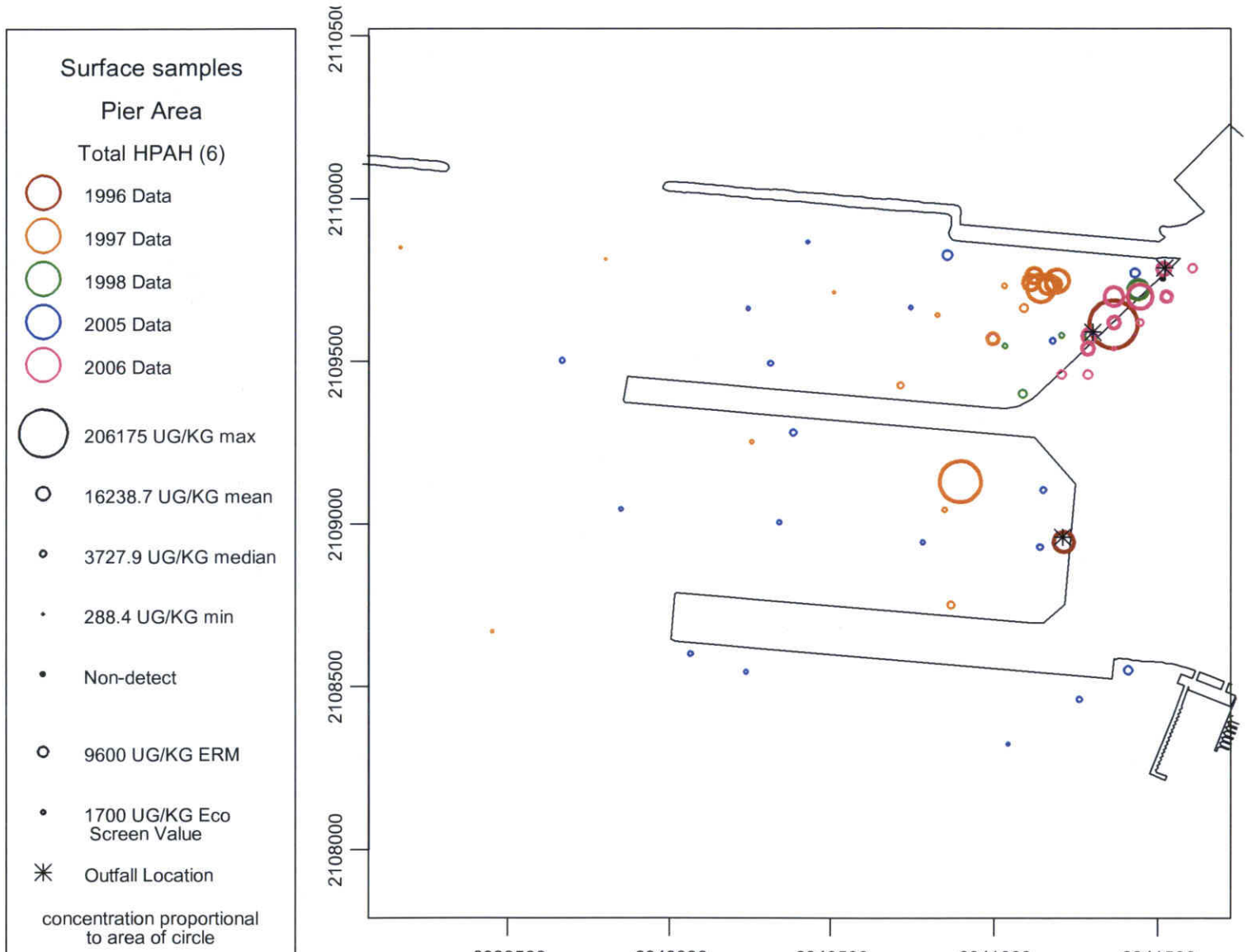

Figure A-442. Bubble Plot of Total HPAH (6) Concentrations in IR Site 24 Surface Sediment by Year.

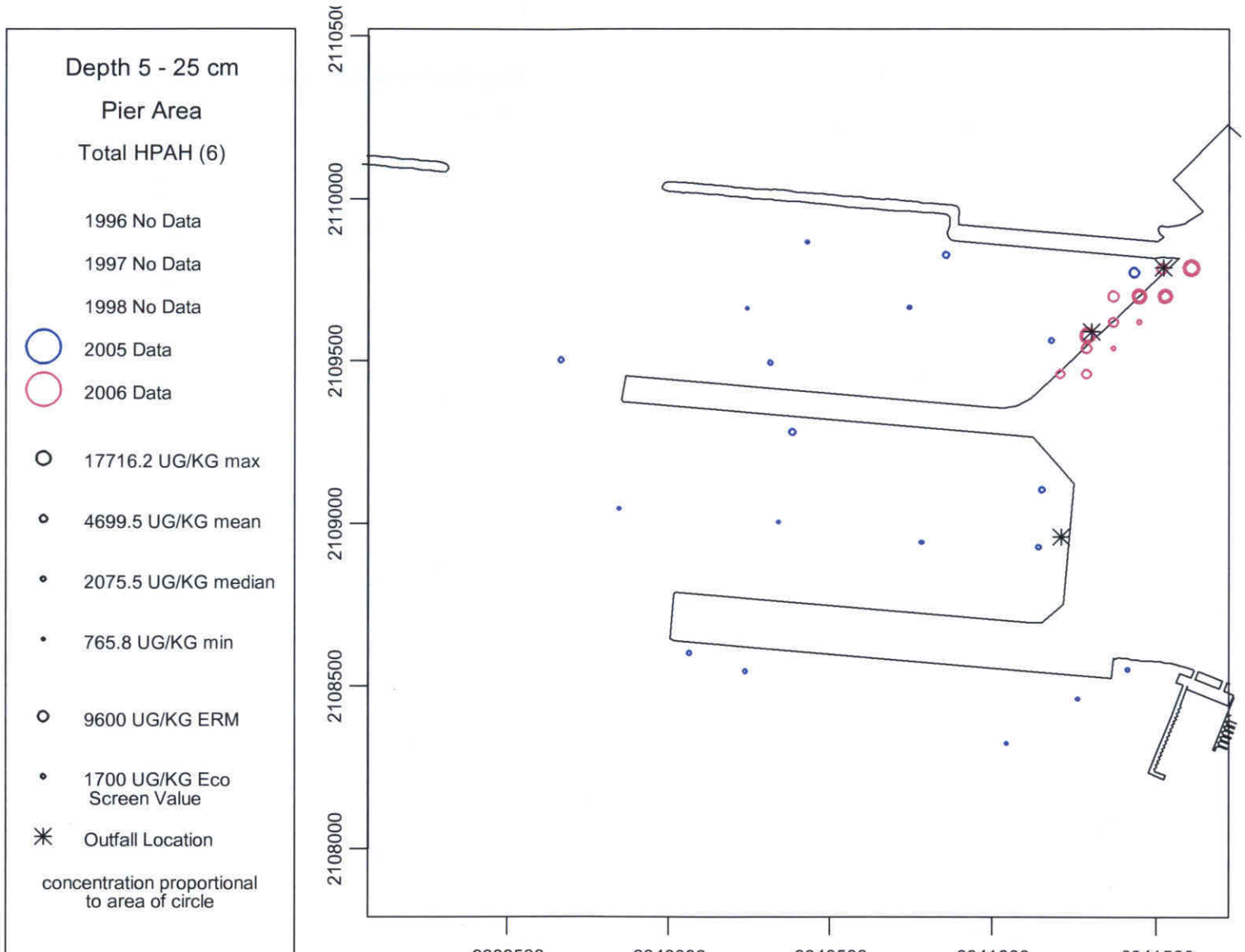

Figure A-443. Bubble Plot of Total HPAH (6) Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

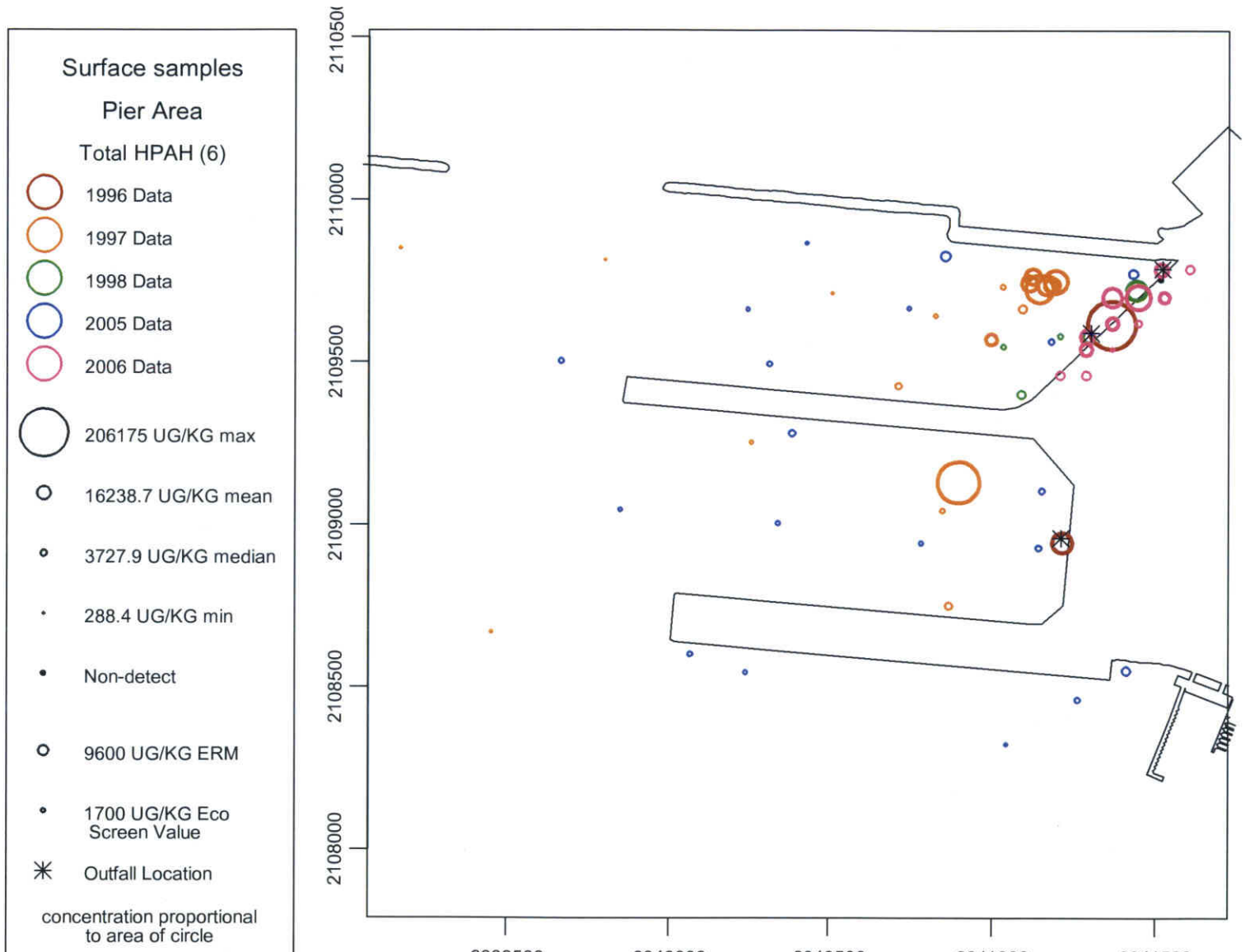

Figure A-444. Bubble Plot of Total HPAH (6) Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

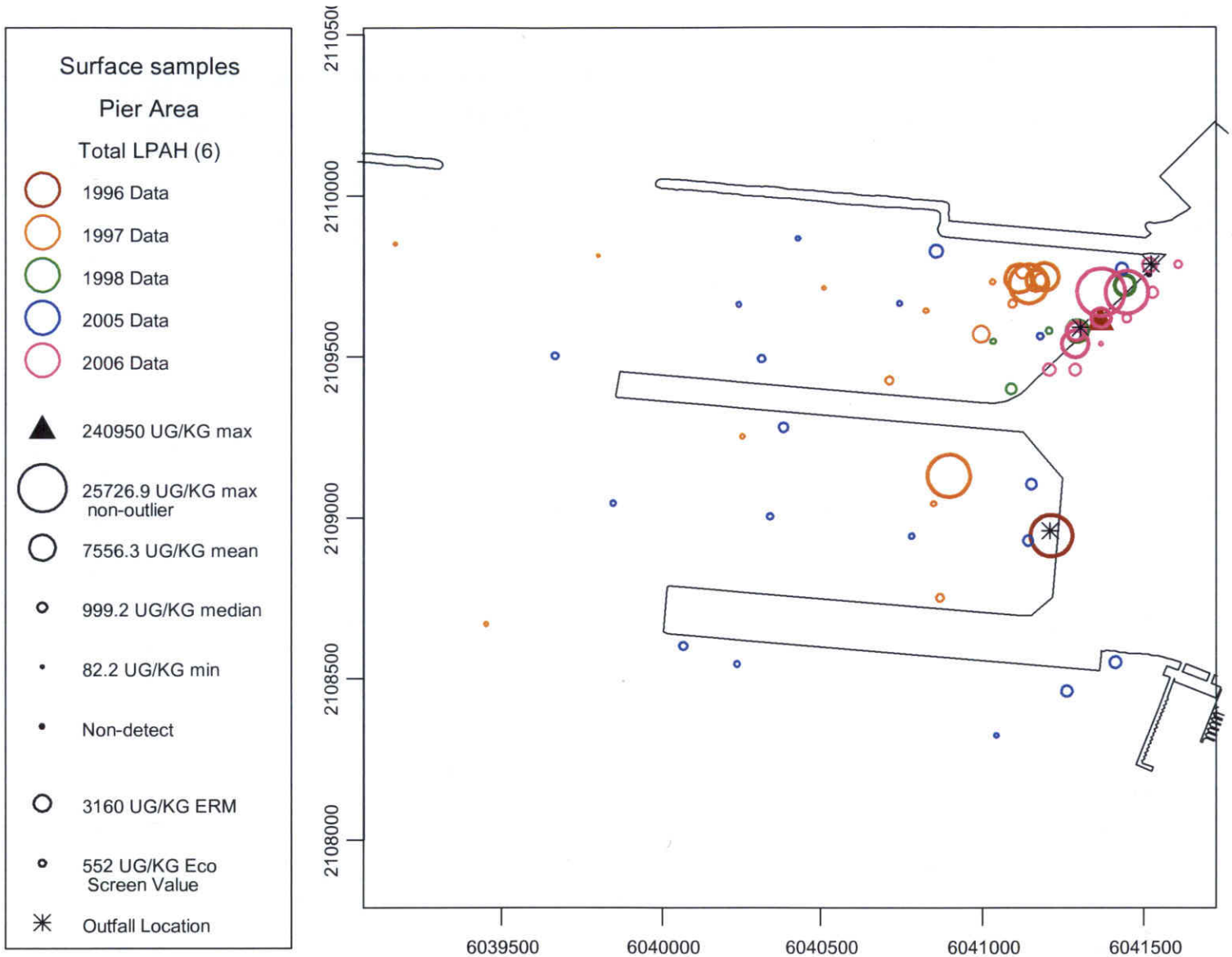

Figure A-445. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment by Year.

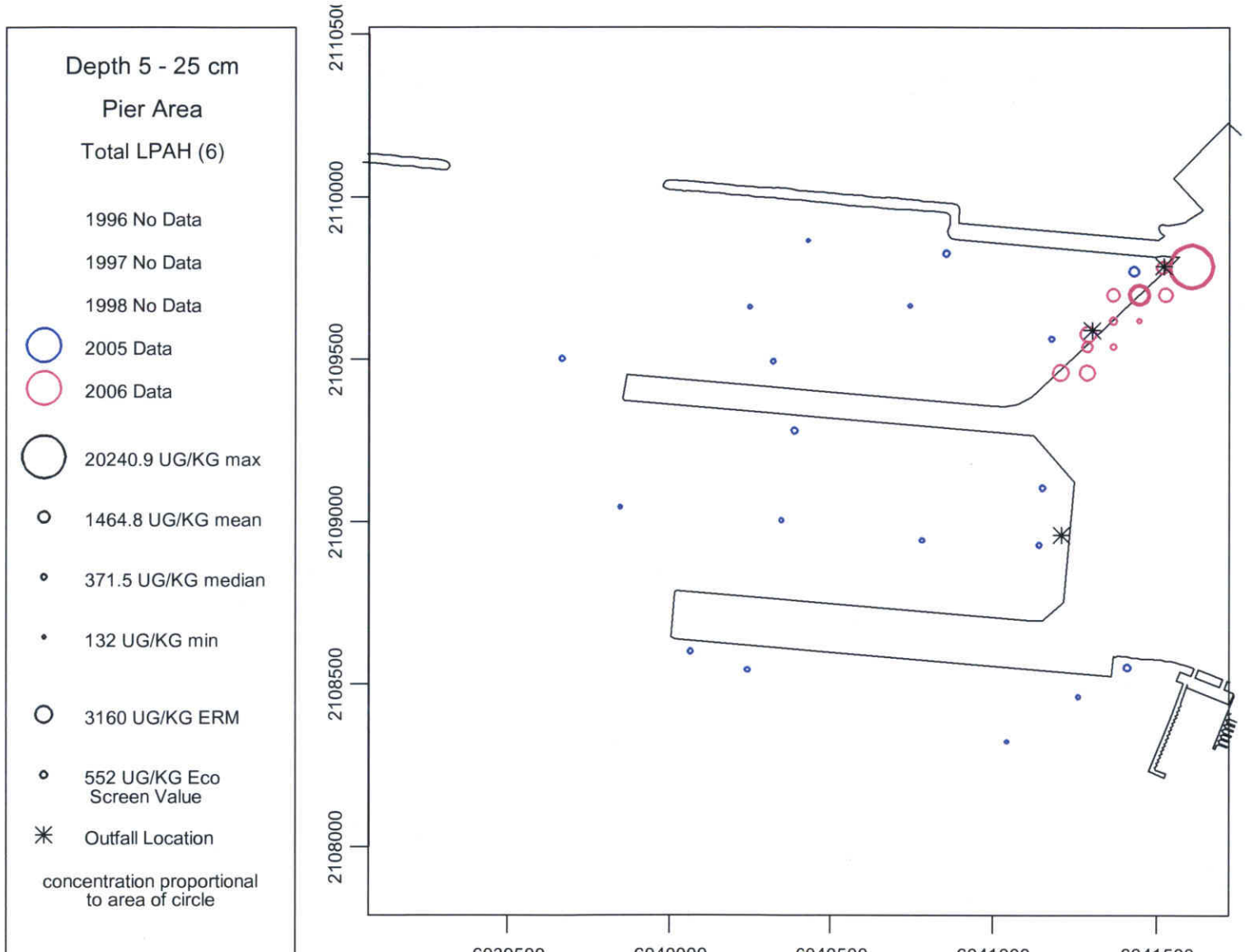

Figure A-446. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

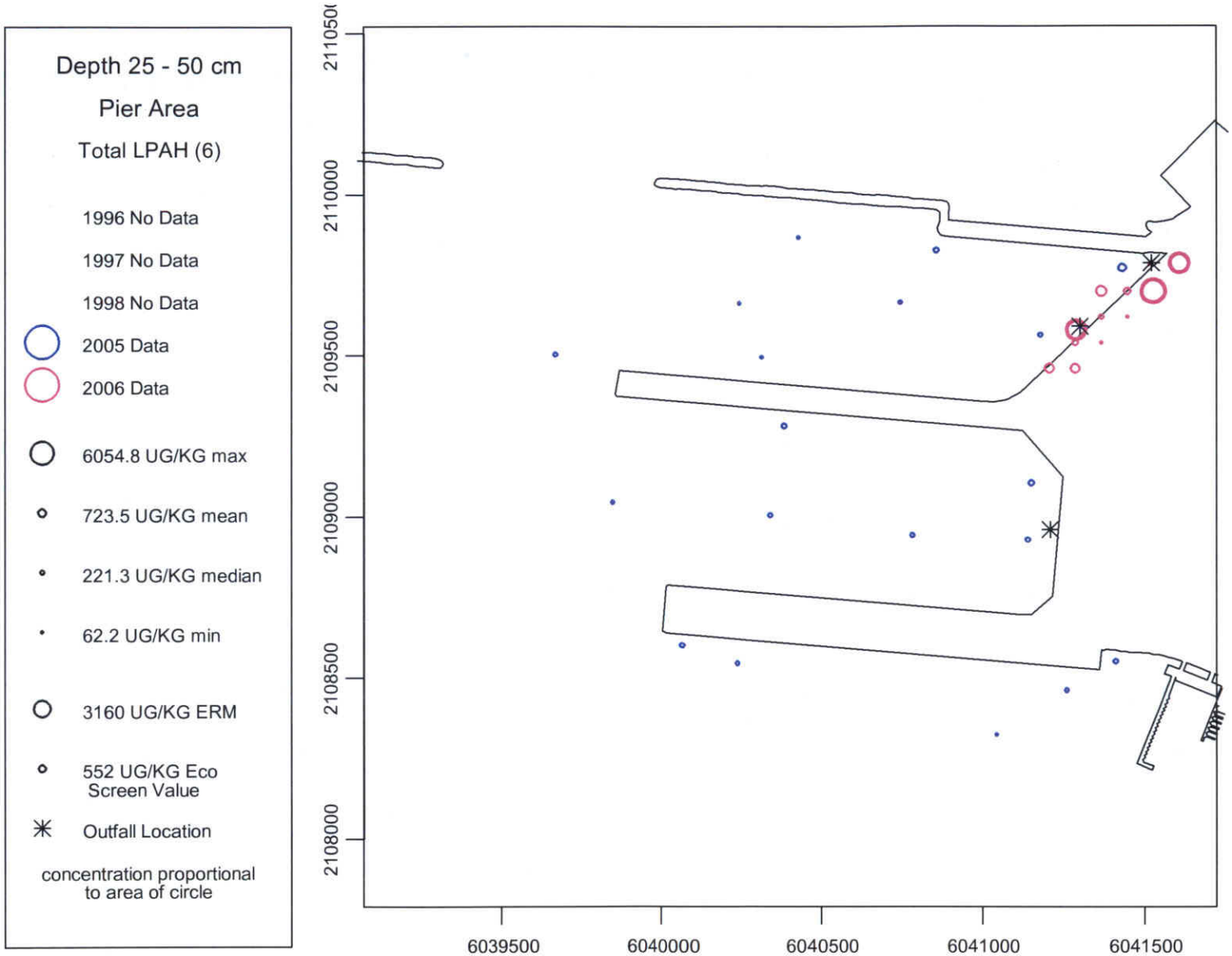

Figure A-447. Bubble Plot of Total LPAH (6) Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

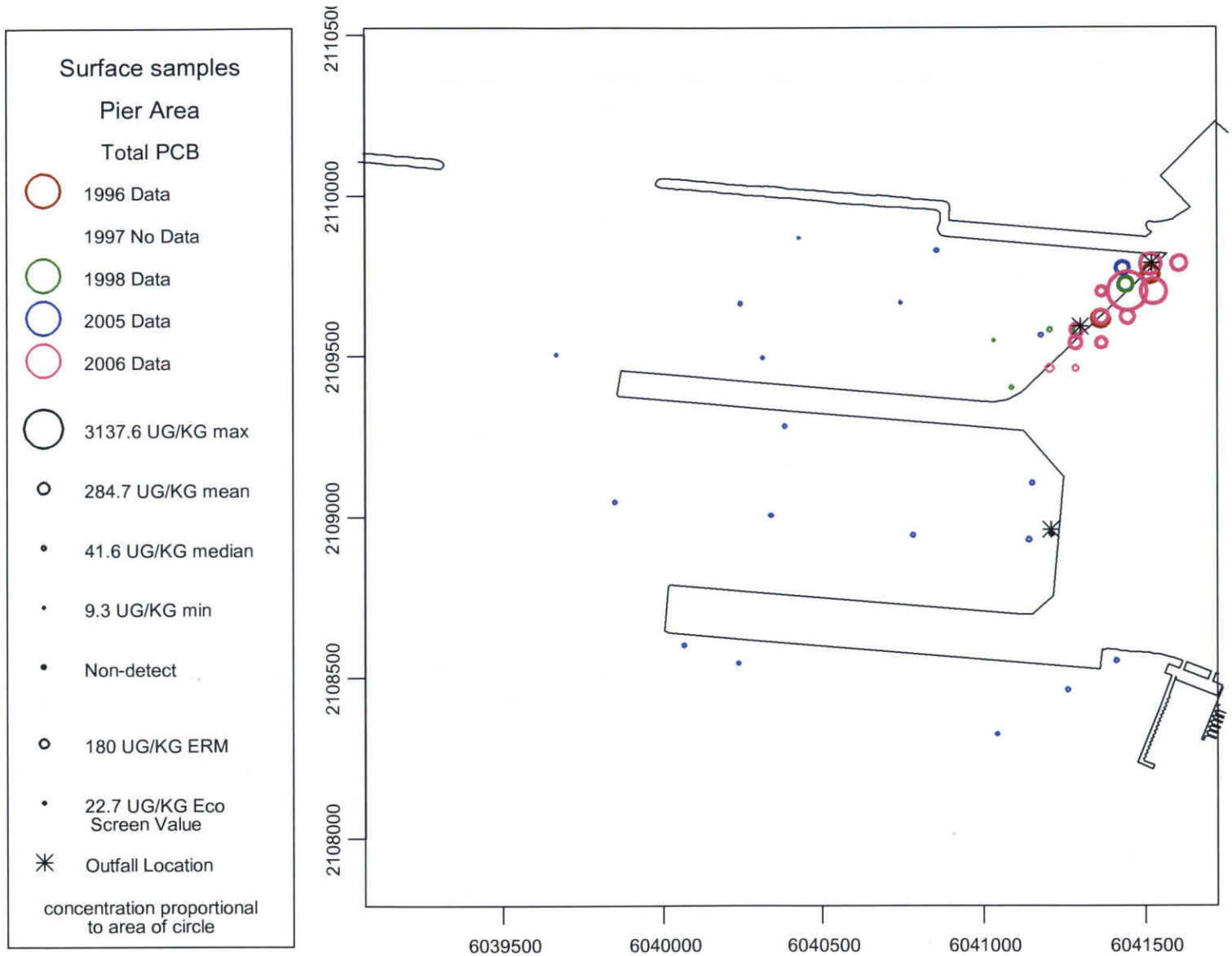

Figure A-448. Bubble Plot of Total PCB Concentrations in IR Site 24 Surface Sediment by Year.

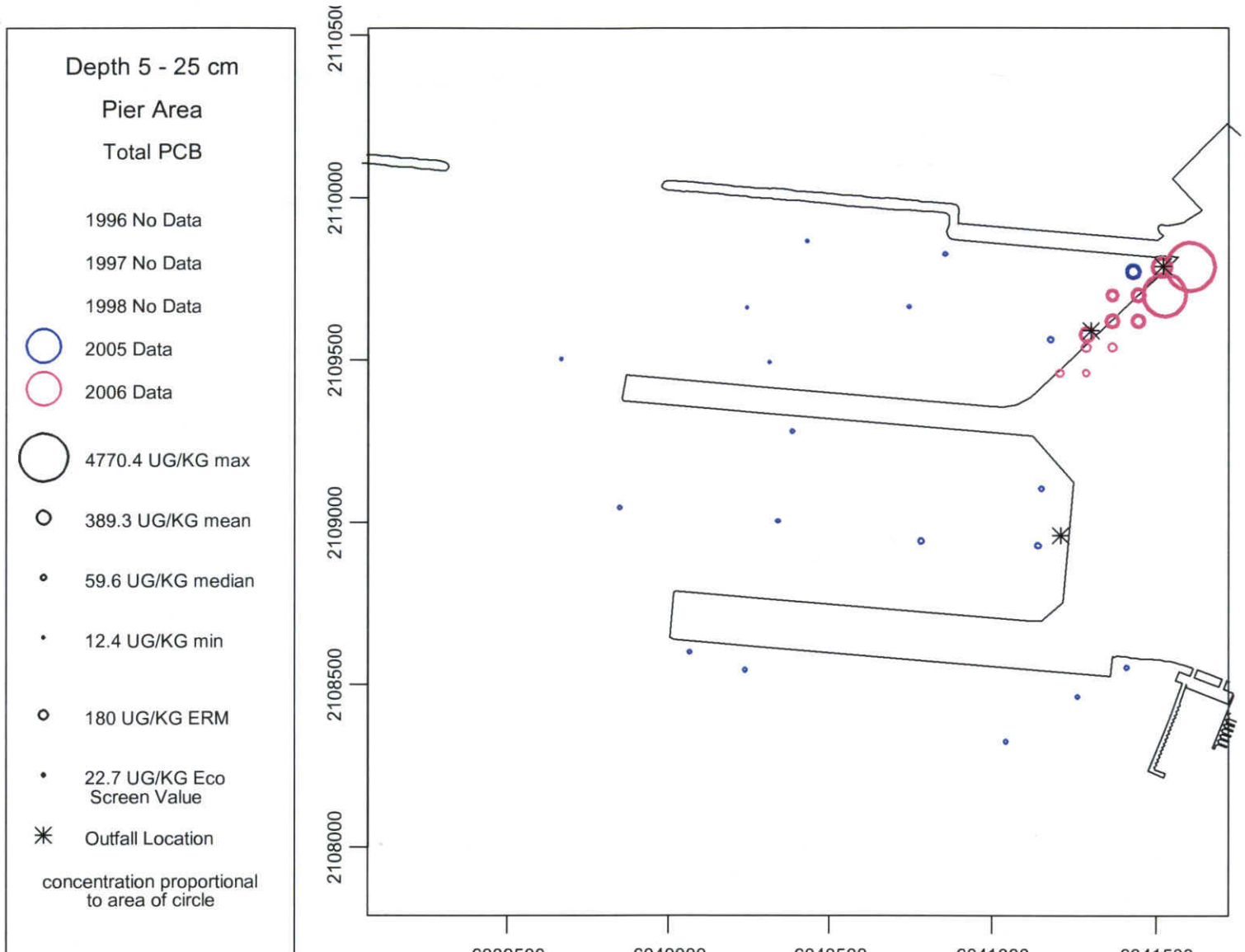

Figure A-449. Bubble Plot of Total PCB Concentrations in IR Site 24 Surface Sediment at 5-25 cm Depth.

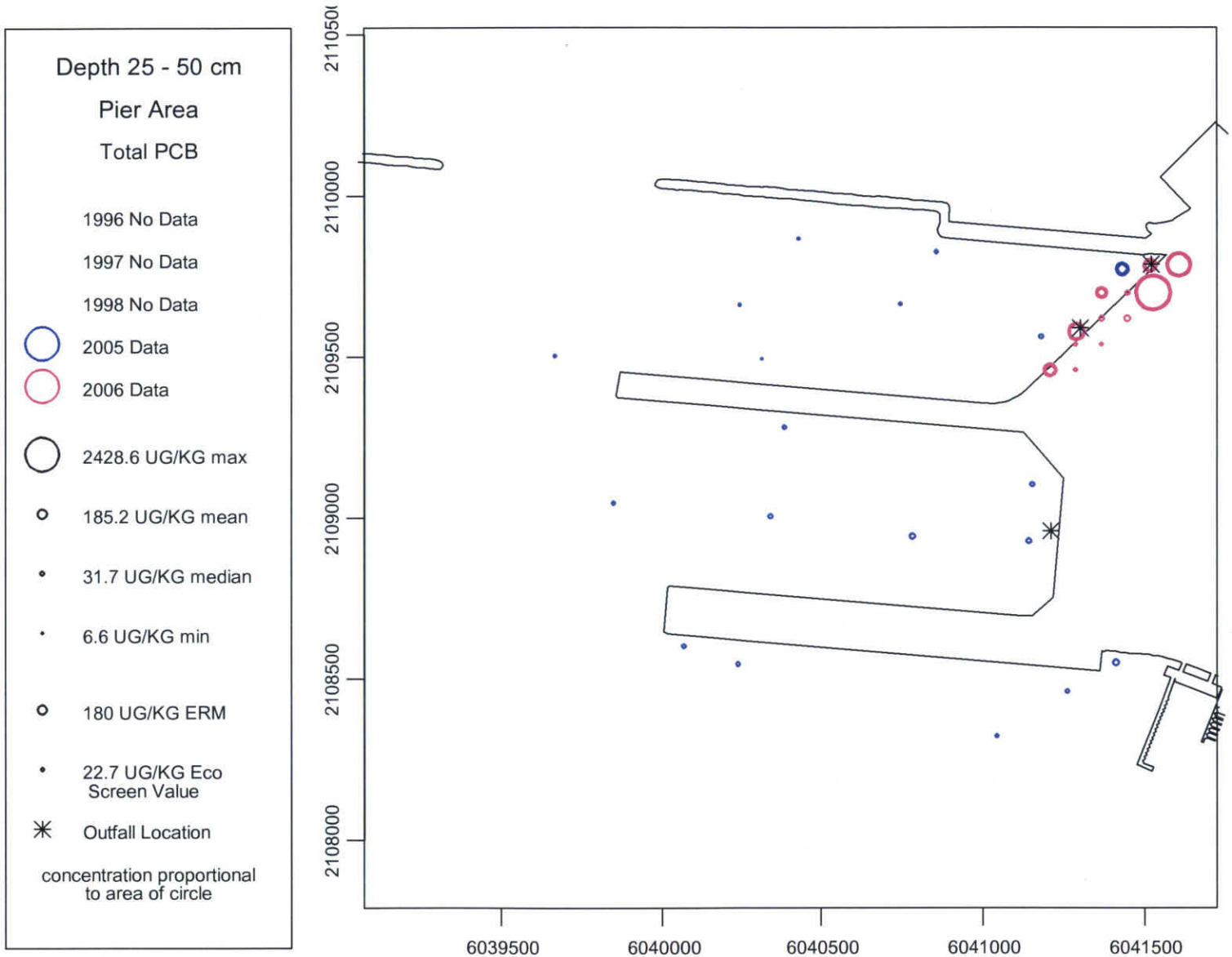

Figure A-450. Bubble Plot of Total PCB Concentrations in IR Site 24 Surface Sediment at 25-50 cm Depth.

A.2 IR Site 20 and IR Site 24 Summary of Analytical Data

List of Figures

Figure A - 451. IR Site 20 (Oakland Inner Harbor) Sampling Stations A-452
Figure A - 452. IR Site 24 (Pier Area) 1996-2005 Sampling Stations. A-452
Figure A - 453. IR Site 24 (Pier Area) 2006 Sampling Stations..... A-~~452~~ 453

List of Tables

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) A-454
Table A-2. Summary Data Table for IR Site 24 (Pier Area) A-551

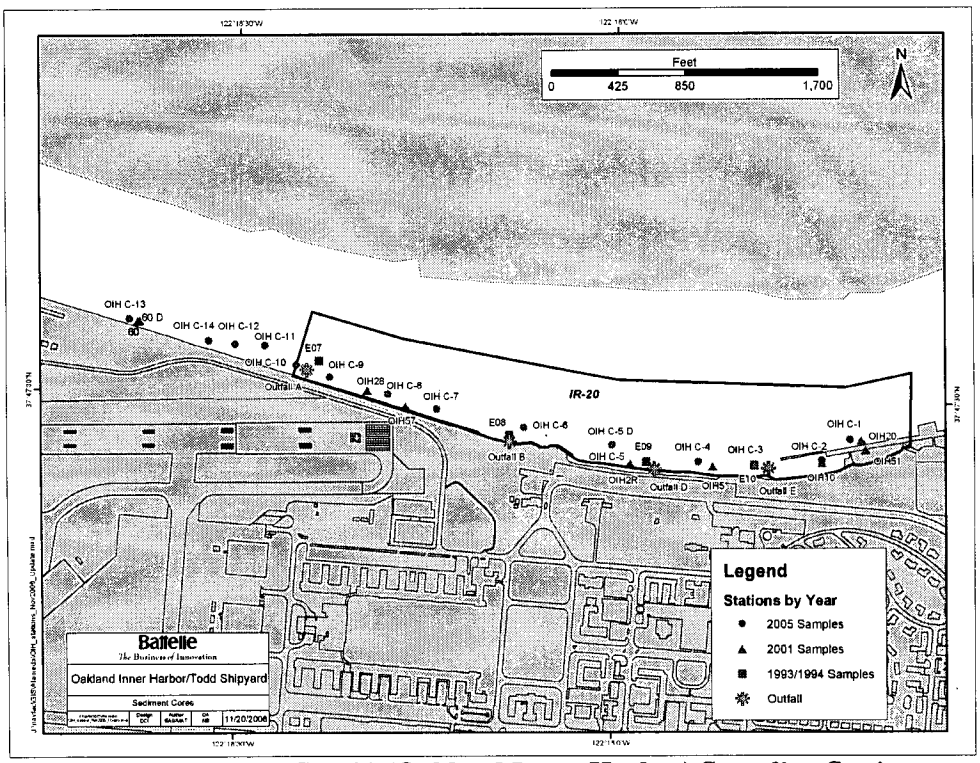

Figure A - 451. IR Site 20 (Oakland Inner Harbor) Sampling Stations

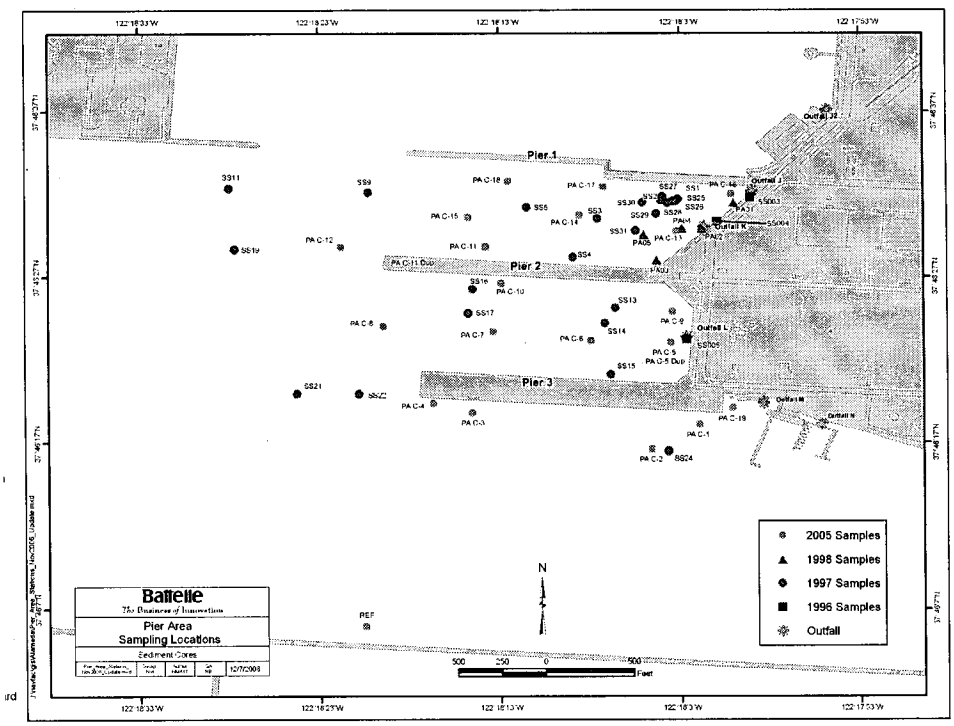

Figure A - 452. IR Site 24 (Pier Area) 1996-2005 Sampling Stations.

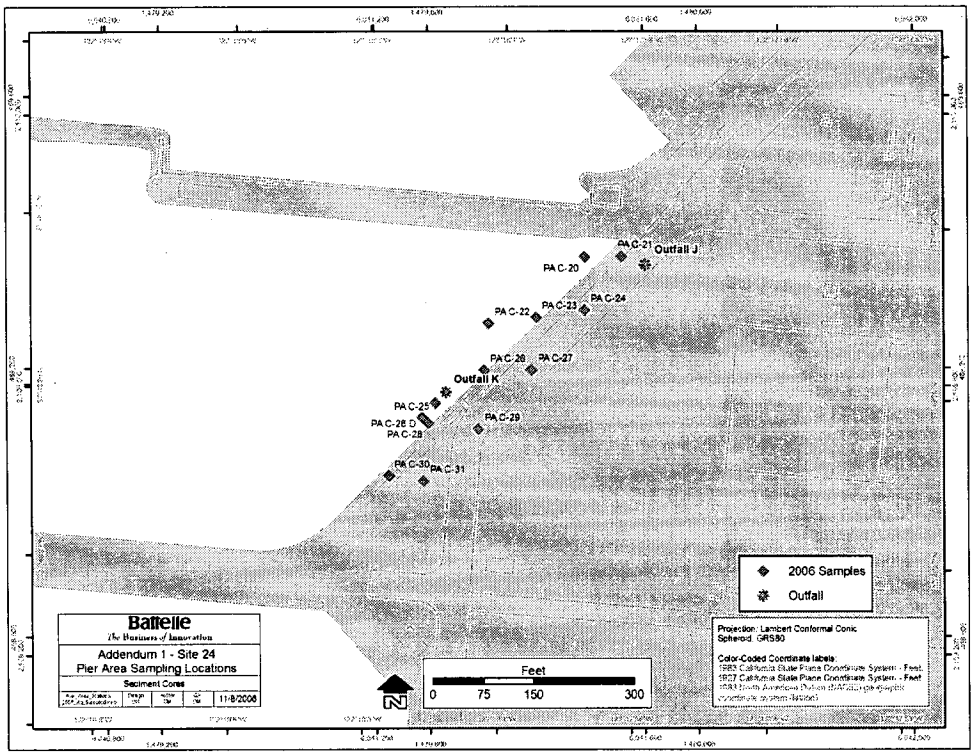

Figure A-453. IR Site 24 (Pier Area) 2006 Sampling Stations

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH10	EOIH	grab	0	5	CM	METAL	ANTIMONY	4.21	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	ANTIMONY	0.36	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	ANTIMONY	1.12	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	ANTIMONY	5.41	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	ANTIMONY	1.55	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	ANTIMONY	0.42	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	ANTIMONY	0.70	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	ARSENIC	5.69	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	ARSENIC	3.10	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	ARSENIC	13.70	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	ARSENIC	10.10	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	ARSENIC	7.89	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	ARSENIC	2.89	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	ARSENIC	5.61	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	CADMIUM	0.12	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	CADMIUM	0.06	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	CADMIUM	0.29	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	CADMIUM	0.17	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	CADMIUM	0.37	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	CADMIUM	0.04	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	CADMIUM	0.22	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	CHROMIUM	219.00	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	CHROMIUM	291.00	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	CHROMIUM	189.00	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	CHROMIUM	430.00	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	CHROMIUM	546.50	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	CHROMIUM	283.00	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	CHROMIUM	1230.00	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	COPPER	45.60	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	COPPER	6.94	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	COPPER	74.90	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	COPPER	131.00	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	COPPER	134.00	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	COPPER	5.18	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	COPPER	141.00	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	LEAD	55.30	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	LEAD	10.90	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	LEAD	40.50	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	LEAD	106.00	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	LEAD	225.50	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	LEAD	10.70	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	LEAD	186.00	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH10	EOIH	grab	0	5	CM	METAL	MERCURY	0.30	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	MERCURY	0.01	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	MERCURY	0.33	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	MERCURY	0.89	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	MERCURY	0.20	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	MERCURY	0.02	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	MERCURY	0.16	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	NICKEL	39.50	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	NICKEL	18.50	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	NICKEL	107.00	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	NICKEL	136.00	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	NICKEL	125.00	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	NICKEL	17.20	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	NICKEL	288.00	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	SELENIUM	0.06	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	SELENIUM	0.05	MG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	METAL	SELENIUM	0.47	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	SELENIUM	0.20	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	SELENIUM	0.15	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	SELENIUM	0.37	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	SELENIUM	0.15	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	SILVER	0.06	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	SILVER	0.05	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	SILVER	0.29	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	SILVER	0.15	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	SILVER	0.09	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	SILVER	0.04	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	SILVER	0.07	MG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	METAL	ZINC	103.00	MG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	METAL	ZINC	37.00	MG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	METAL	ZINC	169.00	MG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	METAL	ZINC	258.00	MG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	METAL	ZINC	168.00	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	METAL	ZINC	32.20	MG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	METAL	ZINC	213.00	MG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	6.86	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	6.86	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	6.86	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	6.86	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	6.86	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	6.86	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	6.86	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB101	0.04	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB105	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB110	0.06	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB118	0.04	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB126	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB128	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB138	0.09	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB153	0.09	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB170	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB18	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB180	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB187	0.04	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB195	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB206	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB209	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB28	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB44	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB52	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB66	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB77	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	CON	PCB8	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ALDRIN	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ENDRIN	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.55	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.55	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	6.76	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	6.76	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	6.76	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	6.76	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH05	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	6.76	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	6.76	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	6.76	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB101	0.13	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB105	0.03	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB110	0.16	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB118	0.08	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB126	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB128	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB138	0.31	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB153	0.37	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB170	0.16	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB18	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB180	0.30	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB187	0.14	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB195	0.03	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB206	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB209	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB28	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB44	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB52	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB66	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB77	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	CON	PCB8	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	0.06	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	0.10	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	0.05	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	0.06	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	PEST	ALDRIN	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	ENDRIN	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.54	UG/KG	U
2001	OIH05	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.54	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH10	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	6.84	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	6.84	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	6.84	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	6.84	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	6.84	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	355.83	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	6.84	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB101	19.66	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB105	3.96	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB110	17.91	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB118	13.66	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB126	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB128	3.40	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB138	25.51	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB153	32.84	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB170	4.15	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB18	3.04	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB180	8.17	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB187	5.71	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB195	0.36	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB206	0.17	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB209	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB28	2.93	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB44	4.41	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB52	9.27	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB66	2.58	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB77	0.46	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	CON	PCB8	1.14	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	3.97	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	1.32	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	10.97	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	2.04	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	8.45	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	PEST	ALDRIN	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.32	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	ENDRIN	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.55	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH10	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.38	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.55	UG/KG	U
2001	OIH10	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.55	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	13.23	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	13.23	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	13.23	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	13.23	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	13.23	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	65.24	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	13.23	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB101	3.56	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB105	1.19	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB110	4.07	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB118	2.65	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB126	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB128	0.65	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB138	3.99	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB153	4.76	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB170	1.12	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB18	0.75	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB180	2.58	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB187	1.42	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB195	0.34	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB206	0.27	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB209	0.33	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB28	0.90	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB44	1.01	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB52	1.69	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB66	0.97	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB77	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	CON	PCB8	0.49	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	2.54	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	0.18	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	3.40	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	2.63	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	2.26	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	PEST	ALDRIN	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.42	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.78	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	1.06	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH20	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	ENDRIN	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.23	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	1.06	UG/KG	U
2001	OIH20	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	1.06	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	7.25	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	7.25	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	7.25	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	7.25	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	240.86	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	231.57	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	7.25	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB101	13.81	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB105	3.45	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB110	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB118	7.83	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB126	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB128	2.26	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB138	13.91	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB153	19.38	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB170	3.23	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB18	11.63	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB180	7.92	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB187	5.25	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB195	0.79	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB206	0.37	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB209	0.10	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB28	6.62	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB44	9.27	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB52	12.64	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB66	6.18	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB77	0.80	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	CON	PCB8	1.66	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	1.56	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	0.27	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	1.65	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	0.80	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	2.01	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	PEST	ALDRIN	0.58	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH28	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.32	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.61	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	ENDRIN	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.54	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.58	UG/KG	U
2001	OIH28	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.58	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	7.55	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	7.55	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	7.55	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	7.55	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	145.04	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	917.65	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	7.55	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB101	78.56	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB105	21.24	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB110	86.23	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB118	62.13	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB126	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB128	15.20	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB138	76.66	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB153	89.57	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB170	6.09	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB18	3.78	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB180	12.18	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB187	8.84	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB195	0.66	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB206	0.32	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB209	0.17	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB28	4.19	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB44	18.39	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB52	39.88	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB66	7.66	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB77	1.13	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	CON	PCB8	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	15.01	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.61	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	9.30	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH51	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	45.29	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	11.80	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	85.64	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	PEST	ALDRIN	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.61	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	3.14	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.61	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.61	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	ENDRIN	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	13.43	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	2.15	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.60	UG/KG	U
2001	OIH51	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.60	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	7.68	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	7.68	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	7.68	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	7.68	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	7.68	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	7.68	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	488.01	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB101	19.17	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB105	3.17	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB110	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB118	8.76	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB126	0.61	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB128	3.08	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB138	38.30	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB153	56.76	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB170	18.83	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB18	1.98	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB180	47.25	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB187	30.56	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB195	4.16	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB206	1.80	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB209	0.10	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB28	1.90	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB44	3.93	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB52	6.73	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB66	2.48	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB77	0.62	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH57	EOIH	grab	0	5	CM	CON	PCB8	0.41	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	1.15	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	1.80	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	0.79	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	ALDRIN	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.45	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.56	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	ENDRIN	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.62	UG/KG	U
2001	OIH57	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.62	UG/KG	U
2001	OIH02	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	0.33	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	0.11	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	2.64	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	0.99	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	17.60	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	29.61	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	17.15	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	23.01	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	17.50	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	CHRYSENE	18.40	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	2.74	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	24.28	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	LPAH	FLUORENE	0.19	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	20.02	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	2.52	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	PERYLENE	7.16	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	1.73	UG/KG	D
2001	OIH02	EOIH	grab	0	5	CM	HPAH	PYRENE	40.66	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	0.32	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	0.66	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	2.63	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	5.79	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	13.60	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH05	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	20.34	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	14.10	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	17.99	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	12.32	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	CHRYSENE	15.73	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	1.52	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	68.50	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	LPAH	FLUORENE	1.49	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	15.39	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	1.74	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	PERYLENE	6.18	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	35.13	UG/KG	D
2001	OIH05	EOIH	grab	0	5	CM	HPAH	PYRENE	69.62	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	3.30	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	7.26	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	33.46	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	55.53	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	166.30	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	197.39	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	181.84	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	151.15	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	170.67	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	CHRYSENE	192.86	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	34.19	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	357.77	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	LPAH	FLUORENE	21.61	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	149.21	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	8.19	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	PERYLENE	52.16	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	240.93	UG/KG	D
2001	OIH10	EOIH	grab	0	5	CM	HPAH	PYRENE	374.63	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	12.52	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	10.10	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	33.13	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	326.81	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	413.62	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	530.98	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	495.66	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	315.42	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	436.83	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	CHRYSENE	691.06	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	66.31	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	745.39	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH20	EOIH	grab	0	5	CM	LPAH	FLUORENE	39.22	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	319.10	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	20.82	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	PERYLENE	166.23	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	207.25	UG/KG	D
2001	OIH20	EOIH	grab	0	5	CM	HPAH	PYRENE	618.33	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	11.92	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	44.28	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	8.82	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	109.21	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	313.34	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	313.91	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	293.90	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	224.30	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	279.92	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	CHRYSENE	336.80	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	50.91	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	760.69	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	LPAH	FLUORENE	44.69	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	235.86	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	16.80	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	PERYLENE	98.40	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	463.69	UG/KG	D
2001	OIH28	EOIH	grab	0	5	CM	HPAH	PYRENE	631.62	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	22.12	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	62.82	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	58.16	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	363.50	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	797.51	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	1022.04	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	837.59	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	692.58	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	891.76	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	CHRYSENE	1008.77	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	175.78	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	1425.70	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	LPAH	FLUORENE	80.04	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	686.74	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	43.61	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	PERYLENE	276.40	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	802.24	UG/KG	D
2001	OIH51	EOIH	grab	0	5	CM	HPAH	PYRENE	1504.19	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	12.38	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH57	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	24.73	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	29.12	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	79.97	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	201.35	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	245.52	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	209.27	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	184.43	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	203.42	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	CHRYSENE	240.15	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	37.10	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	459.12	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	LPAH	FLUORENE	25.25	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	185.14	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	15.14	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	PERYLENE	75.27	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	261.37	UG/KG	D
2001	OIH57	EOIH	grab	0	5	CM	HPAH	PYRENE	445.89	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	ANTIMONY	0.62	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	ANTIMONY	0.58	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	ANTIMONY	0.93	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	ARSENIC	5.94	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	ARSENIC	5.77	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	ARSENIC	10.80	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	CADMIUM	0.18	MG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	METAL	CADMIUM	0.07	MG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	METAL	CADMIUM	0.21	MG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	METAL	CHROMIUM	206.00	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	CHROMIUM	207.00	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	CHROMIUM	200.00	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	COPPER	19.50	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	COPPER	16.70	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	COPPER	49.40	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	LEAD	62.00	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	LEAD	20.60	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	LEAD	29.30	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	MERCURY	0.09	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	MERCURY	0.09	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	MERCURY	0.22	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	NICKEL	37.80	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	NICKEL	34.40	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	NICKEL	91.80	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	SELENIUM	0.13	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	SELENIUM	0.10	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH74	EOIH	grab	0	5	CM	METAL	SELENIUM	0.37	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	SILVER	0.08	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	SILVER	0.08	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	SILVER	0.25	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	METAL	ZINC	66.90	MG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	METAL	ZINC	61.80	MG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	METAL	ZINC	130.00	MG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	8.04	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	8.04	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	8.04	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	8.04	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	8.04	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	15.58	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	8.04	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB101	0.70	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB105	0.20	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB110	0.65	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB118	0.54	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB126	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB128	0.65	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB138	1.00	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB153	1.34	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB170	0.44	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB18	0.11	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB180	1.04	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB187	0.60	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB195	0.12	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB206	0.12	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB209	0.06	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB28	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB44	0.16	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB52	0.30	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB66	0.16	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB77	0.65	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	CON	PCB8	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	0.78	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	1.02	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	0.54	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	0.63	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	PEST	ALDRIN	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.64	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH60	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.17	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.29	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	ENDRIN	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.64	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.64	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	7.54	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	7.54	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	7.54	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	7.54	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	7.54	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	18.42	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	7.54	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB101	0.84	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB105	0.24	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB110	0.93	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB118	0.63	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB126	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB128	0.61	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB138	1.38	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB153	1.35	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB170	0.34	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB18	0.06	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB180	0.80	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB187	0.57	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB195	0.11	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB206	0.10	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB209	0.07	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB28	0.13	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB44	0.16	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB52	0.30	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB66	0.32	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB77	0.61	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	CON	PCB8	0.10	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	1.67	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.61	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	134.91	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	10.14	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH60D	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	0.74	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	471.11	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ALDRIN	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.61	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.18	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.37	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ENDRIN	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.61	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.60	UG/KG	U
2001	OIH60D	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.60	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1016	11.32	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1221	11.32	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1232	11.32	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1242	11.32	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1248	11.32	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1254	24.02	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	AROCLOR	AROCLOR-1260	11.32	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB101	0.89	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB105	0.38	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB110	1.32	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB118	0.91	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB126	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB128	0.21	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB138	1.57	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB153	1.86	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB170	0.37	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB18	0.08	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB180	1.29	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB187	0.65	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB195	0.19	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB206	0.17	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB209	0.64	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB28	0.19	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB44	0.21	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB52	0.38	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB66	0.36	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB77	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	CON	PCB8	0.91	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH74	EOIH	grab	0	5	CM	DDT 24	2,4'-DDD	0.71	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	DDT 24	2,4'-DDE	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	DDT 24	2,4'-DDT	0.07	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	DDT 44	4,4'-DDD	1.53	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	DDT 44	4,4'-DDE	1.03	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	DDT 44	4,4'-DDT	1.28	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	PEST	ALDRIN	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	ALPHA-BHC	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	ALPHA-CHLORDANE	0.14	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	PEST	DIELDRIN	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	ENDOSULFAN I	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	ENDOSULFAN II	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	ENDOSULFAN SULFATE	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	ENDRIN	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	ENDRIN ALDEHYDE	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	GAMMA-BHC	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	GAMMA-CHLORDANE	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	HEPTACHLOR	0.91	UG/KG	U
2001	OIH74	EOIH	grab	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.91	UG/KG	U
2001	OIH60	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	3.35	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	3.06	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	25.95	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	94.93	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	149.81	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	232.54	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	154.43	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	191.52	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	144.51	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	CHRYSENE	193.54	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	22.17	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	480.43	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	LPAH	FLUORENE	15.62	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	174.17	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	7.90	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	PERYLENE	66.09	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	295.67	UG/KG	D
2001	OIH60	EOIH	grab	0	5	CM	HPAH	PYRENE	546.75	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	3.00	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	2.10	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	18.14	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	42.89	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	89.56	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	142.17	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	109.46	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	103.43	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	109.91	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	CHRYSENE	136.08	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	14.73	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	211.66	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	LPAH	FLUORENE	8.02	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	97.16	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	7.20	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	PERYLENE	41.92	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	135.66	UG/KG	D
2001	OIH60D	EOIH	grab	0	5	CM	HPAH	PYRENE	242.86	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	LPAH	2-METHYLNAPHTHALENE	3.98	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	LPAH	ACENAPHTHENE	3.45	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	LPAH	ACENAPHTHYLENE	12.50	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	LPAH	ANTHRACENE	37.03	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	BENZO(A)ANTHRACENE	69.01	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	BENZO(A)PYRENE	124.73	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	89.64	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	101.36	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	93.53	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	CHRYSENE	103.36	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16.09	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	FLUORANTHENE	157.63	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	LPAH	FLUORENE	7.84	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	94.85	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	LPAH	NAPHTHALENE	7.69	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	PERYLENE	41.00	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	LPAH	PHENANTHRENE	72.95	UG/KG	D
2001	OIH74	EOIH	grab	0	5	CM	HPAH	PYRENE	178.70	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.38	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	LEAD	30.60	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	NICKEL	61.40	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	SILVER	0.26	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.16	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	ARSENIC	6.56	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.18	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	COPPER	45.40	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	ZINC	99.60	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	86.90	MG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.41	MG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	140.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	PYRENE	320.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-1	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	7.70	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	160.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	180.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	260.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	430.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	210.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	17.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	440.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	270.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	33.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	220.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	8.50	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	130.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	20.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	13.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	6.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.40	PCT	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.43	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB209	0.88	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB118	2.15	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB66	0.06	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB105	0.93	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.65	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB8	0.20	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB153	4.27	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB138	3.69	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB180	2.41	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB170	1.12	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB52	0.79	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB18	0.05	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB101	1.68	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB110	2.31	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB128	0.69	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB206	1.13	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB44	0.04	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	2.24	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB187	1.16	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB195	0.79	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	1.96	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB129	0.23	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB126	0.10	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.75	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	CON	PCB28	0.10	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.73	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.90	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.79	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	OIH C-1	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	30.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.35	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	LEAD	24.50	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	NICKEL	38.70	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	SILVER	0.20	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.10	MG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	ARSENIC	5.66	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.30	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	COPPER	23.40	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	ZINC	58.00	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	47.70	MG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.08	MG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	280.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	PYRENE	1000.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	5.60	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	330.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	330.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	300.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	810.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	350.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	59.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	420.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	510.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	54.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	350.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	9.30	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	750.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	75.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-10	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	16.00	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	8.90	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.75	PCT	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.33	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB209	0.18	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB118	1.38	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB66	1.18	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB105	0.51	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.14	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB153	3.08	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB138	2.23	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB180	1.33	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB170	0.67	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB52	0.50	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB101	1.75	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB110	1.81	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB128	0.08	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB206	0.34	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB44	0.60	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.04	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.29	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB187	0.69	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB195	0.23	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	1.49	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB129	0.18	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.80	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	3.36	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.34	UG/KG	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.79	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-10	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-10	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	5.90	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.18	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	LEAD	16.10	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	NICKEL	46.40	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	SILVER	0.20	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.10	MG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	ARSENIC	4.75	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.14	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	COPPER	23.00	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	ZINC	56.60	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	74.50	MG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.11	MG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	17.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	PYRENE	120.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	2.70	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	58.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	55.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	52.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	100.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	41.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	4.70	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	57.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	67.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	6.90	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	39.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	3.40	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	48.00	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	6.10	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	5.20	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	2.50	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.73	PCT	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.33	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB209	0.73	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB118	1.20	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB105	0.52	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.14	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB153	2.49	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB138	1.99	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB180	1.59	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB170	0.82	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB52	0.25	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB101	0.75	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB110	1.18	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB128	0.40	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB206	0.84	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.61	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB187	0.77	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB195	0.58	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.97	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB129	0.17	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.58	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.66	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.25	UG/KG	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-11	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	4.50	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.08	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	LEAD	13.50	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	NICKEL	42.40	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	SILVER	0.12	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.06	MG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	ARSENIC	4.34	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.13	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	COPPER	20.00	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	ZINC	49.20	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	57.10	MG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.08	MG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	27.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	PYRENE	370.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	2.90	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	180.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	170.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	120.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	310.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	110.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	8.20	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	130.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	190.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	11.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	86.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	3.90	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	88.00	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	7.40	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	7.70	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	2.30	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.60	PCT	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.32	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB209	0.59	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB118	0.73	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB105	0.35	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.14	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB153	1.66	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB138	1.33	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB180	1.25	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB170	0.69	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB52	0.05	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB101	0.14	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB110	0.59	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB128	0.35	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB206	0.68	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.67	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB187	0.55	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB195	0.04	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.72	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.42	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.25	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	0.99	UG/KG	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-12	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	3.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.04	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	LEAD	6.93	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	NICKEL	18.50	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	SILVER	0.05	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.08	MG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	ARSENIC	2.60	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.13	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	COPPER	9.74	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	ZINC	22.40	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	21.40	MG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.05	MG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	56.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	PYRENE	290.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	1.10	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	91.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	92.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	81.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	250.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	89.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	8.70	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	120.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	130.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	14.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	95.00	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	1.90	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	110.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-13	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	5.70	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	4.80	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	1.60	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.84	PCT	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.27	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB118	0.33	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB105	0.20	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB153	1.13	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB138	0.66	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB180	0.66	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB170	0.46	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB52	0.04	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB101	0.04	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB110	0.23	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB128	0.20	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB206	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB44	0.02	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.37	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB187	0.38	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB195	0.45	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.51	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	CON	PCB28	0.01	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	0.59	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	0.42	UG/KG	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.02	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-13	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-13	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	4.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.11	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	LEAD	10.60	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	NICKEL	22.90	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	SILVER	0.10	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.07	MG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	ARSENIC	3.78	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.14	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	COPPER	115.00	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	ZINC	44.60	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	28.60	MG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.08	MG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	170.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	PYRENE	1200.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	4.20	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	340.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	330.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	270.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	970.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	280.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	66.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	410.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	440.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	40.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	310.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	6.40	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	640.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	45.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	15.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	7.20	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.37	PCT	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.27	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB118	2.00	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB66	0.11	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB105	0.77	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-14	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB153	3.12	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB138	2.57	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB180	1.06	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB170	0.65	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB52	1.19	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB101	2.29	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB110	2.33	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB128	0.59	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB206	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB44	0.21	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.48	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB187	0.64	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB195	0.47	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	1.26	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.53	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	CON	PCB28	0.02	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.83	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	0.99	UG/KG	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-14	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	4.60	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	MERCURY	8.83	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	LEAD	45.90	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	NICKEL	22.40	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	SILVER	0.05	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.47	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	ARSENIC	4.20	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.06	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	COPPER	29.80	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	ZINC	81.50	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	47.60	MG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.32	MG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-2	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	58.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	PYRENE	390.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	4.60	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	140.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	150.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	150.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	360.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	160.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	35.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	180.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	210.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	28.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	150.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	20.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	300.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	18.00	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	6.10	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	2.20	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.21	PCT	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.25	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB209	0.45	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB118	3.72	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB66	0.61	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB105	1.45	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.11	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB8	0.16	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB153	9.52	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB138	8.54	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB180	4.04	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB170	2.03	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB52	3.26	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB18	0.33	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB101	6.46	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB110	5.60	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB128	1.22	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB206	0.63	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB44	1.21	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	3.73	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB187	2.31	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB195	0.60	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	2.43	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB129	0.40	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.43	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	CON	PCB28	0.49	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	7.64	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.15	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	1.34	UG/KG	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-2	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	59.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.07	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	LEAD	12.90	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	NICKEL	12.70	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	SILVER	0.09	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	ARSENIC	2.53	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.04	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	COPPER	7.90	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	ZINC	25.40	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	20.50	MG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.20	MG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	19.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	PYRENE	160.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	0.80	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	50.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	51.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	50.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	150.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	49.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	6.90	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	69.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	69.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	7.70	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	50.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	2.10	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-3	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	80.00	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	4.40	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	2.60	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	0.93	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.24	PCT	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.26	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB118	1.07	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB105	0.41	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.33	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB8	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB153	2.12	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB138	1.94	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB180	1.15	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB170	0.64	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB52	0.10	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB101	0.69	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB110	1.06	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB128	0.36	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB206	0.56	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB44	0.02	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.86	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.19	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB187	0.63	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB195	0.46	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	2.07	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.29	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	CON	PCB28	0.02	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	5.77	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.40	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.36	UG/KG	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-3	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	6.30	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.07	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	LEAD	8.30	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	NICKEL	12.70	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	SILVER	0.03	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.03	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	ARSENIC	2.32	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.03	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	COPPER	6.34	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	ZINC	21.30	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	21.70	MG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.22	MG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	1.50	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	PYRENE	9.40	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	0.18	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	6.00	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	5.30	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	6.60	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	7.40	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	5.00	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	0.51	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	5.90	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	6.20	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	0.75	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	3.50	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	0.26	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	3.90	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	0.39	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	0.64	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	0.27	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.17	PCT	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.26	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB209	0.41	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB118	0.25	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB105	0.18	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.11	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB8	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB153	0.81	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB138	0.62	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB180	0.56	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB170	0.44	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB52	0.04	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB101	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB110	0.12	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB128	0.20	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB206	0.52	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB44	0.02	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.36	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB187	0.26	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB195	0.42	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.21	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.26	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	CON	PCB28	0.02	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	0.57	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	0.37	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.19	UG/KG	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-4	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.40	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.05	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	LEAD	10.80	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	NICKEL	44.20	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	SILVER	0.09	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.07	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	ARSENIC	4.56	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.15	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	COPPER	20.20	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	ZINC	48.10	MG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	62.10	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-5	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.42	MG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	4.80	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	PYRENE	37.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	0.78	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	21.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	19.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	19.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	30.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	15.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	1.70	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	18.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	23.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	2.10	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	11.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	1.20	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	13.00	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	1.30	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	2.80	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	1.10	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.90	PCT	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.33	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB118	0.03	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB105	0.06	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.14	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB153	0.50	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB138	0.29	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB180	0.27	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB170	0.21	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB52	0.05	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB101	0.01	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB110	0.17	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB128	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB206	0.02	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB44	0.03	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-5	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.04	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.22	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.25	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB187	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB195	0.05	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.19	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB129	0.04	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	0.74	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	0.70	UG/KG	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-5	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	4.30	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.22	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	LEAD	20.50	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	NICKEL	47.70	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	SILVER	0.18	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.09	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	ARSENIC	5.51	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.14	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	COPPER	27.00	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	ZINC	64.10	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	73.50	MG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.29	MG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	41.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	PYRENE	250.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	3.30	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	120.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	110.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	100.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	220.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	96.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	14.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	140.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	140.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	12.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	87.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-6	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	4.60	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	110.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	11.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	11.00	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	4.80	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.02	PCT	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.37	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB209	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB118	0.55	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB66	0.21	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB105	0.24	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.16	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.37	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB153	1.87	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB138	1.23	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB180	1.31	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB170	0.57	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB52	0.06	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB101	0.63	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB110	0.72	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB128	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB206	0.15	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	3.57	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.36	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.40	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB187	0.17	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB195	0.19	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.64	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB126	0.08	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	CON	PCB28	0.05	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.60	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.34	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.07	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	1.14	UG/KG	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-6	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	23.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.34	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	LEAD	28.90	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	NICKEL	26.80	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	SILVER	0.17	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.12	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	ARSENIC	4.53	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.22	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	COPPER	20.50	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	ZINC	50.60	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	32.40	MG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.33	MG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	600.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	PYRENE	3200.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	13.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	650.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	680.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	650.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	2500.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	640.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	140.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	1300.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	1200.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	120.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	1000.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	15.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	1600.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	130.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	28.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	15.00	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.81	PCT	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.29	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB209	0.03	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB118	3.02	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB66	1.33	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB105	1.11	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.13	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.30	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB153	5.40	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB138	4.23	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB180	1.66	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB170	0.97	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB52	2.62	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB101	4.03	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB110	4.01	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB128	0.37	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB206	0.13	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB44	1.48	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.74	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.42	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.54	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB187	1.04	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB195	0.22	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	1.13	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB129	0.26	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.58	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	CON	PCB28	0.56	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.50	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.33	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.84	UG/KG	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-7	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	33.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.29	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	LEAD	22.60	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	NICKEL	46.60	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	SILVER	0.15	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.09	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	ARSENIC	4.36	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.14	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	COPPER	34.80	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	ZINC	60.50	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	65.90	MG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.31	MG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	39.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	PYRENE	310.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	2.70	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	130.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	120.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	100.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	280.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	93.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	14.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	120.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	150.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	15.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	83.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	3.90	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	160.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	11.00	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	7.70	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	2.90	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.88	PCT	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.32	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB118	2.22	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB66	0.72	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB105	0.89	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.14	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB153	4.83	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB138	3.67	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB180	1.94	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB170	1.01	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB52	1.59	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB18	0.05	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB101	3.28	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB110	3.05	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB128	0.44	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB206	0.19	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB44	0.92	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.62	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.35	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.45	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB187	0.82	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB195	0.21	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.81	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB129	0.20	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	CON	PCB28	0.56	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.65	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.17	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.85	UG/KG	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-8	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	57.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	MERCURY	0.18	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	LEAD	91.50	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	NICKEL	49.40	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	SILVER	0.21	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	ANTIMONY	0.13	MG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	ARSENIC	6.11	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	CADMIUM	0.37	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	COPPER	37.10	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	ZINC	78.70	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	CHROMIUM	58.40	MG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	METAL	SELENIUM	0.17	MG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	LPAH	ANTHRACENE	48.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	PYRENE	840.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PAH	DIBENZOFURAN	4.60	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	480.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	490.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	440.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	FLUORANTHENE	610.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	430.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	27.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	CHRYSENE	480.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	670.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	62.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-9	EOIH	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	350.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	LPAH	ACENAPHTHENE	9.70	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	LPAH	PHENANTHRENE	130.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	LPAH	FLUORENE	12.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	LPAH	NAPHTHALENE	22.00	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	LPAH	2-METHYLNAPHTHALENE	6.70	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.71	PCT	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.32	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB118	4.75	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB66	1.56	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB105	1.84	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.14	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.46	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB8	0.28	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB153	9.88	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB138	8.16	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB180	4.59	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB170	2.08	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB52	2.26	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB101	5.23	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB110	5.85	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB128	1.24	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB206	0.46	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB44	1.37	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.83	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.66	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.95	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB187	2.79	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB195	0.54	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDD	3.92	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB129	0.48	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	DIELDRIN	0.98	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	CON	PCB28	0.61	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDD	9.54	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-9	EOIH	GRAB	0	5	CM	DDT 44	4,4'-DDE	3.55	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	DDT 24	2,4'-DDT	1.07	UG/KG	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-9	EOIH	GRAB	0	5	CM	TBT	TRIBUTYL TIN	46.00	UG/KG	D
2005	OIH C-1	EOIH	GRAB	0	5	CM	GRAIN	FINES	90.36	PCT	D
2005	OIH C-10	EOIH	GRAB	0	5	CM	GRAIN	FINES	35.61	PCT	D
2005	OIH C-11	EOIH	GRAB	0	5	CM	GRAIN	FINES	50.72	PCT	D
2005	OIH C-12	EOIH	GRAB	0	5	CM	GRAIN	FINES	39.81	PCT	D
2005	OIH C-13	EOIH	GRAB	0	5	CM	GRAIN	FINES	10.12	PCT	D
2005	OIH C-14	EOIH	GRAB	0	5	CM	GRAIN	FINES	13.87	PCT	D
2005	OIH C-2	EOIH	GRAB	0	5	CM	GRAIN	FINES	2.25	PCT	D
2005	OIH C-3	EOIH	GRAB	0	5	CM	GRAIN	FINES	6.46	PCT	D
2005	OIH C-4	EOIH	GRAB	0	5	CM	GRAIN	FINES	5.30	PCT	D
2005	OIH C-5	EOIH	GRAB	0	5	CM	GRAIN	FINES	47.57	PCT	D
2005	OIH C-6	EOIH	GRAB	0	5	CM	GRAIN	FINES	70.15	PCT	D
2005	OIH C-7	EOIH	GRAB	0	5	CM	GRAIN	FINES	26.26	PCT	D
2005	OIH C-8	EOIH	GRAB	0	5	CM	GRAIN	FINES	38.98	PCT	D
2005	OIH C-9	EOIH	GRAB	0	5	CM	GRAIN	FINES	29.62	PCT	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	MERCURY	0.38	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	LEAD	42.80	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	NICKEL	65.30	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	SILVER	0.30	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.23	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	ARSENIC	6.54	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.23	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	COPPER	49.70	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	ZINC	102.00	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	CHROMIUM	91.10	MG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.30	MG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	140.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	PYRENE	450.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	7.30	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	220.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	240.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	330.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	320.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	290.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	24.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	490.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	360.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	47.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-1	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	200.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	8.80	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	150.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	LPAH	FLUORENE	19.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	15.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	6.10	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.35	PCT	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.40	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB209	0.82	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB118	4.84	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB66	0.40	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB105	1.84	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.79	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB8	0.28	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB153	7.75	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB138	7.43	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB180	2.95	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB170	1.61	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB52	3.41	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB18	0.07	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB101	6.37	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB110	6.29	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB128	1.35	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB206	0.96	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB44	0.83	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	1.13	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB187	1.47	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB195	0.84	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	2.25	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB129	0.37	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB126	0.09	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.73	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	CON	PCB28	0.32	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	2.85	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-1	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.96	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.62	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	37.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	MERCURY	0.34	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	LEAD	66.40	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	NICKEL	34.50	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	SILVER	0.22	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.09	MG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	ARSENIC	5.40	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.35	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	COPPER	24.90	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	ZINC	58.80	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	CHROMIUM	41.20	MG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.07	MG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	18.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	PYRENE	180.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	PAH*	DIBENZOFURAN	1.30	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	110.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	110.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	92.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	140.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	80.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	9.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	83.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	130.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	11.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	56.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	2.30	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	59.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	LPAH	FLUORENE	3.70	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	7.20	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	2.30	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.55	PCT	D
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.29	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB209	0.71	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB118	1.88	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB66	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB105	0.77	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB153	3.67	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB138	3.09	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB180	1.67	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB170	0.92	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB52	1.03	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB101	2.22	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB110	2.36	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB128	0.44	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB206	0.86	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB44	0.02	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.56	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB187	0.87	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB195	0.53	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	2.25	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB129	0.20	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.54	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	5.18	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.49	UG/KG	D
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	7.30	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	MERCURY	0.16	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	LEAD	17.20	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	NICKEL	50.40	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	SILVER	0.18	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.10	MG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	ARSENIC	5.25	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.14	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	COPPER	25.20	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	ZINC	61.20	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	CHROMIUM	73.20	MG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.13	MG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	21.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	PYRENE	150.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	3.20	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	76.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	72.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	69.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	130.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	61.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	6.70	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	73.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	91.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	10.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	56.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	4.70	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	49.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	LPAH	FLUORENE	6.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	7.20	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	3.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.77	PCT	D
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.35	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB209	0.66	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB118	1.11	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB105	0.45	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.15	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB153	2.35	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB138	1.73	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB180	1.62	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB170	0.84	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB52	0.08	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB101	0.52	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB110	0.94	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB128	0.43	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB206	0.78	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.70	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB187	0.78	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB195	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	1.05	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB126	0.08	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.49	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	2.26	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.38	UG/KG	D
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.07	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	3.10	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	MERCURY	0.21	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	LEAD	19.30	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	NICKEL	51.50	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	SILVER	0.18	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.10	MG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	ARSENIC	4.98	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.17	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	COPPER	27.40	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	ZINC	64.10	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	CHROMIUM	66.70	MG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.12	MG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	28.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	PYRENE	220.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	3.30	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	110.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	100.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	91.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	200.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	85.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	12.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	100.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	130.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	14.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	75.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	5.10	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	77.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	LPAH	FLUORENE	6.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	6.80	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	2.80	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.81	PCT	D
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.37	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB209	0.74	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB118	0.88	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB66	0.06	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB105	0.43	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.16	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB153	2.23	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB138	1.73	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB180	1.56	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB170	0.85	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB52	0.06	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB101	0.29	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB110	0.76	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB128	0.42	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB206	0.83	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.65	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB187	0.73	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB195	0.68	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	0.06	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB126	0.08	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-12	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	1.67	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.34	UG/KG	D
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.07	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.07	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	5.50	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	MERCURY	0.06	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	LEAD	7.67	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	NICKEL	28.30	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	SILVER	0.05	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.05	MG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	ARSENIC	4.06	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.14	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	COPPER	11.60	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	ZINC	27.80	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	CHROMIUM	28.30	MG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.32	MG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	42.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	PYRENE	220.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	1.30	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	67.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	69.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	59.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	180.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	68.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	8.40	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	93.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	100.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	11.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	75.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	1.20	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	96.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	LPAH	FLUORENE	5.40	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	4.80	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	2.70	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.52	PCT	D
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.27	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB118	0.29	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB105	0.15	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB153	0.79	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB138	0.52	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB180	0.54	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB170	0.46	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB52	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB101	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB110	0.10	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB128	0.19	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB206	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB44	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.45	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB187	0.28	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB195	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	CON	PCB28	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	0.49	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	0.39	UG/KG	D
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.50	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	MERCURY	0.09	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	LEAD	15.50	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	NICKEL	30.20	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	SILVER	0.09	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.06	MG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	ARSENIC	3.92	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.18	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	COPPER	15.40	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	ZINC	41.30	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	CHROMIUM	35.10	MG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.04	MG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	24.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	PYRENE	180.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	1.20	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	80.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	78.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	71.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	150.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	69.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	9.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	86.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	100.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	10.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	58.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	1.70	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	87.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	LPAH	FLUORENE	4.40	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	7.10	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	1.70	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.52	PCT	D
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.30	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB118	3.68	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB66	0.15	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB105	1.33	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.13	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB153	5.61	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB138	5.12	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB180	1.36	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB170	0.86	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB52	2.61	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB101	5.19	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB110	5.17	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB128	0.98	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB206	0.68	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB44	0.83	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB187	0.76	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB195	0.52	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	3.38	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB129	0.38	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.59	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	4.93	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	0.93	UG/KG	D
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	2.70	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	MERCURY	3.84	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	LEAD	109.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	NICKEL	45.50	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	SILVER	0.15	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	ANTIMONY	5.18	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	ARSENIC	9.37	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.35	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	COPPER	179.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	ZINC	490.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	CHROMIUM	67.70	MG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.42	MG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	250.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	PYRENE	1800.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	57.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	640.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	650.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	760.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	1300.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	710.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	80.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	760.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	920.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	140.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	590.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	100.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	1100.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	LPAH	FLUORENE	140.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	100.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	44.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.45	PCT	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.26	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB209	1.49	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB118	11.36	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB66	5.32	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB105	3.48	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	1.36	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB8	1.32	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB153	38.99	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB138	32.79	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB180	15.66	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB170	7.24	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB52	12.77	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB18	3.01	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB101	17.74	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB110	21.50	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB128	3.56	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB206	1.07	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB44	6.62	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	14.08	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.61	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	1.03	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB187	9.09	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB195	1.20	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	23.98	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB129	0.97	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	DIELDRIN	2.16	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	CON	PCB28	4.34	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	58.48	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	10.19	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	2.54	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	2.56	UG/KG	D
2005	OIH C-2	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-2	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	37.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	MERCURY	0.09	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	LEAD	9.89	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	NICKEL	20.90	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	SILVER	0.06	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.05	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	ARSENIC	3.87	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.10	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	COPPER	10.30	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	ZINC	27.60	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	CHROMIUM	27.40	MG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.28	MG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	4.10	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	PYRENE	45.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	0.46	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	18.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	18.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	18.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	41.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	18.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	1.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	22.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	23.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	3.10	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	16.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	0.37	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	13.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	LPAH	FLUORENE	0.75	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	1.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	0.49	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.57	PCT	D
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.28	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB118	1.70	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB105	0.73	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.32	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB153	2.40	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB138	2.21	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB180	0.84	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB170	0.61	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB52	0.86	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB101	2.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB110	2.21	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB128	0.45	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB206	0.58	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB44	0.06	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	1.26	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB187	0.41	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB195	0.47	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	1.27	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB129	0.18	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.34	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	CON	PCB28	0.02	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	7.01	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.03	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.36	UG/KG	D
2005	OIH C-3	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	3.50	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	MERCURY	0.08	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	LEAD	9.27	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	NICKEL	15.70	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	SILVER	0.05	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.06	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	ARSENIC	2.49	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.06	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	COPPER	9.25	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	ZINC	29.30	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	CHROMIUM	24.10	MG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.22	MG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	16.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	PYRENE	88.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	0.63	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	26.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	25.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	24.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	74.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	25.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	6.20	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	33.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	35.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	3.80	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	25.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	0.86	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	56.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	LPAH	FLUORENE	3.90	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	2.60	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	0.87	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.18	PCT	D
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.26	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB209	0.45	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB118	2.10	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB105	0.88	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.30	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB8	0.01	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB153	2.95	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB138	2.91	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB180	0.91	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB170	0.69	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB52	1.40	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB101	2.62	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB110	2.68	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB128	0.63	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB206	0.53	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB44	0.27	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.38	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB187	0.44	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB195	0.44	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	0.21	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB129	0.23	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.29	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	CON	PCB28	0.02	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	0.59	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	0.42	UG/KG	D
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	3.60	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	MERCURY	0.07	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	LEAD	9.40	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	NICKEL	53.10	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	SILVER	0.09	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.06	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	ARSENIC	4.89	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.21	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	COPPER	23.60	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	ZINC	51.60	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	CHROMIUM	66.20	MG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.34	MG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	0.67	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	PYRENE	5.60	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	0.23	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	2.40	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	2.10	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	2.00	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	4.40	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1.80	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	0.41	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	2.40	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	2.50	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	0.22	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	1.60	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	0.18	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	2.90	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	LPAH	FLUORENE	0.44	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	0.46	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	0.24	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.87	PCT	D
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.40	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB209	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB118	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB66	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB105	0.07	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.17	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB153	0.08	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB138	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB180	0.07	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB170	0.06	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB52	0.07	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB18	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB101	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB110	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB128	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB206	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB44	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB187	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB195	0.01	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB126	0.09	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-5	EOIH	CORE	5	25	CM	CON	PCB28	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	0.61	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	0.65	UG/KG	D
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.07	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	0.65	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	MERCURY	0.29	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	LEAD	23.00	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	NICKEL	52.20	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	SILVER	0.21	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	ARSENIC	5.44	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.19	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	COPPER	32.20	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	ZINC	71.20	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	CHROMIUM	76.60	MG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.34	MG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	27.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	PYRENE	210.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	3.60	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	120.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	120.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	140.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	140.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	120.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	10.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	110.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	160.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	64.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	4.10	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	57.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	LPAH	FLUORENE	7.20	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	13.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	4.40	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.11	PCT	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.41	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB209	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB118	0.96	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB66	0.38	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB105	0.37	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.18	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.44	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB153	2.79	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB138	2.02	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB180	1.57	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB170	0.73	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB52	0.07	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB18	0.05	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB101	1.14	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB110	1.25	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB128	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB206	0.22	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB44	0.13	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.05	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.42	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.48	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB187	0.42	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB195	0.29	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	1.03	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB126	0.09	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.59	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	CON	PCB28	0.20	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	2.18	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.82	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.99	UG/KG	D
2005	OIH C-6	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	3.70	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	MERCURY	0.04	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	LEAD	28.70	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	NICKEL	28.70	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	SILVER	0.17	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.08	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	ARSENIC	5.51	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.29	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	COPPER	21.80	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	ZINC	52.30	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	CHROMIUM	39.90	MG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.34	MG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	1300.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	PYRENE	5900.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	51.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	1500.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1500.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1200.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	5200.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1400.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	680.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	2000.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	2100.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	200.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	1500.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	50.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	6200.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	LPAH	FLUORENE	550.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	170.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	110.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.62	PCT	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.28	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB118	2.32	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB66	1.20	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB105	0.85	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.34	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB153	4.81	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB138	3.62	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB180	1.53	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB170	1.15	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB52	1.50	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB101	3.09	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB110	3.21	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB128	0.25	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB206	0.12	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB44	0.91	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.51	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.57	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB187	1.05	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB195	0.24	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	1.49	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB129	0.22	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.73	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	CON	PCB28	0.40	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	3.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.42	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.79	UG/KG	D
2005	OIH C-7	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	20.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	MERCURY	0.29	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	LEAD	28.40	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	NICKEL	46.20	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	SILVER	0.29	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.10	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	ARSENIC	5.00	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.29	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	COPPER	30.40	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	ZINC	69.50	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	CHROMIUM	67.50	MG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.40	MG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	210.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	PYRENE	1100.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	6.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	280.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	280.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	280.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	940.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	270.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-8	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	64.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	330.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	410.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	44.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	280.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	13.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	710.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	LPAH	FLUORENE	57.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	15.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	5.80	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.71	PCT	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.32	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB118	3.06	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB66	1.25	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB105	1.14	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.14	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.36	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB153	7.86	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB138	6.01	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB180	4.08	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB170	1.96	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB52	1.91	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB18	0.12	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB101	4.39	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB110	4.15	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB128	0.79	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB206	0.33	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB44	1.34	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.75	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.37	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.48	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB187	2.42	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB195	0.49	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	1.03	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB129	0.31	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	CON	PCB28	0.81	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	2.40	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	1.72	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	0.96	UG/KG	D
2005	OIH C-8	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	76.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	MERCURY	0.09	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	LEAD	79.00	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	NICKEL	38.40	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	SILVER	0.26	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	ANTIMONY	0.19	MG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	ARSENIC	4.66	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	CADMIUM	0.90	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	COPPER	65.60	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	ZINC	94.10	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	CHROMIUM	45.10	MG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	METAL	SELENIUM	0.12	MG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	LPAH	ANTHRACENE	2900.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	PYRENE	5300.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PAH	DIBENZOFURAN	98.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	930.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1100.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1200.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	FLUORANTHENE	4800.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1700.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	870.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	CHRYSENE	2800.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	2100.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	270.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	2200.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	LPAH	ACENAPHTHENE	130.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	LPAH	PHENANTHRENE	7300.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	LPAH	FLUORENE	1400.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	LPAH	NAPHTHALENE	79.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	270.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.68	PCT	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.28	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB209	0.14	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB118	8.31	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB66	4.99	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB105	3.14	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDE	0.49	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB8	0.79	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB153	17.24	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB138	13.09	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB180	8.76	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB170	3.83	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB52	6.50	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB101	10.52	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB110	11.26	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB128	1.63	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB206	1.36	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB44	2.83	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDT	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.88	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.91	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB187	6.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB195	0.96	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDD	4.57	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB129	0.71	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	DIELDRIN	3.34	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	CON	PCB28	0.86	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDD	11.07	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	DDT 44	4,4'-DDE	3.33	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	DDT 24	2,4'-DDT	1.22	UG/KG	D
2005	OIH C-9	EOIH	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	5	25	CM	TBT	TRIBUTYL TIN	28.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	5	25	CM	GRAIN	FINES	90.75	PCT	D
2005	OIH C-10	EOIH	CORE	5	25	CM	GRAIN	FINES	25.23	PCT	D
2005	OIH C-11	EOIH	CORE	5	25	CM	GRAIN	FINES	58.07	PCT	D
2005	OIH C-12	EOIH	CORE	5	25	CM	GRAIN	FINES	60.52	PCT	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-13	EOIH	CORE	5	25	CM	GRAIN	FINES	25.90	PCT	D
2005	OIH C-14	EOIH	CORE	5	25	CM	GRAIN	FINES	26.23	PCT	D
2005	OIH C-2	EOIH	CORE	5	25	CM	GRAIN	FINES	3.01	PCT	D
2005	OIH C-3	EOIH	CORE	5	25	CM	GRAIN	FINES	23.41	PCT	D
2005	OIH C-4	EOIH	CORE	5	25	CM	GRAIN	FINES	9.52	PCT	D
2005	OIH C-5	EOIH	CORE	5	25	CM	GRAIN	FINES	78.66	PCT	D
2005	OIH C-6	EOIH	CORE	5	25	CM	GRAIN	FINES	75.55	PCT	D
2005	OIH C-7	EOIH	CORE	5	25	CM	GRAIN	FINES	28.08	PCT	D
2005	OIH C-8	EOIH	CORE	5	25	CM	GRAIN	FINES	49.15	PCT	D
2005	OIH C-9	EOIH	CORE	5	25	CM	GRAIN	FINES	23.69	PCT	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	MERCURY	0.42	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	LEAD	40.90	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	NICKEL	72.40	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	SILVER	0.35	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.17	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	ARSENIC	7.50	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.30	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	COPPER	53.30	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	ZINC	111.00	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	CHROMIUM	101.00	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.47	MG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	33.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	PYRENE	370.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	4.30	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	120.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	130.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	190.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	230.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	150.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	11.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	190.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	200.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	17.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	160.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	4.10	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	40.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	LPAH	FLUORENE	6.70	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	9.70	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	3.60	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.53	PCT	D
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.46	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB209	1.08	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB118	1.83	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB66	0.07	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB105	0.70	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.20	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB8	0.12	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB153	3.63	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB138	2.76	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB180	1.85	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB170	1.18	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB52	0.14	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB18	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB101	0.91	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB110	1.63	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB128	0.75	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB206	1.10	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB44	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	1.09	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB187	1.06	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB195	0.79	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	1.71	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB126	0.10	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.62	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	CON	PCB28	0.04	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	2.44	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	2.53	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	OIH C-1	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	13.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	MERCURY	0.33	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	LEAD	25.50	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	NICKEL	33.50	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	SILVER	0.13	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.09	MG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	ARSENIC	5.28	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.28	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	COPPER	25.70	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	ZINC	49.30	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	CHROMIUM	46.90	MG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.10	MG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	67.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	PYRENE	1500.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	2.70	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	800.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	740.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	530.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	720.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	420.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	25.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	350.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	830.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	57.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	260.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	7.70	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	180.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	LPAH	FLUORENE	10.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	46.00	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	5.40	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.07	PCT	D
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.30	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB118	1.13	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB105	0.43	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.13	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB8	0.09	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB153	2.23	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB138	1.68	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB180	1.08	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB170	0.71	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB52	0.70	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB101	0.71	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB110	0.96	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB128	0.36	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB206	0.80	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.74	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB187	0.71	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB195	0.49	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	1.47	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.42	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	2.84	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	0.86	UG/KG	D
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-10	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	3.20	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	MERCURY	0.25	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	LEAD	22.70	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	NICKEL	57.90	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	SILVER	0.25	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.09	MG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	ARSENIC	6.06	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.21	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	COPPER	30.20	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	ZINC	70.40	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	CHROMIUM	75.30	MG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.07	MG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	19.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	PYRENE	150.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	2.60	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	86.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	80.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	69.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	110.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	56.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	6.60	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	68.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	93.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	10.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	49.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	3.80	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	48.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	LPAH	FLUORENE	4.70	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	6.80	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	3.00	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.98	PCT	D
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.40	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB209	0.72	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB118	0.90	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB66	0.06	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB105	0.44	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.17	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB153	2.33	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB138	1.77	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB180	1.65	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB170	0.90	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB52	0.06	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB18	0.05	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB101	0.22	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB110	0.68	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB128	0.40	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB206	0.87	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB44	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	1.63	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB187	0.82	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB195	0.70	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	0.89	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB126	0.09	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.94	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	CON	PCB28	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	1.80	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	1.40	UG/KG	D
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.07	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-11	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	5.70	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	MERCURY	0.30	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	LEAD	27.80	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	NICKEL	67.40	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	SILVER	0.26	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.12	MG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	ARSENIC	6.76	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.27	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	COPPER	37.40	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	ZINC	81.10	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	CHROMIUM	88.10	MG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.16	MG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	55.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	PYRENE	360.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	4.60	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	140.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	130.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	120.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	300.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	110.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	25.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	150.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	170.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	18.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	110.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	6.20	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	260.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	LPAH	FLUORENE	26.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	12.00	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	7.20	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.14	PCT	D
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.36	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB209	0.68	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB118	1.11	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB105	0.48	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.16	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB153	2.58	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB138	1.98	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB180	1.88	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB170	0.87	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB52	0.06	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB101	0.57	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB110	1.04	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB128	0.41	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB206	0.82	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.64	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB187	0.84	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB195	0.67	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	1.10	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB126	0.08	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.52	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	2.04	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	1.46	UG/KG	D
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.07	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-12	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	8.30	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	MERCURY	0.05	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	LEAD	8.25	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	NICKEL	41.10	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	SILVER	0.07	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.05	MG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	ARSENIC	5.15	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.21	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	COPPER	21.00	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	ZINC	36.10	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	CHROMIUM	52.80	MG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.42	MG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	12.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	PYRENE	89.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	0.60	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	26.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	26.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	21.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	75.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	22.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	3.80	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	28.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	34.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	3.40	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	23.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	0.53	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	50.00	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	LPAH	FLUORENE	4.20	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	2.20	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	1.10	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.81	PCT	D
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.31	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB118	0.14	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB105	0.14	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.13	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB153	0.55	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB138	0.29	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB180	0.51	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB170	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB52	0.05	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB101	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB110	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB128	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB206	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB187	0.21	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB195	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	0.05	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	0.48	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	0.35	UG/KG	D
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-13	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.09	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	MERCURY	0.11	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	LEAD	12.30	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	NICKEL	59.30	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	SILVER	0.10	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.05	MG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	ARSENIC	5.21	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.29	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	COPPER	24.80	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	ZINC	51.50	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	CHROMIUM	71.70	MG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.07	MG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	14.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	PYRENE	92.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	0.80	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	38.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	37.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	35.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	75.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	31.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	4.90	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	38.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	48.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	5.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	29.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	0.98	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	48.00	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	LPAH	FLUORENE	3.80	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	2.60	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	1.40	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.80	PCT	D
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.36	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB209	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB118	0.27	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB105	0.21	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.16	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB153	0.88	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB138	0.57	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB180	0.68	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB170	0.57	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB52	0.06	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB101	0.05	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB110	0.12	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB128	0.22	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB206	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.62	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB187	0.28	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB195	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	0.41	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB129	0.03	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB126	0.08	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	0.72	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	0.47	UG/KG	D
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.07	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.07	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-14	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.20	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	MERCURY	12.30	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	LEAD	1480.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	NICKEL	34.40	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	SILVER	0.20	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	ANTIMONY	20.90	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	ARSENIC	30.70	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	CADMIUM	1.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	COPPER	1290.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	ZINC	1800.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	CHROMIUM	105.00	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.54	MG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	450.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	PYRENE	4700.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	58.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	2100.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	2300.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	3500.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	2300.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	2400.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	280.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	2100.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	3500.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	580.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	2000.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	100.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	1000.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	LPAH	FLUORENE	130.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	39.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	26.00	UG/KG	D
2005	OIH C-2	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	2.31	PCT	D
2005	OIH C-2	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.40	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	MERCURY	0.01	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	LEAD	5.37	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	NICKEL	39.00	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	SILVER	0.05	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.05	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	ARSENIC	5.19	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.17	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	COPPER	13.30	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	ZINC	34.60	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	CHROMIUM	48.60	MG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.35	MG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	2.70	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	PYRENE	19.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	0.30	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	5.70	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	5.50	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	5.30	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	16.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	5.30	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	1.40	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	7.20	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	7.40	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	0.80	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	5.40	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	0.20	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	12.00	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	LPAH	FLUORENE	1.20	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	2.70	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	0.68	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.72	PCT	D
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.30	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB209	0.57	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB118	0.10	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB105	0.05	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.13	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB153	0.50	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB138	0.20	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB180	0.41	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB170	0.43	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB52	0.05	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB101	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB110	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB128	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB206	0.68	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.42	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB187	0.16	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB195	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	0.19	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB129	0.02	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	0.71	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	0.39	UG/KG	D
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-3	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.09	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	MERCURY	0.08	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	LEAD	8.75	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	NICKEL	25.30	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	SILVER	0.06	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.06	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	ARSENIC	4.06	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.15	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	COPPER	12.10	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	ZINC	31.80	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	CHROMIUM	33.30	MG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.31	MG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	12.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	PYRENE	140.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	0.44	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	54.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	50.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	41.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	120.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	34.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	3.60	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	44.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	62.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	4.60	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	29.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	0.83	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	52.00	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	LPAH	FLUORENE	1.80	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	2.30	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	0.73	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.37	PCT	D
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.29	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB209	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB118	0.73	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB66	0.04	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB105	0.30	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB8	0.04	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB153	1.57	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB138	1.12	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB180	0.32	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB170	0.28	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB52	0.20	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB101	1.02	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB110	1.02	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB128	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB206	0.03	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB44	0.11	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.26	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.30	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB187	0.03	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB195	0.05	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	0.25	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB129	0.09	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	0.79	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	0.58	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.67	UG/KG	D
2005	OIH C-4	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-4	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	4.20	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	MERCURY	0.15	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	LEAD	8.71	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	NICKEL	53.20	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	SILVER	0.09	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.05	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	ARSENIC	4.99	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.25	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	COPPER	24.10	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	ZINC	50.60	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	CHROMIUM	76.50	MG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.35	MG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	0.75	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	PYRENE	3.80	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	0.31	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	2.90	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	2.30	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	3.60	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	3.20	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	2.80	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	0.20	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	3.90	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	3.10	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	0.42	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	1.30	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	0.18	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	2.20	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	LPAH	FLUORENE	0.59	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	0.55	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-5	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	0.45	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.85	PCT	D
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.34	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB209	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB118	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB105	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.15	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB153	0.07	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB138	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB180	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB170	0.04	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB52	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB101	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB110	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB128	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB206	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB44	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB187	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB195	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	0.05	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB126	0.08	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	0.48	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	0.51	UG/KG	D
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.07	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-5	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-5	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.10	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	MERCURY	0.28	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	LEAD	30.10	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	NICKEL	52.10	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	SILVER	0.23	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.16	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	ARSENIC	6.64	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.28	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	COPPER	35.00	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	ZINC	111.00	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	CHROMIUM	69.80	MG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.34	MG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	82.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	PYRENE	610.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	7.30	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	220.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	220.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	270.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	400.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	220.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	14.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	360.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	310.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	27.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	180.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	20.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	220.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	LPAH	FLUORENE	22.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	21.00	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	7.90	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.82	PCT	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.41	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB209	0.02	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB118	2.08	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB66	0.83	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB105	0.73	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.18	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.44	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB8	0.06	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB153	4.56	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB138	3.20	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB180	1.76	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB170	0.88	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB52	0.45	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB18	0.05	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB101	2.41	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB110	2.20	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB128	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB206	0.16	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB44	0.25	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.05	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.48	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.55	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB187	0.69	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB195	0.28	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	1.92	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB129	0.18	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB126	0.09	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.67	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	CON	PCB28	0.26	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	2.95	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	2.31	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	1.08	UG/KG	D
2005	OIH C-6	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-6	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	5.70	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	MERCURY	0.10	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	LEAD	9.54	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	NICKEL	46.50	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	SILVER	0.10	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.05	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	ARSENIC	5.42	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.25	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	COPPER	17.40	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	ZINC	46.30	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	CHROMIUM	58.20	MG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.35	MG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	25.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	PYRENE	180.00	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-7	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	1.60	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	82.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	76.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	62.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	150.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	52.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	20.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	59.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	91.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	8.40	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	40.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	1.80	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	120.00	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	LPAH	FLUORENE	7.60	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	6.60	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	2.70	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.97	PCT	D
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.34	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB209	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB118	0.42	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.05	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB66	0.05	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB105	0.19	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.15	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB8	0.05	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB153	1.12	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB138	0.65	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB180	0.32	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB170	0.22	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB52	0.06	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB18	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB101	0.53	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB110	0.75	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB128	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB206	0.10	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB44	0.04	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.24	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB187	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB195	0.09	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	0.64	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB129	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB126	0.08	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	DIELDRIN	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	CON	PCB28	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	1.27	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	0.73	UG/KG	D
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.07	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	0.06	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	OIH C-7	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.70	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	MERCURY	0.46	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	LEAD	37.30	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	NICKEL	41.70	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	SILVER	0.43	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.15	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	ARSENIC	6.06	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.59	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	COPPER	29.90	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	ZINC	84.20	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	CHROMIUM	66.10	MG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.37	MG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	33.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	PYRENE	320.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	3.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	200.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	200.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	180.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	270.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	150.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	17.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	130.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	240.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	27.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	94.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	6.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	130.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	LPAH	FLUORENE	8.90	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-8	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	15.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	5.70	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.76	PCT	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.30	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB209	0.22	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB118	4.61	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB66	1.91	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB105	1.64	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.13	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.37	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB8	0.44	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB153	10.32	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB138	7.94	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB180	4.46	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB170	2.18	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB52	3.23	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB18	0.51	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB101	6.40	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB110	6.14	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB128	1.07	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB206	0.45	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB44	1.95	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	20.32	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.47	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.62	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB187	2.69	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB195	0.53	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	1.32	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB129	0.40	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB126	0.07	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	DIELDRIN	1.00	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	CON	PCB28	1.24	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.04	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	3.66	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	1.75	UG/KG	D
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	1.15	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-8	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-8	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	12.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	MERCURY	0.27	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	LEAD	71.70	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	NICKEL	33.40	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	SILVER	0.30	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	ANTIMONY	0.25	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	ARSENIC	4.88	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	CADMIUM	0.80	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	COPPER	47.90	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	ZINC	83.70	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	CHROMIUM	46.30	MG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	METAL	SELENIUM	0.10	MG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	LPAH	ANTHRACENE	130.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	PYRENE	1700.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PAH	DIBENZOFURAN	7.30	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	650.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	650.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	570.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	FLUORANTHENE	1400.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	600.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	67.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	CHRYSENE	740.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	880.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	93.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	540.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	LPAH	ACENAPHTHENE	14.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	LPAH	PHENANTHRENE	310.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	LPAH	FLUORENE	26.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	LPAH	NAPHTHALENE	37.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	16.00	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.78	PCT	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.26	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB209	0.13	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB118	7.34	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB66	2.98	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB77	0.02	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB105	3.01	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN II	0.11	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDE	0.47	UG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB8	0.89	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB153	13.71	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB138	11.23	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB180	5.32	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB170	2.52	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB52	5.58	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB18	1.34	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB101	9.65	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB110	10.07	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB128	1.48	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB206	0.45	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB44	2.86	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDT	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	1.12	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	1.42	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB187	3.31	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB195	0.54	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDD	5.51	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB129	0.78	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB126	0.06	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	DIELDRIN	1.49	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	CON	PCB28	0.91	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDD	15.93	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	DDT 44	4,4'-DDE	4.30	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	DDT 24	2,4'-DDT	1.03	UG/KG	D
2005	OIH C-9	EOIH	CORE	25	50	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	OIH C-9	EOIH	CORE	25	50	CM	TBT	TRIBUTYL TIN	31.00	UG/KG	D
2005	OIH C-1	EOIH	CORE	25	50	CM	GRAIN	FINES	95.19	PCT	D
2005	OIH C-10	EOIH	CORE	25	50	CM	GRAIN	FINES	32.33	PCT	D
2005	OIH C-11	EOIH	CORE	25	50	CM	GRAIN	FINES	77.17	PCT	D
2005	OIH C-12	EOIH	CORE	25	50	CM	GRAIN	FINES	89.55	PCT	D
2005	OIH C-13	EOIH	CORE	25	50	CM	GRAIN	FINES	60.71	PCT	D
2005	OIH C-14	EOIH	CORE	25	50	CM	GRAIN	FINES	77.89	PCT	D
2005	OIH C-2	EOIH	CORE	25	50	CM	GRAIN	FINES	5.31	PCT	D
2005	OIH C-3	EOIH	CORE	25	50	CM	GRAIN	FINES	55.53	PCT	D
2005	OIH C-4	EOIH	CORE	25	50	CM	GRAIN	FINES	23.19	PCT	D
2005	OIH C-5	EOIH	CORE	25	50	CM	GRAIN	FINES	87.01	PCT	D
2005	OIH C-6	EOIH	CORE	25	50	CM	GRAIN	FINES	73.43	PCT	D
2005	OIH C-7	EOIH	CORE	25	50	CM	GRAIN	FINES	66.54	PCT	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	OIH C-8	EOIH	CORE	25	50	CM	GRAIN	FINES	41.74	PCT	D
2005	OIH C-9	EOIH	CORE	25	50	CM	GRAIN	FINES	17.24	PCT	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDD	23.07	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDE	16.20	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDT	4.13	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ALDRIN	1.01	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-BHC	1.01	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-CHLORDANE	3.84	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	ANTIMONY	21.33	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1016	41.33	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1221	3492.33	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1232	1746.00	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1242	1764.00	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1248	41.33	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1254	213.33	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1260	550.00	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	ARSENIC	8.00	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	CADMIUM	0.90	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	CHROMIUM	115.33	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	COPPER	46.67	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	DIELDRIN	87.33	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN I	2.07	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN II	2.07	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN SULFATE	2.07	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN	87.33	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN ALDEHYDE	174.67	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-BHC	1.01	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-CHLORDANE	40.33	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR	1.01	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR EPOXIDE	1.01	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	LEAD	43.00	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	MERCURY	0.24	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	NICKEL	54.67	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	SELENIUM	0.25	MG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	SILVER	0.50	MG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	TOC	TOTAL ORGANIC CARBON	1.07	PCT	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	TBT	TRIBUTYL TIN	35.00	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	METAL	ZINC	166.67	MG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	LPAH	2-METHYLNAPHTHALENE	92.75	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHENE	147.75	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHYLENE	122.75	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	LPAH	ANTHRACENE	168.50	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)ANTHRACENE	316.25	UG/KG	M

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)PYRENE	559.50	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(B)FLUORANTHENE	677.50	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(G,H,I)PERYLENE	445.00	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(K)FLUORANTHENE	248.25	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	CHRYSENE	622.50	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	118.75	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	FLUORANTHENE	942.75	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	LPAH	FLUORENE	127.75	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	401.25	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	LPAH	NAPHTHALENE	92.75	UG/KG	U
1993/4	E07	EOIH	GRAB	0	9.1	CM	LPAH	PHENANTHRENE	997.00	UG/KG	M
1993/4	E07	EOIH	GRAB	0	9.1	CM	HPAH	PYRENE	1097.50	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDD	8.13	UG/KG	M
1993/4	E08	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDE	8.80	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDT	5.98	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ALDRIN	1.05	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-BHC	29.75	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-CHLORDANE	8.47	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	ANTIMONY	29.50	MG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1016	42.00	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1221	483.75	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1232	242.25	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1242	242.25	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1248	42.00	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1254	177.75	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1260	102.00	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	ARSENIC	8.40	MG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	CADMIUM	0.29	MG/KG	M
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	CHROMIUM	98.25	MG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	COPPER	38.50	MG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	DIELDRIN	20.75	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN I	2.08	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN II	2.08	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN SULFATE	2.08	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN	20.75	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN ALDEHYDE	42.00	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-BHC	32.22	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-CHLORDANE	8.47	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR	1.05	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR EPOXIDE	1.05	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	LEAD	21.25	MG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	MERCURY	0.26	MG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	NICKEL	48.75	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	SELENIUM	0.25	MG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	SILVER	0.50	MG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	TOC	TOTAL ORGANIC CARBON	1.08	PCT	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	TBT	TRIBUTYL TIN	25.50	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	METAL	ZINC	113.25	MG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	LPAH	2-METHYLNAPHTHALENE	177.50	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHENE	177.50	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHYLENE	177.50	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	LPAH	ANTHRACENE	177.50	UG/KG	M
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)ANTHRACENE	295.00	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)PYRENE	322.50	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(B)FLUORANTHENE	415.00	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(G,H,I)PERYLENE	210.00	UG/KG	M
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(K)FLUORANTHENE	177.50	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	CHRYSENE	377.50	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	177.50	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	FLUORANTHENE	432.50	UG/KG	M
1993/4	E08	EOIH	GRAB	0	9.1	CM	LPAH	FLUORENE	92.50	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	262.50	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	LPAH	NAPHTHALENE	177.50	UG/KG	U
1993/4	E08	EOIH	GRAB	0	9.1	CM	LPAH	PHENANTHRENE	267.50	UG/KG	D
1993/4	E08	EOIH	GRAB	0	9.1	CM	HPAH	PYRENE	660.00	UG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDD	5.33	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDE	3.73	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDT	3.73	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ALDRIN	0.94	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-BHC	0.94	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-CHLORDANE	0.94	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	ANTIMONY	28.33	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1016	37.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1221	75.00	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1232	37.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1242	37.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1248	37.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1254	47.67	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1260	37.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	ARSENIC	6.93	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	CADMIUM	0.25	MG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	CHROMIUM	123.33	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	COPPER	30.33	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	DIELDRIN	18.67	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN I	1.87	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN II	1.87	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN SULFATE	1.87	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN	18.67	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN ALDEHYDE	37.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-BHC	0.94	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-CHLORDANE	0.94	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR	0.94	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR EPOXIDE	0.94	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	LEAD	17.00	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	MERCURY	0.21	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	NICKEL	53.67	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	SELENIUM	0.25	MG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	SILVER	0.50	MG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	TOC	TOTAL ORGANIC CARBON	0.90	PCT	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	TBT	TRIBUTYL TIN	29.33	UG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	METAL	ZINC	101.67	MG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	LPAH	2-METHYLNAPHTHALENE	123.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHENE	123.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHYLENE	123.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	LPAH	ANTHRACENE	133.33	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)ANTHRACENE	180.00	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)PYRENE	246.67	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(B)FLUORANTHENE	283.33	UG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(G,H,I)PERYLENE	193.33	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(K)FLUORANTHENE	123.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	CHRYSENE	210.00	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	123.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	FLUORANTHENE	396.67	UG/KG	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	LPAH	FLUORENE	62.67	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	180.00	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	LPAH	NAPHTHALENE	123.33	UG/KG	U
1993/4	E09	EOIH	GRAB	0	9.1	CM	LPAH	PHENANTHRENE	256.67	UG/KG	M
1993/4	E09	EOIH	GRAB	0	9.1	CM	HPAH	PYRENE	406.67	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDD	8.13	UG/KG	M
1993/4	E10	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDE	6.23	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	DDT 44	4,4'-DDT	4.88	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ALDRIN	1.23	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-BHC	3.70	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ALPHA-CHLORDANE	6.85	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	ANTIMONY	37.00	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1016	48.75	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1221	97.25	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1232	48.75	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1242	48.75	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E10	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1248	48.75	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1254	88.25	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	AROCLOR	AROCLOR-1260	63.75	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	ARSENIC	9.38	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	CADMIUM	0.26	MG/KG	M
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	CHROMIUM	150.00	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	COPPER	56.00	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	DIELDRIN	24.25	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN I	2.43	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN II	2.43	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ENDOSULFAN SULFATE	2.43	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN	24.25	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	ENDRIN ALDEHYDE	48.75	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-BHC	3.80	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	GAMMA-CHLORDANE	12.25	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR	1.23	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	PEST	HEPTACHLOR EPOXIDE	1.23	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	LEAD	29.50	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	MERCURY	0.38	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	NICKEL	74.00	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	SELENIUM	0.25	MG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	SILVER	0.50	MG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	TOC	TOTAL ORGANIC CARBON	1.20	PCT	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	TBT	TRIBUTYL TIN	37.50	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	METAL	ZINC	157.50	MG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	LPAH	2-METHYLNAPHTHALENE	162.50	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHENE	162.50	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	LPAH	ACENAPHTHYLENE	162.50	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	LPAH	ANTHRACENE	187.50	UG/KG	M
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)ANTHRACENE	300.00	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(A)PYRENE	457.50	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(B)FLUORANTHENE	600.00	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(G,H,I)PERYLENE	282.50	UG/KG	M
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	BENZO(K)FLUORANTHENE	227.50	UG/KG	M
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	CHRYSENE	407.50	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	162.50	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	FLUORANTHENE	425.00	UG/KG	M
1993/4	E10	EOIH	GRAB	0	9.1	CM	LPAH	FLUORENE	85.75	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	357.50	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	LPAH	NAPHTHALENE	162.50	UG/KG	U
1993/4	E10	EOIH	GRAB	0	9.1	CM	LPAH	PHENANTHRENE	377.50	UG/KG	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	HPAH	PYRENE	695.00	UG/KG	D
1993/4	E07	EOIH	GRAB	0	9.1	CM	GRAIN	FINES	53.20	PCT	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E08	EOIH	GRAB	0	9.1	CM	GRAIN	FINES	47.80	PCT	D
1993/4	E09	EOIH	GRAB	0	9.1	CM	GRAIN	FINES	49.43	PCT	D
1993/4	E10	EOIH	GRAB	0	9.1	CM	GRAIN	FINES	82.27	PCT	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	DDT 44	4,4'-DDD	11.00	UG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	DDT 44	4,4'-DDE	2.80	UG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	DDT 44	4,4'-DDT	2.80	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ALDRIN	0.69	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ALPHA-BHC	0.69	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ALPHA-CHLORDANE	0.69	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	ANTIMONY	8.70	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	AROCLOR	AROCLOR-1016	28.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	AROCLOR	AROCLOR-1221	56.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	AROCLOR	AROCLOR-1232	28.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	AROCLOR	AROCLOR-1242	28.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	AROCLOR	AROCLOR-1248	28.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	AROCLOR	AROCLOR-1254	71.00	UG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	AROCLOR	AROCLOR-1260	28.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	ARSENIC	6.20	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	CADMIUM	0.25	MG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	CHROMIUM	66.00	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	COPPER	27.00	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	DIELDRIN	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ENDOSULFAN I	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ENDOSULFAN II	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ENDOSULFAN SULFATE	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ENDRIN	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	ENDRIN ALDEHYDE	2.80	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	GAMMA-BHC	0.69	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	GAMMA-CHLORDANE	2.80	UG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	HEPTACHLOR	0.69	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	PEST	HEPTACHLOR EPOXIDE	0.69	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	LEAD	21.00	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	MERCURY	0.23	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	NICKEL	36.00	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	SELENIUM	0.25	MG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	SILVER	0.50	MG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	TOC	TOTAL ORGANIC CARBON	0.40	PCT	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	TBT	TRIBUTYL TIN	22.00	UG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	METAL	ZINC	91.00	MG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	LPAH	2-METHYLNAPHTHALENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	LPAH	ACENAPHTHENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	LPAH	ACENAPHTHYLENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	LPAH	ANTHRACENE	110.00	UG/KG	U

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	BENZO(A)ANTHRACENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	BENZO(A)PYRENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	BENZO(B)FLUORANTHENE	150.00	UG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	BENZO(G,H,I)PERYLENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	BENZO(K)FLUORANTHENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	CHRYSENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	DIBENZO(A,H)ANTHRACENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	FLUORANTHENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	LPAH	FLUORENE	56.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	INDENO(1,2,3-CD)PYRENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	LPAH	NAPHTHALENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	LPAH	PHENANTHRENE	110.00	UG/KG	U
1993/4	E10	EOIH	CORE	9.1	39.6	CM	HPAH	PYRENE	110.00	UG/KG	D
1993/4	E10	EOIH	CORE	9.1	39.6	CM	GRAIN	FINES	32.20	PCT	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	DDT 44	4,4'-DDD	16.00	UG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	DDT 44	4,4'-DDE	2.70	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	DDT 44	4,4'-DDT	2.70	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ALDRIN	0.68	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ALPHA-BHC	0.68	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ALPHA-CHLORDANE	0.68	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	ANTIMONY	11.00	MG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	AROCLOR	AROCLOR-1016	27.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	AROCLOR	AROCLOR-1221	55.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	AROCLOR	AROCLOR-1232	27.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	AROCLOR	AROCLOR-1242	27.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	AROCLOR	AROCLOR-1248	27.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	AROCLOR	AROCLOR-1254	78.00	UG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	AROCLOR	AROCLOR-1260	27.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	ARSENIC	5.10	MG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	CADMIUM	0.25	MG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	CHROMIUM	82.00	MG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	COPPER	22.00	MG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	DIELDRIN	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ENDOSULFAN I	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ENDOSULFAN II	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ENDOSULFAN SULFATE	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ENDRIN	1.40	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	ENDRIN ALDEHYDE	2.70	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	GAMMA-BHC	0.68	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	GAMMA-CHLORDANE	0.68	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	HEPTACHLOR	0.68	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	PEST	HEPTACHLOR EPOXIDE	0.68	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	LEAD	14.00	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	MERCURY	0.40	MG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	NICKEL	36.00	MG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	SELENIUM	0.25	MG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	SILVER	0.50	MG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	TOC	TOTAL ORGANIC CARBON	0.60	PCT	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	TBT	TRIBUTYL TIN	23.00	UG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	METAL	ZINC	66.00	MG/KG	D
1993/4	E10	EOIH	CORE	39.6	70.1	CM	LPAH	2-METHYLNAPHTHALENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	LPAH	ACENAPHTHENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	LPAH	ACENAPHTHYLENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	LPAH	ANTHRACENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	BENZO(A)ANTHRACENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	BENZO(A)PYRENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	BENZO(B)FLUORANTHENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	BENZO(G,H,I)PERYLENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	BENZO(K)FLUORANTHENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	CHRYSENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	FLUORANTHENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	LPAH	FLUORENE	61.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	LPAH	NAPHTHALENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	LPAH	PHENANTHRENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	HPAH	PYRENE	120.00	UG/KG	U
1993/4	E10	EOIH	CORE	39.6	70.1	CM	GRAIN	FINES	36.30	PCT	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	DDT 44	4,4'-DDD	6.60	UG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	DDT 44	4,4'-DDE	3.30	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	DDT 44	4,4'-DDT	3.30	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ALDRIN	0.82	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ALPHA-BHC	0.82	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ALPHA-CHLORDANE	0.82	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	ANTIMONY	12.00	MG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	AROCLOR	AROCLOR-1016	33.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	AROCLOR	AROCLOR-1221	66.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	AROCLOR	AROCLOR-1232	33.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	AROCLOR	AROCLOR-1242	33.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	AROCLOR	AROCLOR-1248	33.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	AROCLOR	AROCLOR-1254	44.00	UG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	AROCLOR	AROCLOR-1260	33.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	ARSENIC	7.20	MG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	CADMIUM	0.25	MG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	CHROMIUM	80.00	MG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	COPPER	31.00	MG/KG	D

Table A-1. Summary Data Table for IR Site 20 (Oakland Inner Harbor) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	DIELDRIN	1.60	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ENDOSULFAN I	1.60	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ENDOSULFAN II	1.60	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ENDOSULFAN SULFATE	1.60	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ENDRIN	1.60	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	ENDRIN ALDEHYDE	3.30	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	GAMMA-BHC	0.82	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	GAMMA-CHLORDANE	0.82	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	HEPTACHLOR	0.82	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	PEST	HEPTACHLOR EPOXIDE	0.82	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	LEAD	17.00	MG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	MERCURY	0.17	MG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	NICKEL	53.00	MG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	SELENIUM	0.25	MG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	SILVER	0.50	MG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	TOC	TOTAL ORGANIC CARBON	1.10	PCT	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	TBT	TRIBUTYL TIN	10.00	UG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	METAL	ZINC	76.00	MG/KG	D
1993/4	E10	EOIH	CORE	85.3	94.5	CM	LPAH	2-METHYLNAPHTHALENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	LPAH	ACENAPHTHENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	LPAH	ACENAPHTHYLENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	LPAH	ANTHRACENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	BENZO(A)ANTHRACENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	BENZO(A)PYRENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	BENZO(B)FLUORANTHENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	BENZO(G,H,I)PERYLENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	BENZO(K)FLUORANTHENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	CHRYSENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	FLUORANTHENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	LPAH	FLUORENE	67.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	LPAH	NAPHTHALENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	LPAH	PHENANTHRENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	HPAH	PYRENE	130.00	UG/KG	U
1993/4	E10	EOIH	CORE	85.3	94.5	CM	GRAIN	FINES	61.10	PCT	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1996	SS003	PA	GRAB	0	15.2	CM	LPAH	2-METHYLNAPHTHALENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDD	15	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDE	7.6	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDT	10	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	LPAH	ACENAPHTHENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	LPAH	ACENAPHTHYLENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ALDRIN	3.5	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ALPHA-BHC	1.8	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ALPHA-CHLORDANE	13	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	LPAH	ANTHRACENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	METAL	ANTIMONY	1.5	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1016	35	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1221	71	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1232	35	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1242	35	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1248	35	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1254	310	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1260	220	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	METAL	ARSENIC	6	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	BENZO(A)ANTHRACENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	BENZO(A)PYRENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	BENZO(B)FLUORANTHENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	BENZO(G,H,I)PERYLENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	BENZO(K)FLUORANTHENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	METAL	CADMIUM	39.3	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	METAL	CHROMIUM	290	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	CHRYSENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	METAL	COPPER	94.6	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	DIBENZO(A,H)ANTHRACENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	DIELDRIN	4.1	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	TPH	DRO	1500	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN I	1.8	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN II	3.2	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN SULFATE	3.5	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ENDRIN	4.2	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	PEST	ENDRIN ALDEHYDE	4	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	FLUORANTHENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	LPAH	FLUORENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	GAMMA-BHC	1.8	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	GAMMA-CHLORDANE	3.1	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	PEST	HEPTACHLOR	1.8	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	PEST	HEPTACHLOR EPOXIDE	1.8	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	INDENO(1,2,3-CD)PYRENE	350	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1996	SS003	PA	GRAB	0	15.2	CM	METAL	LEAD	200	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	METAL	MERCURY	0.76	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	LPAH	NAPHTHALENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	METAL	NICKEL	110	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	LPAH	PHENANTHRENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	HPAH	PYRENE	350	UG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	METAL	SELENIUM	1.3	MG/KG	U
1996	SS003	PA	GRAB	0	15.2	CM	METAL	SILVER	12.9	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	TOC	TOTAL ORGANIC CARBON	1.26	PCT	D
1996	SS003	PA	GRAB	0	15.2	CM	TBT	TRIBUTYL TIN	6.5	UG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	METAL	ZINC	240	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	LPAH	2-METHYLNAPHTHALENE	6000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDD	6.8	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDE	9.6	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDT	8.7	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	LPAH	ACENAPHTHENE	34000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	LPAH	ACENAPHTHYLENE	550	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ALDRIN	2.8	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ALPHA-BHC	2.8	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ALPHA-CHLORDANE	23	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	LPAH	ANTHRACENE	550	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	METAL	ANTIMONY	2.1	MG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1016	55	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1221	110	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1232	55	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1242	55	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1248	55	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1254	240	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1260	200	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	METAL	ARSENIC	20.7	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	BENZO(A)ANTHRACENE	20000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	BENZO(A)PYRENE	8900	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	BENZO(B)FLUORANTHENE	13000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	BENZO(G,H,I)PERYLENE	1300	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	BENZO(K)FLUORANTHENE	550	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	METAL	CADMIUM	7.2	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	METAL	CHROMIUM	139	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	CHRYSENE	23000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	METAL	COPPER	206	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	DIBENZO(A,H)ANTHRACENE	550	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	DIELDRIN	6.3	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	TPH	DRO	100	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN I	2.8	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN II	4.2	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN SULFATE	5.5	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ENDRIN	5.5	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	ENDRIN ALDEHYDE	5.5	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	FLUORANTHENE	78000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	LPAH	FLUORENE	42000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	PEST	GAMMA-BHC	2.8	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	GAMMA-CHLORDANE	2.8	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	HEPTACHLOR	2.8	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	PEST	HEPTACHLOR EPOXIDE	1.4	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1500	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	METAL	LEAD	91.5	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	METAL	MERCURY	0.36	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	LPAH	NAPHTHALENE	4400	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	METAL	NICKEL	85.9	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	LPAH	PHENANTHRENE	160000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	HPAH	PYRENE	76000	UG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	METAL	SELENIUM	2.1	MG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	METAL	SILVER	2.9	MG/KG	D
1996	SS004	PA	GRAB	0	15.2	CM	TOC	TOTAL ORGANIC CARBON	4.36	PCT	D
1996	SS004	PA	GRAB	0	15.2	CM	TBT	TRIBUTYL TIN	5.3	UG/KG	U
1996	SS004	PA	GRAB	0	15.2	CM	METAL	ZINC	258	MG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	LPAH	2-METHYLNAPHTHALENE	1300	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDD	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDE	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	DDT 44	4,4'-DDT	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	LPAH	ACENAPHTHENE	1500	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	LPAH	ACENAPHTHYLENE	1300	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ALDRIN	6.7	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ALPHA-BHC	6.7	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ALPHA-CHLORDANE	6.7	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	LPAH	ANTHRACENE	2900	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1016	130	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1221	260	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1232	130	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1242	130	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1248	130	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1254	130	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	AROCLOR	AROCLOR-1260	130	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	METAL	ARSENIC	6.9	MG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	BENZO(A)ANTHRACENE	3900	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	BENZO(A)PYRENE	2100	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	BENZO(B)FLUORANTHENE	3500	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	BENZO(G,H,I)PERYLENE	670	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	BENZO(K)FLUORANTHENE	1400	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	METAL	CADMIUM	0.25	MG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	METAL	CHROMIUM	54.9	MG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	CHRYSENE	6100	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	METAL	COPPER	79.8	MG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	DIBENZO(A,H)ANTHRACENE	1300	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	DIELDRIN	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	TPH	DRO	17	MG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN I	35	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN II	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ENDOSULFAN SULFATE	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ENDRIN	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	ENDRIN ALDEHYDE	13	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	FLUORANTHENE	11000	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	LPAH	FLUORENE	2000	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	PEST	GAMMA-BHC	6.7	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	GAMMA-CHLORDANE	6.7	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	HEPTACHLOR	6.7	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	PEST	HEPTACHLOR EPOXIDE	6.7	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	INDENO(1,2,3-CD)PYRENE	750	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	METAL	LEAD	19.1	MG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	METAL	MERCURY	0.16	MG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	LPAH	NAPHTHALENE	1300	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	METAL	NICKEL	43.5	MG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	LPAH	PHENANTHRENE	12000	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	HPAH	PYRENE	12000	UG/KG	D
1996	SS005	PA	GRAB	0	15.2	CM	METAL	SELENIUM	0.98	MG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	METAL	SILVER	0.38	MG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	TOC	TOTAL ORGANIC CARBON	0.205	PCT	D
1996	SS005	PA	GRAB	0	15.2	CM	TBT	TRIBUTYL TIN	3	UG/KG	U
1996	SS005	PA	GRAB	0	15.2	CM	METAL	ZINC	130	MG/KG	D
1996	SS003	PA	GRAB	0	15.2	CM	GRAIN	FINES	41.2	PCT	D
1996	SS004	PA	GRAB	0	15.2	CM	GRAIN	FINES	72.9	PCT	D
1996	SS005	PA	GRAB	0	15.2	CM	GRAIN	FINES	22.5	PCT	D
1997	SS1	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	417	MG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	METAL	COPPER	99.6	MG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	METAL	LEAD	158	MG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	METAL	NICKEL	127	MG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	METAL	ZINC	383	MG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	1200	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	35	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	3100	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	7400	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	3900	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	6800	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	3200	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	2100	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	2100	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	36	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	8100	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	630	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	340	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	380	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	17000	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	740	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	2800	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	73	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	PAH	PERYLENE	1000	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	3500	UG/KG	D
1997	SS1	PA	GRAB	0	4.9	CM	HPAH	PYRENE	11000	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	356	MG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	METAL	COPPER	158	MG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	METAL	LEAD	146	MG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	METAL	NICKEL	123	MG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	METAL	ZINC	271	MG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	250	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	25	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	4500	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	3400	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	2200	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	3700	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	1600	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	990	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	990	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	90	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	4800	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	330	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	430	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	170	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	6000	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	1100	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1300	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	100	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	PAH	PERYLENE	510	UG/KG	D
1997	SS2	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	3000	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS2	PA	GRAB	0	4.9	CM	HPAH	PYRENE	5300	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	30	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	4.3	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	18	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	6.4	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	18	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	22	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	75	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	93	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	8.2	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	370	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	PYRENE	340	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	210	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	300	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	200	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	69	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	110	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	150	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	PAH	PERYLENE	44	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	94	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	12	UG/KG	D
1997	SS3	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	85	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	28	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	6.2	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	27	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	7.9	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	34	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	63	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	230	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	400	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	24	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	1200	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	PYRENE	920	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	550	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	570	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	370	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	150	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	180	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	250	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	PAH	PERYLENE	73	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	120	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	14	UG/KG	D
1997	SS4	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	100	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS5	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	193	MG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	METAL	COPPER	80.7	MG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	METAL	LEAD	26.1	MG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	METAL	NICKEL	127	MG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	METAL	ZINC	161	MG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	23	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	4.3	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	11	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	3.7	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	9.6	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	13	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	26	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	43	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	5.2	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	140	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	PYRENE	120	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	78	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	96	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	73	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	33	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	45	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	54	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	PAH	PERYLENE	16	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	31	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	5.3	UG/KG	D
1997	SS5	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	32	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	16	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	1.7	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	7.3	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	3.9	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	7.3	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	8.2	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	14	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	35	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	3.5	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	77	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	PYRENE	87	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	35	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	42	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	39	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	16	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	36	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	45	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS9	PA	GRAB	0	4.9	CM	PAH	PERYLENE	18	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	28	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	2.4	UG/KG	D
1997	SS9	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	34	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	270	MG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	METAL	COPPER	31.1	MG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	METAL	LEAD	19.2	MG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	METAL	NICKEL	59.9	MG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	METAL	ZINC	84.1	MG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	15	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	2.3	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	7.4	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	3.2	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	4	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	7.8	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	18	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	55	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	4	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	130	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	PYRENE	170	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	67	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	85	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	86	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	34	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	62	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	85	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	PAH	PERYLENE	28	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	52	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	5.2	UG/KG	D
1997	SS11	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	64	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	290	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	260	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	1400	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	91	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	740	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	1800	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	10000	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	7000	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	420	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	45000	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	PYRENE	48000	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	24000	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	23000	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	20000	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	5400	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	7800	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	11000	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	PAH	PERYLENE	2500	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	4700	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	1200	UG/KG	D
1997	SS13	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	3400	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	180	MG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	METAL	COPPER	78.1	MG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	METAL	LEAD	26.3	MG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	METAL	NICKEL	122	MG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	METAL	ZINC	166	MG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	27	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	7.4	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	17	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	6.8	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	21	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	26	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	88	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	130	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	10	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	590	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	PYRENE	490	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	250	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	340	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	210	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	88	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	110	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	160	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	PAH	PERYLENE	44	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	82	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16	UG/KG	D
1997	SS14	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	87	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	34	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	15	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	28	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	7.6	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	32	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	63	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	210	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	300	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	19	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	1200	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	PYRENE	1100	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	570	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	910	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	490	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	200	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	250	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	350	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	PAH	PERYLENE	87	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	150	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	36	UG/KG	D
1997	SS15	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	140	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	30	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	4.1	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	15	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	5.2	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	16	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	25	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	91	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	100	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	6.8	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	490	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	PYRENE	430	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	240	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	280	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	180	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	73	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	99	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	150	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	PAH	PERYLENE	41	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	70	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	13	UG/KG	D
1997	SS16	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	75	UG/KG	D
1997	SS17	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	183	MG/KG	D
1997	SS17	PA	GRAB	0	4.9	CM	METAL	COPPER	77.8	MG/KG	D
1997	SS17	PA	GRAB	0	4.9	CM	METAL	LEAD	25.6	MG/KG	D
1997	SS17	PA	GRAB	0	4.9	CM	METAL	NICKEL	119	MG/KG	D
1997	SS17	PA	GRAB	0	4.9	CM	METAL	ZINC	161	MG/KG	D
1997	SS19	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	182	MG/KG	D
1997	SS19	PA	GRAB	0	4.9	CM	METAL	COPPER	70	MG/KG	D
1997	SS19	PA	GRAB	0	4.9	CM	METAL	LEAD	25.7	MG/KG	D
1997	SS19	PA	GRAB	0	4.9	CM	METAL	NICKEL	114	MG/KG	D
1997	SS19	PA	GRAB	0	4.9	CM	METAL	ZINC	156	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS21	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	22	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	3.6	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	8.9	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	3.8	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	10	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	17	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	52	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	62	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	4.5	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	140	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	PYRENE	130	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	85	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	120	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	93	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	36	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	54	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	76	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	PAH	PERYLENE	21	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	42	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	6.3	UG/KG	D
1997	SS21	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	46	UG/KG	D
1997	SS22	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	181	MG/KG	D
1997	SS22	PA	GRAB	0	4.9	CM	METAL	COPPER	70	MG/KG	D
1997	SS22	PA	GRAB	0	4.9	CM	METAL	LEAD	24.8	MG/KG	D
1997	SS22	PA	GRAB	0	4.9	CM	METAL	NICKEL	115	MG/KG	D
1997	SS22	PA	GRAB	0	4.9	CM	METAL	ZINC	156	MG/KG	D
1997	SS24	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	167	MG/KG	D
1997	SS24	PA	GRAB	0	4.9	CM	METAL	COPPER	84.4	MG/KG	D
1997	SS24	PA	GRAB	0	4.9	CM	METAL	LEAD	66.1	MG/KG	D
1997	SS24	PA	GRAB	0	4.9	CM	METAL	NICKEL	101	MG/KG	D
1997	SS24	PA	GRAB	0	4.9	CM	METAL	ZINC	210	MG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	420	MG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	METAL	COPPER	125	MG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	METAL	LEAD	186	MG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	METAL	NICKEL	125	MG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	METAL	ZINC	282	MG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	45	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	72	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	70	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	13	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	57	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	140	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	940	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS25	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	800	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	68	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	5800	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	PYRENE	4200	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	2800	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	4200	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	3500	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	1000	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	1800	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	2300	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	PAH	PERYLENE	560	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1100	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	280	UG/KG	D
1997	SS25	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	960	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	426	MG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	METAL	COPPER	211	MG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	METAL	LEAD	191	MG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	METAL	NICKEL	166	MG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	METAL	ZINC	383	MG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	47	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	74	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	70	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	20	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	91	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	400	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	2400	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	1900	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	74	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	6400	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	PYRENE	7000	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	5400	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	10000	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	5600	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	2200	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	2500	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	3400	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	PAH	PERYLENE	760	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1400	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	370	UG/KG	D
1997	SS26	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	1200	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	237	MG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	METAL	COPPER	294	MG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	METAL	LEAD	60.3	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS27	PA	GRAB	0	4.9	CM	METAL	NICKEL	117	MG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	METAL	ZINC	285	MG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	61	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	54	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	82	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	16	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	63	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	140	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	830	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	860	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	70	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	7500	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	PYRENE	6100	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	3600	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	3200	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	3000	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	930	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	1200	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	1600	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	PAH	PERYLENE	380	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	580	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	150	UG/KG	D
1997	SS27	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	490	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	271	MG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	METAL	COPPER	151	MG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	METAL	LEAD	45.6	MG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	METAL	NICKEL	102	MG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	METAL	ZINC	250	MG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	120	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	110	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	2000	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	64	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	790	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	1500	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	3600	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	10000	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	590	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	26000	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	PYRENE	20000	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	8300	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	8800	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	6300	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	2300	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS28	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	2700	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	3700	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	PAH	PERYLENE	880	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1500	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	380	UG/KG	D
1997	SS28	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	1200	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	35	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	34	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	88	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	7.1	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	34	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	51	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	290	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	240	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	17	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	950	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	PYRENE	1500	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	1100	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	1400	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	1200	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	510	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	630	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	880	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	PAH	PERYLENE	210	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	350	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	88	UG/KG	D
1997	SS29	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	320	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	METAL	CHROMIUM	205	MG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	METAL	COPPER	103	MG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	METAL	LEAD	37.6	MG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	METAL	NICKEL	127	MG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	METAL	ZINC	185	MG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	32	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	8.5	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	18	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	5.5	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	22	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	27	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	100	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	110	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	8.2	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	580	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	PYRENE	480	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	320	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	380	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	320	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	120	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	170	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	230	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	PAH	PERYLENE	57	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	100	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	20	UG/KG	D
1997	SS30	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	95	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	LPAH	NAPHTHALENE	58	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHYLENE	44	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	LPAH	ACENAPHTHENE	130	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	PAH	BIPHENYL	32	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	PAH	DIBENZOFURAN	160	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	LPAH	FLUORENE	350	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	LPAH	ANTHRACENE	1500	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	LPAH	PHENANTHRENE	960	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	PAH	DIBENZOTHIOPHENE	55	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	FLUORANTHENE	1900	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	PYRENE	4800	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)ANTHRACENE	1100	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	CHRYSENE	1900	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	BENZO(B)FLUORANTHENE	1700	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	BENZO(K)FLUORANTHENE	540	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	PAH	BENZO(E)PYRENE	830	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	BENZO(A)PYRENE	1100	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	PAH	PERYLENE	240	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	INDENO(1,2,3-CD)PYRENE	450	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	DIBENZO(A,H)ANTHRACENE	110	UG/KG	D
1997	SS31	PA	GRAB	0	4.9	CM	HPAH	BENZO(G,H,I)PERYLENE	410	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDD	0.36	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDE	11	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDT	0.6	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDD	6.1	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDE	0.6	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHENE	110	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHYLENE	450	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	PEST	ALDRIN	0.38	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	PEST	ALPHA-CHLORDANE	0.36	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	LPAH	ANTHRACENE	2400	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	ANTIMONY	0.45	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	ARSENIC	10	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)ANTHRACENE	4500	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)PYRENE	3100	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	BENZO(B)FLUORANTHENE	5000	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	PAH	BENZO(E)PYRENE	2400	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	BENZO(G,H,I)PERYLENE	750	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	BENZO(K)FLUORANTHENE	1900	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	PAH	BIPHENYL	17	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	CADMIUM	12.7	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	CHROMIUM	219	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	CHRYSENE	5100	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	COPPER	184	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	200	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	PAH	DIBENZOTHIOPHENE	61	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	PEST	DIELDRIN	0.36	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	PEST	ENDRIN	0.36	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	FLUORANTHENE	10000	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	LPAH	FLUORENE	220	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	PEST	GAMMA-BHC	0.26	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR	0.36	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR EPOXIDE	0.36	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	880	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	LEAD	155	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	MERCURY	0.4	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	LPAH	NAPHTHALENE	26	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	NICKEL	82.4	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB101	32	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB105	14	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB118	28	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB126	0.44	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB128	8.1	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB138	36	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB153	25	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB170	9	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB18	0.53	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB180	16	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB187	11	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB195	1.9	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB206	5.8	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB209	5.6	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB28	0.36	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB44	6.4	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB52	13	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB66	4.5	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB77	0.29	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	CON	PCB8	0.25	UG/KG	U
1998	PA01	PA	GRAB	0	6.1	CM	PAH	PERYLENE	590	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	LPAH	PHENANTHRENE	1600	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	HPAH	PYRENE	9900	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	SELENIUM	1	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	SILVER	8.77	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	TOC	TOTAL ORGANIC CARBON	3.56	PCT	D
1998	PA01	PA	GRAB	0	6.1	CM	TBT	TRIBUTYL TIN	76	UG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	METAL	ZINC	277	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDD	1.6	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDE	4.9	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDT	0.55	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDD	3.1	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDE	1.1	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDT	1.1	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHENE	600	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHYLENE	340	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	PEST	ALDRIN	0.37	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	PEST	ALPHA-CHLORDANE	0.33	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	LPAH	ANTHRACENE	1600	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	ANTIMONY	0.78	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	ARSENIC	9.4	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)ANTHRACENE	2100	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)PYRENE	1100	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	BENZO(B)FLUORANTHENE	1900	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	PAH	BENZO(E)PYRENE	900	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	BENZO(G,H,I)PERYLENE	510	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	BENZO(K)FLUORANTHENE	670	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	PAH	BIPHENYL	57	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	CADMIUM	4.35	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	CHROMIUM	110	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	CHRYSENE	2000	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	COPPER	161	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	140	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	PAH	DIBENZOTHIOPHENE	160	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	PEST	DIELDRIN	0.33	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	PEST	ENDRIN	0.33	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	FLUORANTHENE	6500	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	LPAH	FLUORENE	510	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	PEST	GAMMA-BHC	0.24	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR	0.33	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR EPOXIDE	0.33	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	620	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	LEAD	68.2	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	MERCURY	0.3	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	LPAH	NAPHTHALENE	38	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	NICKEL	58.6	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB101	13	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB105	5.7	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB118	12	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB126	0.41	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB128	3.5	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB138	16	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB153	12	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB170	3.8	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB18	0.49	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB180	7.3	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB187	4.8	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB195	0.59	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB206	2.4	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB209	4.2	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB28	0.33	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB44	2.7	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB52	5.6	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB66	1.7	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB77	0.26	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	CON	PCB8	0.23	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	PAH	PERYLENE	320	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	LPAH	PHENANTHRENE	2200	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	HPAH	PYRENE	8200	UG/KG	U
1998	PA02	PA	GRAB	0	6.1	CM	METAL	SELENIUM	0.9	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	SILVER	1.81	MG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	TOC	TOTAL ORGANIC CARBON	2.22	PCT	D
1998	PA02	PA	GRAB	0	6.1	CM	TBT	TRIBUTYL TIN	28	UG/KG	D
1998	PA02	PA	GRAB	0	6.1	CM	METAL	ZINC	197	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDD	0.75	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDE	0.49	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDT	0.49	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDD	1.2	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDE	1.1	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDT	0.68	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHENE	47	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHYLENE	88	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	PEST	ALDRIN	0.31	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	PEST	ALPHA-CHLORDANE	0.29	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA03	PA	GRAB	0	6.1	CM	LPAH	ANTHRACENE	640	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	ANTIMONY	0.2	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	ARSENIC	7.8	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)ANTHRACENE	890	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)PYRENE	770	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	BENZO(B)FLUORANTHENE	820	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	PAH	BENZO(E)PYRENE	510	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	BENZO(G,H,I)PERYLENE	240	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	BENZO(K)FLUORANTHENE	340	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	PAH	BIPHENYL	7	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	CADMIUM	0.49	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	CHROMIUM	60	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	CHRYSENE	1100	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	COPPER	87	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	66	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	PAH	DIBENZOTHIOPHENE	29	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	PEST	DIELDRIN	0.38	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	PEST	ENDRIN	0.29	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	FLUORANTHENE	1900	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	LPAH	FLUORENE	74	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR	0.29	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR EPOXIDE	0.29	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	340	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	LEAD	54.6	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	MERCURY	0.2	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	LPAH	NAPHTHALENE	18	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	NICKEL	50	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB101	1.7	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB105	0.31	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB118	1.6	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB126	0.36	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB128	0.71	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB138	2.3	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB153	1.7	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB170	0.88	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB18	0.43	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB180	1.5	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB187	1.1	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB195	0.13	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB206	0.11	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB209	1.1	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB28	0.29	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB44	0.25	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB52	0.69	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB66	0.16	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB77	0.23	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	CON	PCB8	0.2	UG/KG	U
1998	PA03	PA	GRAB	0	6.1	CM	PAH	PERYLENE	170	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	LPAH	PHENANTHRENE	430	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	HPAH	PYRENE	1500	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	SELENIUM	0.7	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	SILVER	0.37	MG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	TOC	TOTAL ORGANIC CARBON	3.67	PCT	D
1998	PA03	PA	GRAB	0	6.1	CM	TBT	TRIBUTYL TIN	9	UG/KG	D
1998	PA03	PA	GRAB	0	6.1	CM	METAL	ZINC	115	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDD	0.34	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDE	0.56	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDT	0.56	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDD	0.79	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDE	1.3	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHENE	9.6	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHYLENE	42	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	PEST	ALDRIN	0.39	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	PEST	ALPHA-CHLORDANE	0.34	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	LPAH	ANTHRACENE	210	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	ANTIMONY	0.21	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	ARSENIC	7.2	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)ANTHRACENE	360	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)PYRENE	320	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	BENZO(B)FLUORANTHENE	450	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	PAH	BENZO(E)PYRENE	210	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	BENZO(G,H,I)PERYLENE	130	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	BENZO(K)FLUORANTHENE	170	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	PAH	BIPHENYL	3.8	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	CADMIUM	0.99	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	CHROMIUM	115	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	CHRYSENE	390	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	COPPER	95	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	PAH	DIBENZOTHIOPHENE	10	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	PEST	DIELDRIN	0.34	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	PEST	ENDRIN	0.34	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	FLUORANTHENE	550	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	LPAH	FLUORENE	25	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	PEST	GAMMA-BHC	0.25	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR	0.34	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA04	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR EPOXIDE	0.34	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	160	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	LEAD	53.3	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	MERCURY	0.3	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	LPAH	NAPHTHALENE	6.1	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	NICKEL	68.2	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB101	2.5	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB105	0.8	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB118	2.1	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB126	1.1	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB128	0.57	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB138	3.2	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB153	2.8	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB170	0.81	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB18	1.1	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB180	1.7	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB187	1.2	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB195	1.1	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB206	0.49	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB209	0.72	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB28	1.1	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB44	0.36	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB52	0.83	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB66	1.1	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB77	1.1	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	CON	PCB8	1.1	UG/KG	U
1998	PA04	PA	GRAB	0	6.1	CM	PAH	PERYLENE	90	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	LPAH	PHENANTHRENE	150	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	HPAH	PYRENE	590	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	SELENIUM	0.7	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	SILVER	0.64	MG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	TOC	TOTAL ORGANIC CARBON	1.78	PCT	D
1998	PA04	PA	GRAB	0	6.1	CM	TBT	TRIBUTYL TIN	21	UG/KG	D
1998	PA04	PA	GRAB	0	6.1	CM	METAL	ZINC	161	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDD	0.38	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDE	0.62	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	DDT 24	2,4'-DDT	0.62	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDD	1	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDE	1.4	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	DDT 44	4,4'-DDT	0.88	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHENE	11	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	LPAH	ACENAPHTHYLENE	17	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	PEST	ALDRIN	0.4	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA05	PA	GRAB	0	6.1	CM	PEST	ALPHA-CHLORDANE	0.38	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	LPAH	ANTHRACENE	100	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	ANTIMONY	0.2	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	ARSENIC	7.3	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)ANTHRACENE	280	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	BENZO(A)PYRENE	180	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	BENZO(B)FLUORANTHENE	280	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	PAH	BENZO(E)PYRENE	120	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	BENZO(G,H,I)PERYLENE	85	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	BENZO(K)FLUORANTHENE	82	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	PAH	BIPHENYL	3.7	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	CADMIUM	0.28	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	CHROMIUM	110	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	CHRYSENE	230	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	COPPER	76	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	DIBENZO(A,H)ANTHRACENE	12	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	PAH	DIBENZOTHIOPHENE	11	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	PEST	DIELDRIN	0.38	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	PEST	ENDRIN	0.38	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	FLUORANTHENE	740	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	LPAH	FLUORENE	17	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR	0.38	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	PEST	HEPTACHLOR EPOXIDE	0.38	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	INDENO(1,2,3-CD)PYRENE	98	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	LEAD	28.7	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	MERCURY	0.3	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	LPAH	NAPHTHALENE	11	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	NICKEL	70.7	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB101	0.89	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB105	0.29	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB118	0.81	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB126	1.2	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB128	0.26	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB138	1.6	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB153	1.1	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB170	0.79	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB18	0.55	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB180	0.79	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB187	0.41	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB195	0.16	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB206	0.14	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB209	0.16	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB28	0.38	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB44	0.19	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB52	0.37	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB66	0.2	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB77	0.3	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	CON	PCB8	0.26	UG/KG	U
1998	PA05	PA	GRAB	0	6.1	CM	PAH	PERYLENE	58	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	LPAH	PHENANTHRENE	150	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	HPAH	PYRENE	570	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	SELENIUM	0.7	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	SILVER	0.29	MG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	TOC	TOTAL ORGANIC CARBON	1.72	PCT	D
1998	PA05	PA	GRAB	0	6.1	CM	TBT	TRIBUTYL TIN	9	UG/KG	D
1998	PA05	PA	GRAB	0	6.1	CM	METAL	ZINC	143	MG/KG	D
1998	PA01	PA	GRAB	0	6.1	CM	GRAIN	FINES	67.8	PCT	D
1998	PA02	PA	GRAB	0	6.1	CM	GRAIN	FINES	70	PCT	D
1998	PA03	PA	GRAB	0	6.1	CM	GRAIN	FINES	53.2	PCT	D
1998	PA04	PA	GRAB	0	6.1	CM	GRAIN	FINES	89.3	PCT	D
1998	PA05	PA	GRAB	0	6.1	CM	GRAIN	FINES	93.7	PCT	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	MERCURY	0.314	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	LEAD	26.1	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	NICKEL	62.6	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	SILVER	0.32	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.09	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	ARSENIC	6.5	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	CADMIUM	0.286	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	COPPER	38.7	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	ZINC	82.4	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	CHROMIUM	95.6	MG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	METAL	SELENIUM	0.36	MG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.81	PCT	D
2005	PA C-1	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.6	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.5	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB209	1.04	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB118	1.74	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB105	0.81	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB153	3.36	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB138	2.6	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB180	2.29	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB170	1.15	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB52	0.11	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB101	0.73	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB110	1.31	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB128	1.93	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB206	1.13	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.94	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB187	1.14	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB195	0.98	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.73	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.92	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.77	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	235.71	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	PYRENE	812.88	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	163.63	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	65.07	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	188.74	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	206.45	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	176.67	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	PERYLENE	120.04	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	244.93	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	1025.78	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	130.28	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	16.83	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	CHRYSENE	310.6	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	279.7	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	27.71	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	299.96	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	231.3	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	665.8	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	LPAH	FLUORENE	209.39	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	51.66	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	BIPHENYL	31.31	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	48.09	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	69.74	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	49.48	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	25.33	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	39.13	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	201.58	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	110.2	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	47.77	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	18.77	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	19.83	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	19.85	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	17.05	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	9.71	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	353.27	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	127.82	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	47.8	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	101.16	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	35.21	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	18.52	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-1	PA	GRAB	0	5	CM	TPH	DRO	82.66	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	MERCURY	0.326	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	LEAD	25.5	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	NICKEL	63.2	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	SILVER	0.304	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	ARSENIC	7.19	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	CADMIUM	0.239	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	COPPER	50.2	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	ZINC	90.5	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	CHROMIUM	92.2	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.7	PCT	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.53	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB209	0.15	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB118	1.11	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB66	1.01	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB105	0.43	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB153	2.82	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB138	2.57	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB180	1.76	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB170	0.76	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB101	0.99	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB110	1.25	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB128	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB206	0.17	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.69	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.44	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.45	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB187	0.44	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB195	0.22	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB129	0.31	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	CON	PCB28	0.52	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.53	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.43	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-10	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	344.88	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	PYRENE	866.72	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	79.62	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-10	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	39.04	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	266.61	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	342.39	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	277.94	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	PERYLENE	215.26	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	622.61	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	1097.41	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	255.37	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	22.22	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	CHRYSENE	660.64	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	518.31	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	52.53	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	532.26	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	120.01	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	363.37	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	LPAH	FLUORENE	108.57	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	40.15	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	BIPHENYL	23.09	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	35.36	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	46.96	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	38.25	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	26.47	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	33.95	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	32.18	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	46.63	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	206.49	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	141.75	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	70.04	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	28.21	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	16.16	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	21.72	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	26.68	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	13.29	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	674.52	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	190.13	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	91.67	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	205.63	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	92.67	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	36.68	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	11.19	UG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	TPH	DRO	35.49	MG/KG	D
2005	PA C-10	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.6	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	MERCURY	0.264	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-11	PA	GRAB	0	5	CM	METAL	LEAD	26.9	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	NICKEL	68.3	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	SILVER	0.293	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	ARSENIC	8.13	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	CADMIUM	0.252	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	COPPER	47.8	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	ZINC	91.9	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	CHROMIUM	108	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	METAL	SELENIUM	0.48	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.85	PCT	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.61	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB209	0.19	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB118	0.73	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.09	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB66	0.71	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB77	0.05	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB105	0.39	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.26	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB153	2.09	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB138	1.46	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB180	1.46	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB170	0.68	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB52	0.1	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB101	0.57	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB110	0.9	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB206	0.16	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.29	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.5	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.51	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB187	0.12	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB195	0.22	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.09	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB129	0.05	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB126	0.14	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.06	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-11	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	CON	PCB28	0.18	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.11	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.17	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.12	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.11	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	271.74	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	PYRENE	572.1	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	34.48	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	23.29	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	176.62	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	205.09	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	176.18	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	PERYLENE	113.54	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	349.83	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	733.92	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	135.01	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	14.78	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	CHRYSENE	412.04	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	289.66	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	29.42	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	292.99	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	45.69	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	197.41	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	LPAH	FLUORENE	57.03	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	24.69	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	PAH	BIPHENYL	13.67	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	18.48	UG/KG	U
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	26.95	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	27.07	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	22.24	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	22.43	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	21.42	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	28.95	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	145.41	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	100.22	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	43.28	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	17.2	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	11.8	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	16.28	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	17.67	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	8.77	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	390.41	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	101.09	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	46.21	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	103.6	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	49.63	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	21.06	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	7.31	UG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	TPH	DRO	61.06	MG/KG	D
2005	PA C-11	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	2	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	MERCURY	0.293	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	LEAD	27.3	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	NICKEL	68.9	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	SILVER	0.304	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.09	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	ARSENIC	7.46	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	CADMIUM	0.217	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	COPPER	42.8	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	ZINC	88.2	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	CHROMIUM	107	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	METAL	SELENIUM	0.51	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.58	PCT	D
2005	PA C-12	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.57	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB209	0.02	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB118	0.39	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.09	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB66	0.66	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB105	0.21	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.25	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB153	1.43	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB138	0.92	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB180	1.22	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB170	0.61	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB101	0.17	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB110	0.43	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB206	0.19	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.17	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.41	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.46	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB187	0.05	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB195	0.16	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.09	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.77	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.76	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	202.51	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	PYRENE	583.83	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	23.64	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	18.79	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	145.19	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	198.48	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	147.89	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	PERYLENE	101.99	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	352.59	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	875.37	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	133.24	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	27.87	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	CHRYSENE	399.41	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	282.07	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	26.15	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	330.78	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	23.71	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	197.29	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	LPAH	FLUORENE	36.88	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	22.53	UG/KG	U
2005	PA C-12	PA	GRAB	0	5	CM	PAH	BIPHENYL	11.25	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	16.69	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	18.22	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	19.45	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	14.28	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	17.65	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	17.43	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	27.49	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	137.02	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	93.9	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	42.34	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	17.51	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	11.79	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	15.54	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	16.59	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	0.32	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	470.68	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	106.2	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	51.09	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	95.93	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	42.34	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	15.43	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	5.26	UG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	TPH	DRO	32.9	MG/KG	D
2005	PA C-12	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	2	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	MERCURY	0.337	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	LEAD	24	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	NICKEL	51.7	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	SILVER	0.452	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	ARSENIC	5.84	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	CADMIUM	0.458	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	COPPER	44.3	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	ZINC	75.3	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	CHROMIUM	89	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	METAL	SELENIUM	0.34	MG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	RAD	RADIUM-228	0.34	PCI/G	U
2005	PA C-13	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.75	PCT	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.55	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB209	0.44	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB118	1.89	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB66	0.61	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB105	0.76	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB153	3.86	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB138	2.74	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB180	2.74	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB170	1.1	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB101	2.06	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB110	2.09	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB128	0.16	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB206	0.39	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.95	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.47	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.45	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB187	0.68	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB195	0.32	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB129	0.32	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	CON	PCB28	0.14	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.18	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.02	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-13	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	213.18	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	PYRENE	649.82	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	18.95	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	17.68	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	217.18	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	274.01	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	220.92	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	PERYLENE	135.5	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	478.42	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	831.39	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	193.47	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	26.61	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	CHRYSENE	547.3	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	377.29	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	40.19	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	365.49	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	14.11	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	164.66	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	LPAH	FLUORENE	31.27	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	19.72	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	BIPHENYL	10.91	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	13.14	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	20.55	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	22.56	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	22.73	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	15.4	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	23.46	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	38.84	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	106.64	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	93.8	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	61.73	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	28.37	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	11.5	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	24.2	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	31.05	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	22.83	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	468	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	133.31	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	67.94	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	129.19	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	63.4	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	30.17	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	10.34	UG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	TPH	DRO	100.96	MG/KG	D
2005	PA C-13	PA	GRAB	0	5	CM	RAD	RADIUM-226	0.31	PCI/G	D
2005	PA C-13	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	3.8	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	MERCURY	0.358	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	LEAD	27.6	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	NICKEL	66.7	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	SILVER	0.343	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.14	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	ARSENIC	8.12	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-14	PA	GRAB	0	5	CM	METAL	CADMIUM	0.27	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	COPPER	47.7	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	ZINC	92.8	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	CHROMIUM	95.4	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	METAL	SELENIUM	0.38	MG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.64	PCT	D
2005	PA C-14	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.07	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.71	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB209	0.11	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ALDRIN	0.06	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB118	0.55	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.11	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB66	0.3	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB77	0.05	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB105	0.3	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.31	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.07	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB8	0.1	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB153	1.81	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB138	1.19	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB180	1.3	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB170	0.58	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB52	0.12	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB18	0.08	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB101	0.62	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB110	0.79	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB128	0.07	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB206	0.18	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB44	0.06	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.92	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.52	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.56	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB187	0.06	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB195	0.17	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.11	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB129	0.14	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB126	0.16	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.07	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.07	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	CON	PCB28	0.06	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ENDRIN	0.08	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.15	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.09	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.14	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.06	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.13	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.07	UG/KG	U
2005	PA C-14	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	115.74	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	PYRENE	319.3	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	11.34	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	8.92	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	174.5	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	162.81	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	161.49	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	PERYLENE	91.77	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	259.59	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	337.99	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	102.6	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	12.65	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	CHRYSENE	297.47	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	229.91	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24.46	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	191.78	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	9.98	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	107.53	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	LPAH	FLUORENE	20.72	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	14.16	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	BIPHENYL	7.28	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	9.41	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	14.46	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	15.9	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	11.77	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	9.95	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	10.41	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	18.46	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	67.66	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	53.08	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	23.7	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	11.92	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	5.59	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	9.33	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	12.23	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	8.2	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	209.84	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	59.27	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	31.75	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	70.56	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	39.29	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	15.86	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	9.01	UG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	TPH	DRO	42.72	MG/KG	D
2005	PA C-14	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	2.7	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	MERCURY	0.238	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	LEAD	28.2	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	NICKEL	70.8	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	SILVER	0.32	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.08	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	ARSENIC	9.19	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	CADMIUM	0.228	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	COPPER	44.8	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	ZINC	93.2	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	CHROMIUM	103	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	METAL	SELENIUM	0.43	MG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.69	PCT	D
2005	PA C-15	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	4.2	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.5	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB209	1.06	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB118	1.22	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB105	0.6	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB153	2.35	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB138	1.85	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB180	1.97	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB170	1.13	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB101	0.07	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB110	0.61	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB128	0.44	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB206	1.09	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.03	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB187	0.83	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB195	0.91	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.61	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	CON	PCB28	0.04	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.87	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.8	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	108.56	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	PYRENE	332.9	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	17.01	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	11.62	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	157.42	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	135.79	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	140.52	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	PERYLENE	94.29	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	131.15	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	344.38	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	76.26	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	9.97	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	CHRYSENE	170.3	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	190.56	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	17.77	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	134.98	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	15.77	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	119.73	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	LPAH	FLUORENE	26.13	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	19.99	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	BIPHENYL	10.47	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	13.5	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	19.38	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	18.92	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	13.66	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	10.8	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	67.43	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	56.27	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	34.92	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	13.4	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	7.91	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	12.49	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	12.56	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	8.13	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	171.65	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	64.63	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	28.94	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	57.22	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	24.85	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	13.44	UG/KG	D
2005	PA C-15	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-15	PA	GRAB	0	5	CM	TPH	DRO	52.27	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	MERCURY	0.288	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	LEAD	79.8	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	NICKEL	63.6	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	SILVER	4.61	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.37	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	ARSENIC	15.1	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	CADMIUM	7.34	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	COPPER	131	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	ZINC	148	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	CHROMIUM	167	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	METAL	SELENIUM	0.42	MG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	RAD	RADIUM-228	0.27	PCI/G	U
2005	PA C-16	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.51	PCT	D
2005	PA C-16	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB209	2.48	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB118	22.26	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB66	3.12	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB105	8.77	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB8	2.06	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB153	30.95	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB138	26.6	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB180	13.18	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB170	5.33	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB52	11.84	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB18	1.62	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB101	24.42	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB110	27.71	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB128	6.16	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB206	1.72	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB44	4.64	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.06	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.68	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.63	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB187	7.55	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB195	1.94	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB129	1.88	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	CON	PCB28	1.98	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	6.18	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	3.76	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-16	PA	GRAB	0	5	CM	. LPAH	ANTHRACENE	779.55	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	PYRENE	1981.32	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	34.97	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	26.22	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	1041.75	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	877.43	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1274.85	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	PERYLENE	806.98	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1622.49	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	1492.52	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	1574.78	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	161.84	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	CHRYSENE	1346.48	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	1140.64	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	316.92	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	787.14	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	23.75	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	555.7	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	LPAH	FLUORENE	91.6	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	34.6	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	BIPHENYL	15.71	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	27.35	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	49.81	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	59.43	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	61.21	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	38.19	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	65.42	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	154.97	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	442.77	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	361.55	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	303.7	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	220.33	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	25.76	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	87.67	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	173.89	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	158.01	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	2896.9	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	908.26	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	518.97	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	978.21	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	555.95	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	190.2	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	109.55	UG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	TPH	DRO	608.23	MG/KG	D
2005	PA C-16	PA	GRAB	0	5	CM	RAD	RADIUM-226	0.32	PCI/G	D
2005	PA C-16	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	40	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	MERCURY	0.345	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	LEAD	29.8	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	NICKEL	64.1	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	SILVER	0.418	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.2	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	ARSENIC	9.52	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	CADMIUM	0.463	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	COPPER	70.9	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	ZINC	101	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	CHROMIUM	98.6	MG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	METAL	SELENIUM	0.41	MG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.82	PCT	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.54	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB209	0.61	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB118	1.64	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB66	0.85	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB105	0.65	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB8	0.85	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB153	3.36	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB138	2.16	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB180	1.99	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB170	1.08	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB101	1.68	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB110	1.73	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB206	0.33	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.97	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.44	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.44	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB187	0.86	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB195	0.46	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB129	0.56	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	CON	PCB28	0.2	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.24	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.17	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-17	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	597.3	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	PYRENE	2008.32	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	110.08	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	60.92	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	420.64	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	742.37	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	469.79	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	PERYLENE	320.36	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1437.66	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	1541.62	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	574.78	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	69.49	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	CHRYSENE	1964.01	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	1056.36	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	101.81	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	1297.42	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	202.12	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	782.78	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	LPAH	FLUORENE	157.05	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	59.72	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	BIPHENYL	40.22	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	89.06	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	47.2	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	42.52	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	31.76	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	48.71	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	40.74	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	72.82	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	387.33	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	223.16	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	108.17	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	47.62	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	29.05	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	35.36	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	38.64	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	23.32	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	1623.48	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	358.5	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	165.47	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	399.01	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	151.99	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	48.26	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	20.14	UG/KG	D
2005	PA C-17	PA	GRAB	0	5	CM	TPH	DRO	101.37	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	3.2	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	MERCURY	0.304	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	LEAD	25.3	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	NICKEL	61.4	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	SILVER	0.312	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.08	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	ARSENIC	7.47	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	CADMIUM	0.222	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	COPPER	42.8	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	ZINC	84.9	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	CHROMIUM	99.7	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	METAL	SELENIUM	0.47	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.75	PCT	D
2005	PA C-18	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.57	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB209	0.06	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB118	0.3	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB66	0.21	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB105	0.22	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.25	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB153	1.2	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB138	0.8	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB180	0.83	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB170	0.41	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB101	0.07	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB110	0.46	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB206	0.12	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.99	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.38	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.42	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB187	0.05	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB195	0.11	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB129	0.08	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	CON	PCB28	0.05	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.53	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.54	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	95.47	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	PYRENE	263.88	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	10.38	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	7.76	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	103.62	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	110.56	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	100.13	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	PERYLENE	61.18	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	186.23	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	315.04	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	71.13	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	8.11	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	CHRYSENE	214.3	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	151.51	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	15.01	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	141.12	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	7.92	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	90.16	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	LPAH	FLUORENE	16.86	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	18.66	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PAH	BIPHENYL	7.92	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	12.76	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	12.97	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	12.66	UG/KG	U
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	7.95	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	7.48	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	9.11	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	13.68	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	52.26	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	42	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	19.87	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	8.45	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	4.81	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	7.66	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	9.18	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	5.05	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	171.94	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	43.87	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	22.4	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	46.52	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	22.71	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	10.71	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	3.06	UG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	TPH	DRO	16.85	MG/KG	D
2005	PA C-18	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.7	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	MERCURY	0.109	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	LEAD	12.2	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	NICKEL	34.2	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	SILVER	0.11	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.07	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	ARSENIC	3.16	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	CADMIUM	0.142	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	COPPER	18.5	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	ZINC	41.1	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	CHROMIUM	41.7	MG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	METAL	SELENIUM	0.19	MG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.62	PCT	D
2005	PA C-19	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	2.8	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.29	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB209	0.63	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ALDRIN	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB118	1.07	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB66	0.04	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB77	0.02	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB105	0.37	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.13	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB8	0.04	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB153	4.52	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB138	3.03	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB180	2.93	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB170	1.48	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB52	0.14	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB101	0.87	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB110	0.63	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB128	0.34	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB206	0.73	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB44	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.52	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB187	1.6	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB195	0.78	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.04	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB129	0.02	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB126	0.07	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.32	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	CON	PCB28	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	0.93	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	0.41	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.06	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	1010.69	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	PYRENE	1360.79	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	60.64	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	12.65	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	232.87	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	569.64	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	298.15	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	PERYLENE	263.18	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	791.87	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	1548.3	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	440.13	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	92.01	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	CHRYSENE	1614.45	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	877.22	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	75.02	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	775.39	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	37.91	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	314.41	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	LPAH	FLUORENE	119.16	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-19	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	20.89	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	BIPHENYL	16.59	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	28.02	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	22	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	17.68	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	17.73	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	17.62	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	0.02	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	0.02	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	202.2	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	186.25	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	157.56	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	80.98	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	9.74	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	34.09	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	66.18	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	46.97	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	1360.62	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	474.24	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	191.71	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	457.24	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	152.94	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	50.41	UG/KG	D
2005	PA C-19	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	0.03	UG/KG	U
2005	PA C-19	PA	GRAB	0	5	CM	TPH	DRO	52.99	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	MERCURY	0.31	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	LEAD	27.3	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	NICKEL	69.5	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	SILVER	0.318	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.12	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	ARSENIC	8.35	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	CADMIUM	0.249	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	COPPER	43	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	ZINC	91.5	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	CHROMIUM	102	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	METAL	SELENIUM	0.45	MG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.63	PCT	D
2005	PA C-2	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.5	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.54	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB209	1.04	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB118	0.94	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB105	0.47	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB153	2.42	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB138	1.79	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB180	1.96	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB170	1.12	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB101	0.07	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB110	0.58	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB128	0.42	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB206	1.17	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.02	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB187	0.87	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB195	0.95	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.65	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.81	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.67	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	55.97	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	PYRENE	246.22	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	16.94	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	10.37	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	141.46	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	112.96	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	123.32	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	GRAB	0	5	CM	PAH	PERYLENE	81.43	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	123.18	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	234.4	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	61.14	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	7.71	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	CHRYSENE	108.94	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	156.59	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	15.61	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	94.9	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	16.78	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	100.11	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	LPAH	FLUORENE	24.44	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	19.07	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	BIPHENYL	9.81	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	12.6	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	17.97	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	17.99	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	12.04	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	9.46	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	46.63	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	41.01	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	23.53	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	10.05	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	6.6	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	8.51	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	10.3	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	5.89	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	102.67	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	41.55	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	22.12	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	41.66	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	20.65	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	15.07	UG/KG	D
2005	PA C-2	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-2	PA	GRAB	0	5	CM	TPH	DRO	57.65	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	MERCURY	0.25	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	LEAD	22.9	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	NICKEL	61.7	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	SILVER	0.332	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	ARSENIC	7.42	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-3	PA	GRAB	0	5	CM	METAL	CADMIUM	0.211	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	COPPER	39.3	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	ZINC	80.7	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	CHROMIUM	99.2	MG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	METAL	SELENIUM	0.39	MG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.73	PCT	D
2005	PA C-3	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.3	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.52	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB209	1.01	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB118	1.13	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB105	0.55	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB153	2.69	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB138	0.75	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB180	2.26	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB170	1.08	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB101	0.07	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB110	0.62	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB128	0.45	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB206	1.13	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.99	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB187	0.97	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB195	0.96	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.66	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.07	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-3	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.98	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	143.74	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	PYRENE	444.29	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	32.71	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	19.27	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	184.3	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	157.93	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	165.41	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	PERYLENE	114.53	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	184.03	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	477.88	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	91.88	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	10.79	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	CHRYSENE	217.18	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	228.79	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	23.01	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	181.5	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	37.1	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	166.49	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	LPAH	FLUORENE	48.28	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	23.19	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	BIPHENYL	13.56	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	16.72	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	27.03	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	27.59	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	19.33	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	18.2	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	106.75	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	78.46	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	36.12	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	17.71	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	11.44	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	15.67	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	14.92	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	9.22	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	223.34	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	81.47	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	37.19	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	78.17	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	31.12	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	18.08	UG/KG	D
2005	PA C-3	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-3	PA	GRAB	0	5	CM	TPH	DRO	61.51	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	MERCURY	0.304	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	LEAD	24.8	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	NICKEL	62.9	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	SILVER	0.307	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	ARSENIC	7.7	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	CADMIUM	0.265	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	COPPER	40.6	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	ZINC	82.2	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	CHROMIUM	109	MG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.72	PCT	D
2005	PA C-4	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	0.89	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.45	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB209	0.91	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB118	1.08	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB66	0.07	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB77	0.03	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB105	0.55	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.2	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB8	0.06	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB153	2.59	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB138	2.07	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB180	2.21	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB170	1.02	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB52	0.07	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB18	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB101	0.05	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB110	0.62	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB128	0.39	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB206	1.01	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.45	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB187	0.88	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB195	0.83	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB129	0.03	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB126	0.1	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.58	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	CON	PCB28	0.04	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.83	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.77	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	217.89	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	PYRENE	612.11	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	56.09	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	32.96	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	174.59	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	175.41	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	163.49	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	PERYLENE	118.29	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	208.51	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	702.06	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	112.67	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	12.13	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	CHRYSENE	288.98	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	255.6	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24.99	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	253.71	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	96	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	305.74	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	LPAH	FLUORENE	87.36	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	24.12	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	BIPHENYL	15.39	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	17.93	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	37.51	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	35.34	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	23.07	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	27.7	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	162.07	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	101.21	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	47.75	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	17.13	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	14.91	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	18.34	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	16.39	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	8.02	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	329.77	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	111.03	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	43.41	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	102.41	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	38.53	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	19.11	UG/KG	D
2005	PA C-4	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	0.04	UG/KG	U
2005	PA C-4	PA	GRAB	0	5	CM	TPH	DRO	61.34	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	MERCURY	0.259	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	LEAD	27.3	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	NICKEL	71	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	SILVER	0.335	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.13	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	ARSENIC	7.75	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	CADMIUM	0.263	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	COPPER	48.9	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	ZINC	93.2	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	CHROMIUM	89.8	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	METAL	SELENIUM	0.44	MG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	RAD	RADIUM-228	0.43	PCI/G	U
2005	PA C-5	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.91	PCT	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.09	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.87	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB209	0.14	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ALDRIN	0.08	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB118	1.56	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.13	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB66	1.52	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB77	0.06	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB105	0.75	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.38	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.09	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB8	1.34	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB153	4.46	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB138	7.66	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB180	2.45	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB170	1.21	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB52	0.14	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB18	0.03	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB101	1.27	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB110	1.87	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB128	0.09	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB206	0.27	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB44	0.08	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	2.35	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.67	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.09	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB187	0.44	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB195	0.27	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.13	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB129	0.32	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB126	0.19	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.09	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.09	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	CON	PCB28	0.88	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ENDRIN	0.1	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	3.25	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.93	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.17	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.08	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.16	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.09	UG/KG	U
2005	PA C-5	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	259.55	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	PYRENE	866.05	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	113.69	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	54.49	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	249.59	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	258.32	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	238.57	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	PERYLENE	164.82	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	443.23	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	1068.77	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	163.86	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	19.86	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	CHRYSENE	378.61	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	357.56	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	37.87	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	348.45	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	151.42	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	555.77	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	LPAH	FLUORENE	135.19	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	38.02	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	BIPHENYL	26.1	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	32.93	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	52.12	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	41.38	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	24.6	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	36.93	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	26.51	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	52.63	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	196.53	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	115.49	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	47.93	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	21.99	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	19.17	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	19.6	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	21.68	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	12.55	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	399.82	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	122.18	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	55.92	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	111.44	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	57.75	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	28.57	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	10.46	UG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	TPH	DRO	40.83	MG/KG	D
2005	PA C-5	PA	GRAB	0	5	CM	RAD	RADIUM-226	0.28	PCI/G	D
2005	PA C-5	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.7	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	MERCURY	0.286	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	LEAD	32.8	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	NICKEL	78.5	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	SILVER	0.311	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.12	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	ARSENIC	8.12	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	CADMIUM	0.309	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	COPPER	46.2	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	ZINC	98.9	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	CHROMIUM	94	MG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	METAL	SELENIUM	0.44	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.6	PCT	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB209	0.08	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB118	1.76	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB66	1.86	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB105	0.78	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB8	0.2	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB153	3.51	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB138	2.56	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB180	2.21	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB170	1.03	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB52	0.5	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB101	1.57	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB110	2.04	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB128	0.05	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB206	0.19	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB44	0.91	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.8	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.5	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB187	0.46	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB195	0.25	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB129	0.22	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	CON	PCB28	1.65	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.69	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.44	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-6	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	127.99	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	PYRENE	396.7	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	20.52	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	13.29	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	216.93	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	171.68	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	196.53	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	PERYLENE	134.35	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	210.41	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	451.2	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	98.47	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	11.07	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	CHRYSENE	202.91	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	241.79	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	26.81	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	187.07	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	16.71	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	121.7	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	LPAH	FLUORENE	29.81	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	30.44	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	BIPHENYL	14.51	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	19.11	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	25.84	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	24.56	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	17.49	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	14.99	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	18.49	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	27.01	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	78.51	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	70.53	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	36.17	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	14.63	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	8.58	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	13.38	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	16.5	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	9.94	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	213.94	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	70.9	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	39.34	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	66.64	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	36.93	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	28.31	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	7.54	UG/KG	D
2005	PA C-6	PA	GRAB	0	5	CM	TPH	DRO	36.59	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	0.78	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	MERCURY	0.226	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	LEAD	21.5	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	NICKEL	56	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	SILVER	0.261	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	ARSENIC	7.18	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	CADMIUM	0.174	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	COPPER	35.4	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	ZINC	73	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	CHROMIUM	84.2	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	METAL	SELENIUM	0.43	MG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.64	PCT	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.53	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB209	0.09	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB118	1.1	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB66	0.99	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB105	0.43	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB8	0.03	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB153	2.91	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB138	1.92	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB180	1.99	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB170	0.87	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB101	1.02	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB110	1.28	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB128	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB206	0.22	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.77	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.47	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB187	0.32	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB195	0.21	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB129	0.2	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	CON	PCB28	0.59	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.63	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.39	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-7	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	139.93	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	PYRENE	414.53	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	27.5	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	18.07	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	202.05	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	165.59	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	184.29	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	PERYLENE	128.74	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	258.86	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	470.14	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	94.75	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	11.64	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	CHRYSENE	196.65	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	233.74	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24.76	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	174.6	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	27.34	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	192.09	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	LPAH	FLUORENE	39.97	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	29.5	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	BIPHENYL	14.35	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	19.36	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	28.45	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	27.31	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	19.99	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	18.69	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	18.81	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	20.1	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	108.92	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	77.11	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	36.08	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	14.12	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	9.89	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	14.44	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	15.08	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	8.85	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	212.39	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	68.62	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	37.71	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	65.23	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	36.89	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	20.14	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	8.67	UG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	TPH	DRO	27.39	MG/KG	D
2005	PA C-7	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	0.92	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	MERCURY	0.215	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	LEAD	26.1	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	NICKEL	66.4	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	SILVER	0.28	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	ARSENIC	7.55	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	CADMIUM	0.24	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	COPPER	38.4	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	ZINC	83.9	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	CHROMIUM	104	MG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	METAL	SELENIUM	0.42	MG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.63	PCT	D
2005	PA C-8	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	2.2	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.53	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB209	1.04	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB118	0.94	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB105	0.52	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB153	2.35	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB138	1.83	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB180	2	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB170	1.11	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB101	0.07	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB110	0.47	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB128	0.4	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB206	1.15	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	0.88	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB187	0.88	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB195	0.91	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.62	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.88	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.75	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	105.8	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	PYRENE	358.65	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	20.39	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	14.06	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	155.72	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	127.51	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	137.48	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	PERYLENE	94.15	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	144.78	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	374.2	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	72.97	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	9.17	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	CHRYSENE	147.15	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	185.1	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	17.91	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	131.57	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	20.3	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	148.67	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	LPAH	FLUORENE	31.86	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-8	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	20.47	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	BIPHENYL	11.29	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	13.11	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	20.19	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	21.83	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	14.67	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	12.53	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	81.65	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	63.61	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	30.25	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	11.96	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	8.96	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	10.86	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	12.87	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	6.35	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	165.05	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	62.13	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	30.66	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	53.87	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	22.46	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	14.16	UG/KG	D
2005	PA C-8	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-8	PA	GRAB	0	5	CM	TPH	DRO	54.32	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	MERCURY	0.289	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	LEAD	25.5	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	NICKEL	63.2	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	SILVER	0.322	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	ARSENIC	7.5	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	CADMIUM	0.237	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	COPPER	45.3	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	ZINC	87.6	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	CHROMIUM	85.4	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	METAL	SELENIUM	0.35	MG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.78	PCT	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.55	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB209	0.34	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB118	1.85	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ALPHA-BHC	0.08	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB66	1.51	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB105	0.73	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB153	3.88	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB138	2.91	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB180	2.32	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB170	1.09	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB18	0.44	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB101	1.78	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB110	2.13	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB128	0.01	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB206	0.28	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB44	0.09	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	DDT 44	4,4'-DDT	1.7	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.49	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.52	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB187	0.7	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB195	0.25	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB129	0.27	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	CON	PCB28	1.13	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	DDT 44	4,4'-DDD	2.64	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	DDT 44	4,4'-DDE	2.41	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-9	PA	GRAB	0	5	CM	LPAH	ANTHRACENE	289.95	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	PYRENE	824.02	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	DIBENZOFURAN	125.7	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	58.24	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	248.08	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	264.68	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	240.09	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	PERYLENE	171.44	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	460.34	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	FLUORANTHENE	1016.71	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	172.05	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	19.07	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	CHRYSENE	410.3	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	373.02	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	38.89	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	356.14	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	LPAH	ACENAPHTHENE	191.9	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	LPAH	PHENANTHRENE	555.37	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	LPAH	FLUORENE	163.52	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	LPAH	NAPHTHALENE	46.84	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	BIPHENYL	29.33	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	55.04	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	60.69	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	44.92	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	26.68	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C1-FLUORENES	41.91	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C2-FLUORENES	33.68	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C3-FLUORENES	41.9	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	201.77	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	123.64	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	52.3	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	20.57	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	18.54	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	20.57	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	23.25	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	12.21	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	431.54	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	130.27	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	62.51	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C1-CHRYSENES	122.82	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C2-CHRYSENES	64.16	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C3-CHRYSENES	29.41	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	PAH	C4-CHRYSENES	11.79	UG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	TPH	DRO	44.81	MG/KG	D
2005	PA C-9	PA	GRAB	0	5	CM	TBT	TRIBUTYL TIN	1.6	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	MERCURY	0.297	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	LEAD	22.1	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	NICKEL	51.4	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	SILVER	0.29	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	ANTIMONY	0.09	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	ARSENIC	5.31	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	CADMIUM	0.195	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	COPPER	29.4	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	ZINC	68.8	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	CHROMIUM	71.9	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	METAL	SELENIUM	0.32	MG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.2	PCT	D
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ENDOSULFAN SULFATE	0.42	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB209	0.16	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB118	0.66	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB66	0.26	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB77	0.03	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB105	0.27	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ENDOSULFAN II	0.18	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB8	0.06	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB153	2.24	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB138	1.59	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB180	1.39	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB170	0.64	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB52	0.07	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB18	0.05	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB101	0.72	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB110	0.94	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB128	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB206	0.14	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB44	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	DDT 44	4,4'-DDT	3.09	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ALPHA-CHLORDANE	0.34	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	GAMMA-CHLORDANE	0.36	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB187	0.35	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB195	0.2	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	DDT 24	2,4'-DDD	0.56	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB129	0.03	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB126	0.09	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	DIELDRIN	0.5	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	CON	PCB28	0.48	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	DDT 44	4,4'-DDD	1.49	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	DDT 44	4,4'-DDE	1.41	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	LPAH	ANTHRACENE	21.6	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	PYRENE	207.2	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	DIBENZOFURAN	3.14	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	DIBENZOTHIOPHENE	5.03	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	130.19	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	BENZO(E)PYRENE	95.88	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	116.13	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	PERYLENE	54.37	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	132.38	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	FLUORANTHENE	162.78	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	45.59	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	LPAH	ACENAPHTHYLENE	6.7	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	CHRYSENE	70.25	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	BENZO(A)PYRENE	143.51	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	13.77	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	HPAH	BENZO(A)ANTHRACENE	71.28	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	LPAH	ACENAPHTHENE	4.64	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	LPAH	PHENANTHRENE	67.1	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	LPAH	FLUORENE	6.76	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	LPAH	NAPHTHALENE	16.84	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	BIPHENYL	6.29	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C1-NAPHTHALENES	9.25	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C2-NAPHTHALENES	11.45	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C3-NAPHTHALENES	10.96	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C4-NAPHTHALENES	6.89	UG/KG	U
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C1-FLUORENES	5.94	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C2-FLUORENES	6.88	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C3-FLUORENES	7.26	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	38.15	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	30.25	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	12.74	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	5.83	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C1-DIBENZOTHIOPHENES	4.87	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C2-DIBENZOTHIOPHENES	6.65	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C3-DIBENZOTHIOPHENES	6.87	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C4-DIBENZOTHIOPHENES	3.04	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C1-FLUORANTHENES/PYRENES	71.54	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C2-FLUORANTHENES/PYRENES	23.81	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C3-FLUORANTHENES/PYRENES	14.37	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C1-CHRYSENES	26.76	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C2-CHRYSENES	16.51	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C3-CHRYSENES	10.75	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	PAH	C4-CHRYSENES	6.24	UG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	TPH	DRO	14.99	MG/KG	D
2005	Reference	PA Ref	GRAB	0	5	CM	TBT	TRIBUTYL TIN	0.79	UG/KG	D
2005	PA C-1	PA	GRAB	0	5	CM	GRAIN	FINES	99.21	PCT	D
2005	PA C-10	PA	GRAB	0	5	CM	GRAIN	FINES	99.38	PCT	D
2005	PA C-11	PA	GRAB	0	5	CM	GRAIN	FINES	99.52	PCT	D
2005	PA C-12	PA	GRAB	0	5	CM	GRAIN	FINES	99.2	PCT	D
2005	PA C-13	PA	GRAB	0	5	CM	GRAIN	FINES	98.94	PCT	D
2005	PA C-14	PA	GRAB	0	5	CM	GRAIN	FINES	98.51	PCT	D
2005	PA C-15	PA	GRAB	0	5	CM	GRAIN	FINES	99.24	PCT	D
2005	PA C-16	PA	GRAB	0	5	CM	GRAIN	FINES	88.55	PCT	D
2005	PA C-17	PA	GRAB	0	5	CM	GRAIN	FINES	93.75	PCT	D
2005	PA C-18	PA	GRAB	0	5	CM	GRAIN	FINES	69.7	PCT	D
2005	PA C-19	PA	GRAB	0	5	CM	GRAIN	FINES	24.39	PCT	D
2005	PA C-2	PA	GRAB	0	5	CM	GRAIN	FINES	99.58	PCT	D
2005	PA C-3	PA	GRAB	0	5	CM	GRAIN	FINES	99.81	PCT	D
2005	PA C-4	PA	GRAB	0	5	CM	GRAIN	FINES	99.63	PCT	D
2005	PA C-5	PA	GRAB	0	5	CM	GRAIN	FINES	98.72	PCT	D
2005	PA C-6	PA	GRAB	0	5	CM	GRAIN	FINES	99.73	PCT	D
2005	PA C-7	PA	GRAB	0	5	CM	GRAIN	FINES	99.76	PCT	D
2005	PA C-8	PA	GRAB	0	5	CM	GRAIN	FINES	99.56	PCT	D
2005	PA C-9	PA	GRAB	0	5	CM	GRAIN	FINES	98.06	PCT	D
2005	Reference	PA Ref	GRAB	0	5	CM	GRAIN	FINES	90.43	PCT	D
2005	PA C-4	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.63	PCT	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	MERCURY	0.328	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	LEAD	30.9	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	NICKEL	66.9	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	SILVER	0.369	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	ANTIMONY	0.08	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	ARSENIC	7.27	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	CADMIUM	0.376	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	COPPER	44.1	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	ZINC	89.8	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	CHROMIUM	103	MG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	METAL	SELENIUM	0.35	MG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.66	PCT	D
2005	PA C-1	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.1	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.54	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB209	1.09	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-1	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB118	1.14	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB105	0.58	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB153	3.12	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB138	2.39	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB180	2.01	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB170	1.24	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB101	0.12	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB110	0.86	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB128	0.47	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB206	1.16	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.84	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB187	1.07	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB195	0.98	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PEST	DIELDRIN	0.69	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.72	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.77	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	LPAH	ANTHRACENE	48.96	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	PYRENE	416.18	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	12.83	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	8.1	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	146.49	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-1	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	138.21	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	134.57	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	PERYLENE	83.69	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	164.91	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	226	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	80.16	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	8.75	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	CHRYSENE	135.18	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	182.13	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	17.64	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	121.66	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	8.77	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	75.61	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	LPAH	FLUORENE	15.7	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	19.38	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	BIPHENYL	9.09	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	12.15	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	15.42	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	15.93	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	12.42	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C1-FLUORENES	7.5	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	44.79	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	46.25	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	26.45	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	12.19	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	4.53	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	9.69	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	11.65	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	6.67	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	155.56	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	64.04	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	29.73	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	55.24	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	21.88	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	13.3	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-1	PA	CORE	5	25	CM	TPH	DRO	46.42	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	MERCURY	0.234	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	LEAD	27.9	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	NICKEL	64.3	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	SILVER	0.356	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-10	PA	CORE	5	25	CM	METAL	ANTIMONY	0.12	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	ARSENIC	7.22	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	CADMIUM	0.331	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	COPPER	52.6	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	ZINC	92.3	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	CHROMIUM	86.9	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	METAL	SELENIUM	0.31	MG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.6	PCT	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.46	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB209	0.37	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB118	1.2	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB66	0.81	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB77	0.03	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB105	0.43	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.2	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB8	0.06	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB153	2.93	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB138	1.98	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB180	1.77	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB170	0.83	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB52	0.07	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB18	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB101	1.18	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB110	1.31	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB128	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB206	0.23	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.4	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.4	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB187	0.51	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB195	0.32	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB129	0.28	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB126	0.1	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	CON	PCB28	0.47	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	ENDRIN	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-10	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.39	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	2.22	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-10	PA	CORE	5	25	CM	LPAH	ANTHRACENE	210.13	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	PYRENE	907.46	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	20.25	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	14.85	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	272.7	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	372.61	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	291.71	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	PERYLENE	223.8	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	696.19	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	834.3	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	277.04	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	23.13	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	CHRYSENE	657.53	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	558.19	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	56.24	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	554.44	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	14.46	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	158.83	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	LPAH	FLUORENE	34.02	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	29.25	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	BIPHENYL	13.11	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	18.2	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	25.47	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	26.57	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	23.82	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C1-FLUORENES	18.93	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C2-FLUORENES	23.41	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C3-FLUORENES	48.45	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	139.05	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	118.83	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	68.07	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	30.45	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	9.15	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	19.37	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	28.34	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	15.48	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	749.54	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-10	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	213.05	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	96.65	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	239.51	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	106.99	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	37.85	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	13.72	UG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	TPH	DRO	40.53	MG/KG	D
2005	PA C-10	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.3	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	MERCURY	0.344	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	LEAD	28.5	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	NICKEL	66.6	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	SILVER	0.363	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	ARSENIC	7.05	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	CADMIUM	0.332	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	COPPER	52.6	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	ZINC	90.4	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	CHROMIUM	96.1	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	METAL	SELENIUM	0.51	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.61	PCT	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.57	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB209	0.17	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB118	0.53	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB66	0.25	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB105	0.31	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.25	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB153	1.66	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB138	1.15	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB180	0.97	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB170	0.56	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB101	0.42	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB110	0.67	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB206	0.16	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-11	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.03	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.41	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.43	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB187	0.05	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB195	0.18	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB129	0.16	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.69	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.76	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	LPAH	ANTHRACENE	110.79	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	PYRENE	466.45	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	10.05	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	6.8	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	151.42	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	197.03	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	155.18	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	PERYLENE	94.18	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	334.51	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	350.03	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	134.56	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	14.64	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	CHRYSENE	359.62	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	274.82	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	27.68	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	256.89	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	7.01	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	90.46	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	LPAH	FLUORENE	17.33	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	23.27	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PAH	BIPHENYL	8.8	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	13.91	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	14.82	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	14.87	UG/KG	U
2005	PA C-11	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	12.25	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-11	PA	CORE	5	25	CM	PAH	C1-FLUORENES	9.85	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C2-FLUORENES	10.86	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C3-FLUORENES	22.14	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	72.97	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	59.27	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	32.7	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	17.73	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	5.19	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	10.95	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	13.93	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	7.1	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	338.34	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	88.64	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	42.58	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	101.22	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	47.25	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	18.67	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	9.69	UG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	TPH	DRO	39.64	MG/KG	D
2005	PA C-11	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	2.7	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	MERCURY	0.294	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	LEAD	27.2	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	NICKEL	64.5	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	SILVER	0.332	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	ANTIMONY	0.09	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	ARSENIC	6.22	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	CADMIUM	0.292	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	COPPER	49.7	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	ZINC	86.8	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	CHROMIUM	99.6	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	METAL	SELENIUM	0.42	MG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.55	PCT	D
2005	PA C-12	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.56	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB209	0.17	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB118	0.54	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB66	0.35	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB105	0.32	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB153	1.71	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB138	1.13	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB180	1.04	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB170	0.66	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB101	0.42	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB110	0.65	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB206	0.2	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.08	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.41	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.42	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB187	0.09	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB195	0.18	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB129	0.15	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.02	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.85	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	LPAH	ANTHRACENE	135.99	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	PYRENE	723.23	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	12.47	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	8.71	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	181.09	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	271.7	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	191.02	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	PERYLENE	126.69	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	479.95	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	500.14	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	181.88	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	37.04	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	CHRYSENE	364.7	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-12	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	377.72	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	35.11	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	323.63	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	8.16	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	103.34	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	LPAH	FLUORENE	19.29	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	22.33	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PAH	BIPHENYL	9.73	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	14.81	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	14.76	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	14.71	UG/KG	U
2005	PA C-12	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	12.15	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C1-FLUORENES	9.91	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C2-FLUORENES	11.51	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C3-FLUORENES	25.22	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	77.5	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	70.52	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	42.21	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	21.98	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	5.55	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	12.54	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	17.99	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	10.93	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	540.66	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	139.2	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	68.28	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	119.18	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	57.39	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	21.25	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	7.02	UG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	TPH	DRO	48.18	MG/KG	D
2005	PA C-12	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	2.3	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	MERCURY	0.322	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	LEAD	37.5	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	NICKEL	68.2	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	SILVER	0.724	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	ANTIMONY	0.14	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	ARSENIC	7.78	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	CADMIUM	1.27	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	COPPER	66.3	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	ZINC	102	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	CHROMIUM	104	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	METAL	SELENIUM	0.36	MG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	CORE	5	25	CM	RAD	RADIUM-228	0.85	PCI/G	D
2005	PA C-13	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.68	PCT	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.53	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB209	0.87	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB118	3.48	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB66	0.86	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB105	1.4	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB153	6.06	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB138	4.89	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB180	2.84	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB170	1.36	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB52	0.29	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB101	4.05	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB110	4.06	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB128	0.46	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB206	0.55	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB44	0.31	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.19	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.46	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.49	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB187	1.4	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB195	0.46	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB129	0.35	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	CON	PCB28	0.38	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.53	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	2.51	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-13	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	CORE	5	25	CM	LPAH	ANTHRACENE	97.01	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	PYRENE	742.94	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	13.3	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	10.29	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	247.83	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	293.93	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	244.89	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	PERYLENE	140.83	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	497.21	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	340.4	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	185.74	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	26.52	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	CHRYSENE	314.37	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	396.05	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	41.94	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	239.83	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	9.83	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	132.23	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	LPAH	FLUORENE	18.89	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	18.35	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	BIPHENYL	9.96	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	12.55	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	17.68	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	21.21	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	26.38	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C1-FLUORENES	11.02	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C2-FLUORENES	21.2	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C3-FLUORENES	29.44	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	74.77	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	76.29	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	44.25	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	34.61	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	8.72	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	17.8	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	32.69	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	30.99	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	350.33	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	126.89	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	82.26	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	118.55	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	77.69	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	41.53	UG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	17.28	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	CORE	5	25	CM	TPH	DRO	139.32	MG/KG	D
2005	PA C-13	PA	CORE	5	25	CM	RAD	RADIUM-226	0.36	PCI/G	D
2005	PA C-13	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	6.2	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	MERCURY	0.332	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	LEAD	27.6	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	NICKEL	65.7	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	SILVER	0.531	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	ANTIMONY	0.18	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	ARSENIC	6.27	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	CADMIUM	0.349	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	COPPER	49.1	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	ZINC	88.3	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	CHROMIUM	104	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.53	PCT	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.52	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB209	0.46	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB118	1	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB66	0.41	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB105	0.38	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB8	0.33	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB153	2.49	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB138	1.74	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB180	1.38	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB170	0.67	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB101	0.99	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB110	1.19	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB128	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB206	0.27	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.84	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.4	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.41	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB187	0.32	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB195	0.25	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-14	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB129	0.16	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	CON	PCB28	0.15	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.92	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.97	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-14	PA	CORE	5	25	CM	LPAH	ANTHRACENE	56.57	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	PYRENE	310.67	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	7.09	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	5.75	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	164.34	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	158.16	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	153.3	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	PERYLENE	89.24	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	256.29	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	164.47	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	96.89	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	12.27	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	CHRYSENE	199.26	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	217.06	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	23.41	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	147.1	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	4.88	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	64.48	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	LPAH	FLUORENE	10.73	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	16.33	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	BIPHENYL	8.06	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	9.91	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	13	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	13.5	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	10.01	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C1-FLUORENES	7.32	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C2-FLUORENES	7.78	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C3-FLUORENES	14.7	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	41.67	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	37.89	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-14	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	21.43	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	11.81	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	4.39	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	8.26	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	10.61	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	9.35	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	169.27	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	56.19	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	32.3	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	62.58	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	36.56	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	16.38	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	8.14	UG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	TPH	DRO	44.79	MG/KG	D
2005	PA C-14	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	3	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	MERCURY	0.299	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	LEAD	28.1	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	NICKEL	66.7	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	SILVER	0.332	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	ANTIMONY	0.08	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	ARSENIC	7.19	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	CADMIUM	0.24	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	COPPER	43.4	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	ZINC	85.8	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	CHROMIUM	104	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	METAL	SELENIUM	0.42	MG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.56	PCT	D
2005	PA C-15	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.58	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB209	0.14	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB118	0.52	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.09	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB66	0.3	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB105	0.28	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.25	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB153	1.65	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB138	1.15	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB180	1.14	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB170	0.54	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB101	0.26	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB110	0.64	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB206	0.18	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.9	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.41	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.45	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB187	0.02	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB195	0.13	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.09	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB129	0.12	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.77	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.86	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	LPAH	ANTHRACENE	50.76	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	PYRENE	261.61	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	6.86	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	5.5	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	131.54	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	124.3	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	124.45	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	PERYLENE	70.11	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	190.87	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	197.45	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	71.96	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	8.55	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	CHRYSENE	156.43	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	171.71	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16.76	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	120.42	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	5.2	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	63.65	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-15	PA	CORE	5	25	CM	LPAH	FLUORENE	10.51	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	20.08	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PAH	BIPHENYL	8.05	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	12.25	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	13.13	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	13.46	UG/KG	U
2005	PA C-15	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	9.4	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C1-FLUORENES	6.87	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C2-FLUORENES	8.46	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C3-FLUORENES	13.77	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	41.43	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	38.41	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	19.68	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	9.1	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	4.35	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	7.43	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	9.45	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	4.9	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	141.01	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	41.61	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	23.57	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	45.93	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	24.81	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	12.46	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	5.31	UG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	TPH	DRO	28.15	MG/KG	D
2005	PA C-15	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	2.1	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	MERCURY	0.353	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	LEAD	88.2	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	NICKEL	67.2	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	SILVER	3.83	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	ANTIMONY	0.23	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	ARSENIC	11.1	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	CADMIUM	7.48	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	COPPER	116	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	ZINC	142	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	CHROMIUM	136	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	METAL	SELENIUM	0.38	MG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	RAD	RADIUM-228	0.72	PCI/G	D
2005	PA C-16	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	2.38	PCT	D
2005	PA C-16	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB209	2.99	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-16	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB118	20.12	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB66	3.67	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB105	7.61	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB8	1.48	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB153	29.23	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB138	24.7	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB180	10.54	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB170	5.07	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB52	10.45	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB18	0.27	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB101	22.9	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB110	25.73	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB128	5.45	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB206	1.67	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB44	4.69	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.69	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.66	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.63	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB187	6.48	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB195	1.84	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB129	1.59	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	CON	PCB28	1.42	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	4.87	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	3.35	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-16	PA	CORE	5	25	CM	LPAH	ANTHRACENE	443.09	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	PYRENE	2102.22	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	23.86	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	16.97	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	911.77	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-16	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	1741.75	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1071.28	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	PERYLENE	598.54	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1338.36	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	767.32	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1271.75	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	123.72	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	CHRYSENE	1718.51	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	2351	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	268.55	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	1088.15	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	14.42	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	335.7	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	LPAH	FLUORENE	49.75	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	29.22	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	BIPHENYL	11.67	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	22.1	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	36.86	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	48.98	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	48.82	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C1-FLUORENES	27.1	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C2-FLUORENES	72.76	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C3-FLUORENES	139.8	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	264.74	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	169.09	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	115.17	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	99.44	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	19.57	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	39.87	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	81.51	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	98.86	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	1879.28	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	645.33	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	403.35	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	674.29	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	424.18	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	177.04	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	81.7	UG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	TPH	DRO	563.4	MG/KG	D
2005	PA C-16	PA	CORE	5	25	CM	RAD	RADIUM-226	0.14	PCI/G	U
2005	PA C-16	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	48	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	MERCURY	0.264	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	LEAD	28.2	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	CORE	5	25	CM	METAL	NICKEL	59.5	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	SILVER	0.411	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	ANTIMONY	0.16	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	ARSENIC	8.63	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	CADMIUM	0.522	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	COPPER	60.6	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	ZINC	89.3	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	CHROMIUM	94.2	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	METAL	SELENIUM	0.39	MG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.54	PCT	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.47	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB209	0.57	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB118	1.43	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB66	0.6	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB105	0.61	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.2	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB8	0.36	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB153	3.07	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB138	2.18	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB180	1.51	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB170	0.92	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB101	1.63	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB110	1.71	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB128	0.11	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB206	0.31	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.74	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.37	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.38	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB187	0.68	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB195	0.35	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB129	0.37	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	PEST	DIELDRIN	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	CORE	5	25	CM	CON	PCB28	0.19	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.79	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.88	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-17	PA	CORE	5	25	CM	LPAH	ANTHRACENE	212.11	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	PYRENE	1118.33	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	14.37	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	9.8	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	288.12	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	471.82	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	313.22	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	PERYLENE	199.3	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	884.01	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	394.08	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	346.83	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	42.54	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	CHRYSENE	784.78	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	641.27	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	66.42	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	499.38	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	7.82	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	149.71	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	LPAH	FLUORENE	28	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	17.45	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	BIPHENYL	8.89	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	11.61	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	13.85	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	14.16	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	16.05	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C1-FLUORENES	10.68	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C2-FLUORENES	13.94	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C3-FLUORENES	33.03	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	101.1	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	76.58	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	47.78	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	30.19	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	5.93	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	11.53	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	19.14	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	15.22	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	684.7	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	182.32	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	93.27	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	218.46	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	100.87	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	32.66	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	10.57	UG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	TPH	DRO	68.55	MG/KG	D
2005	PA C-17	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	2.4	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	MERCURY	0.288	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	LEAD	26.4	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	NICKEL	62	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	SILVER	0.328	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	ANTIMONY	0.07	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	ARSENIC	6.62	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	CADMIUM	0.317	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	COPPER	45.5	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	ZINC	81	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	CHROMIUM	93.3	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	METAL	SELENIUM	0.41	MG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.5	PCT	D
2005	PA C-18	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.61	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB209	0.19	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB118	0.5	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.09	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB66	0.14	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB77	0.05	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB105	0.31	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.26	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB153	1.59	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB138	1.15	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB180	0.89	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB170	0.53	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB52	0.1	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB101	0.32	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB110	0.73	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB128	0.06	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB206	0.09	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.41	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB187	0.05	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB195	0.16	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.78	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB129	0.12	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB126	0.14	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.57	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.73	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.12	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.11	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	LPAH	ANTHRACENE	43.9	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	PYRENE	256.52	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	6.03	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	4.56	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	114.64	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	122.78	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	108.64	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	PERYLENE	62.91	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	198.62	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	166.61	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	73.4	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	8.12	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	CHRYSENE	156.53	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	163.28	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16.09	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	114.8	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	4.04	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	58.23	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	LPAH	FLUORENE	8.73	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	18.04	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PAH	BIPHENYL	7.06	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	11.03	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	11.66	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-18	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	11.7	UG/KG	U
2005	PA C-18	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	7.95	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C1-FLUORENES	5.85	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C2-FLUORENES	6.96	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C3-FLUORENES	9.05	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	35.45	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	32.85	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	16.42	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	8.57	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	3.25	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	6.11	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	8.79	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	4.57	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	139.78	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	43.4	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	23.59	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	44.32	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	23.97	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	11.16	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	5.51	UG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	TPH	DRO	5.17	MG/KG	D
2005	PA C-18	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	4.1	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	MERCURY	0.0869	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	LEAD	7.73	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	NICKEL	26.8	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	SILVER	0.099	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	ANTIMONY	0.07	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	ARSENIC	2.41	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	CADMIUM	0.129	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	COPPER	13.8	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	ZINC	31.3	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	CHROMIUM	34.3	MG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	METAL	SELENIUM	0.08	MG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.37	PCT	D
2005	PA C-19	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	0.078	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.27	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB209	0.58	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB118	0.54	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB66	1.76	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB77	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB105	0.24	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.12	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB8	0.04	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB153	4.64	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB138	3.21	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB180	3.02	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB170	1.54	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB52	0.02	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB101	1.07	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB110	0.79	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB128	0.33	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB206	0.95	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB44	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.44	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB187	1.6	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB195	0.78	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.04	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB129	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB126	0.06	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	DIELDRIN	1.22	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	CON	PCB28	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	0.55	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	0.54	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	LPAH	ANTHRACENE	382.43	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	PYRENE	383.49	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	13.31	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	2.84	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	110.41	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	214.88	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	126.03	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	PERYLENE	93.94	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	270.68	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	103.55	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-19	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	159.83	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	27.34	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	CHRYSENE	331.01	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	313.63	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	28.4	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	111.01	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	2.29	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	65.36	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	LPAH	FLUORENE	28.98	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	8.64	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	BIPHENYL	4.44	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	6.56	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	4.95	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	5	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	3.74	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C1-FLUORENES	3.41	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C2-FLUORENES	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PAH	C3-FLUORENES	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	33.28	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	30.78	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	25.8	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	18.7	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	1.96	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	4.1	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	10.88	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	9.25	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	283.5	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	126.38	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	64.93	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	123.05	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	54.02	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	24.24	UG/KG	D
2005	PA C-19	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	0.02	UG/KG	U
2005	PA C-19	PA	CORE	5	25	CM	TPH	DRO	21.63	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	MERCURY	0.295	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	LEAD	25.8	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	NICKEL	60.8	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	SILVER	0.327	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	ARSENIC	6.46	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	CADMIUM	0.274	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	COPPER	40.3	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	ZINC	79.6	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	CORE	5	25	CM	METAL	CHROMIUM	104	MG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.57	PCT	D
2005	PA C-2	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.1	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.55	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB209	1.11	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB118	1.03	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB105	0.58	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB153	2.9	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB138	2.29	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB180	2.12	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB170	1.15	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB101	0.07	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB110	0.86	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB128	0.46	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB206	1.22	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.85	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.07	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB187	1.07	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB195	0.97	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PEST	DIELDRIN	0.67	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.95	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	LPAH	ANTHRACENE	28.67	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	PYRENE	270.97	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	7.45	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	5.42	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	147.87	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	120.5	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	131.9	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	PERYLENE	85.49	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	126.15	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	159.49	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	66.6	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	7.23	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	CHRYSENE	96	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	164.29	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16.13	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	95.98	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	5.84	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	64.93	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	LPAH	FLUORENE	10.25	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	18.68	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	BIPHENYL	9.04	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	10.75	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	14.93	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	14.76	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	10.93	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C1-FLUORENES	6.79	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C2-FLUORENES	0.04	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PAH	C3-FLUORENES	0.04	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	36.19	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	38.41	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	21.2	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	9.04	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	3.64	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	7.83	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	9.05	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	5.21	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	101.11	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	40.02	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	22.4	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	39.22	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	19.96	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	13.31	UG/KG	D
2005	PA C-2	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-2	PA	CORE	5	25	CM	TPH	DRO	49.21	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	MERCURY	0.309	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	LEAD	27.2	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	NICKEL	66.8	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	SILVER	0.318	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	ARSENIC	7.5	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	CADMIUM	0.251	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	COPPER	41.6	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	ZINC	86.2	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	CHROMIUM	97.9	MG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	METAL	SELENIUM	0.38	MG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.62	PCT	D
2005	PA C-3	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.1	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.52	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB209	1	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB118	1.27	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB105	0.63	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB153	2.84	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB138	2.31	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB180	2.25	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB170	1.17	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB101	0.31	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB110	0.94	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB128	0.47	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB206	1.14	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.35	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB187	0.97	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB195	0.93	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PEST	DIELDRIN	0.72	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.03	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.96	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	LPAH	ANTHRACENE	80.7	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	PYRENE	380.99	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	15.69	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	11.14	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	170.99	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	146.15	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	153.55	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	PERYLENE	105.53	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	154.04	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	343.88	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	83.84	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	9.17	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	CHRYSENE	201.63	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	207.1	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	20.68	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	150.62	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	12.34	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	101.37	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	LPAH	FLUORENE	21.92	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	21.22	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	BIPHENYL	10.92	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	13.4	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	20.17	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	19.99	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	15.02	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C1-FLUORENES	11.97	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	67.47	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-3	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	59.91	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	35.52	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	15.85	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	7.6	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	11.65	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	14.81	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	8.88	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	191.88	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	75.41	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	34.26	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	69.17	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	29.02	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	14.83	UG/KG	D
2005	PA C-3	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-3	PA	CORE	5	25	CM	TPH	DRO	51.28	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	MERCURY	0.31	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	LEAD	27.2	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	NICKEL	66.5	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	SILVER	0.344	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	ARSENIC	7.59	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	CADMIUM	0.286	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	COPPER	43.2	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	ZINC	89.9	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	CHROMIUM	102	MG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	METAL	SELENIUM	0.41	MG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	0.88	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.53	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB209	1.04	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB118	1.06	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB105	0.54	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB153	2.71	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB138	2.1	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB180	2.01	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB170	1.19	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB101	0.07	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB110	0.61	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB128	0.44	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB206	1.16	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.01	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB187	0.96	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB195	0.94	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PEST	DIELDRIN	0.73	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.88	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.81	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	LPAH	ANTHRACENE	111.15	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	PYRENE	571.41	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	16.77	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	11.54	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	176.41	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	177.75	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	166.09	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	PERYLENE	112.93	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	212.77	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	340.67	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	114.31	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	10.5	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	CHRYSENE	262.03	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	256.67	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24.87	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	227.25	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	12.85	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	116.03	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-4	PA	CORE	5	25	CM	LPAH	FLUORENE	24.66	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	19.98	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	BIPHENYL	10.35	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	12.65	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	18.61	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	21.09	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	17.4	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C1-FLUORENES	13.87	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	90.01	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	69.92	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	39.48	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	16.67	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	8.36	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	13.49	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	14.15	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	8.33	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	307.03	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	101.41	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	43.54	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	100.94	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	35.25	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	19.35	UG/KG	D
2005	PA C-4	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-4	PA	CORE	5	25	CM	TPH	DRO	63.32	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	MERCURY	0.314	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	LEAD	30.5	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	NICKEL	65.5	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	SILVER	0.378	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	ANTIMONY	0.16	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	ARSENIC	6.94	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	CADMIUM	0.323	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	COPPER	51.1	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	ZINC	90	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	CHROMIUM	103	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	METAL	SELENIUM	0.43	MG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	RAD	RADIUM-228	0.37	PCI/G	U
2005	PA C-5	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.66	PCT	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.55	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB209	0.33	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB118	2.88	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB66	2.51	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB105	1.17	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB8	0.86	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB153	5.18	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB138	3.85	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB180	2.46	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB170	1.26	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB52	1.13	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB18	1.02	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB101	3.37	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB110	3.38	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB128	0.28	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB206	0.44	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB44	1.46	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.57	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.49	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.55	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB187	1.02	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB195	0.39	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB129	0.36	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	CON	PCB28	2.63	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.94	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	2.65	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-5	PA	CORE	5	25	CM	LPAH	ANTHRACENE	106.29	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	PYRENE	607.6	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	18.47	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	11.32	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	236.24	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	272.32	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-5	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	239.59	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	PERYLENE	172.05	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	480.56	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	373.59	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	174.7	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	18.17	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	CHRYSENE	313.87	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	362.04	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	39.93	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	244.25	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	13.02	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	117.94	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	LPAH	FLUORENE	22.99	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	30.77	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	BIPHENYL	13.63	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	18.32	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	27.13	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	21.9	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	17.26	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C1-FLUORENES	13.3	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C2-FLUORENES	18.1	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C3-FLUORENES	37.65	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	80.86	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	69.03	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	37.27	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	18.92	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	7.88	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	13.22	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	17.77	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	10.61	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	308	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	110.31	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	61.4	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	118.22	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	63.52	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	34	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	13.25	UG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	TPH	DRO	47.7	MG/KG	D
2005	PA C-5	PA	CORE	5	25	CM	RAD	RADIUM-226	0.4	PCI/G	D
2005	PA C-5	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.7	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	MERCURY	0.317	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	LEAD	27.9	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	NICKEL	66.5	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	CORE	5	25	CM	METAL	SILVER	0.339	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	ANTIMONY	0.13	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	ARSENIC	7.05	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	CADMIUM	0.248	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	COPPER	46.8	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	ZINC	90.1	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	CHROMIUM	92.4	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	METAL	SELENIUM	0.38	MG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.59	PCT	D
2005	PA C-6	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.54	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB209	0.09	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB118	3.36	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB66	2.32	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB105	1.49	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB8	0.36	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB153	5.32	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB138	4.38	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB180	2.33	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB170	1.19	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB52	0.96	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB18	1.22	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB101	3.41	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB110	3.77	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB128	0.47	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB206	0.2	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB44	1.67	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.06	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.47	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.49	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB187	0.61	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB195	0.4	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB129	0.35	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	CON	PCB28	2.47	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.61	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	2.42	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-6	PA	CORE	5	25	CM	LPAH	ANTHRACENE	72.28	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	PYRENE	338.93	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	12.51	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	8.55	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	200.21	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	167.82	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	182.7	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	PERYLENE	129	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	271.52	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	270.07	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	95.93	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	11.2	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	CHRYSENE	169.78	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	232.33	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	25.65	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	152.27	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	9.88	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	87.77	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	LPAH	FLUORENE	17.25	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	28.91	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	BIPHENYL	12.35	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	17.11	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	21.34	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	19.45	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	14.18	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C1-FLUORENES	10.82	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C2-FLUORENES	14.93	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C3-FLUORENES	19.38	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	54.8	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	52.39	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	28.35	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	14.21	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	5.73	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	10.86	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	13.89	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	9	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	176.02	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	60.53	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	36.58	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	61.59	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	39.26	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	24.19	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	10.11	UG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	TPH	DRO	26.78	MG/KG	D
2005	PA C-6	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.6	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	MERCURY	0.253	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	LEAD	26.2	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	NICKEL	63.8	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	SILVER	0.302	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	ANTIMONY	0.13	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	ARSENIC	6.51	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	CADMIUM	0.234	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	COPPER	40.8	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	ZINC	83	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	CHROMIUM	92.6	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	METAL	SELENIUM	0.39	MG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.54	PCT	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB209	0.22	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB118	1.17	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB66	0.67	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB105	0.47	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB153	2.91	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB138	2.22	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB180	1.88	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB170	0.83	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB101	1.16	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB110	1.43	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB128	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB206	0.2	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.48	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.48	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.48	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB187	0.44	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB195	0.27	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB129	0.16	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	CON	PCB28	0.66	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.62	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	2.44	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-7	PA	CORE	5	25	CM	LPAH	ANTHRACENE	55.62	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	PYRENE	298.11	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	10.16	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	7.65	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	175.93	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	140.71	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	158.57	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	PERYLENE	111.51	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	216.25	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	212.54	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	75.57	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	8.96	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	CHRYSENE	119.87	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	192.12	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	20.37	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	113.08	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	7.77	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	75.04	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	LPAH	FLUORENE	13.96	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	26.03	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	BIPHENYL	11.58	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	15.17	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	20.11	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	17.66	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-7	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	12.69	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C1-FLUORENES	9.63	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C2-FLUORENES	12.85	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C3-FLUORENES	19.35	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	48.23	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	46.7	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	25.26	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	11.23	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	5.56	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	9.2	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	12.4	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	7.35	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	129.01	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	47.81	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	27	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	47.75	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	32.32	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	16.84	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	7.9	UG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	TPH	DRO	13.22	MG/KG	D
2005	PA C-7	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	1.2	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	MERCURY	0.268	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	LEAD	26.8	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	NICKEL	64.3	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	SILVER	0.297	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	ANTIMONY	0.12	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	ARSENIC	6.71	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	CADMIUM	0.246	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	COPPER	37.4	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	ZINC	80.6	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	CHROMIUM	105	MG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.5	PCT	D
2005	PA C-8	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	0.89	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.49	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB209	0.94	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB118	1.1	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB66	0.07	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB105	0.56	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-8	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.21	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB153	2.37	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB138	1.85	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB180	1.82	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB170	1.04	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB101	0.08	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB110	0.74	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB128	0.4	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB206	1.06	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.28	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB187	0.81	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB195	0.91	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PEST	DIELDRIN	0.62	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	CON	PCB28	0.04	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.9	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.77	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	LPAH	ANTHRACENE	37.83	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	PYRENE	239.19	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	6.98	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	5.45	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	139.58	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	112.94	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	124.37	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	PERYLENE	88.08	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	121.26	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	164.14	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	60.42	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-8	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	7.56	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	CHRYSENE	95.87	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	160.81	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	15.33	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	90.44	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	5.16	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	60.75	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	LPAH	FLUORENE	10.5	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	17.24	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	BIPHENYL	8.23	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	10.62	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	14.37	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	14.25	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	10.64	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C1-FLUORENES	7.34	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	38.94	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	40.74	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	22.15	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	13.01	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	4.97	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	6.96	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	9.34	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	6.62	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	103.08	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	45.38	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	22.87	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	44.76	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	21.67	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	13.96	UG/KG	D
2005	PA C-8	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-8	PA	CORE	5	25	CM	TPH	DRO	41.64	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	MERCURY	0.328	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	LEAD	28.3	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	NICKEL	61.1	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	SILVER	0.365	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	ARSENIC	7.15	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	CADMIUM	0.303	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	COPPER	54.8	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	ZINC	93.1	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	METAL	CHROMIUM	86.9	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	CORE	5	25	CM	METAL	SELENIUM	0.32	MG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.67	PCT	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.53	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB209	0.37	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB118	2.19	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB66	1.72	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB105	0.85	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB153	4.46	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB138	3.2	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB180	2.19	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB170	1.16	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB52	0.05	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB18	0.23	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB101	2.4	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB110	2.47	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB128	0.06	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB206	0.27	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB44	0.59	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.54	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.5	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.47	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB187	0.85	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB195	0.34	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB129	0.37	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	CON	PCB28	1.45	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	3.06	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	2.58	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-9	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	CORE	5	25	CM	LPAH	ANTHRACENE	134.25	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	PYRENE	835.67	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	DIBENZOFURAN	19.84	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	12.05	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	269.39	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	BENZO(E)PYRENE	334.89	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	284.21	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	PERYLENE	199.17	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	598.8	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	525.84	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	229.75	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	24.26	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	CHRYSENE	416.82	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	451.72	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	48.84	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	338.62	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	13.92	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	136.76	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	LPAH	FLUORENE	27.46	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	34.85	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	BIPHENYL	14.65	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C1-NAPHTHALENES	20.64	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C2-NAPHTHALENES	27.27	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C3-NAPHTHALENES	23.96	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C4-NAPHTHALENES	20.57	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C1-FLUORENES	15.7	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C2-FLUORENES	19.41	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C3-FLUORENES	35.62	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	97.08	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	82.02	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	46.23	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	24.76	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	8.09	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	17.16	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	23.57	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	14.39	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	439.37	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	161.68	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	83.77	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C1-CHRYSENES	151.05	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C2-CHRYSENES	80.04	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C3-CHRYSENES	42.35	UG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	PAH	C4-CHRYSENES	16.65	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	CORE	5	25	CM	TPH	DRO	44.6	MG/KG	D
2005	PA C-9	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	2	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	MERCURY	0.39	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	LEAD	31.2	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	NICKEL	52.2	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	SILVER	0.44	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	ANTIMONY	0.09	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	ARSENIC	6.04	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	CADMIUM	0.407	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	COPPER	31.3	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	ZINC	72.8	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	CHROMIUM	83.1	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	METAL	SELENIUM	0.3	MG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.99	PCT	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.42	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB209	0.38	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB118	1.35	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB66	0.6	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB77	0.03	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB105	0.5	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ENDOSULFAN II	0.18	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB8	0.06	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB153	4.44	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB138	3.17	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB180	4.12	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB170	2.1	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB52	0.07	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB18	0.05	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB101	1.77	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB110	1.85	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB128	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB206	0.41	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB44	0.03	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	DDT 44	4,4'-DDT	0.76	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.31	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.34	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB187	1.82	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB195	0.66	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	DDT 24	2,4'-DDD	0.66	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB129	0.12	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB126	0.09	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PEST	DIELDRIN	0.53	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	CON	PCB28	0.33	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	DDT 44	4,4'-DDD	1.71	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	DDT 44	4,4'-DDE	1.42	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	LPAH	ANTHRACENE	23.19	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	PYRENE	225.78	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	DIBENZOFURAN	2.83	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	DIBENZOTHIOPHENE	5.5	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	152.96	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	BENZO(E)PYRENE	111.86	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	139.37	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	PERYLENE	57.73	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	160.6	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	FLUORANTHENE	171.6	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	55.07	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	8.16	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	CHRYSENE	75.59	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	173.66	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16.81	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	80.89	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	LPAH	ACENAPHTHENE	6.38	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	LPAH	PHENANTHRENE	77.96	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	LPAH	FLUORENE	6.56	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	LPAH	NAPHTHALENE	16.55	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PAH	BIPHENYL	5.81	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C1-NAPHTHALENES	8.42	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C2-NAPHTHALENES	9.5	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C3-NAPHTHALENES	10.7	UG/KG	U
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C4-NAPHTHALENES	7.82	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C1-FLUORENES	6.01	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C2-FLUORENES	7.37	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C3-FLUORENES	10.12	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	38.87	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	30.96	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	13.99	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	6.46	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C1-DIBENZOTHIOPHENES	5.23	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C2-DIBENZOTHIOPHENES	7.06	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C3-DIBENZOTHIOPHENES	7.87	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C4-DIBENZOTHIOPHENES	3.8	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C1-FLUORANTHENES/PYRENES	75.92	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C2-FLUORANTHENES/PYRENES	25.19	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C3-FLUORANTHENES/PYRENES	17.99	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C1-CHRYSENES	30.94	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C2-CHRYSENES	20.37	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C3-CHRYSENES	13.88	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	PAH	C4-CHRYSENES	7.92	UG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	TPH	DRO	33.15	MG/KG	D
2005	Reference	PA Ref	CORE	5	25	CM	TBT	TRIBUTYL TIN	2.7	UG/KG	D
2005	PA C-1	PA	CORE	5	25	CM	GRAIN	FINES	99.12	PCT	D
2005	PA C-10	PA	CORE	5	25	CM	GRAIN	FINES	99.37	PCT	D
2005	PA C-11	PA	CORE	5	25	CM	GRAIN	FINES	99.16	PCT	D
2005	PA C-12	PA	CORE	5	25	CM	GRAIN	FINES	99.16	PCT	D
2005	PA C-13	PA	CORE	5	25	CM	GRAIN	FINES	98.17	PCT	D
2005	PA C-14	PA	CORE	5	25	CM	GRAIN	FINES	97.8	PCT	D
2005	PA C-15	PA	CORE	5	25	CM	GRAIN	FINES	99.2	PCT	D
2005	PA C-16	PA	CORE	5	25	CM	GRAIN	FINES	78.74	PCT	D
2005	PA C-17	PA	CORE	5	25	CM	GRAIN	FINES	84.87	PCT	D
2005	PA C-18	PA	CORE	5	25	CM	GRAIN	FINES	93.95	PCT	D
2005	PA C-19	PA	CORE	5	25	CM	GRAIN	FINES	17.08	PCT	D
2005	PA C-2	PA	CORE	5	25	CM	GRAIN	FINES	99.6	PCT	D
2005	PA C-3	PA	CORE	5	25	CM	GRAIN	FINES	99.24	PCT	D
2005	PA C-4	PA	CORE	5	25	CM	GRAIN	FINES	99.11	PCT	D
2005	PA C-5	PA	CORE	5	25	CM	GRAIN	FINES	98	PCT	D
2005	PA C-6	PA	CORE	5	25	CM	GRAIN	FINES	98.84	PCT	D
2005	PA C-7	PA	CORE	5	25	CM	GRAIN	FINES	98.7	PCT	D
2005	PA C-8	PA	CORE	5	25	CM	GRAIN	FINES	99.75	PCT	D
2005	PA C-9	PA	CORE	5	25	CM	GRAIN	FINES	98.62	PCT	D
2005	Reference	PA Ref	CORE	5	25	CM	GRAIN	FINES	86.24	PCT	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	MERCURY	0.306	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	MERCURY	0.31	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	LEAD	26.4	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	NICKEL	61.4	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	SILVER	0.341	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	ANTIMONY	0.07	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	ARSENIC	6.75	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	CADMIUM	0.284	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	COPPER	37.7	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-1	PA	CORE	25	50	CM	METAL	ZINC	79.3	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	CHROMIUM	94.5	MG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	METAL	SELENIUM	0.33	MG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.64	PCT	D
2005	PA C-1	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.88	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB209	1.08	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB118	1.14	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB105	0.57	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB153	3.03	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB138	1.05	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB180	2.02	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB170	1.17	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB101	0.26	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB110	0.71	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB128	0.47	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB206	1.13	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1.06	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB187	1.08	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB195	0.98	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PEST	DIELDRIN	0.7	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.86	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	1.95	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-1	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	LPAH	ANTHRACENE	39.81	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	PYRENE	525.13	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	14.58	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	8.12	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	166.41	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	157.55	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	154.53	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	PERYLENE	100.93	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	175.16	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	197.18	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	94.63	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	10.15	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	CHRYSENE	143.64	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	212.22	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	20.66	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	143.8	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	8.65	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	81.66	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	LPAH	FLUORENE	15.43	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	22.02	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	BIPHENYL	11.32	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	14.28	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	17.24	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	16.84	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	13.24	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C1-FLUORENES	8.22	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	45.36	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	44.54	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	25.62	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	13.06	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	4.31	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	7.41	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	10.64	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	6.59	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	160.42	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	60.82	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	31.8	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	63.19	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-1	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	27.29	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	16.02	UG/KG	D
2005	PA C-1	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	TPH	DRO	48.58	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	MERCURY	0.307	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	LEAD	26.6	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	NICKEL	63.2	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	SILVER	0.336	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	ARSENIC	7.03	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	CADMIUM	0.304	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	COPPER	49.6	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	ZINC	87.8	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	CHROMIUM	97.9	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	METAL	SELENIUM	0.37	MG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.61	PCT	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.56	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB209	0.32	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB118	1.17	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB66	0.87	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB105	0.48	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB153	3.09	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB138	2.04	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB180	1.62	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB170	0.83	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB101	1.27	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB110	1.36	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB206	0.22	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1.52	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.49	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.48	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB187	0.44	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB195	0.38	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB129	0.24	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	CON	PCB28	0.54	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	2.48	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.61	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-10	PA	CORE	25	50	CM	LPAH	ANTHRACENE	105.21	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	PYRENE	854.75	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	15.09	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	9.83	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	242.83	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	305.34	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	258.08	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	PERYLENE	190.86	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	538.51	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	327.31	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	209.84	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	18.42	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	CHRYSENE	344.32	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	441.15	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	45.19	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	271.37	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	9.04	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	107.42	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	LPAH	FLUORENE	21.63	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	28.85	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	BIPHENYL	13.38	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	17.18	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	23.71	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	21.71	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	19.74	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C1-FLUORENES	13.12	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C2-FLUORENES	16.77	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C3-FLUORENES	29.71	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	87.28	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-10	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	81.44	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	45.61	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	23.13	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	7.25	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	12.16	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	18.63	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	11.13	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	430.49	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	146.88	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	78.73	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	158.3	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	85.15	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	37.86	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	14.02	UG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	TPH	DRO	30.27	MG/KG	D
2005	PA C-10	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.1	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	MERCURY	0.313	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	LEAD	27.4	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	NICKEL	64.7	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	SILVER	0.404	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	ANTIMONY	0.08	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	ARSENIC	6.82	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	CADMIUM	0.37	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	COPPER	48.4	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	ZINC	87.8	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	CHROMIUM	88.9	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	METAL	SELENIUM	0.38	MG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.59	PCT	D
2005	PA C-11	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.56	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB209	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB118	0.13	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB66	0.08	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB105	0.17	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB153	0.92	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB138	0.59	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB180	0.45	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB170	0.31	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB101	0.08	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB110	0.3	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB206	0.08	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.87	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.38	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB187	0.05	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB195	0.12	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB129	0.09	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	CON	PCB28	0.08	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.22	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	1.43	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	LPAH	ANTHRACENE	26.43	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	PYRENE	209.21	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	4.46	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	2.99	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	81.04	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	89.38	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	79.57	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	PERYLENE	43.32	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	143.2	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	83.13	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	52.8	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	5.8	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	CHRYSENE	99.79	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	117.77	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	12.61	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	67.04	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	2.71	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-11	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	36.27	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	LPAH	FLUORENE	6.54	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	12.48	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PAH	BIPHENYL	5.09	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	7.64	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	8	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	8.96	UG/KG	U
2005	PA C-11	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	6.16	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C1-FLUORENES	4.11	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C2-FLUORENES	5.05	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C3-FLUORENES	10.21	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	25.18	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	26.47	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	10.78	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	6.13	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	2.42	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	4.12	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	5.45	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	3.04	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	97.53	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	30.67	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	18.04	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	35.59	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	20.1	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	9.62	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	4.02	UG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	TPH	DRO	22.39	MG/KG	D
2005	PA C-11	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	2.7	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	LEAD	26.9	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	NICKEL	62.9	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	SILVER	0.31	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	ANTIMONY	0.07	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	ARSENIC	6.05	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	CADMIUM	0.303	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	COPPER	40.9	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	ZINC	83.1	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	CHROMIUM	94.8	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	METAL	SELENIUM	0.45	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.52	PCT	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.55	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB209	0.17	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB118	0.61	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB66	0.35	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB105	0.34	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.24	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB153	1.97	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB138	1.43	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB180	1.14	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB170	0.65	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB101	0.55	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB110	0.74	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB206	0.18	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1.03	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.41	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.46	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB187	0.17	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB195	0.2	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB129	0.15	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	CON	PCB28	0.08	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.74	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.03	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	LPAH	ANTHRACENE	66.92	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	PYRENE	523.78	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	10.06	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	6.8	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	159.82	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	193.81	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-12	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	159.58	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	PERYLENE	99.09	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	324.2	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	177.35	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	117.29	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	22.59	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	CHRYSENE	144.69	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	263.71	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24.94	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	132.3	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	6.8	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	76.77	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	LPAH	FLUORENE	13.29	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	27.75	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PAH	BIPHENYL	11.37	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	18.46	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	17.09	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	16.23	UG/KG	U
2005	PA C-12	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	11.45	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C1-FLUORENES	8.23	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C2-FLUORENES	9.31	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C3-FLUORENES	16.38	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	48.42	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	44.3	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	22.31	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	12.71	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	4.5	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	8.03	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	11.18	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	5.68	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	232.41	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	70.87	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	38.94	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	69.72	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	40.46	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	17.93	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	6	UG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	TPH	DRO	26.44	MG/KG	D
2005	PA C-12	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.6	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	MERCURY	0.32	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	LEAD	30.2	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	NICKEL	65.5	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	SILVER	0.519	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	CORE	25	50	CM	METAL	ANTIMONY	0.15	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	ARSENIC	6.64	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	CADMIUM	0.695	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	COPPER	52.7	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	ZINC	88.9	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	CHROMIUM	89.1	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	METAL	SELENIUM	0.35	MG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	RAD	RADIUM-228	1	PCI/G	D
2005	PA C-13	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.55	PCT	D
2005	PA C-13	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB209	0.44	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB118	1.73	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB66	0.59	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB105	0.67	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB153	3.43	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB138	2.71	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB180	1.63	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB170	0.87	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB101	2.06	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB110	2.07	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB128	0.02	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB206	0.4	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.06	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.41	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.42	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB187	0.59	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB195	0.29	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB129	0.2	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	CON	PCB28	0.21	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.94	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.42	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-13	PA	CORE	25	50	CM	LPAH	ANTHRACENE	64.74	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	PYRENE	541.22	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	12.04	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	6.32	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	187.89	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	223.16	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	179.95	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	PERYLENE	98.85	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	373.74	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	151.06	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	142.62	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	19.75	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	CHRYSENE	180.43	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	291.8	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	32.29	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	112.69	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	6.28	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	70.52	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	LPAH	FLUORENE	14.33	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	17.82	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	BIPHENYL	9.61	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	12.28	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	16.1	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	15.04	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	13.25	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C1-FLUORENES	8.4	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C2-FLUORENES	11.47	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C3-FLUORENES	16.95	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	46.29	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	42.18	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	22.53	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	12.82	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	5.17	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	10.21	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	11.97	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	13.02	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-13	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	215.94	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	81.39	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	48.61	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	74.78	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	52	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	28.06	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	15.23	UG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	TPH	DRO	70.17	MG/KG	D
2005	PA C-13	PA	CORE	25	50	CM	RAD	RADIUM-226	0.42	PCI/G	D
2005	PA C-13	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	3	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	MERCURY	0.311	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	LEAD	29	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	NICKEL	68	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	SILVER	0.407	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	ANTIMONY	0.2	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	ARSENIC	6.53	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	CADMIUM	0.366	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	COPPER	47.7	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	ZINC	88.5	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	CHROMIUM	106	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	METAL	SELENIUM	0.41	MG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.51	PCT	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB209	0.35	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB118	0.8	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB66	0.44	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB105	0.35	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB8	0.28	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB153	2.1	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB138	1.54	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB180	1.11	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB170	0.57	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB101	0.83	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB110	1.02	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB128	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB206	0.22	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.79	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.39	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.41	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB187	0.21	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB195	0.2	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB129	0.13	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	CON	PCB28	0.13	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.81	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.08	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-14	PA	CORE	25	50	CM	LPAH	ANTHRACENE	37.03	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	PYRENE	272.63	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	7.02	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	5.17	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	140.04	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	129.81	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	128.7	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	PERYLENE	73.08	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	204.94	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	115.71	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	74.11	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	9.95	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	CHRYSENE	106.78	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	173.77	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	19.19	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	90.87	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	4.47	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	54.03	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	LPAH	FLUORENE	9.08	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	16.15	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	BIPHENYL	7.81	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	10.21	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	13.92	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-14	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	12.56	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	9.1	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C1-FLUORENES	6.87	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C2-FLUORENES	8.62	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C3-FLUORENES	10.32	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	34.91	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	30.98	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	15.48	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	7.14	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	4.62	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	6.14	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	7.15	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	6.04	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	111.13	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	41.16	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	26.79	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	46.68	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	30.23	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	14.4	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	6.53	UG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	TPH	DRO	40.97	MG/KG	D
2005	PA C-14	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	4.2	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	MERCURY	0.302	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	LEAD	27.1	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	NICKEL	63.6	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	SILVER	0.321	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	ANTIMONY	0.08	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	ARSENIC	6.41	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	CADMIUM	0.262	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	COPPER	42	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	ZINC	82.2	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	CHROMIUM	95.4	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	METAL	SELENIUM	0.35	MG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.51	PCT	D
2005	PA C-15	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.57	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB209	1.98	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB118	0.4	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB66	0.15	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB105	0.23	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-15	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.25	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB8	0.08	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB153	1.44	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB138	1.02	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB180	0.81	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB170	0.44	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB18	0.07	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB101	0.24	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB110	0.56	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB206	0.19	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.96	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.37	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.43	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB187	0.05	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB195	0.19	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB126	0.13	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PEST	ENDRIN	0.07	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.57	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	1.76	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	LPAH	ANTHRACENE	22.49	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	PYRENE	201.03	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	5.22	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	3.8	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	102.53	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	91.78	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	93.92	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	PERYLENE	53.19	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	138.81	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	105.2	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	48.63	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-15	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	6.04	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	CHRYSENE	72.35	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	121.56	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	12.22	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	65.98	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	3.28	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	42.25	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	LPAH	FLUORENE	6.91	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	19.56	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PAH	BIPHENYL	7.73	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	12.11	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	11.98	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	11.7	UG/KG	U
2005	PA C-15	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	8.22	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C1-FLUORENES	5.44	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C2-FLUORENES	6.83	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C3-FLUORENES	8.96	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	26.44	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	28.49	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	13.51	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	7.02	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	2.92	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	5.44	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	6.34	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	4.14	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	79.82	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	28.4	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	16.52	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	29.25	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	19.33	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	9.98	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	5.45	UG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	TPH	DRO	31.25	MG/KG	D
2005	PA C-15	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	2.5	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	MERCURY	0.0023	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	LEAD	67.2	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	NICKEL	60.7	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	SILVER	2.95	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	ANTIMONY	0.72	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	ARSENIC	8.62	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	CADMIUM	6.81	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	COPPER	109	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	ZINC	135	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-16	PA	CORE	25	50	CM	METAL	CHROMIUM	113	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	METAL	SELENIUM	0.38	MG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	RAD	RADIUM-228	0.31	PCI/G	U
2005	PA C-16	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.8	PCT	D
2005	PA C-16	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.45	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB209	1.61	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB118	14.99	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB66	5.97	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB105	5.7	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.2	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB8	1.19	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB153	21.33	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB138	18.36	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB180	7.72	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB170	3.57	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB52	7.84	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB18	0.31	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB101	17.81	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB110	18.94	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB128	3.92	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB206	1.33	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB44	3.93	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.05	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.6	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.49	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB187	4.66	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB195	1.15	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB129	1.12	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB126	0.1	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	CON	PCB28	1.37	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	3.62	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.47	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-16	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-16	PA	CORE	25	50	CM	LPAH	ANTHRACENE	280.87	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	PYRENE	2299.03	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	21.84	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	13.09	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	607.32	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	1102.73	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	694.96	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	PERYLENE	361.43	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	2013.6	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	492.51	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	810.14	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	80.24	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	CHRYSENE	1033.7	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	1440.98	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	170.89	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	726.32	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	15.43	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	208.41	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	LPAH	FLUORENE	32.8	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	27.04	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	BIPHENYL	10.23	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	16.97	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	29.5	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	38.83	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	55.86	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C1-FLUORENES	19.6	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C2-FLUORENES	39.26	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C3-FLUORENES	71.72	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	163.07	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	123.14	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	95.17	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	95.19	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	15.44	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	34.9	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	83.12	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	100.36	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	1321.93	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	445.6	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	287.07	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	483.54	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	307.13	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-16	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	127.87	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	61.25	UG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	TPH	DRO	423.54	MG/KG	D
2005	PA C-16	PA	CORE	25	50	CM	RAD	RADIUM-226	0.28	PCI/G	D
2005	PA C-16	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	18	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	MERCURY	0.177	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	LEAD	16.2	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	NICKEL	42.6	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	SILVER	0.278	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	ANTIMONY	0.13	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	ARSENIC	4.67	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	CADMIUM	0.288	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	COPPER	25.5	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	ZINC	51.9	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	CHROMIUM	64.8	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	METAL	SELENIUM	0.37	MG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.59	PCT	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.41	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB209	0.41	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB118	0.93	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB66	0.43	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB105	0.37	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.18	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB8	0.65	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB153	2.82	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB138	1.98	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB180	1.24	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB170	0.74	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB52	0.07	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB18	0.05	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB101	1.39	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB110	1.34	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB128	0.03	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB206	0.2	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.65	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.31	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.34	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB187	0.59	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB195	0.26	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.06	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB129	0.21	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB126	0.09	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	PEST	DIELDRIN	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	CON	PCB28	0.27	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	2.34	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	1.65	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.07	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	PA C-17	PA	CORE	25	50	CM	LPAH	ANTHRACENE	130.87	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	PYRENE	778.33	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	11.27	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	5.82	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	183.85	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	308.66	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	196.56	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	PERYLENE	119.53	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	564.25	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	210	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	225.01	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	26.89	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	CHRYSENE	329.25	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	404.19	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	42.57	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	250.82	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	5.51	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	94.42	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	LPAH	FLUORENE	19.88	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	12.77	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	BIPHENYL	6.5	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	8.78	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	9.6	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	10.37	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	10.18	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C1-FLUORENES	7	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C2-FLUORENES	10.82	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C3-FLUORENES	21.79	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-17	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	56.71	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	44.32	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	23.26	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	13.81	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	4.45	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	6.5	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	10.25	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	12.3	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	378.71	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	152.23	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	108.95	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	123.39	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	85.01	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	49.98	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	34.88	UG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	TPH	DRO	87.36	MG/KG	D
2005	PA C-17	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.17	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	METAL	MERCURY	0.305	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	LEAD	29.2	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	NICKEL	70.1	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	SILVER	0.318	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	ANTIMONY	0.12	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	ARSENIC	7.03	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	CADMIUM	0.291	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	COPPER	41.4	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	ZINC	82.7	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	CHROMIUM	111	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	METAL	SELENIUM	0.46	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.46	PCT	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.54	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB209	0.12	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB118	0.47	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB66	0.14	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB105	0.27	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB153	1.49	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB138	1.06	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB180	0.72	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB170	0.44	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB101	0.32	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB110	0.61	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB128	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB206	0.15	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.92	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.38	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.42	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB187	0.05	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB195	0.14	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.65	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB129	0.09	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	CON	PCB28	0.01	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.99	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.06	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	LPAH	ANTHRACENE	23.92	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	PYRENE	199.29	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	5.68	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	3.9	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	102.08	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	100.58	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	97.27	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	PERYLENE	54.98	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	154.44	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	95.57	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	54.15	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	6.65	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	CHRYSENE	69.5	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	128.31	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	12.82	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	65.46	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-18	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	3.57	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	41.98	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	LPAH	FLUORENE	7.18	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	20.84	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PAH	BIPHENYL	8.02	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	12.94	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	12.99	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	12.08	UG/KG	U
2005	PA C-18	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	8.1	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C1-FLUORENES	5.26	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C2-FLUORENES	6.36	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C3-FLUORENES	8.32	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	26.11	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	27.04	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	13.17	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	7.58	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	3.45	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	5.61	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	6.57	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	3.81	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	83.63	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	30.31	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	20.19	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	31.1	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	20.71	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	11.34	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	4.85	UG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	TPH	DRO	34.77	MG/KG	D
2005	PA C-18	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.5	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	MERCURY	0.0964	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	LEAD	38.9	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	NICKEL	30.3	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	SILVER	0.1	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	ARSENIC	2.89	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	CADMIUM	0.185	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	COPPER	14.3	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	ZINC	44.9	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	CHROMIUM	42.4	MG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	METAL	SELENIUM	0.06	MG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.31	PCT	D
2005	PA C-19	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.75	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.03	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-19	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.26	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB209	0.51	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB118	0.96	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB66	0.04	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB77	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB105	0.27	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.11	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.03	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB153	9.75	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB138	6.82	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB180	6.23	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB170	2.88	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB52	0.26	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB101	2.67	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB110	1.31	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB128	0.6	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB206	0.67	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB44	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1.06	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.03	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.03	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB187	3.29	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB195	0.85	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.04	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB129	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB126	0.06	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.03	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PEST	DIELDRIN	0.45	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	CON	PCB28	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PEST	ENDRIN	0.03	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	0.77	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	0.61	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.05	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.03	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	LPAH	ANTHRACENE	99.85	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	PYRENE	467.74	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	4.96	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-19	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	4.74	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	118.79	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	222.49	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	136.72	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	PERYLENE	80.21	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	269.95	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	253.2	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	174.29	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	22.75	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	CHRYSENE	315.42	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	335.11	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	34.09	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	142.45	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	4.73	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	86.27	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	LPAH	FLUORENE	11.01	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	5.6	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	BIPHENYL	2.16	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	3.87	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	6.62	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	20.67	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	14.07	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C1-FLUORENES	12.6	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C2-FLUORENES	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PAH	C3-FLUORENES	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	100.17	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	72.16	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	32.42	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	19.73	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	8.93	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	11.55	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	10.7	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	8.99	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	331.17	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	160.07	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	86.92	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	131.69	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	62.92	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	38	UG/KG	D
2005	PA C-19	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	0.02	UG/KG	U
2005	PA C-19	PA	CORE	25	50	CM	TPH	DRO	34.26	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	MERCURY	0.284	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	LEAD	29	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	CORE	25	50	CM	METAL	NICKEL	66.4	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	SILVER	0.342	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	ARSENIC	7.2	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	CADMIUM	0.299	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	COPPER	41	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	ZINC	86	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	CHROMIUM	103	MG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	METAL	SELENIUM	0.38	MG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	4.81	PCT	D
2005	PA C-2	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.1	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.52	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB209	0.94	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB118	0.61	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB105	0.41	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB153	1.82	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB138	0.4	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB180	1.34	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB170	0.99	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB101	0.07	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB110	0.33	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB128	0.33	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB206	1.1	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.71	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB187	0.63	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB195	0.91	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	CORE	25	50	CM	PEST	DIELDRIN	0.57	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.28	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	1.21	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	LPAH	ANTHRACENE	13.7	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	PYRENE	168.13	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	4.02	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	3.29	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	78.87	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	65.01	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	69.29	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	PERYLENE	40.96	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	64.17	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	82.6	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	32.96	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	4.29	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	CHRYSENE	44.94	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	85.46	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	7.98	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	43.97	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	2.65	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	36.94	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	LPAH	FLUORENE	5.67	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	10.72	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	BIPHENYL	5.12	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	6.51	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	9.03	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	9.16	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	6.69	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C1-FLUORENES	4.24	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	22.15	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	24.61	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	12.92	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	4.4	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	2.83	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	2.67	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-2	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	6.45	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	3.92	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	53.69	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	22.18	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	12.34	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	16.91	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	9.91	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	7.85	UG/KG	D
2005	PA C-2	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-2	PA	CORE	25	50	CM	TPH	DRO	43.38	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	MERCURY	0.312	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	LEAD	27.7	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	NICKEL	65.4	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	SILVER	0.313	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	ARSENIC	7.18	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	CADMIUM	0.29	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	COPPER	42.2	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	ZINC	83.2	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	CHROMIUM	107	MG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.54	PCT	D
2005	PA C-3	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.86	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.54	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB209	1.05	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB118	1.2	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB66	0.08	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB105	0.59	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB153	2.93	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB138	2.26	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB180	1.95	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB170	1.18	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB52	0.09	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB101	0.13	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB110	0.8	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB128	0.49	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB206	1.19	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB44	0.05	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB187	0.98	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB195	0.97	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PEST	DIELDRIN	0.68	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	CON	PCB28	0.05	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.97	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.03	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.11	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.1	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	LPAH	ANTHRACENE	46.64	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	PYRENE	386.32	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	11.3	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	7.37	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	173.88	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	153.8	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	159.74	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	PERYLENE	106.58	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	165.13	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	177.07	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	89.9	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	9.55	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	CHRYSENE	139.25	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	216.62	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	20.65	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	138.24	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	8.17	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	76.5	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	LPAH	FLUORENE	14.32	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	23.19	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	BIPHENYL	10.41	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	13.06	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-3	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	21.18	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	18.71	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	13.33	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C1-FLUORENES	8.75	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	50.43	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	46.72	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	28.06	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	13.17	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	5.69	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	10.08	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	11.09	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	6.3	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	162.64	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	67.12	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	31.33	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	67.92	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	28.98	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	17.36	UG/KG	D
2005	PA C-3	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-3	PA	CORE	25	50	CM	TPH	DRO	50.21	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	MERCURY	0.257	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	LEAD	26.4	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	NICKEL	61.8	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	SILVER	0.344	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	ANTIMONY	0.08	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	ARSENIC	6.88	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	CADMIUM	0.322	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	COPPER	42.3	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	ZINC	88.7	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	CHROMIUM	97.4	MG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.6	PCT	D
2005	PA C-4	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.3	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.49	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB209	1.01	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB118	1.16	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB66	0.07	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB105	0.59	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.21	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB8	0.07	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB153	2.89	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB138	2.22	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB180	1.83	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB170	1.16	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB18	0.06	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB101	0.18	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB110	0.74	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB128	0.43	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB206	1.09	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.81	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.06	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB187	0.98	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB195	0.95	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB129	0.04	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PEST	DIELDRIN	0.73	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	CON	PCB28	0.04	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.76	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	1.91	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	LPAH	ANTHRACENE	72.32	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	PYRENE	590.43	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	12.39	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	8.45	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	179.14	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	180.12	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	169.96	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	PERYLENE	116.29	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	201.7	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	219.81	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-4	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	114.6	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	11.23	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	CHRYSENE	193.85	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	256.71	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24.57	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	203.18	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	8.66	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	97.78	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	LPAH	FLUORENE	17.75	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	22.2	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	BIPHENYL	10.53	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	13.15	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	18.26	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	18.64	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	14.64	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C1-FLUORENES	11.14	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	70.48	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	61.97	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	37.58	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	15.42	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	6.52	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	10.96	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	12.4	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	7.24	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	264.11	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	100.29	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	44.32	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	100.01	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	38.01	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	15.76	UG/KG	D
2005	PA C-4	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	0.05	UG/KG	U
2005	PA C-4	PA	CORE	25	50	CM	TPH	DRO	55.28	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	MERCURY	0.297	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	LEAD	92.8	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	NICKEL	66.2	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	SILVER	0.345	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	ANTIMONY	0.17	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	ARSENIC	6.9	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	CADMIUM	0.317	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	COPPER	47.1	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	ZINC	86.8	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-5	PA	CORE	25	50	CM	METAL	CHROMIUM	101	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	METAL	SELENIUM	0.36	MG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	RAD	RADIUM-228	0.6	PCI/G	U
2005	PA C-5	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.51	PCT	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.52	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB209	0.22	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB118	2.21	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB66	3	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB105	0.97	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB8	1.11	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB153	3.74	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB138	2.72	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB180	1.54	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB170	0.9	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB52	0.95	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB18	1.09	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB101	2.46	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB110	2.6	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB128	0.08	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB206	0.24	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB44	1.88	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1.19	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.42	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.44	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB187	0.53	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB195	0.24	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB129	0.27	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	CON	PCB28	2.92	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	2.32	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.77	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-5	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-5	PA	CORE	25	50	CM	LPAH	ANTHRACENE	64.8	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	PYRENE	569.71	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	14.11	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	8.13	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	196.61	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	233.1	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	201.88	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	PERYLENE	151.55	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	405.03	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	199.53	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	152.83	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	15.37	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	CHRYSENE	205.56	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	308.13	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	33.3	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	190.14	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	7.59	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	88.87	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	LPAH	FLUORENE	17.7	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	26.93	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	BIPHENYL	12.07	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	16.7	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	23.44	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	18.25	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	13.79	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C1-FLUORENES	11.18	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C2-FLUORENES	14.05	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C3-FLUORENES	23.29	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	54.9	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	51.14	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	28.86	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	14.97	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	5.12	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	8.65	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	12.36	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	7.5	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	247.18	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	85.93	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	51.23	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	90.05	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	55.18	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-5	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	25.23	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	9.21	UG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	TPH	DRO	34.86	MG/KG	D
2005	PA C-5	PA	CORE	25	50	CM	RAD	RADIUM-226	0.47	PCI/G	D
2005	PA C-5	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.8	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	MERCURY	0.3	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	LEAD	27.1	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	NICKEL	65.2	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	SILVER	0.353	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	ANTIMONY	0.14	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	ARSENIC	6.37	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	CADMIUM	0.299	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	COPPER	44.6	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	ZINC	86.4	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	CHROMIUM	94.3	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	METAL	SELENIUM	0.37	MG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.47	PCT	D
2005	PA C-6	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.06	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.53	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB209	0.28	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB118	2.77	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB66	2.03	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB105	1.06	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.23	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.06	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB8	1.26	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB153	4.61	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB138	3.49	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB180	1.93	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB170	1.07	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB52	0.76	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB18	1.15	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB101	3.03	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB110	3.17	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB128	0.31	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB206	0.23	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB44	1.63	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.06	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.43	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.06	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB187	0.63	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB195	0.43	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB129	0.3	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB126	0.12	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.06	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	PEST	DIELDRIN	0.06	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	CON	PCB28	2.72	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	2.63	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	3	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.06	UG/KG	U
2005	PA C-6	PA	CORE	25	50	CM	LPAH	ANTHRACENE	44.44	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	PYRENE	340.75	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	9.72	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	6.84	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	195.58	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	168.87	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	183.01	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	PERYLENE	130.92	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	271.31	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	153.8	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	92.13	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	11.11	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	CHRYSENE	112.95	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	219.61	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	25.08	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	114.56	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	5.65	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	72.08	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	LPAH	FLUORENE	12.53	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	28.06	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	BIPHENYL	12.35	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	16.37	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	21.24	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	19.31	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	13.41	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C1-FLUORENES	9.93	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C2-FLUORENES	14.74	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C3-FLUORENES	17.62	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-6	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	46.16	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	43.69	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	24.11	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	12.22	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	5.09	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	8.63	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	11.87	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	8.95	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	130.86	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	54.84	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	36.73	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	54.45	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	38.37	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	22.37	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	8.35	UG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	TPH	DRO	18.68	MG/KG	D
2005	PA C-6	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.6	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	MERCURY	0.278	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	LEAD	25.5	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	NICKEL	59.9	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	SILVER	0.306	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	ANTIMONY	0.11	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	ARSENIC	6.07	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	CADMIUM	0.233	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	COPPER	39.6	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	ZINC	82	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	CHROMIUM	83.2	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	METAL	SELENIUM	0.33	MG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.48	PCT	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.48	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB209	0.08	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB118	1.5	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB66	0.88	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB105	0.59	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.21	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB8	0.26	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB153	3.23	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB138	2.51	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB180	1.83	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB170	0.91	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB18	0.08	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB101	1.66	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB110	1.71	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB128	0.05	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB206	0.19	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB44	0.27	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1.21	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.44	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.45	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB187	0.46	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB195	0.34	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB129	0.17	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	PEST	DIELDRIN	0.05	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	CON	PCB28	1.29	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	2.56	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	2.59	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-7	PA	CORE	25	50	CM	LPAH	ANTHRACENE	40.04	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	PYRENE	323.54	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	9	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	6.94	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	186.48	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	153.36	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	173.7	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	PERYLENE	123.84	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	233.45	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	153.55	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	82.27	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	9.49	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	CHRYSENE	107.15	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	207.96	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	21.4	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	108.94	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-7	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	6.19	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	73.86	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	LPAH	FLUORENE	12.48	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	28.72	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	BIPHENYL	12.85	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	17.17	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	21.26	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	19.3	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	14.14	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C1-FLUORENES	10.23	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C2-FLUORENES	13.75	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C3-FLUORENES	15.26	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	45.66	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	45.08	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	25.19	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	13.84	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	5.3	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	9.42	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	12.57	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	7.57	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	125.1	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	52.46	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	32.91	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	50.92	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	35.06	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	21.38	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	6.32	UG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	TPH	DRO	17.37	MG/KG	D
2005	PA C-7	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.5	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	MERCURY	0.286	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	LEAD	20.1	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	NICKEL	52.3	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	SILVER	0.297	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	ANTIMONY	0.1	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	ARSENIC	6.08	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	CADMIUM	0.162	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	COPPER	32.9	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	ZINC	68.2	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	CHROMIUM	94	MG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	METAL	SELENIUM	0.41	MG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.48	PCT	D
2005	PA C-8	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-8	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.46	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB209	0.9	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB118	0.94	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.07	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB66	0.07	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB105	0.5	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.2	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB8	0.06	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB153	2.44	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB138	0.51	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB180	1.72	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB170	1	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB52	0.08	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB18	0.05	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB101	0.01	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB110	0.63	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB128	0.36	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB206	1.02	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB44	0.04	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.71	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.05	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB187	0.81	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB195	0.88	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.07	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB129	0.03	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB126	0.1	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PEST	DIELDRIN	0.57	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	CON	PCB28	0.04	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.8	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	1.82	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.09	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.08	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	LPAH	ANTHRACENE	29.77	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	PYRENE	251.31	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	6.63	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-8	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	5.2	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	143.89	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	115.89	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	128.71	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	PERYLENE	90.79	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	137.12	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	132.42	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	59.87	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	7.19	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	CHRYSENE	84.09	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	164.35	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	15.96	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	85.94	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	4.47	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	58.59	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	LPAH	FLUORENE	9.56	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	17.97	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	BIPHENYL	9.1	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	11.09	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	15.59	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	14.99	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	12.21	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C1-FLUORENES	6.99	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C2-FLUORENES	0.03	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PAH	C3-FLUORENES	0.03	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	35.02	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	36.14	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	22.25	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	9.32	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	4.46	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	8.55	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	8.91	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	5.77	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	94.18	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	42.06	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	23.89	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	43.03	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	20.61	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	12.84	UG/KG	D
2005	PA C-8	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	0.04	UG/KG	U
2005	PA C-8	PA	CORE	25	50	CM	TPH	DRO	43.63	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	MERCURY	0.305	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	LEAD	25.8	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	CORE	25	50	CM	METAL	NICKEL	62.7	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	SILVER	0.335	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	ANTIMONY	0.12	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	ARSENIC	7.19	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	CADMIUM	0.268	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	COPPER	45.6	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	ZINC	85.8	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	CHROMIUM	83.8	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	METAL	SELENIUM	0.36	MG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.49	PCT	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.05	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.51	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB209	0.24	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	ALDRIN	0.05	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB118	1.71	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.08	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB66	1.73	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB105	0.65	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.22	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.05	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB8	0.99	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB153	3.37	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB138	2.3	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB180	1.44	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB170	0.82	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB52	0.17	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB18	0.89	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB101	1.78	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB110	1.98	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB128	0.05	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB206	0.21	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB44	0.66	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	1.42	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.43	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.45	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB187	0.56	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB195	0.2	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.08	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB129	0.24	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB126	0.11	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.05	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	PEST	DIELDRIN	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	CORE	25	50	CM	CON	PCB28	2.31	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	ENDRIN	0.06	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	2.67	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	3.13	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.1	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.05	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.09	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.05	UG/KG	U
2005	PA C-9	PA	CORE	25	50	CM	LPAH	ANTHRACENE	100.61	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	PYRENE	919.57	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	DIBENZOFURAN	22.77	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	12.3	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	228.35	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	BENZO(E)PYRENE	316.86	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	253.96	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	PERYLENE	209.13	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	573.92	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	382.35	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	226.83	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	20.93	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	CHRYSENE	353.87	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	428.89	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	46.42	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	301.97	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	15.6	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	125.64	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	LPAH	FLUORENE	27.06	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	33.97	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	BIPHENYL	13.91	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C1-NAPHTHALENES	20.43	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C2-NAPHTHALENES	23.08	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C3-NAPHTHALENES	23.47	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C4-NAPHTHALENES	18.77	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C1-FLUORENES	16.1	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C2-FLUORENES	17.75	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C3-FLUORENES	30.67	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	90.58	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	73.58	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	40.38	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	23.91	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	8.25	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	12.5	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	19.06	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	PA C-9	PA	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	13.01	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	420.1	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	139.49	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	77.94	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C1-CHRYSENES	151.95	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C2-CHRYSENES	78.07	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C3-CHRYSENES	35.9	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	PAH	C4-CHRYSENES	14.95	UG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	TPH	DRO	30.99	MG/KG	D
2005	PA C-9	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	2.5	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	MERCURY	0.659	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	LEAD	33.7	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	NICKEL	56.2	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	SILVER	0.506	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	ANTIMONY	0.14	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	ARSENIC	8	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	CADMIUM	0.596	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	COPPER	35.6	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	ZINC	81.8	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	CHROMIUM	76.3	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	METAL	SELENIUM	0.4	MG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.05	PCT	D
2005	Reference	PA Ref	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.41	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB209	0.45	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ALDRIN	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB118	0.91	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ALPHA-BHC	0.06	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB66	0.27	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB77	0.03	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB105	0.35	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ENDOSULFAN II	0.18	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB8	0.06	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB153	3.2	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB138	2.23	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB180	1.46	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB170	0.79	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB52	0.07	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB18	0.05	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB101	1.35	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB110	1.46	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB128	0.04	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB206	0.25	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB44	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	DDT 44	4,4'-DDT	0.05	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.05	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB187	0.62	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB195	0.31	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	DDT 24	2,4'-DDD	0.51	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB129	0.09	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB126	0.09	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PEST	GAMMA-BHC	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PEST	DIELDRIN	0.43	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	CON	PCB28	0.58	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ENDRIN	0.05	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	DDT 44	4,4'-DDD	1.67	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	DDT 44	4,4'-DDE	0.82	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.08	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PEST	HEPTACHLOR	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	DDT 24	2,4'-DDT	0.07	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PEST	ENDOSULFAN I	0.04	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	LPAH	ANTHRACENE	14.16	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	PYRENE	147.89	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	DIBENZOFURAN	1.9	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PAH	DIBENZOTHIOPHENE	3.95	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	123.02	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	BENZO(E)PYRENE	78.05	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	110.13	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	PERYLENE	36.84	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	115.53	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	FLUORANTHENE	110.76	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	39.39	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	5.61	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	CHRYSENE	53.38	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	128.27	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	12.39	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	50.27	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	LPAH	ACENAPHTHENE	4.97	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	LPAH	PHENANTHRENE	51.98	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	LPAH	FLUORENE	4.02	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	LPAH	NAPHTHALENE	18.52	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PAH	BIPHENYL	4.7	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C1-NAPHTHALENES	7.61	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C2-NAPHTHALENES	6.81	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C3-NAPHTHALENES	8.4	UG/KG	U
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C4-NAPHTHALENES	5.61	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C1-FLUORENES	3.7	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C2-FLUORENES	5.19	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C3-FLUORENES	4.92	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C1-PHENANTHRENES/ANTHRACENES	23.11	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C2-PHENANTHRENES/ANTHRACENES	21.91	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C3-PHENANTHRENES/ANTHRACENES	9.38	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C4-PHENANTHRENES/ANTHRACENES	3.9	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C1-DIBENZOTHIOPHENES	3.06	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C2-DIBENZOTHIOPHENES	5.16	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C3-DIBENZOTHIOPHENES	4.85	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C4-DIBENZOTHIOPHENES	1.91	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C1-FLUORANTHENES/PYRENES	45.76	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C2-FLUORANTHENES/PYRENES	17.51	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C3-FLUORANTHENES/PYRENES	15.07	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C1-CHRYSENES	16.95	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C2-CHRYSENES	11.19	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C3-CHRYSENES	9.4	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	PAH	C4-CHRYSENES	5.77	UG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	TPH	DRO	30.96	MG/KG	D
2005	Reference	PA Ref	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.11	UG/KG	U
2005	PA C-1	PA	CORE	25	50	CM	GRAIN	FINES	99.23	PCT	D
2005	PA C-10	PA	CORE	25	50	CM	GRAIN	FINES	99.4	PCT	D
2005	PA C-11	PA	CORE	25	50	CM	GRAIN	FINES	99.34	PCT	D
2005	PA C-12	PA	CORE	25	50	CM	GRAIN	FINES	99.36	PCT	D
2005	PA C-13	PA	CORE	25	50	CM	GRAIN	FINES	98.69	PCT	D
2005	PA C-14	PA	CORE	25	50	CM	GRAIN	FINES	98.53	PCT	D
2005	PA C-15	PA	CORE	25	50	CM	GRAIN	FINES	99.24	PCT	D
2005	PA C-16	PA	CORE	25	50	CM	GRAIN	FINES	72.2	PCT	D
2005	PA C-17	PA	CORE	25	50	CM	GRAIN	FINES	44.7	PCT	D
2005	PA C-18	PA	CORE	25	50	CM	GRAIN	FINES	98.07	PCT	D
2005	PA C-19	PA	CORE	25	50	CM	GRAIN	FINES	14.13	PCT	D
2005	PA C-2	PA	CORE	25	50	CM	GRAIN	FINES	99.35	PCT	D
2005	PA C-3	PA	CORE	25	50	CM	GRAIN	FINES	98.42	PCT	D
2005	PA C-4	PA	CORE	25	50	CM	GRAIN	FINES	99.31	PCT	D
2005	PA C-5	PA	CORE	25	50	CM	GRAIN	FINES	98.83	PCT	D
2005	PA C-6	PA	CORE	25	50	CM	GRAIN	FINES	99.5	PCT	D
2005	PA C-7	PA	CORE	25	50	CM	GRAIN	FINES	99.36	PCT	D
2005	PA C-8	PA	CORE	25	50	CM	GRAIN	FINES	99.51	PCT	D
2005	PA C-9	PA	CORE	25	50	CM	GRAIN	FINES	98.39	PCT	D
2005	Reference	PA Ref	CORE	25	50	CM	GRAIN	FINES	83.41	PCT	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-20	PA	CORE	0	5	CM	METAL	MERCURY	0.167	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	LEAD	498	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	NICKEL	100	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	SILVER	20.5	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	ANTIMONY	1.46	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	ARSENIC	9.48	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	CADMIUM	37.7	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	CHROMIUM	360	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	COPPER	173	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	ZINC	205	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	METAL	SELENIUM	1.69	MG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.98	PCT	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB209	7.51	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB118	60.25	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB66	5.26	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB105	28.17	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB153	67.19	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB138	73.69	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB180	22.49	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB170	10.55	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB52	35.68	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB101	79.41	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB110	84.3	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB128	14.63	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB206	2.68	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB44	13.7	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.63	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	6.52	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB187	10.85	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB195	2.71	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	11.44	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB129	5.03	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB126	8.9	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	PEST	DIELDRIN	3.21	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	CON	PCB28	1.98	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	23.4	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	4.37	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	LPAH	ANTHRACENE	711.91	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	PYRENE	3896.63	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	804.07	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	976.91	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1667.65	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	4456.91	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	1614.29	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	94.76	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	CHRYSENE	2286.15	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	1765.48	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	230.62	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	1766.71	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	132.51	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	1272.6	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	LPAH	FLUORENE	171.18	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	36.77	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	44.94	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	98	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.099	UG/KG	U
2006	PA C-20	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	300	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	7.2	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	MERCURY	0.117	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	LEAD	149	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	NICKEL	102	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	SILVER	20.9	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	ANTIMONY	0.84	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	ARSENIC	7.33	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-20	PA	CORE	5	25	CM	METAL	CADMIUM	31.2	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	CHROMIUM	164	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	COPPER	173	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	ZINC	143	MG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	METAL	SELENIUM	0.17	MG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.89	PCT	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB209	5.73	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB118	48.7	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB66	4.94	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB105	23.74	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB153	54.57	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB138	59.12	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB180	26.58	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB170	7.53	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB52	29.71	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB101	59.72	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB110	68.34	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB128	12.84	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB206	2.33	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB44	10.44	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	1.15	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	3.8	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB187	9.16	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB195	2.27	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	9.79	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB129	2.9	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB126	7.39	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	PEST	DIELDRIN	3.53	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	CON	PCB28	1.94	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-20	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	23.53	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	4.08	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	LPAH	ANTHRACENE	757.41	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	PYRENE	2871.88	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	595.19	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	712.16	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1394.45	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	2091.34	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1190.33	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	74.03	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	CHRYSENE	1770.36	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	1265.06	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	178.65	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	952.03	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	76.67	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	543.71	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	LPAH	FLUORENE	112.12	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	28.81	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	30.99	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	91	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	1.1	UG/KG	U
2006	PA C-20	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	160	UG/KG	D
2006	PA C-20	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	20	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	MERCURY	0.0353	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	LEAD	79.5	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	NICKEL	59.1	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	SILVER	3.75	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	ANTIMONY	0.15	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	ARSENIC	3.54	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	CADMIUM	8.57	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	CHROMIUM	105	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	COPPER	29.6	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	ZINC	58.1	MG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	METAL	SELENIUM	0.09	MG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.16	PCT	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB209	1.39	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB118	18.54	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB66	2.77	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB105	7.65	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB8	0.23	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB153	20.97	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB138	22.24	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB180	6.33	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB170	3.14	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB52	14.22	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB18	0.65	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB101	23.12	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB110	24.31	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB128	4.37	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB206	0.99	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB44	5.17	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.18	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.59	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB187	3.36	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB195	0.85	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	1.48	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB129	0.95	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB126	1.91	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	PEST	DIELDRIN	1.11	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	CON	PCB28	0.65	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	3.52	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	0.81	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	LPAH	ANTHRACENE	37.21	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	PYRENE	923.7	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-20	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	102.71	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	116.6	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	234.69	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	160.95	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	237.52	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	13.33	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	CHRYSENE	108.48	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	225.58	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	28.33	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	69.53	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	6.43	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	44.26	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	LPAH	FLUORENE	7.9	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	5.91	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	6.91	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	6.7	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.088	UG/KG	U
2006	PA C-20	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	12	UG/KG	D
2006	PA C-20	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	1.6	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	MERCURY	0.0793	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	LEAD	246	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	NICKEL	112	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	SILVER	10.3	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	ANTIMONY	2.86	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	ARSENIC	4.31	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	CADMIUM	13.2	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	CHROMIUM	270	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	COPPER	108	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	ZINC	129	MG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	METAL	SELENIUM	0.14	MG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.41	PCT	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB209	5.93	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB118	32.58	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB66	5.29	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB105	13.04	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-21	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB153	36.61	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB138	39.52	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB180	11.22	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB170	6.98	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB52	20.3	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB101	42.92	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB110	45.62	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB128	9.07	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB206	1.98	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB44	9.23	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.83	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB187	6.19	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB195	1.98	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	6.3	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB129	5.08	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB126	1.7	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	PEST	DIELDRIN	2.5	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	CON	PCB28	0.92	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	11.14	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	3.66	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	LPAH	ANTHRACENE	227.97	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	PYRENE	2857.46	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	595.53	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	625.59	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	837.44	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	1096.83	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	923.4	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	47.37	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	CHRYSENE	1042.25	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	787.77	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-21	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	175.42	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	628.37	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	31.33	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	236.35	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	LPAH	FLUORENE	47.94	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	50.55	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	53.27	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	93	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.27	UG/KG	U
2006	PA C-21	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	320	UG/KG	D
2006	PA C-21	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	14	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	MERCURY	0.742	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	LEAD	2290	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	NICKEL	161	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	SILVER	47	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	ANTIMONY	3.46	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	ARSENIC	4.68	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	CADMIUM	188	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	CHROMIUM	799	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	COPPER	186	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	ZINC	587	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	METAL	SELENIUM	0.23	MG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	2.43	PCT	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB209	67.97	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB118	330.05	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB66	22.8	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB105	226.28	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB153	303.98	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB138	351.67	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB180	95.18	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB170	50.89	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB52	260.45	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB101	375.54	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB110	485.24	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB128	83.13	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB206	13.15	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB44	115.15	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	2.85	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB187	49.34	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB195	11.68	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	35.4	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB129	15.13	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB126	20.73	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	PEST	DIELDRIN	10.65	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	CON	PCB28	7.18	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	78.07	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	18.05	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	LPAH	ANTHRACENE	2622.49	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	PYRENE	5547.76	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	460.41	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	467.1	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	883.96	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	7973.49	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1122.25	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	0.02	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	HPAH	CHRYSENE	1732.56	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	903.71	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	102.96	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	1455.75	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	2041.51	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	7279.08	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	LPAH	FLUORENE	3318.34	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	4979.46	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	7324.73	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	26	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-21	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.45	UG/KG	U
2006	PA C-21	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	47	UG/KG	D
2006	PA C-21	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	4.4	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	MERCURY	0.0951	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	LEAD	227	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	NICKEL	53	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	SILVER	15.5	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	ANTIMONY	0.63	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	ARSENIC	2.34	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	CADMIUM	34.2	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	CHROMIUM	166	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	COPPER	26.3	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	ZINC	72	MG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	METAL	SELENIUM	0.09	MG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.61	PCT	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB209	13.6	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB118	73.61	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB66	3.94	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB105	32.5	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB153	71.61	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB138	79.06	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB180	23.06	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB170	10.93	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB52	62.3	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB101	95.56	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB110	101.19	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB128	20.66	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB206	3.09	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB44	28.18	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.54	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB187	12.22	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB195	2.73	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	6.2	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB129	3.11	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB126	4.64	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	PEST	DIELDRIN	2.18	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	CON	PCB28	2.11	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	16.25	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	3.73	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	LPAH	ANTHRACENE	437.81	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	PYRENE	784.15	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	95.96	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	88.93	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	152.98	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	1103.05	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	178.64	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	0.02	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	HPAH	CHRYSENE	256.92	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	155.29	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	19.79	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	219.64	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	436.15	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	1446.78	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	LPAH	FLUORENE	681.89	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	1107.27	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	1316.57	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	3.4	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.45	UG/KG	U
2006	PA C-21	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	4.9	UG/KG	D
2006	PA C-21	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	2.4	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	MERCURY	0.0824	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	LEAD	65	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	NICKEL	101	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	SILVER	1.9	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	ANTIMONY	0.51	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-22	PA	CORE	0	5	CM	METAL	ARSENIC	10.4	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	CADMIUM	4.38	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	CHROMIUM	139	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	COPPER	126	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	ZINC	164	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	METAL	SELENIUM	0.29	MG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	2.31	PCT	D
2006	PA C-22	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB209	1.68	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB118	12.86	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB66	2.46	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB77	2.55	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB105	5.13	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB153	16.85	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB138	14.14	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB180	6.45	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB170	4.04	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB52	4.8	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB101	11.18	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB110	18.2	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB128	4.6	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB206	1.22	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB44	1.82	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.33	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	7.02	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB187	4.01	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB195	1.39	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	8.05	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB129	3.17	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB126	5.27	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	PEST	DIELDRIN	2.43	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	CON	PCB28	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-22	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	6	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	3.7	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	LPAH	ANTHRACENE	11936.89	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	PYRENE	9856.31	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	615.77	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	775.01	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1809.11	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	12986.56	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	1951.37	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	181.2	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	CHRYSENE	3775.82	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	1855.72	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	192.89	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	3385.51	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	1264.11	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	10018.4	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	LPAH	FLUORENE	2221.18	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	105.1	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	207.12	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	13	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.21	UG/KG	U
2006	PA C-22	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	25	UG/KG	D
2006	PA C-22	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	5.2	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	MERCURY	0.11	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	LEAD	69.1	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	NICKEL	104	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	SILVER	2.3	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	ANTIMONY	0.37	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	ARSENIC	11.8	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	CADMIUM	4.79	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	CHROMIUM	147	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	COPPER	144	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	ZINC	177	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	METAL	SELENIUM	0.34	MG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.92	PCT	D
2006	PA C-22	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-22	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB209	1.89	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB118	14.05	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB66	2.54	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB77	1.51	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB105	5.48	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB153	19.82	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB138	16.82	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB180	6.97	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB170	4.08	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB52	6.35	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB101	14.88	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB110	19.17	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB128	4.52	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB206	1.5	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB44	2.29	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.3	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	4.34	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB187	4.46	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB195	1.46	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	4.04	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB129	1.56	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB126	3.22	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	PEST	DIELDRIN	1.76	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	4.78	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	3.84	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	LPAH	ANTHRACENE	476.91	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-22	PA	CORE	5	25	CM	HPAH	PYRENE	3548.23	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	548.02	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	652.3	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1318.27	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	1878.72	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1319.77	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	119.1	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	CHRYSENE	1577.91	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	1311.47	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	155.74	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	917.77	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	151.17	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	820.27	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	LPAH	FLUORENE	163.53	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	31.45	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	28.32	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	20	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.21	UG/KG	U
2006	PA C-22	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	33	UG/KG	D
2006	PA C-22	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	3.6	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	MERCURY	0.119	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	LEAD	83.6	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	NICKEL	117	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	SILVER	2.6	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	ANTIMONY	0.38	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	ARSENIC	12.6	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	CADMIUM	6.01	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	CHROMIUM	173	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	COPPER	131	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	ZINC	205	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	METAL	SELENIUM	0.33	MG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.81	PCT	D
2006	PA C-22	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB209	1.79	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB118	12.29	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB66	4.31	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB77	0.88	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB105	4.47	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-22	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB153	16.95	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB138	14.27	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB180	5.53	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB170	3.25	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB52	4.59	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB101	11.63	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB110	15.72	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB128	4.14	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB206	1.12	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB44	1.5	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.18	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	2.26	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB187	3.71	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB195	1.09	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	3.06	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB129	1.55	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB126	2.51	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	PEST	DIELDRIN	3.41	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	3.23	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	3.51	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	LPAH	ANTHRACENE	384.69	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	PYRENE	4673.93	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	426.05	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	483.18	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	964.09	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	2049.35	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	981.37	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	86.55	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	CHRYSENE	1397.45	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-22	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	994.04	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	118.55	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	944.61	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	186.15	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	317.75	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	LPAH	FLUORENE	138.45	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	28.77	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	28.91	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	15	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.2	UG/KG	U
2006	PA C-22	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	15	UG/KG	D
2006	PA C-22	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	4.4	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	MERCURY	0.14	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	LEAD	227	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	NICKEL	75	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	SILVER	11.9	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	ANTIMONY	0.31	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	ARSENIC	8.3	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	CADMIUM	18.6	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	CHROMIUM	262	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	COPPER	114	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	ZINC	276	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	METAL	SELENIUM	0.28	MG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	3.04	PCT	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB209	15.34	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB118	227.78	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB66	8.55	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB105	96.37	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB153	239.61	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB138	249.79	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB180	57.43	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB170	22.87	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB52	167.82	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB101	277.14	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB110	319.96	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB128	51.31	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB206	5.38	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB44	77.73	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	5.58	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	1.03	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB187	32.91	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB195	5.01	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	47.73	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB129	10.82	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB126	20.84	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	PEST	DIELDRIN	22.35	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	CON	PCB28	12.86	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	99.89	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	13.05	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-23	PA	CORE	0	5	CM	LPAH	ANTHRACENE	5928.07	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	PYRENE	17937.44	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	1250.23	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	2082.96	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	4098.42	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	18544.02	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	2621.79	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	308.66	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	CHRYSENE	6548.52	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	4191.51	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	393.91	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	5093.43	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	1476.48	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	10944.75	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	LPAH	FLUORENE	1758.7	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	378.02	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	482.62	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-23	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	57	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	5.2	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	750	UG/KG	D
2006	PA C-23	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	7.4	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	MERCURY	0.16	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	LEAD	69.1	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	NICKEL	103	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	SILVER	2.52	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	ANTIMONY	0.4	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	ARSENIC	10.3	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	CADMIUM	6.26	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	CHROMIUM	148	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	COPPER	61.8	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	ZINC	133	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	METAL	SELENIUM	0.24	MG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	2.06	PCT	D
2006	PA C-23	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB209	1.38	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB118	17.29	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB66	4.16	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB105	6.44	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB153	23.04	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB138	22.53	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB180	8.19	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB170	4.41	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB52	11.22	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB101	21.83	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB110	28.09	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB128	5.19	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB206	1.16	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB44	5.44	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.44	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-23	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB187	4.84	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB195	1.78	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	5.75	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB129	2.62	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB126	3.23	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	PEST	DIELDRIN	5.4	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	CON	PCB28	1.5	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	4.71	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.73	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	LPAH	ANTHRACENE	632.08	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	PYRENE	5083.66	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	642.3	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	737.12	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1310.67	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	3534.04	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1332.31	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	82.88	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	CHRYSENE	1659.85	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	1313.46	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	167.29	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	1103.38	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	374.63	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	2338.04	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	LPAH	FLUORENE	344.55	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	107.17	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	103.73	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	8.4	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.15	UG/KG	U
2006	PA C-23	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	15	UG/KG	D
2006	PA C-23	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	2	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	MERCURY	0.247	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	LEAD	51.8	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	NICKEL	95.3	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	SILVER	0.332	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-23	PA	CORE	25	50	CM	METAL	ANTIMONY	0.27	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	ARSENIC	10.8	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	CADMIUM	0.616	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	CHROMIUM	101	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	COPPER	39.6	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	ZINC	100	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	METAL	SELENIUM	0.29	MG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.33	PCT	D
2006	PA C-23	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB209	3.32	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB118	1.15	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB66	1.48	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB105	0.37	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB153	1.87	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB138	1.33	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB180	0.68	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB170	0.52	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB52	1.22	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB101	1.66	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB110	1.88	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB128	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB206	1.83	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB44	0.47	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB187	0.66	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB195	0.47	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.71	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB129	0.04	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB126	1.47	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	DIELDRIN	0.32	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-23	PA	CORE	25	50	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	0.5	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	LPAH	ANTHRACENE	93.88	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	PYRENE	1275.64	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	535.03	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	483.44	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	397.97	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	526.21	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	386.54	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	33.02	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	CHRYSENE	323.59	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	621.11	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	67.36	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	306.2	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	19.76	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	231.05	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	LPAH	FLUORENE	36.87	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	74.74	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	24.58	UG/KG	D
2006	PA C-23	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	0.28	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.14	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.31	UG/KG	U
2006	PA C-23	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	0.059	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	METAL	MERCURY	0.182	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	LEAD	402	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	NICKEL	143	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	SILVER	47	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	ANTIMONY	1.35	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	ARSENIC	10.6	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	CADMIUM	37.8	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	CHROMIUM	380	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	COPPER	247	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	ZINC	287	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	METAL	SELENIUM	0.3	MG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.73	PCT	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-24	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB209	7.3	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB118	85.83	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB66	10.7	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB105	34.71	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB153	94.78	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB138	107.67	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB180	32.06	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB170	20.4	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB52	50.03	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB101	113.06	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB110	116.91	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB128	36.76	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB206	3.38	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB44	28.16	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	21.43	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	1.11	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB187	20.89	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB195	3.8	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	15.92	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB129	5.55	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB126	8.54	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	PEST	DIELDRIN	8.07	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	CON	PCB28	3.65	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	25.67	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	7.64	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-24	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-24	PA	CORE	0	5	CM	LPAH	ANTHRACENE	589.81	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	PYRENE	2956.1	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	1153.7	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	1214.99	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1775.02	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	2496.37	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	1455.01	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	120.35	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	CHRYSENE	1855.22	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	1658.96	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	265.14	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	1008.81	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	27.18	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	550.24	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	LPAH	FLUORENE	66.62	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	24.6	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	28.85	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	240	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	3.4	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	890	UG/KG	D
2006	PA C-24	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	24	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	MERCURY	0.383	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	LEAD	654	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	NICKEL	180	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	SILVER	70.6	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	ANTIMONY	1.83	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	ARSENIC	6.54	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	CADMIUM	70.9	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	CHROMIUM	699	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	COPPER	200	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	ZINC	334	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	METAL	SELENIUM	0.24	MG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.65	PCT	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB209	12.88	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB118	251.06	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB66	22.59	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB105	146.69	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB153	273.6	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB138	307.07	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB180	62.29	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB170	39.2	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB52	185.45	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB18	9.93	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB101	330.23	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB110	349.39	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB128	67.12	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB206	5.54	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB44	76.1	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	3.98	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB187	31.3	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB195	5.9	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	30.58	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB129	12.9	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB126	18.62	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	PEST	DIELDRIN	8.92	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	CON	PCB28	15.04	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	80.34	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	13.26	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	LPAH	ANTHRACENE	640.17	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	PYRENE	4005.82	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	782.21	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	889.96	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1387.31	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	3921.46	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1420.92	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	101.75	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-24	PA	CORE	5	25	CM	HPAH	CHRYSENE	1440.23	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	1265.63	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	207.16	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	963.08	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	132.3	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	862.19	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	LPAH	FLUORENE	223.75	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	50.18	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	61.19	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	96	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	1.5	UG/KG	U
2006	PA C-24	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	370	UG/KG	D
2006	PA C-24	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	12	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	MERCURY	0.128	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	LEAD	1600	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	NICKEL	126	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	SILVER	35.2	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	ANTIMONY	2.16	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	ARSENIC	4.42	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	CADMIUM	282	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	CHROMIUM	753	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	COPPER	114	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	ZINC	233	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	METAL	SELENIUM	0.14	MG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.72	PCT	D
2006	PA C-24	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB209	12.71	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB118	136.32	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB66	4.62	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB105	59.06	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB153	170.69	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB138	169.4	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB180	132.29	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB170	48.62	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB52	100.13	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB101	162.57	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB110	174.93	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB128	30.02	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB206	28.22	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB44	45.89	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	1.01	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB187	89.7	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB195	18.23	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	21.3	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB129	4.1	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB126	5.78	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	PEST	DIELDRIN	2.93	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	53.75	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	10.41	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	LPAH	ANTHRACENE	733.39	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	PYRENE	1694.01	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	159.99	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	126.47	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	264.7	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	1697.21	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	316	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	0.02	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	HPAH	CHRYSENE	537.89	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	233.63	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	29.66	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	405.29	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	846.35	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	3441.86	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	LPAH	FLUORENE	823.04	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	210.19	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-24	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	190.03	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	6.3	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	1.3	UG/KG	U
2006	PA C-24	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	3.1	UG/KG	D
2006	PA C-24	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	3.9	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	MERCURY	0.107	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	LEAD	140	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	NICKEL	66.8	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	SILVER	4.12	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	ANTIMONY	0.65	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	ARSENIC	9.74	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	CADMIUM	8.46	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	CHROMIUM	285	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	COPPER	117	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	ZINC	723	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	METAL	SELENIUM	0.33	MG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.8	PCT	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB209	3.54	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB118	22.45	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB66	2.8	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB77	3.16	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB105	7.41	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB153	29.21	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB138	27.99	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB180	9.64	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB170	5.33	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB52	8.35	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB101	15.97	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB110	34.75	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB128	5.29	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB206	1.38	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB44	4.07	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-25	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.64	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB187	6.36	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB195	1.92	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	7.27	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB129	0.04	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB126	7.96	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	PEST	DIELDRIN	4.02	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	CON	PCB28	2.63	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	10	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	4.75	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	LPAH	ANTHRACENE	1743.74	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	PYRENE	6546.7	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	597.1	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	709.35	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1653.21	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	4782.64	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	1450.49	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	145.67	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	CHRYSENE	2115.06	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	1468.69	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	167.78	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	1501.13	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	266.68	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	1539.42	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	LPAH	FLUORENE	305.16	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	44.02	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	48.27	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	24	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.17	UG/KG	U
2006	PA C-25	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	39	UG/KG	D
2006	PA C-25	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	6.5	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	MERCURY	0.167	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	LEAD	224	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	NICKEL	66.9	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-25	PA	CORE	5	25	CM	METAL	SILVER	5.22	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	ANTIMONY	0.44	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	ARSENIC	7.84	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	CADMIUM	10.4	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	CHROMIUM	176	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	COPPER	130	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	ZINC	632	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	METAL	SELENIUM	0.26	MG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.72	PCT	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB209	2.77	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB118	23.54	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB66	2.71	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB77	3.21	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB105	8.25	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB153	35.39	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB138	25.71	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB180	9.96	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB170	4.57	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB52	13.08	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB101	22.76	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB110	37.83	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB128	4.93	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB206	2.37	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB44	5.72	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.56	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	3.94	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB187	6.34	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB195	1.63	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	4.79	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB129	1.57	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB126	3.56	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-25	PA	CORE	5	25	CM	PEST	DIELDRIN	1.01	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	CON	PCB28	1.89	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	6.24	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	4.65	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	LPAH	ANTHRACENE	737.7	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	PYRENE	6950.72	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	418.93	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	453.86	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	863.57	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	4089.85	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	860.06	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	46.93	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	CHRYSENE	1528.82	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	955.16	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	96.35	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	1302.47	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	613.84	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	422.46	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	LPAH	FLUORENE	118.02	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	628.28	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	91.61	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	16	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.16	UG/KG	U
2006	PA C-25	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	25	UG/KG	D
2006	PA C-25	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	0.87	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	METAL	MERCURY	0.263	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	LEAD	246	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	NICKEL	81.5	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	SILVER	2.41	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	ANTIMONY	0.41	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	ARSENIC	8.36	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	CADMIUM	7.65	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	CHROMIUM	167	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	COPPER	54.7	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	ZINC	231	MG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	METAL	SELENIUM	0.25	MG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-25	PA	CORE	25	54	CM	TOC	TOTAL ORGANIC CARBON	1.1	PCT	D
2006	PA C-25	PA	CORE	25	54	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB209	4.54	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB118	38.19	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB66	3.83	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB77	2.37	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB105	11.47	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB153	40.2	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB138	40.78	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB180	12.65	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB170	5.18	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB52	16.71	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB101	39.04	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB110	45.99	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB128	7.7	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB206	1.91	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB44	6.31	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	PEST	ALPHA-CHLORDANE	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	PEST	GAMMA-CHLORDANE	5.53	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB187	7.82	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB195	2.18	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	DDT 24	2,4'-DDD	6.87	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB129	2.14	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB126	4.78	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	PEST	DIELDRIN	2.03	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	DDT 44	4,4'-DDD	10.12	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	DDT 44	4,4'-DDE	5.14	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-25	PA	CORE	25	54	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	LPAH	ANTHRACENE	1006.6	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	PYRENE	7623.85	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	BENZO(G,H,I)PERYLENE	484.33	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	INDENO(1,2,3-CD)PYRENE	564.89	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	BENZO(B)FLUORANTHENE	1231.79	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	FLUORANTHENE	3832.82	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	BENZO(K)FLUORANTHENE	1238.78	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	LPAH	ACENAPHTHYLENE	121.31	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	CHRYSENE	1653.27	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	BENZO(A)PYRENE	1225.17	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	DIBENZO(A,H)ANTHRACENE	132.42	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	HPAH	BENZO(A)ANTHRACENE	1045.43	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	LPAH	ACENAPHTHENE	752.02	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	LPAH	PHENANTHRENE	1564.27	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	LPAH	FLUORENE	388.02	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	LPAH	NAPHTHALENE	136.41	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	LPAH	2-METHYLNAPHTHALENE	37.72	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	TBTs	DIBUTYL TIN (DBT)	8.3	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	TBTs	TETRABUTYL TIN (TTBT)	0.13	UG/KG	U
2006	PA C-25	PA	CORE	25	54	CM	TBT	TRIBUTYL TIN	7.5	UG/KG	D
2006	PA C-25	PA	CORE	25	54	CM	TBTs	MONOBUTYL TIN (MBT)	2.1	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	METAL	MERCURY	0.113	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	LEAD	116	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	NICKEL	72	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	SILVER	3.98	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	ANTIMONY	0.42	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	ARSENIC	8.47	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	CADMIUM	9.99	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	CHROMIUM	138	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	COPPER	121	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	ZINC	155	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	METAL	SELENIUM	0.34	MG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.9	PCT	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB209	2.91	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB118	29.7	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB66	3.08	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB77	2.71	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB105	10.42	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB153	41.44	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB138	33.44	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB180	10.7	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB170	5.2	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB52	13.24	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB101	32.13	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB110	49.06	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB128	6.66	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB206	1.4	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB44	5.46	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.4	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB187	6.18	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB195	2.05	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	6.14	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB129	3.67	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB126	2.3	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	PEST	DIELDRIN	3.3	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	CON	PCB28	1.24	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	7.08	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	3.65	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	LPAH	ANTHRACENE	797.63	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	PYRENE	4833.67	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	666.2	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	722.09	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1199.41	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	4098.19	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	1215.61	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-26	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	91.36	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	CHRYSENE	1431.48	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	1204.01	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	157.39	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	1068.09	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	333.85	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	2458.69	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	LPAH	FLUORENE	291.95	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	156.16	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	108.59	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	13	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.16	UG/KG	U
2006	PA C-26	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	17	UG/KG	D
2006	PA C-26	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	2.8	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	MERCURY	0.162	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	LEAD	77	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	NICKEL	97.3	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	SILVER	2	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	ANTIMONY	0.3	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	ARSENIC	9.09	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	CADMIUM	5.67	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	CHROMIUM	137	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	COPPER	82	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	ZINC	153	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	METAL	SELENIUM	0.36	MG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.39	PCT	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB209	2.88	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB118	20.26	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB66	3.61	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB105	7.66	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB153	24.05	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB138	24.72	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB180	8.51	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB170	5.22	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB52	11.1	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB18	0.55	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB101	20.23	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB110	33.91	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB128	6.37	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB206	1.29	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB44	5.03	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.9	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB187	5.51	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB195	2.17	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	7.75	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB129	4.77	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB126	1.15	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	PEST	DIELDRIN	3.53	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	CON	PCB28	1.9	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	7.66	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	3.34	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	LPAH	ANTHRACENE	212.71	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	PYRENE	3357.11	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	657.93	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	740.64	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	1200.87	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	1315.55	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	1003.03	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	68.71	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	CHRYSENE	1014.22	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	927.07	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	156.1	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	645.21	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	22.47	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	260.89	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	LPAH	FLUORENE	35.32	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-26	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	33.98	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	17.45	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	8.4	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.17	UG/KG	U
2006	PA C-26	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	9.8	UG/KG	D
2006	PA C-26	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	1.8	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	MERCURY	0.188	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	LEAD	30.2	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	NICKEL	127	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	SILVER	0.343	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	ANTIMONY	0.27	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	ARSENIC	10.3	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	CADMIUM	0.841	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	CHROMIUM	137	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	COPPER	45.6	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	ZINC	110	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	METAL	SELENIUM	0.22	MG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.8	PCT	D
2006	PA C-26	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB209	0.94	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB118	2.31	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB66	0.37	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB105	0.94	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB153	3.22	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB138	2.78	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB180	1.92	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB170	0.75	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB52	1.46	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB101	2.69	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB110	3.15	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB128	4.01	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB206	1.35	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB44	0.63	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-26	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB187	1.4	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB195	0.64	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.44	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB129	0.51	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB126	0.38	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	DIELDRIN	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	0.47	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	LPAH	ANTHRACENE	43.11	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	PYRENE	723.29	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	338.45	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	286.71	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	230.18	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	226.76	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	217.58	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	17.14	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	CHRYSENE	130.55	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	340.49	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	33.2	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	118.65	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	10.88	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	98.11	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	LPAH	FLUORENE	15.04	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	53.47	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	13.69	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	0.49	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.16	UG/KG	U
2006	PA C-26	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	0.45	UG/KG	D
2006	PA C-26	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	0.11	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	METAL	MERCURY	0.101	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	LEAD	97.3	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-27	PA	CORE	0	5	CM	METAL	NICKEL	48.6	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	SILVER	5.92	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	ANTIMONY	0.35	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	ARSENIC	5.51	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	CADMIUM	4.58	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	CHROMIUM	110	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	COPPER	116	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	ZINC	126	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	METAL	SELENIUM	0.24	MG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.03	PCT	D
2006	PA C-27	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB209	5.97	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB118	33.7	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB66	4.31	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB105	8.02	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB153	32.63	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB138	34.48	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB180	12.65	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB170	6.76	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB52	8.62	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB101	20.65	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB110	31.92	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB128	9.7	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB206	1.55	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB44	3.64	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.69	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB187	7.88	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB195	1.61	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	4.3	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB129	2.21	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB126	3.07	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-27	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	PEST	DIELDRIN	3.5	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	CON	PCB28	2.03	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	6.39	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	3.2	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	LPAH	ANTHRACENE	501.42	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	PYRENE	1184.95	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	330.72	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	405.49	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	608.58	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	824.8	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	561.8	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	58.13	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	CHRYSENE	636.4	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	600.08	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	93.59	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	368.01	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	19.32	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	265.33	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	LPAH	FLUORENE	38.12	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	11.89	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	20.33	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	49	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.12	UG/KG	U
2006	PA C-27	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	82	UG/KG	D
2006	PA C-27	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	10	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	MERCURY	0.0665	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	LEAD	59.1	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	NICKEL	47.7	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	SILVER	3.32	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	ANTIMONY	0.21	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	ARSENIC	4.51	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	CADMIUM	4.34	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	CHROMIUM	96.9	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	COPPER	48.2	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	METAL	ZINC	89.9	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-27	PA	CORE	5	25	CM	METAL	SELENIUM	0.16	MG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.56	PCT	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB209	2.43	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB118	21.17	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB66	4.14	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB105	6.34	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB153	31.26	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB138	20.58	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB180	6	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB170	3.48	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB52	8.21	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB101	17.91	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB110	20.55	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB128	4.72	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB206	0.82	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB44	3.42	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.31	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB187	3.6	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB195	0.93	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	2.23	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB129	1.14	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB126	1.79	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	PEST	DIELDRIN	2.71	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	CON	PCB28	0.91	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	3.25	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.57	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-27	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	LPAH	ANTHRACENE	88.2	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	PYRENE	536.68	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	215.59	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	264.28	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	454.6	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	208.93	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	466.08	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	37.17	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	CHRYSENE	274.77	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	404.23	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	64.32	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	120.11	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	4.62	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	63.02	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	LPAH	FLUORENE	9.12	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	6.69	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	5.88	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	17	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.095	UG/KG	U
2006	PA C-27	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	14	UG/KG	D
2006	PA C-27	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	4.5	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	MERCURY	0.026	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	LEAD	16	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	NICKEL	43.6	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	SILVER	1.09	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	ANTIMONY	0.73	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	ARSENIC	3.19	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	CADMIUM	1.3	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	CHROMIUM	60.3	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	COPPER	17.7	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	ZINC	42.6	MG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	METAL	SELENIUM	0.1	MG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.13	PCT	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB209	0.7	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB118	4.61	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB66	1.39	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB105	1.85	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB153	5.89	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB138	6.11	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB180	1.66	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB170	0.88	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB52	2.13	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB18	0.09	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB101	5.44	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB110	6.5	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB128	1.31	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB206	0.27	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB44	0.93	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.09	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB187	1.07	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB195	0.3	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.59	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB129	0.52	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB126	0.13	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	PEST	DIELDRIN	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	CON	PCB28	0.13	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	1.36	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	0.42	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	LPAH	ANTHRACENE	23.74	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	PYRENE	100.14	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	74.98	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	76.89	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	116.93	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	70.99	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-27	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	119.82	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	10.53	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	CHRYSENE	63.79	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	114.21	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	16.03	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	31.6	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	1.3	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	21.21	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	LPAH	FLUORENE	2.8	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	2.58	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	1.43	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	3	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.087	UG/KG	U
2006	PA C-27	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	2.7	UG/KG	D
2006	PA C-27	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	0.48	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	MERCURY	0.178	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	LEAD	115	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	NICKEL	63.5	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	SILVER	1.41	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	ANTIMONY	1.43	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	ARSENIC	8.66	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	CADMIUM	6.64	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	CHROMIUM	104	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	COPPER	96.7	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	ZINC	177	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	METAL	SELENIUM	0.29	MG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	2.21	PCT	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB209	6.35	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB118	18.55	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB66	2.68	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB77	3.46	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB105	7.08	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB153	31.58	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB138	24.93	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB180	12.99	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB170	5.55	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB52	9.05	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB101	16.46	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB110	29.2	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB128	5.79	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB206	4.41	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB44	3.4	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.54	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	5.71	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB187	7.96	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB195	3.26	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	20.2	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB129	2.55	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB126	4.38	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	PEST	DIELDRIN	2.67	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	CON	PCB28	2.92	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	37.19	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	12.04	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	LPAH	ANTHRACENE	2037.51	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	PYRENE	4509.56	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	409.16	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	459.06	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1020.42	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	4738.07	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	929.39	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	110.2	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	CHRYSENE	1678.61	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	996.84	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	107.02	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	1256.59	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	571.07	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	4414.53	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-28	PA	CORE	0	5	CM	LPAH	FLUORENE	929.88	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	92.31	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	165.78	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	10	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.15	UG/KG	U
2006	PA C-28	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	11	UG/KG	D
2006	PA C-28	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	0.088	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	METAL	MERCURY	0.232	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	LEAD	88.1	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	NICKEL	81.4	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	SILVER	0.83	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	ANTIMONY	3.46	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	ARSENIC	9.26	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	CADMIUM	4.6	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	CHROMIUM	108	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	COPPER	75.3	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	ZINC	183	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	METAL	SELENIUM	0.28	MG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	2.04	PCT	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB209	5.45	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB118	7.1	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB66	1.34	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB77	3.94	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB105	2.64	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB153	11.1	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB138	10.36	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB180	6.18	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB170	3.26	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB52	3.57	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB101	6.27	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB110	11.58	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB128	1.91	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB206	3.19	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB44	1.11	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	1.37	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.33	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB187	4.3	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB195	2.38	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	12	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB129	0.04	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB126	3.32	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	PEST	DIELDRIN	1.64	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	CON	PCB28	1.2	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	23.29	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	8.66	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	LPAH	ANTHRACENE	370.06	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	PYRENE	3077.75	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	442.47	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	464.35	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	817.13	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	2643.63	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	726.17	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	41.45	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	CHRYSENE	959.11	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	793.88	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	107.64	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	732.51	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	126.56	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	414.24	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	LPAH	FLUORENE	96.54	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	89.69	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	45.96	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	2.3	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.16	UG/KG	U
2006	PA C-28	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	4.5	UG/KG	D
2006	PA C-28	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	0.96	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	METAL	MERCURY	0.202	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-28	PA	CORE	25	48	CM	METAL	LEAD	24.6	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	NICKEL	75.9	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	SILVER	0.263	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	ANTIMONY	0.66	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	ARSENIC	11.7	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	CADMIUM	0.605	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	CHROMIUM	90.7	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	COPPER	51.2	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	ZINC	99.8	MG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	METAL	SELENIUM	0.19	MG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	TOC	TOTAL ORGANIC CARBON	0.75	PCT	D
2006	PA C-28	PA	CORE	25	48	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB209	0.82	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB118	1.09	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB66	0.03	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB105	0.42	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB153	2	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB138	1.78	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB180	1.31	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB170	0.66	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB52	0.03	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB101	1.26	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB110	1.77	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB128	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB206	0.51	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB44	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	PEST	ALPHA-CHLORDANE	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB187	0.92	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB195	0.39	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	DDT 24	2,4'-DDD	1.5	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB129	0.04	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB126	0.8	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	PEST	DIELDRIN	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	DDT 44	4,4'-DDD	1.86	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	DDT 44	4,4'-DDE	1.03	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	LPAH	ANTHRACENE	77.81	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	PYRENE	1125.38	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	BENZO(G,H,I)PERYLENE	200.72	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	INDENO(1,2,3-CD)PYRENE	178.63	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	BENZO(B)FLUORANTHENE	200.22	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	FLUORANTHENE	1169.13	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	BENZO(K)FLUORANTHENE	175.09	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	LPAH	ACENAPHTHYLENE	11.65	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	CHRYSENE	243.52	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	BENZO(A)PYRENE	247.02	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	DIBENZO(A,H)ANTHRACENE	24.07	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	HPAH	BENZO(A)ANTHRACENE	207.7	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	LPAH	ACENAPHTHENE	38.63	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	LPAH	PHENANTHRENE	101.94	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	LPAH	FLUORENE	33.88	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	LPAH	NAPHTHALENE	125.13	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	LPAH	2-METHYLNAPHTHALENE	42.88	UG/KG	D
2006	PA C-28	PA	CORE	25	48	CM	TBTs	DIBUTYL TIN (DBT)	0.71	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	TBTs	TETRABUTYL TIN (TTBT)	0.13	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	TBT	TRIBUTYL TIN	0.11	UG/KG	U
2006	PA C-28	PA	CORE	25	48	CM	TBTs	MONOBUTYL TIN (MBT)	0.27	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	METAL	MERCURY	0.0546	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	LEAD	60.1	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	NICKEL	31.5	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	SILVER	1.37	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	ANTIMONY	0.29	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	ARSENIC	2.88	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	CADMIUM	2.08	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	CHROMIUM	65.5	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	COPPER	124	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-29	PA	CORE	0	5	CM	METAL	ZINC	70	MG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	METAL	SELENIUM	0.13	MG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.5	PCT	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB209	0.91	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB118	12.51	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB66	3.39	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB105	4.28	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB153	19.88	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB138	29.06	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB180	11.21	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB170	5.14	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB52	5.07	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB18	0.27	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB101	13.8	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB110	20.92	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB128	3.52	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB206	0.78	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB44	2.41	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.33	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.73	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB187	5.42	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB195	0.99	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	4.84	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB129	0.77	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB126	1.17	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	PEST	DIELDRIN	2.01	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	CON	PCB28	0.79	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	7.41	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	2.52	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-29	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-29	PA	CORE	0	5	CM	LPAH	ANTHRACENE	55.05	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	PYRENE	606.87	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	139.12	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	153.21	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	315.43	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	164.14	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	310.22	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	22	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	CHRYSENE	122.78	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	272.98	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	38.77	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	58.04	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	5.86	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	56.24	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	LPAH	FLUORENE	8.56	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	9.22	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	7.01	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	130	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.36	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	140	UG/KG	D
2006	PA C-29	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	34	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	MERCURY	0.0668	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	LEAD	87.6	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	NICKEL	42.2	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	SILVER	1.1	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	ANTIMONY	0.44	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	ARSENIC	4.92	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	CADMIUM	1.81	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	CHROMIUM	82.3	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	COPPER	372	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	ZINC	111	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	METAL	SELENIUM	0.16	MG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.65	PCT	D
2006	PA C-29	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB209	0.97	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB118	8.99	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-29	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB66	3.67	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB105	3.53	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB153	12.41	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB138	12.72	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB180	4.77	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB170	2.24	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB52	3.49	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB101	9.73	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB110	13.86	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB128	2.5	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB206	0.62	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB44	1.84	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.29	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB187	2.55	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB195	0.59	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	2.9	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB129	0.74	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB126	1.09	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	PEST	DIELDRIN	1.24	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	CON	PCB28	0.69	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	2.87	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	1.47	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-29	PA	CORE	5	25	CM	LPAH	ANTHRACENE	87.65	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	PYRENE	398.56	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	135.74	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	155.32	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	249.02	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-29	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	345.9	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	253.62	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	19.15	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	CHRYSENE	263.89	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	233.34	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	38.08	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	150.61	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	30.28	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	203.99	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	LPAH	FLUORENE	36.5	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	6.44	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	5.96	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	230	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	1.3	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	320	UG/KG	D
2006	PA C-29	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	53	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	MERCURY	0.0635	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	LEAD	12.5	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	NICKEL	26.4	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	SILVER	0.091	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	ANTIMONY	0.07	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	ARSENIC	3.47	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	CADMIUM	0.282	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	CHROMIUM	35.4	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	COPPER	10.7	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	ZINC	29.2	MG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	METAL	SELENIUM	0.09	MG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.09	PCT	D
2006	PA C-29	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB209	0.23	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB118	0.69	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB66	0.53	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB105	0.28	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB153	1	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB138	1.04	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB180	0.47	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB170	0.34	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB52	0.3	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB101	0.78	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB110	0.96	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB128	2.48	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB206	0.1	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB44	0.13	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB187	0.26	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB195	0.08	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.18	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB129	0.25	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB126	0.29	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	PEST	DIELDRIN	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	0.16	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	0.06	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	LPAH	ANTHRACENE	14.29	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	PYRENE	157.44	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	83.17	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	76.78	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	64.69	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	112.01	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	72.25	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	4.59	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	CHRYSENE	62.43	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	106.16	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	11.05	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	52.84	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	0.78	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-29	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	42.15	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	LPAH	FLUORENE	1.9	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	5.75	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	1.21	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	2.3	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.09	UG/KG	U
2006	PA C-29	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	8.4	UG/KG	D
2006	PA C-29	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	0.61	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	MERCURY	0.089	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	LEAD	39.5	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	NICKEL	48.4	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	SILVER	0.741	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	ANTIMONY	0.13	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	ARSENIC	5.95	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	CADMIUM	1.46	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	CHROMIUM	66.7	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	COPPER	69.9	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	ZINC	87.9	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	METAL	SELENIUM	0.26	MG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	1.14	PCT	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB209	0.84	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB118	6.73	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB66	8.23	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB105	2.62	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB153	9.23	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB138	8.81	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB180	3.43	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB170	1.97	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB52	2.93	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB101	8.03	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB110	9.36	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB128	7.87	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB206	0.54	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB44	1.4	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	1.99	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.26	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB187	2.28	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB195	0.64	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	4.57	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB129	1.65	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB126	1.75	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	PEST	DIELDRIN	3.52	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	CON	PCB28	1.25	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	4.71	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	2.02	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	2.9	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	LPAH	ANTHRACENE	520.85	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	PYRENE	2189.13	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	403.48	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	469.74	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	600.05	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	1852.29	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	631.9	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	88.56	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	CHRYSENE	823.95	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	758.51	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	94.18	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	627.28	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	87.86	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	824.47	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	LPAH	FLUORENE	128.81	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	50.66	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	32.08	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	13	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.13	UG/KG	U
2006	PA C-30	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	11	UG/KG	D
2006	PA C-30	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	4.5	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-30	PA	CORE	5	25	CM	METAL	MERCURY	0.0993	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	LEAD	51.6	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	NICKEL	68.3	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	SILVER	0.927	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	ANTIMONY	0.11	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	ARSENIC	7.65	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	CADMIUM	1.76	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	CHROMIUM	87.9	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	COPPER	94.2	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	ZINC	118	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	METAL	SELENIUM	0.38	MG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	1.51	PCT	D
2006	PA C-30	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB209	1.3	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB118	6.3	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB66	1.34	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB77	0.64	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB105	2.48	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB153	9.28	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB138	7.75	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB180	3.66	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB170	2.15	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB52	2.53	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB101	6.52	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB110	9.03	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB128	3.07	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB206	0.61	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB44	0.8	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	1.6	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB187	2.35	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB195	0.76	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	3.73	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB129	1.29	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB126	1.92	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	PEST	DIELDRIN	0.64	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	3.88	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	2.64	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	LPAH	ANTHRACENE	505.11	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	PYRENE	1930.59	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	377.41	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	425.99	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	836.59	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	1084.63	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	893.94	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	73.5	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	CHRYSENE	1394.06	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	843.94	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	99.62	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	633.59	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	442.51	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	1006.07	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	LPAH	FLUORENE	352.19	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	358.71	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	198.48	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	12	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.15	UG/KG	U
2006	PA C-30	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	11	UG/KG	D
2006	PA C-30	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	3.2	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	MERCURY	0.121	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	LEAD	60.7	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	NICKEL	54.7	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	SILVER	1.97	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	ANTIMONY	0.33	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	ARSENIC	6.58	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	CADMIUM	4.41	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	CHROMIUM	87.4	MG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-30	PA	CORE	25	50	CM	METAL	COPPER	53.8	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	ZINC	106	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	METAL	SELENIUM	0.24	MG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	1.11	PCT	D
2006	PA C-30	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB209	2.15	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB118	16.45	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB66	3.2	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB105	6.63	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB153	22.45	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB138	21.6	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB180	6.88	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB170	3.15	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB52	7.18	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB101	15.28	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB110	28.47	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB128	12.95	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB206	1.13	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB44	3.07	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.5	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB187	4.5	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB195	1.19	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	5.57	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB129	1.81	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB126	2.55	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	PEST	DIELDRIN	2.33	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	CON	PCB28	2.42	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	9.84	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	3.31	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-30	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	LPAH	ANTHRACENE	170.76	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	PYRENE	1379	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	795.27	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	830.54	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	842.81	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	701.48	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	808.28	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	83.47	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	CHRYSENE	468.45	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	1088.9	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	153.95	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	366.6	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	68.23	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	432.15	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	LPAH	FLUORENE	69.3	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	119.88	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	56.19	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	9.8	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.13	UG/KG	U
2006	PA C-30	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	8.8	UG/KG	D
2006	PA C-30	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	2.3	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	MERCURY	0.0669	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	LEAD	78.2	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	NICKEL	35.8	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	SILVER	1.04	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	ANTIMONY	0.2	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	ARSENIC	4.42	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	CADMIUM	1.31	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	CHROMIUM	64.9	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	COPPER	56.6	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	ZINC	79.3	MG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	METAL	SELENIUM	0.15	MG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	TOC	TOTAL ORGANIC CARBON	0.47	PCT	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB209	1.24	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	ALDRIN	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB118	4.61	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB66	2.22	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB77	1.29	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB105	1.72	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB153	6.09	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB138	5.9	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB180	2.3	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB170	1.6	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB52	1.71	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB101	4.8	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB110	6.98	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB128	1.34	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB206	0.39	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB44	0.65	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	PEST	ALPHA-CHLORDANE	0.19	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB187	1.59	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB195	0.57	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	DDT 24	2,4'-DDD	1.96	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB129	1.74	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB126	1.99	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	PEST	DIELDRIN	2.33	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	CON	PCB28	0.49	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	DDT 44	4,4'-DDD	2.33	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	DDT 44	4,4'-DDE	0.89	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	LPAH	ANTHRACENE	506.87	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	PYRENE	2272.93	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	BENZO(G,H,I)PERYLENE	351.08	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	INDENO(1,2,3-CD)PYRENE	429.78	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-31	PA	CORE	0	5	CM	HPAH	BENZO(B)FLUORANTHENE	1086.99	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	FLUORANTHENE	1400.23	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	BENZO(K)FLUORANTHENE	907.66	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	LPAH	ACENAPHTHYLENE	37.44	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	CHRYSENE	1336.83	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	BENZO(A)PYRENE	912.99	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	DIBENZO(A,H)ANTHRACENE	120.76	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	HPAH	BENZO(A)ANTHRACENE	763.94	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	LPAH	ACENAPHTHENE	192.45	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	LPAH	PHENANTHRENE	645.15	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	LPAH	FLUORENE	179.13	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	LPAH	NAPHTHALENE	37.93	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	LPAH	2-METHYLNAPHTHALENE	36.75	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	TBTs	DIBUTYL TIN (DBT)	28	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	TBTs	TETRABUTYL TIN (TTBT)	0.13	UG/KG	U
2006	PA C-31	PA	CORE	0	5	CM	TBT	TRIBUTYL TIN	23	UG/KG	D
2006	PA C-31	PA	CORE	0	5	CM	TBTs	MONOBUTYL TIN (MBT)	13	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	MERCURY	0.0771	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	LEAD	51.1	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	NICKEL	34.6	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	SILVER	1.16	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	ANTIMONY	0.14	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	ARSENIC	4.28	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	CADMIUM	1.67	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	CHROMIUM	73.3	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	COPPER	49.9	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	ZINC	120	MG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	METAL	SELENIUM	0.14	MG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	TOC	TOTAL ORGANIC CARBON	0.44	PCT	D
2006	PA C-31	PA	CORE	5	25	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB209	0.69	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB118	5.42	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB66	2.66	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB105	1.95	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB8	0.02	UG/KG	U

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB153	7.17	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB138	7.02	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB180	2.38	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB170	1.72	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB52	1.87	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB101	5.24	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB110	7.66	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB128	1.84	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB206	0.29	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB44	0.77	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	PEST	ALPHA-CHLORDANE	0.22	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB187	1.56	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB195	0.5	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	DDT 24	2,4'-DDD	0.03	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB129	1.34	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB126	1.52	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	PEST	DIELDRIN	2.06	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	DDT 44	4,4'-DDD	1.51	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	DDT 44	4,4'-DDE	0.99	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	LPAH	ANTHRACENE	572.08	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	PYRENE	2635.57	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	BENZO(G,H,I)PERYLENE	284.39	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	INDENO(1,2,3-CD)PYRENE	358.21	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	BENZO(B)FLUORANTHENE	880.42	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	FLUORANTHENE	2104.77	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	BENZO(K)FLUORANTHENE	762.17	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	LPAH	ACENAPHTHYLENE	37.3	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	CHRYSENE	883.28	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	BENZO(A)PYRENE	766.12	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	DIBENZO(A,H)ANTHRACENE	98.74	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	HPAH	BENZO(A)ANTHRACENE	623.15	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-31	PA	CORE	5	25	CM	LPAH	ACENAPHTHENE	582.46	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	LPAH	PHENANTHRENE	838.5	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	LPAH	FLUORENE	258.42	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	LPAH	NAPHTHALENE	120.21	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	LPAH	2-METHYLNAPHTHALENE	80.31	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	TBTs	DIBUTYL TIN (DBT)	18	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	TBTs	TETRABUTYL TIN (TTBT)	0.095	UG/KG	U
2006	PA C-31	PA	CORE	5	25	CM	TBT	TRIBUTYL TIN	20	UG/KG	D
2006	PA C-31	PA	CORE	5	25	CM	TBTs	MONOBUTYL TIN (MBT)	5.5	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	MERCURY	0.0524	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	LEAD	10.8	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	NICKEL	25.6	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	SILVER	0.123	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	ANTIMONY	0.1	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	ARSENIC	3.19	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	CADMIUM	0.363	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	CHROMIUM	33.1	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	COPPER	10.3	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	ZINC	26.2	MG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	METAL	SELENIUM	0.1	MG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	TOC	TOTAL ORGANIC CARBON	0.1	PCT	D
2006	PA C-31	PA	CORE	25	50	CM	PEST	HEPTACHLOR EPOXIDE	0.04	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	PEST	ENDOSULFAN SULFATE	0.03	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB209	0.24	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	PEST	ALDRIN	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB118	1.53	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	PEST	ALPHA-BHC	0.04	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB66	0.76	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB77	0.04	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB105	0.6	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	PEST	ENDOSULFAN II	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	DDT 24	2,4'-DDE	0.04	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB8	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB153	1.92	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB138	2.02	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB180	0.66	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB170	0.55	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB52	0.52	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB18	0.03	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB101	1.54	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB110	1.94	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB128	0.65	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB206	0.09	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB44	0.3	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	DDT 44	4,4'-DDT	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	PEST	ALPHA-CHLORDANE	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	PEST	GAMMA-CHLORDANE	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB187	0.42	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB195	0.16	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	DDT 24	2,4'-DDD	0.03	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB129	0.53	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB126	0.66	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	PEST	GAMMA-BHC	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	PEST	DIELDRIN	0.59	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	CON	PCB28	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	PEST	ENDRIN	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	DDT 44	4,4'-DDD	0.31	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	DDT 44	4,4'-DDE	0.16	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	PEST	ENDRIN ALDEHYDE	0.03	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	PEST	HEPTACHLOR	0.03	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	DDT 24	2,4'-DDT	0.05	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	PEST	ENDOSULFAN I	0.02	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	LPAH	ANTHRACENE	388.31	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	PYRENE	699.52	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	BENZO(G,H,I)PERYLENE	88.34	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	INDENO(1,2,3-CD)PYRENE	104.25	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	BENZO(B)FLUORANTHENE	239.03	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	FLUORANTHENE	675.41	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	BENZO(K)FLUORANTHENE	222.71	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	LPAH	ACENAPHTHYLENE	8.53	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	CHRYSENE	395.74	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	BENZO(A)PYRENE	231.17	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	DIBENZO(A,H)ANTHRACENE	27.4	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	HPAH	BENZO(A)ANTHRACENE	280.79	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	LPAH	ACENAPHTHENE	99.43	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	LPAH	PHENANTHRENE	315.54	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	LPAH	FLUORENE	82.82	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	LPAH	NAPHTHALENE	24.63	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	LPAH	2-METHYLNAPHTHALENE	21.14	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	TBTs	DIBUTYL TIN (DBT)	2.4	UG/KG	D
2006	PA C-31	PA	CORE	25	50	CM	TBTs	TETRABUTYL TIN (TTBT)	0.086	UG/KG	U
2006	PA C-31	PA	CORE	25	50	CM	TBT	TRIBUTYL TIN	1.3	UG/KG	D

Table A-2. Summary Data Table for IR Site 24 (Pier Area) (continued)

YEAR	Station ID	AREA	Samp Type	Depth Top	Depth Bot	Depth Unit	SUITE	ANALYTE	Result	Std Unit	DETECT
2006	PA C-31	PA	CORE	25	50	CM	TBTs	MONOBUTYL TIN (MBT)	0.41	UG/KG	D
2006	PA C-20	PA	CORE	0	5	CM	GRAIN	FINES	10.2	PCT	D
2006	PA C-20	PA	CORE	5	25	CM	GRAIN	FINES	12.5	PCT	D
2006	PA C-20	PA	CORE	25	50	CM	GRAIN	FINES	8.8	PCT	D
2006	PA C-21	PA	CORE	0	5	CM	GRAIN	FINES	1.9	PCT	D
2006	PA C-21	PA	CORE	5	25	CM	GRAIN	FINES	7.1	PCT	D
2006	PA C-21	PA	CORE	25	50	CM	GRAIN	FINES	15.3	PCT	D
2006	PA C-22	PA	CORE	0	5	CM	GRAIN	FINES	89.3	PCT	D
2006	PA C-22	PA	CORE	5	25	CM	GRAIN	FINES	95	PCT	D
2006	PA C-22	PA	CORE	25	50	CM	GRAIN	FINES	92	PCT	D
2006	PA C-23	PA	CORE	0	5	CM	GRAIN	FINES	49.3	PCT	D
2006	PA C-23	PA	CORE	5	25	CM	GRAIN	FINES	72.6	PCT	D
2006	PA C-23	PA	CORE	25	50	CM	GRAIN	FINES	82.3	PCT	D
2006	PA C-24	PA	CORE	0	5	CM	GRAIN	FINES	28.8	PCT	D
2006	PA C-24	PA	CORE	5	25	CM	GRAIN	FINES	21.9	PCT	D
2006	PA C-24	PA	CORE	25	50	CM	GRAIN	FINES	12.4	PCT	D
2006	PA C-25	PA	CORE	0	5	CM	GRAIN	FINES	42.1	PCT	D
2006	PA C-25	PA	CORE	5	25	CM	GRAIN	FINES	43	PCT	D
2006	PA C-25	PA	CORE	25	54	CM	GRAIN	FINES	47.5	PCT	D
2006	PA C-26	PA	CORE	0	5	CM	GRAIN	FINES	47.9	PCT	D
2006	PA C-26	PA	CORE	5	25	CM	GRAIN	FINES	67.1	PCT	D
2006	PA C-26	PA	CORE	25	50	CM	GRAIN	FINES	83.8	PCT	D
2006	PA C-27	PA	CORE	0	5	CM	GRAIN	FINES	22.2	PCT	D
2006	PA C-27	PA	CORE	5	25	CM	GRAIN	FINES	19.53	PCT	D
2006	PA C-27	PA	CORE	25	50	CM	GRAIN	FINES	28.1	PCT	D
2006	PA C-28	PA	CORE	0	5	CM	GRAIN	FINES	32.6	PCT	D
2006	PA C-28	PA	CORE	5	25	CM	GRAIN	FINES	49	PCT	D
2006	PA C-28	PA	CORE	25	48	CM	GRAIN	FINES	46.3	PCT	D
2006	PA C-29	PA	CORE	0	5	CM	GRAIN	FINES	11.7	PCT	D
2006	PA C-29	PA	CORE	5	25	CM	GRAIN	FINES	11	PCT	D
2006	PA C-29	PA	CORE	25	50	CM	GRAIN	FINES	10.9	PCT	D
2006	PA C-30	PA	CORE	0	5	CM	GRAIN	FINES	33.8	PCT	D
2006	PA C-30	PA	CORE	5	25	CM	GRAIN	FINES	56.1	PCT	D
2006	PA C-30	PA	CORE	25	50	CM	GRAIN	FINES	37.8	PCT	D
2006	PA C-31	PA	CORE	0	5	CM	GRAIN	FINES	13.1	PCT	D
2006	PA C-31	PA	CORE	5	25	CM	GRAIN	FINES	13.4	PCT	D
2006	PA C-31	PA	CORE	25	50	CM	GRAIN	FINES	10.7	PCT	D

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APPENDIX B

PAH FORENSICS ANALYSIS FOR IR SITE 24

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CONTENTS

1.0 INTRODUCTION B-1
1.1 Site Background B-1
1.2 Previous Site Investigations B-2
1.3 Potential Sources of PAH in San Francisco Bay Sediments B-2

2.0 SAMPLE ANALYSIS B-5
2.1 Sample Collection B-5
2.2 Analytical Methods B-6
2.3 Contaminant Fingerprinting Methodology B-7

3.0 RESULTS B-11
3.1 Spatial Distribution and Character of TPH B-11
3.2 Spatial Distribution of Total PAH Concentrations B-15
3.3 Sources of PAH Contamination B-17
3.3.1 Individual PAH Distribution Patterns B-17
3.3.2 PAH Source Ratio Analysis B-18
3.3.3 Principal Component Analysis B-19

4.0 CONCLUSIONS B-25

5.0 REFERENCES B-27

TABLES

Table 2-1. Inventory of Sediment Samples B-5
Table 2-2. PAH Analytes and Abbreviations Used in this Study B-6
Table 3-1. TPH Summary Statistics (excluding station PA C-16) B-15
Table 3-2. TPAH Summary Statistics (excluding station PA C-16) B-17
Table 3-3. TPAH Comparison with Screening Benchmarks B-17

FIGURES

Figure 1-1. Map of IR Site 24 with the Sampling Locations. B-1
Figure 2-1. Selected PAH Analyte Profiles in Petrogenic and Pyrogenic Sources B-8
Figure 3-1. Spatial Distribution of TPH and TPAH in IR Site 24 Sediment at 0-5 cm Interval B-12
Figure 3-2. Spatial Distribution of TPH and TPAH in IR Site 24 Sediment at 5-25 cm Interval B-13
Figure 3-3. Spatial Distribution of TPH and TPAH in IR Site 24 Sediment at 25-50 cm Interval B-14
Figure 3-4. Gas Chromatograms of Selected IR Site 24 Samples. B-16
Figure 3-5. PAH Distribution Patterns in Station PA C-1 (5-25 cm) Sediment Sample (A) and Wood Piling Sample from Pier 1 (B) B-18
Figure 3-6. Cross-Plots of PAH Source Ratios B-20
Figure 3-7. PCA Scores Plot for the Full PAH Dataset B-21
Figure 3-8. PCA Scores (A) and Loadings (B) Plots for the Partial PAH Dataset B-22

ABBREVIATIONS AND ACRONYMS

ARRA	Alameda Reuse and Redevelopment Authority
BRAC	Base Realignment and Closure
cm	centimeter
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DDx	a combination of the pesticides DDT, DDE, and DDD
ER-L	effects range-low
ER-M	effects range-median
GC/MS	gas chromatography/mass spectrometry
HPAH	high molecular weight PAH
IR	Installation Restoration
IS	internal standard
kg	kilogram
LPAH	low molecular weight PAH
MGP	gas manufacturing plan
mg	milligram
NAS	Naval Air Station
PAH	polynuclear aromatic hydrocarbon
PCA	Prinicpal Component Analysis
PCB	polychlorinated biphenyl
PMO	program management office
SIM	selected ion monitoring
TPAH	total polynuclear aromatic hydrocarbon
TPH	total petroleum hydrocarbons
TtEMI	Tetra Tech EM, Inc.
UCM	unresolved complex mixture
U.S. EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

This fingerprinting investigation of the hydrocarbon contamination in the Alameda Point Installation Restoration (IR) Site 24 (Pier Area) at Alameda Point, California was performed as an integral part of the Offshore Sediment Study conducted for the Base Realignment and Closure (BRAC) Program Management Office (PMO) in the summer of 2005. The investigation focused on subtidal areas and was designed to address data gaps that were identified from previous investigations and to further assess whether onsite sources may have impacted sediment quality.

The main objectives of this report were to define the spatial and vertical extent of hydrocarbon contamination and to evaluate potential sources of polycyclic aromatic hydrocarbons (PAH) in sediment at IR Site 24. According to the Work Plan (Battelle et al., 2005), nineteen sediment core samples and three treated wood piling scrapings were collected for the investigation. In addition, one sediment core sample was taken from a reference area to characterize ambient background sediment contamination at a location beyond immediate impact of the IR Site 24 contamination.

1.1 Site Background

IR Site 24 is located along the southern edge of Alameda Point (Figure 1-1). The site consists of three piers located within the breakwall of Breakwater Beach and is currently being used to dock naval ships including the USS Hornet, which is permanently docked at Pier 3 as a naval museum.

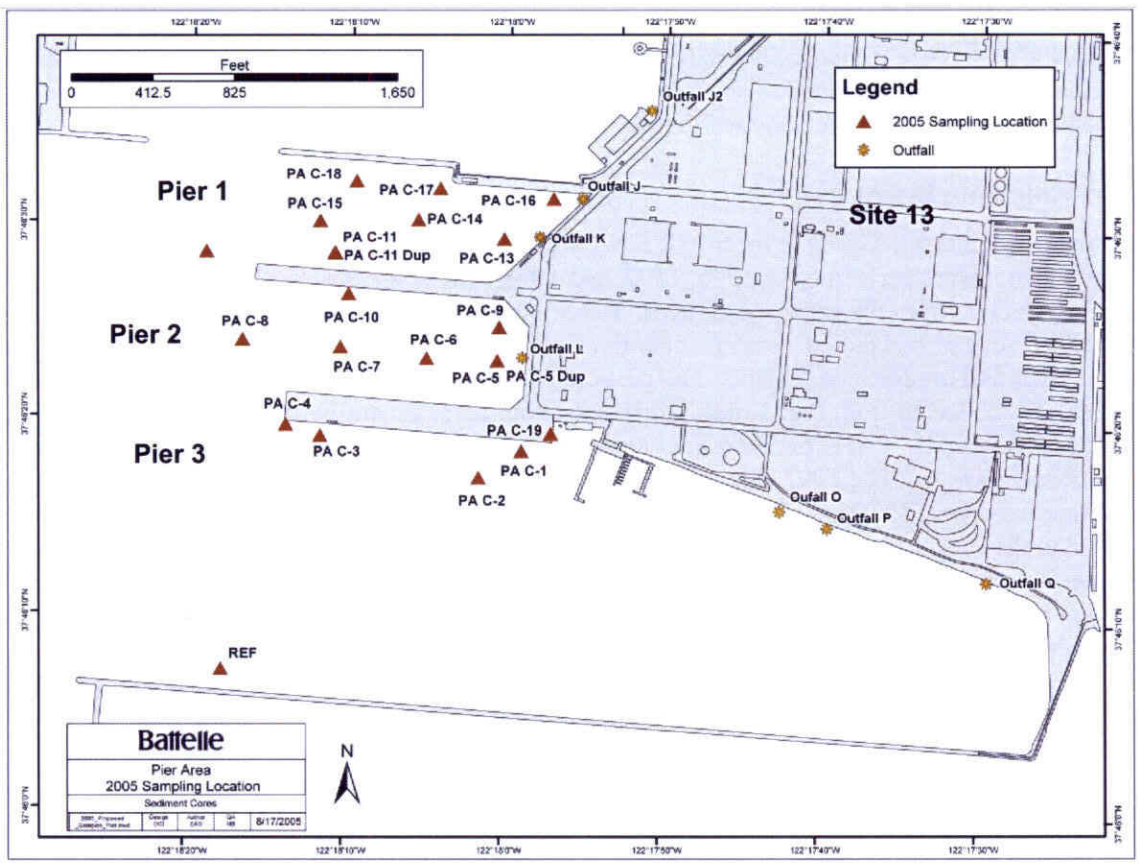

Figure 1-1. Map of IR Site 24 with the Sampling Locations.

The piers were actively used by the Navy from 1943 to 1974 and are constructed with concrete pilings/footings and walk ways. A single layer of treated wood pilings spaced every 5 ft and extending 2 ft from the piers runs along the perimeter of the piers and quay walls. Piers 2 and 3 were routinely used to berth nuclear-powered surface ships as well as occasional nuclear powered submarines. Three storm sewer outfalls lead into the pier areas. System lines J and K discharge into the eastern end between Piers 1 and 2, and line L discharges between Piers 2 and 3. Line J served buildings within Parcel 154 that were used as storage facilities supporting Alameda Point and Mare Island. It is suspected that potentially contaminated surface runoff may have discharged through this storm sewer system. Building 167 was an aircraft hangar that stored various acids, alkalis, solvents, resins, and heavy metals in five aboveground dip tanks near the south wall of the building (Tetra Tech EM, Inc. [TtEMI], 2000). Building 72B was used for chemical storage, and Building 555 was an electrical substation that stored minor amounts of oil. Building 340 was a fire protection pump house that had an associated underground storage tank used for diesel that since has been removed. Open spaces between buildings were used for temporary aircraft parking and chemical and equipment storage, which included hazardous materials storage yards and industrial dust silo.

The Navy reserve fleet is currently docked at the piers which are leased by the Alameda Reuse and Redevelopment Agency (ARRA) to Trident Corporation. Pier 1 is the smallest and northernmost of the three piers with a berth of 1,200 ft that is designed to dock replenishment oiler and combat store ships. Pier 2 (the middle pier) has four berthing spaces with a total available space of 2,420 ft. One of these spaces is reserved for fleet operations and is left vacant. Transient vessels use this berth for loading and offloading small amounts of ordnance. The remaining three berth spaces usually accommodate a combination of destroyers and service ships. Pier 3 (the southernmost) is the largest berthing facility at Alameda with an available berth space of 2,500 ft. The USS Hornet is permanently berthed at this pier. Until 1978, the piers were periodically dredged to allow for ships to be docked and consequently, much of the historical contamination related to shipboard waste and storm drains has been removed. However, a sediment shelf is intact along the quay wall that was not accessible to the dredging equipment.

1.2 Previous Site Investigations

Limited historical data are available for the IR Site 24 sediment. Most of these data are from three investigations that were performed in 1996, 1997, and 1998. All of the historical samples collected from IR Site 24 have been from the surface sediment. Based on comparisons to ambient concentrations in San Francisco Bay, several metals (i.e., arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc) and organic constituents (i.e., pesticides) were measured at concentrations above ambient levels. Samples collected from Pier 1, near storm-sewer outfall J, generally contain the highest concentrations of metals. PAH concentrations also were found to exceed San Francisco Bay ambient sediment concentrations. The 1997 data indicated decreasing PAH concentrations in sediment from east to west along the piers. The Navy has hypothesized that the creosote from the pier pilings may have contributed to the PAH contamination found in the sediment. Total polychlorinated biphenyl (PCBs) exceeded effects range-median (ER-Ms) in four of eight samples collected in 1996 and 1998, and total DDx (refers to a combination of the pesticides dichlorodiphenyldichloroethane [DDT], dichlorodiphenyldichloroethylene [DDE], and dichlorodiphenyltrichloroethane [DDD])) exceeded ambient levels in two samples collected in 1996 (Battelle et al., 2005). These findings are consistent with the suspected sources of contamination including the outfalls, the creosote piling under the piers and ship wastewater discharges.

1.3 Potential Sources of PAH in San Francisco Bay Sediments

Contaminated sediments are typically found in estuaries near urban, industrial, and agricultural areas where fine-grained sediments accumulate. In general, the spatial (horizontal) extent of estuary sediments contamination is extensive while the vertical extent is limited. The San Francisco Estuary is the largest

urbanized estuary on the west coast of the U.S. Because the estuary is situated in a highly populated and urbanized area, it is subject to chemical contamination from a variety of sources and pathways. The immediate area surrounding the estuary is highly industrialized and includes petroleum refineries, chemical manufacturers, and steel producers all of which contribute to the sediment contamination.

One particularly ubiquitous category of pollutants is PAH. There are numerous sources of PAH ranging from anthropogenic to natural environmental sources, which increases the complexity of the source analysis. Both unburned and combusted fossil fuels impart their PAH signature in the marine environment. PAH can originate from a variety of anthropogenic sources in urban areas by thermal combustion processes (e.g., cooking and heating oils and coal burning), vehicular emissions (e.g., automobiles and trucks), and biomass burning (e.g., fireplaces and controlled burning, etc.) (Simoneit, 1984).

Urban runoff is considered the most common pathway of hydrocarbon contaminants to the marine environment. The sources of PAH in urban runoff vary, but the most common sources are (1) urban dust containing combustion-related PAH, (2) street runoff containing traces of lubricating oils (principally arising from releases from automobiles), and (3) illegal or unintentional discharging of waste oil and petroleum products into storm drain systems. In spite of the presence of a petroleum component in urban runoff, the PAH in urban runoff and, in turn, in receiving urban sediments are typically dominated by pyrogenic PAH (Eganhouse et al., 1982). This fact is explained by two reasons: (1) the PAH in storm-water runoff often have a pyrogenic PAH signature to begin with, and (2) the 2- and 3- ring PAH (predominantly petroleum-derived) are more water soluble and degradable than heavier 4,-5,-,and 6-ring PAH (predominantly combustion-related). The concentration of PAH in urban sediments impacted by urban runoff is very broad and highly site-dependent but are typically in the 1-50 milligram per kilogram (mg/kg range) (Stout et al., 2001).

All the common PAH sources identified above, as well as the site-specific sources were previously identified as potential cause of sediment contamination in the study area. Among the site-specific sources of PAH contamination are those potentially related to Navy activities, as well as two suspected historical sources: (1) the former gas manufacturing plants (MGP) located in Oakland, across the inner harbor from Todd Shipyards, and (2) the former Pacific Coast Oil Refinery located on the current Site 13 at Alameda Point (see Figure 1-1). The MGPs are known sources of predominantly pyrogenic PAH, whereas oil refineries are typically contribute petrogenic PAH.

To accomplish objectives of the current investigation, and determine extent and sources of hydrocarbon contamination in IR Site 24 sediment, PAH fingerprinting analysis was performed on surficial sediment samples (0- 5 centimeters [cm]) as well as core samples collected at the depth of 5-25 cm and 25-50 cm from the surface.

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2.0 SAMPLE ANALYSIS

2.1 Sample Collection

Sediment samples were collected from 20 locations in IR Site 24 from June 14 though June 16, 2005. Duplicate cores and grabs were collected at two locations. Sampling locations are shown in Figure 1-1. Inventory of core samples collected at IR Site 24 is presented in Table 2-1. In addition, wood pile scrapings were collected from Piers 1, 2, and 3 for PAH fingerprinting analysis. Field activities that were performed to collect subsurface sediment cores and surface sediment samples are described in (Battelle, 2005).

Four intervals were sub-sampled from each core sediment sample: 0 – 5 cm, 5 – 25 cm 25 – 50 cm and 50+ cm. The top three sub-samples were analyzed for contaminants of concern, while the last section was archived for potential future analyses.

Table 2-1. Inventory of Sediment Samples

Station ID	Latitude North (WGS1984)	Longitude West (WGS1984)	Date	Time (PDT)	Core length (cm)
PA C-1	37.771702	122.300609	14-Jun-05	1056	152
PA C-2	37.771312	122.301369	14-Jun-05	1203	122
PA C-3	37.771876	122.304153	14-Jun-05	1413	150
PA C-4	37.772022	122.304759	14-Jun-05	1500	152
PA C-5	37.772979	122.301056	15-Jun-05	0914	152
PA C-5 Dup	37.772975	122.301065	15-Jun-05	0935	152
PA C-6	37.772996	122.302298	14-Jun-05	1655	142
PA C-7	37.773142	122.303821	15-Jun-05	0824	147
PA C-8	37.773228	122.305537	14-Jun-05	1602	142
PA C-9	37.773459	122.301031	15-Jun-05	1034	147
PA C-10	37.773905	122.303713	15-Jun-05	1124	152
PA C-11	37.774486	122.303944	16-Jun-05	1001	142
PA C-11 Dup	37.774480	122.303929	16-Jun-05	1018	145
PA C-12	37.774495	122.306191	16-Jun-05	1234	147
PA C-13	37.774723	122.300987	15-Jun-05	1255	152
PA C-14	37.774978	122.302477	15-Jun-05	1513	163
PA C-15	37.774943	122.304206	16-Jun-05	1127	147
PA C-16	37.775316	122.300107	15-Jun-05	1348	142
PA C-17	37.775429	122.302137	15-Jun-05	1549	152
PA C-18	37.775514	122.303576	16-Jun-05	0918	137
PA C-19	37.771955	122.300095	14-Jun-05	0931	152
REF	37.768559	122.305823	16-Jun-05	0811	137
Pier 1 Scrapings	37.775451	122.300251	16-Jun-05	1321	NA
Pier 2 Scrapings	37.77434	122.305976	16-Jun-05	1320	NA
Pier 3 Scrapings	37.772614	122.306089	16-Jun-05	1322	NA

2.2 Analytical Methods

The sample extraction and analytical methods are described in the Work Plan (Battelle et al., 2005). PAH analysis relied upon a modified U.S. EPA Method 8270, *Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)*, as detailed throughout the published literature and in the Federal Register (Federal Register 40CFR Subchapter J, Part 300, Subpart L, Appendix C, par. 4.6.3 to 4.6.5). In this modified method, the GC is operated with a very slow oven temperature program to optimize separation of target compounds (Table 2-2), and the mass spectrometer is operated in the selected ion monitoring (SIM) mode to minimize interferences from non-target compounds and, when necessary, to improve detection limits of low concentration analytes. In addition, rather than using the Method's standard analyte list, ions characteristic of an extended suite of parent and alkylated PAH groups were monitored (Table 2-2). Internal surrogate and recovery standards are used to measure performance and concentrations, relative to an external calibration solution containing the parent PAH (i.e., C_0- PAH) on the analyte list. The response factors for the parent PAH are applied to the appropriate alkylated PAH. This method is fully described in numerous publications (e.g., Stout et al., 2001). Total petroleum (extractable) hydrocarbon (TPH) concentrations in the sediment samples were determined using U.S. EPA Method 8015.

Prior to the instrument analysis, all sediment extracts were cleaned-up by processing with alumina and copper in order to isolate extractable hydrocarbons and remove sulfur moieties. PAH and TPH

Table 2-2. PAH Analytes and Abbreviations Used in this Study

Analyte/Analyte Group	Abbr.	Analyte/Analyte Group	Abbr.
Naphthalene	N0	C3-dibenzothiophenes	D3
C1-naphthalenes	N1	C4-dibenzothiophenes	D4
C2-naphthalenes	N2	**Fluoranthene**	FL
C3-naphthalenes	N3	**Pyrene**	PY
C4-naphthalenes	N4	C1-fluoranthenes/pyrenes	FP1
Biphenyl	Bph	C2-fluoranthenes/pyrenes	FP2
Acenaphthylene	Acl	C3-fluoranthenes/pyrenes	FP3
Acenaphthene	Ace	**Benz(a)anthracene**	BaA
Dibenzofuran	DbF	**Chrysene**	C0
Fluorene	F0	C1-chrysenes	C1
C1-fluorenes	F1	C2-chrysenes	C2
C2-fluorenes	F2	C3-chrysenes	C3
C3-fluorenes	F3	C4-chrysenes	C4
Anthracene	AN	**Benzo(b)fluoranthene**	BbF
Phenanthrene	P0	**Benzo(j,k)fluoranthene**	BkF
C1-phenanthrenes/anthracenes	P1	Benzo(e)pyrene	BeP
C2-phenanthrenes/anthracenes	P2	**Benzo(a)pyrene**	BaP
C3-phenanthrenes/anthracenes	P3	Perylene	Per
C4-phenanthrenes/anthracenes	P4	**Indeno(1,2,3-c,d)pyrene**	ID
Dibenzothiophene	D0	**Dibenzo(a,h)anthracene**	DA
C1-dibenzothiophenes	D1	**Benzo(g,h,i)perylene**	BgP
C2-dibenzothiophenes	D2		

bold - 16 Priority Pollutant PAH

concentration data were not surrogate or blank corrected. The PAH analytes included in this study consisted of the 43 parent and alkylated compounds listed in Table 2-2, which also included the analyte abbreviations used in figures throughout this report.

2.3 Contaminant Fingerprinting Methodology

Three major types of hydrocarbons may be present in sediments: 1) petrogenic, which are generated in organic-rich source rocks exposed to elevated temperature for long periods – a category that includes crude oil and its refined products; 2) biogenic, which are generated by biological processes or in the early stages of diagenesis in marine sediments; and 3) pyrogenic which are generated from the combustion of fossil fuels.

Each hydrocarbon product is standardized by a set of physical and chemical properties, which are often used for product characterization in environmental samples. The Advanced Chemical Fingerprinting approach for product-type identification is based on evaluation of the chemical composition of contaminants and pattern recognition analysis of the analytical data collected. Depending on the analytical technique(s) selected for the sample analysis, different chemical parameters can be used for data evaluation.

When gas chromatography with a flame ionization detector is conducted, the data evaluation is focused on the boiling range and distribution pattern of normal alkanes (n-alkanes) and selected isoalkanes, which are the most abundant and easily identified compounds in undegraded hydrocarbon products. The analysis also ascertains the boiling range and shape of the unresolved complex mixture (UCM), observed as a baseline rise over a broad retention-time window of the gas chromatogram.

PAH compounds represent one of the classes of organic compounds commonly used for product-type identification in environmental samples. These hydrocarbons are analyzed by GC/MS. The target analyte list includes two-, three-, four-, five-, and six-ring PAH compounds and alkyl-substituted PAH compounds (homologous series). The distribution of PAH homologous series is commonly used for source identification.

PAH are found in all petroleum-based mixtures including, crude oil, refined fuels, fuel combustion products, preservatives such as creosote, and lubricating oils. Natural sources are nearly always secondary to anthropogenic inputs and occur from natural oil seeps, forest fires and direct biogenesis by microbes and plants (Kennish, 1991). Although fossil fuels are common sources of saturated and aromatic hydrocarbons, most of the concentrations measured in sediment are typically derived from incomplete combustion of organic matter at high temperatures (Neff, 1979). Combustion of fossil fuel generates PAH assemblages, which are typically dominated by four-, five-, and six-ring compounds, and by a parent (unalkylated) compound in each homologous series (Brassell and Eglinton, 1980):

$$C_0\text{-PAH} \gg C_1\text{-PAH} > C_2\text{-PAH} > C_3\text{-PAH} > C_4\text{-PAH}.$$

In unburned petroleum products, alkyl homologues of most PAH are more abundant than the parent compound and the distribution pattern can be generally described as:

$$C_0\text{-PAH} < C_1\text{-PAH} < C_2\text{-PAH} > C_3\text{-PAH} > C_4\text{-PAH}.$$

The comparison of typical petrogenic and pyrogenic PAH distribution patterns is shown in Figure 2-1.

The distinctions in distribution patterns shown in Figure 2-1 are often used to differentiate between petrogenic and pyrogenic sources of PAH in sediment samples. Some of the PAH compounds, such as

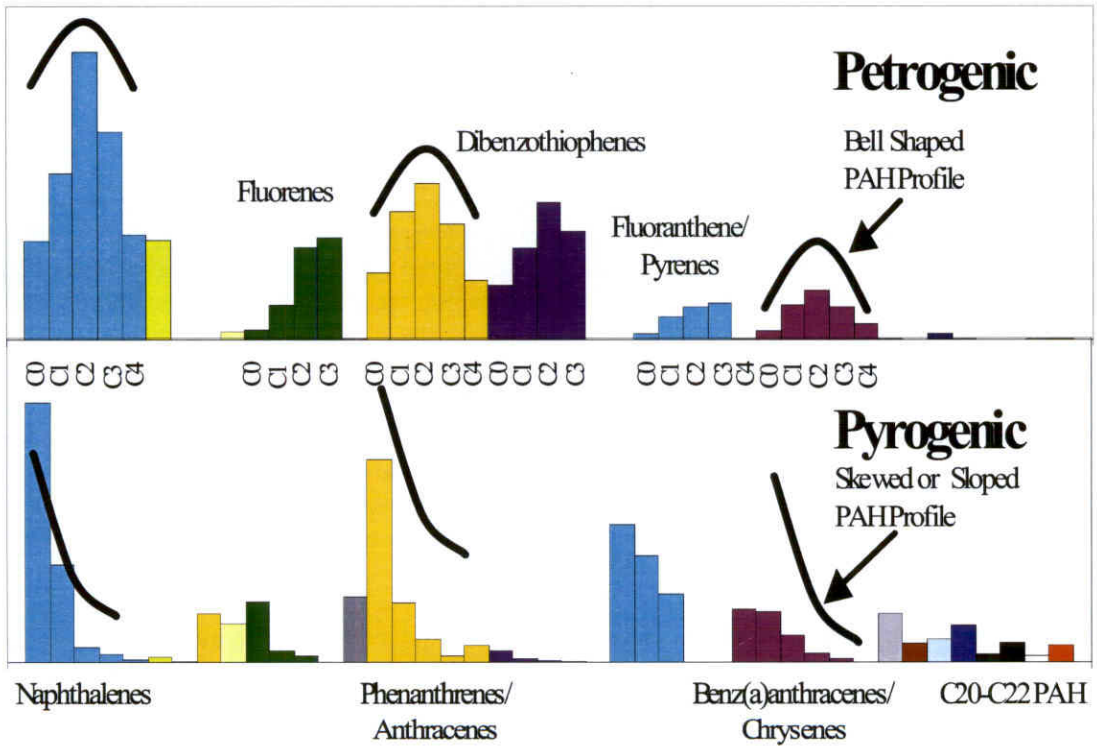

Figure 2-1. Selected PAH Analyte Profiles in Petrogenic and Pyrogenic Sources

perylene and alkyl phenanthrenes, are also formed during diagenesis of plant material (Venkatesan, 1988; Tan and Heit, 1981).

Certain PAH compounds degrade at the same rate, so that their ratios retain the initial oil signature. These ratios are termed "source" ratios, in contrast to ratios that change substantially with degradation and are termed "weathering" ratios. Ratios of C3-dibenzothiophenes/C3-phenanthrenes (C3D/C3P) and C2-dibenzothiophenes/C2-phenanthrenes (C2D/C2P) are known to be the most stable petroleum source ratios (Douglas et al., 1996).

Different sets of diagnostic ratios have been proposed for the pyrogenic source identification (Gschwend and Hites, 1981; Sicre et al., 1987; Budzinski et al., 1997; Soclo et al., 2000). The most common among these pyrogenic source ratios are Anthracene/Anthracene + Phenanthrene (AN/AN+P0), Fluoranthene/ Fluoranthene + Pyrene (FL/FL+PY), Benzo(a)anthracene/ Benzo(a)anthracene + Chrysene (BaA/BaA+C0) and Indeno(1,2,3-c,d)pyrene/Indeno(1,2,3-c,d)pyrene + Benzo(g,h,i)perylene (ID/ID+BgP) (Yunker et al., 2002; Oros and Ross, 2004; Costa and Sauer, 2005). Using these ratios, Oros and Ross (2004) concluded that PAH compounds in San Francisco estuary sediments are derived primarily from combustion sources. The possible major sources of combustion-derived PAH include fossil fuel/petroleum (gasoline, crude oil, and coal) and biomass (wood and grasses). In addition, there are minor amounts of PAH that are possibly derived from direct input of unburned fossil fuel/petroleum.

In this investigation, the evaluation based on the PAH distribution patterns and source ratios is supplemented by Principal Component Analysis (PCA; Pirouette, Version 3.02, Infometrix, Seattle, WA) of the PAH concentrations. PCA is a multivariate factor analysis method that generates new independent variables (factors) that are linear combinations of the original input variables (e.g., PAH concentrations). This method reduces the dimensionality of the dataset to a few important "principal components" (axes) that

best describe variations in the data. The first axis (1st Factor) demonstrates the most prominent trend and successive axes (Factors) demonstrate additional trends in decreasing order of importance.

The sediment samples in the database typically have concentrations that vary widely between samples. Given this variability, the raw "nominal" concentrations are normally preprocessed or "transformed" prior to analysis using PCA. This preprocessing of the data sets is done using a series of transformations that standardize the values of the original matrixes in order to remove extreme variations in concentrations between samples and between individual analytes. The standardization is done for each sample and for each analyte (variable standardization). This standardization process removes the effects of the dimensions of the absolute concentrations and all of the analytes are handled with a similar weighting in PCA. The standardization allows comparisons to be made by PCA between the samples based on the relative proportions of the different analytes and prevents the higher concentrations of some analytes or samples from skewing the trends of the new vectors produced in the analysis. In this study, the variables were log-normalized - common transformation of variables in geochemical analysis.

The primary objective of the PCA conducted for this study was to aid in the classification of the PAH in the sediments according to their chemical similarities or differences, without any pre-classification as to their nature/source(s). In this report, the results of a PCA are presented using two-dimensional factor scores and loadings plots. The scores parameter contains information about the sample patterns, whereas loadings reflect the contribution of each variable (measurement) to the sample patterns.

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3.0 RESULTS

The study area includes near-shore areas adjacent to piers and coastal installations of the former Naval Air Station (NAS) Alameda. In addition, to differentiate between NAS activities-related and other possible sources of sediment contamination, one sediment core sample was taken from a reference area south of Pier 3 in the breakwater beach (Figure 1-1) to characterize ambient background sediment contamination at a location beyond immediate impact of the pier area contamination. Complete set of analytical results for the study area samples are presented in Appendix A of the *Draft Final Remedial Investigation Report for IR Sites 20 and 24.*

3.1 Spatial Distribution and Character of TPH

The spatial distribution of TPH concentrations measured in IR Site 24 surficial (0-5 cm) sediment and core samples collected at the depth of 5-24 cm and 25-50 cm are shown in Figures 3-1, 3-2, and 3-3, respectively. Chronic low-level inputs of TPH were evident throughout IR Site 24 and reference sediments, except at station PA C-16, which exhibited elevated levels of hydrocarbon contamination. Ranges and mean values of measured TPH concentrations for IR Site 24 sediment (excluding station PA C-16) are presented in Table 3-1.

The values listed in Table 3-1 are well within the range of concentrations attributable to urban background — most urban sediments impacted by background hydrocarbons contained less than 500 mg/kg TPH (Stout et al., 2004). TPH concentrations measured in the reference core samples (15.0 mg/kg at 0-5 cm, 33.2 mg/kg at 5-25 cm, and 31.0 mg/kg at 25-50 cm) fall in the same ranges as the corresponding Pear Area sediments. No noteworthy trends or patterns in TPH concentrations were observed with depth within the study area except an apparent decrease of mean TPH concentrations in deeper interval sediments. This trend may reflect a higher flux of contamination in recent years. Alternatively, it may be due to degradation of hydrocarbon contaminants with time, or to the removal of contaminated sediments during the dredging activities.

TPH concentrations in sediment samples collected at station PA C-16 (608.2 mg/kg at 0-5 cm, 563.4 mg/kg at 5-25 cm, and 423.5 mg/kg at 25-50 cm) were approximately 5 to 100 times higher than in the rest of the study area. This station is located closest to the storm sewer outfall line J. Line J served buildings within Parcel 154 that were used as storage facilities supporting Alameda Point and Mare Island. It is suspected that potentially contaminated surface runoff may have discharged through this storm sewer system. Building 167 was an aircraft hangar that stored various acids, alkalis, solvents, resins, and heavy metals in five aboveground dip tanks near the south wall of the building (TtEMI, 2000).

The chromatographic characteristics of the extractable TPH in most of the IR Site 24 sediment samples studied were generally similar. An example is presented in Figure 3-4 (A), which shows the chromatogram of the extractable hydrocarbons from the sediment sample collected at Station PA C-1, 5-25 cm. The chromatogram is characterized by a minor, broad UCM hump in the C_{12} to C_{40} retention time window with a number of resolved peaks superimposed over the UCM signal. The most abundant resolved peaks on the chromatogram represent internal standards (IS) that were added to all the samples prior to analysis. In addition, some of the less abundant peaks were tentatively identified as PAH compounds, including fluoranthene and pyrene, common pyrogenic PAH. The chromatographic features of the PA C-1, 5-25 cm (and most other) sediment are generally consistent with those impacted by urban runoff/fallout, which would be expected to contain PAH related to combustion-derived particulates (soot) and residual petroleum (UCM) washed from surfaces during rain events (Section 1.3).

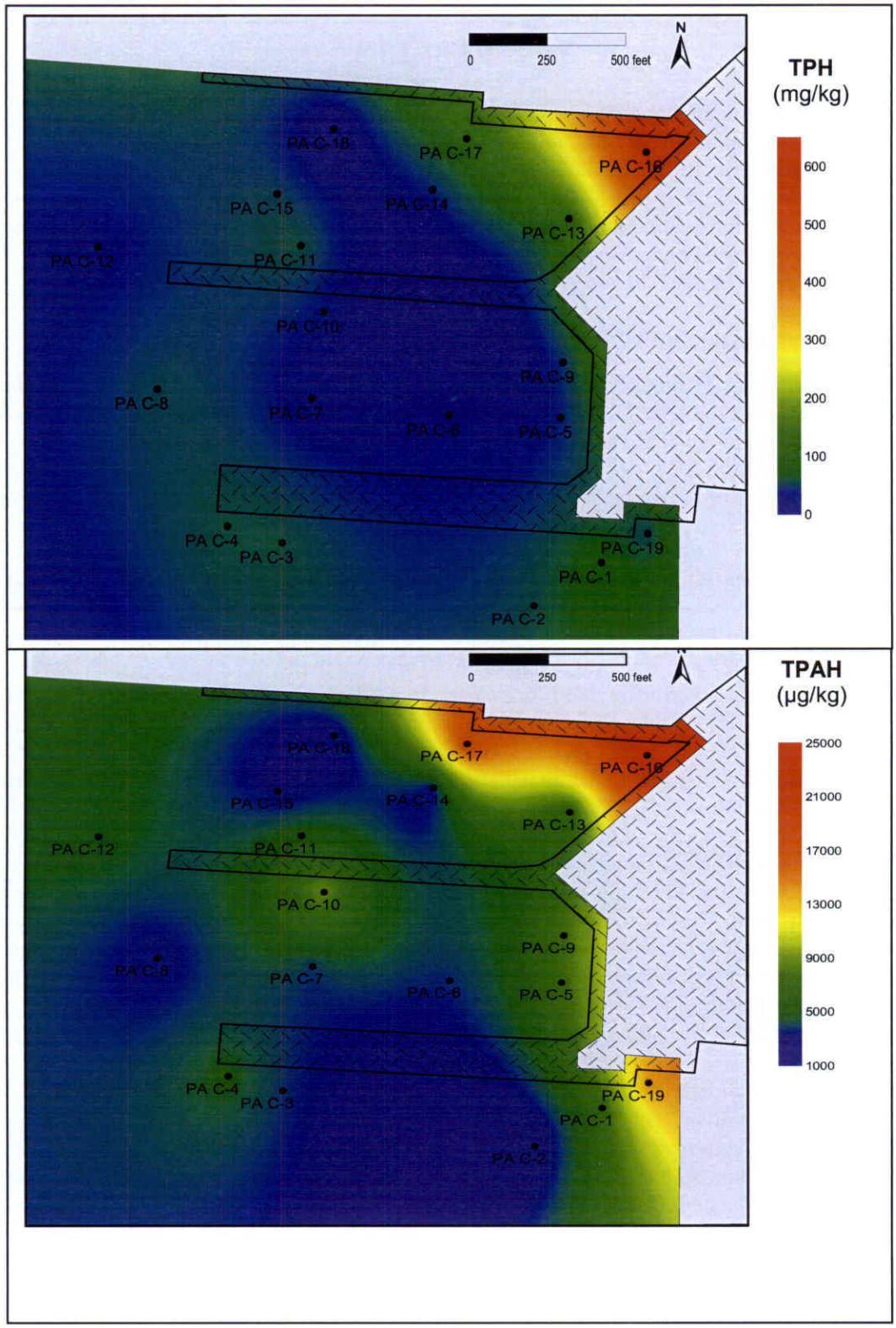

Figure 3-1. Spatial Distribution of TPH and TPAH in IR Site 24 Sediment at 0-5 cm Interval

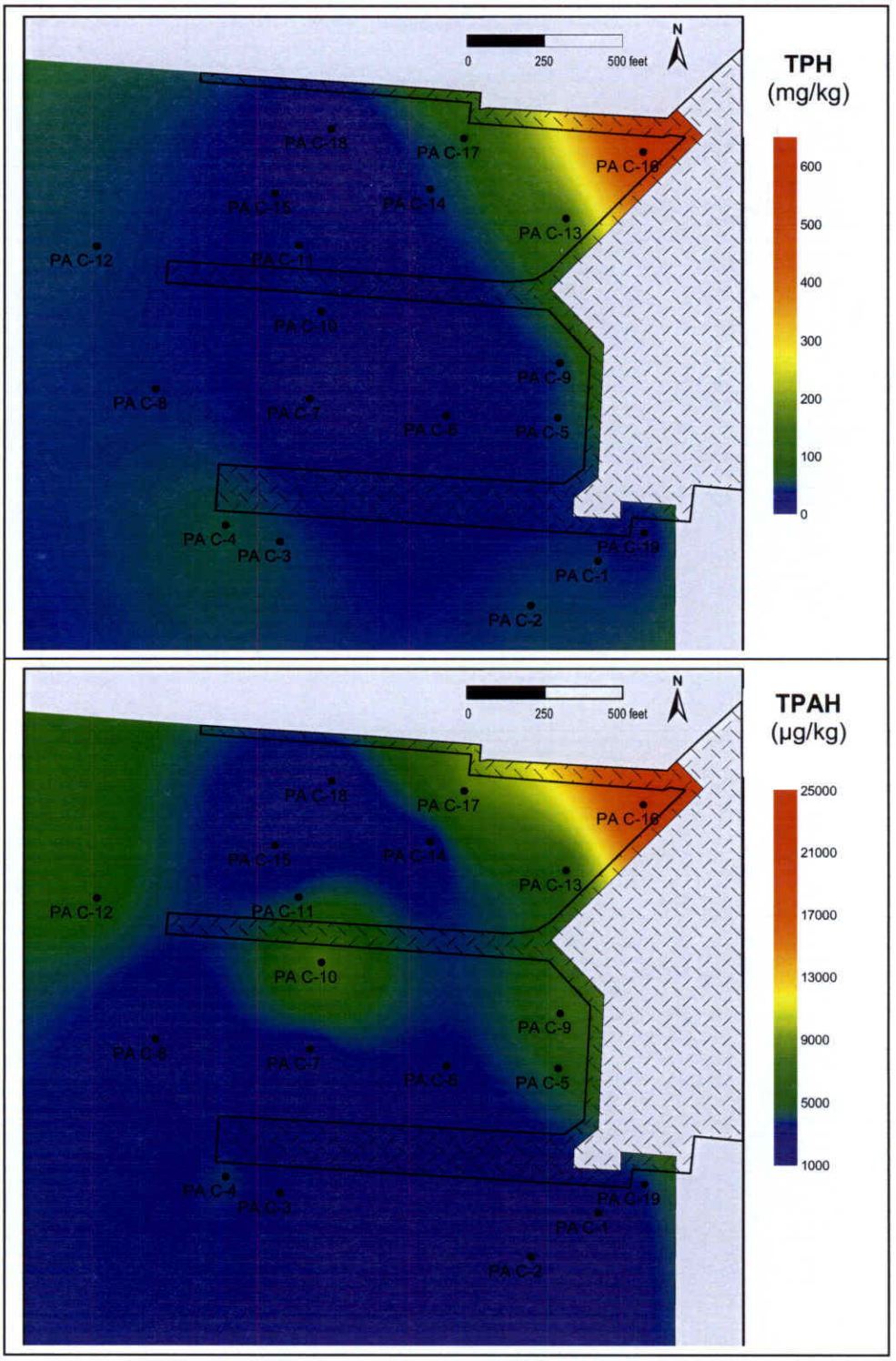

Figure 3-2. Spatial Distribution of TPH and TPAH in IR Site 24 Sediment at 5-25 cm Interval

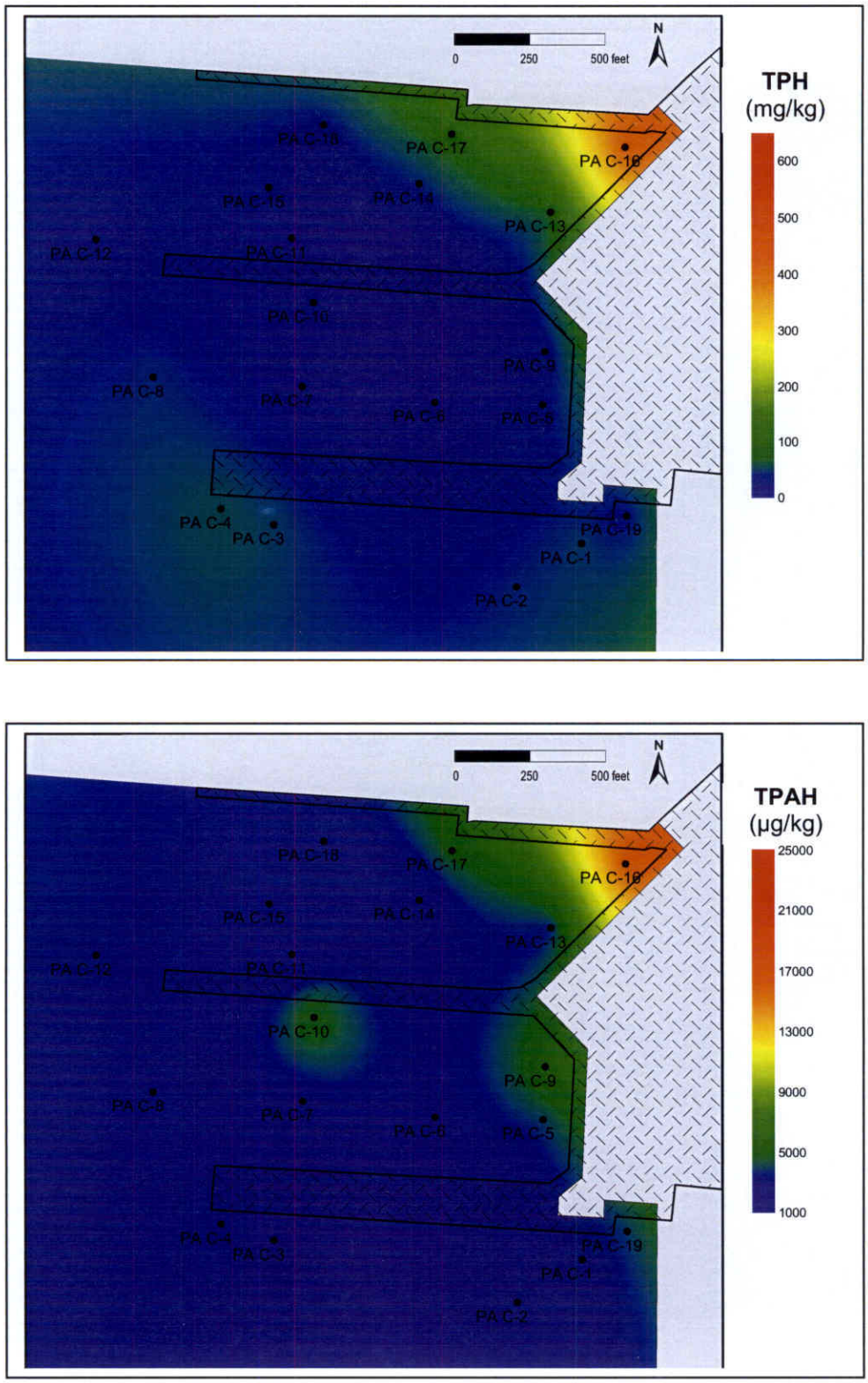

Figure 3-3. Spatial Distribution of TPH and TPAH in IR Site 24 Sediment at 25-50 cm Interval

Table 3-1. TPH Summary Statistics (excluding station PA C-16)

Sediment Depth (cm)	Number of Stations	Range (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)
0 - 5	18	16.9 – 101	53.8	21.9
5 - 25	18	5.2 – 139	45.0	26.9
25 - 50	18	17.4 – 87.4	39.0	17.1

Sediment samples collected at Station PA C-16 (the highest TPH level among the samples analyzed) exhibits chromatographic characteristics (Figure 3-4 (B)) suggesting a noticeably higher contribution of unburned petroleum. This conclusion is based on a more pronounced bi-modal UCM signal typical of heavy petroleum products (e.g., lubricating oil) and the fact that in addition to pyrogenic PAH, some of the resolved peaks in the C_{21} to C_{38} retention time window were tentatively identified as petroleum biomarkers. Both features are consistent with petrogenic sources of contamination. It should be noted that Station PA C-16 is located closest to Site 13 that housed former Pacific Coast Oil Refinery. Hydrocarbon contamination related to the refinery activities may have contributed to elevated level of TPH with petrogenic signature at this location.

The chromatogram of a treated wood piling sample from Pier 1 (Figure 3-4 (C)) shows characteristics typical of the coal-derived product, creosote. It does not exhibits the UCM hump and contains relatively abundant peaks tentatively identified as parent PAH compounds, phenanthrene, anthracene, fluoranthene, pyrene, benzo(j,k)fluoranthene, and benzo(e)pyrene. More detailed assessment as to the nature of the extractable hydrocarbons (TPH and PAH) in the bulk of the sediments studied is provided in the next sections.

3.2 Spatial Distribution of Total PAH Concentrations

The spatial distribution of Total PAH (TPAH) concentrations in IR Site 24 sediments at 0-5 cm, 5-25 cm and 25 – 50 cm are shown in Figures 3-1, 3-2 and 3-3, respectively. In general, the distribution is quite uniform except for a "hot spot" at Station PA C-16 in the vicinity of outfall line J. A noticeable increase in TPAH concentration is also observed in surficial samples at Station PA C-19 (Figure 3-1), suggesting a possibility of a point-source in the vicinity of this station. There is also a slight elevation of PAH concentrations in the surficial sediment along the quay wall (Figure 3-1). Since this is the undredged area, the sediment could still retain historical contamination. Alternatively, the higher PAH content along the quay wall may be related to the storm sewer outfall line L that discharges between Piers 2 and 3.

Ranges and mean values of measured TPAH concentrations for IR Site 24 sediment (excluding station PA C-16) are presented in Table 3-2. The examination of the data in Table 3-2 demonstrates that TPAH concentrations in IR Site 24 sediment exceed concentrations measured in the reference core sample — 1,715.4 μg/kg (0-5 cm), 1,937.5 μg/kg (5-25 cm), and 1,351.0 μg/kg (25-50 cm). The TPAH concentrations in IR Site 24 sediment also exceed surficial TPAH concentrations measured in reference areas throughout San Francisco Bay that ranged from 407 μg/kg to 2,482 μg/kg, with a mean value of 1,517 (Stout et al., 2004). TPAH concentrations in only two surficial (0-5 cm) IR Site 24 sediment samples fall in this range. This comparison suggests that anthropogenic activities in the area contributes to the PAH contamination of IR Site 24 sediment above a typical San Francisco Bay background level. Data in Table 3-2 also reveal a general tendency of decreasing TPAH concentration with depth. This trend may reflect a recent increase in the PAH input, similar to that observed for TPH (Section 3.1).

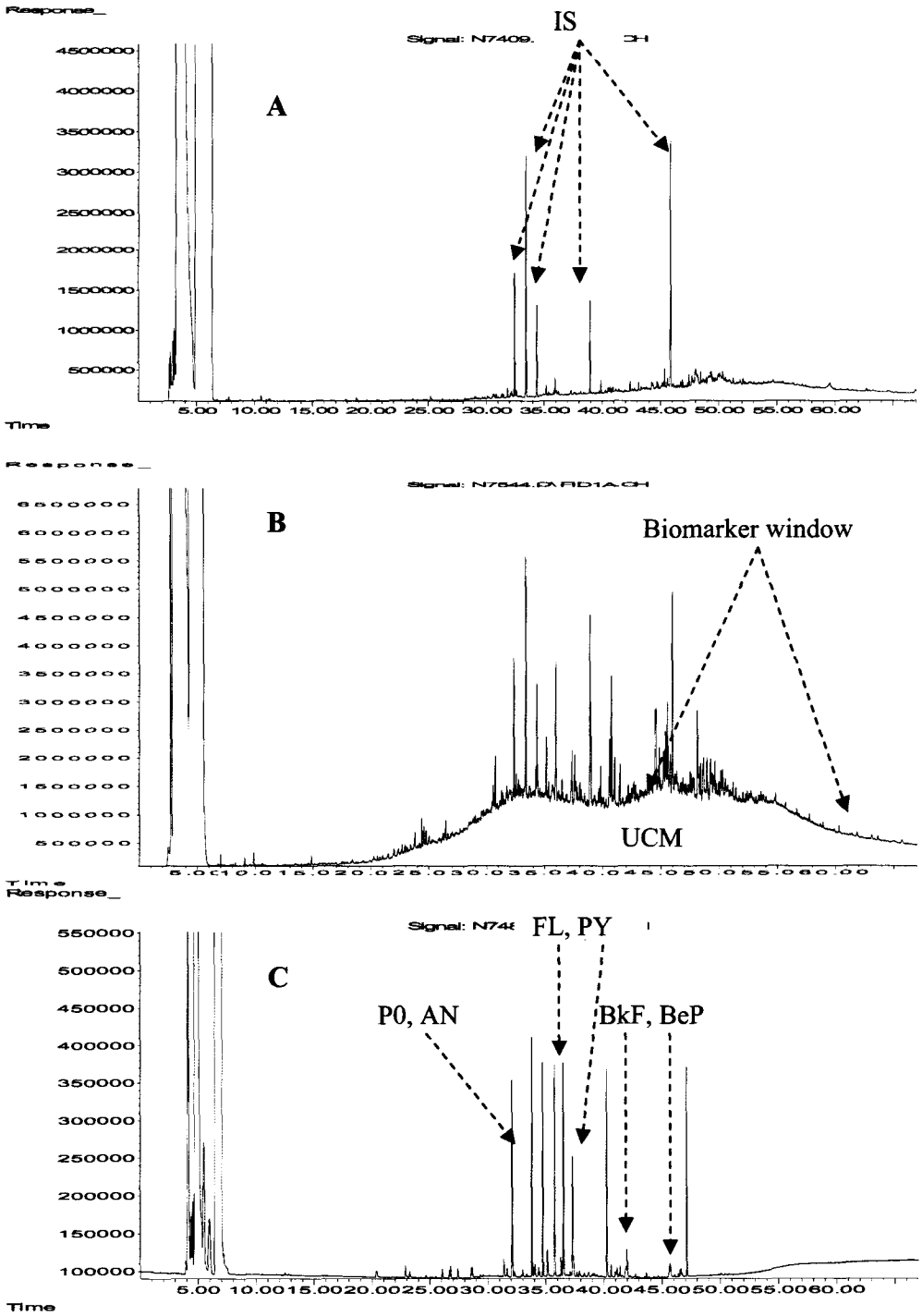

Figure 3-4. Gas Chromatograms of Selected IR Site 24 Samples.

(A) – Sediment sample PA C-1, 5 – 25 cm;
(B) – Sediment sample PA C-16, 5- 25 cm;
(C) – Pier 1 treated wood piling sample

Table 3-2. TPAH Summary Statistics (excluding Station PA C-16)

Sediment Depth (cm)	Number of Stations	Range (µg/kg)	Mean (µg /kg)	Standard Deviation (µg /kg)
0 - 5	18	2,220 - 18,000	6,420	4,140
5 - 25	18	2,020 - 8,280	4,110	1,900
25 - 50	18	1.110 - 5,950	3,060	1,430

The PAH concentrations in sediments were also compared against risk-based sediment screening benchmarks, i.e., effects range-low (ER-Ls) and ER-Ms (Long et al., 1995). The comparisons were performed for low (LPAHs) and high (HPAHs) molecular weight PAHs by summing concentrations for those compounds identified in each classification. Results of the comparison presented in Table 3-3 show that both LPAH and HPAH concentrations measured in IR Site 24 sediment samples do not exceed corresponding ER-M values. LPAH concentrations in 52 sediment samples analyzed were below the ER-L, and 14 fall in the range between ER-L and ER-M. HPAH concentrations in 39 samples were below the ER-L, and 27 fall in the range between ER-L and ER-M. Sediment concentrations below the ER-L are interpreted as being "rarely" associated with adverse effects. Concentrations between the ER-L and ER-M are "occasionally" associated with adverse effects, and concentrations above the ER-M are "frequently" associated with adverse effects (Long et al., 1995).

Table 3-3. TPAH Comparison with Screening Benchmarks

Sediment Depth (cm)	LPAH Range (µg/kg)	ER-L - ER-M (µg/kg)	HPAH Range (µg /kg)	ER-L - ER-M (µg /kg)
0 - 5	124 – 2109	552 - 3160	669 - 7970	1700 - 9600
5 - 25	136 - 996	552 - 3160	744 - 8296	1700 - 9600
25 - 50	73 - 645	552 - 3160	433 - 6163	1700 - 9600

3.3 Sources of PAH Contamination

3.3.1 Individual PAH Distribution Patterns

Background concentrations of PAHs are ubiquitous in San Francisco Estuary sediments. Low concentrations of naturally occurring background PAHs, derived from natural fires, natural oil-seeps, eroded shale/coal, and early diagenetic processes, pre-date modern anthropogenic activities. However, the prolific use of fossil fuels by human civilization over the last 200 years has altered the loading of hydrocarbons to the environment. The resulting residues and combustion byproducts from these fuels have contributed a modern "anthropogenic background" to sediments in both urban and remote locations (Oros and Ross, 2004).

General origin (petroleum- or combustion-related) of PAH contaminants is typically identified by evaluation of distribution patterns of individual hydrocarbons and selected parameters (Section 2.3). Analysis of aromatic compounds in IR Site 24 sediments revealed the presence of a full suite of 2-, 3-, 4-, 5- and 6-ring PAH compounds with similar distribution patterns in most of the samples analyzed. Representative distribution characteristics observed in IR Site 24 sediment samples are shown in Figure 3-5(A). For the comparison purposes, PAH distribution pattern in one of the suspected sources of sediment

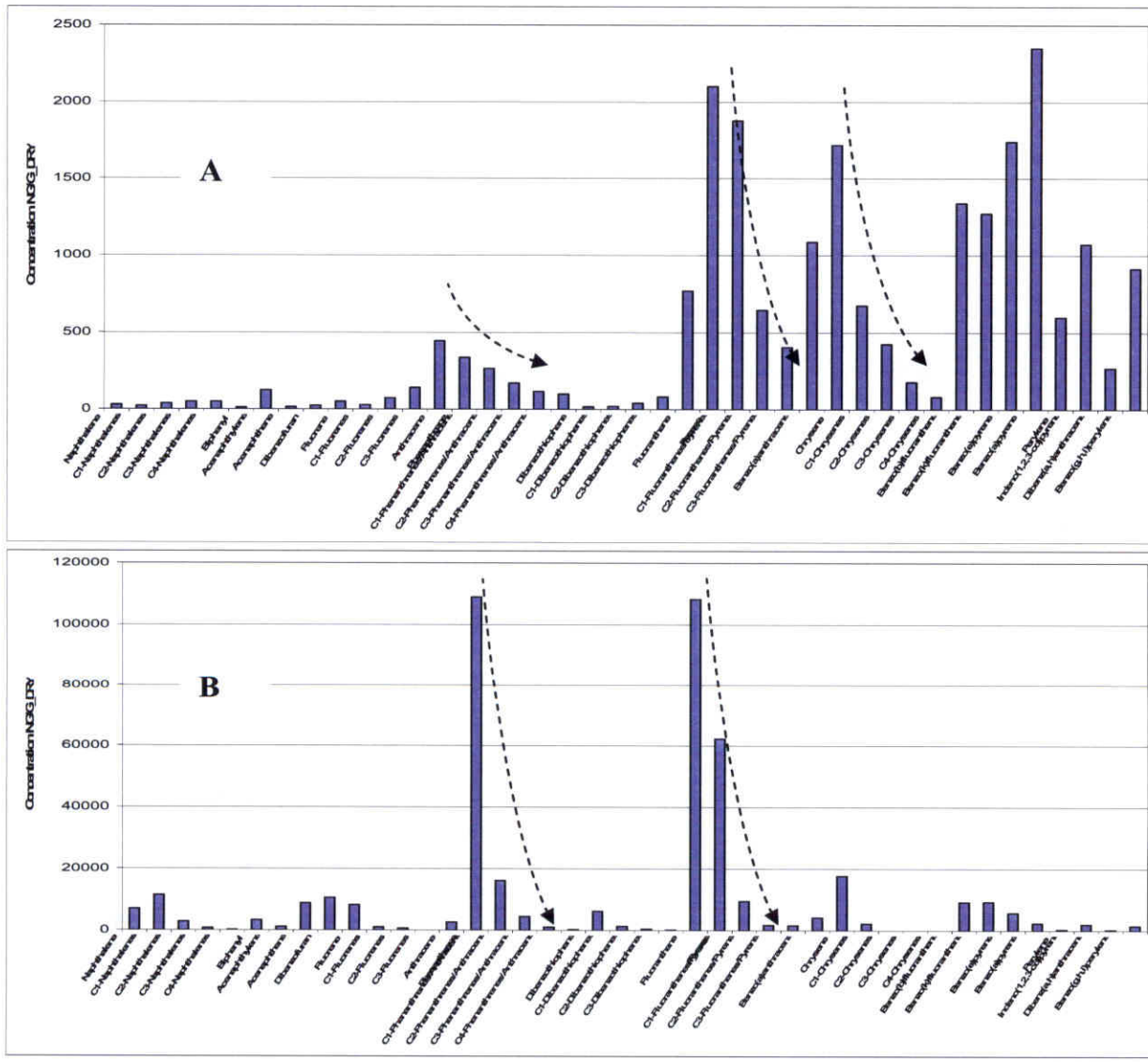

Figure 3-5. PAH Distribution Patterns in Station PA C-1 (5-25 cm) Sediment Sample (A) and Wood Piling Sample from Pier 1 (B)

contamination, scraping of the Pier 1 wood piling, is shown in Figure 3-5(B). The PAH histogram of Sample PA C-1 (5-25 cm) shown in Figure 3-5(A) is dominated by heavier 4-, 5- and 6-ring PAH compounds and by descending distribution patterns of major homologous series, C_0-PAH >> C_1-PAH > C_2-PAH > C_3-PAH > C_4-PAH. Both of these characteristics are typical of pyrogenic sources. The wood piling sample is enriched in anthracene/phenantherene (3-ring) and fluoranthene/pyrene (4-ring) homologous series with the descending distribution patterns (Figure 3-5(B)). The appearance of the wood piling PAH histogram is characteristic of a moderately weathered coal distillation product, such as creosote.

3.3.2 PAH Source Ratio Analysis

A source ratio-based approach was employed in this study to further differentiate among the different potential sources of PAH contamination in IR Site 24 sediment. The following PAH source ratios were used in this study: Anthracene/Anthracene + Phenanthrene (AN/AN+P0), Fluoranthene/ Fluoranthene +

Pyrene (FL/FL+PY), Benzo(a)anthracene/Benzo(a)anthracene + Chrysene (BaA/BaA+C0) and Indeno(1,2,3-c,d)pyrene/Indeno(1,2,3-c,d)pyrene + Benzo(g,h,i)perylene (ID/ID+BgP).

Based on the PAH source ratio measurements compiled by Yunker et al. (2002), AN/AN+P0 ratio <0.10 indicates dominance of petroleum and >0.10 indicates dominance of combustion sources; FL/FL+ PY ratio <0.40 is typical of petroleum, 0.40-0.50 — petroleum combustion, and >0.50 — combustion of coal, grasses and wood; BaA/BaA+C0 ratio <0.20 characteristic of petroleum, 0.20-0.35 — petroleum and combustion, and >0.35 — combustion; and ID/ID + BgP <0.20 indicative of petroleum, 0.20-0.50 — petroleum combustion, and >0.50 — combustion of coal, grasses and wood.

To compare PAH source ratios calculated for the sediment samples from IR Site 24 to the source-specific values listed above, the pair ratios AN/AN+P0, BaA/BaA+C0, and ID/ID + BgP were plotted against the FL/FL+ PY ratio. The resulting cross-plots that show how IR Site 24 sediment samples distribute against possible PAH sources are presented in Figure 3-6.

The evaluation of the cross-plots in Figure 3-6 demonstrates that three reference sediment samples exhibit source ratios values indicative of the predominantly petroleum combustion source of PAH, regardless of the sample depth interval. This is consistent with the conclusion reported by Oros and Ross (2004) that most of the PAH contamination in San Francisco estuary is derived from combustion of petroleum products. It also suggests that the reference area was not directly affected by IR Site 24 activities.

Data in Figure 3-6 also show that based on the FL/FL+PY ratio (widely used in differentiating combustion and petroleum sources), PAH compounds in most of the surficial IR Site 24 sediment samples are predominantly combustion-related, whereas most of the 25-50 cm interval sediment samples contain a mixed petroleum-derived PAH component. The intermediate depth interval (5-25 cm) samples contain PAH originating from both petroleum and combustion sources. Combustion of biomass and coal appears to be possible major pyrogenic sources, while combustion of petroleum products is a possible minor contributor. Unburned petroleum products such as kerosene and diesel fuels are also possible sources of PAH, particularly for deeper interval sediments. Kerosene was widely used as a fuel (JP-5) for Navy turbojet aircraft engines, suggesting that one of the possible sources of unburned petroleum in IR Site 24 sediment could be historical Navy operations at the former NAS Alameda. However, petrogenic PAH contamination related to the former Pacific Coast Oil Refinery activities at Site 13, as well as runoffs containing civilian-use hydrocarbon fuel and lubricating oil are equally possible sources of unburned petroleum.

The other source ratios plotted in Figure 3-6 indicate that biomass (wood and grass) and coal combustion are major contribution sources of PAH in the surficial sediment, whereas both petroleum and biomass combustion sources contribute to PAH contamination in deeper interval sediments. Location of the wood piling samples on the cross-plots in Figure 3-6 suggests that creosote used for the piling treatment possibly introduces merely minor amounts of PAH and only to surficial sediment.

3.3.3 Principal Component Analysis

To evaluate and interpret major factors that are responsible for the observed similarities and differences in chemical characteristics at different parts of IR Site 24 site contamination, a multivariate technique, PCA (Section 2.3), was applied to the database containing all individual PAH concentrations obtained in this study. The purpose of PCA is to determine whether the samples analyzed are related and what (Sample ID-A denotes 0-5 cm interval; ID-B denotes 5-25 cm interval; ID-C denotes 25-50cm interval) characteristics make them similar or different. It also assists in evaluation of the specific processes responsible for the variation in chemical properties among the samples analyzed.

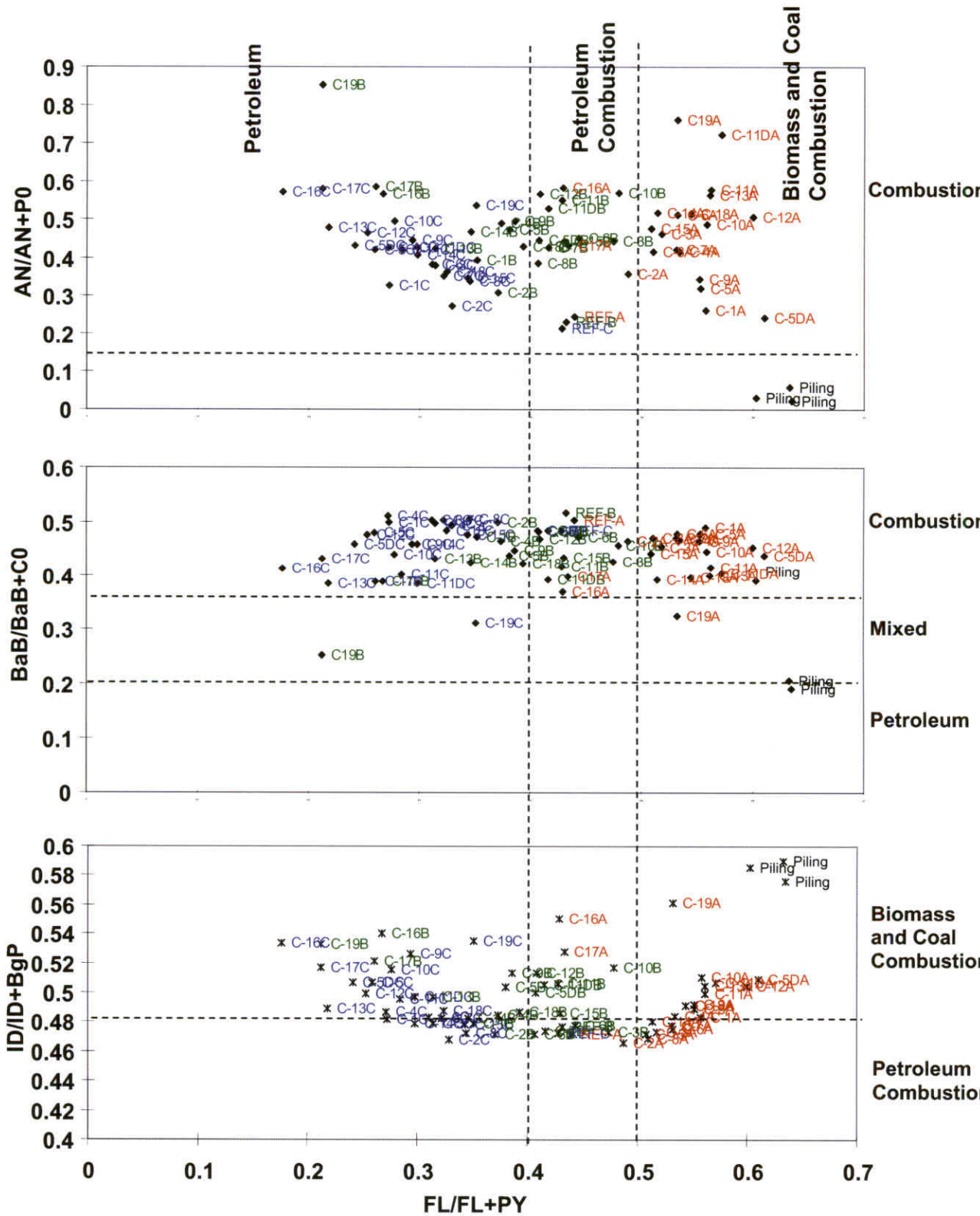

Figure 3-6. Cross-Plots of PAH Source Ratios

(A) AN/AN+P0 vs. FL/FL+ PY; (B) BaA/BaA+C0 vs. FL/FL+ PY;
(C) ID/ID + BgP vs. FL/FL+ PY

PCA produces a distribution of samples in a space of n dimensions, where n is the number of variables (analytes). The 1st Principal Component (Factor) is the axis that runs the length of the analyte space in which each samples can be projected. The direction of this axis is such that the variance of the projections is maximized. The 2nd Factor is another axis orthogonal to the first, defining the second variance, while the first two axes define a two-dimensional plane. These planes are called factor graphs and are the final product of PCA. The Euclidian distances between the points plotted for the samples represent the variance captured in each Factor vector. In other words, the samples found near each other on the graphs will be those with similar chemical characteristics, while the more distant "outliers" will have different chemical compositions.

Results of the PCA application to the PAH dataset are shown in Figure 3-7 (Scores plot). The scores plot exhibits three distinct clusters. One cluster consists of the wood piling samples, while two other clusters are composed of sediment samples collected at different locations of IR Site 24. From the distance separating the wood piling and sediment samples, it is quite obvious that these two types of samples exhibit notably different chemical signature (fingerprint). This suggests that creosote from the treated wood piling layer covering perimeter of the piers does is not a significant contributor to the PAH contamination in the study area.

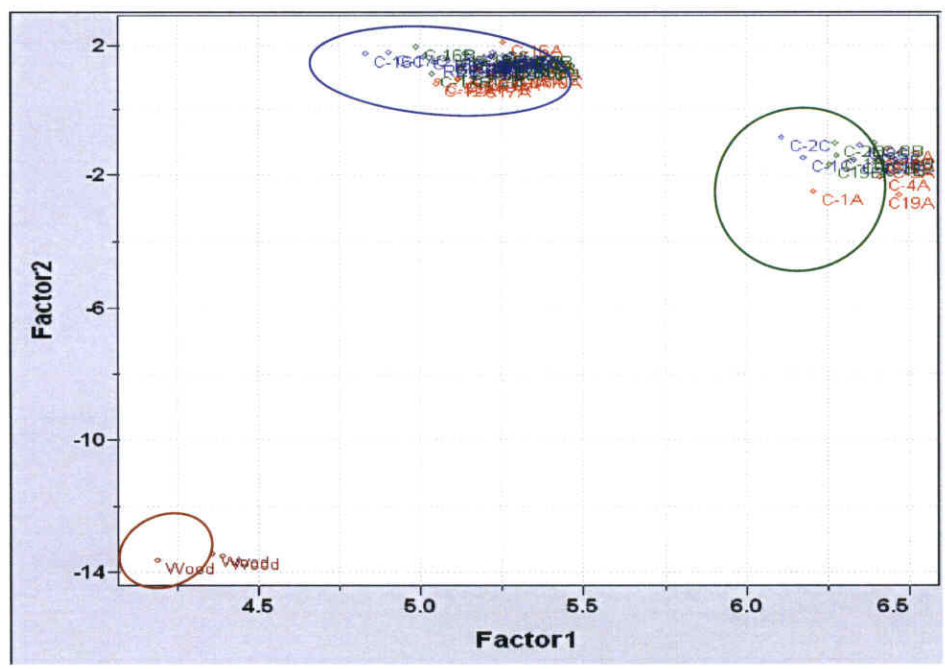

Figure 3-7. PCA Scores Plot for the Full PAH Dataset

To increase the resolution and evaluate relationships among the sediment samples, the same PCA procedure was applied to the partial dataset without the wood piling samples. Results of this analysis are shown in Figure 3-8. The factor scores plot for two principal components shown in Figure 3-8 accounts for 86% and 11%, of the sample variability, respectively, which indicates that most of the sample variance was accommodated in the 1st factor.

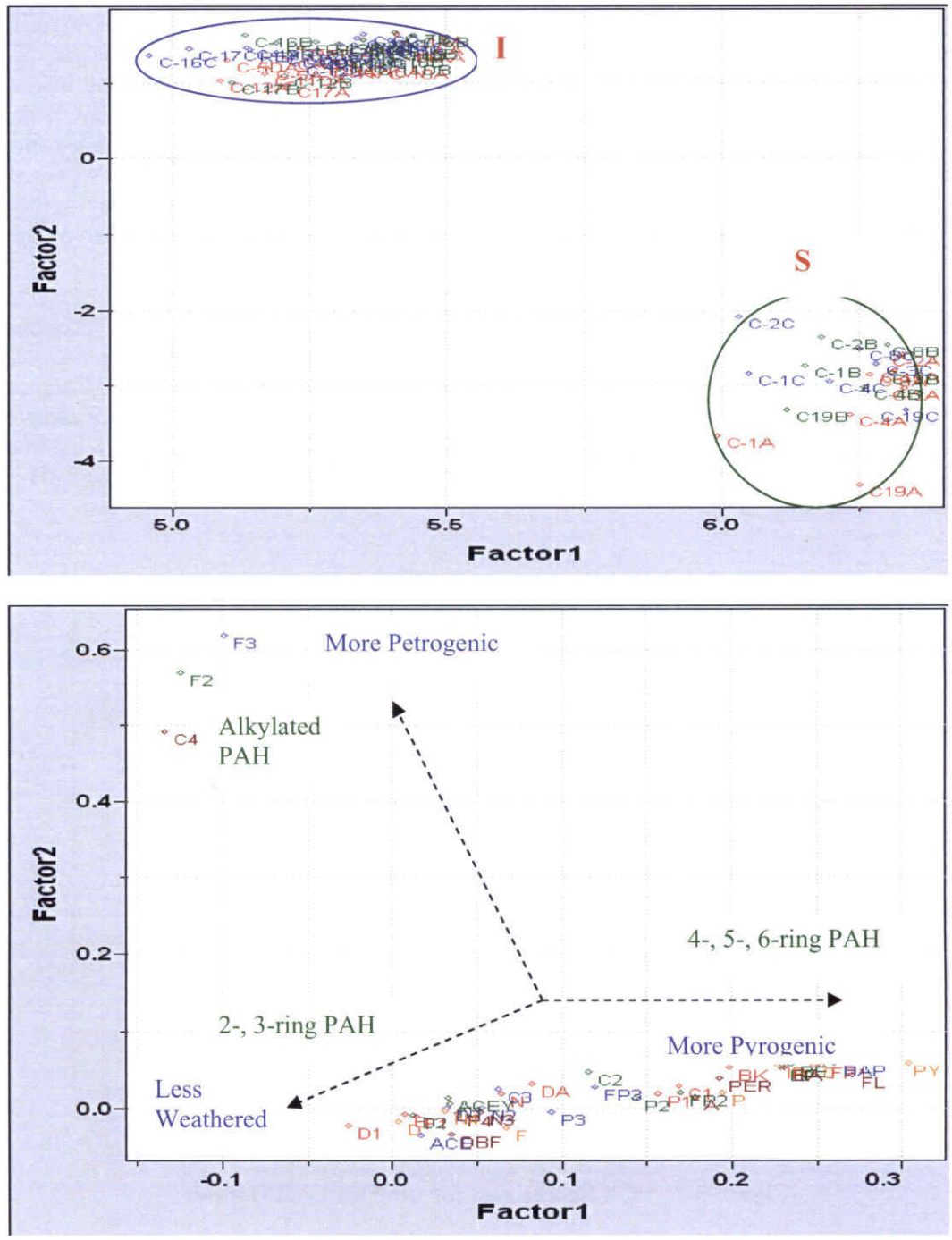

Figure 3-8. PCA Scores (A) and Loadings (B) Plots for the Partial PAH Dataset

The scores plot in Figure 3-8(A) exhibits two distinct clusters. The first cluster (I) consists of all the inner IR Site 24 sediment samples and the reference sediment samples, which exhibit a close similarity in their chemical fingerprint. Assuming that the hydrocarbon distribution in the inner IR Site 24 sediment is influenced by the storm sewer outfalls, this similarity suggests that the impact of the outfalls also extends to the reference area. The general fingerprint of the PAH contamination in the inner IR Site 24 sediment

appears to be similar to that expected in the typical urban background. The second cluster (S) observed in Figure 3-8(A) includes sediment samples collected south of Pier 3. Hydrocarbon contamination of sediment in this area appears to be relatively uniform and its fingerprint appears to be different from contamination in the inner IR Site 24 sediment.

The loadings plot in Figure 3-8(B) provides information on chemical components of contamination that make samples similar and components that draw the samples apart. Based on the evaluation of the loadings characteristics, sediment samples in cluster S are characterized by the higher molecular weight PAH (4-, 5-, and 6-ring compounds) typical of weathered pyrogenic sources. Sediment samples in cluster I are characterized by lower molecular weight pyrogenic (parent) PAH compounds typical of less weathered pyrogenic inputs, and also by alkylated homologues indicative of petrogenic sources of contamination.

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4.0 CONCLUSIONS

Historical activities in the near-shore area adjacent to piers and coastal installations of the former Naval Air Station Alameda have contributed to the PAH contamination of sediment at Alameda Point IR Site 24. Results of this study demonstrated that general levels of hydrocarbon contamination in IR Site 24 exceed typical background levels of the San Francisco Bay sediments. The highest level of contamination is observed along the quay wall and particularly in the vicinity of Outfall J. However, most of the sediment samples exhibit characteristics consistent with a typical urban background. Because IR Site 24 sediment was periodically dredged, some of the historical contamination related to ship services activities and storm drains has been obviously removed. The following findings support the above conclusion:

- Chromatographic characteristics of hydrocarbon contamination in IR Site 24 sediments are generally consistent with those impacted by urban runoff/fallout. The highest level of contamination was observed in the vicinity of the storm sewer outfall line J. Line J served buildings within Parcel 154 that were used as storage facilities supporting Alameda Point and Mare Island. Contaminated surface runoffs may have discharged through this storm sewer system. In addition, historic contamination related to the former refinery activities at Site13 may have contributed to elevated level of hydrocarbon at this location.

- Measured TPAH concentrations in IR Site 24 sediments do not exceed ER-M benchmark screening values. LPAH concentrations in 52 sediment samples were below the ER-L, and 14 fall in the range between ER-L and ER-M. HPAH concentrations in 39 samples were below the ER-L, and 27 fall in the range between ER-L and ER-M.

- PAH distributions in IR Site 24 sediment samples exhibit characteristic descending patterns of major homologous series, which is typical of predominantly combustion-related (pyrogenic) sources of hydrocarbon contamination. The waste streams related to the former MGPs located in Oakland, across the inner harbor from Todd Shipyards, may be responsible for this dominant background signature.

- The evaluation of the specific PAH source ratios widely used in differentiating combustion and petroleum sources demonstrated that PAH compounds in most of the surficial IR Site 24 sediment samples are predominantly combustion-related, whereas deeper interval sediment samples contain PAH originating from both petroleum and combustion sources. Combustion of biomass and coal appears to be possible major pyrogenic sources, while combustion of petroleum products is a possible minor contributor.

- Source ratios and PCA parameters of IR Site 24 wood piling samples suggest that creosote used for the piling treatment introduces relatively small amounts of PAH and primarily to surficial sediment.

- Based on the PCA evaluation, sediment samples collected south of Pier 3 exhibit a higher proportion of heavier (4-, 5-, and 6-ring) PAH compounds typical of the weathered pyrogenic sources. PAH contamination in the inner IR Site 24 sediment appears to represent less weathered pyrogenic and petrogenic sources.

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APPENDIX C

BACKGROUND COMPARISON TEST

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This appendix contains additional information to support the data comparison to background concentrations. This appendix is organized in the following way.

C.1 Tier 2 Screening Refinement C-1
C.2 Distribution Shift Tests C-1
C.3 IR Site 20 (Oakland Inner Harbor) C-2
C.4 IR Site 24 (Pier Area) C-3
References C-4

The following tables are presented after the text.

Table C-1. Distribution Shift Test Results for Inorganics from Combined Years at IR Site 20 (Oakland Inner Harbor) C-5
Table C-2. Distribution Shift Test Results for Inorganics from Combined Years at IR Site 24 (Pier Area). C-7
Table C-3. Distribution Shift Test Results for Inorganics from 2005 at IR Site 20 (Oakland Inner Harbor). C-9
Table C-4. Distribution Shift Test Results for Inorganics from 2005 and 2006 at IR Site 24 (Pier Area). C-11
Table C-5. Distribution Shift Test Results for Organics from Combined Years at IR Site 20 (Oakland Inner Harbor). C-13
Table C-6. Distribution Shift Test Results for Organics from Combined Years at IR Site 24 (Pier Area). C-15
Table C-7. Distribution Shift Test Results for Organics from 2005 at IR Site 20 (Oakland Inner Harbor). C-17
Table C-8. Distribution Shift Test Results for Organics from 2005 and 2006 at IR Site 24 (Pier Area). C-19

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C.1 Tier 2 Screening Refinement

The Tier 2 screening refinement step involves comparison of the concentration distributions observed on site to ambient distributions using distribution shift tests. It corresponds to Step 3a of the Navy's Ecological Risk Assessment (ERA) process. The steps involved in this process are described below:

1. Reach agreement on an adequate data set to represent ambient or background conditions, and prepare this data set in the same manner as the site data.

2. If adequate data are present for both the site and ambient conditions, perform distribution shift tests as per Navy guidance, i.e., the t-test, Gehan test, quantile test and slippage test (United States Department of the Navy [DON], 1999). If one or more tests fail, retain for full evaluation in the ERA. For constituents where all tests pass (we conclude they are within the ambient), consider the potential risk due to ambient concentrations in the uncertainty analysis of the risk characterization step.

A brief description of the distribution shift test methods and results are presented in the following paragraphs. Additionally, a visual review of the range of concentrations between site and ambient and/or reference concentrations using the box plots provided in Appendix A is summarized.

C.2 Distribution Shift Tests

Surface sediment chemistry results for the offshore areas were compared to data from San Francisco Bay ambient locations to determine if site-specific chemical concentrations were higher than ambient levels in San Francisco Bay. The data used to represent ambient conditions in San Francisco Bay were collected as part of the Bay Protection and Toxic Hotspot Cleanup Program (BPTCP) and the San Francisco Estuary Institute (SFEI) Regional Monitoring Program (RMP). All available sediment chemistry results from 1993 through 1997 from stations classified as ambient (RWQCB, 1998) were used. For chemicals that were not analyzed by the RMP or BPTCP, results were used from sediment samples collected at ten San Francisco Bay reference stations for the Navy's 1998 Alameda Point ERA (TtEMI, 1998) and the Navy's Hunter's Point Shipyard Validation Study (VS) (Battelle et al., 2005).

Distribution shift tests were conducted to statistically compare the data from each offshore site to the distribution of ambient concentrations. Each distribution shift test yielded a test statistic and an associated significance level (also known as a p-value). The significance level is the probability that the test statistic would be as large or larger than the one produced if the two data sets were from the same distribution (i.e., were both from the ambient distribution). A small significance level (i.e., <0.05) indicates that it is not likely that two given data sets come from the same distribution. Four distribution shift tests were used: the *t*-test, Gehan test (same as the Wilcoxon Rank Sum test with a robust ranking procedure to accommodate nondetects at multiple detection limits), quantile test and slippage test. The t-test and Gehan test are best suited for assessing complete shifts (of central location) in the distributions. The t-test test evaluates differences between two population means and the Gehan test evaluates differences between two population medians. The quantile test and slippage test are better suited by assessing partial shifts, (i.e., a shift of a subset of the site results to larger concentrations). The quantile test compares the relative proportions of site and ambient concentrations that are in the largest 20%, that is, larger than the combined 80th percentile. A slippage test is used to determine whether the number of site concentrations larger than the maximum ambient concentration is statistically significant. The t-test is only appropriate when the populations being compared are either both normal or log-normal. The other three tests are nonparametric and applicable to any distribution. The tests are not conclusive for cases where either the site data or ambient data have a detection rate of less than 50%. Distributions of site data and San Francisco Bay ambient data for most detected chemicals are summarized in box plots included in

Appendix A. The distribution shift tests provide statistical significance to the differences that can be seen in the box plots.

Ambient inorganic concentrations were influenced by grain size; therefore, ambient stations having less than 40% fines were categorized as "coarse" and with 40% or more fines as "fine" (RWQCB, 1998). Distribution shift tests for inorganic chemicals were based on grain size to the extent possible. The sample locations in 1997 at Installation Restoration (IR) Site 24 and in 2001 at IR Site 20 did not analyze nor report grain size results. In order to include all site samples in a comparison and to accommodate the intended grain size distinction, the tests were performed multiple ways. Identified fine grain samples from the site are compared to ambient fine grain results, identified coarse grain samples from the site are compared to ambient coarse grain results, the combined set of all site samples are compared to the combined set of ambient results. The distribution shift test results for inorganic chemicals based on results from all years are listed in Table C-1 (IR Site 20) and C-2 (IR Site 24).

In addition to the distribution tests for the combined set of results for all years, the distribution tests were performed in the same manner on the data from 2005 (IR Site 20) or data from 2005 and 2006 (IR Site 24) to see if the more recent data would support the same conclusions. The results of the distribution shift tests on recent (2005 or 2005/2006) inorganic chemical data are listed in Table C-3 (IR Site 20) and C-4 (IR Site 24).

The distribution shift test results for organic chemicals based on results from all years are listed in Table C-5 (IR Site 20) and C-6 (IR Site 24). The tests were performed comparing the combined set of site samples to the combined set of ambient results. The organic chemical totals (sums of analytes within a suite) are based on sums that use half detection limits for nondetects. Due to the higher detection limits and lower detection rates observed in samples collected prior to 2005, the majority of comparisons for organic chemicals resulted in no conclusion. To take advantage of lower detection limits obtained in subsequent to 2005, the tests were also performed on recent data. The distribution shift test results for organic chemicals based on results from 2005 are listed in Table C-7 (IR Site 20) and C-8 (IR Site 24).

Compounds that failed any of the distribution shift tests or that could not be evaluated were carried forward as Tier 2 contaminants of potential ecological concern (COPECs) for evaluation in the baseline ecological risk assessment (BERA).

A general summary of the findings based on background comparison tests follows in separate paragraphs for IR Site 20 and IR Site 24.

C.3 IR Site 20 (Oakland Inner Harbor)

Results of background tests for inorganic chemicals at IR Site 20 are presented Tables C-1 and C-3. These tables indicate that arsenic, cadmium, nickel and silver were not different from ambient background in either the 2005 data set or the overall combined data set, nor were they different in any of the grain size classifications evaluated (fine, coarse, all). Antimony, chromium, copper and zinc were not different in the 2005 data, but were significantly different when data from all years were combined. The difference seen in all years for antimony was primarily a result of the samples collected in 1993 (see box plots, Figure A-1). Lead and mercury were different from San Francisco Bay ambient background in both the 2005 and all years combined data sets. The concentrations of mercury above ambient conditions appear to all be located offshore of Todd Shipyards (IR Site 28). Background comparisons excluding the results offshore of Todd Shipyards conclude that mercury is not greater than ambient in 2005 and all years combined (see test results for "MERCURY (no IR-28)" in Tables C-1 and C-3). The larger mercury concentrations offshore of Todd Shipyards are evident in the bubble plot (Figure A-69). Selenium could not be compared to background using standard background comparison tests due to the

small number of detects at IR Site 20, but the IR Site 20 results (detects and the reported detection limits of nondetects) were all below the effects range-low (ER-L) (see Table 4-2). Modified background tests treating the IR Site 20 reported nondetects as detects at their reported detection limits and leaving the ambient data unchanged concluded that IR Site 20 selenium concentrations were not greater than ambient (see test results for "SELENIUM mod" in Tables C-1 and C-3).

The background comparison results for IR Site 20 organic chemicals are shown in Tables C-5 and C-7. Of the pesticides, background comparisons could only be conducted for the DDx compounds, because frequency of detection for the other pesticides was too low for statistical comparisons. Total DDx and Total 4,4'-DDx were statistically different than background in the 2005 and combined years data sets. Total PCBs, and all of the various Total PAH combinations evaluated, were also different than background in the 2005 and combined years data sets. The only individual PAH compounds not different than background were 2-methylnaphthalene, acenaphthene, benzo(g,h,i)perylene and naphthalene.

C.4 IR Site 24 (Pier Area)

Inorganic comparisons using coarse grained data could not be conducted because only two IR Site 24 sampling locations fit the definition for coarse grained sediment (< 40% fines). The two coarse stations in IR Site 24 were close to the shore line at SS005 (between Pier 2 and Pier 3) and PA C-19 (south of Pier 3 and just west of the Breakwater Beach docks). These stations are located south of the region that contained the largest concentrations and they did not produce elevated concentrations of any inorganic (see visual confirmation of largest concentrations to north of Pier 2 in bubble plots in Appendix A). The 1997 locations that had no grain size analyses were relatively distant from the shoreline and locations close to them were classified as fine (>40% fines). It can be assumed that the conclusions based on fine sediments and combined grain size at IR Site 24 will identify any inorganic chemicals above ambient.

Of the inorganic constituents, antimony, arsenic, nickel, and selenium were not different than San Francisco Bay ambient concentrations in either the All Years data set or the 2005/2006 data set (Table C-2 and Table C-4). Mercury was elevated compared to background in the All Years data set but not in the 2005/2006 data. Cadmium, chromium, copper, lead, silver and zinc were elevated compared to ambient in both the All Years data set and the 2005/2006 data.

Tributyl tin, 4,4′-DDx compounds, Total PCBs, and all PAHs were elevated compared to background in both the All Years and the 2005/2006 data sets (Table C-6 and Table C-8). Background comparisons could not be conducted for any pesticides other than the DDx compounds due to the infrequency of detection of those compounds.

References

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Table C-1. Distribution Shift Test Results for Inorganics from Combined Years at IR Site 20 (Oakland Inner Harbor)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Fine Stations											
ANTIMONY	7/8	0.875	BPTCP[d]	20/20	1	F	0.5101	0.01481	0.003419		none
ARSENIC	8/8	1	RMP, BPTCP	148/148	1	P	0.9999	1	1		none
CADMIUM	7/8	0.875	RMP, BPTCP	148/148	1	P	0.9272	0.8267	0.05128		none
CHROMIUM	8/8	1	RMP[c]	128/128	1	P	0.557	0.1947	0.05882	0.4891	logN
COPPER	8/8	1	RMP, BPTCP	147/147	1	P	0.9726	0.8399	1	0.9523	logN
LEAD	8/8	1	RMP, BPTCP	148/148	1	P	0.5859	0.1958	1	0.5376	logN
MERCURY	8/8	1	RMP, BPTCP	159/159	1	P	0.9496	0.4931	1		none
MERCURY (no IR-28)	8/8	1	RMP, BPTCP	159/159	1	P	0.9496	0.4931	1		none
NICKEL	8/8	1	RMP, BPTCP	147/147	1	P	1	1	1		none
SELENIUM	0/8	0	RMP, BPTCP	142/148	0.959	NA					
SELENIUM mod	8/8	1	RMP, BPTCP	142/148	0.959	P	0.8781	1	1		none
SILVER	4/8	0.5	RMP, BPTCP	136/136	1	P	0.9995	1	1		none
ZINC	8/8	1	RMP, BPTCP	148/148	1	P	0.9147	0.4967	1		none
Coarse Stations											
ANTIMONY	5/10	0.5	BPTCP	1/1	1	P	0.9625	1	1		none
ARSENIC	10/10	1	RMP, BPTCP	51/51	1	P	1	1	1		none
CADMIUM	10/10	1	RMP, BPTCP	51/51	1	P	0.3849	0.3054	0.1639	0.5019	logN
CHROMIUM	10/10	1	RMP	50/50	1	P	1	1	1		none
COPPER	10/10	1	RMP, BPTCP	47/47	1	P	0.3607	0.1192	0.1754	0.3821	logN
LEAD	10/10	1	RMP, BPTCP	51/51	1	F	0.02187	0.01909	0.1639		none
MERCURY	10/10	1	RMP, BPTCP	51/51	1	F	0.01854	0.01909	0.1639		none
MERCURY (no IR-28)	9/9	1	RMP, BPTCP	51/51	1	P	0.05574	0.07017	1	0.06619	logN
NICKEL	10/10	1	RMP, BPTCP	51/51	1	P	1	1	1	0.9999	logN
SELENIUM	0/10	0	RMP, BPTCP	51/51	1	NA					
SELENIUM mod	10/10	1	RMP, BPTCP	51/51	1	P	0.3738	1	1	0.4506	logN
SILVER	10/10	1	RMP, BPTCP	42/44	0.955	P	0.07364	0.07464	1		none
ZINC	10/10	1	RMP, BPTCP	51/51	1	P	0.9997	1	1		none

Table C-1. Distribution Shift Test Results for Inorganics from Combined Years at IR Site 20 (Oakland Inner Harbor) (continued)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
All Stations											
ANTIMONY	22/28	0.7857	BPTCP	21/21	1	F	0.9946	0.4001	0.02694		none
ARSENIC	28/28	1	RMP, BPTCP	199/199	1	P	1	0.9989	1	1	logN
CADMIUM	24/28	0.8571	RMP, BPTCP	199/199	1	P	0.9918	0.6472	0.1233		none
CHROMIUM	28/28	1	RMP	178/178	1	F	0.3474	0.000537	3.97E-11	0.2093	logN
COPPER	28/28	1	RMP, BPTCP	194/194	1	F	0.9411	0.5199	2.29E-05		none
LEAD	28/28	1	RMP, BPTCP	199/199	1	F	0.03094	0.000569	0.00019		none
MERCURY	28/28	1	RMP, BPTCP	211/211	1	F	0.9591	0.6834	0.01329		none
MERCURY (no IR-28)	25/25	1	RMP, BPTCP	211/211	1	P	0.9956	0.9204	1		none
NICKEL	28/28	1	RMP, BPTCP	198/198	1	P	1	0.8543	0.1239	1	logN
SELENIUM	9/28	0.3214	RMP, BPTCP	193/199	0.970	NA					
SELENIUM mod	28/28	1	RMP, BPTCP	193/199	0.970	P	0.9927	0.9881	1		none
SILVER	24/28	0.8571	RMP, BPTCP	178/180	0.989	P	1	1	1		none
ZINC	28/28	1	RMP, BPTCP	199/199	1	F	0.9982	0.5194	0.01474		none

Note: grain size not analyzed for samples in 2001 (N=10).
The results for SELENIUM "mod" replaced site nondetects with detects at the reported detection limit and kept nondetects in ambient as nondetects.
D/N=number of detected results / number of samples
F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets)
Navy Ref=SF Bay Reference Locations sampled by the Navy in 1998 and 2001
RMP=(San Francisco Estuary Institute) Regional Monitory Program
a) BPTCP=Bay Protection and Toxic Cleanup Program
(b) P=pass. No statistically significant results for any of the distribution shift tests
(c) Chromium results from RMP are used for reference set. The BPTCP analytical method was not considered comparable.
(d) Antimony was not analyzed in RMP samples.

Table C-2. Distribution Shift Test Results for Inorganics from Combined Years at IR Site 24 (Pier Area)

Constituent	IR24 D/N	Detect	Ambient Data Set(a)	Ambient D/N	Detect	Test Results(b)	Gehan test	quantile test	slippage test	t-test	Common Distribution
Fine Stations											
ANTIMONY	28/29	0.97	BPTCP	20/20	1	P	1	0.9999	1		none
ARSENIC	29/29	1	RMP, BPTCP	148/148	1	P	1	0.9928	1		none
CADMIUM	29/29	1	RMP, BPTCP	148/148	1	F	7.02E-09	0.0002616	3.966E-12		none
CHROMIUM	29/29	1	RMP	128/128	1	F	0.000914	0.07965	0.0001593		none
COPPER	29/29	1	RMP, BPTCP	147/147	1	F	6.39E-05	0.0004755	4.129E-11		none
LEAD	29/29	1	RMP, BPTCP	148/148	1	F	6.89E-10	0.0001218	3.55E-10		none
MERCURY	29/29	1	RMP, BPTCP	159/159	1	P	0.7372	0.8715	0.1543		none
NICKEL	29/29	1	RMP, BPTCP	147/147	1	P	1	0.9993	1		none
SELENIUM	15/29	0.5	RMP, BPTCP	142/148	0.96	P	0.7325	0.182	1		none
SILVER	29/29	1	RMP, BPTCP	136/136	1	F	7.84E-07	0.002938	1.075E-12		none
ZINC	29/29	1	RMP, BPTCP	148/148	1	F	0.8206	0.01033	1.212E-05		none
Coarse Stations											
ANTIMONY	9/9	1	BPTCP	1/1	1	NA					
ARSENIC	10/10	1	RMP, BPTCP	51/51	1	P	0.9619	0.6355	1	0.9628	logN
CADMIUM	9/10	0.9	RMP, BPTCP	51/51	1	F	5.41E-05	2.272E-06	1.528E-08	0.00035	logN
CHROMIUM	10/10	1	RMP	50/50	1	F	0.1968	0.02056	0.003507	0.07557	logN
COPPER	10/10	1	RMP, BPTCP	47/47	1	F	8.09E-06	5.884E-08	1.112E-09		none
LEAD	10/10	1	RMP, BPTCP	51/51	1	F	4.65E-06	6.576E-06	3.782E-06		none
MERCURY	10/10	1	RMP, BPTCP	51/51	1	F	0.07331	0.3054	1	0.0246	logN
NICKEL	10/10	1	RMP, BPTCP	51/51	1	P	0.9686	0.3593	0.1639	0.9163	logN
SELENIUM	5/10	0.5	RMP, BPTCP	51/51	1	P	0.5427	0.9089	0.1639	0.1697	logN
SILVER	9/10	1	RMP, BPTCP	42/44	0.95	F	2.25E-05	1.797E-06	4.325E-08		none
ZINC	10/10	1	RMP, BPTCP	51/51	1	F	0.002294	0.002339	3.782E-06	0.01814	logN
All Stations											
ANTIMONY	37/38	0.97	BPTCP	21/21	1	P	1	0.9624	0.6441		none
ARSENIC	39/39	1	RMP, BPTCP	199/199	1	P	1	0.999	1		none
CADMIUM	38/39	0.97	RMP, BPTCP	199/199	1	F	1.06E-12	1.519E-08	9.769E-20		none
CHROMIUM	53/53	1	RMP	178/178	1	F	3.38E-09	1.385E-07	1.462E-16		none
COPPER	53/53	1	RMP, BPTCP	194/194	1	F	2.58E-15	6.533E-17	1.717E-24		none
LEAD	53/53	1	RMP, BPTCP	199/199	1	F	1.55E-17	5.064E-11	2.994E-13		none
MERCURY	39/39	1	RMP, BPTCP	211/211	1	P	0.7528	0.9307	0.156		none
NICKEL	53/53	1	RMP, BPTCP	198/198	1	P	0.9821	0.1283	0.05392	0.9474	logN

Table C-2. Distribution Shift Test Results for Inorganics from Combined Years at IR Site 24 (Pier Area) (continued)

Constituent	IR24 D/N	Detect	Ambient Data Set(a)	Ambient D/N	Detect	Test Results(b)	Gehan test	quantile test	slippage test	t-test	Common Distribution
SELENIUM	20/39	0.5	RMP, BPTCP	193/199	0.97	P	0.7503	0.1113	1		none
SILVER	38/39	0.97	RMP, BPTCP	178/180	0.99	F	3.56E-11	9.948E-07	6.096E-16		none
ZINC	53/53	1	RMP, BPTCP	199/199	1	F	0.000169	4.055E-09	1.191E-11		none

Note: grainsize not analyzed for samples in 1997 (N=23).
D/N=number of detected results / number of samples
The results for SELENIUM "mod" replaced site nondetects with detects at half the reported detection limit and kept nondetects in ambient as nondetects.
a) BPTCP=Bay Protection and Toxic Cleanup Program
RMP=(San Francisco Estuary Institute) Regional Monitory Program
(b) P=pass. No statistically significant results for any of the distribution shift tests.
F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets).
(c) Chromium results from RMP are used for reference set. The BPTCP analytical method was not considered comparable.
(d) Antimony was not analyzed in RMP samples.

Table C-3. Distribution Shift Test Results for Inorganics from 2005 at IR Site 20 (Oakland Inner Harbor)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Fine Stations from 2005											
ANTIMONY	3/4	0.75	BPTCP[d]	20/20	1	P	0.9991	1	1	0.9995	logN
ARSENIC	4/4	1	RMP, BPTCP	148/148	1	P	0.9994	1	1	0.999	logN
CADMIUM	4/4	1	RMP, BPTCP	148/148	1	P	0.9882	1	1		none
CHROMIUM	4/4	1	RMP[c]	128/128	1	P	0.9917	1	1		none
COPPER	4/4	1	RMP, BPTCP	147/147	1	P	0.9924	1	1	0.96	logN
LEAD	4/4	1	RMP, BPTCP	148/148	1	P	0.8578	0.5891	1	0.7804	logN
MERCURY	4/4	1	RMP, BPTCP	159/159	1	P	0.9468	0.5866	1		none
MERCURY (no IR-28)	4/4	1	RMP, BPTCP	159/159	1	P	0.9468	0.5866	1		none
NICKEL	4/4	1	RMP, BPTCP	147/147	1	P	0.9994	1	1		none
SELENIUM	0/4	0	RMP, BPTCP	142/148	0.959	NA					
SELENIUM mod	4/4	1	RMP, BPTCP	142/148	0.959	P	0.4862	1	1		
SILVER	4/4	1	RMP, BPTCP	136/136	1	P	0.9897	1	1		none
ZINC	4/4	1	RMP, BPTCP	148/148	1	P	0.9987	1	1		none
Coarse Stations from 2005											
ANTIMONY	5/10	0.5	BPTCP	1/1	1	P	0.9625	1	1		none
ARSENIC	10/10	1	RMP, BPTCP	51/51	1	P	1	1	1		none
CADMIUM	10/10	1	RMP, BPTCP	51/51	1	P	0.3849	0.3054	0.1639	0.5019	logN
CHROMIUM	10/10	1	RMP	50/50	1	P	1	1	1		none
COPPER	10/10	1	RMP, BPTCP	47/47	1	P	0.3607	0.1192	0.1754	0.3821	logN
LEAD	10/10	1	RMP, BPTCP	51/51	1	F	0.02187	0.01909	0.1639		none
MERCURY	10/10	1	RMP, BPTCP	51/51	1	F	0.01854	0.01909	0.1639		none
MERCURY (no IR-28)	9/9	1	RMP, BPTCP	51/51	1	P	0.05574	0.07017	1	0.0662	logN
NICKEL	10/10	1	RMP, BPTCP	51/51	1	P	1	1	1	0.9999	logN
SELENIUM	0/10	0	RMP, BPTCP	51/51	1	NA					
SELENIUM mod	10/10	1	RMP, BPTCP	51/51	1	P	0.3738	1	1	0.4506	logN
SILVER	10/10	1	RMP, BPTCP	42/44	0.955	P	0.07364	0.07464	1		none
ZINC	10/10	1	RMP, BPTCP	51/51	1	P	0.9997	1	1		none

Table C-3. Distribution Shift Test Results for Inorganics from 2005 at IR Site 20 (Oakland Inner Harbor) (continued)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
All Stations from 2005											
ANTIMONY	8/14	0.571	BPTCP	21/21	1	P	1	1	1	1	logN
ARSENIC	14/14	1	RMP, BPTCP	199/199	1	P	1	1	1		none
CADMIUM	14/14	1	RMP, BPTCP	199/199	1	P	0.9846	0.7795	1		none
CHROMIUM	14/14	1	RMP	178/178	1	P	1	1	1		none
COPPER	14/14	1	RMP, BPTCP	194/194	1	P	0.999	0.9587	0.06731		none
LEAD	14/14	1	RMP, BPTCP	199/199	1	P	0.6078	0.3218	0.06573		none
MERCURY	14/14	1	RMP, BPTCP	211/211	1	P	0.9024	0.5571	0.06222		none
MERCURY (no IR-28)	13/13	1	RMP, BPTCP	211/211	1	P	0.965	0.7652	1		none
NICKEL	14/14	1	RMP, BPTCP	198/198	1	P	1	1	1		none
SELENIUM	0/14	0	RMP, BPTCP	193/199	0.970	NA					
SELENIUM mod	14/14	1	RMP, BPTCP	193/199	0.970	P	0.9452	0.962	1		none
SILVER	14/14	1	RMP, BPTCP	178/180	0.989	P	0.9996	1	1		none
ZINC	14/14	1	RMP, BPTCP	199/199	1	P	1	1	1		none

The results for SELENIUM "mod" replaced site nondetects with detects at the reported detection limit and kept nondetects in ambient as nondetects.
D/N=number of detected results / number of samples
F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets).
Navy Ref=SF Bay Reference Locations sampled by the Navy in 1998 and 2001
RMP=(San Francisco Estuary Institute) Regional Monitory Program
a) BPTCP=Bay Protection and Toxic Cleanup Program
(b) P=pass. No statistically significant results for any of the distribution shift tests.
(c) Chromium results from RMP are used for reference set. The BPTCP analytical method was not considered comparable.
(d) Antimony was not analyzed in RMP samples.

Table C-4. Distribution Shift Test Results for Inorganics from 2005 and 2006 at IR Site 24 (Pier Area)

Constituent	IR24 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Fine 2005/2006 Stations											
ANTIMONY	22/22	1	BPTCP	20/20	1	P	1	1	1		none
ARSENIC	22/22	1	RMP, BPTCP	148/148	1	P	1	0.9958	1		none
CADMIUM	22/22	1	RMP, BPTCP	148/148	1	F	6.37E-06	0.01334	2.37E-07		none
CHROMIUM	22/22	1	RMP	128/128	1	F	0.007705	0.4604	0.002793		none
COPPER	22/22	1	RMP, BPTCP	147/147	1	F	0.01859	0.2368	2.43E-05		none
LEAD	22/22	1	RMP, BPTCP	148/148	1	F	8.38E-07	0.01334	2.36E-05		none
MERCURY	22/22	1	RMP, BPTCP	159/159	1	P	0.9256	0.9937	1		none
NICKEL	22/22	1	RMP, BPTCP	147/147	1	P	1	1	1		none
SELENIUM	10/22	0.5	RMP, BPTCP	142/148	0.96	P	0.9865	0.46	1		none
SILVER	22/22	1	RMP, BPTCP	136/136	1	F	0.000111	0.1063	3.42E-05		none
ZINC	22/22	1	RMP, BPTCP	148/148	1	F	0.9985	0.46	0.01608		none
ANTIMONY	22/22	1	BPTCP	20/20	1	P	1	1	1		none
Coarse 2005/2006 Stations*											
ANTIMONY	9/9	1	BPTCP	1/1	1	NA					
ARSENIC	9/9	1	RMP, BPTCP	51/51	1	P	0.9608	0.5802	1	0.9581	logN
CADMIUM	9/9	1	RMP, BPTCP	51/51	1	F	6.11E-06	5.51E-07	3.52E-09	0.0002	logN
CHROMIUM	9/9	1	RMP	50/50	1	F	0.08861	0.0125	0.002584	0.0585	logN
COPPER	9/9	1	RMP, BPTCP	47/47	1	F	2.45E-05	9.87E-07	6.34E-09		none
LEAD	9/9	1	RMP, BPTCP	51/51	1	F	8.27E-06	1.62E-06	1.68E-06		none
MERCURY	9/9	1	RMP, BPTCP	51/51	1	P	0.1149	0.2515	1	0.0501	logN
NICKEL	9/9	1	RMP, BPTCP	51/51	1	P	0.9264	0.2995	0.15	0.8679	logN
SELENIUM	5/9	0.6	RMP, BPTCP	51/51	1	P	0.5248	0.8866	0.15	0.2562	logN
SILVER	9/9	1	RMP, BPTCP	42/44	0.95	F	5.73E-06	4.39E-07	1.02E-08		none
ZINC	9/9	1	RMP, BPTCP	51/51	1	F	0.006489	0.01157	2.31E-05	0.0323	logN
ANTIMONY	9/9	1	BPTCP	1/1	1	NA					
All 2005/2006 Stations											
ANTIMONY	31/31	1	BPTCP	21/21	1	P	1	0.9604	0.5962		none
ARSENIC	31/31	1	RMP, BPTCP	199/199	1	P	1	0.9994	1		none
CADMIUM	31/31	1	RMP, BPTCP	199/199	1	F	1.32E-10	6.19E-06	2.35E-15		none
CHROMIUM	31/31	1	RMP	178/178	1	F	0.001087	0.2379	6.84E-06		none
COPPER	31/31	1	RMP, BPTCP	194/194	1	F	7.98E-07	0.000514	5.79E-11		none
LEAD	31/31	1	RMP, BPTCP	199/199	1	F	3E-11	2.01E-06	4.74E-10		none
MERCURY	31/31	1	RMP, BPTCP	211/211	1	P	0.9343	0.9937	1		none
NICKEL	31/31	1	RMP, BPTCP	198/198	1	P	1	0.9683	0.1354		none

Table C-4. Distribution Shift Test Results for Inorganics from 2005 and 2006 at IR Site 24 (Pier Area) (continued)

Constituent	IR24 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
SELENIUM	15/31	0.5	RMP, BPTCP	193/199	0.97	P	0.9784	0.4547	1		none
SILVER	31/31	1	RMP, BPTCP	178/180	0.99	F	1.46E-09	4.37E-05	1.14E-12		none
ZINC	31/31	1	RMP, BPTCP	199/199	1	F	0.672	0.2583	0.000277		none

*Note: only N=1 Coarse 2005 Station at Pier Area; no tests performed; Test Results=NA.
D/N=number of detected results / number of samples
The results for SELENIUM "mod" replaced site nondetects with detects at half the reported detection limit and kept nondetects in ambient as nondetects.
a) BPTCP=Bay Protection and Toxic Cleanup Program
RMP=(San Francisco Estuary Institute) Regional Monitory Program
(b) P=pass. No statistically significant results for any of the distribution shift tests.
F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets).
(c) Chromium results from RMP are used for reference set. The BPTCP analytical method was not considered comparable.
(d) Antimony was not analyzed in RMP samples.

Table C-5. Distribution Shift Test Results for Organics from Combined Years at IR Site 20 (Oakland Inner Harbor)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Pesticides - All Stations											
2,4'-DDD	23/24	0.96	RMP, BPTCP	73/199	0.37	NA					
2,4'-DDE	3/24	0.13	RMP, BPTCP	19/199	0.10	NA					
2,4'-DDT	15/24	0.63	RMP, BPTCP	5/185	0.03	NA					
4,4'-DDD	27/28	0.96	RMP, BPTCP	179/199	0.90	F	0.00011	0.00011	1.84E-09		None
4,4'-DDE	26/28	0.93	RMP, BPTCP	185/199	0.93	F	0.1379	0.3513	0.001703		None
4,4'-DDT	20/28	0.71	RMP, BPTCP	84/199	0.42	NA					
ALDRIN	0/28	0.00	RMP, BPTCP	9/185	0.05	NA					
ALPHA-BHC	0/28	0.00	RMP, BPTCP	28/199	0.14	NA					
ALPHA-CHLORDANE	15/28	0.54	RMP, BPTCP	32/199	0.16	NA					
DIELDRIN	15/28	0.54	RMP, BPTCP	64/199	0.32	NA					
ENDOSULFAN I	0/28	0	BPTCP	0/21	0	NA					
ENDOSULFAN II	2/28	0.07	BPTCP	1/21	0.05	NA					
ENDOSULFAN SULFATE	0/28	0	BPTCP	0/21	0	NA					
ENDRIN	0/28	0	RMP, BPTCP	17/185	0.09	NA					
ENDRIN ALDEHYDE	3/28	0.11	none	0/0	0	NA					
GAMMA-BHC (LINDANE)	0/28	0.00	RMP, BPTCP	28/199	0.14	NA					
GAMMA-CHLORDANE	9/28	0.32	RMP	29/178	0.16	NA					
HEPTACHLOR	0/28	0.00	RMP, BPTCP	1/185	0.01	NA					
HEPTACHLOR EPOXIDE	0/28	0.00	RMP, BPTCP	4/199	0.02	NA					
PAHs - All Stations											
2-METHYLNAPHTHALENE	24/28	0.86	RMP, BPTCP	141/185	0.76	P	0.9546	0.9879	1		None
ACENAPHTHENE	25/28	0.89	RMP, BPTCP	139/185	0.75	P	0.3096	0.4344	1		none
ACENAPHTHYLENE	25/28	0.89	RMP, BPTCP	149/185	0.81	F	0.00137	0.01229	0.01467		none
ANTHRACENE	28/28	1.00	RMP, BPTCP	179/199	0.90	F	6.60E-06	2.58E-05	0.00019		none
BENZO(A)ANTHRACENE	28/28	1.00	RMP, BPTCP	196/199	0.98	F	0.0001	1.86E-05	0.001703		none
BENZO(A)PYRENE	28/28	1.00	RMP, BPTCP	192/199	0.96	F	0.00085	0.00893	0.01474		none
BENZO(B)FLUORANTHENE	28/28	1.00	RMP, BPTCP	194/199	0.97	F	0.00913	0.00245	1		none
BENZO(G,H,I)PERYLENE	28/28	1.00	RMP, BPTCP	196/199	0.98	P	0.06199	0.1611	1		none
BENZO(K)FLUORANTHENE	26/28	0.93	RMP, BPTCP	188/199	0.94	F	8.90E-06	1.86E-05	0.01474		none
CHRYSENE	28/28	1.00	RMP, BPTCP	193/199	0.97	F	3.38E-06	2.60E-06	2.05E-05		none
DIBENZO(A,H)ANTHRACENE	25/28	0.89	RMP, BPTCP	164/199	0.82	F	0.00293	0.00245	0.1233		none
FLUORANTHENE	28/28	1.00	RMP, BPTCP	196/197	0.99	F	2.47E-05	2.95E-06	0.000197		none
FLUORENE	25/28	0.89	RMP, BPTCP	157/185	0.85	F	0.01064	0.00823	0.002063		none
INDENO(1,2,3-CD)PYRENE	28/28	1.00	RMP, BPTCP	196/199	0.98	F	0.01438	0.0276	1		none
NAPHTHALENE	24/28	0.86	RMP, BPTCP	143/160	0.89	P	0.9976	0.9988	1		none
PHENANTHRENE	28/28	1.00	RMP, BPTCP	188/192	0.98	F	5.18E-05	0.00012	2.40E-05		none
PYRENE	28/28	1.00	RMP, BPTCP	196/197	0.99	F	0.00037	0.00266	0.015		none

Table C-5. Distribution Shift Test Results for Organics from Combined Years at IR Site 20 (Oakland Inner Harbor) (continued)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Organotins – All Stations											
TRIBUTYL TIN	18/18	1.00	BPTCP	10/19	0.53	F	1.92E-05	0.00309	7.62E-08		none
Totals, sum with nondetects=half detection limits – All Stations											
Total 4,4-DDx	27/28	0.96	RMP, BPTCP	189/199	0.95	F	0.001	0.00245	0.01474		none
Total DDx	23/24	0.96	Navy Ref	9/10	0.90	F	0.00566	0.1001	0.008725		none
Total PCB	28/28	1.00	RMP, BPTCP	190/211	0.90	F	3.39E-08	2.43E-09	1.15E-09		none
Total HPAH (10)	28/28	1.00	RMP, BPTCP	197/197	1.00	F	0.00041	0.00063	0.015		none
Total HPAH (6)	28/28	1.00	RMP, BPTCP	196/197	0.99	F	9.90E-05	0.00063	0.015		none
Total LPAH (7)	28/28	1.00	RMP, BPTCP	156/160	0.98	F	0.0008	0.00042	5.30E-05		none
Total LPAH (6)	28/28	1.00	RMP, BPTCP	173/178	0.97	F	0.0002	0.0001	3.34E-05		none
Total PAH (12)	28/28	1.00	Navy Ref	10/10	1.00	F	0.00207	0.09382	0.001368	0	logN
Total PAH (13)	28/28	1.00	Navy Ref	5/5	1.00	F	0.02367	0.3402	0.02607	0.03	logN

D/N=number of detected results / number of samples
F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets).
Navy Ref=SF Bay Reference Locations sampled by the Navy in 1998 and 2001
RMP=(San Francisco Estuary Institute) Regional Monitory Program
a) BPTCP=Bay Protection and Toxic Cleanup Program
(b) P=pass. No statistically significant results for any of the distribution shift tests.

Table C-6. Distribution Shift Test Results for Organics from Combined Years at IR Site 24 (Pier Area)

Constituent	IR24 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Pesticides – All Stations											
2,4'-DDD	14/36	0.08	RMP, BPTCP	73/199	0.37	NA					
2,4'-DDE	2/36	0.08	RMP, BPTCP	19/199	0.10	NA					
2,4'-DDT	1/36	0.00	RMP, BPTCP	5/185	0.03	NA					
4,4'-DDD	37/39	0.93	RMP, BPTCP	179/199	0.90	F	2.66E-10	9.15E-07	7.07E-13		none
4,4'-DDE	36/39	0.89	RMP, BPTCP	185/199	0.93	F	1.18E-08	3.29E-06	9.44E-05		none
4,4'-DDT	24/37	0.80	RMP, BPTCP	84/199	0.42	NA					
ALDRIN	3/39	0.11	RMP, BPTCP	9/185	0.05	NA					
ALPHA-BHC	0/34	0	RMP, BPTCP	28/199	0.14	NA					
ALPHA-CHLORDANE	26/39	0.52	RMP, BPTCP	32/199	0.16	NA					
DIELDRIN	22/39	0.37	RMP, BPTCP	64/199	0.32	NA					
ENDOSULFAN I	1/34	0.05	BPTCP	0/21	0.00	NA					
ENDOSULFAN II	2/34	0.09	BPTCP	1/21	0.05	NA					
ENDOSULFAN SULFATE	0/34	0	BPTCP	0/21	0	NA					
ENDRIN	1/39	0.04	RMP, BPTCP	17/185	0.09	NA					
ENDRIN ALDEHYDE	1/34	0.05	none	0/0	NA	NA					
GAMMA-BHC (LINDANE)	0/37	0.00	RMP, BPTCP	28/199	0.14	NA					
GAMMA-CHLORDANE	13/34	0.45	RMP	29/178	0.16	NA					
HEPTACHLOR	0/39	0	RMP, BPTCP	1/185	0.01	NA					
HEPTACHLOR EPOXIDE	1/39	0.04	RMP, BPTCP	4/199	0.02	NA					
PAHs – All Stations											
2-METHYLNAPHTHALENE	13/15	0.33	RMP, BPTCP	141/185	0.76	F	1.89E-07	2.67E-07	2.54E-11		none
ACENAPHTHENE	57/58	0.98	RMP, BPTCP	139/185	0.75	F	1.19E-21	1.07E-20	1.39E-14		none
ACENAPHTHYLENE	55/58	0.93	RMP, BPTCP	149/185	0.81	F	3.19E-10	7.08E-10	2.54E-13		none
ANTHRACENE	56/58	0.96	RMP, BPTCP	179/199	0.90	F	9.96E-25	8.91E-30	1.84E-31		none
FLUORENE	57/58	0.98	RMP, BPTCP	157/185	0.85	F	2.2E-24	1.47E-25	4.17E-21		none
NAPHTHALENE	53/58	0.89	RMP, BPTCP	143/160	0.89	F	5.7E-06	2.27E-05	5.88E-05		none
PHENANTHRENE	57/58	0.98	RMP, BPTCP	188/192	0.98	F	2.33E-16	5.35E-16	1.55E-19		none
BENZO(A)ANTHRACENE	57/58	0.98	RMP, BPTCP	196/199	0.98	F	3.17E-22	1.7E-24	2.26E-23		none
BENZO(A)PYRENE	57/58	0.98	RMP, BPTCP	192/199	0.96	F	4.76E-16	9.04E-15	3.5E-18		none
BENZO(B)FLUORANTHENE	57/58	0.98	RMP, BPTCP	194/199	0.97	F	1.2E-17	1.51E-18	2.34E-17		none
BENZO(G,H,I)PERYLENE	57/58	0.98	RMP, BPTCP	196/199	0.98	F	1.31E-08	6.86E-08	1.8E-07		none
BENZO(K)FLUORANTHENE	56/58	0.96	RMP, BPTCP	188/199	0.94	F	1.48E-17	1.26E-13	5.11E-19		none
CHRYSENE	57/58	0.98	RMP, BPTCP	193/199	0.97	F	1.25E-23	6.29E-28	3.33E-25		none
DIBENZO(A,H)ANTHRACENE	55/58	0.93	RMP, BPTCP	164/199	0.82	F	1.86E-13	1.53E-12	5.51E-13		none
FLUORANTHENE	56/58	0.96	RMP, BPTCP	196/197	0.99	F	4.4E-21	2.38E-24	2.51E-26		none
INDENO(1,2,3-CD)PYRENE	57/58	0.98	RMP, BPTCP	196/199	0.98	F	4.81E-10	1.35E-09	6.68E-09		none
PYRENE	56/58	0.96	RMP, BPTCP	196/197	0.99	F	5.76E-18	4.19E-17	5.53E-20		none

Table C-6. Distribution Shift Test Results for Organics from Combined Years at IR Site 24 (Pier Area) (continued)

Constituent	IR24 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Organotins – All Stations											
TRIBUTYL TIN	37/39	0.93	BPTCP	10/19	0.53	F	1.99E-05	0.007361	1.93E-10		none
Totals, sum with nondetects=half detection limits – All Stations											
Total 4,4-DDx	38/39	0.96	RMP, BPTCP	189/199	0.95	F	8.81E-10	9.15E-07	0.1639		none
Total DDx	36/36	1.00	RMP, BPTCP	175/185	0.95	F	6.87E-10	6.84E-06	0.02592		none
Total PCB	38/39	0.96	RMP, BPTCP	190/211	0.90	F	3.39E-18	1.16E-22	5.14E-17		none
Total HPAH (10)	57/58	0.98	RMP, BPTCP	197/197	1	F	1.18E-18	2.03E-18	1.26E-20		none
Total HPAH (6)	57/58	0.98	RMP, BPTCP	196/197	0.99	F	1.87E-20	3.04E-21	1.71E-21		none
Total LPAH (7)	14/15	0.67	RMP, BPTCP	156/160	0.98	F	1.81E-07	8.06E-09	0		none
Total LPAH (6)	57/58	0.98	RMP, BPTCP	173/178	0.97	F	1.76E-18	3.86E-19	4.38E-21		none
Total PAH (12)	57/58	0.98	RMP, BPTCP	160/160	1	F	7.14E-19	1.16E-17	4.38E-21		none
Total PAH (13)	14/15	0.67	RMP, BPTCP	160/160	1	F	4.98E-08	8.06E-09	0		none

D/N=number of detected results / number of samples
a) BPTCP=Bay Protection and Toxic Cleanup Program
RMP=(San Francisco Estuary Institute) Regional Monitory Program
(b) P=pass. No statistically significant results for any of the distribution shift tests.
F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets).
(c) Chromium results from RMP are used for reference set. The BPTCP analytical method was not considered comparable.
(d) Antimony was not analyzed in RMP samples.

Table C-7. Distribution Shift Test Results for Organics from 2005 at IR Site 20 (Oakland Inner Harbor)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Pesticides – All 2005 Stations											
2,4'-DDD	14/14	1	RMP, BPTCP	73/199	0.37	NA					
2,4'-DDE	3/14	0.21	RMP, BPTCP	19/199	0.10	NA					
2,4'-DDT	9/14	0.64	RMP, BPTCP	5/185	0.03	NA					
4,4'-DDD	14/14	1	RMP, BPTCP	179/199	0.90	F	0.009801	0.04007	0.000229		none
4,4'-DDE	14/14	1	RMP, BPTCP	185/199	0.93	P	0.2806	0.9586	1		none
4,4'-DDT	12/14	0.86	RMP, BPTCP	84/199	0.42	NA					
ALDRIN	0/14	0	RMP, BPTCP	9/185	0.05	NA					
ALPHA-BHC	0/14	0	RMP, BPTCP	28/199	0.14	NA					
ALPHA-CHLORDANE	6/14	0.43	RMP, BPTCP	32/199	0.16	NA					
DIELDRIN	10/14	0.71	RMP, BPTCP	64/199	0.32	NA					
ENDOSULFAN I	0/14	0	BPTCP	0/21	0	NA					
ENDOSULFAN II	2/14	0.14	BPTCP	1/21	0.05	NA					
ENDOSULFAN SULFATE	0/14	0	BPTCP	0/21	0	NA					
ENDRIN	0/14	0	RMP, BPTCP	17/185	0.09	NA					
ENDRIN ALDEHYDE	0/14	0	none	0/0		NA					
GAMMA-BHC (LINDANE)	0/14	0	RMP, BPTCP	28/199	0.14	NA					
GAMMA-CHLORDANE	7/14	0.5	RMP	29/178	0.16	NA					
HEPTACHLOR	0/14	0	RMP, BPTCP	1/185	0.01	NA					
HEPTACHLOR EPOXIDE	0/14	0	RMP, BPTCP	4/199	0.02	NA					
PAHs – All 2005 Stations											
2-METHYLNAPHTHALENE	14/14	1	RMP, BPTCP	141/185	0.76	P	0.9836	0.9581	1		none
ACENAPHTHENE	14/14	1	RMP, BPTCP	139/185	0.75	P	0.5974	0.8269	1		none
ACENAPHTHYLENE	14/14	1	RMP, BPTCP	149/185	0.81	F	0.02609	0.1134	0.07035		none
ANTHRACENE	14/14	1	RMP, BPTCP	179/199	0.90	F	0.007217	0.04007	0.00403		none
BENZO(A)ANTHRACENE	14/14	1	RMP, BPTCP	196/199	0.98	F	0.02671	0.03583	0.06573		none
BENZO(A)PYRENE	14/14	1	RMP, BPTCP	192/199	0.96	F	0.0496	0.1265	0.06573		none
BENZO(B)FLUORANTHENE	14/14	1	RMP, BPTCP	194/199	0.97	P	0.2175	0.1165	1		none
BENZO(G,H,I)PERYLENE	14/14	1	RMP, BPTCP	196/199	0.98	P	0.2483	0.2884	1		none
BENZO(K)FLUORANTHENE	14/14	1	RMP, BPTCP	188/199	0.94	F	0.000981	0.008362	0.06573		none
CHRYSENE	14/14	1	RMP, BPTCP	193/199	0.97	F	0.004142	0.03583	0.00403		none
DIBENZO(A,H)ANTHRACENE	14/14	1	RMP, BPTCP	164/199	0.82	F	0.04766	0.03583	1		none
FLUORANTHENE	14/14	1	RMP, BPTCP	196/197	0.99	F	0.008275	0.03742	0.004107		none
FLUORENE	14/14	1	RMP, BPTCP	157/185	0.85	P	0.1046	0.1353	0.07035		none
INDENO(1,2,3-CD)PYRENE	14/14	1	RMP, BPTCP	196/199	0.98	P	0.1495	0.2884	1		none
NAPHTHALENE	14/14	1	RMP, BPTCP	143/160	0.89	P	0.9957	1	1		none
PHENANTHRENE	14/14	1	RMP, BPTCP	188/192	0.98	F	0.02542	0.1201	0.000254		none
PYRENE	14/14	1	RMP, BPTCP	196/197	0.99	F	0.03412	0.295	0.06635		none

Table C-7. Distribution Shift Test Results for Organics from 2005 at IR Site 20 (Oakland Inner Harbor) (continued)

Constituent	IR20 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Organotins - All 2005 Stations											
TRIBUTYL TIN	14/14	1	BPTCP	10/19	0.5263	F	0.000192	0.002711	5.10E-07		none
Totals, sum with nondetects=half detection limits - All 2005 Stations											
Total 4,4-DDx	14/14	1.00	RMP, BPTCP	189/199	0.95	F	0.02017	0.1165	1		none
Total DDx	14/14	1.00	Navy Ref	9/10	0.90	F	0.003859	0.0942	0.009916	0.008	logN
Total PCB	14/14	1.00	RMP, BPTCP	190/211	0.90	F	9.25E-05	0.000226	0.003611		none
Total HPAH (10)	14/14	1.00	RMP, BPTCP	197/197	1.00	F	0.03695	0.1204	0.06635		none
Total HPAH (6)	14/14	1.00	RMP, BPTCP	196/197	0.99	F	0.02063	0.03742	0.06635		none
Total LPAH (7)	14/14	1.00	RMP, BPTCP	156/160	0.98	F	0.07397	0.1111	0.000422		none
Total LPAH (6)	14/14	1.00	RMP, BPTCP	173/178	0.97	F	0.03667	0.1172	0.000313		none
Total PAH (12)	14/14	1.00	Navy Ref	10/10	1.00	F	0.01405	0.0942	0.02231	0.029	logN
Total PAH (13)	14/14	1.00	Navy Ref	5/5	1.00	P	0.07564	0.3756	0.1107	0.074	logN

D/N=number of detected results / number of samples
F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets).
Navy Ref=SF Bay Reference Locations sampled by the Navy in 1998 and 2001
RMP=(San Francisco Estuary Institute) Regional Monitory Program
a) BPTCP=Bay Protection and Toxic Cleanup Program
(b) P=pass. No statistically significant results for any of the distribution shift tests.

Table C-8. Distribution Shift Test Results for Organics from 2005 and 2006 at IR Site 24 (Pier Area)

Constituent	IR24 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Pesticides - All 2005/2006 Stations											
2,4'-DDD	12/31	0.39	RMP, BPTCP	73/199	0.37	NA					
2,4'-DDE	0/31	0	RMP, BPTCP	19/199	0.10	NA					
2,4'-DDT	1/31	0.03	RMP, BPTCP	5/185	0.03	NA					
4,4'-DDD	31/31	1	RMP, BPTCP	179/199	0.90	F	1.63E-10	2.96E-06	4.52E-11		none
4,4'-DDE	31/31	1	RMP, BPTCP	185/199	0.93	F	6.39E-10	8.63E-07	0.002246		none
4,4'-DDT	22/31	0.71	RMP, BPTCP	84/199	0.42	NA					
ALDRIN	0/31	0	RMP, BPTCP	9/185	0.05	NA					
ALPHA-BHC	0/31	0	RMP, BPTCP	28/199	0.14	NA					
ALPHA-CHLORDANE	24/31	0.77	RMP, BPTCP	32/199	0.16	NA					
DIELDRIN	19/31	0.61	RMP, BPTCP	64/199	0.32	NA					
ENDOSULFAN I	0/31	0	BPTCP	0/21	0	NA					
ENDOSULFAN II	0/31	0	BPTCP	1/21	0.05	NA					
ENDOSULFAN SULFATE	0/31	0	BPTCP	0/21	0	NA					
ENDRIN	0/31	0	RMP, BPTCP	17/185	0.09	NA					
ENDRIN ALDEHYDE	0/31	0	none	0/0	NA	NA					
GAMMA-BHC (LINDANE)	0/31	0	RMP, BPTCP	28/199	0.14	NA					
GAMMA-CHLORDANE	12/31	0.39	RMP	29/178	0.16	NA					
HEPTACHLOR	0/31	0	RMP, BPTCP	1/185	0.01	NA					
HEPTACHLOR EPOXIDE	0/31	0	RMP, BPTCP	4/199	0.02	NA					
PAHs - All 2005/2006 Stations											
2-METHYLNAPHTHALENE	12/12	1	RMP, BPTCP	141/185	0.76	F	8.11E-08	5.3E-08	3.86E-10		none
ACENAPHTHENE	31/31	1	RMP, BPTCP	139/185	0.75	F	4.19E-15	7.2E-16	8.95E-12		none
ACENAPHTHYLENE	31/31	1	RMP, BPTCP	149/185	0.81	F	3.85E-09	1.81E-07	9.17E-11		none
ANTHRACENE	31/31	1	RMP, BPTCP	179/199	0.90	F	1.96E-18	1.24E-22	7.04E-24		none
FLUORENE	31/31	1	RMP, BPTCP	157/185	0.85	F	4.89E-17	4.39E-21	4.95E-16		none
NAPHTHALENE	28/31	0.90	RMP, BPTCP	143/160	0.89	F	0.001115	0.000271	0.003932		none
PHENANTHRENE	31/31	1	RMP, BPTCP	188/192	0.98	F	2.57E-12	1.8E-10	4.66E-14		none
BENZO(A)ANTHRACENE	31/31	1	RMP, BPTCP	196/199	0.98	F	4.88E-15	3.98E-17	2.99E-14		none
BENZO(A)PYRENE	31/31	1	RMP, BPTCP	192/199	0.96	F	1.4E-12	3.84E-09	4.52E-11		none
BENZO(B)FLUORANTHENE	31/31	1	RMP, BPTCP	194/199	0.97	F	1.29E-12	2.96E-10	4.74E-10		none
BENZO(G,H,I)PERYLENE	31/31	1	RMP, BPTCP	196/199	0.98	F	5.73E-08	1.37E-05	0.002246		none
BENZO(K)FLUORANTHENE	31/31	1	RMP, BPTCP	188/199	0.94	F	1.72E-13	1.9E-11	3.6E-13		none
CHRYSENE	31/31	1	RMP, BPTCP	193/199	0.97	F	3.19E-16	8.15E-19	1.75E-16		none
DIBENZO(A,H)ANTHRACENE	31/31	1	RMP, BPTCP	164/199	0.82	F	2.7E-12	4.17E-08	4.59E-08		none
FLUORANTHENE	31/31	1	RMP, BPTCP	196/197	0.99	F	8.28E-16	8.73E-16	9.49E-19		none
INDENO(1,2,3-CD)PYRENE	31/31	1	RMP, BPTCP	196/199	0.98	F	8.3E-09	1.95E-05	0.000277		none
PYRENE	31/31	1	RMP, BPTCP	196/197	0.99	F	1.32E-13	6.41E-13	4.05E-13		none

Table C-8. Distribution Shift Test Results for Organics from 2005 and 2006 at IR Site 24 (Pier Area) (continued)

Constituent	IR24 D/N	Detect Rate	Ambient Data Set[a]	Ambient D/N	Detect Rate	Test Results[b]	Gehan Test	Quantile Test	Slippage Test	t-Test	Common Distribution
Organotins - All 2005/2006 Stations											
TRIBUTYL TIN	31/31	1	BPTCP	10/19	0.526316	F	0.001803	0.003993	4.99E-08		none
Totals, sum with nondetects=half detection limits - All 2005/2006 Stations											
Total 4,4-DDx	31/31	1	RMP, BPTCP	189/199	0.95	F	3.85E-11	3.81E-07	0.1348		none
Total DDx	31/31	1	RMP, BPTCP	175/185	0.95	F	1.9E-10	2.34E-06	0.02003		none
Total PCB	31/31	1	RMP, BPTCP	190/211	0.90	F	1.18E-16	1.57E-20	1.44E-14		none
Total HPAH (10)	31/31	1	RMP, BPTCP	197/197	1	F	5.99E-14	1.26E-11	4.05E-13		none
Total HPAH (6)	31/31	1	RMP, BPTCP	196/197	0.99	F	3.97E-15	6.41E-13	4.05E-13		none
Total LPAH (7)	12/12	1	RMP, BPTCP	156/160	0.98	F	7.85E-08	4.24E-08	0		none
Total LPAH (6)	31/31	1	RMP, BPTCP	173/178	0.97	F	1.42E-14	7.06E-15	3.28E-16		none
Total PAH (12)	31/31	1	RMP, BPTCP	160/160	1	F	1.87E-14	4.85E-12	4.21E-14		none
Total PAH (13)	12/12	1	RMP, BPTCP	160/160	1	F	1.63E-08	4.24E-08	0		none

D/N=number of detected results / number of samples
a) BPTCP=Bay Protection and Toxic Cleanup Program
RMP=(San Francisco Estuary Institute) Regional Monitory Program
(b) P=pass. No statistically significant results for any of the distribution shift tests.F=fail. One or more statistical tests indicate a shifted site distribution.
NA=not applicable; too few detects to run statistical tests (need Detect rate>0.5 for both sets).

APPENDIX D

DEVELOPMENT OF BIOACCUMULATION FACTORS

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This appendix contains additional information to support the derivation of bioaccumulation factors (BAF). This appendix is organized in the following way.

D.1 Definition D-1
D.2 *Macoma* Bioaccumulation Factors D-2
D.3 Forage Fish Bioaccumulation Factors D-3
References D-4

The following figures are presented after the text.

Figure D-1. *Macoma* BAFs (tissue in dry wt) for antimony, arsenic, cadmium, chromium, copper, lead. D-5
Figure D-2. *Macoma* BAFs (tissue in dry wt) for mercury, nickel, selenium, silver, zinc, 2,4′-DDD. D-6
Figure D-3. *Macoma* BAFs (tissue in dry wt) for 2,4′-DDE, 2,4′-DDT, 4,4′-DDD, 4,4-DDE, 4,4′-DDT, benzo(a)anthracene. D-7
Figure D-4. *Macoma* BAFs (tissue in dry wt) for benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene. D-8
Figure D-5. *Macoma* BAFs (tissue in dry wt) for fluoranthene, indeno(1,2,3-cd)pyrene, pyrene, acenaphthene, acenaphthylene, anthracene. D-9
Figure D-6. *Macoma* BAFs (tissue in dry wt) for fluorene, naphthalene, phenanthrene, aldrin, alpha-chlordane, dieldrin. D-10
Figure D-7. *Macoma* BAFs (tissue in dry wt) for endrin, gamma-BHC (Lindane), heptachlor, heptachlor epoxide, tributyl tin, DDD+DDE. D-11
Figure D-8. *Macoma* BAFs (tissue in dry wt) for Total 4,4-DDx, Total HPAH(10), Total HPAH (6), Total LPAH (6), Total PCB. D-12
Figure D-9. Forage fish BAFs (tissue in dry wt) for antimony, arsenic, cadmium, chromium. D-13
Figure D-10. Forage fish BAFs (tissue in dry wt) for copper, lead, mercury, nickel. D-14
Figure D-11. Forage fish BAFs (tissue in dry wt) for selenium, silver, zinc, aldrin. D-15
Figure D-12. Forage fish BAFs (tissue in dry wt) for alpha-BHC, alpha-chlordane, dieldrin, endosulfan I. D-16
Figure D-13. Forage fish BAFs (tissue in dry wt) for endosulfan II, endosulfan sulfate, endrin, endrin aldehyde. D-17
Figure D-14. Forage fish BAFs (tissue in dry wt) for gamma-BHC (Lindane), gamma-chlordane, heptachlor, heptachlor epoxide. D-18
Figure D-15. Forage fish BAFs (tissue in dry wt) for tributyl tin, 2-methylnaphthalene, acenaphthene, acenaphthylene. D-19
Figure D-16. Forage fish BAFs (tissue in dry wt) for anthracene, fluorene, naphthalene, phenanthrene. D-20
Figure D-17. Forage fish BAFs (tissue in dry wt) for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene. D-21
Figure D-18. Forage fish BAFs (tissue in dry wt) for benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene. D-22
Figure D-19. Forage fish BAFs (tissue in dry wt) for indeno(1,2,3-cd)pyrene, pyrene, 2,4′-DDD, 2,4′-DDE. D-23
Figure D-20. Forage fish BAFs (tissue in dry wt) for 2,4′-DDT, 4,4′-DDD, 4,4-DDE, 4,4′-DDT. D-24
Figure D-21. Forage fish BAFs (tissue in dry wt) for Total 4,4-DDx, Total DDx, Total PCB, Total HPAH (6). D-25
Figure D-22. Forage fish BAFs (tissue in dry wt) for Total LPAH (7), Total LPAH (6). D-26

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D.1 Definition

Tissue concentrations of organisms exposed to sediments were used in conjunction with sediment chemistry results to quantify the biotic uptake rate. A bioaccumulation factor (BAF) was estimated for analytes accumulating into tissue for *Macoma* and forage fish. Sediment concentrations were measured at each location used as an exposure medium in *Macoma* bioassay tests so results were collocated. Sediment concentrations from locations within a fishing area were associated with the forage fish caught in that area.

There are many choices of models to estimate the relationship between two variables both of which vary from sample to sample. The general form of a BAF expressed as a single value or ratio (multiplier to predict tissue from sediment) rather than as a mathematical function of one or more independent variables (perhaps curvilinear) was chosen due to simplicity of form for use in risk assessment formulas.

An estimate of the response ratio using the sediment chemistry results and tissue results was chosen to model the bioaccumulation response. The following ratios of concentrations were estimated.

$$\text{BAF} = \frac{C_{tissue}}{C_{sed}}$$

Where

C_{sed} = Contaminant of potential ecological concern (COPEC)-specific concentration in surface sediments (milligrams COPEC per kilograms sediment dry weight).

C_{tissue} = COPEC-specific concentration in tissue (milligrams COPEC per kilograms tissue, where tissue results are reported in dry weight for use in ecological risk assessment, or in wet weight for use in human health risk assessment)

Inherent in the calculation of a ratio are a number of assumptions. With data in which it is believed that Y (tissue concentration) is proportional to X (sediment concentration), apart from sampling or analytical error, the data analyst may regard the objective as that of estimating the common ratio Y/X rather than a problem in regression. If the assumption of proportionality is correct, that is, if $Y = \beta X + \varepsilon$, the three quantities $\Sigma XY/\Sigma X^2$ ("regression through the origin" estimator), $\Sigma Y/\Sigma X$ ("ratio estimator") and $\Sigma\ (Y/X)n$ ("average of point ratios") are all unbiased estimates of the population ratio β. The choice among the three is a question of precision (variability of the estimate). The most precise estimate is the first, second, or third above depending on whether the variance of ε is constant, proportional to X or proportional to X^2. If the variance of ε (error variance in tissue about the BAF line, e.g.: residuals) is expected to increase moderately as sediment concentrations increase, though the exact rate is not known, the estimate $\Sigma Y/\Sigma X$ (ratio estimator) usually does well, in addition to being the simplest of the three (Snedecor and Cochran, 1967).

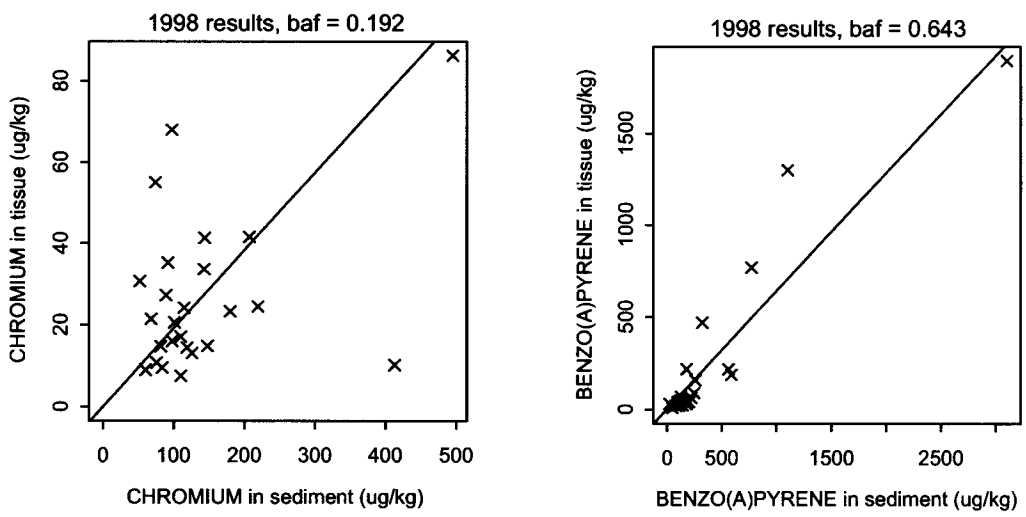
Use of any of the BAF estimates assumes that the ratio is constant across the range of sediment concentrations and that the line goes through the origin (when sediment concentration is zero then tissue concentration is zero). The "ratio estimator" (Cochran, 1963) was chosen to estimate the ratio between sediment and tissue. After plotting and reviewing the data pattern for analytes having detection rates greater than 50% in both sediment and tissue, the above precision criteria indicated that the ratio estimator was preferred for the majority of cases. The ratio estimate is simply the ratio of the averages of the two variables. Thus, the BAF is equal to the average tissue concentration divided by the average sediment concentration, using all paired sediment and tissue results. The ratio estimate has the advantage of being less biased than the average of the individual station ratios when the distribution of the station ratios is highly skewed.

It is preferred over regression through the origin analyses that have slopes that may be dominated by a single influential point. The Appendix D BAF plots are presented to facilitate visual review of how well the BAF lines fit the data.

D.2 *Macoma* Bioaccumulation Factors

Sediment samples collected at Alameda Point areas in 1993 and 1998 were analyzed for sediment chemistry and used in bioassay tests as exposure medium for laboratory reared *Macoma nasuta*. The data was reviewed for suitability in calculating BAFs. The *Macoma* tissues from 1993 exposed to IR Site 20 sediments produced no detected concentrations of organic constituents due to high detection limits. The achievement of better detection limits in *Macoma* tissues in 1998 made the data from that year more suitable for use in BAF calculations. Since the sediment concentrations collected in 1998 were representative of the range of concentrations at areas throughout Alameda Point and the *Macoma* tissue results were better quality, only the 1998 data were used to calculate BAFs to represent biotic uptake in *Macoma* for all areas in Alameda Point.

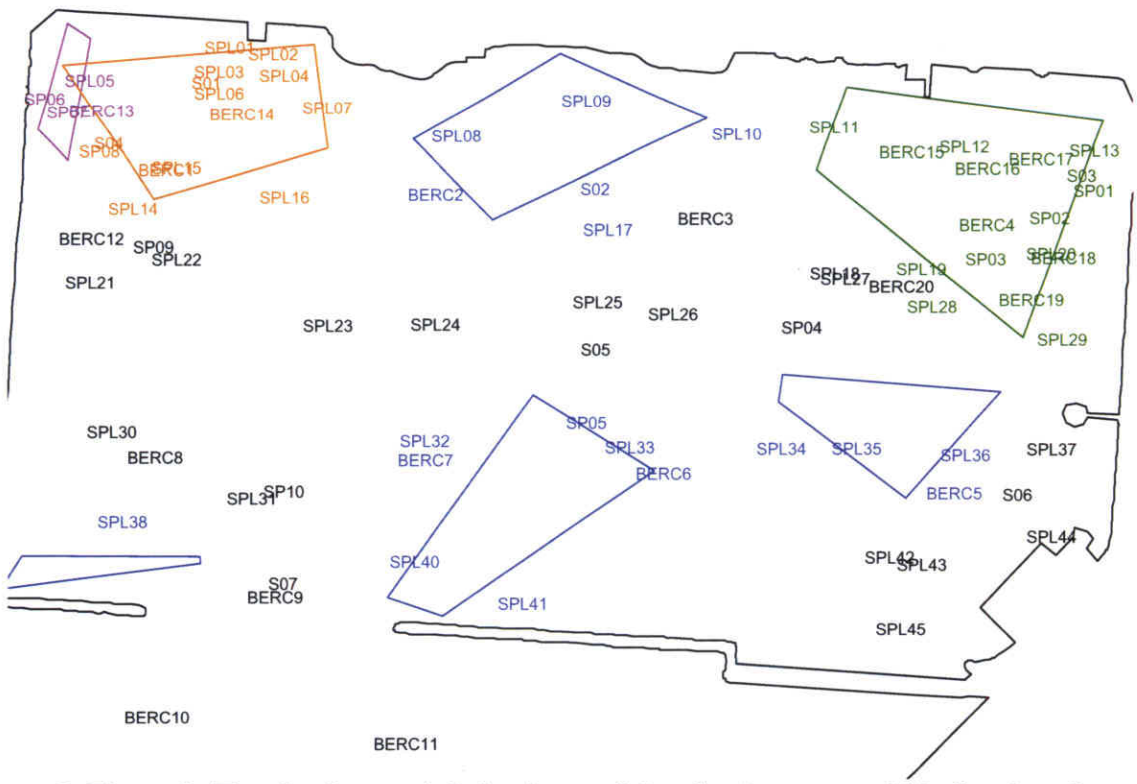
The bivariate plots in Example Figure 1 illustrate two examples of the data and the BAF calculation process. Each point represents the collocated sediment and tissue results at a single location. The sediment concentration is indicated by the position along the x-axis and the tissue concentration by the position along the y-axis. For both sediment and tissue, half the detection limit was used for results that were nondetect. The BAF calculation is represented by the line that passes through the origin (where both x and y are zero) and has a slope equal to the estimated ratio of biotic uptake. The scatter of points around the line provides an indication of the variability of the data and the strength of the relationship or correlation between concentrations in sediment and tissues. In Example Figure 1, the plot on the left indicates that chromium exhibits a relatively weak relationship or low correlation (loose scatter of points about the BAF line) and that benzo(a)pyrene exhibits a more consistent pattern or stronger correlation (points closer to BAF line). The complete set of *Macoma* BAF plots (based on dry weight tissue) are shown in Figures D-1 through D-8.



Example Figure 1. Bivariate plots of chromium and benzo(a)pyrene concentrations from sediment and *Macoma* tissue exposures at Alameda Point stations. The slope of the line is the BAF ratio.

D.3 Forage Fish Bioaccumulation Factors

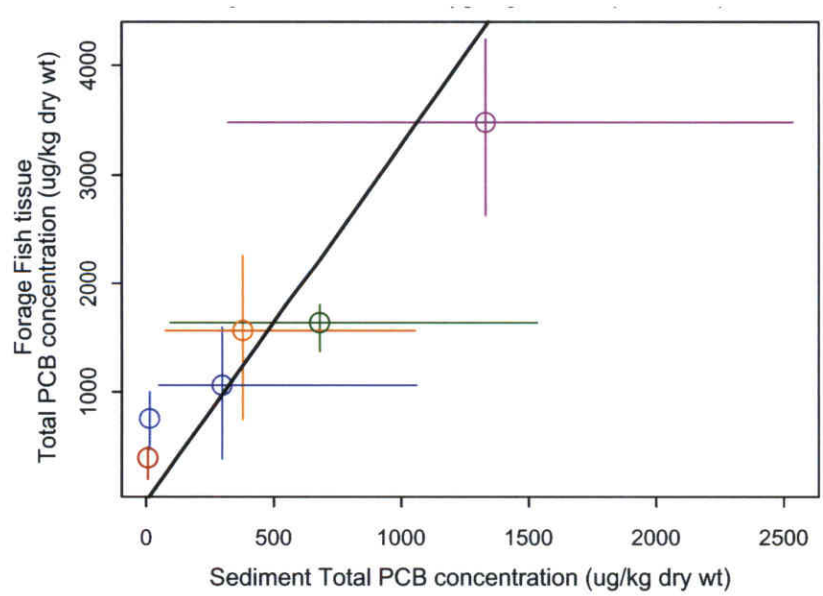
Forage fish were collected from Seaplane Lagoon and two San Francisco Bay reference areas, Bay Farms and Paradise Cove, in support of the Seaplane Lagoon RI. No forage fish have been collected from other Alameda Point offshore areas. The BAF calculations for the Seaplane Lagoon RI were intended to represent the uptake rate specific to Seaplane Lagoon and based on fish and sediments from Seaplane Lagoon only. The sediment concentrations in Oakland Inner Harbor and the Alameda Pier Area generally fall between those observed in Seaplane Lagoon and the reference areas. In order to model biotic uptake across the expected range of sediment concentrations, the BAFs for this investigation are calculated using the results from both Seaplane Lagoon and the reference areas. The sediment data used to represent forage fish exposure concentrations were collected from the same general areas. The Seaplane Lagoon sediment areas were defined by circumscribing a polygon around the trawl lines used during fish collection (Example Figure 2). Sediment samples collected over the years from within the polygon were used to represent the sediment concentration of the polygon. Forage fish samples were composite tissue samples of the fish collected within the polygon. Similarly, sediments and fish tissue were collected in the same general areas at each of the two reference locations. For both sediment and tissue, half the detection limit was used for results that were nondetect.



Example Figure 2. Trawl polygons defining forage fish collection areas within Seaplane Lagoon. Polygons in navy blue collectively define collection area distant from outfalls. Sediment stations used to characterize a trawl polygon are labeled in the same color as the trawl line.

Based on this sampling scenario, sediment and tissue results are proximal rather than collocated and a point by point pairing of sediment and tissue results is not possible. Therefore, an approach of pairing average fish concentrations with average sediment concentrations from each collection area was applied. Example Figure 3 illustrates the data pairing and BAF calculation results for Total PCBs. The concentration results in Example Figure 3 are plotted in the same colors as the trawl polygons in Example Figure 2

so the viewer can make a visual association. The reference areas are plotted in red (Paradise Cove) and light blue (Bay Farms). The results are plotted as a crossed vertical line and horizontal line with the intersection point circled. The range of sediment concentrations for a collection area is indicated by the horizontal line and the range of tissue concentrations is indicated by the vertical line. The lines cross at the average or mean concentrations for the tissue and sediment results. The BAF estimate of the uptake rate is presented as the slope of the black line. Note that a measure of the uncertainty associated with this calculation can be summarized by the lengths of the horizontal and vertical lines that show the ranges of sample concentrations. The circled mean concentrations indicate the central trend within each sampling area and their pattern and distance from the BAF line is a measure of the correlation or strength of the overall association. The complete set of forage fish BAF plots (based on dry weight tissue) are shown in Figures D-9 through D-22.



Example Figure 3. Bivariate plot of sediment vs. tissue concentrations of Total PCBs. The BAF ratio is presented as the slope of the diagonal black line.

References

Cochran, W.G. 1963. *Sampling Techniques*. Second Edition. John Wiley and Sons, Inc., New York.

Snedecor, G.W. and W.G. Cochran. 1967. *Statistical Methods.* Iowa State University Press, Ames, IA.

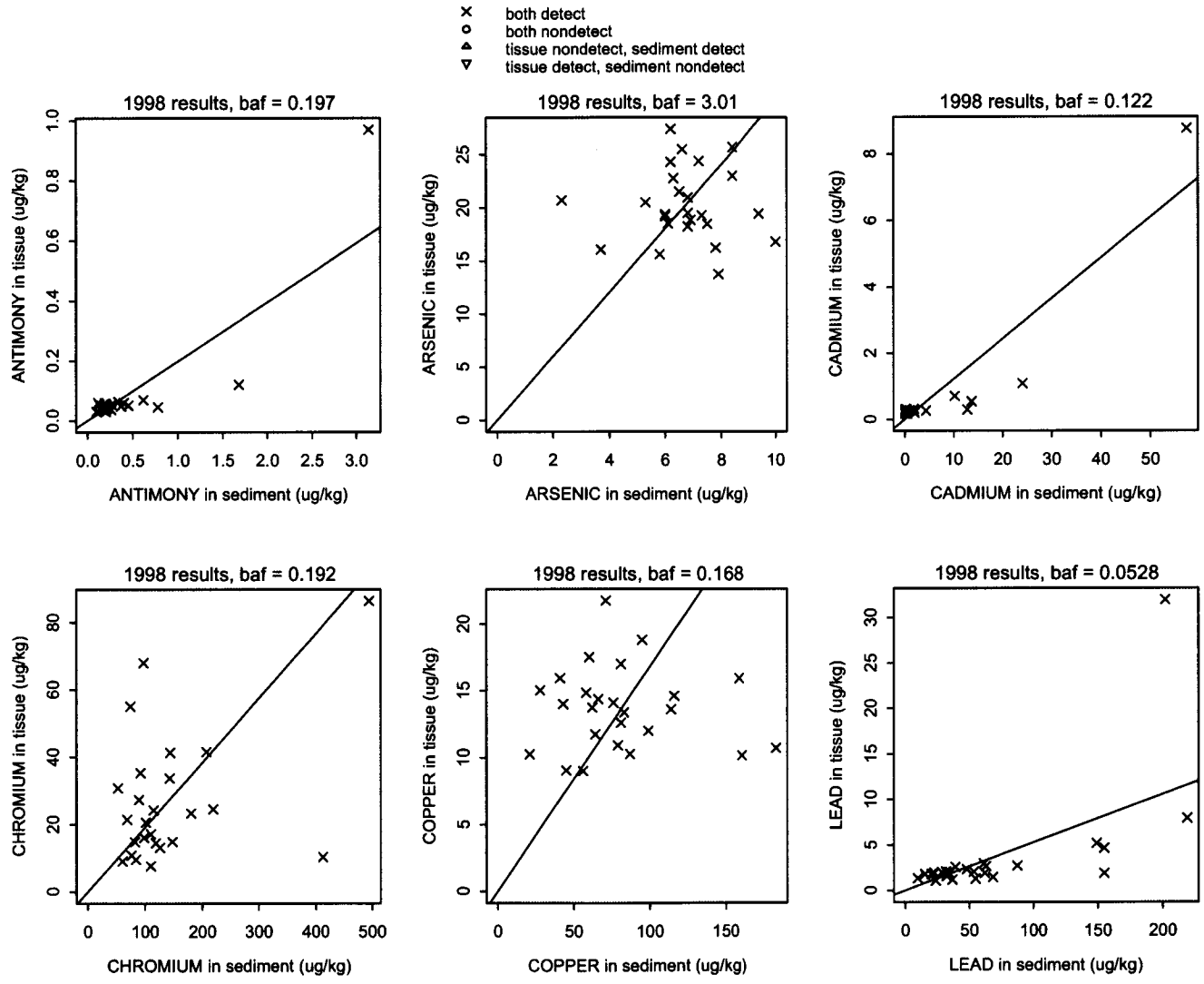


Figure D-1. ***Macoma*** **BAFs (tissue in dry wt) for antimony, arsenic, cadmium, chromium, copper, lead.**

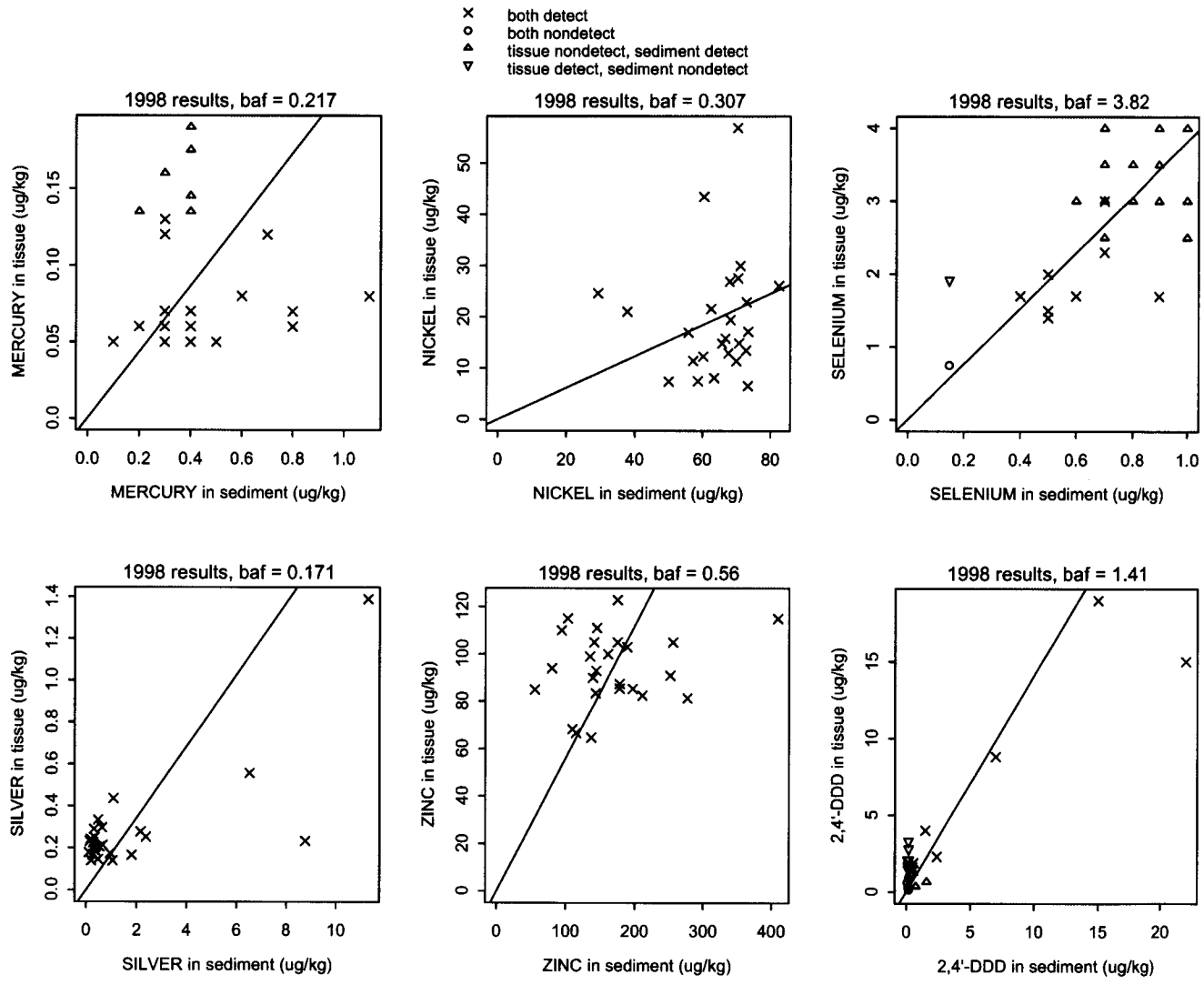


Figure D-2. ***Macoma*** **BAFs (tissue in dry wt) for mercury, nickel, selenium, silver, zinc, 2,4′-DDD.**

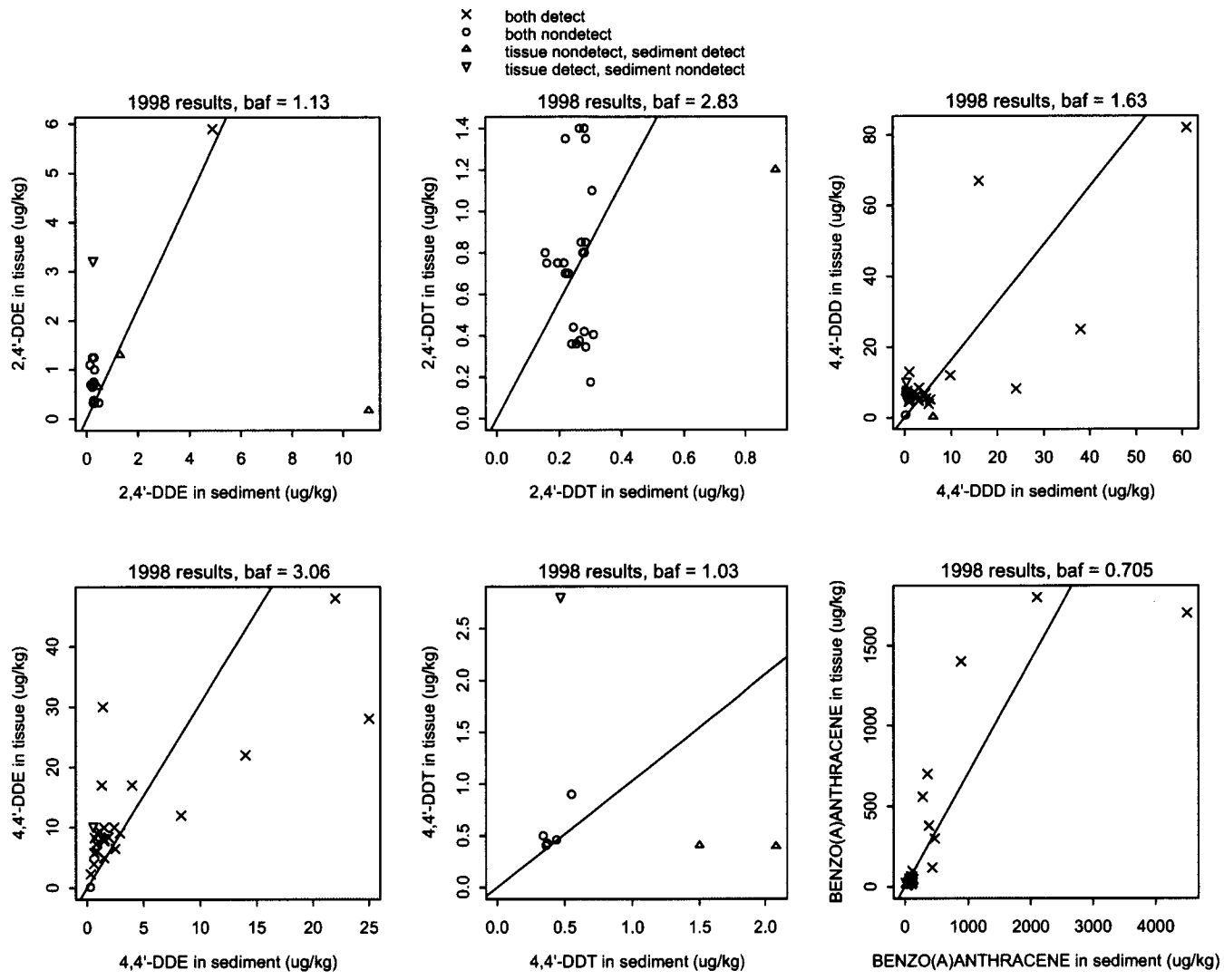


Figure D-3. ***Macoma*** **BAFs (tissue in dry wt) for 2,4′-DDE, 2,4′-DDT, 4,4′-DDD, 4,4-DDE, 4,4′-DDT, benzo(a)anthracene.**

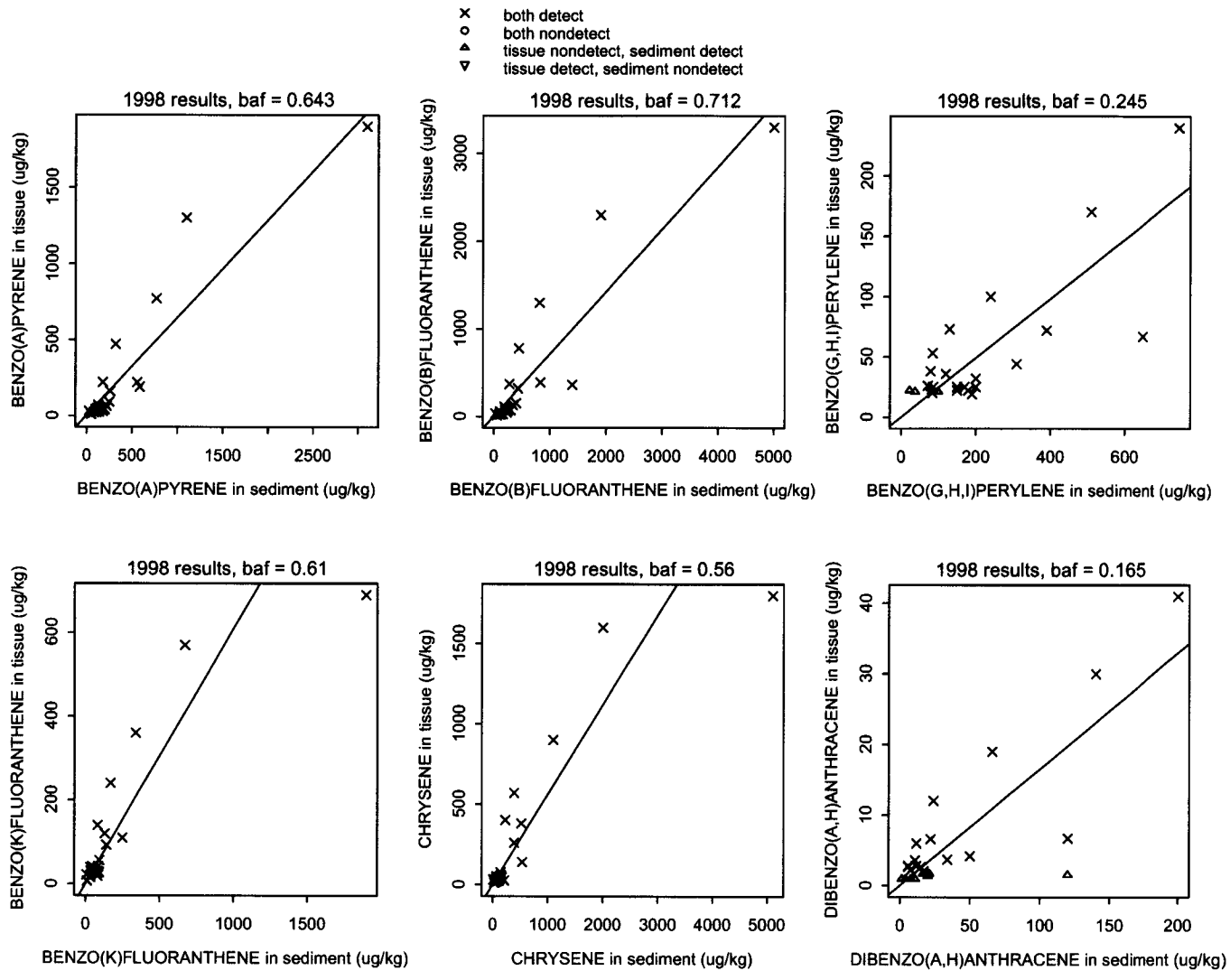


Figure D-4. ***Macoma*** **BAFs (tissue in dry wt) for benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene.**

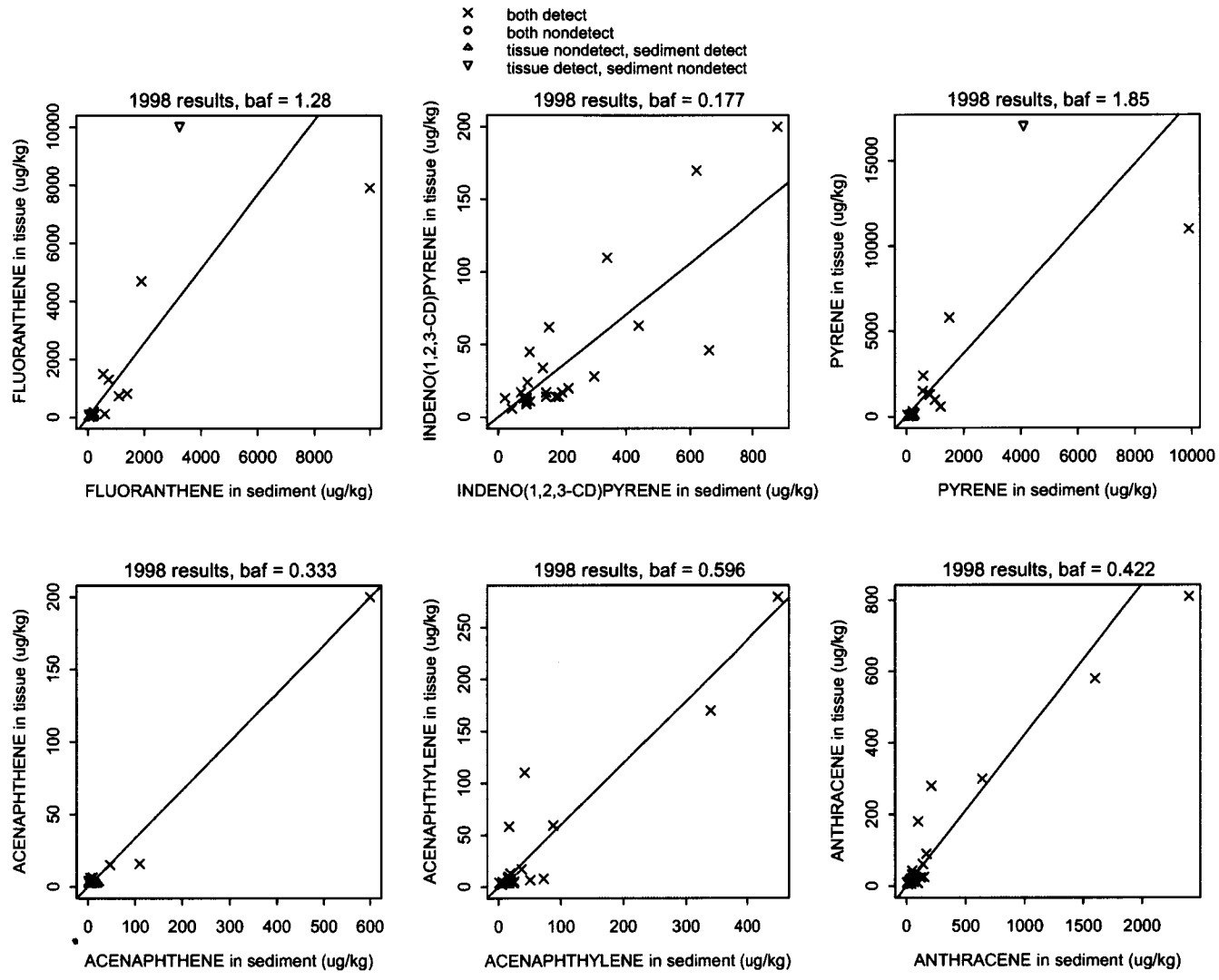


Figure D-5. ***Macoma*** **BAFs (tissue in dry wt) for fluoranthene, indeno(1,2,3-cd)pyrene, pyrene, acenaphthene, acenaphthylene, anthracene.**

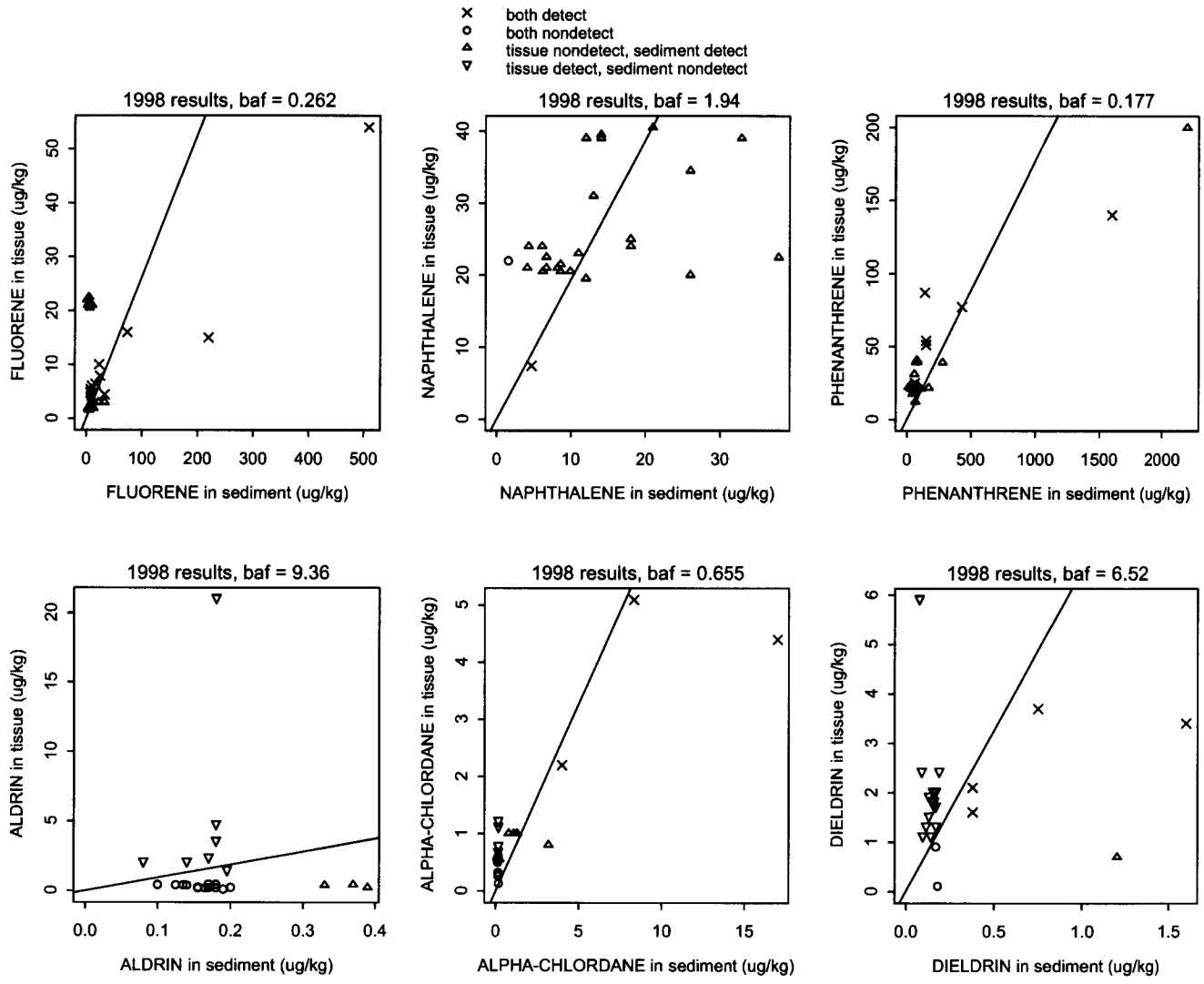


Figure D-6. ***Macoma*** **BAFs (tissue in dry wt) for fluorene, naphthalene, phenanthrene, aldrin, alpha-chlordane, dieldrin.**

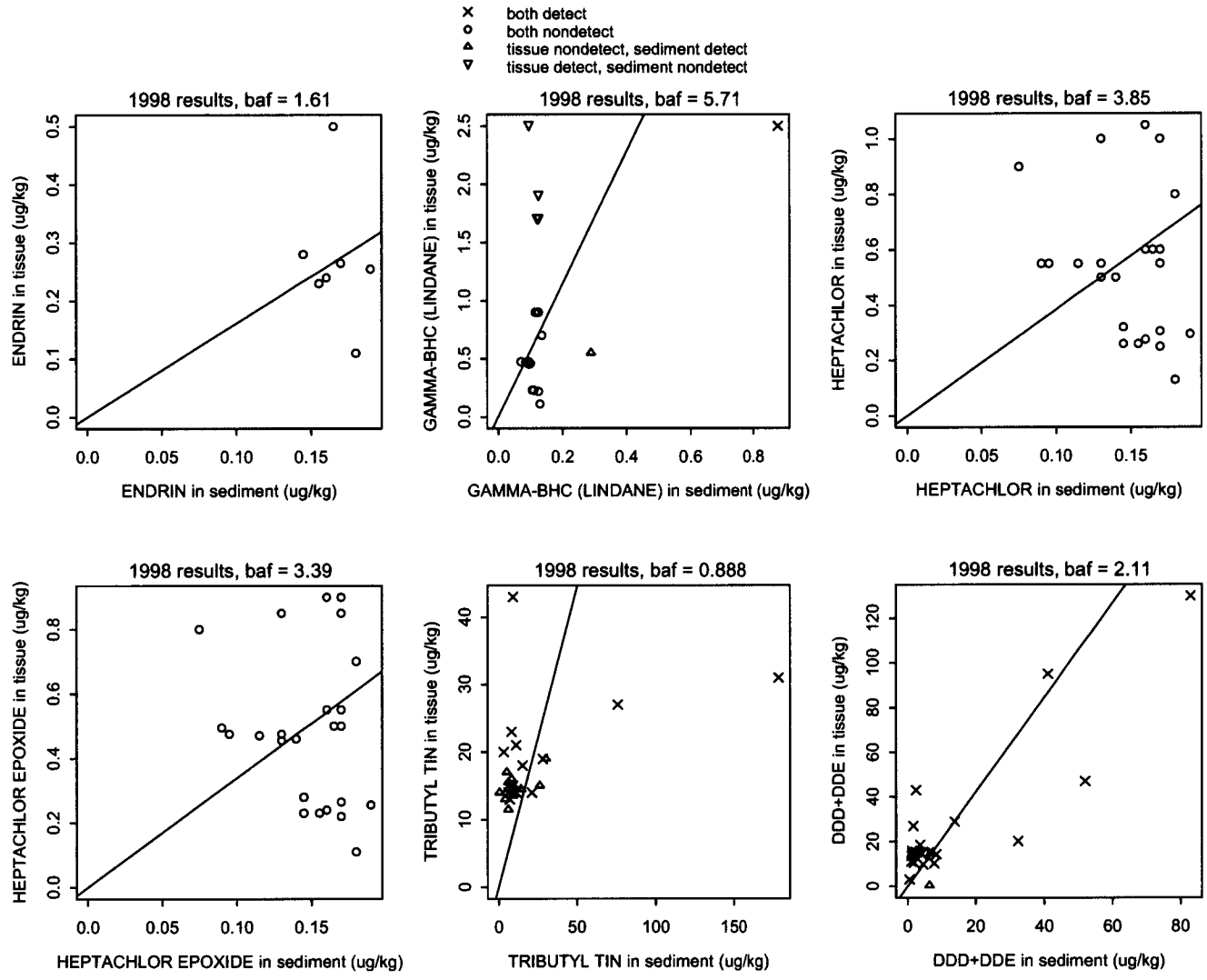


Figure D-7. ***Macoma*** **BAFs (tissue in dry wt) for endrin, gamma-BHC (Lindane), heptachlor, heptachlor epoxide, tributyl tin, DDD+DDE.**

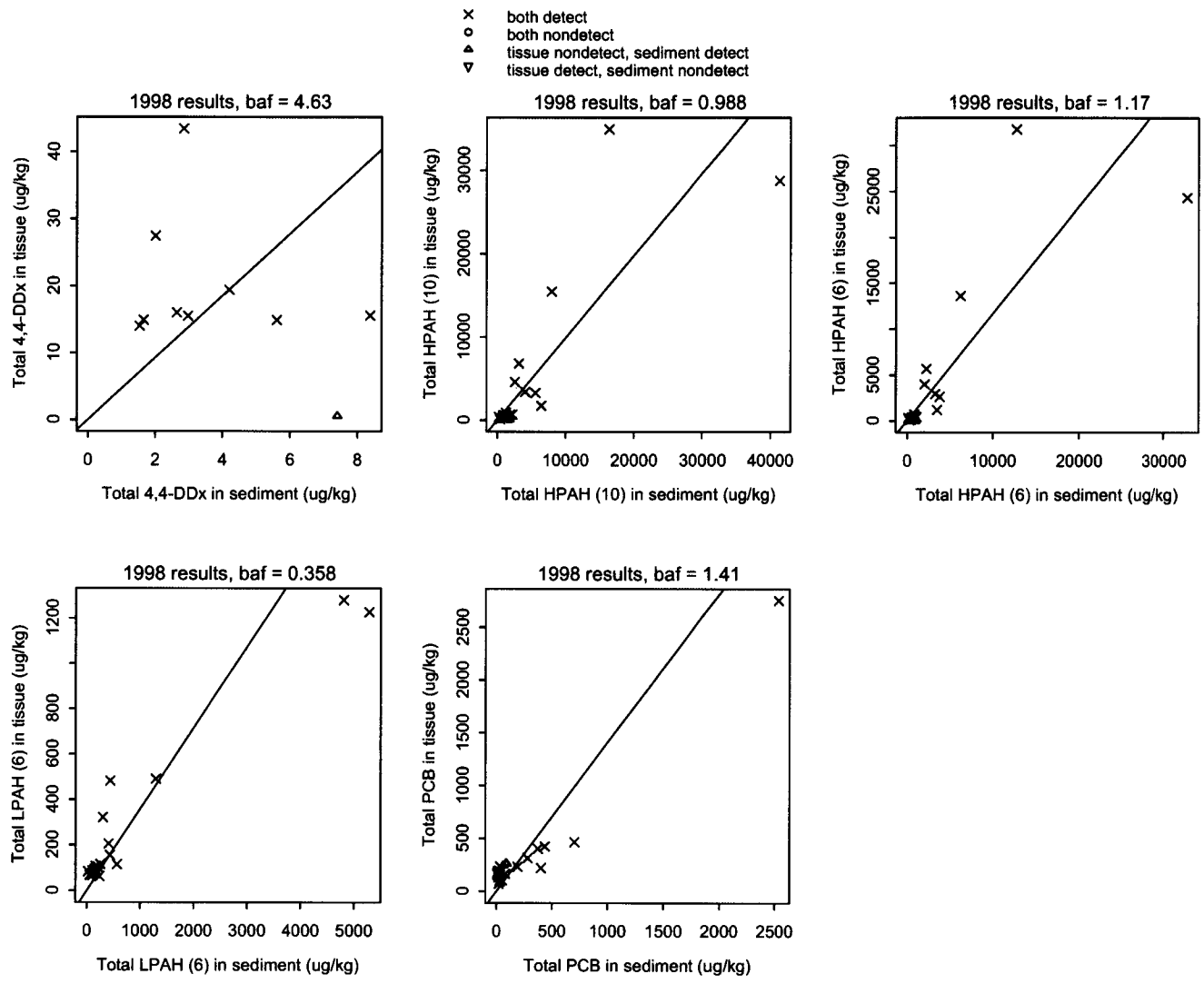


Figure D-8. ***Macoma*** **BAFs (tissue in dry wt) for Total 4,4-DDx, Total HPAH(10), Total HPAH (6), Total LPAH (6), Total PCB.**

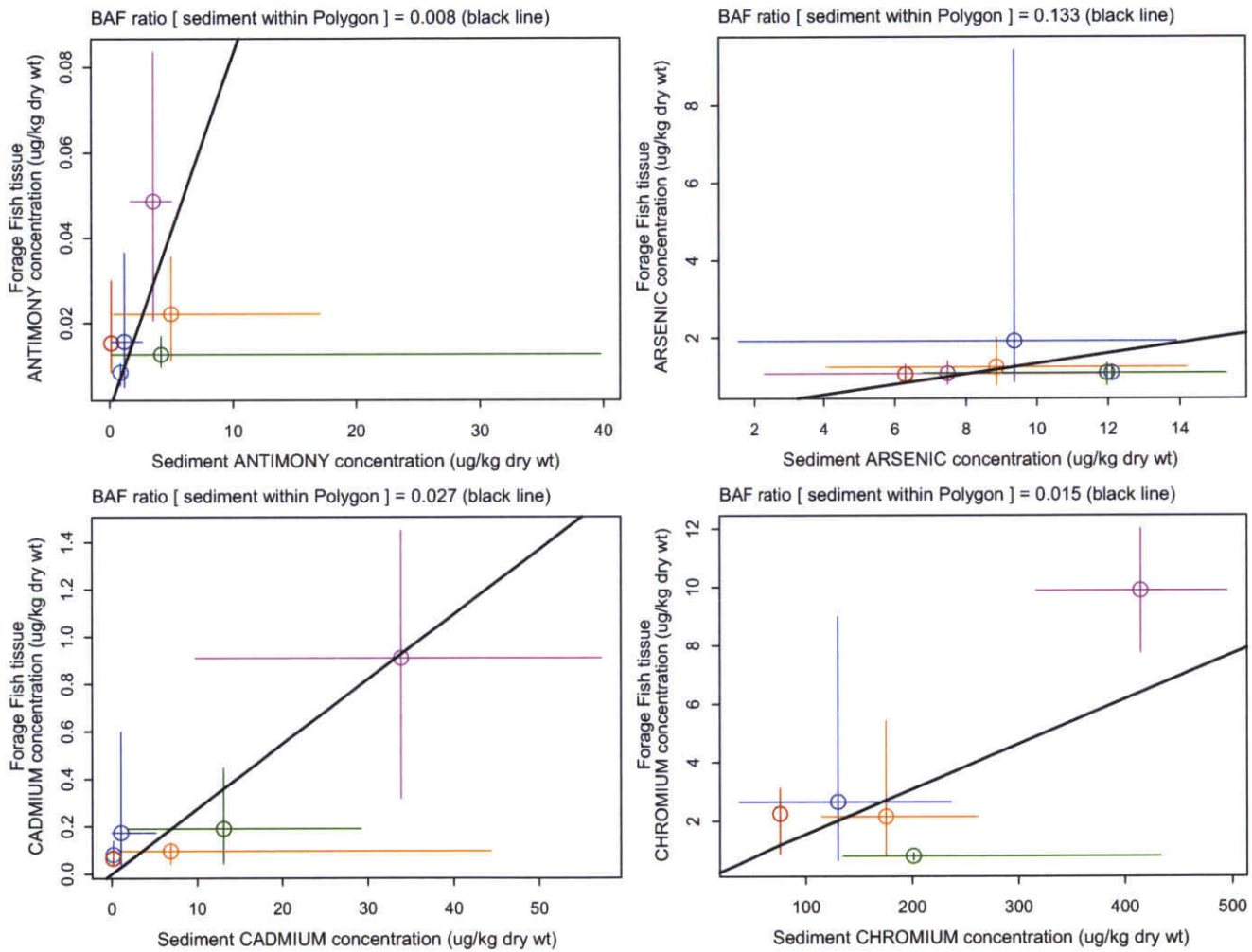


Figure D-9. Forage fish BAFs (tissue in dry wt) for antimony, arsenic, cadmium, chromium.

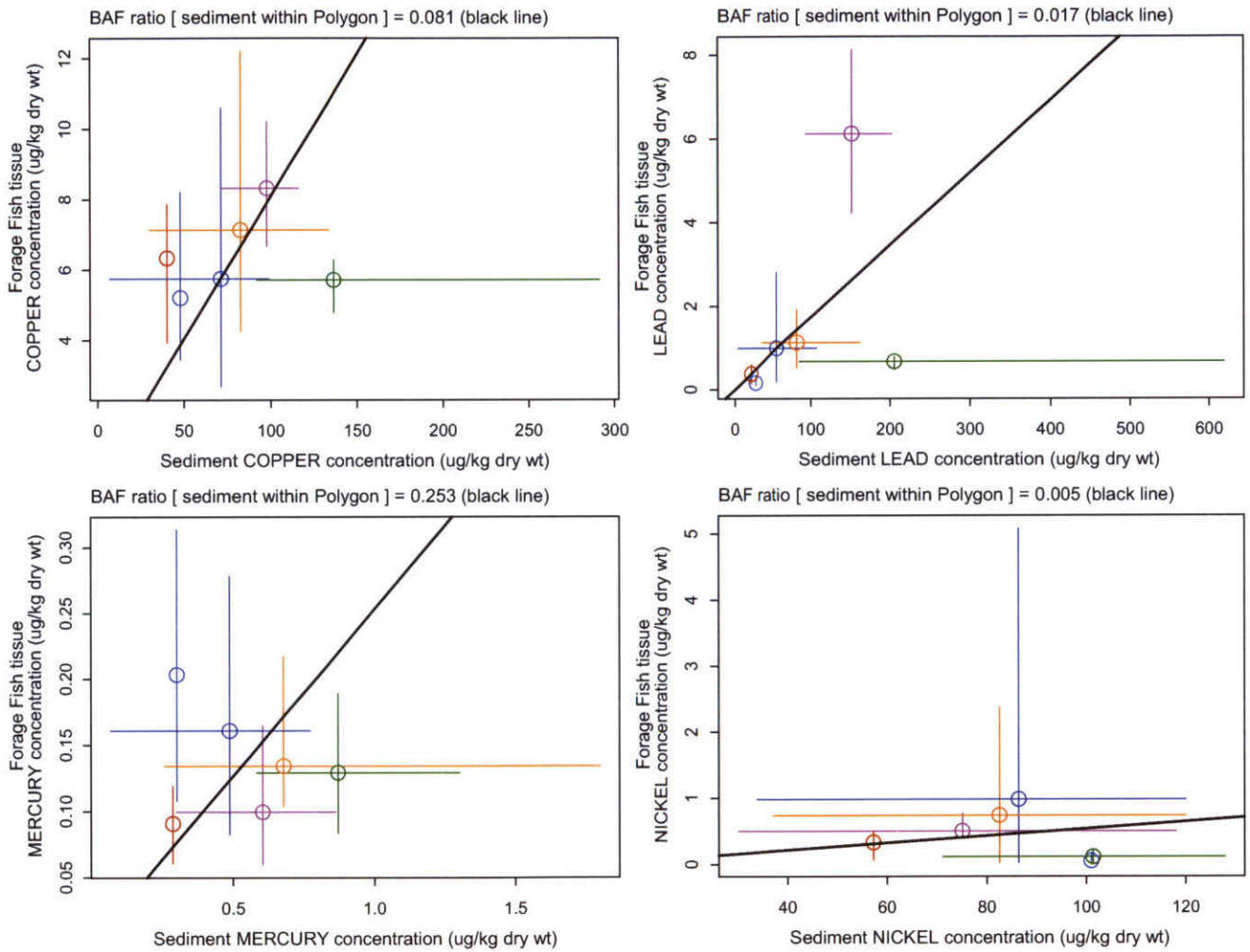


Figure D-10. Forage fish BAFs (tissue in dry wt) for copper, lead, mercury, nickel.

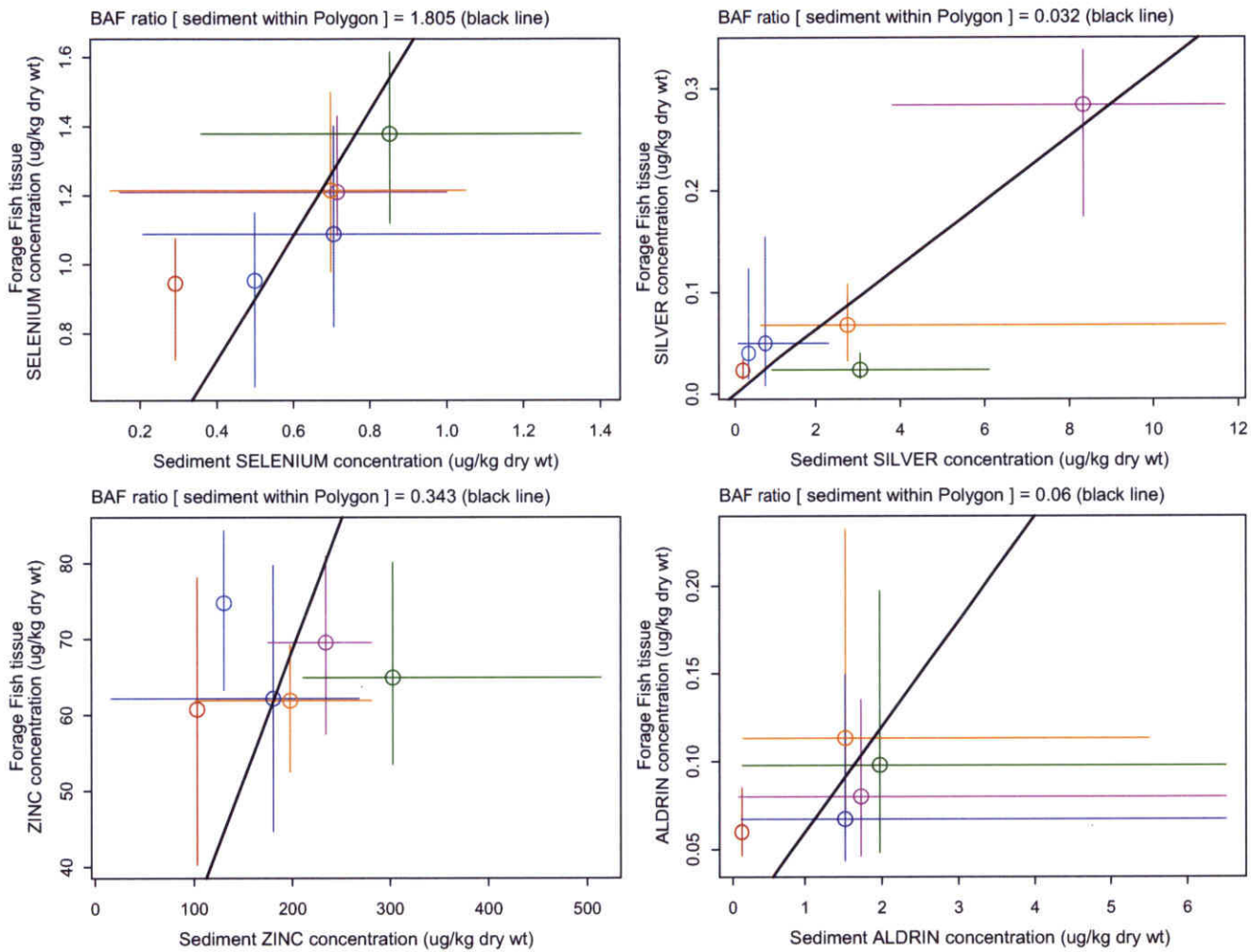


Figure D-11. Forage fish BAFs (tissue in dry wt) for selenium, silver, zinc, aldrin.

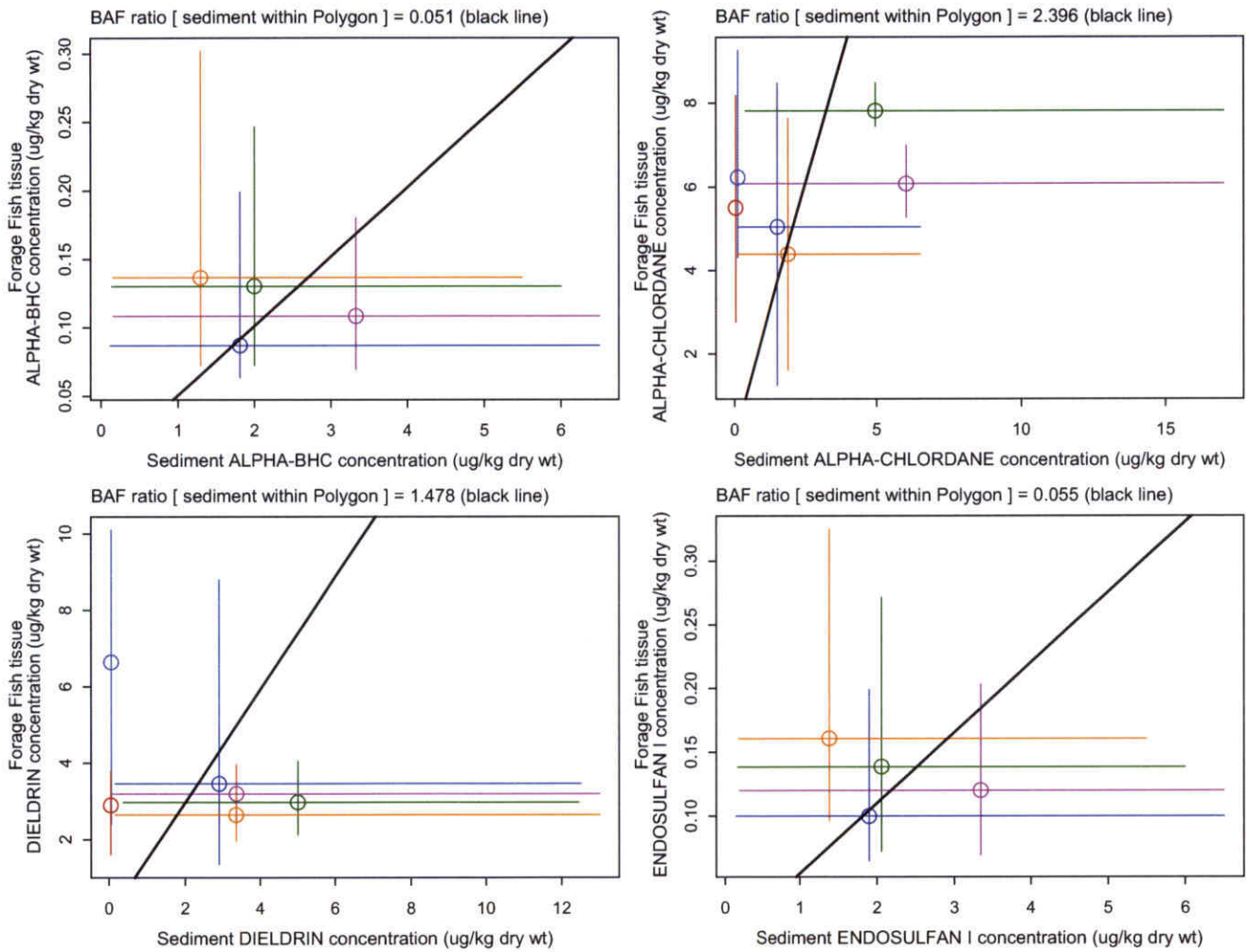


Figure D-12. Forage fish BAFs (tissue in dry wt) for alpha-BHC, alpha-chlordane, dieldrin, endosulfan I.

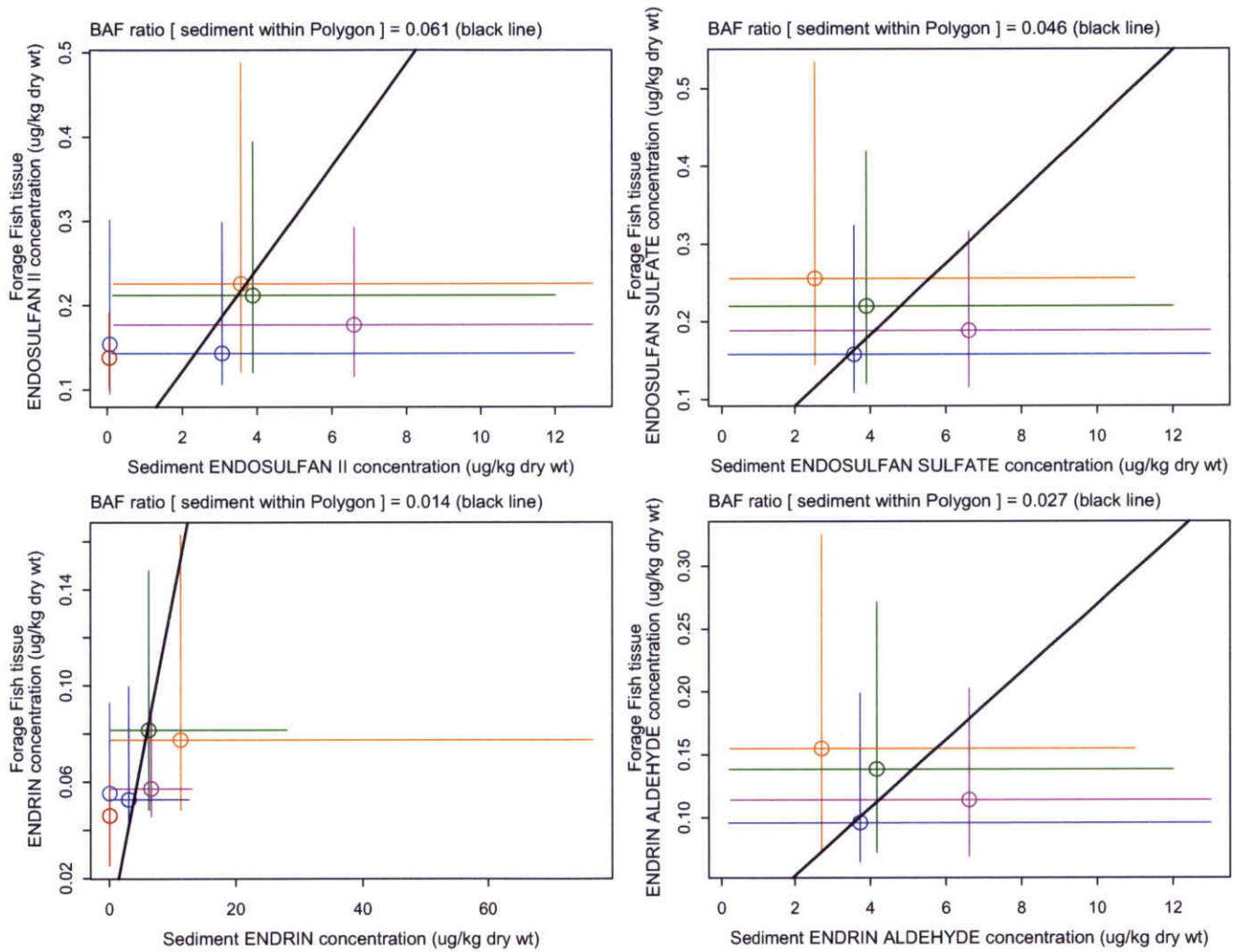


Figure D-13. Forage fish BAFs (tissue in dry wt) for endosulfan II, endosulfan sulfate, endrin, endrin aldehyde.

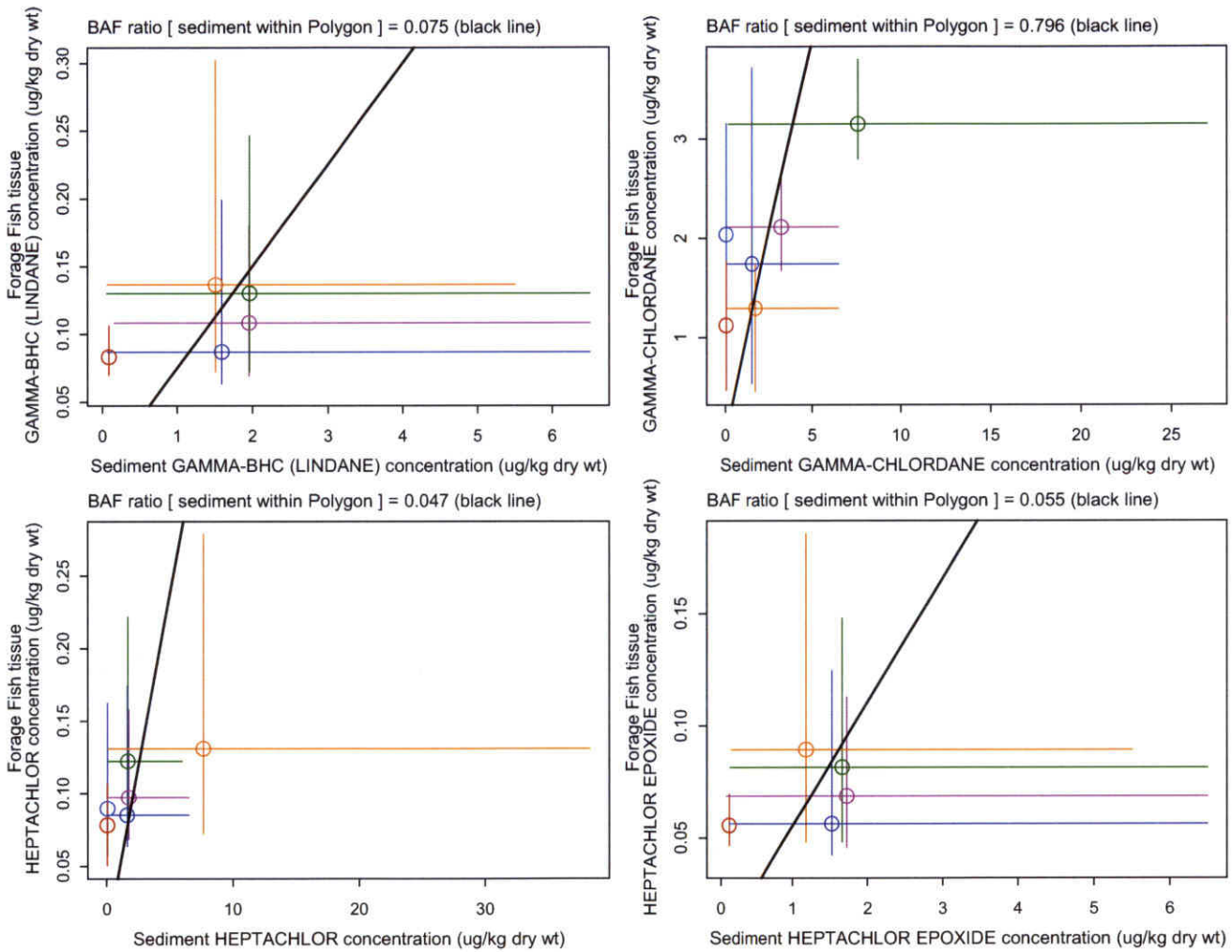


Figure D-14. Forage fish BAFs (tissue in dry wt) for gamma-BHC (Lindane), gamma-chlordane, heptachlor, heptachlor epoxide

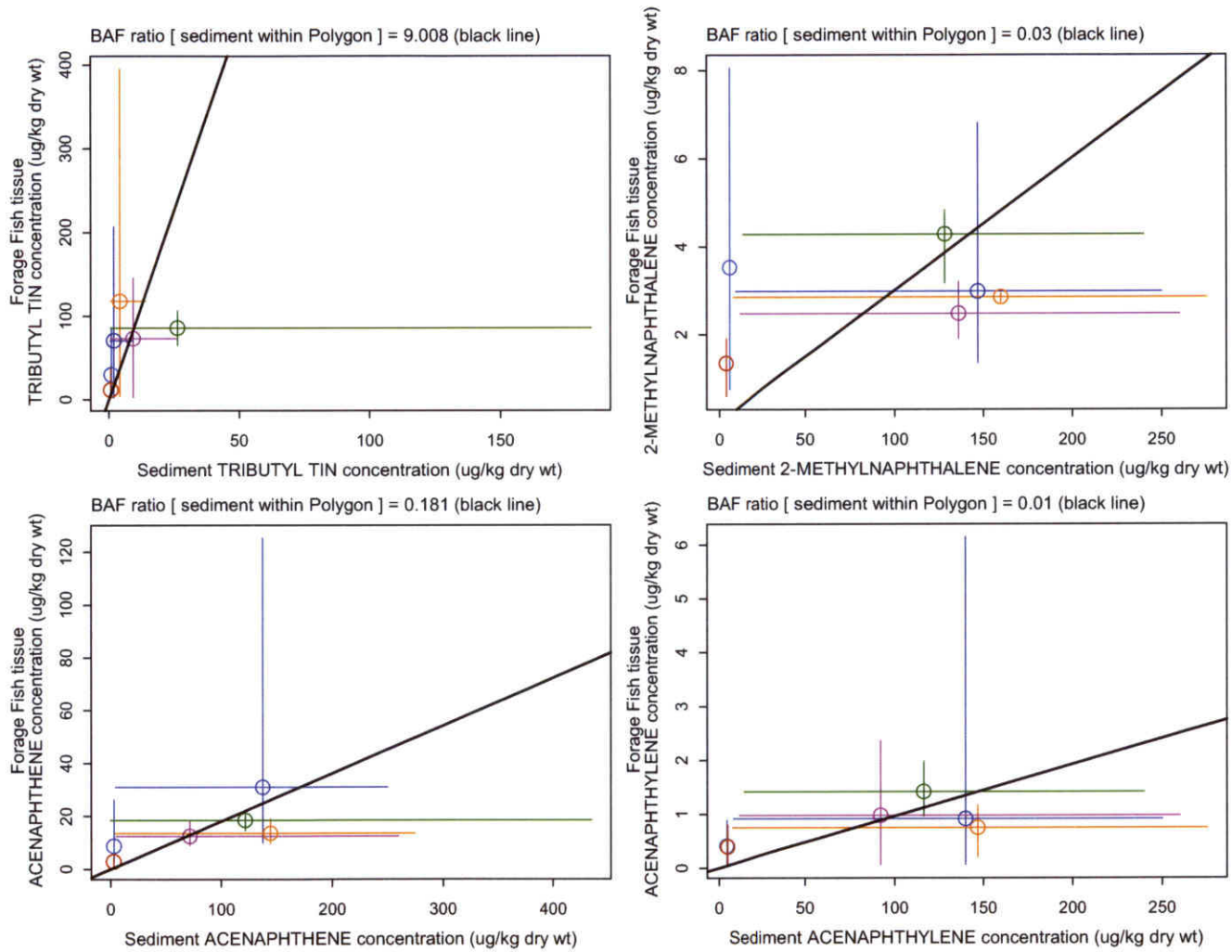


Figure D-15. Forage fish BAFs (tissue in dry wt) for tributyl tin, 2-methylnaphthalene, acenaphthene, acenaphthylene.

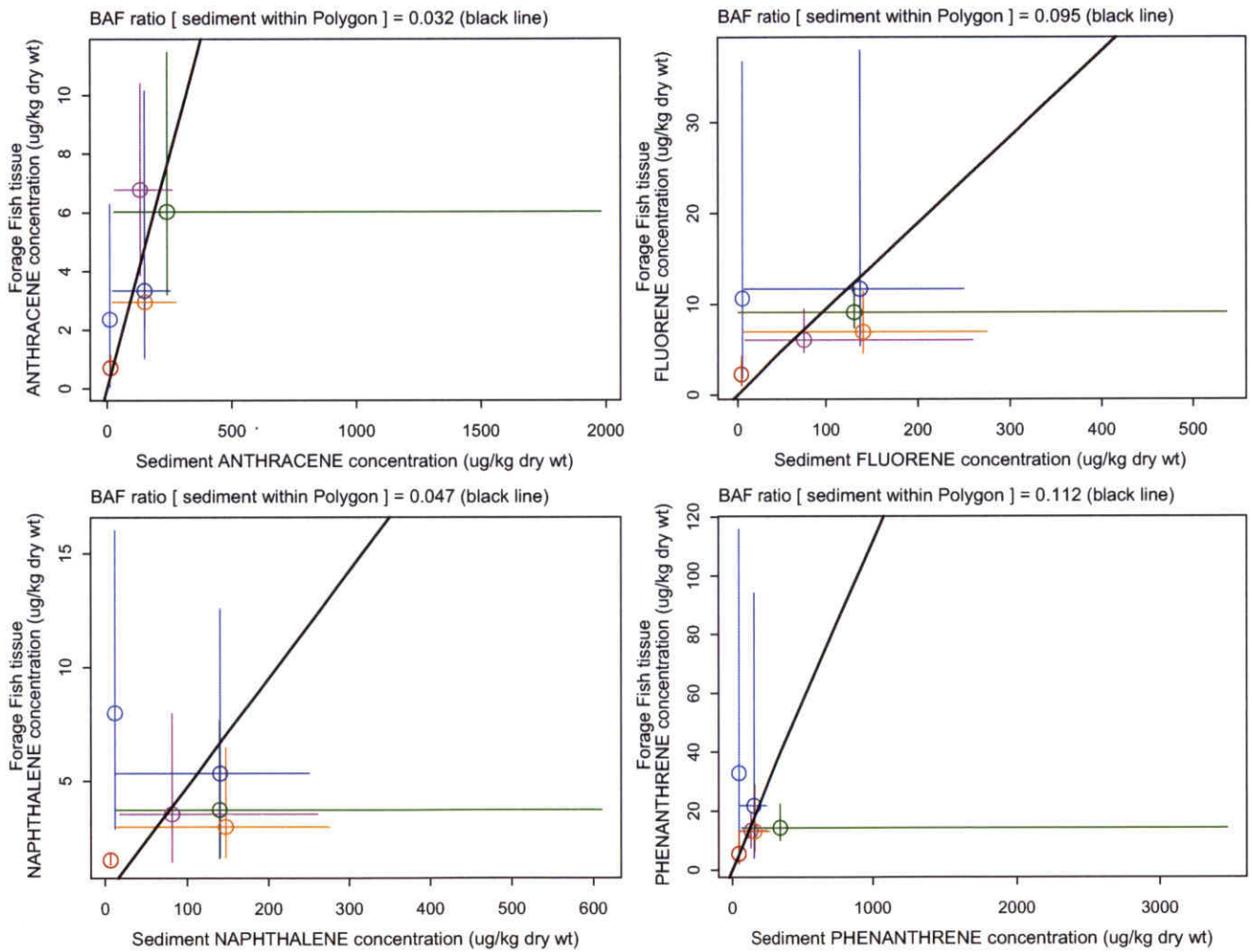


Figure D-16. Forage fish BAFs (tissue in dry wt) for anthracene, fluorene, naphthalene, phenanthrene.

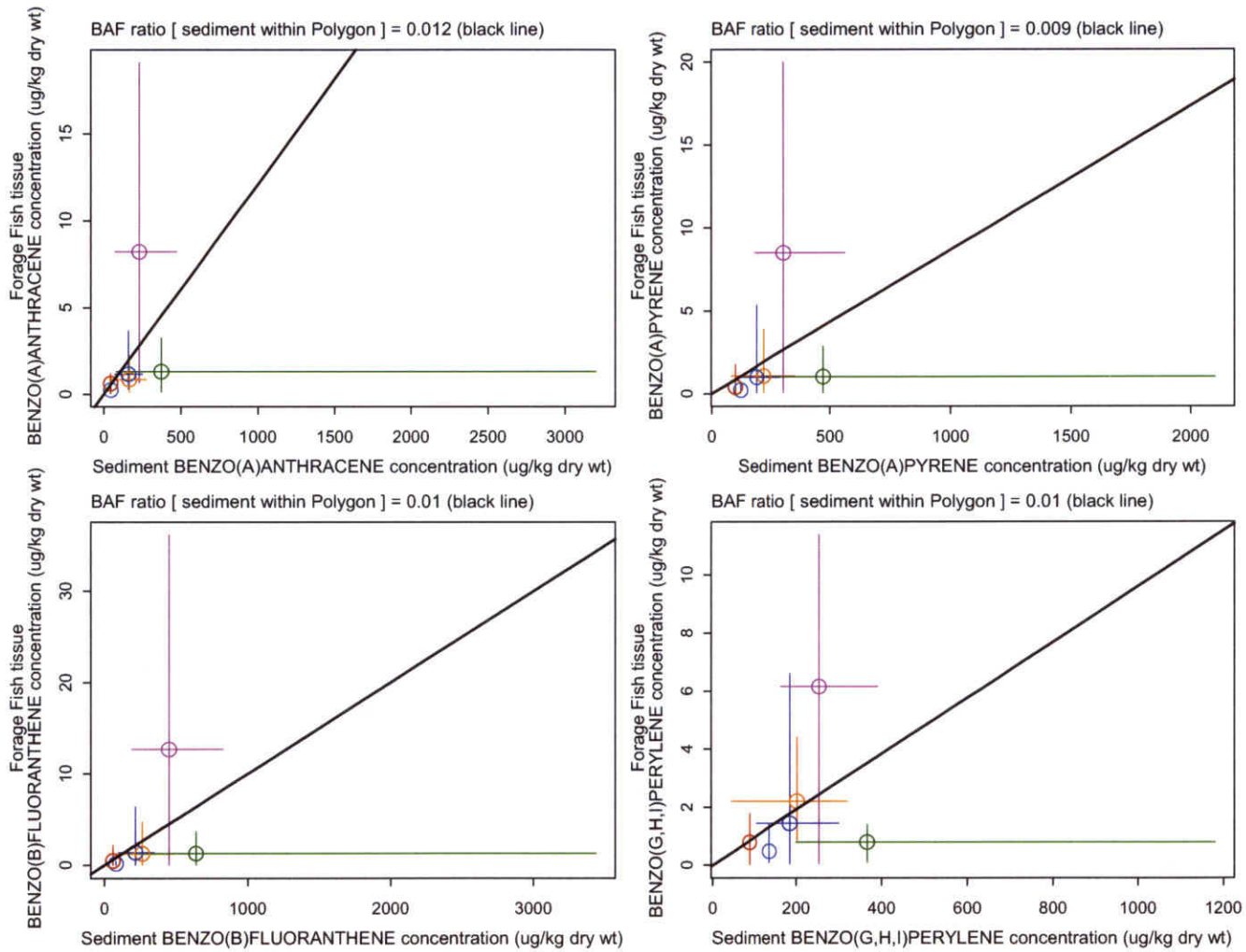


Figure D-17. Forage fish BAFs (tissue in dry wt) for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene.

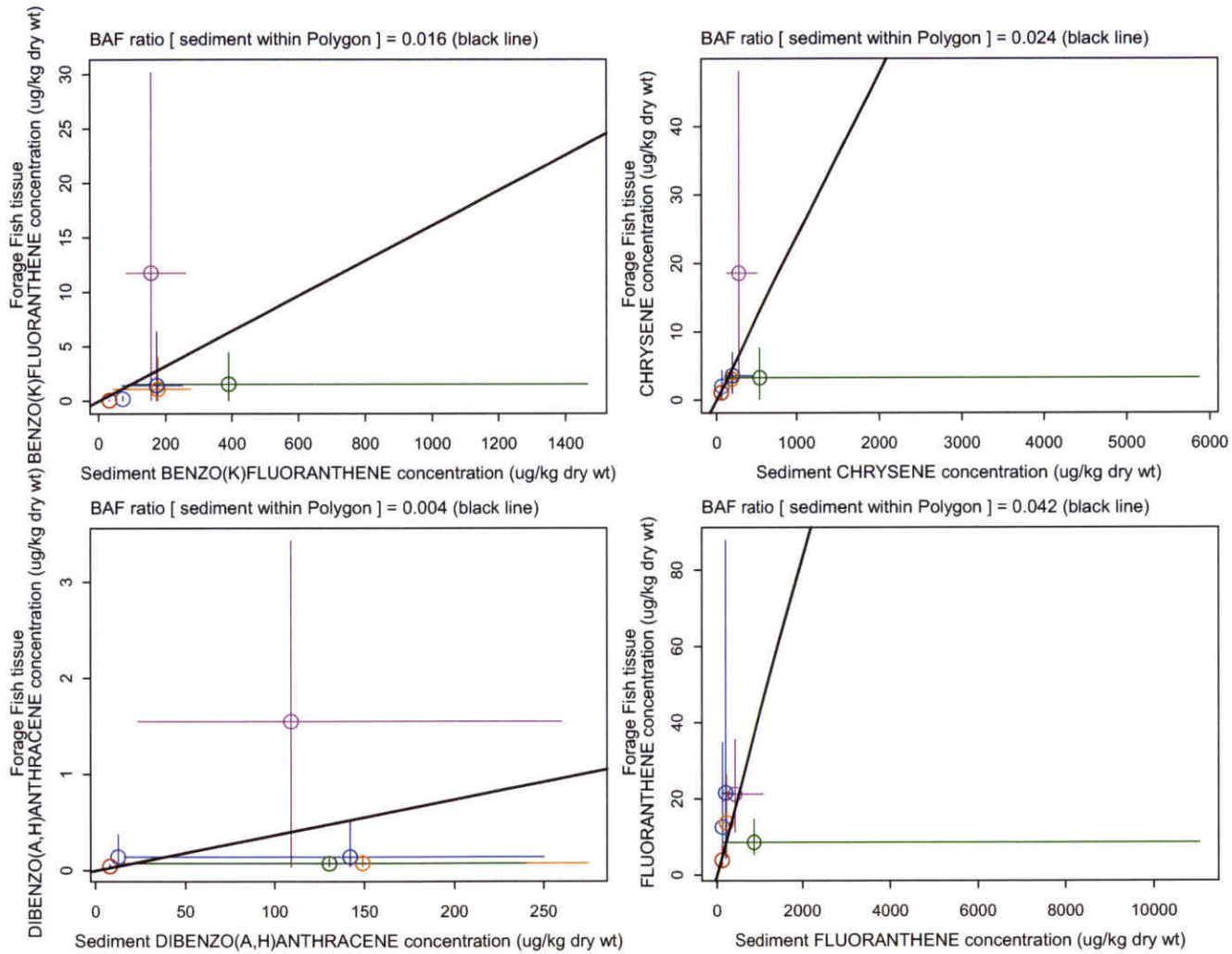


Figure D-18. Forage fish BAFs (tissue in dry wt) for benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene.

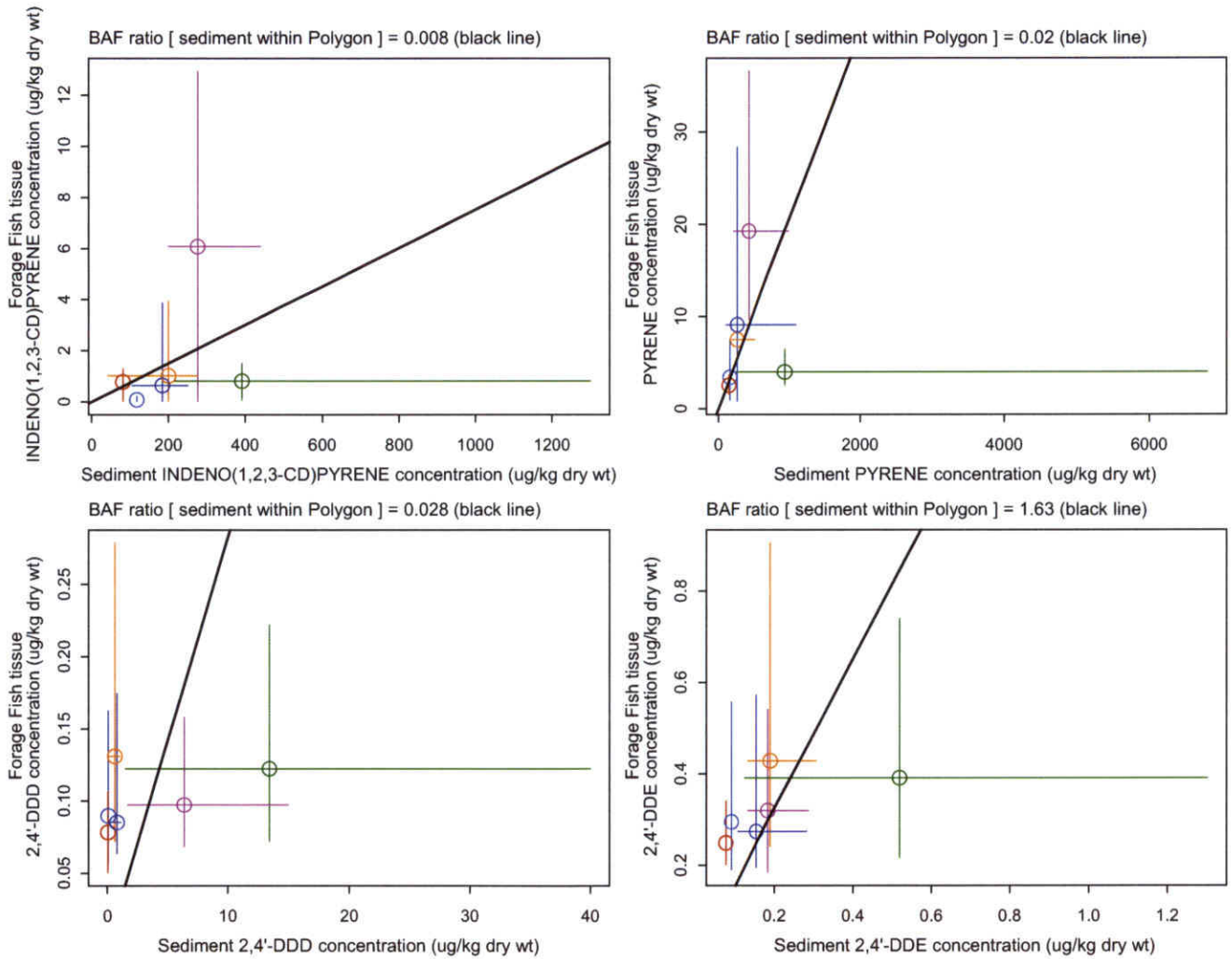


Figure D-19. Forage fish BAFs (tissue in dry wt) for indeno(1,2,3-cd)pyrene, pyrene, 2,4′-DDD, 2,4′-DDE.

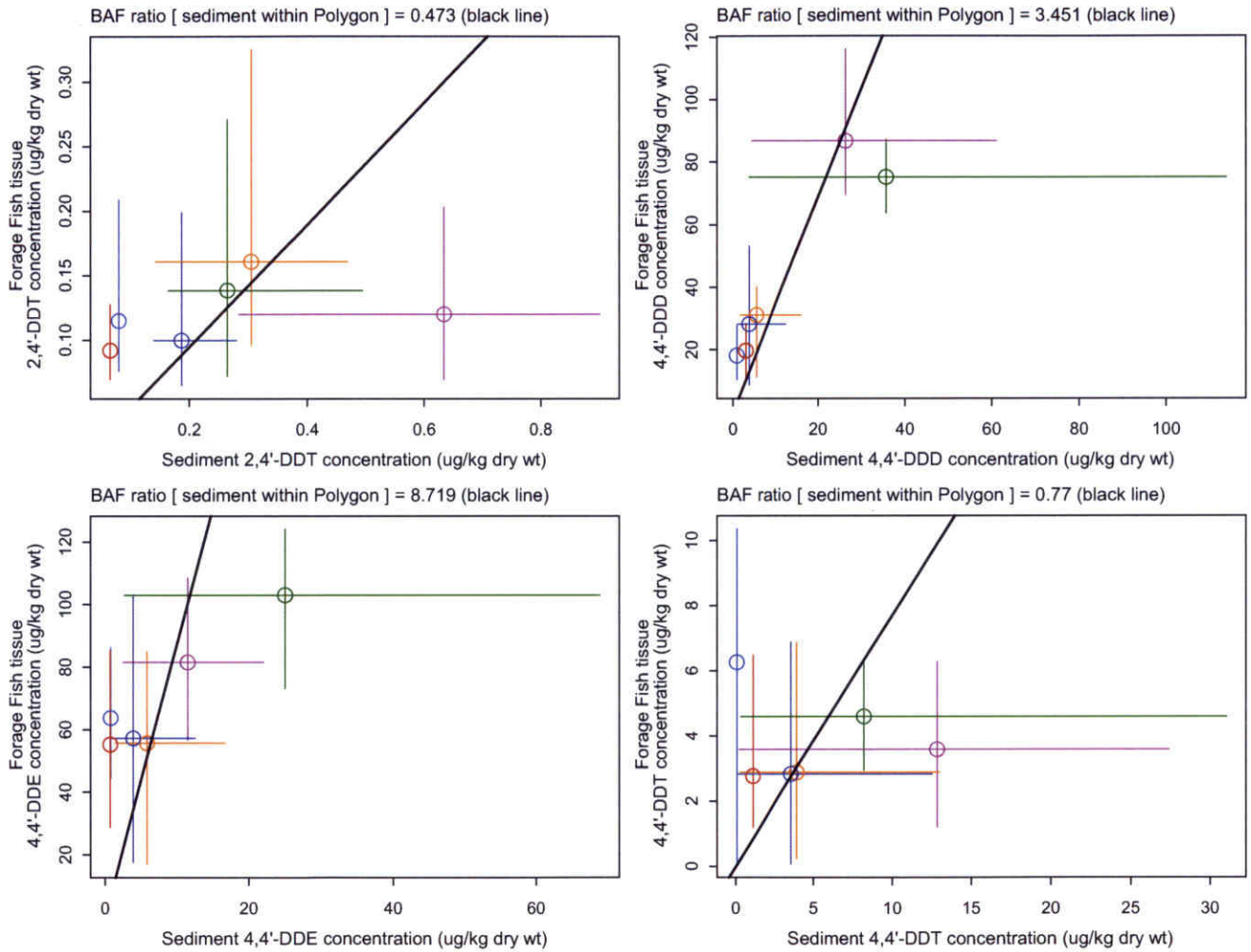


Figure D-20. Forage fish BAFs (tissue in dry wt) for 2,4′-DDT, 4,4′-DDD, 4,4-DDE, 4,4′-DDT.

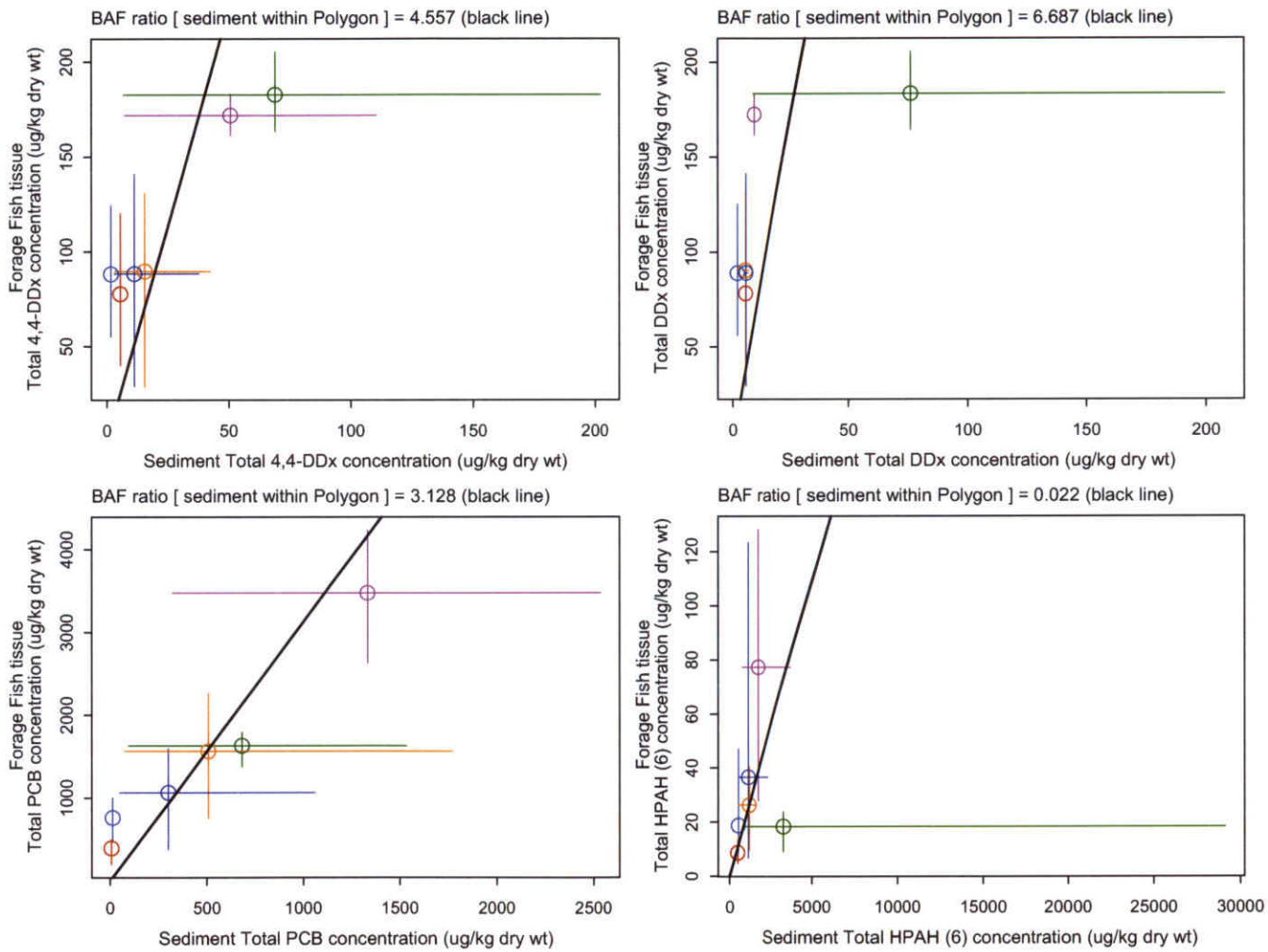


Figure D-21. Forage fish BAFs (tissue in dry wt) for Total 4,4-DDx, Total DDx, Total PCB, Total HPAH (6).

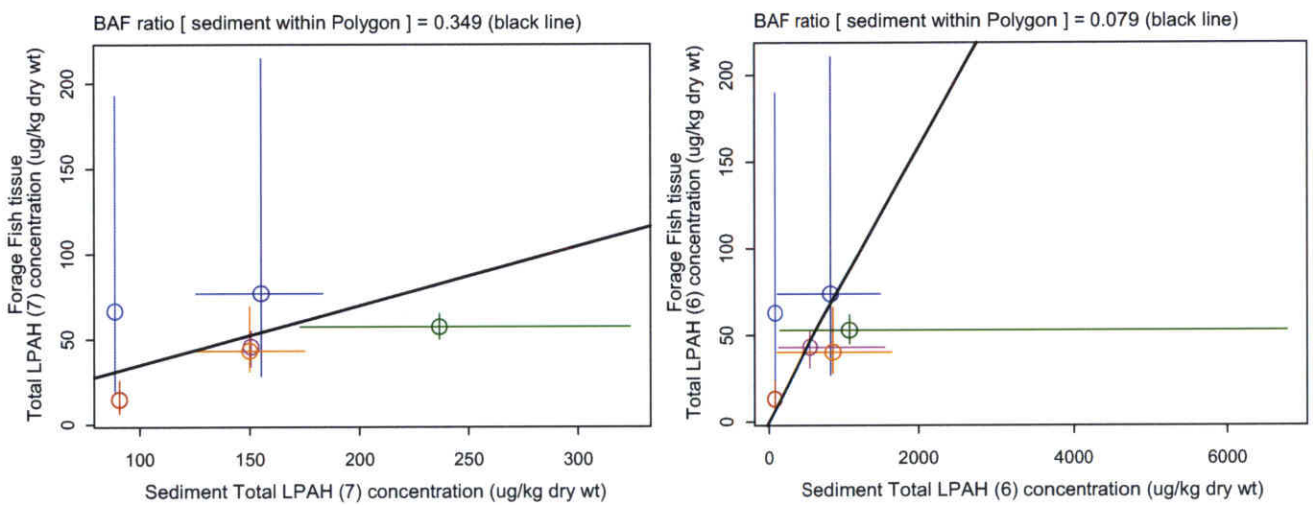


Figure D-22. Forage fish BAFs (tissue in dry wt) for Total LPAH (7), Total LPAH (6).

APPENDIX E

ECOLOGICAL RISK ASSESSMENT

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This appendix contains additional information to support the ecological risk assessment. This appendix is organized in the following way.

E.1 Supporting Information for the Ecological Setting of the Offshore Sites E-1
E.2 Supporting Information for the Effects Assessment E-19
E.3 Supporting Information for the Food Chain Screening-Level Risk Estimates E-23
E.4 Supporting Information for the Food Chain Baseline Risk Estimates E-42
E.5 Qualitative Evaluation of Harbor Seal Exposure to Sediments at Alameda Point E-64
E.5.1 Dermal Exposure to Contaminated Sediments E-64
E.5.2 Exposure from Incidental Ingestion of Contaminated Sediments E-66
E.5.3 Exposure from Ingestion of Contaminated Prey E-66
E.5.4 Conclusions E-69

FIGURE

Figure E-1. Harbor Seal Haul-Out Sites and Feeding Areas in San Francisco Bay E-65

TABLES

Table E-1. Invertebrates in Offshore Sediment at Alameda Point E-6
Table E-2. Marine Fish Species Potentially Occurring at Alameda Point E-8
Table E-3. Birds Occurring in Alameda Point Environs E-9
Table E-4. Mammals Occurring in San Francisco Bay and Alameda Point Environs E-17
Table E-5. Weight-Adjusted Toxicity Reference Values for the Surf Scoter E-20
Table E-6. Weight-Adjusted Toxicity Reference Value for Double-Crested Cormorant E-21
Table E-7. Weight-Adjusted Toxicity Reference Values for the Least Tern E-22
Table E-8. Screening-Level Hazard Quotient Results for the Surf Scoter for All Years Data from IR Site 20 ..... E-24
Table E-9. Screening-Level Hazard Quotient Results for the Least Tern for All Years Data from IR Site 20 ..... E-25
Table E-10. Screening-Level Hazard Quotient Results for the Double-Crested Cormorant for All Years Data from IR Site 20 ..... E-26
Table E-11. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Surface Data from IR Site 20 ..... E-27
Table E-12. Screening-Level Hazard Quotients for the Least Tern for 2005 Surface Data from IR Site 20 ..... E-28
Table E-13. Screening-Level Hazard Quotient for the Double-Crested Cormorant for 2005 Surface Data from IR Site 20 ..... E-29
Table E-14. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Subsurface Data from IR Site 20 ..... E-30
Table E-15. Screening-Level Hazard Quotient Results for the Least Tern for 2005 Subsurface Data at IR Site 20 ..... E-31
Table E-16. Screening-Level Hazard Quotient Results for the Double-Crested Cormorant for 2005 Subsurface Data at IR Site 20 ..... E-32
Table E-17. Screening-Level Hazard Quotient Results for the Surf Scoter for All Years Data from IR Site 24 ..... E-33
Table E-18. Screening-Level Hazard Quotients for the Least Tern for All Years Data from IR Site 24 ..... E-34

Table E-19. Screening-Level Hazard Quotient for the Double-Crested Cormorant for All Years Data from IR Site 24 ..... E-35
Table E-20. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Surface IR Site 24 ..... E-36
Table E-21. Screening-Level Hazard Quotients for the Least Tern for 2005 Surface IR Site 24 ..... E-37
Table E-22. Screening-Level Hazard Quotient for the Double-Crested Cormorant for 2005 Surface IR Site 24 ..... E-38
Table E-23. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Subsurface IR Site 24 ..... E-39
Table E-24. Screening-Level Hazard Quotients for the Least Tern for 2005 Subsurface IR Site 24 ..... E-40
Table E-25. Screening-Level Hazard Quotient for the Double-Crested Cormorant for 2005 Subsurface IR Site 24 ..... E-41
Table E-26. Baseline Dose and Hazard Quotient Results for the Surf Scoter for All Years for IR Site 20 ..... E-43
Table E-27. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Surface for IR Site 20 ..... E-44
Table E-28. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Subsurface for IR Site 20 ..... E-45
Table E-29. Reference Hazard Quotient Results for the Surf Scoter E-46
Table E-30. Baseline Hazard Quotient Results for the Least Tern for All Years for IR Site 20 ..... E-47
Table E-31. Baseline Dose and Hazard Quotient Results for the Least Tern for 2005 Surface for IR Site 20 ..... E-48
Table E-32. Baseline Hazard Quotient Results for the Least Tern for 2005 Subsurface for IR Site 20 ..... E-49
Table E-33. Reference Hazard Quotient Results for the Least Tern E-50
Table E-34. Baseline Hazard Quotient Results for the Cormorant for All Years for IR Site 20 ..... E-51
Table E-35. Baseline Hazard Quotient Results for the Cormorant for 2005 Surface for IR Site 20 ..... E-52
Table E-36. Baseline Dose and Hazard Quotient Results for the Cormorant for 2005 Subsurface for IR Site 20 ..... E-53
Table E-37. Reference Hazard Quotient Results for the Cormorant E-54
Table E-38. Baseline Dose and Hazard Quotient Results for the Surf Scoter for All Years for IR Site 24 ..... E-55
Table E-39. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Surface for IR Site 24 ..... E-56
Table E-40. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Subsurface, IR Site 24 ..... E-57
Table E-41. Baseline Hazard Quotient Results for the Least Tern for All Years for IR Site 24 ..... E-58
Table E-42. Baseline Hazard Quotient Results for the Least Tern for 2005 Surface for IR Site 24 ..... E-59
Table E-43. Baseline Hazard Quotient Results for the Least Tern for 2005 Subsurface for IR Site 24 ..... E-60
Table E-44. Baseline Hazard Quotient Results for the Cormorant for All Years for IR Site 24 ..... E-61
Table E-45. Baseline Hazard Quotient Results for the Cormorant for 2005 Surface for IR Site 24 ..... E-62
Table E-46. Baseline Hazard Quotient Results for the Cormorant for 2005 Subsurface for IR Site 24 ..... E-63

E.1 SUPPORTING INFORMATION FOR THE ECOLOGICAL SETTING OF THE OFFSHORE SITES

A summary of the ecology of San Francisco Bay is presented in the ERA. This section of the Appendix presents more specific information on the invertebrate, fish, bird, and mammalian species observed or likely to be present in the offshore areas of Alameda Point. Complete species lists can be found in Tables E-1 through E-4 for benthic invertebrates, fish, birds, and marine mammals, respectively.

Special status species known to occur in the Central Bay include green sturgeon (*Acipenser medirostris*), winter-run Chinook salmon (*Oncorhynchus tshawytscha*), central California steelhead (*Oncorhynchus mykiss*), Barrow's goldeneye (*Bucephala islandica*), double-crested cormorant, California least tern, California brown pelican (*Pelecanus occidentalis californicus*), western snowy plover (*Charadrius alexandrinus nivosus*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), American peregrine falcon (*Falco peregrinus anatum*), California sea lion, and harbor seal (ENTRIX, 1997). None of these species is known to nest or breed in the offshore areas, although several species are known to use adjacent upland areas for nesting or and/or foraging activities (e.g., least tern).

Additional information detailing conservation status, distribution, abundance, seasonality, life history, and occurrence in the vicinity of Alameda Point for each of the special status species is discussed below.

Chinook Salmon. The Chinook salmon is recognized to have four distinct breeding populations or races, which are unique to the Sacramento-San Joaquin River system. These races are segregated by the seasonality of their spawning activities and include spring, fall, late fall, and winter races or runs. Each race has been afforded its own management status, and currently, Central Valley spring-run (threatened) and Sacramento River winter-run (endangered) Chinook salmon are listed by the state and federal government (National Marine Fishery Service [NMFS], 2001). The status of fall-run Chinook salmon is currently under review, and it is likely that this population will soon be listed as Threatened.

Chinook salmon are anadromous (they migrate from the ocean to upper reaches of rivers to reproduce), and young fish (smolts) migrate downstream to the ocean 5 to 10 months after hatching. Once downstream, they spend two to four years before completing their life cycle. Adult and smolting (juvenile sea-run) Chinook salmon are likely to occasionally stray into the Alameda Point vicinity from their migration corridor to the north and may engage in limited foraging activities; however, Chinook salmon of any race are unlikely to forage significantly around the offshore areas of Alameda Point.

Central California Steelhead. Central California steelheads are listed by the federal government as a threatened species and by the California Department of Fish and Game (CDFG) as a California Special Management Species. Steelhead historically ranged throughout the northern Pacific Ocean from Baja California to the Kamchatka Peninsula; their range currently extends from Malibu Creek in southern California to the Kamchatka Peninsula (NMFS, 2001). Steelheads are anadromous (they migrate from the ocean to upper reaches of rivers to reproduce), and young fish (smolts) generally migrate downstream to the ocean as two-year-olds. Once downstream, they spend two to three years before beginning an upstream spawning migration. Spawning runs typically occur from December through May. Unlike salmon, steelheads are iteroparous, meaning they are capable of spawning more than once before they die.

Steelheads were not collected during the 1997 habitat evaluation surveys conducted by ENTRIX (1997) in the Oakland estuary. Steelhead are known to use San Francisco Bay as a migratory route to and from the ocean and for limited foraging activities, but are unlikely to use the habitat around Alameda Point to any great extent.

Double-Crested Cormorant. The double-crested cormorant is a CDFG species of special concern and is afforded legal protections under the Migratory Bird Treaty Act (16 USC 703-711). It is a year-long resident along the entire coast of California and is known to frequent inland lakes, fresh, salt, and estuarine waters. It is common within San Francisco Bay.

Fish comprise the bulk of the cormorant diet, and crustaceans and amphibians are ingested as food items to a lesser degree. The double-crested cormorant is a diving bird, which pursues its prey underwater and can remain submerged for about 30 seconds. It feeds diurnally and is known to roost beside water on offshore rocks, islands, steep cliffs, trees, or artificial structures (i.e., wharves, jetties, bridges). Nests are built in similar habitats as those used for roosting, with an additional requirement that the area be undisturbed and within 8 to 16 km (5-10 mi.) of a foraging area with a dependable food supply (ENTRIX, 1997).

Double-crested cormorants are common in the vicinity of Alameda Point. They have been observed foraging in a variety of habitats and resting upon manmade structures within the Port of Oakland (ENTRIX, 1997). A large nesting colony, estimated at more than 1,000 individuals during the 1997 ENTRIX bird surveys, exists on the eastern span of the Bay Bridge. The close proximity of the cormorant breeding colony and the associated high-energy demands of chick rearing likely make the general area, including the area around Alameda Point, foraging habitat for this species.

California Least Tern. The California least tern is listed by the state (CDFG) and federal government (U.S. Fish and Wildlife Service [USFWS]) as an endangered species and by CDFG as a fully protected species. It is also afforded legal protection under the Migratory Bird Treaty Act (16 USC 703-711). California least terns are migratory and usually arrive in California in April and May. They feed diurnally, primarily on anchovy, silversides, and shiner surfperch. Prey is taken near the water surface after a short plunging dive. Breeding colonies are generally located in abandoned salt ponds and along estuarine shorelines that are relatively free of predators and human disturbance. Nests are arranged in loose colonies on barren to sparsely vegetated substrate (usually sand and gravel) near the shoreline. Nesting colonies typically break up in late July to mid August.

California least terns are common from the months of April to late August. A large breeding colony (approximately 210 nests in 1997) is established each year at the western margin of Alameda Point. Surveys conducted by ENTRIX during the 1997 nesting period indicate that foraging activity seems to be concentrated to the south of Alameda Point. These findings are consistent with the findings of previous foraging surveys conducted for the Navy (DON, 1997).

California Brown Pelican. The California brown pelican is listed by the state and federal government (USFWS) as an endangered species and by CDFG as a fully protected species. It also is afforded legal protections under the Migratory Bird Treaty Act (16 USC 703-711). The California brown pelican is found in estuarine, marine nearshore, and marine pelagic waters along the entire California coast and is known to range inland to the Salton Sea. It breeds in the California Channel Islands from March to early August and the population is concentrated within 12 miles of those islands. The California brown pelican does not breed in northern California. In northern California, they are most common along the coast from June to November, though individuals have been cited during every month of the year. Fish comprise the bulk of its diet, although crustaceans and carrion are known to be taken as food items to a lesser degree (ENTRIX, 1997).

California brown pelicans are known to forage and rest in the vicinity of Alameda Point, although sightings are infrequent as most of the foraging is concentrated in the central and western portions of the San Francisco Bay. One of the most frequently used pelican roosts within the bay is located on the breakwaters associated with the southern portion of Alameda Point (ENTRIX, 1997).

Western Snowy Plover. The western snowy plover is listed by the federal government as a threatened species and by the State of California as a state species of special concern. It also is afforded legal protections under the Migratory Bird Treaty Act (16 USC 703-711). This small shorebird typically occupies sandy beaches and intertidal areas of marine and estuarine habitats but is known to occur in some inland areas. Along the Pacific Coast, snowy plovers are distributed on the mainland and offshore islands from southern Washington to southern Baja California, Mexico. Nests are usually established in sparsely to nonvegetated areas of sandy beaches and estuaries. Prey items consist of intertidal and supratidal invertebrates and feeding is diurnal.

Western snowy plovers are known to winter in the San Francisco Bay Area and an estimated 250 individuals have been recorded in the bay during the breeding season. However, no snowy plovers were observed in the Alameda Point area during the bird surveys conducted during the winter and summer of 1997 (ENTRIX, 1997).

American Peregrine Falcon. The American peregrine falcon is listed by the state and by CDFG as a fully protected species. The federal government de-listed the peregrine from endangered status in 1999. It also is afforded legal protections under the Migratory Bird Treaty Act (16 USC 703-711). Distribution is throughout North America and within a wide variety of habitats. Prey items typically consist of other bird species, though mammals, insects, and fish are known to comprise a portion of its diet. The American peregrine falcon typically breeds near wetlands, lakes, rivers or other water-bodies and establishes its nests on high cliffs, banks, dunes, mounds, or artificial structures.

American peregrine falcons are known to reside (breeding pairs) and winter (migratory individuals) in the San Francisco Bay area. One breeding pair and a nesting female falcon were observed on the western and eastern spans (respectively) of the Bay Bridge during bird surveys conducted in June-July 1997. One or two of the falcons were observed to take California least terns from the Alameda Point breeding colony (ENTRIX, 1997).

Barrow's Goldeneye. The Barrow's goldeneye is a CDFG species of special concern and is afforded legal protections under the Migratory Bird Treaty Act (16 USC 703-711). The Barrow's goldeneye is an uncommon winter resident along the central California coast, mainly occurring in the San Francisco Bay and vicinity, and Marin and Sonoma Counties. The Barrow's goldeneye is found on estuarine lagoons and bays, and brackish lacustrine waters (Zeiner et al., 1990).

The Barrow's goldeneye feeds primarily on animal foods, mainly mollusks and crustaceans in saltwater, and aquatic insects and crustaceans in freshwater, but also eats fish eggs and young. They also eat algae and the seeds, leaves, and stems of other aquatic plants. Juveniles eat almost entirely aquatic invertebrates, primarily in the form of insects (Zeiner et al., 1990). The Barrow's goldeneye is a diving bird, taking food from the bottom and preferring water 0.9-3 m (3-10 ft) deep (Palmer, 1976a,b). They will also glean food from submerged plants. At low tide, the Barrow's goldeneye occasionally feeds in water 8-15 cm (3-6 in) deep by immersing its head, but does not tip up (Palmer, 1976a,b). The Barrow's goldeneye prefers to feed on rocky bottoms, at least on coastal wintering grounds (Palmer, 1976a,b). The Barrow's goldeneye feeds diurnally, resting in feeding areas and seeking sheltered waters during windy conditions. At night, the Barrow's goldeneye rests on sheltered, open water (Zeiner et al., 1990).

A few individuals identified as Barrow's goldeneye were observed during winter bird surveys near Alameda Point in 1997 (ENTRIX, 1997), which is consistent with data from others indicating that it is an uncommon winter resident along the California coast.

White-Tailed Kite. The white-tailed kite is a CDFG fully protected species and is afforded legal protections under the Migratory Bird Treaty Act (16 USC 703-711). The white-tailed kite is a common to

uncommon, yearlong resident in coastal and valley lowlands. The white-tailed kite has extended its range and increased its numbers in recent decades. The white-tailed kite inhabits herbaceous and open stages of most habitats, however is rarely found away from agricultural areas (Zeiner et al., 1990).

Foraging in undisturbed, open grasslands, meadows, farmlands and emergent wetlands, white-tailed kites feed primarily on voles and other small, diurnal mammals, and occasionally on birds, insects, reptiles, and amphibians. Substantial groves of dense, broad-leafed deciduous trees are used for nesting and roosting. Nests are made of loosely piled sticks and twigs and lined with grass, straw, or rootlets. Nests are located near open foraging areas (Zeiner et al., 1990).

The white-tailed kite is a year-round resident in San Francisco Bay but was not recorded in bird surveys conducted by ENTRIX in 1997 (ENTRIX, 1997). The white-tailed kite is not likely to forage in or near Seaplane Lagoon, but could occasionally take least tern chicks from the colony at Alameda Point. If they forage to any extent at Alameda Point, they are likely to prefer foraging in the nearby wetlands.

Cooper's Hawk. The Cooper's hawk is a CDFG species of special concern and is afforded legal protections under the Migratory Bird Treaty Act (16 USC 703-711). The Cooper's hawk is a permanent breeding resident throughout most of the wooded areas of California, ranging from sea level to above 9,000 ft. Dense stands of live oak, riparian deciduous, or other forested habitats near water are used by the Cooper's hawk most frequently (Zeiner et al., 1990).

Cooper's hawks nest in deciduous trees in crotches or cavities that are usually 20 to 50 ft above the ground. They have also been found to nest in conifers on horizontal branches or in the main crotch. Nests are generally placed in second growth coniferous stands or in the deciduous riparian areas nearest streams. Breeding occurs from March through August, with the peak activity taking place from May through July. The Cooper's hawk utilizes broken woodland and habitat edges for hunting. The Cooper's hawk diet consists of small birds, small mammals, reptiles, and amphibians (Zeiner et al., 1990).

The Cooper's hawk is a year-round resident in San Francisco Bay but was not recorded in bird surveys conducted by ENTRIX in 1997 (ENTRIX, 1997). The Cooper's hawk is not likely to forage in or near Seaplane Lagoon, but could possibly take least terns and chicks from the colony at Alameda Point.

California Sea Lion. The California sea lion is afforded legal protection under guidelines established through the Marine Mammal Protection Act. California sea lions range from Vancouver Island to Nayarit (western Mexico). They are common in California, and are typically found near shore on the open outer coast, but are also frequent visitors of bays and estuaries. Breeding occurs from Mazatlan in the south to the Channel Islands in California. A few pups are born on islands farther north including the Farallon Islands (Nowak, 1991). Juveniles and adults are known to migrate north from these rookeries as far as Vancouver Island.

The California sea lion commonly forages in the San Francisco Bay and delta and has established regular haul-outs at Pier 39 in San Francisco. No known breeding occurs in San Francisco Bay (Federal Register, 2005). The California sea lion is known to forage occasionally in the vicinity of Alameda Point (ENTRIX, 1997).

Harbor Seal. The harbor seal is afforded legal protection under guidelines established through the Marine Mammal Protection Act. The harbor seal is nonmigratory and can be found along shorelines and in estuaries throughout North America, Europe, and Asia. It is generally a solitary animal, although it is known to congregate at regular haul-outs and in breeding colonies. The seal is a fairly common year-long resident in coastal California and within the San Francisco Bay. It has established regular haul-outs at the Castro Rocks near the Richmond-San Rafael Bridge, Corte Madera Marsh, and on lower Tubbs Island in

San Pablo Bay (U.S. EPA et al., 1996). Its diet consists primarily of fish, though crustaceans comprise a large component of the diet of newly weaned pups (Nowak, 1991).

Harbor seals have been documented in the area around Alameda Point and are known to forage in the vicinity; a harbor seal was observed with a captured adult salmon near the Alameda Point during July 1997 biological surveys conducted by ENTRIX (ENTRIX, 1997). Haul-outs have been observed along the breakwaters along the southern side of Alameda Point. However, while the presence of harbor seals in the vicinity of Alameda Point been documented, it is unlikely that the seals use the offshore areas to any great extent. A specific discussion regarding the potential for harbor seal exposure can be found in Section E.5.

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Table E-1. Invertebrates in Offshore Sediment at Alameda Point

SPECIES (AND REFERENCES)	
ANNELIDS	**CRUSTACEANS (continued)**
Brania brevipharyngeals [1S]	*Pacificanthomysis nephrophthalma* [1S]
Capitella capitata [1W,1S,1B,1O]	*Palaemon macrodactylus* [1S]
Chaetozone spp. [1S]	*Paranthura elegans* [1S,1B,1O]
Cirriformia spirabranchals [1S,1B,1O]	*Sphaeroma quoyanum* [1S]
Cossura pygodactylata [1S,1B,1O]	*Stenothoe valida* [1S]
Dorvillea rudolphi [1S,1B,1O]	*Synchalidium cf. Miraculum* [1S,1B,1O]
Etone lighti [1S]	*Upogebia pugettensis* [1S]
Euchone limnicola [1S,1B,1O]	*Zeuxo normani* [1S,1O]
Eumida longicornuta [1S,1B]	
Eusyllis transecta [1S,1B,1O]	**ECHINODERMS**
Exogone lourei [1S,1B,1O]	*Amphioda spp.* [1S,1B,1O]
Glycinde polynatha [1S,1B,1O]	*Unidentified Holothuroid* [1S,1B,1O]
Harmothoe imbricata [1S,1B,1O]	
Heteromastus filiformis [1S,1B,1O]	**MOLLUSCS**
Leitoscoloplos pugettensis [1S,1B,1O]	*Cryptomya californica* [1S,1B,1O]
Mediomastus spp. [1R,1S,1B,1O]	*Gemma gemma* [1W,1S,1B]
Neanthes succina [1S]	*Macoma balthica* [1S,1B,1O]
Nephtys caecoides [1S,1B,1O]	*Musculista senhousia* [1S,1B,1O]
Nephtys cornuta franciscana [1S,1B,1O]	*Nucella sp.* [1S]
Notomastus tenuis [1S,1O]	*Nuculana spp.* [1S,1B]
Unidentified Oligochaete [1W,1R,1S,1B,1O]	*Phiine sp.* [1S,1B,1O]
Unidentified Polychaete [1S,1B]	*Potamocorbula amurensis* [1S,1B,1O]
Polydora cornuta [1W,1R,1S,1O]	*Tapes japonica* [1S,1B,1O]
Pseudopolydora kempi [1S,1B,1O]	*Theora fragilis* [1S,1B,1O]
Sphaerosyllis californiensis [1S,1B,1O]	
Spiophanes missionensis [1S,1B,1O]	**NEMERTEA**
Tharyx acutus [1S,1B,1O]	*Cerebratatulus spp.* [1S,1B,1O]
	Unidentified Nemertea [1W,1R,1S,1B,1O]
CRUSTACEANS	
Ampelisca abdita [1W,1S,1B,1O]	**MISCELLANEOUS OTHERS**
Corophium alienense [1S,1B,1O]	*Unidentified Ascidiacea* [1S,1B,1O]
Blacktail Bay Shrimp [1S,1B]	*Unidentified Hydrozoa* [1R,1S]
Eusarsiella zostericoloa [1S,1B,1O]	*Unidentified Nematodes* [1S,1B,1O]
Grandidierella japonica [1S,1B,1O]	
Hemileucon hinumensis [1W,1S,1B,1O]	
Nebalia pugettensis [1S]	

[1W] - West Beach Landfill Wetland [1R] - Runway Wetland [1S] - Sea Plane Lagoon
[1B] - Western Bayside [1O] - Oakland Inner Harbor

Conservation Status of Species

Status of species was reviewed at the California Department of Fish and Game Habitat Conservation Planning Branch website on December 9, 2005: http://www.dfg.ca.gov/hcpb/species/search_species.shtml

None of the species listed in the table is listed as a Species of Special Concern according to the July 2005 CDFG Natural Diversity Database.

Reference for Occurrence

California Department of Fish and Game. (CDFG). 1994a. Unpublished data from the fish, shrimp, and crab trawl surveys performed by CDFG from 1987 through 1988 at station 142 (latitude 37.45.54, longitude 122.18.01, depth 3.9 meters), near NAS Alameda.

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Table E-2. Marine Fish Species Potentially Occurring at Alameda Point

Common Name	Scientific Name	Status
Yellowfin goby	*Acanthogobius flavimanus*	None
White sturgeon	*Acipenser sp.*	None
Green sturgeon	*Acipenser sp.*	SSC, FPT
American shad	*Alosa sapidissima*	None
Topsmelt	*Atherinopsis affinis*	None
Jacksmelt	*Atherinopsis californiensis*	None
Speckled sanddab	*Citharichthys sigmaeus*	None
Pacific herring	*Clupea harengeus pallasi.*	None
Shiner surfperch	*Cymatogaster aggregata*	None
Northern anchovy	*Engraulis mordax*	None
Pacific lamprey	*Entosphenus tridentatus*	None
Pacific staghorn sculpin	*Leptocottus armatus*	None
Striped bass	*Morone saxatilis*	None
Brown smoothhound shark	*Mustlus henlei*	None
Bat ray	*Myliobatis californicus*	None
Steelhead trout	*Oncorhynchus mykiss*	SSC/FT
Chinook salmon	*Oncorhynchus tshawytscha*	FT
English sole	*Parophrys vetulus*	None
White seaperch	*Phanerodon furcatus*	None
Starry flounder	*Platichthys stellatus*	None
Big skate	*Raja binoculata*	None
Spiny dogfish	*Squalus acanthias*	None
Chameleon goby	*Tridentiger trigonocephalus*	None

Conservation Status of Species

Status of species was reviewed at the California Department of Fish and Game Habitat Conservation Planning Branch website on December 9, 2005: http://www.dfg.ca.gov/hcpb/species/search_species.shtml

None of the species listed in the table is listed as a Species of Special Concern according to the July 2005 CDFG Natural Diversity Data Base.

Reference for Occurrence

ENTRIX. 1997. *Habitat Evaluation, Port of Oakland 50-ft Deepening Project.* Prepared in association with Hartman Consulting Corporation, Merkel & Associates, Inc., Uribe & Associates, and Laurel Marcus & Associates. Project No. 377301. December 17.

Table E-3. Birds Occurring in Alameda Point Environs

Species (and Reference)	Status	California Native	SF Bay Residency	Habitat/ Presence	Feeding Guild
FAMILY GAVIDAE					
Red-throated Loon[1] *Gavia stellata*	None	Yes	Winter	O ★	Carnivore/Omnivore (fish, crustaceans, leeches, snails, aquatic insects, other invertebrates)
Pacific Loon[7] *Gavia arctica*	None	Yes	Winter		Fish, aquatic invertebrates, reptiles, amphibians, insects
Common Loon[1,3] *Gavia immer*	SSC (nest colony)	Yes	Winter	O ★	Carnivore/Omnivore (fish, crustaceans, aquatic plants, algae, snails, leeches, frogs, salamanders, aquatic insects)
Pied-billed Grebe[1,3,4] *Podilymbus podiceps*	None	Yes	Winter	O ★	Carnivore/Omnivore (insects, crustaceans, fish, amphibians, mollusks, leeches, aquatic plants; young: insects)
Red-necked Grebe[7] *Podiceps grisegena*	None	Yes	Winter		Aquatic invertebrates, fish
Horned Grebe[1,4] *Podiceps auritus*	None	Yes	Winter	O ★	Carnivore (small fish, crustaceans, insects)
Eared Grebe[1,3,4] *Podiceps nigricollis*	None	Yes	Winter	O ★	Carnivore (aquatic and land insects and larvae, crustaceans, mollusks, inverts, small fish, amphibians)
Western Grebe[1,3,4] *Aechmophorus occidentalis*	None	Yes	Winter	O ★	Carnivore/Omnivore (fish, insects, other invertebrates, rarely amphibians and plants)
Clark's Grebe[1,3,4] *Aechmophorus clarkii*	None	Yes	Winter	O ★	Carnivore (fish, insects, other invertebrates)
FAMILY PROCELLARIIDAE					
Sooty Shearwater[1] *Puffinus griseus*	None	Yes	Transient	O ★	Carnivore (fish, shrimp)
FAMILY HYDROBATIDAE					
Fork-tailed Storm Petrel[1] *Oceanodroma furcata*	SSC (rookery)	Yes	Transient	O ★	Carnivore (fish, crustaceans, carrion)
FAMILY PELICANIDAE					
American White Pelican[1] *Pelecanus erythrorhynchos*	SSC (nest colony)	Yes	Transient	W, O ★	Carnivore (fish, occasionally amphibians and crustaceans)
California Brown Pelican[1,3] *Pelecanus occidentalis californicus*	FE (nest colony & communal roosts) SE (nest colony & communal roosts) CFP	Yes	Summer Transient	IBW, O ★	Carnivore (fish, occasionally crustaceans, carrion)
FAMILY PHALACROCORACIDAE					
Double-crested Cormorant[1,3,4,5] *Phalacrocorax auritis*	SSC	Yes	All year	O, IBW ★	Carnivore (fish, also crustaceans and amphibians)
Brandt's Cormorant[1] *Phalacrocorax penicillatus*	None	Yes	All year	O, IBW ★	Carnivore (fish, crustaceans)
Pelagic Cormorant[1] *Phalacrocorax pelagicus*	None	Yes	All year	O, IBW ★	Carnivore (fish, crustaceans)
FAMILY ARDEIDAE					
Great Blue Heron[1,4,5] *Ardea herodias*	None	Yes	All year	W, G ★	Carnivore (fish, also small rodents, amphibians, snakes, lizards, insects, crustaceans, occasionally small birds)

Table E-3. Birds Occurring in Alameda Point Environs (page 2 of 8)

Species (and Reference)	Status	California Native	SF Bay Residency	Habitat/ Presence	Feeding Guild
Cattle Egret[6] *Bubulcus ibis*	None	Yes	Winter	W, G ★	Carnivore (large insects and other arthropods, also worms, amphibians, reptiles, small mammals)
Great Egret[1,3,4] *Casmerodius albus*	None	Yes	All year	W, G ★	Carnivore (fish, amphibs, snakes, snails, crustaceans, insects, small mammals)
Snowy Egret[1,3,4,5] *Egretta thula*	None	Yes	All year	W, B, IBW, RR ★	Carnivore (small fish, crustaceans, large insects, also amphibians, reptiles, worms, snails, small mammals)
Black-crowned Night-Heron[1,3,4,5] *Nycticorax nycticorax*	None	Yes	All year	W, BW, RR, IBW ★	Carnivore (fishes, crustaceans, aquatic invertebrates, amphibians, reptiles, small mammals)
FAMILY ANATIDAE					
Snow Goose[1] *Chen caerulescens*	None	Yes	Winter	W ★	Herbivore (seeds, stems, roots, berries)
Canada Goose[1,4,5] *Branta canadensis*	FT, Delisted (wintering Aleutian subspecies)	Yes	Winter	W, G, H ★	Herbivore (green shoots and seeds of grains and wild grasses and forbs, aquatic plants)
Green-winged Teal[1,4] *Anas crecca*	HS	Yes	Winter	W ★	Omnivore (seeds, leaves, and stems of aquatic plants, terrestrial grasses, forbs, grains)
Blue-winged Teal[4] *Anas discors*	HS	Yes	Winter	W, O	Omnivore (seeds, vegetative parts of plants, mollusks, insects, crustaceans)
Mallard[1,4,5] *Anas platyrhynchos*	HS	Yes	All year	W, O ★	Herbivore/Omnivore (grains, seeds, leaves of aquatic plants, grasses, other green vegetation, aquatic insects, also snails, earthworms, tadpoles, crustaceans, small fish)
Northern Pintail[1,4] *Anas acuta*	HS	Yes	All year	W ★	Omnivore (aquatic plant seeds, wild grasses, forbs, grains, insects, crustaceans, mollusks, worms, stems, leaves)
Cinnamon Teal[1,,54] *Anas cyanoptera*	HS	Yes	All year	W ★	Omnivore (plant matter, seeds and vegetative parts of sedges, pondweeds, grasses, mollusks, insects)
Northern Shoveler[1,4] *Anas clypeata*	None	Yes	All year	W ★	Omnivore (phyto- and zooplankton, including algae, crustaceans, and insect larvae, also seeds and other parts of aquatic plants, mollusks, aquatic insects, small fish)
Gadwall[1,4] *Anas strepera*	HS	Yes	Winter	W	Herbivore/Omnivore (leaves and stems of aquatic plants, seeds and cultivated grains, also insects, mollusks, crustaceans)
Eurasion Wigeon[1,4] *Anas penelope*	None	Yes	Winter	W ★	Herbivore/Omnivore(stems and leafy parts of plants, upland grassess and clovers, insects ingests gravel)
American Wigeon[1,3,4] *Anas americana*	HS	Yes	Winter	W, O ★	Omnivore (leaves, stems of aquatic plants and terrestrial grasses and forbs, also crops–lettuce, alfalfa, clover, some seeds, waste grain; young: insects, invertebrates)
Canvasback[1,4] *Aythya valisneria*	HS, Delisted	Yes	Winter	O, W ★	Omnivore (seeds, tubers, leaves, stems of aquatic plants, aquatic mollusks, crustaceans, worms, insects, fish, invertebrates)
Greater Scaup[1,4] *Aythya marila*	HS	Yes	Winter	O ★	Omnivore (mollusks, crustaceans, insects)
Lesser Scaup[1,4] *Aythya affinis*	None	Yes	Winter	O ★	Omnivore (aquatic invertebrates, mollusks, insects, crustaceans, leaves, stems, seeds aquatic plants)
Oldsquaw[1] *Clangula hyemalis*	None	Yes	Winter	O ★	Omnivore (small crustaceans, mollusks, aquatic insects, small fishes, plant matter)

Table E-3. Birds Occurring in Alameda Point Environs (page 3 of 8)

Species (and Reference)	Status	California Native	SF Bay Residency	Habitat/ Presence	Feeding Guild
Black Scoter[1] *Melanitta nigra*	None	Yes	Winter	O ★	Omnivore (marine invetebrates, bivalves, gastropods, barnacles, shrimp, herring roe, aquatic plant material)
Surf Scoter[1,3] *Melanitta perspicillata*	None	Yes	Winter	O ★	Omnivore (bivalves, gastropods, crustaceans, other invertebrates, fish, plant material)
White-winged Scoter[1] *Melanitta fusca*	None	Yes	Winter	O ★	Omnivore (bivalves and gastropods, crustaceans, other invertebrates, fish, plant material)
Barrow's Goldeneye[7] *Bucephala islandica*	SSC (nest colony)	Yes	Winter		Aquatic invertebrates, mollusks, fish eggs, crustaceans, aquatic insects, fish young
Common Goldeneye[1,4] *Bucephala clangula*	None	Yes	Winter	O ★	Omnivore (crustaceans, mollusks, small fish, insects, seeds, tubers, leaves, stems of aquatic plants)
Bufflehead[1,4] *Bucephala albeola*	HS	Yes	Winter	O, W ★	Omnivore (small inverts, crustaceans, mollusks aquatic insects, gastropods, fish, seeds, parts of aquatic plants. Young: aquatic insects)
Red-breasted Merganser[1,4] *Mergus serrator*	None	Yes	Winter	O ★	Omnivore (fish, crustaceans, amphibians, insects worms)
Ruddy Duck[1,4] *Oxyura jamaicensis*	None	Yes	All year	O ★	Omnivore (seeds, tubers, foliage, stems of submerged aquatic plants, aquatic insects, mollusks, crustaceans, worms)
Greylag Goose[7] *Anser anser*	None	No exotic			
Hooded Merganser[7] *Lophodytes cucullatus*	None	Yes	Winter		Fish, aquatic invertebrates
FAMILY RALLIDAE					
American Coot[1,4] *Fulica americana*	HS	Yes	All year	W, O ★	Omnivore (submerged aquatic plants, seeds, insects, small fish)
FAMILY HAEMATOPODIDAE					
Black Oystercatcher[7] *Haematopus bachmani*	None	Yes	All year	IBW, BW, RR	Carnivore (crustaceans, marine worms, fish)
FAMILY RECURVIROSTRIDAE					
Black-necked Stilt[1,4,5] *Himantopus mexicanus*	None	Yes	All year	W ★	Carnivore (insects, crustaceans, mollusks, other aquatic inverts, small fish)
American Avocet[1,4,5] *Recurvirostra americana*	None	Yes	All year	W ★	Omnivore (aquatic insects, crustaceans, snails, worms, aquatic plant seeds
FAMILY CHARADRIIDAE					
Black Bellied Plover[1,4] *Pluvialis squatarola*	None	Yes	All year	W, B ★	Aquatic invertebrates, insects, crustaceans, marine worms
Western Snowy Plover[1,2] *Charadrius alexandrinus nivosus*	SSC FT (coastal & nest colony)	Yes	All year	H ★	Aquatic invertebrates
Semipalmated Plover[1,4] *Charadrius semipalmatus*	None	Yes	Spring, Fall, Winter	W, B ★	Aquatic invertebrates, insects, crustaceans, marine worms
Killdeer[1,4,5] *Charadrius vociferus*	None	Yes	All year	G, W, H, B	Carnivore (invertebrates, insects, beetles, grasshoppers, flies, mosquitoes, weevils, crustaceans, worms, mollusks, seeds)

Table E-3. Birds Occurring in Alameda Point Environs (page 4 of 8)

Species (and Reference)	Status	California Native	SF Bay Residency	Habitat/ Presence	Feeding Guild
FAMILY SCOLOPACIDAE					
Willet[1,3,4] *Catoptrophorus semipalmatus*	None	Yes	Winter	RR, B, BW, W ★	Carnivore (invertebrates, small crustaceans, mollusks, polychaete worms, larval and pupal dipteran insects, fish, fish eggs)
Whimbrel[4] *Numenius phaeopus*	None	Yes	Spring and Fall	RR, B, BW, W	Omnivore (crabs, crayfish, marine worms, grasshoppers, beetles, spiders, and berries)
Wandering Tattler[1] *Heteroscelus incanus*	None	Yes	Winter	BW, IBW ★	Carnivore (decapod crustaceans, marine worms, small mollusks)
Spotted Sandpiper[1,4] *Actitis macularia*	None	Yes	Winter	BW, RR, BM ★	Carnivore (flying and benthic insects, beetles, crickets, flies, grasshoppers, worms, ants, other aquatic inverts, small fish)
Long-billed Curlew[1,4] *Numenius americanus*	SSC (nest colony)	Yes	Winter	W ★	Carnivore (mud crabs, ghost and mud shrimp, insect pupae, gem clams, small estuarine fish)
Marbled Godwit[1,4] *Limosa fedoa*	None	Yes	Winter	B, W ★	Carnivore (small snails and clams, sand crabs, amphipods, polychaete worms)
Ruddy Turnstone[1] *Arenaria interpres*	None	Yes	Spring, Fall, Winter	IBW, BW, B ★	Omnivore (crustaceans, worms, mollusks, insects, small fish, vegetative material)
Black Turnstone[1] *Arenaria melanocephala*	None	Yes	Spring, Fall, Winter	IBW ★	Carnivore (small crustaceans and mollusks)
Sanderling[1,3] *Calidris alba*	None	Yes	Summer, Fall, Winter	RR, IBW ★	Carnivore (small crustaceans, sand crabs, amphipods, small mollusks, marine worms, adult and larval flies)
Western Sandpiper[1,3,4] *Calidris mauri*	None	Yes	Summer, Fall, Winter	MW, B, IBW ★	Carnivore (insects, mollusks, crustaceans, worms; Young: adult and larval flies and beetles)
Least Sandpiper[1,4] *Calidris minutilla*	None	Yes	Summer, Fall, Winter	W, B, RR, IBW ★	Omnivore (invertebrates, crustaceans, worms, adult larval insects, seeds, plant material)
Rock Sandpiper[1] *Califris ptilocnemis*	None	Yes	Transient	RR ★	Omnivore (mollusks, crustaceans, flies, beetles, seeds, algae)
Dunlin[1,4] *Calidris alpina*	None	Yes	Winter	W, B, R, IBW ★	Carnivore (mollusks, crustaceans, polychaete worms)
Short-billed Dowitcher[1,4] *Limnodromus griseus*	None	Yes	Winter	B, W ★	Omnivore (small mollusks, crustaceans, marine worms, vegetative material, insects)
Long-billed Dowitcher[1,4] *Limnodromus scolopaceus*	None	Yes	Winter	W ★	Aquatic invertebrates, seeds
Common Snipe[4] *Gallinago gallinago*	None	Yes	Winter	W ★	Carnivore (insects, earthworms, crustaceans, mollusks, occasionally fish)
Wilson's Pharalope[4] *Phalaropus tricolor*	None	Yes	Transient Summer	W	Carnivore (insects and small crustaceans)
Red-necked Phalarope[1,4] *Phalaropus lobatus*	None	Yes	Transient	W, O ★	Carnivore/Omnivore (crustaceans, aquatic insects, mollusks, zooplankton, seeds)
Red Phalarope[1] *Phalaropus fulicaria*	None	Yes	Transient	O ★	Carnivore/Omnivore (aquatic insects, marine, invertebrates, fish, seeds)
Surfbird[7] *Aphriza virlata*	None	Yes	Winter		Aquatic invertebrates

Table E-3. Birds Occurring in Alameda Point Environs (page 5 of 8)

Species (and Reference)	Status	California Native	SF Bay Residency	Habitat/ Presence	Feeding Guild
FAMILY LARIDAE					
Pomarine Jaeger[1] *Stercorarius pomarinus*	None	Yes	Transient	O ★	Carnivore (fish, offal, carrion)
Parasitic Jaeger[1] *Stercorarius parasiticus*	None	Yes	Transient	O ★	Carnivore (fish, offal)
Bonaparte's Gull[1,4] *Larus philadelphia*	None	Yes	Transient, Winter	O ★	Carnivore (insects, fish, crustaceans, marine worms)
Heermann's Gull[1] *Larus heermanni*	None	Yes	Summer, Fall	O, R, IBW ★	Carnivore (marine fishes, shrimps, mollusks, crustaceans)
Mew Gull[1,4] *Larus canus*	None	Yes	Winter	O, W, B, H ★	Carnivore (mollusks, crustaceans, echinoderms, worms, insect larvae)
Ring-billed Gull[1,3,4] *Larus delawarensis*	None	Yes	All year	B, W, RR, H, O ★	Omnivore (fish, insects, earthworms, crustaceans, garbage, grain, rodents, amphibians, reptiles, carrion)
California Gull[1,3,4,5] *Larus californicus*	SE, CFP (nest colony) FE (nest colony)	Yes	All year	B, W, IBW ★	Carnivore (garbage, carrion, earthworms, adult and larval insects)
Herring Gull[1,4] *Larus argentatus*	None	Yes	Winter	W, O, B, H, RR, IBW ★	Omnivore (small fishes, invertebrates, worms, insect larvae, rats, mice, moles, small rabbits)
Thayer's Gull[1,4] *Larus thayeri*	None	Yes	Winter	W, O, B, H, RR, IBW ★	Carnivore (garbage, marine invertebrates, carrion fish offal, pelagic crabs)
Western Gull[1,3,4,5] *Larus occidentalis*	None	Yes	All year	Uses all habitats IBW, W, RR, BW ★	Omnivore (fish, intertidal invertebrates, small birds and eggs)
Glaucous-winged Gull[1,4] *Larus glaucescens*	None	Yes	Winter	O, W, RR, B, W, IBW ★	Omnivore, (barnacles, mollusks, sea urchins, carrion, and fish)
Black Tern[6] *Chlidonias niger*	SSC	Yes	Spring and Fall		Carnivore (grasshoppers, dragonflies, moths, flies, beetles, and other insects, and larvae, small fish, mollusks, tadpoles, crayfish)
Caspian Tern[1,4,5] *Sterna caspia*	None	Yes	Summer	O, W ★	Piscivore (small fish up to 15cm)
Elegant Tern[1,4] *Sterna elegans*	SSC	Yes	Summer	O ★	Carnivore (fish)
Forster's Tern[1,3,4,5] *Sterna forsteri*	None	Yes	All year	O, W, B ★	Carnivore (small fish, aquatic insects, crustaceans, small amphibians)
Least Tern[1,4,7] *Sterna antillarum browni*	SE (nest colony) FE (nest colony) CFP	Yes	Summer	H, O, B, W ★	Piscivore (small fish, anchovy, silversides, shiner surfperch)
FAMILY ALCIDAE					
Common Murre[1] *Uria aalge*	None	Yes	Transient	O ★	Carnivore (fish, sand lances, herring, rockfish anchovies, crustaceans, cephalopods.
Pigeon Guillemont[7] *Cepphus co*lumba*	None	Yes	All year		
FAMILY CATHARTIDAE					
Turkey Vulture[1,4] *Cathartes aura*	None	Yes	All year	G, H, W ★	Carnivore/Omnivore (carrion, rotting fruit, live birds, eggs, live mammals)

Table E-3. Birds Occurring in Alameda Point Environs (page 6 of 8)

Species (and Reference)	Status	California Native	SF Bay Residency	Habitat/ Presence	Feeding Guild
FAMILY ACCIPITRIDAE					
Osprey[6] *Pandion haliaetus*	SSC	Yes	Winter	G, W, O ★	Carnivore (fish, also mammals, birds, reptiles, amphibians, invertebrates)
Black-Shouldered Kite[6] *Elanus caeruleus*	CFP	Yes	All year	W,G, H ★	Carnivore (voles and other small diurnal mammals, also birds, insects, reptiles, amphibians)
White-tailed Kite[1,4] *Elanus caeruleus*	CFP	Yes	All year	G, W, H ★	Carnivore (voles and other small, diurnal mammals, birds, insects, reptiles, amphibians)
Northern Harrier[1,4] *Circus cyaneus*	SSC	Yes	All year	G, W, H, RR ★	Carnivore (voles, small mammals, birds, frogs, small reptiles, crustaceans, insects)
Sharp-shinned Hawk[4] *Accipiter striatus*	SSC	Yes	All year	G, W, H, RR	Carnivore (small birds, small mammals, insects, reptiles, amphibians)
Cooper's Hawk[4] *Accipiter cooperii*	SSC (nest colony)	Yes	All year	G, W	Carnivore (small birds, small mammals, amphibians, reptiles)
FAMILY FALCONIDAE					
Merlin[1,4] *Falco columbarius*	SSC (wintering)	Yes	Winter	G, H ★	Carnivore (small mammals, birds, shorebirds, insects)
American Peregrine Falcon[1,2,4,7] *Falco peregrinus anatum*	SE, CFP FE, Delisted	Yes	All year	O, G, H ★	Carnivore (small mammals, birds, fish, insects)
American Kestrel [1,4] Falco sparverius	None	Yes	All year	G, H ★	Carnivore (small mammals, birds, insects, earthworms, reptiles, amphibians)
FAMILIES TYTONIDAE and STRIGIDAE					
Great Horned Owl[6] *Bubo virginianus*	None	Yes	All year	G, H, O ★	Carnivore (rabbits, rodents, other med. mammals, also birds, amphibians, reptiles, fish and arthropods)
Barn Owl[1] *Tyto alba*	None	Yes	All year	G, H ★	Carnivore (mice, rats, voles, gophers, squirrels, shrews, insects, crustaceans, reptiles, amphibians, small birds)
Burrowing Owl[1,] *Athene cunicularia*	SSC	Yes	All year	G, H ★	Carnivore (insects, small mammals, reptiles, birds, carrion)
FAMILY ALCEDINIDAE					
Belted Kingfisher[1,3,4] *Ceryle alcyon*	None	Yes	All year	W ★	Carnivore (fish, also amphibians, crayfish, insects)
FAMILY LANIDAE					
Loggerhead Shrike[1,4] *Lanius ludovicianus*	SSC	Yes	All year	G, T ★	Carnivore (large insects, also small birds, mammals, reptiles, fish, carrion, other invertebrates)
FAMILY MOTACILLIDAE					
American Pipit[1,4] *Anthus rubescens*	None	Yes	Winter	G, H ★	Omnivore (insects, also mollusks, crustaceans, arthropods, seeds)
FAMILY EMBERIZIDAE					
Alameda Song Sparrow[1,2,4] *Melospiza melodia pusillula*	SSC	Yes	All year	W ★	Omnivore (seeds, insects, spiders, other small invertebrates, mollusks, crustaceans along coast)
California towhee[7] *Pipilo Crissalis*	None	Yes	All year		Seeds, fruit, insects

Table E-3. Birds Occurring in Alameda Point Environs (page 7 of 8)

References for Occurrence

1 L.R. Feeney and L.D. Collins. 1993. This document provides lists of mammal, bird, reptile, and fish species that have been observed at NAS Alameda based on the following sources:

Bailey, S.F., and Collins, L.D. 1983. "Annotated list of waterbirds of the Naval Air Station, Alameda." March.
Bailey, S.F. 1985. "A study of bird use of the breakwater island and breakwater gap area of the Naval Air Station, Alameda."
Christmas Bird Counts conducted by volunteers of Golden Gate Audubon Socieity, 1984, 1985, 1987, 1988, 1990, 1992.
Observations made during foraging and nesting surveys of California Least Terns at ANAS, various observers, for last several years.

2 USFWS. 1993. "Listed and Proposed Endangered and Threatened Species and Candidate Species that may occur in the Area of the Proposed Closure of Naval Air Station, Alameda, Alameda County, California (1-1-94-SP-192, December 31, 1993)". Enclosure attached to letter from Dale A. Pierce, USFWS, to John H. Kennedy, Department of the Navy.
3 Environmental Science Associates, Inc. 1987. The Environmental Impact Statement for the Homeporting of Navy ships at NAS Alameda includes a waterbird survey conducted at NAS Alameda.
4 PRC. 1994. NAS Alameda Ecological Assessment (Draft). February
5 PRC. 1995. Terrestrial EA Field Survey.
6 Morrison, M.L., et al. 1992. Avian Surveys at Naval Air Station Alameda for the Bird-aircraft Strike Hazard (bash) Program. University of California, Berkeley Department of Forestry and Resource Management.
7 ENTRIX. 1997. *Habitat Evaluation, Port of Oakland 50-ft Deepening Project*. Prepared in association with Hartman Consulting Corporation, Merkel & Associates, Inc., Uribe & Associates, and Laurel Marcus & Associates. Project No. 377301. December 17.

Status

Species of special conservation status, as registered in the California Department of Fish and Game's Natural Diversity Data Base, are indicated by the following codes.

SSC	California Department of Fish and Game (CDFG) Species of Special Concern
SE	State of California Endangered Species
SCE	State of California Candidate for Endangered Species
ST	State of California Threatened Species
SCT	State of California Candidate for Threatened Species
CFP	State of California Fully Protected Species
FE	Federal Endangered Species
FT	Federal Threatened Species
FC2	Federal Category 2 Species
HS	Species designated for harvest under California State Fish and Game Code and USFWS regulations.
AB	Species listed on the Audubon Blue List of birds designated by the National Audubon Society as experiencing a population decline.
None	Species has no special status

Native

Yes	Species is native to California.
No	Species is not native to California.

SF Bay Residency

Fall	Species resident during Fall
Winter	Species resident during Winter
Spring	Species resident during Spring
Summer	Species resident during Summer
Transient	Species transient resident
All Year	Species resident all year

Table E-3. Birds Occurring in Alameda Point Environs (page 8 of 8)

Primary Exposure

The primary exposure description reflects the primary routes of exposure to contaminants for the species, excluding exposure through ingestion of contaminated prey.

Air	Air
Soil	Soil
Sed	Sediments
SW	Surface Water (including San Francisco Bay water)

Habitat/Presence

O	San Francisco Bay, open waters
W	Wetland areas
G	Grassy areas sometimes with shrubs and small trees
H	Hard surfaces such as tarmac, gravel, pavement
IBW	Island breakwater
BW	Connected breakwater
B	Beach
RR	Rip-rap, most shore edges excluding small beaches
T	Trees near shooting range
P	Pier
★	Observed at Alameda Point (Species not marked with a "★" are expected to occur at NAS Alameda).

Breeding

The habitat used for nesting is underlined in this column. Nesting is indicated only when confirmed.

Feeding Guild

Carnivore	Eats primarily animals.
Insectivore	Eats primarily insects.
Herbivore	Eats primarily plants.
Omnivore	Eats a combination of animals and plants.

References

California Department of Fish and Game (CDFG). 1990. "California's Wildlife, Vol. 2, Birds." November.

USFWS. 1992. "Status and Trends Report on Wildlife of the San Francisco Estuary, San Francisco Estuary Project." February.

USFWS. 1993. "Listed and Proposed Endangered and Threatened Species and Candidate Species that may occur in the Area of the Proposed Closure of Naval Air Station, Alameda, Alameda County, California (1-1-94-SP-192, December 31, 1993)". Enclosure attached to letter from Dale A. Pierce, USFWS, to John H. Kennedy, Department of the Navy.

CDFG. 1994. "Special Animals." August.

CDFG. 1994. "Endangered and Threatened Animals of California." October.

Table E-4. Mammals Occurring in San Francisco Bay and Alameda Point Environs

Species (and reference)	Status	CA Native	SF Bay Residency	Breed	Habitat/ Presence	Feeding Guild
FAMILY OTARIIDAE						
Steller (Northern) Sea Lion[1] *Eumetopias jubatus*	FT (rookery), MMPA	Yes	All year	No	O	Carnivore (fish, rockfish, flatfish, anchovy, and hake, cephalopods, crustaceans, other invertebrates)
California Sea Lion[1] *Zalophus californianus*	MMPA	Yes	All year	No		Carnivore (fish and cephalopods)
FAMILY PHOCIDAE						
Harbor Seal[1] *Phoca vitulina*	MMPA	Yes	All year	No	O, IBW	Carnivore (fish, crustaceans, cephalopods)
FAMILY DELPHINIDA						
Pacific White-sided[1] Dolphin *Lagenorhynchus obliquidens*	MMPA	Yes	Transient		O	Piscivore (*Engraulis*, *Merluccis*, *Sardina*, *Salmo*, *Cololabis*, *Trachurus*)
FAMILY PHOCOENIDAE						
Harbor Porpoise[1] *Phocoena phocoena*	MMPA	Yes	Transient		O	Piscivore (*Clupea*, *Ammodytes*, *Sprattus*, *Scomber*, *Sardina*, *Micromesistius*, *Trisopterus*, *Merluccius*, *Trachurus*, *Pollachius*, *Merlangius*) and squid (Loliginidae, Ommastrephidae)

References for Occurrence

[1]L.R. Feeney and L.D. Collins, 1993. This document provides lists of mammal, bird, reptile, and fish species that have been observed at NAS Alameda based on the following sources:

Bailey, S.F., and Collins, L.D. 1983. "Annotated list of waterbirds of the Naval Air Station, Alameda." March.
Bailey, S.F. 1985. "A study of bird use of the breakwater island and breakwater gap area of the Naval Air Station, Alameda."
Christmas Bird Counts conducted by volunteers of Golden Gate Audubon Society, 1984, 1985, 1987, 1988, 1990, 1992.
Observations made during foraging and nesting surveys of California Least Terns at ANAS, various observers, for last several years.

Status

Species of special conservation status, as registered in the California Department of Fish and Game's Natural Diversity Data Base and 50 CFR Part17, Endangered and Threatened Species, Plant and Animal Taxa; Proposed Rule (Feb. 28, 1996), are indicated by the following codes.

FT Federal Threatened Species
MMPA Protected under the Marine Mammal Protection Act

Native

Yes Species is native to California.
No Species is not native to California.

Table E-4. Mammals Occurring in San Francisco Bay and Alameda Point Environs (page 2 of 2)

SF Bay Residency

All Year	Species resides in area all year.
Transient	Species spends a portion of year in area.
None	No data was found regarding residency duration at NAS Alameda during this preliminary search.

Breed

Yes	Species breeds in area.
No	Species does not breed in area.
Blank	No data was found regarding breeding location at NAS Alameda during this preliminary search.

Primary Exposure

The primary exposure description reflects the primary routes of exposure to contaminants for the species, excluding exposure through ingestion of contaminated prey.

Air	Air
Sed	Sediments
SW	Surface Water (including San Francisco Bay water)

Habitat/Presence

O	San Francisco Bay, open waters
IBW	Island breakwater

Feeding Guild

Carnivore	Eats primarily animals.
Insectivore	Eats primarily insects.
Omnivore	Eats a combination of animals and plants.
Piscivore	Eats primarily fish

Conservation Status of Species

Status of species was reviewed at the California Department of Fish and Game Habitat Conservation Planning Branch website on September 23, 2002:
http://www.dfg.ca.gov/hcpb/species/search_species.shtml

None of the species listed in the table is listed as a Species of Special Concern according to the May 2002 California Department of Fish and Game (CDFG) Natural Diversity Data Base.

References for Occurrence

USFWS. 1996 "50 CFR part 17, Endangered and Threatened Species, Plant and Animal Taxa; Proposed Rule." February.

USFWS. 1993. "Listed and Proposed Endangered and Threatened Species and Candidate Species that may occur in the Area of the Proposed Closure of Naval Air Station, Alameda, Alameda County, California (1-1-94-SP-192, December 31, 1993)." Enclosure attached to letter from Dale A. Pierce, USFW, to John H. Kennedy, Department of the Navy.

USFWS. 1992. "Status and Trends Report on Wildlife of the San Francisco Estuary, San Francisco Estuary Project." February.

E.2 SUPPORTING INFORMATION FOR THE EFFECTS ASSESSMENT

As described in the ERA, toxicity reference values (TRVs) were used to evaluate the potential effects associated with the doses calculated in the exposure assessment. TRVs were scaled to account for differences in body weights between the organism used to establish the TRVs (high and low) and the ecological receptor chosen for evaluation. This was accomplished by using the following equation (Sample and Arenal, 1999):

$$TRV_w = TRV_l * (BW_s/BW_r)^{1-1.2}$$

where: TRV_w = weight-adjusted TRV (mg/kg-day)
TRV_l = literature-based TRV (mg/kg-day)
BW_s = body weight of toxicity study receptor (kg)
BW_r = body weight of ecological receptor (kg).

Weight-adjusted TRVs for each ROC (surf scoter, least tern, and double-crested cormorant) are presented in Tables E-5 through E-7.

Reference

Sample, B., and C. Arenal. 1999. "Allometric Models for Interspecies Extrapolation of Wildlife Toxicity Data." *Bull. Environ. Contam. Toxicol., 62*: 653-663.

Table E-5. Weight-Adjusted Toxicity Reference Values for the Surf Scoter

Constituent	NOAEL Study Receptor Body Weight (kg)	Literature-Based Low Avian TRV (mg/kg/day)	Weight-Adjusted Low TRV (mg/kg/day)	LOAEL Study Receptor Body Weight (kg)	Literature-Based High Avian TRV (mg/kg/day)	Weight-Adjusted High TRV (mg/kg/day)
ANTIMONY	NA	NA	NA	NA	NA	NA
ARSENIC	1.17E+00	5.50E+00	5.43E+00	1.17E+00	2.20E+01	2.17E+01
CADMIUM	7.99E-01	8.00E-02	8.53E-02	8.40E-02	1.04E+01	1.74E+01
CHROMIUM	1.25E+00	2.66E+00	2.59E+00	1.25E+00	1.56E+01	1.52E+01
COPPER	6.39E-01	2.30E+00	2.56E+00	4.09E-01	5.23E+01	6.37E+01
LEAD	8.40E-02	1.40E-02	2.34E-02	8.00E-01	8.75E+00	9.33E+00
MERCURY	1.00E+00	3.90E-02	3.98E-02	1.00E+00	1.80E-01	1.83E-01
NICKEL	6.14E-01	1.38E+00	1.55E+00	5.80E-01	5.63E+01	6.40E+01
SELENIUM	1.11E+00	2.30E-01	2.30E-01	1.11E+00	9.30E-01	9.28E-01
SILVER	NA	NA	NA	NA	NA	NA
ZINC	9.55E-01	1.72E+01	1.77E+01	9.55E-01	1.72E+02	1.77E+02
ALDRIN	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	6.40E-02	2.14E+00	3.78E+00	6.40E-02	1.07E+01	1.89E+01
DIELDRIN	4.66E-01	7.09E-02	8.42E-02	4.66E-01	8.01E-01	9.51E-01
ENDOSULFAN I	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA
ENDRIN	1.81E-01	1.00E-02	1.43E-02	1.81E-01	1.00E-01	1.43E-01
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA
GAMMA-BHC	1.00E+00	2.00E+00	2.04E+00	1.00E+00	2.00E+01	2.04E+01
GAMMA-CHLORDANE	6.40E-02	2.14E+00	3.78E+00	6.40E-02	1.07E+01	1.89E+01
DIBENZOFURAN	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	9.65E-02	7.30E-01	1.19E+00	9.65E-02	4.59E+01	7.47E+01
Total PCB	8.00E-01	9.00E-02	9.59E-02	1.72E+00	1.27E+00	1.16E+00
Total 4,4-DDx	3.50E+00	9.00E-03	7.14E-03	1.00E+00	6.00E-01	6.12E-01
Total HPAH	NA	NA	NA	NA	NA	NA
Total LPAH	NA	NA	NA	NA	NA	NA
Total PAH	NA	NA	NA	NA	NA	NA

Body Weight (kg) = 1.1

Table E-6. Weight-Adjusted Toxicity Reference Value for Double-Crested Cormorant

Constituent	NOAEL Study Receptor Body Weight (kg)	Literature-Based Low Avian TRV (mg/kg/day)	Weight-Adjusted Low TRV (mg/kg/day)	LOAEL Study Receptor Body Weight (kg)	Literature-Based High Avian TRV (mg/kg/day)	Weight-Adjusted High TRV (mg/kg/day)
ANTIMONY	NA	NA	NA	NA	NA	NA
ARSENIC	1.17E+00	5.50E+00	5.91E+00	1.17E+00	2.20E+01	2.36E+01
CADMIUM	7.99E-01	8.00E-02	9.27E-02	8.40E-02	1.04E+01	1.89E+01
CHROMIUM	1.25E+00	2.66E+00	2.82E+00	1.25E+00	5.00E+00	5.30E+00
COPPER	6.39E-01	2.30E+00	2.79E+00	4.09E-01	5.23E+01	6.93E+01
LEAD	8.40E-02	1.40E-02	2.55E-02	8.00E-01	8.75E+00	1.01E+01
MERCURY	1.00E+00	3.90E-02	4.32E-02	1.00E+00	1.80E-01	1.99E-01
NICKEL	6.14E-01	1.38E+00	1.69E+00	5.80E-01	5.63E+01	6.96E+01
SELENIUM	1.11E+00	2.30E-01	2.50E-01	1.11E+00	9.30E-01	1.01E+00
SILVER	NA	NA	NA	NA	NA	NA
ZINC	9.55E-01	1.72E+01	1.92E+01	9.55E-01	1.72E+02	1.92E+02
ALDRIN	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	6.40E-02	2.14E+00	4.11E+00	6.40E-02	1.07E+01	2.05E+01
DIELDRIN	4.66E-01	7.09E-02	9.15E-02	4.66E-01	7.70E-01	9.94E-01
ENDOSULFAN I	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA
ENDRIN	1.81E-01	1.00E-02	1.56E-02	1.81E-01	1.00E-01	1.56E-01
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA
GAMMA-BHC	1.00E+00	2.00E+00	2.22E+00	1.00E+00	2.00E+01	2.22E+01
GAMMA-CHLORDANE	6.40E-02	2.14E+00	4.11E+00	6.40E-02	1.07E+01	2.05E+01
DIBENZOFURAN	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	9.65E-02	7.30E-01	1.29E+00	9.65E-02	4.59E+01	8.12E+01
Total PCB	8.00E-01	9.00E-02	1.04E-01	1.72E+00	1.27E+00	1.26E+00
Total 4,4-DDx	3.50E+00	9.00E-03	7.76E-03	1.00E+00	6.00E-01	6.65E-01
Total HPAH	NA	NA	NA	NA	NA	NA
Total LPAH	NA	NA	NA	NA	NA	NA
Total PAH	NA	NA	NA	NA	NA	NA

Body Weight (kg) = 1.67

Table E-7. Weight-Adjusted Toxicity Reference Values for the Least Tern

Constituent	NOAEL Study Receptor Body Weight (kg)	Literature-Based Low Avian TRV (mg/kg/day)	Weight-Adjusted Low TRV (mg/kg/day)	LOAEL Study Receptor Body Weight (kg)	Literature-Based High Avian TRV (mg/kg/day)	Weight-Adjusted High TRV (mg/kg/day)
ANTIMONY	NA	NA	NA	NA	NA	NA
ARSENIC	1.17E+00	5.50E+00	2.87E+00	1.17E+00	2.20E+01	1.15E+01
CADMIUM	7.99E-01	8.00E-02	4.50E-02	8.40E-02	1.04E+01	9.18E+00
CHROMIUM	1.25E+00	2.66E+00	1.37E+00	1.25E+00	1.56E+01	8.02E+00
COPPER	6.39E-01	2.30E+00	1.35E+00	4.09E-01	5.23E+01	3.36E+01
LEAD	8.40E-02	1.40E-02	1.24E-02	8.00E-01	8.75E+00	4.92E+00
MERCURY	1.00E+00	3.90E-02	2.10E-02	1.00E+00	1.80E-01	9.68E-02
NICKEL	6.14E-01	1.38E+00	8.18E-01	5.80E-01	5.63E+01	3.38E+01
SELENIUM	1.11E+00	2.30E-01	1.21E-01	1.11E+00	9.30E-01	4.90E-01
SILVER	NA	NA	NA	NA	NA	NA
ZINC	9.55E-01	1.72E+01	9.34E+00	9.55E-01	1.72E+02	9.34E+01
ALDRIN	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	6.40E-02	2.14E+00	1.99E+00	6.40E-02	1.07E+01	9.97E+00
DIELDRIN	4.66E-01	7.09E-02	4.44E-02	4.66E-01	8.01E-01	5.02E-01
ENDOSULFAN I	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA
ENDRIN	1.81E-01	1.00E-02	7.57E-03	1.81E-01	1.00E-01	7.57E-02
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA
GAMMA-BHC	1.00E+00	2.00E+00	1.08E+00	1.00E+00	2.00E+01	1.08E+01
GAMMA-CHLORDANE	6.40E-02	2.14E+00	1.99E+00	6.40E-02	1.07E+01	9.97E+00
DIBENZOFURAN	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	9.65E-02	7.30E-01	6.27E-01	9.65E-02	4.59E+01	3.94E+01
Total PCB	8.00E-01	9.00E-02	5.06E-02	1.72E+00	1.27E+00	6.13E-01
Total 4,4-DDx	3.50E+00	9.00E-03	3.77E-03	1.00E+00	6.00E-01	3.23E-01
Total HPAH	NA	NA	NA	NA	NA	NA
Total LPAH	NA	NA	NA	NA	NA	NA
Total PAH	NA	NA	NA	NA	NA	NA

Body Weight (kg) = 0.045

E.3 SUPPORTING INFORMATION FOR THE FOOD CHAIN SCREENING-LEVEL RISK ESTIMATES

A screening-level risk estimate for indirect exposure through the food chain was developed by comparing the modeled dose based on maximum sediment exposure to the low TRV. Three receptors were evaluated (the scoter, double-crested cormorant, and the California least tern) for three datasets (All Years, 2005 Surface, and 2005 Subsurface) at both IR Sites. Tables E-8 through E-16 present the supporting tables and results of the screening-level risk estimate for the three avian receptors and three sediment datasets at IR Site 20. Tables E-17 through E-25 present the results and supporting tables of the screening-level risk estimate for the three avian receptors and three sediment datasets at IR Site 24.

Table E-8: Screening-Level Hazard Quotient Results for the Surf Scoter for All Years Data from IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ ((unitless))**
ANTIMONY	3.70E+01	7.30E+00		6.35E-01	NA	NA
ARSENIC	1.37E+01	2.20E+01		1.71E+00	5.43E+00	3.15E-01
CADMIUM	9.03E-01	1.10E-01		1.03E-02	8.53E-02	1.21E-01
CHROMIUM	1.23E+03	2.36E+02		2.06E+01	2.59E+00	7.94E+00
COPPER	1.41E+02	1.56E+01		1.49E+00	2.56E+00	5.80E-01
LEAD	2.26E+02	2.54E+00		6.65E-01	2.34E-02	2.84E+01
MERCURY	8.83E+00	4.50E-02		2.19E-02	3.98E-02	5.51E-01
NICKEL	2.88E+02	1.25E+00		6.98E-01	1.55E+00	4.50E-01
SELENIUM	4.71E-01	1.80E+00		1.38E-01	2.30E-01	6.03E-01
SILVER	2.88E-01	4.93E-02		4.37E-03	NA	NA
ZINC	2.58E+02	8.72E+01		7.20E+00	1.77E+01	4.07E-01
ALPHA-CHLORDANE	3.14E-03	2.06E-03		1.64E-04	3.78E+00	4.33E-05
DIELDRIN	9.80E-04	6.39E-03		4.90E-04	8.42E-02	5.82E-03
ENDOSULFAN II	6.50E-04	NA		NA	NA	NA
ENDRIN ALDEHYDE	1.34E-02	NA		NA	NA	NA
GAMMA-CHLORDANE	2.15E-03	2.32E-03		1.82E-04	3.78E+00	4.81E-05
DIBENZOFURAN	1.30E-02	NA		NA	NA	NA
TRIBUTYLTIN	5.90E-02	3.74E-02		2.98E-03	1.19E+00	2.51E-03
Total PCB	8.93E-01	1.26E+00		9.78E-02	9.59E-02	1.02E+00
Total 4,4-DDx	4.82E-01	2.23E+00		1.72E-01	7.14E-03	2.40E+01
Total HPAH	9.32E+00	1.09E+01		8.51E-01	NA	NA
Total LPAH	2.51E+00	8.99E-01		7.39E-02	NA	NA
Total PAH	1.18E+01	NA		NA	NA	NA

Highlighted Cell = HQ > 1.

Table E-9. Screening-Level Hazard Quotient Results for the Least Tern for All Years Data from IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ ((unitless))**
ANTIMONY	3.70E+01		3.00E-01	5.53E-02	NA	NA
ARSENIC	1.37E+01		1.75E+00	3.22E-01	2.87E+00	1.12E-01
CADMIUM	9.03E-01		2.48E-02	4.57E-03	4.50E-02	1.01E-01
CHROMIUM	1.23E+03		1.89E+01	3.49E+00	1.37E+00	2.55E+00
COPPER	1.41E+02		1.14E+01	2.10E+00	1.35E+00	1.55E+00
LEAD	2.26E+02		3.90E+00	7.20E-01	1.24E-02	5.82E+01
MERCURY	8.83E+00		2.23E+00	4.12E-01	2.10E-02	1.96E+01
NICKEL	2.88E+02		1.50E+00	2.76E-01	8.18E-01	3.38E-01
SELENIUM	4.71E-01		8.27E-01	1.53E-01	1.21E-01	1.26E+00
SILVER	2.88E-01		9.10E-03	1.68E-03	NA	NA
ZINC	2.58E+02		8.85E+01	1.63E+01	9.34E+00	1.75E+00
ALPHA-CHLORDANE	3.14E-03		7.47E-03	1.38E-03	1.99E+00	6.91E-04
DIELDRIN	9.80E-04		1.45E-03	2.67E-04	4.44E-02	6.00E-03
ENDOSULFAN II	6.50E-04		3.96E-05	7.30E-06	NA	NA
ENDRIN ALDEHYDE	1.34E-02		3.63E-04	6.69E-05	NA	NA
GAMMA-CHLORDANE	2.15E-03		1.71E-03	3.16E-04	1.99E+00	1.58E-04
DIBENZOFURAN	1.30E-02		NA	NA	NA	NA
TRIBUTYLTIN	5.90E-02		5.06E-01	9.34E-02	6.27E-01	1.49E-01
Total PCB	8.93E-01		2.79E+00	5.15E-01	5.06E-02	1.02E+01
Total 4,4-DDx	4.82E-01		2.20E+00	4.05E-01	3.77E-03	1.07E+02
Total HPAH	9.32E+00		2.03E-01	3.75E-02	NA	NA
Total LPAH	2.51E+00		1.99E-01	3.68E-02	NA	NA
Total PAH	1.18E+01		2.58E-01	4.76E-02	NA	NA

Highlighted Cell = HQ > 1.

Table E-10. Screening-Level Hazard Quotient Results for the Double-Crested Cormorant for All Years Data from IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ ((unitless))**
ANTIMONY	3.70E+01		3.00E-01	5.62E-02	NA	NA
ARSENIC	1.37E+01		1.75E+00	1.10E-01	5.91E+00	1.86E-02
CADMIUM	9.03E-01		2.48E-02	2.32E-03	9.27E-02	2.50E-02
CHROMIUM	1.23E+03		1.89E+01	2.36E+00	2.82E+00	8.37E-01
COPPER	1.41E+02		1.14E+01	7.72E-01	2.79E+00	2.77E-01
LEAD	2.26E+02		3.90E+00	4.56E-01	2.55E-02	1.79E+01
MERCURY	8.83E+00		2.23E+00	1.31E-01	4.32E-02	3.04E+00
NICKEL	2.88E+02		1.50E+00	3.92E-01	1.69E+00	2.33E-01
SELENIUM	4.71E-01		8.27E-01	4.56E-02	2.50E-01	1.83E-01
SILVER	2.88E-01		9.10E-03	8.06E-04	NA	NA
ZINC	2.58E+02		8.85E+01	5.10E+00	1.92E+01	2.65E-01
ALPHA-CHLORDANE	3.14E-03		7.47E-03	4.11E-04	4.11E+00	9.99E-05
DIELDRIN	9.80E-04		1.45E-03	7.98E-05	9.15E-02	8.72E-04
ENDOSULFAN II	6.50E-04		3.96E-05	2.86E-06	NA	NA
ENDRIN ALDEHYDE	1.34E-02		3.63E-04	3.42E-05	NA	NA
GAMMA-CHLORDANE	2.15E-03		1.71E-03	9.56E-05	4.11E+00	2.33E-05
DIBENZOFURAN	1.30E-02		NA	NA	NA	NA
TRIBUTYLTIN	5.90E-02		5.06E-01	2.77E-02	1.29E+00	2.14E-02
Total PCB	8.93E-01		2.79E+00	1.53E-01	1.04E-01	1.47E+00
Total 4,4-DDx	4.82E-01		2.20E+00	1.20E-01	7.76E-03	1.55E+01
Total HPAH	9.32E+00		2.03E-01	2.11E-02	NA	NA
Total LPAH	2.51E+00		1.99E-01	1.36E-02	NA	NA
Total PAH	1.18E+01		2.58E-01	2.68E-02	NA	NA

Highlighted Cell = HQ > 1.

Table E-11. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Surface Data from IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ ((unitless))**
ANTIMONY	4.70E-01	9.28E-02		8.07E-03	NA	NA
ARSENIC	6.56E+00	2.20E+01		1.69E+00	5.43E+00	3.12E-01
CADMIUM	3.70E-01	4.51E-02		4.22E-03	8.53E-02	4.94E-02
CHROMIUM	8.69E+01	1.67E+01		1.45E+00	2.59E+00	5.61E-01
COPPER	1.15E+02	1.56E+01		1.43E+00	2.56E+00	5.58E-01
LEAD	9.15E+01	2.54E+00		3.85E-01	2.34E-02	1.65E+01
MERCURY	8.83E+00	4.50E-02		2.19E-02	3.98E-02	5.51E-01
NICKEL	6.14E+01	1.25E+00		2.24E-01	1.55E+00	1.44E-01
SELENIUM	2.10E-01	8.02E-01		6.17E-02	2.30E-01	2.69E-01
SILVER	2.63E-01	4.51E-02		3.99E-03	NA	NA
ZINC	9.96E+01	8.72E+01		6.87E+00	1.77E+01	3.88E-01
ALPHA-CHLORDANE	6.60E-04	4.32E-04		3.44E-05	3.78E+00	9.10E-06
DIELDRIN	9.80E-04	6.39E-03		4.90E-04	8.42E-02	5.82E-03
ENDOSULFAN II	6.50E-04	NA		NA	NA	NA
ENDRIN ALDEHYDE	4.00E-05	NA		NA	NA	NA
GAMMA-CHLORDANE	9.50E-04	2.32E-03		1.79E-04	3.78E+00	4.74E-05
DIBENZOFURAN	1.30E-02	NA		NA	NA	NA
TRIBUTYLTIN	5.90E-02	3.74E-02		2.98E-03	1.19E+00	2.51E-03
Total PCB	9.50E-02	1.34E-01		1.04E-02	9.59E-02	1.08E-01
Total 4,4-DDx	1.39E-02	6.45E-02		4.95E-03	7.14E-03	6.94E-01
Total HPAH	9.32E+00	1.09E+01		8.51E-01	NA	NA
Total LPAH	2.51E+00	8.99E-01		7.39E-02	NA	NA
Total PAH	1.18E+01	NA		NA	NA	NA

Highlighted Cell = HQ > 1.

Table E-12. Screening-Level Hazard Quotients for the Least Tern for 2005 Surface Data from IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ ((unitless))**
ANTIMONY	4.70E-01		3.81E-03	7.02E-04	NA	NA
ARSENIC	6.56E+00		8.36E-01	1.54E-01	2.87E+00	5.38E-02
CADMIUM	3.70E-01		1.01E-02	1.87E-03	4.50E-02	4.16E-02
CHROMIUM	8.69E+01		1.34E+00	2.47E-01	1.37E+00	1.80E-01
COPPER	1.15E+02		9.28E+00	1.71E+00	1.35E+00	1.27E+00
LEAD	9.15E+01		1.58E+00	2.92E-01	1.24E-02	2.36E+01
MERCURY	8.83E+00		2.23E+00	4.12E-01	2.10E-02	1.96E+01
NICKEL	6.14E+01		3.19E-01	5.89E-02	8.18E-01	7.20E-02
SELENIUM	2.10E-01		3.69E-01	6.80E-02	1.21E-01	5.62E-01
SILVER	2.63E-01		8.31E-03	1.53E-03	NA	NA
ZINC	9.96E+01		3.42E+01	6.30E+00	9.34E+00	6.75E-01
ALPHA-CHLORDANE	6.60E-04		1.57E-03	2.90E-04	1.99E+00	1.45E-04
DIELDRIN	9.80E-04		1.45E-03	2.67E-04	4.44E-02	6.00E-03
ENDOSULFAN II	6.50E-04		3.96E-05	7.30E-06	NA	NA
ENDRIN ALDEHYDE	4.00E-05		1.08E-06	1.99E-07	NA	NA
GAMMA-CHLORDANE	9.50E-04		7.56E-04	1.39E-04	1.99E+00	6.99E-05
DIBENZOFURAN	1.30E-02		NA	NA	NA	NA
TRIBUTYLTIN	5.90E-02		5.06E-01	9.34E-02	6.27E-01	1.49E-01
Total PCB	9.50E-02		2.97E-01	5.47E-02	5.06E-02	1.08E+00
Total 4,4-DDx	1.39E-02		6.34E-02	1.17E-02	3.77E-03	3.10E+00
Total HPAH	9.32E+00		2.03E-01	3.75E-02	NA	NA
Total LPAH	2.51E+00		1.99E-01	3.68E-02	NA	NA
Total PAH	1.18E+01		2.58E-01	4.76E-02	NA	NA

Highlighted Cell = HQ > 1.

Table E-13. Screening-Level Hazard Quotient for the Double-Crested Cormorant for 2005 Surface Data from IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ ((unitless))**
ANTIMONY	4.70E-01		3.81E-03	7.14E-04	NA	NA
ARSENIC	6.56E+00		8.36E-01	5.26E-02	5.91E+00	8.91E-03
CADMIUM	3.70E-01		1.01E-02	9.51E-04	9.27E-02	1.03E-02
CHROMIUM	8.69E+01		1.34E+00	1.67E-01	2.82E+00	5.91E-02
COPPER	1.15E+02		9.28E+00	6.30E-01	2.79E+00	2.26E-01
LEAD	9.15E+01		1.58E+00	1.85E-01	2.55E-02	7.26E+00
MERCURY	8.83E+00		2.23E+00	1.31E-01	4.32E-02	3.04E+00
NICKEL	6.14E+01		3.19E-01	8.36E-02	1.69E+00	4.96E-02
SELENIUM	2.10E-01		3.69E-01	2.03E-02	2.50E-01	8.14E-02
SILVER	2.63E-01		8.31E-03	7.36E-04	NA	NA
ZINC	9.96E+01		3.42E+01	1.97E+00	1.92E+01	1.02E-01
ALPHA-CHLORDANE	6.60E-04		1.57E-03	8.63E-05	4.11E+00	2.10E-05
DIELDRIN	9.80E-04		1.45E-03	7.98E-05	9.15E-02	8.72E-04
ENDOSULFAN II	6.50E-04		3.96E-05	2.86E-06	NA	NA
ENDRIN ALDEHYDE	4.00E-05		1.08E-06	1.02E-07	NA	NA
GAMMA-CHLORDANE	9.50E-04		7.56E-04	4.22E-05	4.11E+00	1.03E-05
DIBENZOFURAN	1.30E-02		NA	NA	NA	NA
TRIBUTYLTIN	5.90E-02		5.06E-01	2.77E-02	1.29E+00	2.14E-02
Total PCB	9.50E-02		2.97E-01	1.63E-02	1.04E-01	1.56E-01
Total 4,4-DDx	1.39E-02		6.34E-02	3.47E-03	7.76E-03	4.47E-01
Total HPAH	9.32E+00		2.03E-01	2.11E-02	NA	NA
Total LPAH	2.51E+00		1.99E-01	1.36E-02	NA	NA
Total PAH	1.18E+01		2.58E-01	2.68E-02	NA	NA

Highlighted Cell = HQ > 1.

Table E-14. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Subsurface Data from IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ ((unitless))**
ANTIMONY	5.18E+00	1.02E+00		8.89E-02	NA	NA
ARSENIC	9.37E+00	2.20E+01		1.70E+00	5.43E+00	3.13E-01
CADMIUM	8.98E-01	1.09E-01		1.02E-02	8.53E-02	1.20E-01
CHROMIUM	9.11E+01	1.75E+01		1.52E+00	2.59E+00	5.88E-01
COPPER	1.79E+02	1.56E+01		1.57E+00	2.56E+00	6.11E-01
LEAD	1.09E+02	2.54E+00		4.22E-01	2.34E-02	1.80E+01
MERCURY	3.84E+00	4.50E-02		1.15E-02	3.98E-02	2.88E-01
NICKEL	6.53E+01	1.25E+00		2.32E-01	1.55E+00	1.50E-01
SELENIUM	2.10E-01	8.02E-01		6.17E-02	2.30E-01	2.69E-01
SILVER	3.02E-01	5.17E-02		4.58E-03	NA	NA
ZINC	4.90E+02	8.72E+01		7.68E+00	1.77E+01	4.34E-01
ALPHA-CHLORDANE	8.80E-04	5.76E-04		4.58E-05	3.78E+00	1.21E-05
DIELDRIN	3.34E-03	2.18E-02		1.67E-03	8.42E-02	1.98E-02
ENDOSULFAN II	1.36E-03	NA		NA	NA	NA
ENDRIN ALDEHYDE	2.54E-03	NA		NA	NA	NA
GAMMA-CHLORDANE	1.03E-03	2.32E-03		1.79E-04	3.78E+00	4.74E-05
DIBENZOFURAN	9.80E-02	NA		NA	NA	NA
TRIBUTYLTIN	7.60E-02	3.74E-02		3.01E-03	1.19E+00	2.54E-03
Total PCB	3.54E-01	4.98E-01		3.88E-02	9.59E-02	4.04E-01
Total 4,4-DDx	8.28E-02	3.83E-01		2.95E-02	7.14E-03	4.13E+00
Total HPAH	1.75E+01	2.04E+01		1.59E+00	NA	NA
Total LPAH	1.27E+01	4.54E+00		3.73E-01	NA	NA
Total PAH	3.02E+01	NA		NA	NA	NA

Highlighted Cell = HQ > 1.

Table E-15. Screening-Level Hazard Quotient Results for the Least Tern for 2005 Subsurface Data at IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ ((unitless))**
ANTIMONY	5.18E+00		4.20E-02	7.74E-03	NA	NA
ARSENIC	9.37E+00		1.19E+00	2.20E-01	2.87E+00	7.69E-02
CADMIUM	8.98E-01		2.46E-02	4.54E-03	4.50E-02	1.01E-01
CHROMIUM	9.11E+01		1.40E+00	2.59E-01	1.37E+00	1.89E-01
COPPER	1.79E+02		1.44E+01	2.66E+00	1.35E+00	1.97E+00
LEAD	1.09E+02		1.89E+00	3.48E-01	1.24E-02	2.81E+01
MERCURY	3.84E+00		9.71E-01	1.79E-01	2.10E-02	8.54E+00
NICKEL	6.53E+01		3.40E-01	6.26E-02	8.18E-01	7.65E-02
SELENIUM	2.10E-01		3.69E-01	6.80E-02	1.21E-01	5.62E-01
SILVER	3.02E-01		9.54E-03	1.76E-03	NA	NA
ZINC	4.90E+02		1.68E+02	3.10E+01	9.34E+00	3.32E+00
ALPHA-CHLORDANE	8.80E-04		2.09E-03	3.86E-04	1.99E+00	1.94E-04
DIELDRIN	3.34E-03		4.93E-03	9.09E-04	4.44E-02	2.05E-02
ENDOSULFAN II	1.36E-03		8.28E-05	1.53E-05	NA	NA
ENDRIN ALDEHYDE	2.54E-03		6.86E-05	1.26E-05	NA	NA
GAMMA-CHLORDANE	1.03E-03		8.20E-04	1.51E-04	1.99E+00	7.58E-05
DIBENZOFURAN	9.80E-02		NA	NA	NA	NA
TRIBUTYLTIN	7.60E-02		6.52E-01	1.20E-01	6.27E-01	1.92E-01
Total PCB	3.54E-01		1.11E+00	2.04E-01	5.06E-02	4.03E+00
Total 4,4-DDx	8.28E-02		3.77E-01	6.95E-02	3.77E-03	1.85E+01
Total HPAH	1.75E+01		3.81E-01	7.02E-02	NA	NA
Total LPAH	1.27E+01		1.01E+00	1.85E-01	NA	NA
Total PAH	3.02E+01		6.57E-01	1.21E-01	NA	NA

Highlighted Cell = HQ > 1.

Table E-16. Screening-Level Hazard Quotient Results for the Double-Crested Cormorant for 2005 Subsurface Data at IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ ((unitless))**
ANTIMONY	5.18E+00		4.20E-02	7.87E-03	NA	NA
ARSENIC	9.37E+00		1.19E+00	7.52E-02	5.91E+00	1.27E-02
CADMIUM	8.98E-01		2.46E-02	2.31E-03	9.27E-02	2.49E-02
CHROMIUM	9.11E+01		1.40E+00	1.75E-01	2.82E+00	6.20E-02
COPPER	1.79E+02		1.44E+01	9.80E-01	2.79E+00	3.52E-01
LEAD	1.09E+02		1.89E+00	2.20E-01	2.55E-02	8.65E+00
MERCURY	3.84E+00		9.71E-01	5.70E-02	4.32E-02	1.32E+00
NICKEL	6.53E+01		3.40E-01	8.89E-02	1.69E+00	5.27E-02
SELENIUM	2.10E-01		3.69E-01	2.03E-02	2.50E-01	8.14E-02
SILVER	3.02E-01		9.54E-03	8.46E-04	NA	NA
ZINC	4.90E+02		1.68E+02	9.68E+00	1.92E+01	5.03E-01
ALPHA-CHLORDANE	8.80E-04		2.09E-03	1.15E-04	4.11E+00	2.80E-05
DIELDRIN	3.34E-03		4.93E-03	2.72E-04	9.15E-02	2.97E-03
ENDOSULFAN II	1.36E-03		8.28E-05	5.98E-06	NA	NA
ENDRIN ALDEHYDE	2.54E-03		6.86E-05	6.47E-06	NA	NA
GAMMA-CHLORDANE	1.03E-03		8.20E-04	4.58E-05	4.11E+00	1.11E-05
DIBENZOFURAN	9.80E-02		NA	NA	NA	NA
TRIBUTYLTIN	7.60E-02		6.52E-01	3.56E-02	1.29E+00	2.76E-02
Total PCB	3.54E-01		1.11E+00	6.06E-02	1.04E-01	5.81E-01
Total 4,4-DDx	8.28E-02		3.77E-01	2.06E-02	7.76E-03	2.66E+00
Total HPAH	1.75E+01		3.81E-01	3.96E-02	NA	NA
Total LPAH	1.27E+01		1.01E+00	6.85E-02	NA	NA
Total PAH	3.02E+01		6.57E-01	6.83E-02	NA	NA

Highlighted Cell = HQ > 1.

Table E-17. Screening-Level Hazard Quotient Results for the Surf Scoter for All Years Data from IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	2.86E+00	5.65E-01		4.91E-02	NA	NA
ARSENIC	2.07E+01	6.23E+01		4.80E+00	5.43E+00	8.84E-01
CADMIUM	3.93E+01	4.79E+00		4.48E-01	8.53E-02	5.25E+00
CHROMIUM	4.26E+02	8.17E+01		7.13E+00	2.59E+00	2.75E+00
COPPER	2.94E+02	4.94E+01		4.39E+00	2.56E+00	1.71E+00
LEAD	4.98E+02	2.63E+01		3.05E+00	2.34E-02	1.30E+02
MERCURY	7.60E-01	1.65E-01		1.42E-02	3.98E-02	3.56E-01
NICKEL	1.66E+02	5.10E+01		4.24E+00	1.55E+00	2.74E+00
SELENIUM	1.69E+00	6.45E+00		4.96E-01	2.30E-01	2.16E+00
SILVER	4.70E+01	8.05E+00		7.13E-01	NA	NA
ZINC	7.23E+02	4.05E+02		3.24E+01	1.77E+01	1.83E+00
ALDRIN	3.50E-03	3.28E-02		2.51E-03	NA	NA
ALPHA-CHLORDANE	2.30E-02	1.51E-02		1.20E-03	3.78E+00	3.17E-04
DIELDRIN	2.24E-02	1.46E-01		1.12E-02	8.42E-02	1.33E-01
ENDOSULFAN I	3.50E-02	NA		NA	NA	NA
ENDOSULFAN II	4.20E-03	NA		NA	NA	NA
ENDRIN	4.20E-03	6.78E-03		5.26E-04	1.43E-02	3.67E-02
ENDRIN ALDEHYDE	4.00E-03	NA		NA	NA	NA
GAMMA-BHC	3.35E-03	NA		NA	2.04E+00	NA
GAMMA-CHLORDANE	7.02E-03	NA		NA	3.78E+00	NA
HEPTACHLOR EPOXIDE	1.40E-03	4.75E-03		3.65E-04	NA	NA
DIBENZOFURAN	7.90E-01	NA		NA	NA	NA
TRIBUTYL TIN	8.90E-01	7.90E-01		6.22E-02	1.19E+00	5.24E-02
Total PCB	3.14E+00	4.41E+00		3.44E-01	9.59E-02	3.58E+00
Total 4,4-DDx	1.19E-01	5.49E-01		4.22E-02	7.14E-03	5.91E+00
Total HPAH	2.06E+02	2.41E+02		1.88E+01	NA	NA
Total LPAH	2.41E+02	8.62E+01		7.09E+00	NA	NA
Total PAH	4.47E+02	3.30E+01		3.45E+00	NA	NA

Highlighted Cell = HQ > 1.

Table E-18. Screening-Level Hazard Quotients for the Least Tern for All Years Data from IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	2.86E+00		2.32E-02	4.27E-03	NA	NA
ARSENIC	2.07E+01		2.64E+00	4.87E-01	2.87E+00	1.70E-01
CADMIUM	3.93E+01		1.08E+00	1.99E-01	4.50E-02	4.41E+00
CHROMIUM	4.26E+02		6.56E+00	1.21E+00	1.37E+00	8.84E-01
COPPER	2.94E+02		2.37E+01	4.38E+00	1.35E+00	3.23E+00
LEAD	4.98E+02		8.62E+00	1.59E+00	1.24E-02	1.29E+02
MERCURY	7.60E-01		1.92E-01	3.54E-02	2.10E-02	1.69E+00
NICKEL	1.66E+02		8.63E-01	1.59E-01	8.18E-01	1.95E-01
SELENIUM	1.69E+00		2.97E+00	5.48E-01	1.21E-01	4.52E+00
SILVER	4.70E+01		1.49E+00	2.74E-01	NA	NA
ZINC	7.23E+02		2.48E+02	4.57E+01	9.34E+00	4.90E+00
ALDRIN	3.50E-03		2.10E-04	3.87E-05	NA	NA
ALPHA-CHLORDANE	2.30E-02		5.47E-02	1.01E-02	1.99E+00	5.06E-03
DIELDRIN	2.24E-02		3.30E-02	6.08E-03	4.44E-02	1.37E-01
ENDOSULFAN I	3.50E-02		1.93E-03	3.56E-04	NA	NA
ENDOSULFAN II	4.20E-03		2.56E-04	4.72E-05	NA	NA
ENDRIN	4.20E-03		5.71E-05	1.05E-05	7.57E-03	1.39E-03
ENDRIN ALDEHYDE	4.00E-03		1.08E-04	1.99E-05	NA	NA
GAMMA-BHC	3.35E-03		2.52E-04	4.64E-05	1.08E+00	4.31E-05
GAMMA-CHLORDANE	7.02E-03		5.59E-03	1.03E-03	1.99E+00	5.17E-04
HEPTACHLOR EPOXIDE	1.40E-03		7.74E-05	1.43E-05	NA	NA
DIBENZOFURAN	7.90E-01		NA	NA	NA	NA
TRIBUTYL TIN	8.90E-01		7.64E+00	1.41E+00	6.27E-01	2.25E+00
Total PCB	3.14E+00		9.80E+00	1.81E+00	5.06E-02	3.57E+01
Total 4,4-DDx	1.19E-01		5.40E-01	9.95E-02	3.77E-03	2.64E+01
Total HPAH	2.06E+02		4.50E+00	8.29E-01	NA	NA
Total LPAH	2.41E+02		1.91E+01	3.52E+00	NA	NA
Total PAH	4.47E+02		9.75E+00	1.80E+00	NA	NA

Highlighted Cell = HQ > 1.

Table E-19. Screening-Level Hazard Quotient for the Double-Crested Cormorant for All Years Data from IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	2.86E+00		2.32E-02	4.34E-03	NA	NA
ARSENIC	2.07E+01		2.64E+00	1.66E-01	5.91E+00	2.81E-02
CADMIUM	3.93E+01		1.08E+00	1.01E-01	9.27E-02	1.09E+00
CHROMIUM	4.26E+02		6.56E+00	8.17E-01	2.82E+00	2.90E-01
COPPER	2.94E+02		2.37E+01	1.61E+00	2.79E+00	5.78E-01
LEAD	4.98E+02		8.62E+00	1.01E+00	2.55E-02	3.95E+01
MERCURY	7.60E-01		1.92E-01	1.13E-02	4.32E-02	2.61E-01
NICKEL	1.66E+02		8.63E-01	2.26E-01	1.69E+00	1.34E-01
SELENIUM	1.69E+00		2.97E+00	1.64E-01	2.50E-01	6.55E-01
SILVER	4.70E+01		1.49E+00	1.32E-01	NA	NA
ZINC	7.23E+02		2.48E+02	1.43E+01	1.92E+01	7.43E-01
ALDRIN	3.50E-03		2.10E-04	1.52E-05	NA	NA
ALPHA-CHLORDANE	2.30E-02		5.47E-02	3.01E-03	4.11E+00	7.32E-04
DIELDRIN	2.24E-02		3.30E-02	1.82E-03	9.15E-02	1.99E-02
ENDOSULFAN I	3.50E-02		1.93E-03	1.43E-04	NA	NA
ENDOSULFAN II	4.20E-03		2.56E-04	1.85E-05	NA	NA
ENDRIN	4.20E-03		5.71E-05	7.64E-06	1.56E-02	4.90E-04
ENDRIN ALDEHYDE	4.00E-03		1.08E-04	1.02E-05	NA	NA
GAMMA-BHC	3.35E-03		2.52E-04	1.73E-05	2.22E+00	7.82E-06
GAMMA-CHLORDANE	7.02E-03		5.59E-03	3.12E-04	4.11E+00	7.60E-05
HEPTACHLOR EPOXIDE	1.40E-03		7.74E-05	5.73E-06	NA	NA
DIBENZOFURAN	7.90E-01		NA	NA	NA	NA
TRIBUTYL TIN	8.90E-01		7.64E+00	4.17E-01	1.29E+00	3.23E-01
Total PCB	3.14E+00		9.80E+00	5.37E-01	1.04E-01	5.15E+00
Total 4,4-DDx	1.19E-01		5.40E-01	2.95E-02	7.76E-03	3.81E+00
Total HPAH	2.06E+02		4.50E+00	4.67E-01	NA	NA
Total LPAH	2.41E+02		1.91E+01	1.30E+00	NA	NA
Total PAH	4.47E+02		9.75E+00	1.01E+00	NA	NA

Highlighted Cell = HQ > 1.

Table E-20. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Surface IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	2.86E+00	5.65E-01		4.91E-02	NA	NA
ARSENIC	1.51E+01	4.54E+01		3.50E+00	5.43E+00	6.44E-01
CADMIUM	3.78E+01	4.60E+00		4.31E-01	8.53E-02	5.05E+00
CHROMIUM	3.80E+02	7.28E+01		6.36E+00	2.59E+00	2.45E+00
COPPER	2.47E+02	4.15E+01		3.69E+00	2.56E+00	1.44E+00
LEAD	4.98E+02	2.63E+01		3.05E+00	2.34E-02	1.30E+02
MERCURY	3.58E-01	1.20E-01		9.91E-03	3.98E-02	2.49E-01
NICKEL	1.43E+02	4.39E+01		3.65E+00	1.55E+00	2.36E+00
SELENIUM	1.69E+00	6.45E+00		4.96E-01	2.30E-01	2.16E+00
SILVER	4.70E+01	8.05E+00		7.13E-01	NA	NA
ZINC	7.23E+02	4.05E+02		3.24E+01	1.77E+01	1.83E+00
ALDRIN	4.00E-05	4.35E-04		3.33E-05	NA	NA
ALPHA-CHLORDANE	1.11E-03	7.27E-04		5.78E-05	3.78E+00	1.53E-05
DIELDRIN	2.24E-02	1.46E-01		1.12E-02	8.42E-02	1.33E-01
ENDOSULFAN I	4.50E-05	NA		NA	NA	NA
ENDOSULFAN II	1.90E-04	NA		NA	NA	NA
ENDRIN	5.00E-05	5.00E-04		3.83E-05	1.43E-02	2.67E-03
ENDRIN ALDEHYDE	8.50E-05	NA		NA	NA	NA
GAMMA-BHC	4.50E-05	NA		NA	2.04E+00	NA
GAMMA-CHLORDANE	7.02E-03	NA		NA	3.78E+00	NA
HEPTACHLOR EPOXIDE	4.50E-05	5.00E-04		3.83E-05	NA	NA
DIBENZOFURAN	1.64E-01	NA		NA	NA	NA
TRIBUTYL TIN	8.90E-01	7.90E-01		6.22E-02	1.19E+00	5.24E-02
Total PCB	3.14E+00	4.41E+00		3.44E-01	9.59E-02	3.58E+00
Total 4,4-DDx	1.19E-01	5.49E-01		4.22E-02	7.14E-03	5.91E+00
Total HPAH	5.27E+01	6.16E+01		4.81E+00	NA	NA
Total LPAH	2.57E+01	9.21E+00		7.57E-01	NA	NA
Total PAH	7.35E+01	3.30E+01		2.67E+00	NA	NA

Highlighted Cell = HQ > 1.

Table E-21. Screening-Level Hazard Quotients for the Least Tern for 2005 Surface IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	2.86E+00		2.32E-02	4.27E-03	NA	NA
ARSENIC	1.51E+01		1.93E+00	3.55E-01	2.87E+00	1.24E-01
CADMIUM	3.78E+01		1.04E+00	1.91E-01	4.50E-02	4.25E+00
CHROMIUM	3.80E+02		5.85E+00	1.08E+00	1.37E+00	7.89E-01
COPPER	2.47E+02		1.99E+01	3.68E+00	1.35E+00	2.72E+00
LEAD	4.98E+02		8.62E+00	1.59E+00	1.24E-02	1.29E+02
MERCURY	3.58E-01		9.05E-02	1.67E-02	2.10E-02	7.96E-01
NICKEL	1.43E+02		7.44E-01	1.37E-01	8.18E-01	1.68E-01
SELENIUM	1.69E+00		2.97E+00	5.48E-01	1.21E-01	4.52E+00
SILVER	4.70E+01		1.49E+00	2.74E-01	NA	NA
ZINC	7.23E+02		2.48E+02	4.57E+01	9.34E+00	4.90E+00
ALDRIN	4.00E-05		2.40E-06	4.43E-07	NA	NA
ALPHA-CHLORDANE	1.11E-03		2.64E-03	4.87E-04	1.99E+00	2.44E-04
DIELDRIN	2.24E-02		3.30E-02	6.08E-03	4.44E-02	1.37E-01
ENDOSULFAN I	4.50E-05		2.48E-06	4.58E-07	NA	NA
ENDOSULFAN II	1.90E-04		1.16E-05	2.13E-06	NA	NA
ENDRIN	5.00E-05		6.80E-07	1.25E-07	7.57E-03	1.66E-05
ENDRIN ALDEHYDE	8.50E-05		2.30E-06	4.23E-07	NA	NA
GAMMA-BHC	4.50E-05		3.38E-06	6.23E-07	1.08E+00	5.79E-07
GAMMA-CHLORDANE	7.02E-03		5.59E-03	1.03E-03	1.99E+00	5.17E-04
HEPTACHLOR EPOXIDE	4.50E-05		2.49E-06	4.59E-07	NA	NA
DIBENZOFURAN	1.64E-01		NA	NA	NA	NA
TRIBUTYL TIN	8.90E-01		7.64E+00	1.41E+00	6.27E-01	2.25E+00
Total PCB	3.14E+00		9.80E+00	1.81E+00	5.06E-02	3.57E+01
Total 4,4-DDx	1.19E-01		5.40E-01	9.95E-02	3.77E-03	2.64E+01
Total HPAH	5.27E+01		1.15E+00	2.12E-01	NA	NA
Total LPAH	2.57E+01		2.04E+00	3.76E-01	NA	NA
Total PAH	7.35E+01		1.60E+00	2.96E-01	NA	NA

Highlighted Cell = HQ > 1.

Table E-22. Screening-Level Hazard Quotient for the Double-Crested Cormorant for 2005 Surface IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	2.86E+00		2.32E-02	4.34E-03	NA	NA
ARSENIC	1.51E+01		1.93E+00	1.21E-01	5.91E+00	2.05E-02
CADMIUM	3.78E+01		1.04E+00	9.72E-02	9.27E-02	1.05E+00
CHROMIUM	3.80E+02		5.85E+00	7.28E-01	2.82E+00	2.58E-01
COPPER	2.47E+02		1.99E+01	1.35E+00	2.79E+00	4.85E-01
LEAD	4.98E+02		8.62E+00	1.01E+00	2.55E-02	3.95E+01
MERCURY	3.58E-01		9.05E-02	5.32E-03	4.32E-02	1.23E-01
NICKEL	1.43E+02		7.44E-01	1.95E-01	1.69E+00	1.15E-01
SELENIUM	1.69E+00		2.97E+00	1.64E-01	2.50E-01	6.55E-01
SILVER	4.70E+01		1.49E+00	1.32E-01	NA	NA
ZINC	7.23E+02		2.48E+02	1.43E+01	1.92E+01	7.43E-01
ALDRIN	4.00E-05		2.40E-06	1.74E-07	NA	NA
ALPHA-CHLORDANE	1.11E-03		2.64E-03	1.45E-04	4.11E+00	3.53E-05
DIELDRIN	2.24E-02		3.30E-02	1.82E-03	9.15E-02	1.99E-02
ENDOSULFAN I	4.50E-05		2.48E-06	1.84E-07	NA	NA
ENDOSULFAN II	1.90E-04		1.16E-05	8.35E-07	NA	NA
ENDRIN	5.00E-05		6.80E-07	9.09E-08	1.56E-02	5.83E-06
ENDRIN ALDEHYDE	8.50E-05		2.30E-06	2.17E-07	NA	NA
GAMMA-BHC	4.50E-05		3.38E-06	2.33E-07	2.22E+00	1.05E-07
GAMMA-CHLORDANE	7.02E-03		5.59E-03	3.12E-04	4.11E+00	7.60E-05
HEPTACHLOR EPOXIDE	4.50E-05		2.49E-06	1.84E-07	NA	NA
DIBENZOFURAN	1.64E-01		NA	NA	NA	NA
TRIBUTYL TIN	8.90E-01		7.64E+00	4.17E-01	1.29E+00	3.23E-01
Total PCB	3.14E+00		9.80E+00	5.37E-01	1.04E-01	5.15E+00
Total 4,4-DDx	1.19E-01		5.40E-01	2.95E-02	7.76E-03	3.81E+00
Total HPAH	5.27E+01		1.15E+00	1.19E-01	NA	NA
Total LPAH	2.57E+01		2.04E+00	1.39E-01	NA	NA
Total PAH	7.35E+01		1.60E+00	1.67E-01	NA	NA

Highlighted Cell = HQ > 1.

Table E-23. Screening-Level Hazard Quotient Results for the Surf Scoter for 2005 Subsurface IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	3.46E+00	6.83E-01		5.94E-02	NA	NA
ARSENIC	1.18E+01	3.55E+01		2.74E+00	5.43E+00	5.04E-01
CADMIUM	1.88E+02	2.29E+01		2.14E+00	8.53E-02	2.51E+01
CHROMIUM	7.99E+02	1.53E+02		1.34E+01	2.59E+00	5.16E+00
COPPER	3.72E+02	6.25E+01		5.55E+00	2.56E+00	2.17E+00
LEAD	2.29E+03	1.21E+02		1.40E+01	2.34E-02	5.99E+02
MERCURY	7.42E-01	1.61E-01		1.38E-02	3.98E-02	3.48E-01
NICKEL	1.80E+02	5.53E+01		4.60E+00	1.55E+00	2.97E+00
SELENIUM	5.10E-01	2.30E+00		1.77E-01	2.30E-01	7.70E-01
SILVER	7.06E+01	1.21E+01		1.07E+00	NA	NA
ZINC	6.32E+02	3.54E+02		2.83E+01	1.77E+01	1.60E+00
ALDRIN	2.50E-05	4.35E-04		3.33E-05	NA	NA
ALPHA-CHLORDANE	3.98E-03	2.61E-03		2.07E-04	3.78E+00	5.49E-05
DIELDRIN	1.07E-02	6.94E-02		5.32E-03	8.42E-02	6.32E-02
ENDOSULFAN I	3.00E-05	NA		NA	NA	NA
ENDOSULFAN II	1.30E-04	NA		NA	NA	NA
ENDRIN	3.50E-05	5.00E-04		3.83E-05	1.43E-02	2.67E-03
ENDRIN ALDEHYDE	6.00E-05	NA		NA	NA	NA
GAMMA-BHC	3.00E-05	NA		NA	2.04E+00	NA
GAMMA-CHLORDANE	4.34E-03	NA		NA	3.78E+00	NA
HEPTACHLOR EPOXIDE	3.00E-05	5.00E-04		3.82E-05	NA	NA
DIBENZOFURAN	2.39E-02	NA		NA	NA	NA
TRIBUTYL TIN	3.70E-01	3.28E-01		2.59E-02	1.19E+00	2.18E-02
Total PCB	4.77E+00	6.71E+00		5.22E-01	9.59E-02	5.45E+00
Total 4,4-DDx	9.61E-02	4.45E-01		3.42E-02	7.14E-03	4.79E+00
Total HPAH	1.77E+01	3.17E+01		2.46E+00	NA	NA
Total LPAH	2.02E+01	7.24E+00		5.95E-01	NA	NA
Total PAH	3.80E+01	3.30E+01		2.60E+00	NA	NA

Highlighted Cell = HQ > 1.

Table E-24. Screening-Level Hazard Quotients for the Least Tern for 2005 Subsurface IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc.**	**Invert Conc**	**Fish Conc**	**Calculated Dose**	**Low TRV**	**Low HQ**
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg/day)	(mg/kg/day)	unitless
ANTIMONY	3.46E+00		2.80E-02	5.17E-03	NA	NA
ARSENIC	1.18E+01		1.50E+00	2.77E-01	2.87E+00	9.68E-02
CADMIUM	1.88E+02		5.15E+00	9.50E-01	4.50E-02	2.11E+01
CHROMIUM	7.99E+02		1.23E+01	2.27E+00	1.37E+00	1.66E+00
COPPER	3.72E+02		3.00E+01	5.54E+00	1.35E+00	4.09E+00
LEAD	2.29E+03		3.96E+01	7.31E+00	1.24E-02	5.91E+02
MERCURY	7.42E-01		1.88E-01	3.46E-02	2.10E-02	1.65E+00
NICKEL	1.80E+02		9.36E-01	1.73E-01	8.18E-01	2.11E-01
SELENIUM	5.10E-01		8.96E-01	1.65E-01	1.21E-01	1.36E+00
SILVER	7.06E+01		2.23E+00	4.11E-01	NA	NA
ZINC	6.32E+02		2.17E+02	4.00E+01	9.34E+00	4.28E+00
ALDRIN	2.50E-05		1.50E-06	2.77E-07	NA	NA
ALPHA-CHLORDANE	3.98E-03		9.47E-03	1.75E-03	1.99E+00	8.76E-04
DIELDRIN	1.07E-02		1.57E-02	2.90E-03	4.44E-02	6.52E-02
ENDOSULFAN I	3.00E-05		1.66E-06	3.05E-07	NA	NA
ENDOSULFAN II	1.30E-04		7.92E-06	1.46E-06	NA	NA
ENDRIN	3.50E-05		4.76E-07	8.78E-08	7.57E-03	1.16E-05
ENDRIN ALDEHYDE	6.00E-05		1.62E-06	2.99E-07	NA	NA
GAMMA-BHC	3.00E-05		2.25E-06	4.16E-07	1.08E+00	3.86E-07
GAMMA-CHLORDANE	4.34E-03		3.46E-03	6.37E-04	1.99E+00	3.20E-04
HEPTACHLOR EPOXIDE	3.00E-05		1.66E-06	3.06E-07	NA	NA
DIBENZOFURAN	2.39E-02		NA	NA	NA	NA
TRIBUTYL TIN	3.70E-01		3.18E+00	5.86E-01	6.27E-01	9.35E-01
Total PCB	4.77E+00		1.49E+01	2.75E+00	5.06E-02	5.43E+01
Total 4,4-DDx	9.61E-02		4.38E-01	8.08E-02	3.77E-03	2.14E+01
Total HPAH	1.77E+01		3.86E-01	7.13E-02	NA	NA
Total LPAH	2.02E+01		1.61E+00	2.96E-01	NA	NA
Total PAH	3.80E+01		8.28E-01	1.53E-01	NA	NA

Highlighted Cell = HQ > 1.

Table E-25. Screening-Level Hazard Quotient for the Double-Crested Cormorant for 2005 Subsurface IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**Low TRV (mg/kg/day)**	**Low HQ (unitless)**
ANTIMONY	3.46E+00		2.80E-02	5.26E-03	NA	NA
ARSENIC	1.18E+01		1.50E+00	9.47E-02	5.91E+00	1.60E-02
CADMIUM	1.88E+02		5.15E+00	4.83E-01	9.27E-02	5.21E+00
CHROMIUM	7.99E+02		1.23E+01	1.53E+00	2.82E+00	5.43E-01
COPPER	3.72E+02		3.00E+01	2.04E+00	2.79E+00	7.31E-01
LEAD	2.29E+03		3.96E+01	4.63E+00	2.55E-02	1.82E+02
MERCURY	7.42E-01		1.88E-01	1.10E-02	4.32E-02	2.55E-01
NICKEL	1.80E+02		9.36E-01	2.45E-01	1.69E+00	1.45E-01
SELENIUM	5.10E-01		8.96E-01	4.94E-02	2.50E-01	1.98E-01
SILVER	7.06E+01		2.23E+00	1.98E-01	NA	NA
ZINC	6.32E+02		2.17E+02	1.25E+01	1.92E+01	6.49E-01
ALDRIN	2.50E-05		1.50E-06	1.09E-07	NA	NA
ALPHA-CHLORDANE	3.98E-03		9.47E-03	5.20E-04	4.11E+00	1.27E-04
DIELDRIN	1.07E-02		1.57E-02	8.67E-04	9.15E-02	9.48E-03
ENDOSULFAN I	3.00E-05		1.66E-06	1.23E-07	NA	NA
ENDOSULFAN II	1.30E-04		7.92E-06	5.72E-07	NA	NA
ENDRIN	3.50E-05		4.76E-07	6.37E-08	1.56E-02	4.08E-06
ENDRIN ALDEHYDE	6.00E-05		1.62E-06	1.53E-07	NA	NA
GAMMA-BHC	3.00E-05		2.25E-06	1.55E-07	2.22E+00	7.00E-08
GAMMA-CHLORDANE	4.34E-03		3.46E-03	1.93E-04	4.11E+00	4.70E-05
HEPTACHLOR EPOXIDE	3.00E-05		1.66E-06	1.23E-07	NA	NA
DIBENZOFURAN	2.39E-02		NA	NA	NA	NA
TRIBUTYL TIN	3.70E-01		3.18E+00	1.73E-01	1.29E+00	1.34E-01
Total PCB	4.77E+00		1.49E+01	8.17E-01	1.04E-01	7.84E+00
Total 4,4-DDx	9.61E-02		4.38E-01	2.40E-02	7.76E-03	3.09E+00
Total HPAH	1.77E+01		3.86E-01	4.01E-02	NA	NA
Total LPAH	2.02E+01		1.61E+00	1.09E-01	NA	NA
Total PAH	3.80E+01		8.28E-01	8.60E-02	NA	NA

Highlighted Cell = HQ > 1.

E.4 SUPPORTING INFORMATION FOR THE FOOD CHAIN BASELINE RISK ESTIMATES

In the baseline ecological risk assessment (BERA), exposure estimates were refined and hazard quotients (HQs) were estimated. Tables E-26 through E-46 present the supporting information for the dose-modeling used in the BERA.

Table E-26. Baseline Dose and Hazard Quotient Results for the Surf Scoter for All Years for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	1.03E+01	2.04E+00		1.78E-01	NA	NA	NA	NA
ARSENIC	7.04E+00	2.20E+01		1.69E+00	5.43E+00	3.12E-01	2.17E+01	7.80E-02
CADMIUM	2.56E-01	3.12E-02		2.92E-03	8.53E-02	3.42E-02	1.74E+01	1.68E-04
CHROMIUM	3.37E+02	6.46E+01		5.63E+00	2.59E+00	2.17E+00	1.52E+01	3.70E-01
COPPER	6.85E+01	1.56E+01		1.33E+00	2.56E+00	5.20E-01	6.37E+01	2.09E-02
LEAD	**6.14E+01**	**2.50E+00**		**3.19E-01**	**2.34E-02**	**1.36E+01**	**9.33E+00**	**3.42E-02**
MERCURY	**2.45E+00**	**4.50E-02**		**8.57E-03**	**3.98E-02**	**2.16E-01**	**1.83E-01**	**4.67E-02**
NICKEL	7.71E+01	1.25E+00		2.57E-01	1.55E+00	1.66E-01	6.40E+01	4.01E-03
SELENIUM	2.08E-01	7.94E-01		6.10E-02	2.30E-01	2.66E-01	9.28E-01	6.57E-02
SILVER	1.72E-01	2.95E-02		2.61E-03	NA	NA	NA	NA
ZINC	1.21E+02	8.72E+01		6.91E+00	1.77E+01	3.91E-01	1.77E+02	3.91E-02
ALPHA-CHLORDANE*	1.25E-03	8.17E-04		6.50E-05	3.78E+00	1.72E-05	1.89E+01	3.44E-06
DIELDRIN*	9.80E-04	6.39E-03		4.90E-04	8.42E-02	5.82E-03	9.51E-01	5.15E-04
ENDOSULFAN II*	4.67E-04	NA		NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	1.34E-02	NA		NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	2.15E-03	2.31E-03		1.81E-04	3.78E+00	4.79E-05	1.89E+01	9.58E-06
DIBENZOFURAN*	1.30E-02	NA		NA	NA	NA	NA	NA
TRIBUTYLTIN	**3.16E-02**	**3.45E-02**		**2.70E-03**	**1.19E+00**	**2.27E-03**	**7.47E+01**	**3.62E-05**
Total PCB	**4.51E-01**	**6.35E-01**		**4.94E-02**	**9.59E-02**	**5.15E-01**	**1.16E+00**	**4.26E-02**
Total 4,4-DDx	**4.68E-02**	**2.17E-01**		**1.67E-02**	**7.14E-03**	**2.33E+00**	**6.12E-01**	**2.72E-02**
Total HPAH	**5.22E+00**	**6.10E+00**		**4.77E-01**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**7.82E-01**	**2.80E-01**		**2.30E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**6.82E+00**	**NA**		**NA**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-27. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Surface for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	1.60E-01	3.16E-02		2.75E-03	NA	NA	NA	NA
ARSENIC	5.03E+00	2.20E+01		1.69E+00	5.43E+00	3.11E-01	2.17E+01	7.78E-02
CADMIUM	1.99E-01	2.42E-02		2.26E-03	8.53E-02	2.65E-02	1.74E+01	1.30E-04
CHROMIUM	6.03E+01	1.16E+01		1.01E+00	2.59E+00	3.89E-01	1.52E+01	6.63E-02
COPPER	4.96E+01	1.56E+01		1.30E+00	2.56E+00	5.05E-01	6.37E+01	2.03E-02
LEAD	**3.83E+01**	**2.50E+00**		**2.71E-01**	**2.34E-02**	**1.16E+01**	**9.33E+00**	**2.91E-02**
MERCURY	**4.66E+00**	**4.50E-02**		**1.32E-02**	**3.98E-02**	**3.32E-01**	**1.83E-01**	**7.19E-02**
NICKEL	4.25E+01	1.25E+00		1.84E-01	1.55E+00	1.19E-01	6.40E+01	2.88E-03
SELENIUM	1.40E-01	5.35E-01		4.11E-02	2.30E-01	1.79E-01	9.28E-01	4.43E-02
SILVER	1.68E-01	2.88E-02		2.55E-03	NA	NA	NA	NA
ZINC	6.50E+01	8.72E+01		6.79E+00	1.77E+01	3.84E-01	1.77E+02	3.84E-02
ALPHA-CHLORDANE*	3.04E-04	1.99E-04		1.58E-05	3.78E+00	4.19E-06	1.89E+01	8.38E-07
DIELDRIN*	5.57E-04	3.63E-03		2.78E-04	8.42E-02	3.31E-03	9.51E-01	2.93E-04
ENDOSULFAN II*	3.21E-04	NA		NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	3.17E-05	NA		NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	4.19E-04	2.31E-03		1.77E-04	3.78E+00	4.69E-05	1.89E+01	9.39E-06
DIBENZOFURAN*	1.30E-02	NA		NA	NA	NA	NA	NA
TRIBUTYLTIN	**5.90E-02**	**3.45E-02**		**2.76E-03**	**1.19E+00**	**2.32E-03**	**7.47E+01**	**3.69E-05**
Total PCB	**9.50E-02**	**1.34E-01**		**1.04E-02**	**9.59E-02**	**1.08E-01**	**1.16E+00**	**8.96E-03**
Total 4,4-DDx	**9.17E-03**	**4.25E-02**		**3.26E-03**	**7.14E-03**	**4.57E-01**	**6.12E-01**	**5.34E-03**
Total HPAH	**9.32E+00**	**1.09E+01**		**8.51E-01**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**2.51E+00**	**8.99E-01**		**7.39E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**1.18E+01**	**NA**		**NA**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-28. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Subsurface for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	2.72E+00	5.37E-01		4.67E-02	NA	NA	NA	NA
ARSENIC	5.98E+00	2.20E+01		1.69E+00	5.43E+00	3.12E-01	2.17E+01	7.79E-02
CADMIUM	3.86E-01	4.70E-02		4.40E-03	8.53E-02	5.15E-02	1.74E+01	2.53E-04
CHROMIUM	6.37E+01	1.22E+01		1.07E+00	2.59E+00	4.11E-01	1.52E+01	7.01E-02
COPPER	6.15E+01	1.56E+01		1.32E+00	2.56E+00	5.15E-01	6.37E+01	2.07E-02
LEAD	**6.15E+01**	**2.50E+00**		**3.19E-01**	**2.34E-02**	**1.36E+01**	**9.33E+00**	**3.43E-02**
MERCURY	**2.08E+00**	**4.50E-02**		**7.79E-03**	**3.98E-02**	**1.96E-01**	**1.83E-01**	**4.24E-02**
NICKEL	4.68E+01	1.25E+00		1.93E-01	1.55E+00	1.25E-01	6.40E+01	3.02E-03
SELENIUM	1.53E-01	5.84E-01		4.49E-02	2.30E-01	1.96E-01	9.28E-01	4.84E-02
SILVER	2.06E-01	3.53E-02		3.12E-03	NA	NA	NA	NA
ZINC	2.26E+02	8.72E+01		7.13E+00	1.77E+01	4.03E-01	1.77E+02	4.03E-02
ALPHA-CHLORDANE*	4.03E-04	2.64E-04		2.10E-05	3.78E+00	5.56E-06	1.89E+01	1.11E-06
DIELDRIN*	1.90E-03	1.24E-02		9.51E-04	8.42E-02	1.13E-02	9.51E-01	1.00E-03
ENDOSULFAN II*	8.63E-04	NA		NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	1.33E-03	NA		NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	4.97E-04	2.31E-03		1.78E-04	3.78E+00	4.70E-05	1.89E+01	9.39E-06
DIBENZOFURAN*	9.80E-02	NA		NA	NA	NA	NA	NA
TRIBUTYLTIN	**7.60E-02**	**3.45E-02**		**2.79E-03**	**1.19E+00**	**2.35E-03**	**7.47E+01**	**3.74E-05**
Total PCB	**3.54E-01**	**4.98E-01**		**3.88E-02**	**9.59E-02**	**4.04E-01**	**1.16E+00**	**3.34E-02**
Total 4,4-DDx	**3.56E-02**	**1.65E-01**		**1.27E-02**	**7.14E-03**	**1.77E+00**	**6.12E-01**	**2.07E-02**
Total HPAH	**1.75E+01**	**2.04E+01**		**1.59E+00**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**1.22E+01**	**4.36E+00**		**3.58E-01**	**NA**	**NA**	**NA**	**NA**
Total PAH	**3.02E+01**	**NA**		**NA**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-29. Reference Hazard Quotient Results for the Surf Scoter

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	9.30E-01	1.84E-01		1.60E-02	NA	NA	NA	NA
ARSENIC	9.50E+00	2.10E+01		1.62E+00	5.43E+00	2.99E-01	2.17E+01	7.47E-02
CADMIUM	3.30E-01	4.02E-02		3.76E-03	8.53E-02	4.41E-02	1.74E+01	2.16E-04
CHROMIUM	8.10E+01	1.55E+01		1.36E+00	2.59E+00	5.23E-01	1.52E+01	8.91E-02
COPPER	4.10E+01	1.40E+01		1.15E+00	2.56E+00	4.50E-01	6.37E+01	1.81E-02
LEAD	2.40E+01	2.60E+00		2.49E-01	2.34E-02	1.06E+01	9.33E+00	2.67E-02
MERCURY	4.00E-01	1.20E-01		1.00E-02	3.98E-02	2.52E-01	1.83E-01	5.45E-02
NICKEL	7.90E+01	1.80E+01		1.54E+00	1.55E+00	9.93E-01	6.40E+01	2.41E-02
SELENIUM	4.80E-01	1.83E+00		1.41E-01	2.30E-01	6.14E-01	9.28E-01	1.52E-01
SILVER	3.00E-01	5.14E-02		4.55E-03	NA	NA	NA	NA
ZINC	1.07E+02	1.02E+02		8.01E+00	1.77E+01	4.53E-01	1.77E+02	4.53E-02
ALPHA-CHLORDANE*	1.30E-04	8.51E-05		6.77E-06	3.78E+00	1.79E-06	1.89E+01	3.58E-07
DIELDRIN*	1.30E-04	8.47E-04		6.50E-05	8.42E-02	7.72E-04	9.51E-01	6.83E-05
ENDOSULFAN II*	NA	NA		NA	NA	NA	NA	NA
ENDRIN ALDEHYDE*	NA	NA		NA	NA	NA	NA	NA
GAMMA-CHLORDANE*	5.00E-05	6.00E-04		4.59E-05	3.78E+00	1.21E-05	1.89E+01	2.43E-06
DIBENZOFURAN*	NA	NA		NA	NA	NA	NA	NA
TRIBUTYLTIN	3.80E-03	3.50E-02		2.68E-03	1.19E+00	2.26E-03	7.47E+01	3.59E-05
Total PCB	1.10E-02	1.55E-02		1.20E-03	9.59E-02	1.26E-02	1.16E+00	1.04E-03
Total 4,4-DDx	4.30E-03	1.99E-02		1.53E-03	7.14E-03	2.14E-01	6.12E-01	2.50E-03
Total HPAH	1.07E+00	1.25E+00		9.79E-02	NA	NA	NA	NA
Total LPAH	1.94E-01	6.94E-02		5.71E-03	NA	NA	NA	NA
Total PAH	1.07E+00	NA		NA	NA	NA	NA	NA

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-30. Baseline Hazard Quotient Results for the Least Tern for All Years for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	1.03E+01		8.38E-02	1.55E-02	NA	NA	NA	NA
ARSENIC	7.04E+00		8.98E-01	1.66E-01	2.87E+00	5.78E-02	1.15E+01	1.44E-02
CADMIUM	2.56E-01		7.02E-03	1.29E-03	4.50E-02	2.88E-02	9.18E+00	1.41E-04
CHROMIUM	3.37E+02		5.19E+00	9.56E-01	1.37E+00	6.99E-01	8.02E+00	1.19E-01
COPPER	6.85E+01		5.52E+00	1.02E+00	1.35E+00	7.53E-01	3.36E+01	3.03E-02
LEAD	**6.14E+01**		**1.06E+00**	**1.96E-01**	**1.24E-02**	**1.58E+01**	**4.92E+00**	**3.98E-02**
MERCURY	**2.45E+00**		**6.20E-01**	**1.14E-01**	**2.10E-02**	**5.46E+00**	**9.68E-02**	**1.18E+00**
NICKEL	7.71E+01		4.01E-01	7.40E-02	8.18E-01	9.04E-02	3.38E+01	2.19E-03
SELENIUM	2.08E-01		3.65E-01	6.73E-02	1.21E-01	5.56E-01	4.90E-01	1.37E-01
SILVER	1.72E-01		5.43E-03	1.00E-03	NA	NA	NA	NA
ZINC	1.21E+02		4.15E+01	7.66E+00	9.34E+00	8.20E-01	9.34E+01	8.20E-02
ALPHA-CHLORDANE*	1.25E-03		2.97E-03	5.48E-04	1.99E+00	2.75E-04	9.97E+00	5.50E-05
DIELDRIN*	9.80E-04		1.45E-03	2.67E-04	4.44E-02	6.00E-03	5.02E-01	5.31E-04
ENDOSULFAN II*	4.67E-04		2.85E-05	5.25E-06	NA	NA	NA	NA
ENDRIN ALDEHYDE*	1.34E-02		3.63E-04	6.69E-05	NA	NA	NA	NA
GAMMA-CHLORDANE*	2.15E-03		1.71E-03	3.16E-04	1.99E+00	1.58E-04	9.97E+00	3.17E-05
DIBENZOFURAN*	1.30E-02		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**3.16E-02**		**2.71E-01**	**5.00E-02**	**6.27E-01**	**7.97E-02**	**3.94E+01**	**1.27E-03**
Total PCB	**4.51E-01**		**1.41E+00**	**2.60E-01**	**5.06E-02**	**5.14E+00**	**6.13E-01**	**4.24E-01**
Total 4,4-DDx	**4.68E-02**		**2.13E-01**	**3.93E-02**	**3.77E-03**	**1.04E+01**	**3.23E-01**	**1.22E-01**
Total HPAH	**5.22E+00**		**1.14E-01**	**2.10E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**7.82E-01**		**6.20E-02**	**1.14E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**6.82E+00**		**1.49E-01**	**2.74E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-31. Baseline Dose and Hazard Quotient Results for the Least Tern for 2005 Surface for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	1.60E-01		1.30E-03	2.39E-04	NA	NA	NA	NA
ARSENIC	5.03E+00		6.42E-01	1.18E-01	2.87E+00	4.13E-02	1.15E+01	1.03E-02
CADMIUM	1.99E-01		5.44E-03	1.00E-03	4.50E-02	2.23E-02	9.18E+00	1.09E-04
CHROMIUM	6.03E+01		9.29E-01	1.71E-01	1.37E+00	1.25E-01	8.02E+00	2.13E-02
COPPER	4.96E+01		4.00E+00	7.39E-01	1.35E+00	5.46E-01	3.36E+01	2.20E-02
LEAD	**3.83E+01**		**6.63E-01**	**1.22E-01**	**1.24E-02**	**9.89E+00**	**4.92E+00**	**2.48E-02**
MERCURY	**4.66E+00**		**1.18E+00**	**2.17E-01**	**2.10E-02**	**1.04E+01**	**9.68E-02**	**2.25E+00**
NICKEL	4.25E+01		2.21E-01	4.08E-02	8.18E-01	4.99E-02	3.38E+01	1.21E-03
SELENIUM	1.40E-01		2.46E-01	4.54E-02	1.21E-01	3.74E-01	4.90E-01	9.26E-02
SILVER	1.68E-01		5.31E-03	9.80E-04	NA	NA	NA	NA
ZINC	6.50E+01		2.23E+01	4.11E+00	9.34E+00	4.41E-01	9.34E+01	4.41E-02
ALPHA-CHLORDANE*	3.04E-04		7.23E-04	1.33E-04	1.99E+00	6.69E-05	9.97E+00	1.34E-05
DIELDRIN*	5.57E-04		8.22E-04	1.52E-04	4.44E-02	3.41E-03	5.02E-01	3.02E-04
ENDOSULFAN II*	3.21E-04		1.95E-05	3.60E-06	NA	NA	NA	NA
ENDRIN ALDEHYDE*	3.17E-05		8.56E-07	1.58E-07	NA	NA	NA	NA
GAMMA-CHLORDANE*	4.19E-04		3.33E-04	6.15E-05	1.99E+00	3.08E-05	9.97E+00	6.17E-06
DIBENZOFURAN*	1.30E-02		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**5.90E-02**		**5.06E-01**	**9.34E-02**	**6.27E-01**	**1.49E-01**	**3.94E+01**	**2.37E-03**
Total PCB	**9.50E-02**		**2.97E-01**	**5.47E-02**	**5.06E-02**	**1.08E+00**	**6.13E-01**	**8.93E-02**
Total 4,4-DDx	**9.17E-03**		**4.18E-02**	**7.70E-03**	**3.77E-03**	**2.04E+00**	**3.23E-01**	**2.39E-02**
Total HPAH	**9.32E+00**		**2.03E-01**	**3.75E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**2.51E+00**		**1.99E-01**	**3.68E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**1.18E+01**		**2.58E-01**	**4.76E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-32. Baseline Hazard Quotient Results for the Least Tern for 2005 Subsurface for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	2.72E+00		2.20E-02	4.06E-03	NA	NA	NA	NA
ARSENIC	5.98E+00		7.62E-01	1.41E-01	2.87E+00	4.90E-02	1.15E+01	1.23E-02
CADMIUM	3.86E-01		1.06E-02	1.95E-03	4.50E-02	4.33E-02	9.18E+00	2.12E-04
CHROMIUM	6.37E+01		9.82E-01	1.81E-01	1.37E+00	1.32E-01	8.02E+00	2.26E-02
COPPER	6.15E+01		4.96E+00	9.15E-01	1.35E+00	6.76E-01	3.36E+01	2.72E-02
LEAD	**6.15E+01**		**1.06E+00**	**1.96E-01**	**1.24E-02**	**1.59E+01**	**4.92E+00**	**3.99E-02**
MERCURY	**2.08E+00**		**5.26E-01**	**9.70E-02**	**2.10E-02**	**4.62E+00**	**9.68E-02**	**1.00E+00**
NICKEL	4.68E+01		2.43E-01	4.49E-02	8.18E-01	5.48E-02	3.38E+01	1.33E-03
SELENIUM	1.53E-01		2.69E-01	4.95E-02	1.21E-01	4.09E-01	4.90E-01	1.01E-01
SILVER	2.06E-01		6.51E-03	1.20E-03	NA	NA	NA	NA
ZINC	2.26E+02		7.74E+01	1.43E+01	9.34E+00	1.53E+00	9.34E+01	1.53E-01
ALPHA-CHLORDANE*	4.03E-04		9.60E-04	1.77E-04	1.99E+00	8.88E-05	9.97E+00	1.78E-05
DIELDRIN*	1.90E-03		2.81E-03	5.18E-04	4.44E-02	1.17E-02	5.02E-01	1.03E-03
ENDOSULFAN II*	8.63E-04		5.25E-05	9.69E-06	NA	NA	NA	NA
ENDRIN ALDEHYDE*	1.33E-03		3.59E-05	6.62E-06	NA	NA	NA	NA
GAMMA-CHLORDANE*	4.97E-04		3.96E-04	7.30E-05	1.99E+00	3.66E-05	9.97E+00	7.32E-06
DIBENZOFURAN*	9.80E-02		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**7.60E-02**		**6.52E-01**	**1.20E-01**	**6.27E-01**	**1.92E-01**	**3.94E+01**	**3.05E-03**
Total PCB	**3.54E-01**		**1.11E+00**	**2.04E-01**	**5.06E-02**	**4.03E+00**	**6.13E-01**	**3.33E-01**
Total 4,4-DDx	**3.56E-02**		**1.62E-01**	**2.99E-02**	**3.77E-03**	**7.94E+00**	**3.23E-01**	**9.27E-02**
Total HPAH	**1.75E+01**		**3.81E-01**	**7.02E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**1.22E+01**		**9.66E-01**	**1.78E-01**	**NA**	**NA**	**NA**	**NA**
Total PAH	**3.02E+01**		**6.57E-01**	**1.21E-01**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-33. Reference Hazard Quotient Results for the Least Tern

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	9.30E-01		7.53E-03	1.39E-03	NA	NA	NA	NA
ARSENIC	9.50E+00		1.21E+00	2.23E-01	2.87E+00	7.79E-02	1.15E+01	1.95E-02
CADMIUM	3.30E-01		9.04E-03	1.67E-03	4.50E-02	3.71E-02	9.18E+00	1.82E-04
CHROMIUM	8.10E+01		1.25E+00	2.30E-01	1.37E+00	1.68E-01	8.02E+00	2.87E-02
COPPER	4.10E+01		3.31E+00	6.10E-01	1.35E+00	4.51E-01	3.36E+01	1.81E-02
LEAD	2.40E+01		4.15E-01	7.66E-02	1.24E-02	6.20E+00	4.92E+00	1.56E-02
MERCURY	4.00E-01		1.01E-01	1.87E-02	2.10E-02	8.89E-01	9.68E-02	1.93E-01
NICKEL	7.90E+01		4.11E-01	7.58E-02	8.18E-01	9.26E-02	3.38E+01	2.24E-03
SELENIUM	4.80E-01		8.43E-01	1.56E-01	1.21E-01	1.28E+00	4.90E-01	3.17E-01
SILVER	3.00E-01		9.48E-03	1.75E-03	NA	NA	NA	NA
ZINC	1.07E+02		3.67E+01	6.77E+00	9.34E+00	7.25E-01	9.34E+01	7.25E-02
ALPHA-CHLORDANE	1.30E-04		3.09E-04	5.71E-05	1.99E+00	2.86E-05	9.97E+00	5.72E-06
DIELDRIN	1.30E-04		1.92E-04	3.54E-05	4.44E-02	7.96E-04	5.02E-01	7.05E-05
ENDOSULFAN II	NA		NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA		NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	5.00E-05		3.98E-05	7.34E-06	1.99E+00	3.68E-06	9.97E+00	7.36E-07
DIBENZOFURAN	NA		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	3.80E-03		3.26E-02	6.02E-03	6.27E-01	9.60E-03	3.94E+01	1.53E-04
Total PCB	1.10E-02		3.44E-02	6.34E-03	5.06E-02	1.25E-01	6.13E-01	1.03E-02
Total 4,4-DDx	4.30E-03		1.96E-02	3.61E-03	3.77E-03	9.59E-01	3.23E-01	1.12E-02
Total HPAH	1.07E+00		2.34E-02	4.31E-03	NA	NA	NA	NA
Total LPAH	1.94E-01		1.54E-02	2.84E-03	NA	NA	NA	NA
Total PAH	1.07E+00		2.34E-02	4.31E-03	NA	NA	NA	NA

Highlighted cell = HQ > 1

Table E-34. Baseline Hazard Quotient Results for the Cormorant for All Years for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	1.03E+01		8.38E-02	1.57E-02	NA	NA	NA	NA
ARSENIC	7.04E+00		8.98E-01	5.65E-02	5.91E+00	9.57E-03	2.36E+01	2.39E-03
CADMIUM	2.56E-01		7.02E-03	6.58E-04	9.27E-02	7.10E-03	1.89E+01	3.48E-05
CHROMIUM	3.37E+02		5.19E+00	6.46E-01	2.82E+00	2.29E-01	1.65E+01	3.91E-02
COPPER	6.85E+01		5.52E+00	3.75E-01	2.79E+00	1.34E-01	6.93E+01	5.41E-03
LEAD	**6.14E+01**		**1.06E+00**	**1.24E-01**	**2.55E-02**	**4.87E+00**	**1.01E+01**	**1.22E-02**
MERCURY	**2.45E+00**		**6.20E-01**	**3.65E-02**	**4.32E-02**	**8.44E-01**	**1.99E-01**	**1.83E-01**
NICKEL	7.71E+01		4.01E-01	1.05E-01	1.69E+00	6.23E-02	6.96E+01	1.51E-03
SELENIUM	2.08E-01		3.65E-01	2.01E-02	2.50E-01	8.06E-02	1.01E+00	1.99E-02
SILVER	1.72E-01		5.43E-03	4.81E-04	NA	NA	NA	NA
ZINC	1.21E+02		4.15E+01	2.39E+00	1.92E+01	1.24E-01	1.92E+02	1.24E-02
ALPHA-CHLORDANE*	1.25E-03		2.97E-03	1.63E-04	4.11E+00	3.97E-05	2.05E+01	7.95E-06
DIELDRIN*	9.80E-04		1.45E-03	7.98E-05	9.15E-02	8.72E-04	1.03E+00	7.72E-05
ENDOSULFAN II*	4.67E-04		2.85E-05	2.05E-06	NA	NA	NA	NA
ENDRIN ALDEHYDE*	1.34E-02		3.63E-04	3.42E-05	NA	NA	NA	NA
GAMMA-CHLORDANE*	2.15E-03		1.71E-03	9.56E-05	4.11E+00	2.33E-05	2.05E+01	4.65E-06
DIBENZOFURAN*	1.30E-02		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**3.16E-02**		**2.71E-01**	**1.48E-02**	**1.29E+00**	**1.15E-02**	**8.12E+01**	**1.82E-04**
Total PCB	**4.51E-01**		**1.41E+00**	**7.73E-02**	**1.04E-01**	**7.41E-01**	**1.26E+00**	**6.12E-02**
Total 4,4-DDx	**4.68E-02**		**2.13E-01**	**1.17E-02**	**7.76E-03**	**1.50E+00**	**6.65E-01**	**1.75E-02**
Total HPAH	**5.22E+00**		**1.14E-01**	**1.18E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**7.82E-01**		**6.20E-02**	**4.22E-03**	**NA**	**NA**	**NA**	**NA**
Total PAH	**6.82E+00**		**1.49E-01**	**1.55E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-35. Baseline Hazard Quotient Results for the Cormorant for 2005 Surface for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	1.60E-01		1.30E-03	2.43E-04	NA	NA	NA	NA
ARSENIC	5.03E+00		6.42E-01	4.04E-02	5.91E+00	6.84E-03	2.36E+01	1.71E-03
CADMIUM	1.99E-01		5.44E-03	5.11E-04	9.27E-02	5.51E-03	1.89E+01	2.70E-05
CHROMIUM	6.03E+01		9.29E-01	1.16E-01	2.82E+00	4.10E-02	1.65E+01	6.99E-03
COPPER	4.96E+01		4.00E+00	2.72E-01	2.79E+00	9.75E-02	6.93E+01	3.92E-03
LEAD	**3.83E+01**		**6.63E-01**	**7.74E-02**	**2.55E-02**	**3.04E+00**	**1.01E+01**	**7.64E-03**
MERCURY	**4.66E+00**		**1.18E+00**	**6.93E-02**	**4.32E-02**	**1.60E+00**	**1.99E-01**	**3.47E-01**
NICKEL	4.25E+01		2.21E-01	5.79E-02	1.69E+00	3.43E-02	6.96E+01	8.32E-04
SELENIUM	1.40E-01		2.46E-01	1.36E-02	2.50E-01	5.43E-02	1.01E+00	1.34E-02
SILVER	1.68E-01		5.31E-03	4.71E-04	NA	NA	NA	NA
ZINC	6.50E+01		2.23E+01	1.29E+00	1.92E+01	6.68E-02	1.92E+02	6.68E-03
ALPHA-CHLORDANE*	3.04E-04		7.23E-04	3.97E-05	4.11E+00	9.67E-06	2.05E+01	1.93E-06
DIELDRIN*	5.57E-04		8.22E-04	4.54E-05	9.15E-02	4.96E-04	1.03E+00	4.39E-05
ENDOSULFAN II*	3.21E-04		1.95E-05	1.41E-06	NA	NA	NA	NA
ENDRIN ALDEHYDE*	3.17E-05		8.56E-07	8.08E-08	NA	NA	NA	NA
GAMMA-CHLORDANE*	4.19E-04		3.33E-04	1.86E-05	4.11E+00	4.53E-06	2.05E+01	9.06E-07
DIBENZOFURAN*	1.30E-02		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**5.90E-02**		**5.06E-01**	**2.77E-02**	**1.29E+00**	**2.14E-02**	**8.12E+01**	**3.41E-04**
Total PCB	**9.50E-02**		**2.97E-01**	**1.63E-02**	**1.04E-01**	**1.56E-01**	**1.26E+00**	**1.29E-02**
Total 4,4-DDx	**9.17E-03**		**4.18E-02**	**2.29E-03**	**7.76E-03**	**2.94E-01**	**6.65E-01**	**3.44E-03**
Total HPAH	**9.32E+00**		**2.03E-01**	**2.11E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**2.51E+00**		**1.99E-01**	**1.36E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**1.18E+01**		**2.58E-01**	**2.68E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-36. Baseline Dose and Hazard Quotient Results for the Cormorant for 2005 Subsurface for IR Site 20

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit

Constituent	Exposure Point Sediment Conc. (mg/kg)	Invert Conc (mg/kg)	Fish Conc (mg/kg)	Calculated Dose (mg/kg/day)	NOAEL TRV (mg/kg/day)	NOAEL HQ (unitless)	LOAEL TRV (mg/kg/day)	LOAEL HQ (unitless)
ANTIMONY	2.72E+00		2.20E-02	4.13E-03	NA	NA	NA	NA
ARSENIC	5.98E+00		7.62E-01	4.80E-02	5.91E+00	8.12E-03	2.36E+01	2.03E-03
CADMIUM	3.86E-01		1.06E-02	9.92E-04	9.27E-02	1.07E-02	1.89E+01	5.25E-05
CHROMIUM	6.37E+01		9.82E-01	1.22E-01	2.82E+00	4.34E-02	1.65E+01	7.39E-03
COPPER	6.15E+01		4.96E+00	3.37E-01	2.79E+00	1.21E-01	6.93E+01	4.86E-03
LEAD	**6.15E+01**		**1.06E+00**	**1.24E-01**	**2.55E-02**	**4.88E+00**	**1.01E+01**	**1.23E-02**
MERCURY	**2.08E+00**		**5.26E-01**	**3.09E-02**	**4.32E-02**	**7.15E-01**	**1.99E-01**	**1.55E-01**
NICKEL	4.68E+01		2.43E-01	6.37E-02	1.69E+00	3.78E-02	6.96E+01	9.15E-04
SELENIUM	1.53E-01		2.69E-01	1.48E-02	2.50E-01	5.93E-02	1.01E+00	1.47E-02
SILVER	2.06E-01		6.51E-03	5.76E-04	NA	NA	NA	NA
ZINC	2.26E+02		7.74E+01	4.46E+00	1.92E+01	2.32E-01	1.92E+02	2.32E-02
ALPHA-CHLORDANE*	4.03E-04		9.60E-04	5.27E-05	4.11E+00	1.28E-05	2.05E+01	2.57E-06
DIELDRIN*	1.90E-03		2.81E-03	1.55E-04	9.15E-02	1.69E-03	1.03E+00	1.50E-04
ENDOSULFAN II*	8.63E-04		5.25E-05	3.79E-06	NA	NA	NA	NA
ENDRIN ALDEHYDE*	1.33E-03		3.59E-05	3.39E-06	NA	NA	NA	NA
GAMMA-CHLORDANE*	4.97E-04		3.96E-04	2.21E-05	4.11E+00	5.38E-06	2.05E+01	1.08E-06
DIBENZOFURAN*	9.80E-02		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	**7.60E-02**		**6.52E-01**	**3.56E-02**	**1.29E+00**	**2.76E-02**	**8.12E+01**	**4.39E-04**
Total PCB	**3.54E-01**		**1.11E+00**	**6.06E-02**	**1.04E-01**	**5.81E-01**	**1.26E+00**	**4.80E-02**
Total 4,4-DDx	**3.56E-02**		**1.62E-01**	**8.87E-03**	**7.76E-03**	**1.14E+00**	**6.65E-01**	**1.33E-02**
Total HPAH	**1.75E+01**		**3.81E-01**	**3.96E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**1.22E+01**		**9.66E-01**	**6.57E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**3.02E+01**		**6.57E-01**	**6.83E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-37. Reference Hazard Quotient Results for the Cormorant

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ (unitless)**	**LOAEL TRV (mg/kg/day)**	**LOAEL HQ (unitless)**
ANTIMONY	9.30E-01		7.53E-03	1.41E-03	NA	NA	NA	NA
ARSENIC	9.50E+00		1.21E+00	7.62E-02	5.91E+00	1.29E-02	2.36E+01	3.23E-03
CADMIUM	3.30E-01		9.04E-03	8.48E-04	9.27E-02	9.15E-03	1.89E+01	4.49E-05
CHROMIUM	8.10E+01		1.25E+00	1.55E-01	2.82E+00	5.51E-02	1.65E+01	9.39E-03
COPPER	4.10E+01		3.31E+00	2.24E-01	2.79E+00	8.05E-02	6.93E+01	3.24E-03
LEAD	2.40E+01		4.15E-01	4.85E-02	2.55E-02	1.90E+00	1.01E+01	4.78E-03
MERCURY	4.00E-01		1.01E-01	5.94E-03	4.32E-02	1.37E-01	1.99E-01	2.98E-02
NICKEL	7.90E+01		4.11E-01	1.08E-01	1.69E+00	6.38E-02	6.96E+01	1.55E-03
SELENIUM	4.80E-01		8.43E-01	4.65E-02	2.50E-01	1.86E-01	1.01E+00	4.60E-02
SILVER	3.00E-01		9.48E-03	8.40E-04	NA	NA	NA	NA
ZINC	1.07E+02		3.67E+01	2.11E+00	1.92E+01	1.10E-01	1.92E+02	1.10E-02
ALPHA-CHLORDANE	1.30E-04		3.09E-04	1.70E-05	4.11E+00	4.14E-06	2.05E+01	8.28E-07
DIELDRIN	1.30E-04		1.92E-04	1.06E-05	9.15E-02	1.16E-04	1.03E+00	1.02E-05
ENDOSULFAN II	NA		NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA		NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	5.00E-05		3.98E-05	2.22E-06	4.11E+00	5.41E-07	2.05E+01	1.08E-07
DIBENZOFURAN	NA		NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	3.80E-03		3.26E-02	1.78E-03	1.29E+00	1.38E-03	8.12E+01	2.19E-05
Total PCB	1.10E-02		3.44E-02	1.88E-03	1.04E-01	1.81E-02	1.26E+00	1.49E-03
Total 4,4-DDx	4.30E-03		1.96E-02	1.07E-03	7.76E-03	1.38E-01	6.65E-01	1.61E-03
Total HPAH	1.07E+00		2.34E-02	2.43E-03	NA	NA	NA	NA
Total LPAH	1.94E-01		1.54E-02	1.05E-03	NA	NA	NA	NA
Total PAH	1.07E+00		2.34E-02	2.43E-03	NA	NA	NA	NA

Highlighted cell = HQ > 1

Table E-38. Baseline Dose and Hazard Quotient Results for the Surf Scoter for All Years for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ (unitless)**	**LOAEL TRV (mg/kg/day)**	**LOAEL HQ (unitless)**
ANTIMONY	5.93E-01	1.17E-01		1.02E-02	NA	NA	NA	NA
ARSENIC	**8.80E+00**	**2.65E+01**		**2.04E+00**	5.43E+00	3.76E-01	2.17E+01	9.39E-02
CADMIUM	**8.42E+00**	**1.03E+00**		**9.59E-02**	**8.53E-02**	**1.12E+00**	**1.74E+01**	**5.51E-03**
CHROMIUM	**1.91E+02**	**3.67E+01**		**3.20E+00**	**2.59E+00**	**1.23E+00**	**1.52E+01**	**2.10E-01**
COPPER	**1.11E+02**	**1.87E+01**		**1.66E+00**	**2.56E+00**	**6.49E-01**	**6.37E+01**	**2.61E-02**
LEAD	**1.03E+02**	**5.46E+00**		**6.33E-01**	**2.34E-02**	**2.70E+01**	**9.33E+00**	**6.79E-02**
MERCURY	**2.76E-01**	**1.20E-01**		**9.74E-03**	**3.98E-02**	**2.45E-01**	**1.83E-01**	**5.31E-02**
NICKEL	8.98E+01	**2.76E+01**		**2.29E+00**	1.55E+00	1.48E+00	6.40E+01	3.59E-02
SELENIUM	5.25E-01	2.30E+00		1.77E-01	2.30E-01	7.70E-01	9.28E-01	1.90E-01
SILVER	**6.04E+00**	**1.03E+00**		**9.16E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	**1.92E+02**	**1.07E+02**		**8.59E+00**	**1.77E+01**	**4.85E-01**	**1.77E+02**	**4.85E-02**
ALDRIN*	4.61E-04	4.31E-03		3.30E-04	NA	NA	NA	NA
***ALPHA*-CHLORDANE**	**2.47E-03**	**1.62E-03**		**1.29E-04**	**3.78E+00**	**3.41E-05**	**1.89E+01**	**6.82E-06**
DIELDRIN*	3.13E-03	2.04E-02		1.56E-03	8.42E-02	1.86E-02	9.51E-01	1.64E-03
ENDOSULFAN I*	2.79E-03	NA		NA	NA	NA	NA	NA
ENDOSULFAN II*	8.60E-04	NA		NA	NA	NA	NA	NA
ENDRIN*	7.16E-04	1.16E-03		8.97E-05	1.43E-02	6.25E-03	1.43E-01	6.25E-04
ENDRIN ALDEHYDE*	8.01E-04	NA		NA	NA	NA	NA	NA
GAMMA-BHC*	3.43E-04	NA		NA	2.04E+00	NA	2.04E+01	NA
GAMMA-CHLORDANE*	1.46E-03	NA		NA	3.78E+00	NA	1.89E+01	NA
HEPTACHLOR EPOXIDE*	3.37E-04	1.14E-03		8.79E-05	NA	NA	NA	NA
DIBENZOFURAN*	1.58E-01	NA		NA	NA	NA	NA	NA
TRIBUTYLTIN	**1.23E-01**	**1.09E-01**		**8.56E-03**	**1.19E+00**	**7.21E-03**	**7.47E+01**	**1.15E-04**
Total PCB	**4.11E-01**	**5.78E-01**		**4.50E-02**	**9.59E-02**	**4.69E-01**	**1.16E+00**	**3.87E-02**
Total 4,4-DDx	**1.91E-02**	**8.86E-02**		**6.80E-03**	**7.14E-03**	**9.53E-01**	**6.12E-01**	**1.11E-02**
Total HPAH	**2.55E+01**	**2.98E+01**		**2.33E+00**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**1.40E+01**	**5.03E+00**		**4.13E-01**	**NA**	**NA**	**NA**	**NA**
Total PAH	**3.47E+01**	**2.85E+01**		**2.25E+00**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-39. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Surface for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ (unitless)**	**LOAEL TRV (mg/kg/day)**	**LOAEL HQ (unitless)**
ANTIMONY	5.70E-01	1.13E-01		9.79E-03	NA	NA	NA	NA
ARSENIC	8.36E+00	**2.52E+01**		**1.94E+00**	5.43E+00	3.57E-01	2.17E+01	8.92E-02
CADMIUM	**7.93E+00**	**9.66E-01**		**9.04E-02**	**8.53E-02**	**1.06E+00**	**1.74E+01**	**5.19E-03**
CHROMIUM	**1.57E+02**	**3.01E+01**		**2.63E+00**	**2.59E+00**	**1.01E+00**	**1.52E+01**	**1.73E-01**
COPPER	**9.16E+01**	**1.64E+01**		**1.44E+00**	**2.56E+00**	**5.62E-01**	**6.37E+01**	**2.26E-02**
LEAD	**1.19E+02**	**6.27E+00**		**7.27E-01**	**2.34E-02**	**3.10E+01**	**9.33E+00**	**7.79E-02**
MERCURY	**2.43E-01**	**1.20E-01**		**9.67E-03**	**3.98E-02**	**2.43E-01**	**1.83E-01**	**5.27E-02**
NICKEL	7.44E+01	**2.28E+01**		**1.90E+00**	1.55E+00	**1.23E+00**	6.40E+01	2.97E-02
SELENIUM	3.90E-01	2.30E+00		1.76E-01	2.30E-01	7.69E-01	9.28E-01	1.90E-01
SILVER	**6.52E+00**	**1.12E+00**		**9.89E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	1.69E+02	9.47E+01		7.59E+00	1.77E+01	4.29E-01	1.77E+02	4.29E-02
ALDRIN*	2.16E-05	3.60E-04		2.76E-05	NA	NA	NA	NA
ALPHA-CHLORDANE	**5.27E-04**	**4.92E-04**		**3.86E-05**	**3.78E+00**	**1.02E-05**	**1.89E+01**	**2.04E-06**
DIELDRIN*	3.30E-03	2.15E-02		1.65E-03	8.42E-02	1.96E-02	9.51E-01	1.73E-03
ENDOSULFAN I*	2.38E-05	NA		NA	NA	NA	NA	NA
ENDOSULFAN II*	9.33E-05	NA		NA	NA	NA	NA	NA
ENDRIN*	2.69E-05	4.15E-04		3.18E-05	1.43E-02	2.21E-03	1.43E-01	2.21E-04
ENDRIN ALDEHYDE*	4.45E-05	NA		NA	NA	NA	NA	NA
GAMMA-BHC*	2.39E-05	NA		NA	2.04E+00	NA	2.04E+01	NA
GAMMA-CHLORDANE*	1.21E-03	NA		NA	3.78E+00	NA	1.89E+01	NA
HEPTACHLOR EPOXIDE*	2.66E-05	4.15E-04		3.18E-05	NA	NA	NA	NA
DIBENZOFURAN*	8.43E-02	NA		NA	NA	NA	NA	NA
TRIBUTYL TIN	**1.48E-01**	**1.32E-01**		**1.04E-02**	**1.19E+00**	**8.72E-03**	**7.47E+01**	**1.39E-04**
Total PCB	**4.53E-01**	**6.37E-01**		**4.96E-02**	**9.59E-02**	**5.17E-01**	**1.16E+00**	**4.27E-02**
Total 4,4-DDx	**2.08E-02**	**9.66E-02**		**7.42E-03**	**7.14E-03**	**1.04E+00**	**6.12E-01**	**1.21E-02**
Total HPAH	**1.15E+01**	**2.73E+01**		**2.11E+00**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**4.30E+00**	**1.54E+00**		**1.27E-01**	**NA**	**NA**	**NA**	**NA**
Total PAH	**1.58E+01**	**2.85E+01**		**2.21E+00**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-40. Baseline Hazard Quotient Results for the Surf Scoter for 2005 Subsurface, IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	100.00%	0.00%	1.10E+00	8.40E-02	2.30E-03	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ (unitless)**	**LOAEL TRV (mg/kg/day)**	**LOAEL HQ (unitless)**
ANTIMONY	7.16E-01	1.41E-01		1.23E-02	NA	NA	NA	NA
ARSENIC	7.74E+00	2.33E+01		1.80E+00	5.43E+00	3.31E-01	2.17E+01	8.26E-02
CADMIUM	**2.15E+01**	**2.62E+00**		**2.45E-01**	**8.53E-02**	**2.88E+00**	**1.74E+01**	**1.41E-02**
CHROMIUM	**1.96E+02**	**3.76E+01**		**3.28E+00**	**2.59E+00**	**1.26E+00**	**1.52E+01**	**2.16E-01**
COPPER	**1.03E+02**	**1.73E+01**		**1.54E+00**	**2.56E+00**	**6.01E-01**	**6.37E+01**	**2.42E-02**
LEAD	**2.62E+02**	**1.39E+01**		**1.61E+00**	**2.34E-02**	**6.86E+01**	**9.33E+00**	**1.72E-01**
MERCURY	**2.94E-01**	**1.20E-01**		**9.78E-03**	**3.98E-02**	**2.46E-01**	**1.83E-01**	**5.33E-02**
NICKEL	8.25E+01	2.53E+01		2.11E+00	1.55E+00	1.36E+00	6.40E+01	3.29E-02
SELENIUM	2.40E-01	2.30E+00		1.76E-01	2.30E-01	7.67E-01	9.28E-01	1.90E-01
SILVER	**9.76E+00**	**1.67E+00**		**1.48E-01**	**NA**	**NA**	**NA**	**NA**
ZINC	1.83E+02	1.02E+02		8.19E+00	1.77E+01	4.63E-01	1.77E+02	4.63E-02
ALDRIN*	2.03E-05	3.60E-04		2.76E-05	NA	NA	NA	NA
ALPHA-CHLORDANE	**7.98E-04**	**5.22E-04**		**4.15E-05**	**3.78E+00**	**1.10E-05**	**1.89E+01**	**2.20E-06**
DIELDRIN*	2.33E-03	1.52E-02		1.17E-03	8.42E-02	1.38E-02	9.51E-01	1.23E-03
ENDOSULFAN I*	2.31E-05	NA		NA	NA	NA	NA	NA
ENDOSULFAN II*	8.57E-05	NA		NA	NA	NA	NA	NA
ENDRIN*	2.56E-05	4.15E-04		3.18E-05	1.43E-02	2.21E-03	1.43E-01	2.21E-04
ENDRIN ALDEHYDE*	4.16E-05	NA		NA	NA	NA	NA	NA
GAMMA-BHC*	2.32E-05	NA		NA	2.04E+00	NA	2.04E+01	NA
GAMMA-CHLORDANE*	9.50E-04	NA		NA	3.78E+00	NA	1.89E+01	NA
HEPTACHLOR EPOXIDE*	2.59E-05	4.15E-04		3.18E-05	NA	NA	NA	NA
DIBENZOFURAN*	1.51E-02	NA		NA	NA	NA	NA	NA
TRIBUTYL TIN	**9.74E-02**	**8.64E-02**		**6.80E-03**	**1.19E+00**	**5.73E-03**	**7.47E+01**	**9.11E-05**
Total PCB	**7.03E-01**	**9.89E-01**		**7.70E-02**	**9.59E-02**	**8.03E-01**	**1.16E+00**	**6.63E-02**
Total 4,4-DDx	**1.97E-02**	**9.15E-02**		**7.03E-03**	**7.14E-03**	**9.85E-01**	**6.12E-01**	**1.15E-02**
Total HPAH	**6.10E+00**	**2.73E+01**		**2.10E+00**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**2.52E+00**	**1.20E+00**		**9.65E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**8.43E+00**	**2.85E+01**		**2.19E+00**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-41. Baseline Hazard Quotient Results for the Least Tern for All Years for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ (unitless)**	**LOAEL TRV (mg/kg/day)**	**LOAEL HQ (unitless)**
ANTIMONY	5.93E-01		4.80E-03	8.86E-04	NA	NA	NA	NA
ARSENIC	8.80E+00		1.12E+00	2.07E-01	2.87E+00	7.22E-02	1.15E+01	1.81E-02
CADMIUM	**8.42E+00**		**2.31E-01**	**4.25E-02**	**4.50E-02**	**9.45E-01**	**9.18E+00**	**4.63E-03**
CHROMIUM	**1.91E+02**		**2.94E+00**	**5.43E-01**	**1.37E+00**	**3.97E-01**	**8.02E+00**	**6.77E-02**
COPPER	**1.11E+02**		**8.99E+00**	**1.66E+00**	**1.35E+00**	**1.23E+00**	**3.36E+01**	**4.93E-02**
LEAD	**1.03E+02**		**1.79E+00**	**3.30E-01**	**1.24E-02**	**2.67E+01**	**4.92E+00**	**6.70E-02**
MERCURY	**2.76E-01**		**6.98E-02**	**1.29E-02**	**2.10E-02**	**6.14E-01**	**9.68E-02**	**1.33E-01**
NICKEL	8.98E+01		4.67E-01	8.61E-02	8.18E-01	1.05E-01	3.38E+01	2.55E-03
SELENIUM	5.25E-01		9.22E-01	1.70E-01	1.21E-01	1.40E+00	4.90E-01	3.47E-01
SILVER	**6.04E+00**		**1.91E-01**	**3.52E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	**1.92E+02**		**6.57E+01**	**1.21E+01**	**9.34E+00**	**1.30E+00**	**9.34E+01**	**1.30E-01**
ALDRIN*	4.61E-04		2.77E-05	5.10E-06	NA	NA	NA	NA
ALPHA-CHLORDANE	**2.47E-03**		**5.89E-03**	**1.09E-03**	**1.99E+00**	**5.44E-04**	**9.97E+00**	**1.09E-04**
DIELDRIN*	3.13E-03		4.62E-03	8.51E-04	4.44E-02	1.92E-02	5.02E-01	1.70E-03
ENDOSULFAN I*	2.79E-03		1.54E-04	2.84E-05	NA	NA	NA	NA
ENDOSULFAN II*	8.60E-04		5.24E-05	9.66E-06	NA	NA	NA	NA
ENDRIN*	7.16E-04		9.73E-06	1.80E-06	7.57E-03	2.37E-04	7.57E-02	2.37E-05
ENDRIN ALDEHYDE*	8.01E-04		2.16E-05	3.99E-06	NA	NA	NA	NA
GAMMA-BHC*	3.43E-04		2.58E-05	4.76E-06	1.08E+00	4.42E-06	1.08E+01	4.42E-07
GAMMA-CHLORDANE*	1.46E-03		1.16E-03	2.14E-04	1.99E+00	1.07E-04	9.97E+00	2.14E-05
HEPTACHLOR EPOXIDE*	3.37E-04		1.86E-05	3.43E-06	NA	NA	NA	NA
DIBENZOFURAN*	1.58E-01		NA	NA	NA	NA	NA	NA
TRIBUTYL TIN	**1.23E-01**		**1.05E+00**	**1.94E-01**	**6.27E-01**	**3.10E-01**	**3.94E+01**	**4.92E-03**
Total PCB	**4.11E-01**		**1.28E+00**	**2.37E-01**	**5.06E-02**	**4.68E+00**	**6.13E-01**	**3.86E-01**
Total 4,4-DDx	**1.91E-02**		**8.71E-02**	**1.61E-02**	**3.77E-03**	**4.26E+00**	**3.23E-01**	**4.98E-02**
Total HPAH	**2.55E+01**		**5.55E-01**	**1.02E-01**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**1.40E+01**		**1.11E+00**	**2.05E-01**	**NA**	**NA**	**NA**	**NA**
Total PAH	**3.47E+01**		**7.57E-01**	**1.40E-01**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-42. Baseline Hazard Quotient Results for the Least Tern for 2005 Surface for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
	Exposure Point Sediment Conc.	**Invert Conc**	**Fish Conc**	**Calculated Dose**	**NOAEL TRV**	**NOAEL HQ**	**LOAEL TRV**	**LOAEL HQ**
Constituent	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg/day)**	**(mg/kg/day)**	**unitless**	**(mg/kg/day)**	**unitless**
ANTIMONY	5.70E-01		4.62E-03	8.52E-04	NA	NA	NA	NA
ARSENIC	8.36E+00		1.07E+00	1.97E-01	2.87E+00	6.86E-02	1.15E+01	1.71E-02
CADMIUM	**7.93E+00**		**2.17E-01**	**4.01E-02**	**4.50E-02**	**8.91E-01**	**9.18E+00**	**4.37E-03**
CHROMIUM	**1.57E+02**		**2.42E+00**	**4.46E-01**	**1.37E+00**	**3.26E-01**	**8.02E+00**	**5.55E-02**
COPPER	**9.16E+01**		**7.39E+00**	**1.36E+00**	**1.35E+00**	**1.01E+00**	**3.36E+01**	**4.05E-02**
LEAD	**1.19E+02**		**2.05E+00**	**3.79E-01**	**1.24E-02**	**3.07E+01**	**4.92E+00**	**7.70E-02**
MERCURY	**2.43E-01**		**6.13E-02**	**1.13E-02**	**2.10E-02**	**5.39E-01**	**9.68E-02**	**1.17E-01**
NICKEL	7.44E+01		3.87E-01	7.13E-02	8.18E-01	8.72E-02	3.38E+01	2.11E-03
SELENIUM	3.90E-01		6.84E-01	1.26E-01	1.21E-01	1.04E+00	4.90E-01	2.58E-01
SILVER	**6.52E+00**		**2.06E-01**	**3.80E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	1.69E+02		5.80E+01	1.07E+01	9.34E+00	1.15E+00	9.34E+01	1.15E-01
ALDRIN*	2.16E-05		1.29E-06	2.39E-07	NA	NA	NA	NA
ALPHA-CHLORDANE	**5.27E-04**		**1.25E-03**	**2.31E-04**	**1.99E+00**	**1.16E-04**	**9.97E+00**	**2.32E-05**
DIELDRIN*	3.30E-03		4.87E-03	8.98E-04	4.44E-02	2.02E-02	5.02E-01	1.79E-03
ENDOSULFAN I*	2.38E-05		1.31E-06	2.42E-07	NA	NA	NA	NA
ENDOSULFAN II*	9.33E-05		5.68E-06	1.05E-06	NA	NA	NA	NA
ENDRIN*	2.69E-05		3.65E-07	6.74E-08	7.57E-03	8.90E-06	7.57E-02	8.90E-07
ENDRIN ALDEHYDE*	4.45E-05		1.20E-06	2.21E-07	NA	NA	NA	NA
GAMMA-BHC*	2.39E-05		1.80E-06	3.31E-07	1.08E+00	3.08E-07	1.08E+01	3.08E-08
GAMMA-CHLORDANE*	1.21E-03		9.61E-04	1.77E-04	1.99E+00	8.89E-05	9.97E+00	1.78E-05
HEPTACHLOR EPOXIDE*	2.66E-05		1.47E-06	2.71E-07	NA	NA	NA	NA
DIBENZOFURAN*	8.43E-02		NA	NA	NA	NA	NA	NA
TRIBUTYL TIN	**1.48E-01**		**1.27E+00**	**2.35E-01**	**6.27E-01**	**3.74E-01**	**3.94E+01**	**5.96E-03**
Total PCB	**4.53E-01**		**1.41E+00**	**2.61E-01**	**5.06E-02**	**5.15E+00**	**6.13E-01**	**4.26E-01**
Total 4,4-DDx	**2.08E-02**		**9.49E-02**	**1.75E-02**	**3.77E-03**	**4.65E+00**	**3.23E-01**	**5.43E-02**
Total HPAH	**1.15E+01**		**2.51E-01**	**4.62E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-43. Baseline Hazard Quotient Results for the Least Tern for 2005 Subsurface for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	0.00%	100.00%	4.50E-02	8.30E-03	0.00E+00	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
	Exposure Point Sediment Conc.	**Invert Conc**	**Fish Conc**	**Calculated Dose**	**NOAEL TRV**	**NOAEL HQ**	**LOAEL TRV**	**LOAEL HQ**
Constituent	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg/day)**	**(mg/kg/day)**	**unitless**	**(mg/kg/day)**	**unitless**
ANTIMONY	7.16E-01		5.80E-03	1.07E-03	NA	NA	NA	NA
ARSENIC	7.74E+00		9.87E-01	1.82E-01	2.87E+00	6.35E-02	1.15E+01	1.59E-02
CADMIUM	**2.15E+01**		**5.90E-01**	**1.09E-01**	**4.50E-02**	**2.42E+00**	**9.18E+00**	**1.19E-02**
CHROMIUM	**1.96E+02**		**3.02E+00**	**5.57E-01**	**1.37E+00**	**4.07E-01**	**8.02E+00**	**6.94E-02**
COPPER	**1.03E+02**		**8.32E+00**	**1.54E+00**	**1.35E+00**	**1.13E+00**	**3.36E+01**	**4.56E-02**
LEAD	**2.62E+02**		**4.54E+00**	**8.37E-01**	**1.24E-02**	**6.77E+01**	**4.92E+00**	**1.70E-01**
MERCURY	**2.94E-01**		**7.43E-02**	**1.37E-02**	**2.10E-02**	**6.53E-01**	**9.68E-02**	**1.42E-01**
NICKEL	8.25E+01		4.29E-01	7.91E-02	8.18E-01	9.67E-02	3.38E+01	2.34E-03
SELENIUM	2.40E-01		4.22E-01	7.78E-02	1.21E-01	6.42E-01	4.90E-01	1.59E-01
SILVER	**9.76E+00**		**3.08E-01**	**5.69E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	1.83E+02		6.26E+01	1.16E+01	9.34E+00	1.24E+00	9.34E+01	1.24E-01
ALDRIN*	2.03E-05		1.22E-06	2.25E-07	NA	NA	NA	NA
ALPHA-CHLORDANE	**7.98E-04**		**1.90E-03**	**3.50E-04**	**1.99E+00**	**1.76E-04**	**9.97E+00**	**3.51E-05**
DIELDRIN*	2.33E-03		3.44E-03	6.35E-04	4.44E-02	1.43E-02	5.02E-01	1.26E-03
ENDOSULFAN I*	2.31E-05		1.28E-06	2.36E-07	NA	NA	NA	NA
ENDOSULFAN II*	8.57E-05		5.22E-06	9.62E-07	NA	NA	NA	NA
ENDRIN*	2.56E-05		3.48E-07	6.42E-08	7.57E-03	8.48E-06	7.57E-02	8.48E-07
ENDRIN ALDEHYDE*	4.16E-05		1.12E-06	2.07E-07	NA	NA	NA	NA
GAMMA-BHC*	2.32E-05		1.75E-06	3.22E-07	1.08E+00	2.99E-07	1.08E+01	2.99E-08
GAMMA-CHLORDANE*	9.50E-04		7.56E-04	1.40E-04	1.99E+00	6.99E-05	9.97E+00	1.40E-05
HEPTACHLOR EPOXIDE*	2.59E-05		1.43E-06	2.64E-07	NA	NA	NA	NA
DIBENZOFURAN*	1.51E-02		NA	NA	NA	NA	NA	NA
TRIBUTYL TIN	**9.74E-02**		**8.36E-01**	**1.54E-01**	**6.27E-01**	**2.46E-01**	**3.94E+01**	**3.91E-03**
Total PCB	**7.03E-01**		**2.20E+00**	**4.05E-01**	**5.06E-02**	**8.01E+00**	**6.13E-01**	**6.61E-01**
Total 4,4-DDx	**1.97E-02**		**8.99E-02**	**1.66E-02**	**3.77E-03**	**4.40E+00**	**3.23E-01**	**5.14E-02**
Total HPAH	**6.10E+00**		**1.33E-01**	**2.45E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-44. Baseline Hazard Quotient Results for the Cormorant for All Years for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
	Exposure Point Sediment Conc.	**Invert Conc**	**Fish Conc**	**Calculated Dose**	**NOAEL TRV**	**NOAEL HQ**	**LOAEL TRV**	**LOAEL HQ**
Constituent	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg/day)**	**(mg/kg/day)**	**unitless**	**(mg/kg/day)**	**unitless**
ANTIMONY	5.93E-01		4.80E-03	9.01E-04	NA	NA	NA	NA
ARSENIC	8.80E+00		1.12E+00	7.06E-02	5.91E+00	1.20E-02	2.36E+01	2.99E-03
CADMIUM	**8.42E+00**		**2.31E-01**	**2.16E-02**	**9.27E-02**	**2.33E-01**	**1.89E+01**	**1.14E-03**
CHROMIUM	**1.91E+02**		**2.94E+00**	**3.67E-01**	**2.82E+00**	**1.30E-01**	**5.30E+00**	**6.92E-02**
COPPER	**1.11E+02**		**8.99E+00**	**6.10E-01**	**2.79E+00**	**2.19E-01**	**6.93E+01**	**8.80E-03**
LEAD	**1.03E+02**		**1.79E+00**	**2.09E-01**	**2.55E-02**	**8.20E+00**	**1.01E+01**	**2.06E-02**
MERCURY	**2.76E-01**		**6.98E-02**	**4.10E-03**	**4.32E-02**	**9.49E-02**	**1.99E-01**	**2.06E-02**
NICKEL	8.98E+01		4.67E-01	1.22E-01	1.69E+00	7.25E-02	6.96E+01	1.76E-03
SELENIUM	5.25E-01		9.22E-01	5.08E-02	2.50E-01	2.04E-01	1.01E+00	5.04E-02
SILVER	**6.04E+00**		**1.91E-01**	**1.69E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	**1.92E+02**		**6.57E+01**	**3.79E+00**	**1.92E+01**	**1.97E-01**	**1.92E+02**	**1.97E-02**
ALDRIN*	4.61E-04		2.77E-05	2.00E-06	NA	NA	NA	NA
ALPHA-CHLORDANE	**2.47E-03**		**5.89E-03**	**3.23E-04**	**4.11E+00**	**7.87E-05**	**2.05E+01**	**1.57E-05**
DIELDRIN*	3.13E-03		4.62E-03	2.55E-04	9.15E-02	2.78E-03	9.94E-01	2.56E-04
ENDOSULFAN I*	2.79E-03		1.54E-04	1.14E-05	NA	NA	NA	NA
ENDOSULFAN II*	8.60E-04		5.24E-05	3.78E-06	NA	NA	NA	NA
ENDRIN*	7.16E-04		9.73E-06	1.30E-06	1.56E-02	8.35E-05	1.56E-01	8.35E-06
ENDRIN ALDEHYDE*	8.01E-04		2.16E-05	2.04E-06	NA	NA	NA	NA
GAMMA-BHC*	3.43E-04		2.58E-05	1.78E-06	2.22E+00	8.01E-07	2.22E+01	8.01E-08
GAMMA-CHLORDANE*	1.46E-03		1.16E-03	6.47E-05	4.11E+00	1.58E-05	2.05E+01	3.15E-06
HEPTACHLOR EPOXIDE*	3.37E-04		1.86E-05	1.38E-06	NA	NA	NA	NA
DIBENZOFURAN*	1.58E-01		NA	NA	NA	NA	NA	NA
TRIBUTYL TIN	**1.23E-01**		**1.05E+00**	**5.74E-02**	**1.29E+00**	**4.45E-02**	**8.12E+01**	**7.08E-04**
Total PCB	**4.11E-01**		**1.28E+00**	**7.04E-02**	**1.04E-01**	**6.75E-01**	**1.26E+00**	**5.57E-02**
Total 4,4-DDx	**1.91E-02**		**8.71E-02**	**4.76E-03**	**7.76E-03**	**6.14E-01**	**6.65E-01**	**7.17E-03**
Total HPAH	**2.55E+01**		**5.55E-01**	**5.77E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-45. Baseline Hazard Quotient Results for the Cormorant for 2005 Surface for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ (unitless)**	**LOAEL TRV (mg/kg/day)**	**LOAEL HQ (unitless)**
ANTIMONY	5.70E-01		4.62E-03	8.67E-04	NA	NA	NA	NA
ARSENIC	8.36E+00		1.07E+00	6.71E-02	5.91E+00	1.14E-02	2.36E+01	2.84E-03
CADMIUM	**7.93E+00**		**2.17E-01**	**2.04E-02**	**9.27E-02**	**2.20E-01**	**1.89E+01**	**1.08E-03**
CHROMIUM	**1.57E+02**		**2.42E+00**	**3.01E-01**	**2.82E+00**	**1.07E-01**	**1.65E+01**	**1.82E-02**
COPPER	**9.16E+01**		**7.39E+00**	**5.01E-01**	**2.79E+00**	**1.80E-01**	**6.93E+01**	**7.24E-03**
LEAD	**1.19E+02**		**2.05E+00**	**2.40E-01**	**2.55E-02**	**9.42E+00**	**1.01E+01**	**2.37E-02**
MERCURY	**2.43E-01**		**6.13E-02**	**3.60E-03**	**4.32E-02**	**8.34E-02**	**1.99E-01**	**1.81E-02**
NICKEL	7.44E+01		3.87E-01	1.01E-01	1.69E+00	6.00E-02	6.96E+01	1.45E-03
SELENIUM	3.90E-01		6.84E-01	3.77E-02	2.50E-01	1.51E-01	1.01E+00	3.74E-02
SILVER	**6.52E+00**		**2.06E-01**	**1.83E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	1.69E+02		5.80E+01	3.34E+00	1.92E+01	1.74E-01	1.92E+02	1.74E-02
ALDRIN*	2.16E-05		1.29E-06	9.38E-08	NA	NA	NA	NA
ALPHA-CHLORDANE	**5.27E-04**		**1.25E-03**	**6.89E-05**	**4.11E+00**	**1.68E-05**	**2.05E+01**	**3.35E-06**
DIELDRIN*	3.30E-03		4.87E-03	2.69E-04	9.15E-02	2.94E-03	1.03E+00	2.60E-04
ENDOSULFAN I*	2.38E-05		1.31E-06	9.72E-08	NA	NA	NA	NA
ENDOSULFAN II*	9.33E-05		5.68E-06	4.10E-07	NA	NA	NA	NA
ENDRIN*	2.69E-05		3.65E-07	4.89E-08	1.56E-02	3.13E-06	1.56E-01	3.13E-07
ENDRIN ALDEHYDE*	4.45E-05		1.20E-06	1.13E-07	NA	NA	NA	NA
GAMMA-BHC*	2.39E-05		1.80E-06	1.24E-07	2.22E+00	5.58E-08	2.22E+01	5.58E-09
GAMMA-CHLORDANE*	1.21E-03		9.61E-04	5.37E-05	4.11E+00	1.31E-05	2.05E+01	2.61E-06
HEPTACHLOR EPOXIDE*	2.66E-05		1.47E-06	1.09E-07	NA	NA	NA	NA
DIBENZOFURAN*	8.43E-02		NA	NA	NA	NA	NA	NA
TRIBUTYL TIN	**1.48E-01**		**1.27E+00**	**6.95E-02**	**1.29E+00**	**5.38E-02**	**8.12E+01**	**8.56E-04**
Total PCB	**4.53E-01**		**1.41E+00**	**7.75E-02**	**1.04E-01**	**7.44E-01**	**1.26E+00**	**6.14E-02**
Total 4,4-DDx	**2.08E-02**		**9.49E-02**	**5.19E-03**	**7.76E-03**	**6.69E-01**	**6.65E-01**	**7.81E-03**
Total HPAH	**1.15E+01**		**2.51E-01**	**2.60E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**4.30E+00**		**3.41E-01**	**2.32E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**1.58E+01**		**3.45E-01**	**3.58E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

Table E-46. Baseline Hazard Quotient Results for the Cormorant for 2005 Subsurface for IR Site 24

Parameter	% invertebrates	% fish	BW	IR food	IR soil	SUF		
Value	0.00%	100.00%	1.67E+00	9.10E-02	1.80E-03	1.00E+00		
Units	proportion	proportion	kg	kg/day dw	kg/day dw	no unit		
Constituent	**Exposure Point Sediment Conc. (mg/kg)**	**Invert Conc (mg/kg)**	**Fish Conc (mg/kg)**	**Calculated Dose (mg/kg/day)**	**NOAEL TRV (mg/kg/day)**	**NOAEL HQ (unitless)**	**LOAEL TRV (mg/kg/day)**	**LOAEL HQ (unitless)**
ANTIMONY	7.16E-01		5.80E-03	1.09E-03	NA	NA	NA	NA
ARSENIC	7.74E+00		9.87E-01	6.21E-02	5.91E+00	1.05E-02	2.36E+01	2.63E-03
CADMIUM	**2.15E+01**		**5.90E-01**	**5.54E-02**	**9.27E-02**	**5.97E-01**	**1.89E+01**	**2.93E-03**
CHROMIUM	**1.96E+02**		**3.02E+00**	**3.76E-01**	**2.82E+00**	**1.33E-01**	**1.65E+01**	**2.27E-02**
COPPER	**1.03E+02**		**8.32E+00**	**5.65E-01**	**2.79E+00**	**2.03E-01**	**6.93E+01**	**8.15E-03**
LEAD	**2.62E+02**		**4.54E+00**	**5.30E-01**	**2.55E-02**	**2.08E+01**	**1.01E+01**	**5.23E-02**
MERCURY	**2.94E-01**		**7.43E-02**	**4.37E-03**	**4.32E-02**	**1.01E-01**	**1.99E-01**	**2.19E-02**
NICKEL	8.25E+01		4.29E-01	1.12E-01	1.69E+00	6.66E-02	6.96E+01	1.61E-03
SELENIUM	2.40E-01		4.22E-01	2.32E-02	2.50E-01	9.31E-02	1.01E+00	2.30E-02
SILVER	**9.76E+00**		**3.08E-01**	**2.73E-02**	**NA**	**NA**	**NA**	**NA**
ZINC	1.83E+02		6.26E+01	3.61E+00	1.92E+01	1.88E-01	1.92E+02	1.88E-02
ALDRIN*	2.03E-05		1.22E-06	8.84E-08	NA	NA	NA	NA
ALPHA-CHLORDANE	**7.98E-04**		**1.90E-03**	**1.04E-04**	**4.11E+00**	**2.54E-05**	**2.05E+01**	**5.08E-06**
DIELDRIN*	2.33E-03		3.44E-03	1.90E-04	9.15E-02	2.08E-03	1.03E+00	1.84E-04
ENDOSULFAN I*	2.31E-05		1.28E-06	9.45E-08	NA	NA	NA	NA
ENDOSULFAN II*	8.57E-05		5.22E-06	3.77E-07	NA	NA	NA	NA
ENDRIN*	2.56E-05		3.48E-07	4.65E-08	1.56E-02	2.98E-06	1.56E-01	2.98E-07
ENDRIN ALDEHYDE*	4.16E-05		1.12E-06	1.06E-07	NA	NA	NA	NA
GAMMA-BHC*	2.32E-05		1.75E-06	1.20E-07	2.22E+00	5.42E-08	2.22E+01	5.42E-09
GAMMA-CHLORDANE*	9.50E-04		7.56E-04	4.22E-05	4.11E+00	1.03E-05	2.05E+01	2.06E-06
HEPTACHLOR EPOXIDE*	2.59E-05		1.43E-06	1.06E-07	NA	NA	NA	NA
DIBENZOFURAN*	1.51E-02		NA	NA	NA	NA	NA	NA
TRIBUTYL TIN	**9.74E-02**		**8.36E-01**	**4.56E-02**	**1.29E+00**	**3.54E-02**	**8.12E+01**	**5.62E-04**
Total PCB	**7.03E-01**		**2.20E+00**	**1.20E-01**	**1.04E-01**	**1.16E+00**	**1.26E+00**	**9.54E-02**
Total 4,4-DDx	**1.97E-02**		**8.99E-02**	**4.92E-03**	**7.76E-03**	**6.34E-01**	**6.65E-01**	**7.40E-03**
Total HPAH	**6.10E+00**		**1.33E-01**	**1.38E-02**	**NA**	**NA**	**NA**	**NA**
Total LPAH	**2.52E+00**		**2.00E-01**	**1.36E-02**	**NA**	**NA**	**NA**	**NA**
Total PAH	**8.43E+00**		**1.84E-01**	**1.91E-02**	**NA**	**NA**	**NA**	**NA**

Highlighted cell = HQ > 1, Bold text indicates concentrations above background. Constituents retained as a Tier 2 COPEC.
*Insufficient data to conduct background comparison. Constituent retained as a Tier 2 COPEC.
Subsurface background data not available for background evaluation. Therefore surface data used as a surrogate.

E.5 QUALITATIVE EVALUATION OF HARBOR SEAL EXPOSURE TO SEDIMENTS AT ALAMEDA POINT

The Pacific harbor seal (*Phoca vitulina richardsi*) is a nonmigratory, fairly common inhabitant of coastal waters throughout the northern seas of the world (Orr, 1972; Jameson and Peeters, 1988). In contrast to the more gregarious sea lions and elephant seals of the California coast, harbor seals form smaller groups, from a few to more than hundred individuals (Zeiner et al., 1990). Increases in harbor seal populations have been documented in many areas on the West Coast of the United States. The San Francisco Bay population appears to be stable, but not growing (Kopec and Harvey, 1995). Concern about the causes of the flat growth trajectory of the San Francisco Bay population has led to investigations of human disturbance, including habitat destruction, direct interference, and chemical pollution (Harvey and Torok, 1994; Kopec and Harvey, 1995; She et al., 2000).

Harbor seals have been proposed by regulatory agencies as assessment endpoints for ecological risk assessments being conducted by the Navy in San Francisco Bay for the following reasons:

- Concerns about the health of the San Francisco Bay harbor seal population;
- Harbor seals are long-lived, opportunistic tertiary carnivores exposed to a variety of anthropogenic chemicals in coastal habitats; and,
- All marine mammals have special status through the Marine Mammal Protection Act (United States Code, 1996).

Harbor seals could potentially be exposed to contaminants in sediments at Navy sites such as Hunters Point Shipyard and Alameda Point via three potential exposure routes: (1) dermal exposure while at haul-outs, (2) incidental ingestion of sediment while foraging, and (3) ingestion of prey that have accumulated contaminants from sediments. Other major exposure routes include exposure across the placenta before birth and through milk during lactation (Law, 1996). Neither of these exposure routes is pertinent to sediment issues at Hunters Point Shipyard or Alameda Point.

This section evaluates harbor seals' potential for exposure from contaminants in sediments offshore of Hunters Point Shipyard and Alameda Point via dermal exposure, incidental ingestion of sediment, and through the food chain. Based on an estimate of exposure, a recommendation is made as to whether harbor seals are appropriate assessment endpoints for ecological risk at these two facilities.

E.5.1 Dermal Exposure to Contaminated Sediments

Harbor seals are tied to coastal areas by their need to haul out of the water on a regular basis (Kopec, 1994). In San Francisco Bay, about 12 haul-out sites have been identified (see Figure E-1); only three sites (Mowry Slough, Yerba Buena Island, and Castro Rocks) have greater than 40 individuals during the breeding and molting season. In the San Francisco Bay area, the primary harbor seal haul-out area is Mowry Slough in the extreme south bay, below the San Mateo Bridge. Mowry Slough supports the largest concentration of harbor seals in northern California during spring and summer (Harvey and Torok, 1994). The nearest consistently used haul-out area to Alameda Point and Hunters Point Shipyard is on the southern tip of Yerba Buena Island. Harbor seals haul out all year at Yerba Buena Island but it is not considered a pupping site (Kopec and Harvey, 1995); abundance of harbor seals is highest in winter months (Spencer, 1997).

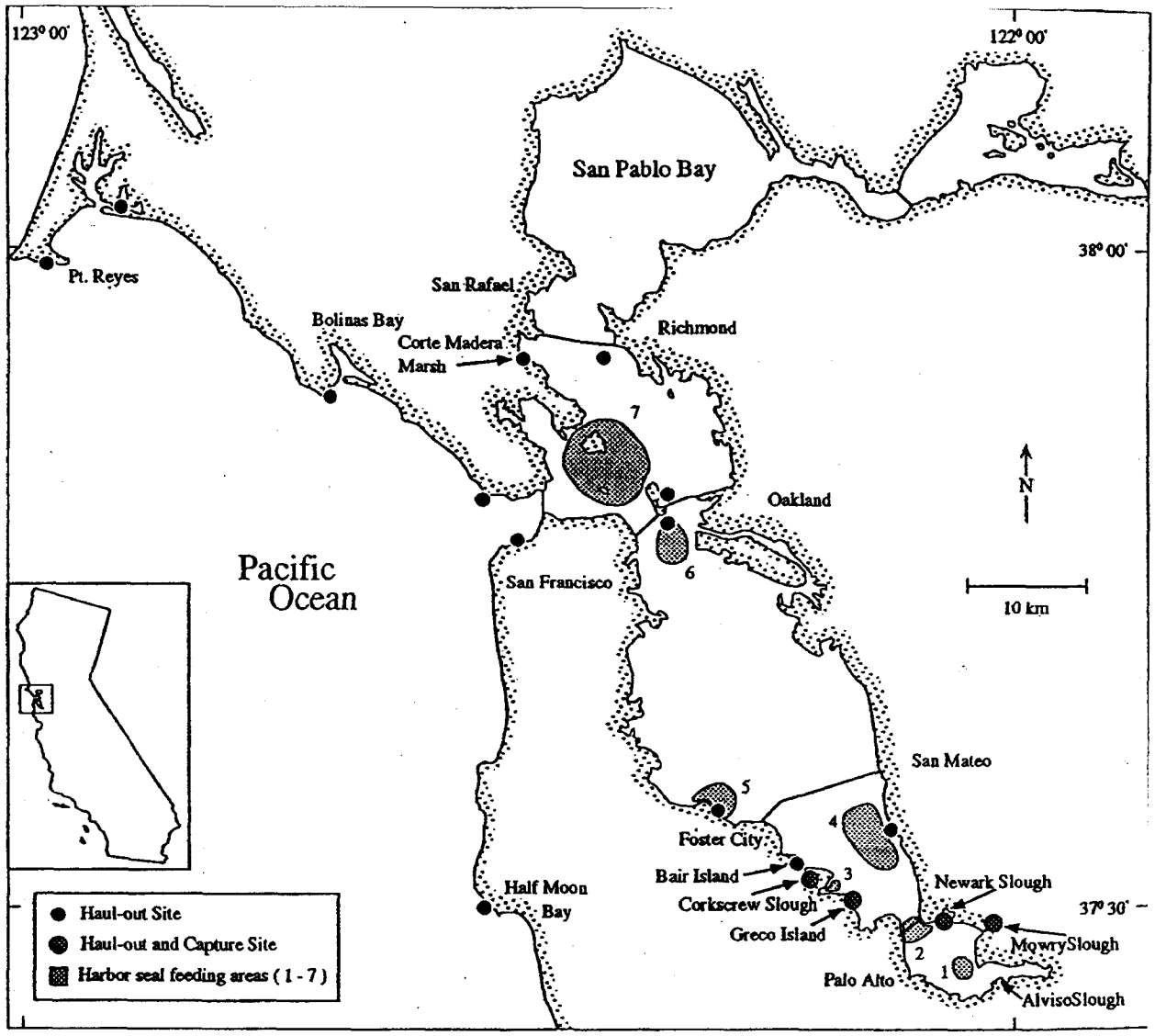

Figure E-1. Harbor Seal Haul-Out Sites and Feeding Areas in San Francisco Bay (from Harvey and Torok, 1995)

Harbor seals may infrequently haul out in other areas. In recent years, a few seals have been observed hauling out on the breakwater west of Alameda Point (Kopec, 1994). There are also incidental observations of harbor seals off of South Basin at Hunters Point Shipyard.

Exposure of seals to contaminants in sediments at their haul-out locations at Alameda Point and Hunters Point Shipyard is likely to be *de minimus*. First, very few animals are likely to be exposed because neither location is used consistently by more than a few seals. Secondly, the only potential exposure at the haul-out areas is through the skin (seals do not feed while they haul-out; they rest). However, for both inorganic and organic compounds, dermal uptake is likely to be negligible. Because these compounds are likely to be sorbed to sediment (especially fine-grained sediments), desorption and uptake across the thick fur and dermis of a seal is unlikely. Therefore, dermal exposure will not be considered a significant exposure route.

E.5.2 Exposure from Incidental Ingestion of Contaminated Sediments

A radiotelemetry study was conducted by Harvey and Torok (1994) that focused on harbor seal movements and foraging behavior within San Francisco Bay. The study found that harbor seals spend a majority of their active diving time (e.g., foraging time) in localized areas of San Francisco Bay (Figure E-1). For purposes of the study, Harvey and Torok divided the San Francisco Bay Estuary into five regions, three of which were relevant to the feeding study: (1) extreme South San Francisco Bay, south of the San Mateo Bridge; (2) South San Francisco Bay, between the San Mateo Bridge and the Bay Bridge; and (3) Central San Francisco Bay, the area enclosed by the Bay Bridge, Golden Gate Bridge, and the Richmond-San Rafael Bridge. Of the seven feeding stations documented using radio-tagged individuals in the bay, only one was in the South Bay region, which is the location of Alameda Point and Hunters Point Shipyard (Feeding Station 6, south of Yerba Buena Island). Based on the location of the feeding station south of Yerba Buena Island in relation to Hunters Point Shipyard and nearshore areas of Alameda Point, it is unlikely that significant exposure to sediments from these two facilities occurs to harbor seals during foraging activities. Thus, exposure of contaminants to harbor seals from incidental ingestion of potentially contaminated sediments at Hunters Point Shipyard and Alameda Point is considered *de minimus*.

E.5.3 Exposure from Ingestion of Contaminated Prey

The remaining exposure route to be evaluated is ingestion of contaminated prey that have accumulated contaminants from sediments at Hunters Point Shipyard and Alameda Point. The importance of trophic transfer of compounds (especially dioxins, furans, PCBs, and organochlorine compounds) as the primary mechanism of exposure to upper trophic levels (such as seals) has been discussed in EPA guidance (U.S. EPA, 1997). It has been additionally confirmed by recent studies in San Francisco Bay (Kopec and Harvey, 1995; She et al., 2000).

To evaluate the potential for harbor seals to feed on fish that may have become contaminated with chemicals from sediments at Hunters Point Shipyard or Alameda Point, information on harbor seal prey collected by Harvey and Torok (1994) was evaluated. This is discussed further in the following sections.

Harbor Seal Diet in San Francisco Bay

Harbor seals feed on benthic and pelagic fish, crustaceans, and cephalopods. Individual seals may specialize on one prey type during a feeding session, during which a seal may consume up to 5 or 6% of its body weight in prey (Zeiner et al., 1990). Based on otoliths collected from feces, the harbor seal diet in San Francisco Bay consists of 14 species of fish (Harvey and Torok, 1994). Of the nonpiscine elements identified in the samples, only shrimp and cephalopods were represented; neither of these groups was considered by the authors to represent significant dietary contributions. Five fish species made up 93% of the diet in both total dietary mass and number of individuals. These species in order of decreasing abundance (as measured in otoliths collected from feces) are:

- Yellowfin goby (*Acanthogobius flavimanus*)
- Northern anchovy (*Engraulis mordax*)
- Pacific staghorn sculpin (*Leptocottus armatus*)
- Plainfin midshipman (*Porichthys notatus*)
- White croaker (*Genyonemus lineatus*)

Based on these data, it is reasonable to assume that tissue concentrations of these five species of fish represent the most reasonable potential inputs to the diet of the harbor seal. According to CDFG data reviewed in Harvey and Torok (1994), all of these fish species (except northern anchovy) were more

abundant in otter trawls than in mid-water trawls, suggesting that the seals often feed on or near the bottom of the bay.

To answer the question of whether these prey fishes may play a role in food chain transfer of chemicals from Hunters Point Shipyard or Alameda Point to the harbor seal, several life history traits of the fishes and the seal must be considered. Information on the foraging behavior and movement patterns relevant to the harbor seal exposure route is presented below for the five most important fish species in the harbor seal diet.

Yellowfin Goby: Gobies tend to be a small, relatively sedentary fish that live in constructed or borrowed borrows in the sediment (Moyle, 1976). They typically prey on benthic and epibenthic invertebrates such as amphipods, ostracods, polychaetes, as well as some algae (Moyle, 1976). During the reproductive phase, gobies provide parental care for the eggs by guarding the burrow in which the eggs are laid. During this time they show strong site attachment (Moyle, 1976). The pelagic larvae of most gobies feed on zooplankton (Moyle, 1976); yellowfin gobies settle out of the plankton to establish residency on the bottom when they have reached a length of 15 to 20 mm. Thus, yellowfin and other gobies are assumed to be exposed to chemicals in surficial and subsurface sediment, surface water and porewater, algae, and invertebrate prey.

Due to their sedentary life style, harbor seals are unlikely to be exposed to contaminants in gobies from sediments at Hunters Point Shipyard and Alameda Point unless seals are eating gobies physically located at Hunters Point Shipyard or Alameda. In an analysis of the yellowfin goby population size structure and harbor seal diet, Harvey and Torok (1994) concluded that most yellowfin gobies in the harbor seal diet were probably taken from feeding stations in the extreme south bay, below the San Mateo Bridge, during the pupping season, and in areas north of the Bay Bridge during the non-pupping season. The south bay region, identified as the area between the two bridges, did not appear to contribute significant numbers of yellowfin goby to the harbor seal diet.

Anchovy: All life stages of the northern anchovy are highly abundant (numerically dominant) year round throughout the San Francisco Bay (Monaco et al., 1990; Emmett et al., 1991). Spawning occurs offshore; eggs and larvae are planktonic. Juveniles and adults feed both by random filtration and by biting into the plankton; prey include phytoplankton, planktonic crustaceans, and fish larvae (Emmett et al., 1991). Northern anchovies, like all of the clupeids, are pelagic throughout their lives.

Based on size and abundance measures of the northern anchovy, Harvey and Torok (1994) concluded that most anchovy in the harbor seal diet were probably taken from feeding stations below the San Mateo Bridge during the pupping season. Very few anchovy occurred in the seal diet in the non-pupping season.

Because the northern anchovy is pelagic throughout its life, and does not typically come into contact with sediment, this species is not considered a viable pathway by which contaminants in sediment at Hunters Point Shipyard and Alameda Point can be transferred to harbor seals.

Pacific Staghorn Sculpin: The Pacific staghorn sculpin is abundant in the San Francisco Bay year round, and juveniles are numerically dominant from March through June (Monaco et al., 1990). This euryhaline species can withstand rapid changes in salinity, especially during the first two years of life (Moyle, 1993). Adults are less tolerant of fresh water, and are more commonly found in lower reaches of coastal streams and in bays. Adults range in size up to 31 cm total length at age 3, which is about the typical life span of this sculpin (Moyle, 1976). Sculpin are demersal carnivores, consuming crustaceans, worms, and other soft-bodied benthic animals.

The size range of Pacific staghorn sculpin in the diet of harbor seals in San Francisco Bay varied with the seals' reproductive season (Harvey and Torok, 1994). During the pupping season (February through June), mostly juvenile sculpin were taken, probably from the extreme south bay, according to Harvey and Torok (1994). During the non-pupping season, only adults appeared in the feces. These gobies were likely taken from areas north of the Bay Bridge, based on CDFG trawl data (Harvey and Torok, 1994). When the pupping and non-pupping data are combined for comparison to year-round CDFG data, size range of sculpin in the seal diet was similar to the general sculpin population (Harvey and Torok, 1994). In the CDFG sampling effort, most sculpin were collected in otter trawls rather than mid-water trawls. These data are consistent with the demersal foraging and movement patterns of the sculpin described in Monaco et al. (1990) and Emmett et al. (1991). The south bay region, which includes Hunters Point Shipyard and Alameda Point, did not appear to contribute significant numbers of sculpin to the harbor seal diet during either season.

Plainfin Midshipman: The plainfin midshipman is a toadfish (family Batrachoididae), characterized by a broad head, a large mouth, and a flattened body typical of benthic fishes. Midshipman are found in San Francisco Bay during the spring and summer spawning season; the rest of the year they are found offshore (Love, 1991). In San Francisco Bay, males dig nests in the intertidal zone, where they vocalize to attract females. Females spawn in one nest, males then guard the eggs and larvae for up to 45 days. Although males are fairly sedentary while in San Francisco Bay, female movement patterns are less clear.

Plainfin midshipman appeared in the seal diet primarily during the pupping season; almost all were adults, larger than 17 cm standard length (SL) (Harvey and Torok, 1994). In contrast, most specimens caught in CDFG otter and mid-water trawls were juveniles, smaller than 10 cm SL. Harvey and Torok (1994) concluded that this discrepancy probably resulted from differences in the timing of collection. Seals feed primarily at night, when adult plainfin midshipman are active. The CDFG trawls were conducted during the day, when most adult plainfin midshipman are in burrows but juveniles are actively swimming. Because of this lack of correlation between the seal fecal samples and the CDFG trawl results, no conclusions about location of plainfin midshipman capture were drawn by Harvey and Torok (1994). Based on this uncertainty, the potential for plainfin midshipman exposed to contaminants in sediments at either Hunters Point Shipyard or Alameda Point and preyed upon by seals at feeding stations within the Bay is unknown.

White Croaker: All life stages of white croaker are generally encountered, but not in large numbers, in San Francisco Bay year round (Monaco et al., 1990). Spawning occurs in the Central San Francisco Bay in the spring. Eggs are pelagic; larvae live on or near the sediment (Emmett et al., 1991). Adults mature at around 12 cm SL. Juvenile croaker leave the bay in the fall, then return the following spring (SFEI, 1999). Juvenile croaker may feed in the water column, but become benthic omnivores as they mature. Typical prey of adults includes pelagic species such as northern anchovy and squid, as well as benthic organisms such as polychaetes and clams; detritus and carrion are also consumed (SFEI, 1999; Emmett et al., 1991).

Adult croaker ranging in size from 16 to 28 cm SL were consumed by harbor seals during the pupping season; very few croaker appeared in feces during the non-pupping season. Juvenile and adult croaker were collected in CDFG otter and mid-water trawls, indicating that the seals were selectively feeding on adult croaker. The presence of croaker in both mid-water and otter trawls confirms that white croaker are associated with benthic and pelagic habitats. Based on the size distribution of croaker in CDFG trawls, Harvey and Torok (1994) concluded that the most likely point of capture of croakers by harbor seals is in mid-water areas south of the San Mateo Bridge. All croaker otoliths were collected from seals in the extreme south bay, below the San Mateo Bridge (Harvey and Torok, 1994).

The white croaker is considered a good indicator of pollution and is monitored by NOAA's National Status and Trends Program (Emmett et al., 1991). This species is exposed to chemicals in prey, sediment, and water (SFEI, 1999). Levels of several chemicals in tissues of the white croaker and other sport fishes in San Francisco Bay are considered elevated with respect to human health, and fishing advisories are in place (SFEI, 1999). However, because croakers are fairly mobile while in the Bay, contaminant body burdens are likely due to exposure integrated over large areas rather than small specific locations.

E.5.4 Conclusions

Three potential exposure routes of contaminants from sediments at Hunters Point Shipyard and Alameda Point to harbor seals were evaluated: (1) dermal exposure while at haul-outs, (2) incidental ingestion of sediment while foraging, and (3) ingestion of prey that have accumulated contaminants from sediments. Exposure via the dermal route and incidental ingestion of sediments was concluded to be insignificant. Ingestion of contaminated prey is likely to be the most significant exposure route to seals. A review of the behavior of the fish that comprise more than 90% of the harbor seal diet in San Francisco Bay concluded that fish are either (1) sufficiently sedentary that they are unlikely to be exposed to sediments at Hunters Point Shipyard or Alameda Point *and* preyed upon by seals at known feeding stations, or (2) sufficiently mobile that their exposure to contaminated sediments is integrated over large areas of San Francisco Bay.

Based on this pathway analysis, contribution of potential contaminants in sediment at Hunters Point Shipyard and Alameda Point to the regional status of the harbor seal is considered to be minimal. Thus, harbor seals are not recommended as appropriate assessment endpoints. Additionally, a quantitative evaluation of exposure and effects for harbor seals at Hunters Point Shipyard and Alameda Point is not recommended at this time.

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APPENDIX F

HUMAN HEALTH RISK ASSESSMENT

This appendix contains additional information to support the human health risk assessment. This appendix is organized in the following way.

F.1 Calculation of Age-Adjusted Factors F-1
F.2 Risk Assessment Guidance for Superfund (RAGS), Part D Planning Tables F-3

F.1 Calculation of Age-Adjusted Factors

Table F-1. Calculation of Age-Adjusted Factors

Age-adjusted sediment IR: (EDchild x IRsedchild)/BWchild + (EDadult x IRsedadult)/BWadult

114.28571 mg-yr/kg-day

Age-adjusted fish ingestion rate: (EDchild x IRfishchild)/BWchild + (EDadult x IRfishadult)/Bwadult

0.0414286 yr/day

Age-adjusted skin contact rate: (EDchild x AF x SAchild)/BWchild + (EDadult x AF x SAadult)/Bwadult

360.8 mg-yr/kg-day

Exposure Parameters	Symbol	Units	RME Adult/Child	Reference
Target Risk	TR	unitless	1.0E-06	U.S. EPA, 1989
Target Hazard Index	THI	unitless	1	U.S. EPA, 1989
Ingestion Rate - Fish	IRfish	kg/day	0.108 / 0.011	SFEI, 2002; U.S. EPA 1997
Ingestion Rate - Sediment	IRsed	mg/day	100 / 200	U.S. EPA, 2004
Fraction Ingested from Contaminated Source	FI	unitless	1	Prof. Judgment
Exposure Frequency - Bivalve	EF	days/year	365	U.S. EPA, 1989
Exposure Frequency - Direct Contact	EF	days/year	26	Prof. Judgment
Skin Surface Area	SA	cm^2/day	5,700 / 2,800	U.S. EPA, 2004
Adherence Factor	AF	mg/cm^2	0.07 / 0.2	U.S. EPA, 2004
Dermal Absorption Factor	DAF	unitless	chemical-specific	U.S. EPA, 2004
Exposure Duration	ED	years	30 / 6	U.S. EPA 1989& 1991
Body Weight	BW	kg	70 / 15	U.S. EPA, 2004
Averaging Time- cancer	AT_c	days	25,550	U.S. EPA, 2004
Averaging Time - noncancer	AT_{nc}	days	10,950 / 2,190	U.S. EPA, 2004

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F.2 Risk Assessment Guidance for Superfund (RAGS), Part D Planning Tables

Note: Table numbering and format are consistent with RAGS Part D requirements.

Table 0. Site Risk Assessment Identification Information for IR Site 20

Site Name/OU:	IR Site 20, Alameda Point, CA
Region:	9
EPA ID Number:	
State:	CA
Status:	
Federal Facility (Y/N):	Y
EPA Project Manager:	
EPA Risk Assessor:	
Prepared by (Organization):	Battelle
Prepared for (Organization):	Department of the Navy Base Realignment and Closure Program Management Office West
Document Title:	Remedial Investigation Report IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area) Revision 1
Document Date:	July 2007
Probabilistic Risk Assessment (Y/N): Y	
Comments:	

Table 1. Selection Exposure Pathways for IR Site 20

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Sediment	Sediment	IR Site 20	Fisher	Adult	Ingestion	Quant	Exposure to contaminants in sediment during shellfish collection
						Dermal	Quant	Exposure to contaminants in sediment during shellfish collection
					Child	Ingestion	Quant	Exposure to contaminants in sediment during shellfish collection
						Dermal	Quant	Exposure to contaminants in sediment during shellfish collection
		Fish Tissue	Shellfish from IR Site 20	Fisher	Adult	Ingestion	Quant	Possibility of contaminants in shellfish exposed to sediments in Oakland Inner Harbor
					Child	Ingestion	None	Children are assumed not to ingest shellfish
			Forage fish from IR Site 20	Fisher	Adult	Ingestion	Quant	Possibility of contaminants in forage fish exposed to sediments in Oakland Inner Harbor
					Child	Ingestion	Quant	Possibility of contaminants in forage fish exposed to sediments in Oakland Inner Harbor
	Surface Water	Surface Water	IR Site 20	Recreational User	Adult	Ingestion	None	Water is not a primary exposure medium due to rapid dilution
						Dermal	None	Water is not a primary exposure medium due to rapid dilution
					Child	Ingestion	None	Water is not a primary exposure medium due to rapid dilution
						Dermal	None	Water is not a primary exposure medium due to rapid dilution

Table 2.1. Occurrence, Distribution, and Selection of Chemicals of Potential Concern for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (N/C)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
IR Site 20	7440-22-4	Ag	3.00E-02	2.88E-01	mg/kg dry	OIH20	24/28	0.5-0.5	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-38-2	As	2.32E+00	1.37E+01	mg/kg dry	OIH20	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-43-9	Cd	3.20E-02	9.03E-01	mg/kg dry	E07	24/28	0.0736-0.25	N/A	N/A	N/A	N/A	N/A	Y	D
	18540-29-9	Cr	2.05E+01	1.23E+03	mg/kg dry	OIH28	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-50-8	Cu	5.18E+00	1.41E+02	mg/kg dry	OIH28	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	7439-97-6	Hg	6.60E-03	8.83E+00	mg/kg dry	OIH C-2	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-02-0	Ni	1.27E+01	2.88E+02	mg/kg dry	OIH28	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-36-0	Sb	3.00E-02	3.70E+01	mg/kg dry	E10	22/28	0.06-0.13	N/A	N/A	N/A	N/A	N/A	Y	D
	7782-49-2	Se	5.70E-02	4.71E-01	mg/kg dry	OIH20	9/28	0.046-0.42	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-66-6	Zn	2.13E+01	2.58E+02	mg/kg dry	OIH51	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	83-32-9	Acenaphthene	1.10E-04	1.14E-01	mg/kg dry	E07	25/28	0.12334-0.1775	N/A	N/A	N/A	N/A	N/A	Y	D
	208-96-8	Acenaphthylene	5.10E-04	1.40E-01	mg/kg dry	OIH C-7	25/28	0.12334-0.1775	N/A	N/A	N/A	N/A	N/A	Y	D
	120-12-7	Anthracene	9.90E-04	6.00E-01	mg/kg dry	OIH C-7	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	56-55-3	Benzo(a)anthracene	3.50E-03	1.00E+00	mg/kg dry	OIH C-7	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	50-32-8	Benzo(a)pyrene	6.20E-03	1.20E+00	mg/kg dry	OIH C-7	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	205-99-2	Benzo(b)fluoranthene	6.60E-03	8.38E-01	mg/kg dry	OIH51	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	191-24-2	Benzo(g,h,i)perylene	6.00E-03	6.93E-01	mg/kg dry	OIH51	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	207-08-9	Benzo(k)fluoranthene	5.00E-03	8.92E-01	mg/kg dry	OIH51	26/28	0.12334-0.1775	N/A	N/A	N/A	N/A	N/A	Y	D
	218-01-9	Chrysene	5.90E-03	1.30E+00	mg/kg dry	OIH C-7	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	53-70-3	Dibenz(a,h)anthracene	7.50E-04	1.76E-01	mg/kg dry	OIH51	25/28	0.12334-0.1775	N/A	N/A	N/A	N/A	N/A	Y	D
	206-44-0	Fluoranthene	7.40E-03	2.50E+00	mg/kg dry	OIH C-7	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	86-73-7	Fluorene	1.90E-04	1.30E-01	mg/kg dry	OIH C-7	25/28	0.06266-0.0925	N/A	N/A	N/A	N/A	N/A	Y	D
	193-39-5	Indeno(1,2,3-cd)pyrene	5.30E-03	6.87E-01	mg/kg dry	OIH51	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	91-57-6	2-Methylnaphthalene	2.70E-04	2.21E-02	mg/kg dry	OIH51	24/28	0.09276-0.1775	N/A	N/A	N/A	N/A	N/A	Y	D
	91-20-3	Naphthalene	6.40E-04	4.36E-02	mg/kg dry	OIH51	24/28	0.09276-0.1775	N/A	N/A	N/A	N/A	N/A	Y	D
	85-01-8	Phenanthrene	1.73E-03	1.60E+00	mg/kg dry	OIH C-7	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	129-00-0	Pyrene	9.40E-03	3.20E+00	mg/kg dry	OIH C-7	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
		2,4'-DDD	6.00E-05	1.50E-02	mg/kg dry	OIH51	23/24	0.00055-0.00055	N/A	N/A	N/A	N/A	N/A	Y	D
		2,4'-DDE	3.00E-04	4.60E-04	mg/kg dry	OIH C-9	3/24	0.00003-0.00106	N/A	N/A	N/A	N/A	N/A	Y	D
		2,4'-DDT	7.00E-05	1.35E-01	mg/kg dry	OIH60D	15/24	0.00005-0.00064	N/A	N/A	N/A	N/A	N/A	Y	D
	72-54-8	4,4'-DDD	1.00E-04	4.53E-02	mg/kg dry	OIH51	27/28	0.00055-0.00055	N/A	N/A	N/A	N/A	N/A	Y	D
	72-55-9	4,4'-DDE	5.00E-05	1.62E-02	mg/kg dry	E07	26/28	0.00055-0.003734	N/A	N/A	N/A	N/A	N/A	Y	D
	50-29-3	4,4'-DDT	6.00E-05	4.71E-01	mg/kg dry	OIH60D	20/28	0.00004-0.005974	N/A	N/A	N/A	N/A	N/A	Y	D
	5103-71-9	*alpha*-Chlordane	4.00E-05	3.14E-03	mg/kg dry	OIH51	15/28	0.00003-0.008472	N/A	N/A	N/A	N/A	N/A	Y	D
	50-67-1	Dieldrin	2.60E-04	9.80E-04	mg/kg dry	OIH C-9	15/28	0.00003-0.08734	N/A	N/A	N/A	N/A	N/A	Y	D
	33213-65-9	Endosulfan II	3.30E-04	6.50E-04	mg/kg dry	OIH C-1	2/28	0.00011-0.002424	N/A	N/A	N/A	N/A	N/A	Y	D
	7421-93-4	Endrin aldehyde	2.30E-04	1.34E-02	mg/kg dry	OIH51	3/28	0.00005-0.17466	N/A	N/A	N/A	N/A	N/A	Y	D
	005566-34-7	*gamma*-Chlordane	2.00E-05	2.15E-03	mg/kg dry	OIH51	9/28	0.00003-0.04034	N/A	N/A	N/A	N/A	N/A	Y	D
		Total PCBs	6.00E-04	8.93E-01	mg/kg dry	OIH51	28/28	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	56-35-9	TBT	1.40E-03	5.90E-02	mg/kg dry	OIH C-2	18/18	N/A	N/A	N/A	N/A	N/A	N/A	Y	D

ND = non-detect
N/A = not applicable
D = detected in sediment

Table 2.2. Occurrence, Distribution, and Selection of Chemicals of Potential Concern for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Shellfish Tissue

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (N/C)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
IR Site 20	7440-22-4	Ag	ND	ND	mg/kg wet	[E07]	0/4	0.056-0.056	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-38-2	As	2.09E+00	2.47E+00	mg/kg wet	E08	4/4	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-43-9	Cd	ND	ND	mg/kg wet	[E07]	0/4	0.028-0.028	N/A	N/A	N/A	N/A	N/A	Y	D
	18540-29-9	Cr	ND	ND	mg/kg wet	[E07]	0/4	0.056-0.056	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-50-8	Cu	1.58E+00	1.72E+00	mg/kg wet	E07	4/4	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	7439-97-6	Hg	4.95E-03	4.95E-03	mg/kg wet	E07	1/4	0.002-0.002	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-02-0	Ni	1.38E-01	1.38E-01	mg/kg wet	E09	1/4	0.056-0.056	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-36-0	Sb	ND	ND	mg/kg wet	[E07]	0/4	0.11-0.112	N/A	N/A	N/A	N/A	N/A	Y	D
	7782-49-2	Se	ND	ND	mg/kg wet	[E07]	0/4	0.028-0.028	N/A	N/A	N/A	N/A	N/A	Y	D
	7440-66-6	Zn	7.52E+00	9.75E+00	mg/kg wet	E08	4/4	N/A	N/A	N/A	N/A	N/A	N/A	Y	D
	83-32-9	Acenaphthene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	208-96-8	Acenaphthylene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	120-12-7	Anthracene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	56-55-3	Benzo(a)anthracene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	50-32-8	Benzo(a)pyrene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	205-99-2	Benzo(b)fluoranthene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	191-24-2	Benzo(g,h,i)perylene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	207-08-9	Benzo(k)fluoranthene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	218-01-9	Chrysene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	53-70-3	Dibenz(a,h)anthracene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	206-44-0	Fluoranthene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	86-73-7	Fluorene	ND	ND	mg/kg wet	[E10]	0/4	0.0348-0.035	N/A	N/A	N/A	N/A	N/A	Y	D
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	91-57-6	2-Methylnaphthalene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	91-20-3	Naphthalene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A	N/A	Y	D
	85-01-8	Phenanthrene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A			
	129-00-0	Pyrene	ND	ND	mg/kg wet	[E10]	0/4	0.0672-0.0672	N/A	N/A	N/A	N/A			
	72-54-8	4,4'-DDD	ND	ND	mg/kg wet	[E08]	0/4	0.00198-0.00208	N/A	N/A	N/A	N/A			
	72-55-9	4,4'-DDE	ND	ND	mg/kg wet	[E08]	0/4	0.00198-0.00208	N/A	N/A	N/A	N/A			
	50-29-3	4,4'-DDT	ND	ND	mg/kg wet	[E08]	0/4	0.00198-0.00208	N/A	N/A	N/A	N/A			
	5103-71-9	*alpha*-Chlordane	ND	ND	mg/kg wet	[E08]	0/4	0.000496-0.000518	N/A	N/A	N/A	N/A			
	50-67-1	Dieldrin	ND	ND	mg/kg wet	[E08]	0/4	0.001-0.00104	N/A	N/A	N/A	N/A			
	33213-65-9	Endosulfan II	ND	ND	mg/kg wet	[E08]	0/4	0.001-0.00104	N/A	N/A	N/A	N/A			
	7421-93-4	Endrin aldehyde	ND	ND	mg/kg wet	[E08]	0/4	0.00198-0.00208	N/A	N/A	N/A	N/A			
	005566-34-7	*gamma*-Chlordane	ND	ND	mg/kg wet	[E08]	0/4	0.000496-0.000518	N/A	N/A	N/A	N/A			
		Total PCBs	ND	ND	mg/kg wet	[E08]	0/4	N/A	N/A	N/A	N/A	N/A			
	56-35-9	TBT	1.21E-03	4.11E-03	mg/kg wet	E09	4/4	N/A	N/A	N/A	N/A	N/A			

ND = non-detect
N/A = not applicable
D = detected in sediment

Table 3.1. CT. Central Tendency EPC Summary for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
IR Site 20	Ag	mg/kg dry	1.45E-01	1.72E-01 (NP)	2.88E-01	1.72E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	As	mg/kg dry	5.93E+00	7.04E+00 (T)	1.37E+01	7.04E+00	mg/kg dry	95% UCL - T	W - Test (2)
	Cd	mg/kg dry	1.82E-01	2.56E-01 (T)	9.03E-01	2.56E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Cr	mg/kg dry	1.70E+02	3.37E+02 (T)	1.23E+03	3.37E+02	mg/kg dry	95% UCL - T	W - Test (2)
	Cu	mg/kg dry	4.42E+01	6.85E+01 (T)	1.41E+02	6.85E+01	mg/kg dry	95% UCL - T	W - Test (2)
	Hg	mg/kg dry	5.22E-01	2.45E+00 (NP)	8.83E+00	2.45E+00	mg/kg dry	95% UCL - NP	W - Test (1)
	Ni	mg/kg dry	5.62E+01	7.71E+01 (T)	2.88E+02	7.71E+01	mg/kg dry	95% UCL - T	W - Test (2)
	Sb	mg/kg dry	4.77E+00	1.03E+01 (NP)	3.70E+01	1.03E+01	mg/kg dry	95% UCL - NP	W - Test (1)
	Se	mg/kg dry	1.49E-01	2.08E-01 (T)	4.71E-01	2.08E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Zn	mg/kg dry	9.12E+01	1.21E+02 (T)	2.58E+02	1.21E+02	mg/kg dry	95% UCL - T	W - Test (2)
	Acenaphthene	mg/kg dry	2.68E-02	7.62E-02 (T)	1.14E-01	7.62E-02	mg/kg dry	95% UCL - T	W - Test (2)
	Acenaphthylene	mg/kg dry	4.19E-02	9.56E-02 (T)	1.40E-01	9.56E-02	mg/kg dry	95% UCL - T	W - Test (2)
	Anthracene	mg/kg dry	1.56E-01	4.07E-01 (T)	6.00E-01	4.07E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(a)anthracene	mg/kg dry	2.69E-01	5.87E-01 (T)	1.00E+00	5.87E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(a)pyrene	mg/kg dry	3.64E-01	7.28E-01 (T)	1.20E+00	7.28E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(b)fluoranthene	mg/kg dry	3.02E-01	6.24E-01 (T)	8.38E-01	6.24E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(g,h,i)perylene	mg/kg dry	2.38E-01	4.34E-01 (T)	6.93E-01	4.34E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(k)fluoranthene	mg/kg dry	2.31E-01	4.61E-01 (T)	8.92E-01	4.61E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Chrysene	mg/kg dry	3.70E-01	8.05E-01 (T)	1.30E+00	8.05E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Dibenz(a,h)anthracene	mg/kg dry	5.26E-02	1.23E-01 (T)	1.76E-01	1.23E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Fluoranthene	mg/kg dry	4.92E-01	7.54E-01 (NP)	2.50E+00	7.54E-01	mg/kg dry	95% UCL - NP	W - Test (1)

Table 3.1.CT. Central Tendency EPC Summary for IR Site 20, continued

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
	Fluorene	mg/kg dry	4.27E-02	1.14E-01 (T)	1.30E-01	1.14E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Indeno(1,2,3-cd)pyrene	mg/kg dry	2.11E-01	2.86E-01 (NP)	6.87E-01	2.86E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	2-Methylnaphthalene	mg/kg dry	1.56E-02	4.11E-01 (T)	2.21E-02	2.21E-02	mg/kg dry	Max	W-Test (3)
	Naphthalene	mg/kg dry	2.06E-02	3.96E-02 (T)	4.36E-02	3.96E-02	mg/kg dry	95% UCL - T	W - Test (2)
	Phenanthrene	mg/kg dry	3.05E-01	4.77E-01 (NP)	1.60E+00	4.77E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	Pyrene	mg/kg dry	6.76E-01	1.37E+00 (T)	3.20E+00	1.37E+00	mg/kg dry	95% UCL - T	W - Test (2)
	2,4'-DDD	mg/kg dry	1.92E-03	3.84E-03 (T)	1.50E-02	3.84E-03	mg/kg dry	95% UCL - T	W - Test (2)
	2,4'-DDE	mg/kg dry	1.93E-04	2.57E-04 (NP)	4.60E-04	2.57E-04	mg/kg dry	95% UCL - NP	W - Test (1)
	2,4'-DDT	mg/kg dry	6.45E-03	4.14E-02 (NP)	1.35E-01	4.14E-02	mg/kg dry	95% UCL - NP	W - Test (1)
	4,4'-DDD	mg/kg dry	5.74E-03	1.26E-02 (T)	4.53E-02	1.26E-02	mg/kg dry	95% UCL - T	W - Test (2)
	4,4'-DDE	mg/kg dry	2.50E-03	4.78E-03 (T)	1.62E-02	4.78E-03	mg/kg dry	95% UCL - T	W - Test (2)
	4,4'-DDT	mg/kg dry	2.13E-02	1.90E-01 (NP)	4.71E-01	1.90E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	alpha-Chlordane	mg/kg dry	6.41E-04	1.25E-03 (NP)	3.14E-03	1.25E-03	mg/kg dry	95% UCL - NP	W - Test (1)
	Dieldrin	mg/kg dry	3.05E-03	1.18E-02 (NP)	9.80E-04	9.80E-04	mg/kg dry	Max	W-Test (3)
	Endosulfan II	mg/kg dry	3.33E-04	4.67E-04 (NP)	6.50E-04	4.67E-04	mg/kg dry	95% UCL - NP	W - Test (1)
	Endrin aldehyde	mg/kg dry	6.01E-03	2.11E-02 (NP)	1.34E-02	1.34E-02	mg/kg dry	Max	W-Test (3)
	gamma-Chlordane	mg/kg dry	1.40E-03	6.03E-03 (NP)	2.15E-03	2.15E-03	mg/kg dry	Max	W-Test (3)
	Total PCBs	mg/kg dry	1.57E-01	4.51E-01 (T)	8.93E-01	4.51E-01	mg/kg dry	95% UCL - T	W - Test (2)
	TBT	mg/kg dry	2.27E-02	3.16E-02 (NP)	5.90E-02	3.16E-02	mg/kg dry	95% UCL - NP	W - Test (1)

For non-detects, 1/2 sample detection limit was used as a proxy concentration. For Total PCBs, zero was used for summing non-detects.

W-test: Developed by Shapiro and Wilk, refer to Calculating Exposure Point Concentrations at Hazardous Waste Sites, OSWER 9285.6-10. July 2002.

Distribution: Nonparametric (NP); Log-Transformed (T)

Statistic: Maximum Detected Value (Max); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of Log-transformed Data (95% UCL - T)

Rationale: (1) Shapiro-Wilk W-test indicates nonparametric distribution of data.

(2) Shapiro-Wilk W-test indicates data are log-normally distributed.

(3) 95% UCL exceeds maximum detected concentration. Therefore, maximum concentration used for EPC.

Table 3.2.CT. Central Tendency EPC Summary for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Shellfish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value (a)	Units	Statistic	Rationale
Shellfish in IR Site 20	Ag	mg/kg wet	2.76E-02	2.82E-02 (NP)	ND	4.87E-03	mg/kg wet	N/A	N/A
	As	mg/kg wet	2.30E+00	2.48E+00 (N)	2.47E+00	2.47E+00	mg/kg wet	Max	W-Test (1)
	Cd	mg/kg wet	1.38E-02	1.41E-02 (NP)	ND	4.94E-03	mg/kg wet	N/A	N/A
	Cr	mg/kg wet	2.76E-02	2.82E-02 (NP)	ND	1.06E+01	mg/kg wet	N/A	N/A
	Cu	mg/kg wet	1.67E+00	1.74E+00 (N)	1.72E+00	1.72E+00	mg/kg wet	Max	W-Test (1)
	Hg	mg/kg wet	1.65E-03	8.52E-03 (NP)	4.95E-03	4.95E-03	mg/kg wet	Max	W-Test (1)
	Ni	mg/kg wet	5.51E-02	1.75E-01 (NP)	1.38E-01	1.38E-01	mg/kg wet	Max	W-Test (1)
	Sb	mg/kg wet	5.53E-02	5.63E-02 (NP)	ND	3.28E-01	mg/kg wet	N/A	N/A
	Se	mg/kg wet	1.38E-02	1.41E-02 (NP)	ND	1.29E-01	mg/kg wet	N/A	N/A
	Zn	mg/kg wet	8.66E+00	9.87E+00 (N)	9.75E+00	9.75E+00	mg/kg wet	Max	W-Test (1)
	Acenaphthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	4.54E-03	mg/kg wet	N/A	N/A
	Acenaphthylene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.02E-02	mg/kg wet	N/A	N/A
	Anthracene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	3.08E-02	mg/kg wet	N/A	N/A
	Benzo(a)anthracene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	7.40E-02	mg/kg wet	N/A	N/A
	Benzo(a)pyrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	8.33E-02	mg/kg wet	N/A	N/A
	Benzo(b)fluoranthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	7.91E-02	mg/kg wet	N/A	N/A
	Benzo(g,h,i)perylene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.84E-02	mg/kg wet	N/A	N/A
	Benzo(k)fluoranthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	4.97E-02	mg/kg wet	N/A	N/A
	Chrysene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	8.03E-02	mg/kg wet	N/A	N/A
	Dibenz(a,h)anthracene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	3.58E-03	mg/kg wet	N/A	N/A
	Fluoranthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.74E-01	mg/kg wet	N/A	N/A
	Fluorene	mg/kg wet	1.75E-02	1.75E-02 (N)	ND	5.21E-03	mg/kg wet	N/A	N/A

Table 3.2.CT. Central Tendency EPC Summary for IR Site 20, continued

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value (a)	Units	Statistics	Rationale
	Indeno(1,2,3-cd)pyrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	8.77E-03	mg/kg wet	N/A	N/A
	2-Methylnaphthalene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	NA	mg/kg wet	N/A	N/A
	Naphthalene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.27E-02	mg/kg wet	N/A	N/A
	Phenanthrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.45E-02	mg/kg wet	N/A	N/A
	Pyrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	4.58E-01	mg/kg wet	N/A	N/A
	2,4'-DDD	mg/kg wet	N/A	N/A	N/A	8.64E-04	mg/kg wet	N/A	N/A
	2,4'-DDE	mg/kg wet	N/A	N/A	N/A	4.91E-05	mg/kg wet	N/A	N/A
	2,4'-DDT	mg/kg wet	N/A	N/A	N/A	1.93E-02	mg/kg wet	N/A	N/A
	4,4'-DDD	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	3.30E-03	mg/kg wet	N/A	N/A
	4,4'-DDE	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	2.41E-03	mg/kg wet	N/A	N/A
	4,4'-DDT	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	3.43E-02	mg/kg wet	N/A	N/A
	alpha-Chlordane	mg/kg wet	2.51E-04	2.63E-04 (NP)	ND	1.31E-04	mg/kg wet	N/A	N/A
	Dieldrin	mg/kg wet	5.05E-04	5.26E-04 (NP)	ND	1.06E-03	mg/kg wet	N/A	N/A
	Endosulfan II	mg/kg wet	5.05E-04	5.26E-04 (NP)	ND	NA	mg/kg wet	N/A	N/A
	Endrin aldehyde	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	NA	mg/kg wet	N/A	N/A
	gamma-Chlordane	mg/kg wet	2.51E-04	2.63E-04 (NP)	ND	NA	mg/kg wet	N/A	N/A
	Total PCBs	mg/kg wet	ND	0.0E+00	ND	1.03E-01	mg/kg wet	N/A	N/A
	TBT	mg/kg wet	2.27E-03	3.79E-03 (N)	4.1E-03	4.63E-03	mg/kg wet	95% UCL - N	W-Test (2)

N/A = not applicable

ND = not detected

(a) Shellfish tissue concentrations for non-detected chemicals were modeled from sediment EPCs using bioaccumulation factors developed from Seaplane Lagoon and San Francisco Bay reference data.

W-test: Developed by Shapiro and Wilk, refer to Calculating Exposure Point Concentrations at Hazardous Waste Sites, OSWER 9285.6-10. July 2002.

Distribution: Nonparametric (NP); Normal (N)

Statistic: Maximum Detected Value (Max); Maximum Detection Limit (Max DL); 95% UCL of Normal Data (95% UCL - N)

Rationale: (1) 95% UCL exceeds maximum detected concentration. Therefore, maximum concentration used for EPC.

(2) Shapiro-Wilk W Test indicates data are normally distributed.

Table 3.3.CT. Central Tendency EPC Summary for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Forage Fish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (a)	95% UCL (Distribution) (a)	Maximum Concentration (Qualifier) (a)	Exposure Point Concentration			
						Value (b)	Units	Statistic	Rationale
Forage fish in IR Site 20	Ag	N/A	N/A	N/A	N/A	7.74E-04	mg/kg wet	N/A	N/A
	As	N/A	N/A	N/A	N/A	2.10E-01	mg/kg wet	N/A	N/A
	Cd	N/A	N/A	N/A	N/A	9.99E-04	mg/kg wet	N/A	N/A
	Cr	N/A	N/A	N/A	N/A	8.76E-01	mg/kg wet	N/A	N/A
	Cu	N/A	N/A	N/A	N/A	9.93E-01	mg/kg wet	N/A	N/A
	Hg	N/A	N/A	N/A	N/A	1.09E-01	mg/kg wet	N/A	N/A
	Ni	N/A	N/A	N/A	N/A	8.48E-02	mg/kg wet	N/A	N/A
	Pb	N/A	N/A	N/A	N/A	1.66E-01	mg/kg wet	N/A	N/A
	Sb	N/A	N/A	N/A	N/A	1.03E-02	mg/kg wet	N/A	N/A
	Se	N/A	N/A	N/A	N/A	7.16E-02	mg/kg wet	N/A	N/A
	Zn	N/A	N/A	N/A	N/A	7.81E+00	mg/kg wet	N/A	N/A
	Acenaphthene	N/A	N/A	N/A	N/A	2.02E-03	mg/kg wet	N/A	N/A
	Acenaphthylene	N/A	N/A	N/A	N/A	1.34E-04	mg/kg wet	N/A	N/A
	Anthracene	N/A	N/A	N/A	N/A	1.95E-03	mg/kg wet	N/A	N/A
	Benzo(a)anthracene	N/A	N/A	N/A	N/A	1.11E-03	mg/kg wet	N/A	N/A
	Benzo(a)pyrene	N/A	N/A	N/A	N/A	1.02E-03	mg/kg wet	N/A	N/A
	Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	9.36E-04	mg/kg wet	N/A	N/A
	Benzo(g,h,i)perylene	N/A	N/A	N/A	N/A	7.38E-04	mg/kg wet	N/A	N/A
	Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	1.20E-03	mg/kg wet	N/A	N/A
	Chrysene	N/A	N/A	N/A	N/A	3.14E-03	mg/kg wet	N/A	N/A
	Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	7.38E-05	mg/kg wet	N/A	N/A

Table 3.3.CT. Central Tendency EPC Summary for IR Site 20, continued

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (a)	95% UCL (Distribution) (a)	Maximum Concentration (Qualifier) (a)	Exposure Point Concentration			
						Value (b)	Units	Statistic	Rationale
	Fluoranthene	N/A	N/A	N/A	N/A	5.20E-03	mg/kg wet	N/A	N/A
	Fluorene	N/A	N/A	N/A	N/A	1.65E-03	mg/kg wet	N/A	N/A
	Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	3.71E-04	mg/kg wet	N/A	N/A
	2-Methylnaphthalene	N/A	N/A	N/A	N/A	9.73E-05	mg/kg wet	N/A	N/A
	Naphthalene	N/A	N/A	N/A	N/A	2.89E-04	mg/kg wet	N/A	N/A
	Phenanthrene	N/A	N/A	N/A	N/A	8.96E-03	mg/kg wet	N/A	N/A
	Pyrene	N/A	N/A	N/A	N/A	4.66E-03	mg/kg wet	N/A	N/A
	2,4'-DDD	N/A	N/A	N/A	N/A	1.57E-05	mg/kg wet	N/A	N/A
	2,4'-DDE	N/A	N/A	N/A	N/A	6.67E-05	mg/kg wet	N/A	N/A
	2,4'-DDT	N/A	N/A	N/A	N/A	2.86E-03	mg/kg wet	N/A	N/A
	4,4'-DDD	N/A	N/A	N/A	N/A	6.49E-03	mg/kg wet	N/A	N/A
	4,4'-DDE	N/A	N/A	N/A	N/A	6.06E-03	mg/kg wet	N/A	N/A
	4,4'-DDT	N/A	N/A	N/A	N/A	2.29E-02	mg/kg wet	N/A	N/A
	alpha-Chlordane	N/A	N/A	N/A	N/A	4.41E-04	mg/kg wet	N/A	N/A
	Dieldrin	N/A	N/A	N/A	N/A	2.25E-04	mg/kg wet	N/A	N/A
	Endosulfan II	N/A	N/A	N/A	N/A	4.25E-06	mg/kg wet	N/A	N/A
	Endrin aldehyde	N/A	N/A	N/A	N/A	7.79E-05	mg/kg wet	N/A	N/A
	gamma-Chlordane	N/A	N/A	N/A	N/A	2.54E-04	mg/kg wet	N/A	N/A
	Total PCBs	N/A	N/A	N/A	N/A	3.04E-01	mg/kg wet	N/A	N/A
	TBT	N/A	N/A	N/A	N/A	3.97E-02	mg/kg wet	N/A	N/A

N/A = not applicable

(a) No forage fish tissue samples were collected from Oakland Inner Harbor during this study.
(b) Forage fish tissue concentrations were modeled from sediment EPCs using bioaccumulation factors developed from Seaplane Lagoon and San Francisco Bay reference data.

Table 3.1.RME. Reasonable Maximum Exposure EPC Summary for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
IR Site 20	Ag	mg/kg dry	1.45E-01	1.72E-01 (NP)	2.88E-01	1.72E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	As	mg/kg dry	5.93E+00	7.04E+00 (T)	1.37E+01	7.04E+00	mg/kg dry	95% UCL - T	W - Test (2)
	Cd	mg/kg dry	1.82E-01	2.56E-01 (T)	9.03E-01	2.56E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Cr	mg/kg dry	1.70E+02	3.37E+02 (T)	1.23E+03	3.37E+02	mg/kg dry	95% UCL - T	W - Test (2)
	Cu	mg/kg dry	4.42E+01	6.85E+01 (T)	1.41E+02	6.85E+01	mg/kg dry	95% UCL - T	W - Test (2)
	Hg	mg/kg dry	5.22E-01	2.45E+00 (NP)	8.83E+00	2.45E+00	mg/kg dry	95% UCL - NP	W - Test (1)
	Ni	mg/kg dry	5.62E+01	7.71E+01 (T)	2.88E+02	7.71E+01	mg/kg dry	95% UCL - T	W - Test (2)
	Pb	mg/kg dry	4.01E+01	6.14E+01 (T)	2.26E+02	6.14E+01	mg/kg dry	95% UCL - T	W - Test (2)
	Sb	mg/kg dry	4.77E+00	1.03E+01 (NP)	3.70E+01	1.03E+01	mg/kg dry	95% UCL - NP	W - Test (1)
	Se	mg/kg dry	1.49E-01	2.08E-01 (T)	4.71E-01	2.08E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Zn	mg/kg dry	9.12E+01	1.21E+02 (T)	2.58E+02	1.21E+02	mg/kg dry	95% UCL - T	W - Test (2)
	Acenaphthene	mg/kg dry	2.68E-02	7.62E-02 (T)	1.14E-01	7.62E-02	mg/kg dry	95% UCL - T	W - Test (2)
	Acenaphthylene	mg/kg dry	4.19E-02	9.56E-02 (T)	1.40E-01	9.56E-02	mg/kg dry	95% UCL - T	W - Test (2)
	Anthracene	mg/kg dry	1.56E-01	4.07E-01 (T)	6.00E-01	4.07E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(a)anthracene	mg/kg dry	2.69E-01	5.87E-01 (T)	1.00E+00	5.87E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(a)pyrene	mg/kg dry	3.64E-01	7.28E-01 (T)	1.20E+00	7.28E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(b)fluoranthene	mg/kg dry	3.02E-01	6.24E-01 (T)	8.38E-01	6.24E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(g,h,i)perylene	mg/kg dry	2.38E-01	4.34E-01 (T)	6.93E-01	4.34E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Benzo(k)fluoranthene	mg/kg dry	2.31E-01	4.61E-01 (T)	8.92E-01	4.61E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Chrysene	mg/kg dry	3.70E-01	8.05E-01 (T)	1.30E+00	8.05E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Dibenz(a,h)anthracene	mg/kg dry	5.26E-02	1.23E-01 (T)	1.76E-01	1.23E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Fluoranthene	mg/kg dry	4.92E-01	7.54E-01 (NP)	2.50E+00	7.54E-01	mg/kg dry	95% UCL - NP	W - Test (1)

Table 3.1.RME. Reasonable Maximum Exposure EPC Summary for IR Site 20, continued

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
	Fluorene	mg/kg dry	4.27E-02	1.14E-01 (T)	1.30E-01	1.14E-01	mg/kg dry	95% UCL - T	W - Test (2)
	Indeno(1,2,3-cd)pyrene	mg/kg dry	2.11E-01	2.86E-01 (NP)	6.87E-01	2.86E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	2-Methylnaphthalene	mg/kg dry	1.56E-02	4.11E-01 (T)	2.21E-02	2.21E-02	mg/kg dry	Max	W-Test (3)
	Naphthalene	mg/kg dry	2.06E-02	3.96E-02 (T)	4.36E-02	3.96E-02	mg/kg dry	95% UCL - T	W - Test (2)
	Phenanthrene	mg/kg dry	3.05E-01	4.77E-01 (NP)	1.60E+00	4.77E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	Pyrene	mg/kg dry	6.76E-01	1.37E+00 (T)	3.20E+00	1.37E+00	mg/kg dry	95% UCL - T	W - Test (2)
	2,4'-DDD	mg/kg dry	1.92E-03	3.84E-03 (T)	1.50E-02	3.84E-03	mg/kg dry	95% UCL - T	W - Test (2)
	2,4'-DDE	mg/kg dry	1.93E-04	2.57E-04 (NP)	4.60E-04	2.57E-04	mg/kg dry	95% UCL - NP	W - Test (1)
	2,4'-DDT	mg/kg dry	6.45E-03	4.14E-02 (NP)	1.35E-01	4.14E-02	mg/kg dry	95% UCL - NP	W - Test (1)
	4,4'-DDD	mg/kg dry	5.74E-03	1.26E-02 (T)	4.53E-02	1.26E-02	mg/kg dry	95% UCL - T	W - Test (2)
	4,4'-DDE	mg/kg dry	2.50E-03	4.78E-03 (T)	1.62E-02	4.78E-03	mg/kg dry	95% UCL - T	W - Test (2)
	4,4'-DDT	mg/kg dry	2.13E-02	1.90E-01 (NP)	4.71E-01	1.90E-01	mg/kg dry	95% UCL - NP	W - Test (1)
	alpha-Chlordane	mg/kg dry	6.41E-04	1.25E-03 (NP)	3.14E-03	1.25E-03	mg/kg dry	95% UCL - NP	W - Test (1)
	Dieldrin	mg/kg dry	3.05E-03	1.18E-02 (NP)	9.80E-04	9.80E-04	mg/kg dry	Max	W-Test (3)
	Endosulfan II	mg/kg dry	3.33E-04	4.67E-04 (NP)	6.50E-04	4.67E-04	mg/kg dry	95% UCL - NP	W - Test (1)
	Endrin aldehyde	mg/kg dry	6.01E-03	2.11E-02 (NP)	1.34E-02	1.34E-02	mg/kg dry	Max	W-Test (3)
	gamma-Chlordane	mg/kg dry	1.40E-03	6.03E-03 (NP)	2.15E-03	2.15E-03	mg/kg dry	Max	W-Test (3)
	Total PCBs	mg/kg dry	1.57E-01	4.51E-01 (T)	8.93E-01	4.51E-01	mg/kg dry	95% UCL - T	W - Test (2)
	TBT	mg/kg dry	2.27E-02	3.16E-02 (NP)	5.90E-02	3.16E-02	mg/kg dry	95% UCL - NP	W - Test (1)

For non-detects, 1/2 sample detection limit was used as a proxy concentration. For Total PCBs, zero was used for summing non-detects.

W-test: Developed by Shapiro and Wilk, refer to Calculating Exposure Point Concentrations at Hazardous Waste Sites, OSWER 9285.6-10. July 2002.

Distribution: Nonparametric (NP); Log-Transformed (T)

Statistic: Maximum Detected Value (Max); 95% UCL of Nonparametric Data (95% UCL - NP); 95% UCL of Log-transformed Data (95% UCL - T)

Rationale: (1) Shapiro-Wilk W Test indicates nonparametric distribution of data.

(2) Shapiro-Wilk W Test indicates data are log-normally distributed.

(3) 95% UCL exceeds maximum detected concentration. Therefore, maximum concentration used for EPC.

Table 3.2.RME. Reasonable Maximum Exposure EPC Summary for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Shellfish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value (a)	Units	Statistic	Rationale
Shellfish in IR Site 20	Ag	mg/kg wet	2.76E-02	2.82E-02 (NP)	ND	4.87E-03	mg/kg wet	N/A	N/A
	As	mg/kg wet	2.30E+00	2.48E+00 (N)	2.47E+00	2.47E+00	mg/kg wet	Max	W-Test (1)
	Cd	mg/kg wet	1.38E-02	1.41E-02 (NP)	ND	4.94E-03	mg/kg wet	N/A	N/A
	Cr	mg/kg wet	2.76E-02	2.82E-02 (NP)	ND	1.06E+01	mg/kg wet	N/A	N/A
	Cu	mg/kg wet	1.67E+00	1.74E+00 (N)	1.72E+00	1.72E+00	mg/kg wet	Max	W-Test (1)
	Hg	mg/kg wet	1.65E-03	8.52E-03 (NP)	4.95E-03	4.95E-03	mg/kg wet	Max	W-Test (1)
	Ni	mg/kg wet	5.51E-02	1.75E-01 (NP)	1.38E-01	1.38E-01	mg/kg wet	Max	W-Test (1)
	Sb	mg/kg wet	5.53E-02	5.63E-02 (NP)	ND	3.28E-01	mg/kg wet	N/A	N/A
	Se	mg/kg wet	1.38E-02	1.41E-02 (NP)	ND	1.29E-01	mg/kg wet	N/A	N/A
	Zn	mg/kg wet	8.66E+00	9.87E+00 (N)	9.75E+00	9.75E+00	mg/kg wet	Max	W-Test (1)
	Acenaphthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	4.54E-03	mg/kg wet	N/A	N/A
	Acenaphthylene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.02E-02	mg/kg wet	N/A	N/A
	Anthracene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	3.08E-02	mg/kg wet	N/A	N/A
	Benzo(a)anthracene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	7.40E-02	mg/kg wet	N/A	N/A
	Benzo(a)pyrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	8.33E-02	mg/kg wet	N/A	N/A
	Benzo(b)fluoranthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	7.91E-02	mg/kg wet	N/A	N/A
	Benzo(g,h,i)perylene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.84E-02	mg/kg wet	N/A	N/A
	Benzo(k)fluoranthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	4.97E-02	mg/kg wet	N/A	N/A
	Chrysene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	8.03E-02	mg/kg wet	N/A	N/A
	Dibenz(a,h)anthracene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	3.58E-03	mg/kg wet	N/A	N/A
	Fluoranthene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.74E-01	mg/kg wet	N/A	N/A

Table 3.2.RME. Reasonable Maximum Exposure EPC Summary for IR Site 20, continued

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value (a)	Units	Statistic	Rationale
	Fluorene	mg/kg wet	1.75E-02	1.75E-02 (N)	ND	5.21E-03	mg/kg wet	N/A	N/A
	Indeno(1,2,3-cd)pyrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	8.77E-03	mg/kg wet	N/A	N/A
	2-Methylnaphthalene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	NA	mg/kg wet	N/A	N/A
	Naphthalene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.27E-02	mg/kg wet	N/A	N/A
	Phenanthrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	1.45E-02	mg/kg wet	N/A	N/A
	Pyrene	mg/kg wet	3.36E-02	3.36E-02 (N)	ND	4.58E-01	mg/kg wet	N/A	N/A
	4,4'-DDD	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	3.30E-03	mg/kg wet	N/A	N/A
	4,4'-DDE	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	2.41E-03	mg/kg wet	N/A	N/A
	4,4'-DDT	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	3.43E-02	mg/kg wet	N/A	N/A
	alpha-Chlordane	mg/kg wet	2.51E-04	2.63E-04 (NP)	ND	1.31E-04	mg/kg wet	N/A	N/A
	Dieldrin	mg/kg wet	5.05E-04	5.26E-04 (NP)	ND	1.06E-03	mg/kg wet	N/A	N/A
	Endosulfan II	mg/kg wet	5.05E-04	5.26E-04 (NP)	ND	NA	mg/kg wet	N/A	N/A
	Endrin aldehyde	mg/kg wet	1.00E-03	1.06E-03 (NP)	ND	NA	mg/kg wet	N/A	N/A
	gamma-Chlordane	mg/kg wet	2.51E-04	2.63E-04 (NP)	ND	NA	mg/kg wet	N/A	N/A
	Total PCBs	mg/kg wet	ND	0.0E+00	ND	1.03E-01	mg/kg wet	N/A	N/A
	TBT	mg/kg wet	2.27E-03	3.79E-03 (N)	4.1E-03	4.63E-03	mg/kg wet	95% UCL - N	W-Test (2)

N/A = not applicable

ND = not detected

(a) Shellfish tissue concentrations for non-detected chemicals were modeled from sediment EPCs using bioaccumulation factors developed from Seaplane Lagoon and San Francisco Bay reference data.

W-test: Developed by Shapiro and Wilk, refer to Calculating Exposure Point Concentrations at Hazardous Waste Sites, OSWER 9285.6-10. July 2002.

Distribution: Nonparametric (NP); Normal (N)

Statistic: Maximum Detected Value (Max); Maximum Detection Limit (Max DL); 95% UCL of Normal Data (95% UCL - N)

Rationale: (1) 95% UCL exceeds maximum detected concentration. Therefore, maximum concentration used for EPC.

(2) Shapiro-Wilk W Test indicates data are normally distributed.

Table 3.3.RME. Reasonable Maximum Exposure EPC Summary for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Forage Fish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (a)	95% UCL (Distribution) (a)	Maximum Concentration (Qualifier) (a)	Exposure Point Concentration			
						Value (b)	Units	Statistic	Rationale
Forage fish in IR Site 20	Ag	N/A	N/A	N/A	N/A	7.74E-04	mg/kg wet	N/A	N/A
	As	N/A	N/A	N/A	N/A	2.10E-01	mg/kg wet	N/A	N/A
	Cd	N/A	N/A	N/A	N/A	9.99E-04	mg/kg wet	N/A	N/A
	Cr	N/A	N/A	N/A	N/A	8.76E-01	mg/kg wet	N/A	N/A
	Cu	N/A	N/A	N/A	N/A	9.93E-01	mg/kg wet	N/A	N/A
	Hg	N/A	N/A	N/A	N/A	1.09E-01	mg/kg wet	N/A	N/A
	Ni	N/A	N/A	N/A	N/A	8.48E-02	mg/kg wet	N/A	N/A
	Pb	N/A	N/A	N/A	N/A	1.66E-01	mg/kg wet	N/A	N/A
	Sb	N/A	N/A	N/A	N/A	1.03E-02	mg/kg wet	N/A	N/A
	Se	N/A	N/A	N/A	N/A	7.16E-02	mg/kg wet	N/A	N/A
	Zn	N/A	N/A	N/A	N/A	7.81E+00	mg/kg wet	N/A	N/A
	Acenaphthene	N/A	N/A	N/A	N/A	2.02E-03	mg/kg wet	N/A	N/A
	Acenaphthylene	N/A	N/A	N/A	N/A	1.34E-04	mg/kg wet	N/A	N/A
	Anthracene	N/A	N/A	N/A	N/A	1.95E-03	mg/kg wet	N/A	N/A
	Benzo(a)anthracene	N/A	N/A	N/A	N/A	1.11E-03	mg/kg wet	N/A	N/A
	Benzo(a)pyrene	N/A	N/A	N/A	N/A	1.02E-03	mg/kg wet	N/A	N/A
	Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	9.36E-04	mg/kg wet	N/A	N/A
	Benzo(g,h,i)perylene	N/A	N/A	N/A	N/A	7.38E-04	mg/kg wet	N/A	N/A
	Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	1.20E-03	mg/kg wet	N/A	N/A
	Chrysene	N/A	N/A	N/A	N/A	3.14E-03	mg/kg wet	N/A	N/A
	Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	7.38E-05	mg/kg wet	N/A	N/A

Table 3.3.RME. Reasonable Maximum Exposure EPC Summary for IR Site 20, continued

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (a)	95% UCL (Distribution) (a)	Maximum Concentration (Qualifier) (a)	Exposure Point Concentration			
						Value (b)	Units	Statistic	Rationale
	Fluoranthene	N/A	N/A	N/A	N/A	5.20E-03	mg/kg wet	N/A	N/A
	Fluorene	N/A	N/A	N/A	N/A	1.65E-03	mg/kg wet	N/A	N/A
	Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	3.71E-04	mg/kg wet	N/A	N/A
	2-Methylnaphthalene	N/A	N/A	N/A	N/A	9.73E-05	mg/kg wet	N/A	N/A
	Naphthalene	N/A	N/A	N/A	N/A	2.89E-04	mg/kg wet	N/A	N/A
	Phenanthrene	N/A	N/A	N/A	N/A	8.96E-03	mg/kg wet	N/A	N/A
	Pyrene	N/A	N/A	N/A	N/A	4.66E-03	mg/kg wet	N/A	N/A
	2,4'-DDD	N/A	N/A	N/A	N/A	1.57E-05	mg/kg wet	N/A	N/A
	2,4'-DDE	N/A	N/A	N/A	N/A	6.67E-05	mg/kg wet	N/A	N/A
	2,4'-DDT	N/A	N/A	N/A	N/A	2.86E-03	mg/kg wet	N/A	N/A
	4,4'-DDD	N/A	N/A	N/A	N/A	6.49E-03	mg/kg wet	N/A	N/A
	4,4'-DDE	N/A	N/A	N/A	N/A	6.06E-03	mg/kg wet	N/A	N/A
	4,4'-DDT	N/A	N/A	N/A	N/A	2.29E-02	mg/kg wet	N/A	N/A
	alpha-Chlordane	N/A	N/A	N/A	N/A	4.41E-04	mg/kg wet	N/A	N/A
	Dieldrin	N/A	N/A	N/A	N/A	2.25E-04	mg/kg wet	N/A	N/A
	Endosulfan II	N/A	N/A	N/A	N/A	4.25E-06	mg/kg wet	N/A	N/A
	Endrin aldehyde	N/A	N/A	N/A	N/A	7.79E-05	mg/kg wet	N/A	N/A
	gamma-Chlordane	N/A	N/A	N/A	N/A	2.54E-04	mg/kg wet	N/A	N/A
	Total PCBs	N/A	N/A	N/A	N/A	3.04E-01	mg/kg wet	N/A	N/A
	TBT	N/A	N/A	N/A	N/A	3.97E-02	mg/kg wet	N/A	N/A

N/A = not applicable

(a) No forage fish tissue samples were collected from Oakland Inner Harbor during this study.
(b) Forage fish tissue concentrations were modeled from sediment EPCs using bioaccumulation factors developed from Seaplane Lagoon and San Francisco Bay reference data.

Table 4.1.CT. Central Tendency-Values Used for Daily Intake Calculations for IR Site 20

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Combined (Ingestion & Dermal)	Fisher	Adult	IR Site 20	Csed	Chemical Concentration in Sediment	see Table 3.1.CT	mg/kg	---	Dose (mg/kg/day) = (Csed x IRsed x FI x EF x ED) + (Csed x SA x AF x DAF x FI x EF x ED) / (BW x AT)
				IRsed	Ingestion Rate of Sediment	50	mg/day	U.S. EPA, 2004	
				SA	Skin Surface Area	5,700	cm^2/day	U.S. EPA, 2004	
				AF	Adherence Factor	0.07	mg/cm^2	U.S. EPA, 2004	
				DAF	Dermal Absorption Factor	See Table 7-3	N/A	U.S. EPA, 2004	
				FI	Fraction Ingestion	0.5	N/A	(1)	
				EF	Exposure Frequency	13	days/year	(1)	
				ED	Exposure Duration	9	years	U.S. EPA, 1989, 1991	
				CF	Conversion Factor	0.000001	kg/mg	---	
				BW	Body Weight	70	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	3,285	days	U.S. EPA, 2004	
		Child	IR Site 20	Csed	Chemical Concentration in Sediment	see Table 3.1.CT	mg/kg	---	Dose (mg/kg/day) = (Csed x IRsed x FI x EF x ED) + (Csed x SA x AF x DAF x FI x EF x ED) / (BW x AT)
				IRsed	Ingestion Rate of Sediment	100	mg/day	U.S. EPA, 2004	
				SA	Skin Surface Area	2,800	cm^2/day	U.S. EPA, 2004	
				AF	Adherence Factor	0.2	mg/cm^2	U.S. EPA, 2004	
				DAF	Dermal Absorption Factor	see Table 7-3	N/A	U.S. EPA, 2004	
				FI	Fraction Ingestion	0.5	N/A	(1)	
				EF	Exposure Frequency	13	days/year	(1)	
				ED	Exposure Duration	6	years	U.S. EPA, 1989, 1991	
				CF	Conversion Factor	0.000001	kg/mg	---	
				BW	Body Weight	15	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	2,190	days	U.S. EPA, 2004	

(1) Professional Judgment.

Sources: EPA, 1989: Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund, Volume 1. Human Health Evaluation Manual, Supplemental Guidance Exposure Factors, Draft Final. OSWER Directive 9285.6-03.

EPA, 2004: U.S. EPA Region 9 Preliminary Remediation Goal Tables. www.epa.gov/region09/waste/sfund/prg.

Table 4.2.CT. Central Tendency-Values Used for Daily Intake Calculations for IR Site 20

Scenario Timeframe: Current
Medium: Sediment
Exposure Medium: Fish Tissue

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion of Shellfish	Fisher	Adult	Shellfish in IR Site 20	Cshell	Chemical Concentration in Shellfish	see Table 3.2.CT	mg/kg	---	Dose (mg/kg/day) =
				IRshell	Ingestion Rate of Shellfish	0.0008	kg/day	SFEI, 2002; EPA 1997	Cshell x IRshell x FI x EF x ED
				FI	Fraction Ingestion	0.5	N/A	(1)	x CF/ (BW x AT)
				EF	Exposure Frequency	365	days/year	U.S. EPA, 1989	
				ED	Exposure Duration	9	years	U.S. EPA, 1989, 1991	
				BW	Body Weight	70	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	3,285	days	U.S. EPA, 2004	
Ingestion of Forage Fish	Fisher	Adult	Forage Fish in IR Site 20	Cfish	Chemical Concentration in Fish	see Table 3.3.CT	mg/kg	---	Dose (mg/kg/day) =
				IRfish	Ingestion Rate of Fish	0.016	kg/day	SFEI, 2002; EPA 1997	Cfish x IRfish x FI x EF x ED
				FI	Fraction Ingestion	0.5	N/A	(1)	x CF/ (BW x AT)
				EF	Exposure Frequency	365	days/year	U.S. EPA, 1989	
				ED	Exposure Duration	9	years	U.S. EPA, 1989, 1991	
				BW	Body Weight	70	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	3,285	days	U.S. EPA, 2004	
		Child	Forage Fish in IR Site 20	Cfish	Chemical Concentration in Fish	see Table 3.3.CT	mg/kg	---	Dose (mg/kg/day) =
				IRfish	Ingestion Rate of Fish	0.0056	kg/day	SFEI, 2002; EPA 1997	Cfish x IRfish x FI x EF x ED
				FI	Fraction Ingestion	0.5	N/A	(1)	x CF/ (BW x AT)
				EF	Exposure Frequency	365	days/year	U.S. EPA, 1989	
				ED	Exposure Duration	6	years	U.S. EPA, 1989, 1991	
				BW	Body Weight	15	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	2,190	days	U.S. EPA, 2004	

(1) Professional Judgment.

Sources: EPA, 1989: Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund, Volume 1. Human Health Evaluation Manual, Supplemental Guidance Exposure Factors, Draft Final. OSWER Directive 9285.6-03.

EPA, 2004: U.S. EPA Region 9 Preliminary Remediation Goal Tables. www.epa.gov/region09/waste/sfund/prg.

Table 4.1.RME. Reasonable Maximum Exposure Values Used for Daily Intake Calculations for IR Site 20

Scenario Timeframe: Current/Future

Medium: Sediment

Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Combined (Ingestion & Dermal)	Fisher	Adult	IR Site 20	Csed	Chemical Concentration in Sediment	see Table 3.1.RME	mg/kg	---	Dose (mg/kg/day) = (Csed x IRsed x FI x EF x ED x CF) + (Csed x SA x AF x DAF x FI x EF x ED x CF) / (BW x AT)
				IRsed	Ingestion Rate of Sediment	100	mg/day	U.S. EPA, 2004	
				SA	Skin Surface Area	5,700	cm^2/day	U.S. EPA, 2004	
				AF	Adherence Factor	0.07	mg/cm^2	U.S. EPA, 2004	
				DAF	Dermal Absorption Factor	See Table 7-3	N/A	U.S. EPA, 2004	
				FI	Fraction Ingestion	1	N/A	(1)	
				EF	Exposure Frequency	26	days/year	(1)	
				ED	Exposure Duration	30	years	U.S. EPA, 1989,	
				CF	Conversion Factor	0.000001	kg/mg	---	
				BW	Body Weight	70	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	10,950	days	U.S. EPA, 2004	
		Child	IR Site 20	Csed	Chemical Concentration in Sediment	see Table 3.1.RME	mg/kg	---	Dose (mg/kg/day) = (Csed x IRsed x FI x EF x ED x CF) + (Csed x SA x AF x DAF x FI x EF x ED x CF) / (BW x AT)
				IRsed	Ingestion Rate of Sediment	200	mg/day	U.S. EPA, 2004	
				SA	Skin Surface Area	2,800	cm^2/day	U.S. EPA, 2004	
				AF	Adherence Factor	0.2	mg/cm^2	U.S. EPA, 2004	
				DAF	Dermal Absorption Factor	see Table 7-3	N/A	U.S. EPA, 2004	
				FI	Fraction Ingestion	1	N/A	(1)	
				EF	Exposure Frequency	26	days/year	(1)	
				ED	Exposure Duration	6	years	U.S. EPA, 1989,	
				CF	Conversion Factor	0.000001	kg/mg	---	
				BW	Body Weight	15	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	2,190	days	U.S. EPA, 2004	
		Adult/Child	IR Site 20	Csed	Chemical Concentration in Sediment	see Table 3.1.RME	mg/kg	---	Dose (mg/kg/day) = Csed x FI x EF x CF x (IFSadj + (SFSadj x DAF)) / ATc
				IFSadj	Ingestion factor, soils	114	mg-yr/kg-day	U.S. EPA, 2004	
				SFSadj	Dermal factor, soils	361	mg-yr/kg-day	U.S. EPA, 2004	
				DAF	Dermal Absorption Factor	see Table 7-3	N/A	U.S. EPA, 2004	
				FI	Fraction Ingestion	1	N/A	(1)	
				EF	Exposure Frequency	26	days/year	(1)	
				CF	Conversion Factor	0.000001	kg/mg	---	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	

(1) Professional Judgment.

Sources: EPA, 1989: Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund, Volume 1. Human Health Evaluation Manual, Supplemental Guidance Exposure Factors, Draft Final. OSWER Directive 9285.6-03.

EPA, 2004: U.S. EPA Region 9 Preliminary Remediation Goal Tables. www.epa.gov/region09/waste/sfund/prg.

Table 4.2.RME. Reasonable Maximum Exposure Values Used for Daily Intake Calculations for IR Site 20

Scenario Timeframe: Current
Medium: Sediment
Exposure Medium: Fish Tissue

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion of Shellfish	Fisher	Adult	Shellfish in IR Site 20	Cshell	Chemical Concentration in Shellfish	see Table 3.2.RME	mg/kg	---	Dose (mg/kg/day) = Cshell x IRshell x FI x EF x ED x CF/ (BW x AT)
				IRshell	Ingestion Rate of Shellfish	0.0054	kg/day	SFEI, 2002; EPA 1997	
				FI	Fraction Ingestion	1	N/A	(1)	
				EF	Exposure Frequency	365	days/year	U.S. EPA, 1989	
				ED	Exposure Duration	30	years	U.S. EPA, 1989, 1991	
				BW	Body Weight	70	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	10,950	days	U.S. EPA, 2004	
Ingestion of Forage Fish	Fisher	Adult	Forage Fish in IR Site 20	Cfish	Chemical Concentration in Fish	see Table 3.3.RME	mg/kg	---	Dose (mg/kg/day) = Cfish x IRfish x FI x EF x ED x CF/ (BW x AT)
				IRfish	Ingestion Rate of Fish	0.108	kg/day	SFEI, 2002; EPA 1997	
				FI	Fraction Ingestion	1	N/A	(1)	
				EF	Exposure Frequency	365	days/year	U.S. EPA, 1989	
				ED	Exposure Duration	30	years	U.S. EPA, 1989, 1991	
				BW	Body Weight	70	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	10,950	days	U.S. EPA, 2004	
		Child	Forage Fish in IR Site 20	Cfish	Chemical Concentration in Fish	see Table 3.3.RME	mg/kg	---	Dose (mg/kg/day) = Cfish x IRfish x FI x EF x ED x CF/ (BW x AT)
				IRfish	Ingestion Rate of Fish	0.011	kg/day	SFEI, 2002; EPA 1997	
				FI	Fraction Ingestion	1	N/A	(1)	
				EF	Exposure Frequency	365	days/year	U.S. EPA, 1989	
				ED	Exposure Duration	6	years	U.S. EPA, 1989, 1991	
				BW	Body Weight	15	kg	U.S. EPA, 2004	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	
				ATnc	Averaging Time (Noncancer)	2,190	days	U.S. EPA, 2004	
		Adult/Child	Forage Fish in IR Site 20	Cfish	Chemical Concentration in Fish	see Table 3.3.RME	mg/kg	---	Dose (mg/kg/day) = (Cfish x IRaafish x FI x EF) / ATc
				IRaafish	Age Adjusted Fish Ingestion Rate	0.041	yr/day	(2)	
				FI	Fraction Ingestion	1	N/A	(1)	
				EF	Exposure Frequency	365	days/year	U.S. EPA, 1989	
				ATc	Averaging Time (Cancer)	25,550	days	U.S. EPA, 2004	

(1) Professional Judgment.

(2) Age adjusted fish ingestion rate calculated as: (EDchild x IRfishchild)/BWchild + (EDadult x IRfishadult)/BWadult, where EDchild is 6 yr, IRshellchild is 0.011 kg/day, BWchild is 15 kg, EDadult is 24 yr, IRshelladult is 0.108 kg/day, and BWadult is 70 kg.

Sources: EPA, 1989: Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund, Volume 1. Human Health Evaluation Manual, Supplemental Guidance Exposure Factors, Draft Final. OSWER Directive 9285.6-03.

EPA, 2004: U.S. EPA Region 9 Preliminary Remediation Goal Tables. www.epa.gov/region09/waste/sfund/prg.

Table 5.1. Non-Cancer Toxicity Data – Oral/Dermal, IR Site 20

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Ag	Chronic	5.0E-03	mg/kg-day	N/A	N/A	N/A	N/A	3	IRIS	10/28/05
As	Chronic	3.0E-04	mg/kg-day	N/A	N/A	N/A	liver/kidney/bladder	3	IRIS	10/28/05
Cd	Chronic	5.0E-04	mg/kg-day	N/A	N/A	N/A	kidney	10	IRIS	10/28/05
Cr [(b)]	Chronic	3.0E-03	mg/kg-day	N/A	N/A	N/A	liver/kidney	300	IRIS	10/28/05
Cu	Chronic	3.7E-02	mg/kg-day	N/A	N/A	N/A	gastrointestinal	N/A	HEAST	10/28/05
Hg [(b)]	Chronic	1.0E-04	mg/kg-day	N/A	N/A	N/A	developmental	10	IRIS	10/28/05
Ni	Chronic	2.0E-02	mg/kg-day	N/A	N/A	N/A	skin/kidney/reproductive	300	IRIS	10/28/05
Sb	Chronic	4.0E-04	mg/kg-day	N/A	N/A	N/A	blood	1000	IRIS	10/28/05
Se	Chronic	5.0E-03	mg/kg-day	N/A	N/A	N/A	N/A	3	IRIS	10/28/05
Zn	Chronic	3.0E-01	mg/kg-day	N/A	N/A	N/A	blood	3	IRIS	10/28/05
Acenaphthene	Chronic	6.0E-02	mg/kg-day	N/A	N/A	N/A	liver	3000	IRIS	10/28/05
Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	Chronic	3.0E-01	mg/kg-day	N/A	N/A	N/A	liver	3000	IRIS	10/28/05
Benzo(a)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(g,h,i)perylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	Chronic	4.0E-02	mg/kg-day	N/A	N/A	N/A	liver	3000	IRIS	10/28/05
Fluorene	Chronic	4.0E-02	mg/kg-day	N/A	N/A	N/A	liver	3000	IRIS	10/28/05
Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	Chronic	4.0E-03	mg/kg-day	N/A	N/A	N/A	lung	1000	IRIS	10/28/05
Naphthalene	Chronic	2.0E-02	mg/kg-day	N/A	N/A	N/A	liver/CNS	3000	IRIS	10/28/05
Phenanthrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	Chronic	3.0E-02	mg/kg-day	N/A	N/A	N/A	kidneys	3000	IRIS	10/28/05
2,4'-DDD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4'-DDE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4'-DDT	Chronic	5.0E-04	mg/kg-day	N/A	N/A	N/A	CNS/reproductive/liver	100	IRIS	10/28/05
4,4'-DDD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDT	Chronic	5.0E-04	mg/kg-day	N/A	N/A	N/A	CNS/reproductive/liver	100	IRIS	10/28/05
alpha-Chlordane [(b)]	Chronic	5.0E-04	mg/kg-day	N/A	N/A	N/A	liver	300	IRIS	10/28/05
Dieldrin	Chronic	5.0E-05	mg/kg-day	N/A	N/A	N/A	liver/CNS	100	IRIS	10/28/05
Endosulfan II	Chronic	6.0E-03	mg/kg-day	N/A	N/A	N/A	Immune system/liver	100	IRIS	10/28/05
Endrin aldehyde	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
gamma-Chlordane [(b)]	Chronic	5.0E-04	mg/kg-day	N/A	N/A	N/A	liver	300	IRIS	10/28/05
Total PCBs	Chronic	2.0E-05	N/A	N/A	N/A	N/A	CNS/immune system/liver	300	IRIS	10/28/05
TBT	Chronic	3.0E-04	mg/kg-day	N/A	N/A	N/A	Immune system	100	IRIS	10/28/05

N/A = Not Applicable

CNS = central nervous system

(a) The more conservative value was used.

(b) Toxicity values for methylmercury, chromium (IV), and technical chlordane were applied.

Table 6.1. Cancer Toxicity Data – Oral/Dermal, IR Site 20

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s) (a)	Date(s) (MM/DD/YYYY)
Ag	NA	N/A	N/A	N/A	N/A	D	N/A	N/A
As	9.45E+00	(mg/kg-day)-1	N/A	N/A	N/A	A	OEHHA	10/28/05
Cd	3.80E-01	(mg/kg-day)-1	N/A	N/A	N/A	B1	OEHHA	10/28/05
Cr (b)	1.90E-01	(mg/kg-day)-1	N/A	N/A	N/A	A (CrVI), N/A (CrIII)	OEHHA	10/28/05
Cu	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Hg (b)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ni	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sb	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Se	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Zn	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Acenaphthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Benzo(a)anthracene	1.20E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
Benzo(a)pyrene	1.20E+01	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
Benzo(b)fluoranthene	1.20E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
Benzo(g,h,i)perylene	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Benzo(k)fluoranthene	1.20E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
Chrysene	1.20E-01	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
Dibenz(a,h)anthracene	4.10E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
Fluoranthene	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Fluorene	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Indeno(1,2,3-cd)pyrene	1.20E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Naphthalene	1.20E-01	(mg/kg-day)-1	N/A	N/A	N/A	C	OEHHA	10/28/05
Phenanthrene	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
Pyrene	N/A	N/A	N/A	N/A	N/A	D	N/A	N/A
2,4'-DDD	2.40E-01	(mg/kg-day)-1	N/A	N/A	N/A	B2	IRIS	10/28/05
2,4'-DDE	3.40E-01	(mg/kg-day)-1	N/A	N/A	N/A	B2	IRIS	10/28/05
2,4'-DDT	3.40E-01	(mg/kg-day)-1	N/A	N/A	N/A	B2	IRIS	10/28/05
4,4'-DDD	2.40E-01	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA/IRIS	10/28/05
4,4'-DDE	3.40E-01	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA/IRIS	10/28/05
4,4'-DDT	3.40E-01	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA/IRIS	10/28/05
alpha-Chlordane [b]	1.30E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
Dieldrin	1.60E+01	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA/IRIS	10/28/05
Endosulfan II	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin aldehyde	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
gamma-Chlordane [b]	1.30E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA/IRIS	10/28/05
Total PCBs	5.00E+00	(mg/kg-day)-1	N/A	N/A	N/A	B2	OEHHA	10/28/05
TBT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A = Not Applicable
OEHHA = California Office of Environmental Health Hazard Assessment
IRIS = Integrated Risk Information System

HEAST = Health Effects Assessment Summary Tables

(a) When more than one source exists, the more conservative value was used.

(b) Toxicity values for methylmercury, chromium (IV), and technical chlordane were applied.

EPA Group:
A - Human Carcinogen
B1 - Probable human carcinogen - indicates that limited human data are available
B2 - Probably human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E - Evidence of noncarcinogenicity

Weight of Evidence: Known/Likely Cannot be Determined Not Likely

Table 7.1.CT. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Central Tendency, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	IR Site 20	Combined (Ingestion and Dermal)	Ag	1.72E-01	mg/kg dry	3.0E-10	mg/kg-day	NA	(mg/kg-day)-1	---	2.4E-09	mg/kg-day	5.0E-03	mg/kg-day	4.7E-07
				As	7.04E+00	mg/kg dry	1.4E-08	mg/kg-day	9.5E+00	(mg/kg-day)-1	1.3E-07	1.1E-07	mg/kg-day	3.0E-04	mg/kg-day	3.7E-04
				Cd	2.56E-01	mg/kg dry	4.2E-10	mg/kg-day	3.8E-01	(mg/kg-day)-1	1.6E-10	3.3E-09	mg/kg-day	5.0E-04	mg/kg-day	6.6E-06
				Cr	3.37E+02	mg/kg dry	5.5E-07	mg/kg-day	1.9E-01	(mg/kg-day)-1	1.0E-07	4.3E-06	mg/kg-day	3.0E-03	mg/kg-day	1.4E-03
				Cu	6.85E+01	mg/kg dry	1.2E-07	mg/kg-day	NA	(mg/kg-day)-1	---	9.4E-07	mg/kg-day	3.7E-02	mg/kg-day	2.5E-05
				Hg	2.45E+00	mg/kg dry	4.3E-09	mg/kg-day	NA	(mg/kg-day)-1	---	3.4E-08	mg/kg-day	1.0E-04	mg/kg-day	3.4E-04
				Ni	7.71E+01	mg/kg dry	1.4E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	5.3E-05
				Sb	1.03E+01	mg/kg dry	1.8E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.4E-07	mg/kg-day	4.0E-04	mg/kg-day	3.6E-04
				Se	2.08E-01	mg/kg dry	3.7E-10	mg/kg-day	NA	(mg/kg-day)-1	---	2.9E-09	mg/kg-day	5.0E-03	mg/kg-day	5.7E-07
				Zn	1.21E+02	mg/kg dry	2.1E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.7E-06	mg/kg-day	3.0E-01	mg/kg-day	5.5E-06
				Acenaphthene	7.62E-02	mg/kg dry	2.7E-10	mg/kg-day	NA	(mg/kg-day)-1	---	2.1E-09	mg/kg-day	6.0E-02	mg/kg-day	3.6E-08
				Acenaphthylene	9.56E-02	mg/kg dry	3.4E-10	mg/kg-day	NA	(mg/kg-day)-1	---	2.7E-09	mg/kg-day	NA	mg/kg-day	---
				Anthracene	4.07E-01	mg/kg dry	1.5E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-08	mg/kg-day	3.0E-01	mg/kg-day	3.8E-08
				Benzo(a)anthracene	5.87E-01	mg/kg dry	2.1E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.5E-09	1.6E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	7.28E-01	mg/kg dry	2.6E-09	mg/kg-day	1.2E+01	(mg/kg-day)-1	3.1E-08	2.0E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	6.24E-01	mg/kg dry	2.2E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.7E-09	1.7E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	4.34E-01	mg/kg dry	1.6E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	4.61E-01	mg/kg dry	1.7E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.0E-09	1.3E-08	mg/kg-day	NA	mg/kg-day	---
				Chrysene	8.05E-01	mg/kg dry	2.9E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	3.5E-10	2.2E-08	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	1.23E-01	mg/kg dry	4.4E-10	mg/kg-day	4.1E+00	(mg/kg-day)-1	1.8E-09	3.4E-09	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	7.54E-01	mg/kg dry	2.7E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.1E-08	mg/kg-day	4.0E-02	mg/kg-day	5.3E-07
				Fluorene	1.14E-01	mg/kg dry	4.1E-10	mg/kg-day	NA	(mg/kg-day)-1	---	3.2E-09	mg/kg-day	4.0E-02	mg/kg-day	8.0E-08
				Indeno(1,2,3-cd)pyrene	2.86E-01	mg/kg dry	1.0E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.2E-09	8.0E-09	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	2.21E-02	mg/kg dry	7.9E-11	mg/kg-day	NA	(mg/kg-day)-1	---	6.2E-10	mg/kg-day	4.0E-03	mg/kg-day	1.5E-07
				Naphthalene	3.96E-02	mg/kg dry	1.4E-10	mg/kg-day	1.2E-01	(mg/kg-day)-1	1.7E-11	1.1E-09	mg/kg-day	2.0E-02	mg/kg-day	5.5E-08
				Phenanthrene	4.77E-01	mg/kg dry	1.7E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-08	mg/kg-day	NA	mg/kg-day	---
				Pyrene	1.37E+00	mg/kg dry	4.9E-09	mg/kg-day	NA	(mg/kg-day)-1	---	3.8E-08	mg/kg-day	3.0E-02	mg/kg-day	1.3E-06
				2,4'-DDD	3.84E-03	mg/kg dry	8.8E-12	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.1E-12	6.8E-11	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	2.57E-04	mg/kg dry	5.9E-13	mg/kg-day	3.4E-01	(mg/kg-day)-1	2.0E-13	4.6E-12	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	4.14E-02	mg/kg dry	9.5E-11	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.2E-11	7.4E-10	mg/kg-day	5.0E-04	mg/kg-day	1.5E-06
				4,4'-DDD	1.26E-02	mg/kg dry	2.9E-11	mg/kg-day	2.4E-01	(mg/kg-day)-1	6.9E-12	2.2E-10	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	4.78E-03	mg/kg dry	1.1E-11	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.7E-12	8.5E-11	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	1.90E-01	mg/kg dry	4.3E-10	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.5E-10	3.4E-09	mg/kg-day	5.0E-04	mg/kg-day	6.8E-06
				alpha-Chlordane	1.25E-03	mg/kg dry	2.9E-12	mg/kg-day	1.3E+00	(mg/kg-day)-1	3.7E-12	2.2E-11	mg/kg-day	5.0E-04	mg/kg-day	4.4E-08
				Dieldrin	9.80E-04	mg/kg dry	2.2E-12	mg/kg-day	1.6E+01	(mg/kg-day)-1	3.6E-11	1.7E-11	mg/kg-day	5.0E-05	mg/kg-day	3.5E-07
				Endosulfan II	4.67E-04	mg/kg dry	1.1E-12	mg/kg-day	NA	(mg/kg-day)-1	---	8.3E-12	mg/kg-day	6.0E-03	mg/kg-day	1.4E-09
				Endrin aldehyde	1.34E-02	mg/kg dry	3.1E-11	mg/kg-day	NA	(mg/kg-day)-1	---	2.4E-10	mg/kg-day	NA	mg/kg-day	8.0E-07
				gamma-Chlordane	2.15E-03	mg/kg dry	4.9E-12	mg/kg-day	1.3E+00	(mg/kg-day)-1	6.4E-12	3.8E-11	mg/kg-day	5.0E-04	mg/kg-day	7.7E-08
				Total PCBs	4.51E-01	mg/kg dry	1.6E-09	mg/kg-day	5.0E+00	(mg/kg-day)-1	8.1E-09	1.3E-08	mg/kg-day	2.0E-05	mg/kg-day	6.3E-04
				TBT	3.16E-02	mg/kg dry	9.3E-11	mg/kg-day	NA	(mg/kg-day)-1	---	7.2E-10	mg/kg-day	3.0E-04	mg/kg-day	2.4E-06
			Exp. Route Total								2.9E-07					3.2E-03
		Exposure Point Total									2.9E-07					3.2E-03
	Exposure Medium Total										2.9E-07					3.2E-03

Table 7.1.CT. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Central Tendency, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Fish Tissue	Shellfish in IR Site 20	Ingestion	Ag	4.87E-03	mg/kg wet	3.6E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.8E-08	mg/kg-day	5.0E-03	mg/kg-day	5.6E-06
				As	2.47E+00	mg/kg wet	1.8E-06	mg/kg-day	9.5E+00	(mg/kg-day)-1	1.7E-05	1.4E-05	mg/kg-day	3.0E-04	mg/kg-day	4.7E-02
				Cd	4.94E-03	mg/kg wet	3.6E-09	mg/kg-day	3.8E-01	(mg/kg-day)-1	1.4E-09	2.8E-08	mg/kg-day	5.0E-04	mg/kg-day	5.6E-05
				Cr	1.06E+01	mg/kg wet	7.8E-06	mg/kg-day	1.9E-01	(mg/kg-day)-1	1.5E-06	6.0E-05	mg/kg-day	3.0E-03	mg/kg-day	2.0E-02
				Cu	1.72E+00	mg/kg wet	1.3E-06	mg/kg-day	NA	(mg/kg-day)-1	---	9.8E-06	mg/kg-day	3.7E-02	mg/kg-day	2.7E-04
				Hg	4.95E-03	mg/kg wet	3.6E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.8E-08	mg/kg-day	1.0E-04	mg/kg-day	2.8E-04
				Ni	1.38E-01	mg/kg wet	1.0E-07	mg/kg-day	NA	(mg/kg-day)-1	---	7.9E-07	mg/kg-day	2.0E-02	mg/kg-day	3.9E-05
				Sb	3.28E-01	mg/kg wet	2.4E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.9E-06	mg/kg-day	4.0E-04	mg/kg-day	4.7E-03
				Se	1.29E-01	mg/kg wet	9.5E-08	mg/kg-day	NA	(mg/kg-day)-1	---	7.4E-07	mg/kg-day	5.0E-03	mg/kg-day	1.5E-04
				Zn	9.75E+00	mg/kg wet	7.2E-06	mg/kg-day	NA	(mg/kg-day)-1	---	5.6E-05	mg/kg-day	3.0E-01	mg/kg-day	1.9E-04
				Acenaphthene	4.54E-03	mg/kg wet	3.3E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.6E-08	mg/kg-day	6.0E-02	mg/kg-day	4.3E-07
				Acenaphthylene	1.02E-02	mg/kg wet	7.5E-09	mg/kg-day	NA	(mg/kg-day)-1	---	5.9E-08	mg/kg-day	NA	mg/kg-day	---
				Anthracene	3.08E-02	mg/kg wet	2.3E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.8E-07	mg/kg-day	3.0E-01	mg/kg-day	5.9E-07
				Benzo(a)anthracene	7.40E-02	mg/kg wet	5.4E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	6.5E-08	4.2E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	8.33E-02	mg/kg wet	6.1E-08	mg/kg-day	1.2E+01	(mg/kg-day)-1	7.3E-07	4.8E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	7.91E-02	mg/kg wet	5.8E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	7.0E-08	4.5E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	1.84E-02	mg/kg wet	1.4E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	4.97E-02	mg/kg wet	3.7E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	4.4E-08	2.8E-07	mg/kg-day	NA	mg/kg-day	---
				Chrysene	8.03E-02	mg/kg wet	5.9E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	7.1E-09	4.6E-07	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	3.58E-03	mg/kg wet	2.6E-09	mg/kg-day	4.1E+00	(mg/kg-day)-1	1.1E-08	2.0E-08	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	1.74E-01	mg/kg wet	1.3E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.0E-06	mg/kg-day	4.0E-02	mg/kg-day	2.5E-05
				Fluorene	5.21E-03	mg/kg wet	3.8E-09	mg/kg-day	NA	(mg/kg-day)-1	---	3.0E-08	mg/kg-day	4.0E-02	mg/kg-day	7.4E-07
				Indeno(1,2,3-cd)pyrene	8.77E-03	mg/kg wet	6.4E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	7.7E-09	5.0E-08	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	NA	mg/kg wet	NA	mg/kg-day	NA	(mg/kg-day)-1	---	NA	mg/kg-day	4.0E-03	mg/kg-day	NA
				Naphthalene	1.27E-02	mg/kg wet	9.3E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	1.1E-09	7.2E-08	mg/kg-day	2.0E-02	mg/kg-day	3.6E-06
				Phenanthrene	1.45E-02	mg/kg wet	1.1E-08	mg/kg-day	NA	(mg/kg-day)-1	---	8.3E-08	mg/kg-day	NA	mg/kg-day	---
				Pyrene	4.58E-01	mg/kg wet	3.4E-07	mg/kg-day	NA	(mg/kg-day)-1	---	2.6E-06	mg/kg-day	3.0E-02	mg/kg-day	8.7E-05
				2,4'-DDD	8.64E-04	mg/kg wet	6.4E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	1.5E-10	4.9E-09	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	4.91E-05	mg/kg wet	3.6E-11	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.2E-11	2.8E-10	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	1.93E-02	mg/kg wet	1.4E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	4.8E-09	1.1E-07	mg/kg-day	5.0E-04	mg/kg-day	2.2E-04
				4,4'-DDD	3.30E-03	mg/kg wet	2.4E-09	mg/kg-day	2.4E-01	(mg/kg-day)-1	5.8E-10	1.9E-08	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	2.41E-03	mg/kg wet	1.8E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	6.0E-10	1.4E-08	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	3.43E-02	mg/kg wet	2.5E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	8.6E-09	2.0E-07	mg/kg-day	5.0E-04	mg/kg-day	3.9E-04
				alpha-Chlordane	1.31E-04	mg/kg wet	9.6E-11	mg/kg-day	1.3E+00	(mg/kg-day)-1	1.2E-10	7.5E-10	mg/kg-day	5.0E-04	mg/kg-day	1.5E-06
				Dieldrin	1.06E-03	mg/kg wet	7.8E-10	mg/kg-day	1.6E+01	(mg/kg-day)-1	1.2E-08	6.1E-09	mg/kg-day	5.0E-05	mg/kg-day	1.2E-04
				Endosulfan II	NA	mg/kg wet	NA	mg/kg-day	NA	(mg/kg-day)-1	---	NA	mg/kg-day	6.0E-03	mg/kg-day	NA
				Endrin aldehyde	NA	mg/kg wet	NA	mg/kg-day	NA	(mg/kg-day)-1	---	NA	mg/kg-day	NA	mg/kg-day	---
				gamma-Chlordane	NA	mg/kg wet	NA	mg/kg-day	1.3E+00	(mg/kg-day)-1	NA	NA	mg/kg-day	5.0E-04	mg/kg-day	NA
				Total PCBs	1.03E-01	mg/kg wet	7.5E-08	mg/kg-day	5.0E+00	(mg/kg-day)-1	3.8E-07	5.9E-07	mg/kg-day	2.0E-05	mg/kg-day	2.9E-02
				TBT	4.63E-03	mg/kg wet	2.8E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.2E-08	mg/kg-day	3.0E-04	mg/kg-day	7.2E-05
			Exp. Route Total								2.0E-05					1.0E-01
		Exposure Point Total									2.0E-05					1.0E-01

Table 7.1.CT. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Central Tendency, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
		Forage Fish in IR Site 20	Ingestion	Ag	7.74E-04	mg/kg wet	1.1E-08	mg/kg-day	NA	(mg/kg-day)-1	---	8.8E-08	mg/kg-day	5.0E-03	mg/kg-day	1.8E-05
				As	2.10E-01	mg/kg wet	3.1E-06	mg/kg-day	9.5E+00	(mg/kg-day)-1	2.9E-05	2.4E-05	mg/kg-day	3.0E-04	mg/kg-day	8.0E-02
				Cd	9.99E-04	mg/kg wet	1.5E-08	mg/kg-day	3.8E-01	(mg/kg-day)-1	5.6E-09	1.1E-07	mg/kg-day	5.0E-04	mg/kg-day	2.3E-04
				Cr	8.76E-01	mg/kg wet	1.3E-05	mg/kg-day	1.9E-01	(mg/kg-day)-1	2.4E-06	1.0E-04	mg/kg-day	3.0E-03	mg/kg-day	3.3E-02
				Cu	9.93E-01	mg/kg wet	1.5E-05	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-04	mg/kg-day	3.7E-02	mg/kg-day	3.1E-03
				Hg	1.09E-01	mg/kg wet	1.6E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-05	mg/kg-day	1.0E-04	mg/kg-day	1.2E-01
				Ni	8.48E-02	mg/kg wet	1.2E-06	mg/kg-day	NA	(mg/kg-day)-1	---	9.7E-06	mg/kg-day	2.0E-02	mg/kg-day	4.8E-04
				Sb	1.03E-02	mg/kg wet	1.5E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-06	mg/kg-day	4.0E-04	mg/kg-day	3.0E-03
				Se	7.16E-02	mg/kg wet	1.1E-06	mg/kg-day	NA	(mg/kg-day)-1	---	8.2E-06	mg/kg-day	5.0E-03	mg/kg-day	1.6E-03
				Zn	7.81E+00	mg/kg wet	1.1E-04	mg/kg-day	NA	(mg/kg-day)-1	---	8.9E-04	mg/kg-day	3.0E-01	mg/kg-day	3.0E-03
				Acenaphthene	2.02E-03	mg/kg wet	3.0E-08	mg/kg-day	NA	(mg/kg-day)-1	---	2.3E-07	mg/kg-day	6.0E-02	mg/kg-day	3.8E-06
				Acenaphthylene	1.34E-04	mg/kg wet	2.0E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-08	mg/kg-day	NA	mg/kg-day	---
				Anthracene	1.95E-03	mg/kg wet	2.9E-08	mg/kg-day	NA	(mg/kg-day)-1	---	2.2E-07	mg/kg-day	3.0E-01	mg/kg-day	7.4E-07
				Benzo(a)anthracene	1.11E-03	mg/kg wet	1.6E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.0E-08	1.3E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	1.02E-03	mg/kg wet	1.5E-08	mg/kg-day	1.2E+01	(mg/kg-day)-1	1.8E-07	1.2E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	9.36E-04	mg/kg wet	1.4E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.6E-08	1.1E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	7.38E-04	mg/kg wet	1.1E-08	mg/kg-day	NA	(mg/kg-day)-1	---	8.4E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	1.20E-03	mg/kg wet	1.8E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.1E-08	1.4E-07	mg/kg-day	NA	mg/kg-day	---
				Chrysene	3.14E-03	mg/kg wet	4.6E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	5.5E-09	3.6E-07	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	7.38E-05	mg/kg wet	1.1E-09	mg/kg-day	4.1E+00	(mg/kg-day)-1	4.4E-09	8.4E-09	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	5.20E-03	mg/kg wet	7.6E-08	mg/kg-day	NA	(mg/kg-day)-1	---	5.9E-07	mg/kg-day	4.0E-02	mg/kg-day	1.5E-05
				Fluorene	1.65E-03	mg/kg wet	2.4E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.9E-07	mg/kg-day	4.0E-02	mg/kg-day	4.7E-06
				Indeno(1,2,3-cd)pyrene	3.71E-04	mg/kg wet	5.5E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	6.6E-09	4.2E-08	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	9.73E-05	mg/kg wet	1.4E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-08	mg/kg-day	4.0E-03	mg/kg-day	2.8E-06
				Naphthalene	2.89E-04	mg/kg wet	4.2E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	5.1E-10	3.3E-08	mg/kg-day	2.0E-02	mg/kg-day	1.7E-06
				Phenanthrene	8.96E-03	mg/kg wet	1.3E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.0E-06	mg/kg-day	NA	mg/kg-day	---
				Pyrene	4.66E-03	mg/kg wet	6.8E-08	mg/kg-day	NA	(mg/kg-day)-1	---	5.3E-07	mg/kg-day	3.0E-02	mg/kg-day	1.8E-05
				2,4'-DDD	1.57E-05	mg/kg wet	2.3E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	5.5E-11	1.8E-09	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	6.67E-05	mg/kg wet	9.8E-10	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.3E-10	7.6E-09	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	2.86E-03	mg/kg wet	4.2E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.4E-08	3.3E-07	mg/kg-day	5.0E-04	mg/kg-day	6.5E-04
				4,4'-DDD	6.49E-03	mg/kg wet	9.5E-08	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.3E-08	7.4E-07	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	6.06E-03	mg/kg wet	8.9E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.0E-08	6.9E-07	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	2.29E-02	mg/kg wet	3.4E-07	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.1E-07	2.6E-06	mg/kg-day	5.0E-04	mg/kg-day	5.2E-03
				alpha-Chlordane	4.41E-04	mg/kg wet	6.5E-09	mg/kg-day	1.3E+00	(mg/kg-day)-1	8.4E-09	5.0E-08	mg/kg-day	5.0E-04	mg/kg-day	1.0E-04
				Dieldrin	2.25E-04	mg/kg wet	3.3E-09	mg/kg-day	1.6E+01	(mg/kg-day)-1	5.3E-08	2.6E-08	mg/kg-day	5.0E-05	mg/kg-day	5.1E-04
				Endosulfan II	4.25E-06	mg/kg wet	6.2E-11	mg/kg-day	NA	(mg/kg-day)-1	---	4.9E-10	mg/kg-day	6.0E-03	mg/kg-day	8.1E-08
				Endrin aldehyde	7.79E-05	mg/kg wet	1.1E-09	mg/kg-day	NA	(mg/kg-day)-1	---	8.9E-09	mg/kg-day	NA	mg/kg-day	---
				gamma-Chlordane	2.54E-04	mg/kg wet	3.7E-09	mg/kg-day	1.3E+00	(mg/kg-day)-1	4.9E-09	2.9E-08	mg/kg-day	5.0E-04	mg/kg-day	5.8E-05
				Total PCBs	3.04E-01	mg/kg wet	4.5E-06	mg/kg-day	5.0E+00	(mg/kg-day)-1	2.2E-05	3.5E-05	mg/kg-day	2.0E-05	mg/kg-day	1.7E+00
				TBT	3.97E-02	mg/kg wet	5.8E-07	mg/kg-day	NA	(mg/kg-day)-1	---	4.5E-06	mg/kg-day	3.0E-04	mg/kg-day	1.5E-02
			Exp. Route								5.4E-05					2.0E+00
		Exposure Point Total									5.4E-05					2.0E+00
	Exposure Medium										7.4E-05					2.1E+00
Medium Total											7.5E-05					2.1E+00
							Total of Receptor Risks Across All Media				7.5E-05	Total of Receptor Hazards Across All Media				2.1E+00

Table 7.2.CT. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Central Tendency, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	IR Site 20	Combined (Ingestion and Dermal)	Ag	1.72E-01	mg/kg dry	1.8E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.2E-08	mg/kg-day	5.0E-03	mg/kg-day	4.3E-06
				As	7.04E+00	mg/kg dry	8.4E-08	mg/kg-day	9.5E+00	(mg/kg-day)-1	7.9E-07	9.8E-07	mg/kg-day	3.0E-04	mg/kg-day	3.3E-03
				Cd	2.56E-01	mg/kg dry	2.6E-09	mg/kg-day	3.8E-01	(mg/kg-day)-1	1.0E-09	3.1E-08	mg/kg-day	5.0E-04	mg/kg-day	6.1E-05
				Cr	3.37E+02	mg/kg dry	3.4E-06	mg/kg-day	1.9E-01	(mg/kg-day)-1	6.5E-07	4.0E-05	mg/kg-day	3.0E-03	mg/kg-day	1.3E-02
				Cu	6.85E+01	mg/kg dry	7.4E-07	mg/kg-day	NA	(mg/kg-day)-1	---	8.6E-06	mg/kg-day	3.7E-02	mg/kg-day	2.3E-04
				Hg	2.45E+00	mg/kg dry	2.6E-08	mg/kg-day	NA	(mg/kg-day)-1	---	3.1E-07	mg/kg-day	1.0E-04	mg/kg-day	3.1E-03
				Ni	7.71E+01	mg/kg dry	8.3E-07	mg/kg-day	NA	(mg/kg-day)-1	---	9.7E-06	mg/kg-day	2.0E-02	mg/kg-day	4.8E-04
				Sb	1.03E+01	mg/kg dry	1.1E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-06	mg/kg-day	4.0E-04	mg/kg-day	3.2E-03
				Se	2.08E-01	mg/kg dry	2.2E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.6E-08	mg/kg-day	5.0E-03	mg/kg-day	5.2E-06
				Zn	1.21E+02	mg/kg dry	1.3E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-05	mg/kg-day	3.0E-01	mg/kg-day	5.1E-05
				Acenaphthene	7.62E-02	mg/kg dry	1.4E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.7E-08	mg/kg-day	6.0E-02	mg/kg-day	2.8E-07
				Acenaphthylene	9.56E-02	mg/kg dry	1.8E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.1E-08	mg/kg-day	NA	mg/kg-day	---
				Anthracene	4.07E-01	mg/kg dry	7.6E-09	mg/kg-day	NA	(mg/kg-day)-1	---	8.9E-08	mg/kg-day	3.0E-01	mg/kg-day	3.0E-07
				Benzo(a)anthracene	5.87E-01	mg/kg dry	1.1E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.3E-08	1.3E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	7.28E-01	mg/kg dry	1.4E-08	mg/kg-day	1.2E+01	(mg/kg-day)-1	1.6E-07	1.6E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	6.24E-01	mg/kg dry	1.2E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.4E-08	1.4E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	4.34E-01	mg/kg dry	8.1E-09	mg/kg-day	NA	(mg/kg-day)-1	---	9.5E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	4.61E-01	mg/kg dry	8.6E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.0E-08	1.0E-07	mg/kg-day	NA	mg/kg-day	---
				Chrysene	8.05E-01	mg/kg dry	1.5E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	1.8E-09	1.8E-07	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	1.23E-01	mg/kg dry	2.3E-09	mg/kg-day	4.1E+00	(mg/kg-day)-1	9.4E-09	2.7E-08	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	7.54E-01	mg/kg dry	1.4E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.6E-07	mg/kg-day	4.0E-02	mg/kg-day	4.1E-06
				Fluorene	1.14E-01	mg/kg dry	2.1E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.5E-08	mg/kg-day	4.0E-02	mg/kg-day	6.2E-07
				Indeno(1,2,3-cd)pyrene	2.86E-01	mg/kg dry	5.4E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	6.4E-09	6.2E-08	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	2.21E-02	mg/kg dry	4.1E-10	mg/kg-day	NA	(mg/kg-day)-1	---	4.8E-09	mg/kg-day	4.0E-03	mg/kg-day	1.2E-06
				Naphthalene	3.96E-02	mg/kg dry	7.4E-10	mg/kg-day	1.2E-01	(mg/kg-day)-1	8.9E-11	8.6E-09	mg/kg-day	2.0E-02	mg/kg-day	4.3E-07
				Phenanthrene	4.77E-01	mg/kg dry	8.9E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.0E-07	mg/kg-day	NA	mg/kg-day	---
				Pyrene	1.37E+00	mg/kg dry	2.6E-08	mg/kg-day	NA	(mg/kg-day)-1	---	3.0E-07	mg/kg-day	3.0E-02	mg/kg-day	1.0E-05
				2,4'-DDD	3.84E-03	mg/kg dry	5.0E-11	mg/kg-day	2.4E-01	(mg/kg-day)-1	1.2E-11	5.8E-10	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	2.57E-04	mg/kg dry	3.3E-12	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.1E-12	3.9E-11	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	4.14E-02	mg/kg dry	5.4E-10	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.8E-10	6.3E-09	mg/kg-day	5.0E-04	mg/kg-day	1.3E-05
				4,4'-DDD	1.26E-02	mg/kg dry	1.6E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	3.9E-11	1.9E-09	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	4.78E-03	mg/kg dry	6.2E-11	mg/kg-day	3.4E-01	(mg/kg-day)-1	2.1E-11	7.3E-10	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	1.90E-01	mg/kg dry	2.5E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	8.4E-10	2.9E-08	mg/kg-day	5.0E-04	mg/kg-day	5.8E-05
				alpha-Chlordane	1.25E-03	mg/kg dry	1.6E-11	mg/kg-day	1.3E+00	(mg/kg-day)-1	2.1E-11	1.9E-10	mg/kg-day	5.0E-04	mg/kg-day	3.8E-07
				Dieldrin	9.80E-04	mg/kg dry	1.3E-11	mg/kg-day	1.6E+01	(mg/kg-day)-1	2.0E-10	1.5E-10	mg/kg-day	5.0E-05	mg/kg-day	3.0E-06
				Endosulfan II	4.67E-04	mg/kg dry	6.1E-12	mg/kg-day	NA	(mg/kg-day)-1	---	7.1E-11	mg/kg-day	6.0E-03	mg/kg-day	1.2E-08
				Endrin aldehyde	1.34E-02	mg/kg dry	1.7E-10	mg/kg-day	NA	(mg/kg-day)-1	---	2.0E-09	mg/kg-day	NA	mg/kg-day	6.8E-06
				gamma-Chlordane	2.15E-03	mg/kg dry	2.8E-11	mg/kg-day	1.3E+00	(mg/kg-day)-1	3.6E-11	3.3E-10	mg/kg-day	5.0E-04	mg/kg-day	6.5E-07
				Total PCBs	4.51E-01	mg/kg dry	8.5E-09	mg/kg-day	5.0E+00	(mg/kg-day)-1	4.2E-08	9.9E-08	mg/kg-day	2.0E-05	mg/kg-day	4.9E-03
				TBT	3.16E-02	mg/kg dry	5.0E-10	mg/kg-day	NA	(mg/kg-day)-1	---	5.8E-09	mg/kg-day	3.0E-04	mg/kg-day	1.9E-05
			Exp. Route Total								1.7E-06					2.9E-02
		Exposure Point Total									1.7E-06					2.9E-02
	Exposure Medium Total										1.7E-06					2.9E-02

Table 7.2.CT. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Central Tendency, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Fish Tissue	Forage Fish in IR Site 20	Ingestion	Ag	8E-04	mg/kg wet	1.2E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.4E-07	mg/kg-day	5.0E-03	mg/kg-day	2.9E-05
				As	2E-01	mg/kg wet	3.4E-06	mg/kg-day	9.5E+00	(mg/kg-day)-1	3.2E-05	3.9E-05	mg/kg-day	3.0E-04	mg/kg-day	1.3E-01
				Cd	1E-03	mg/kg wet	1.6E-08	mg/kg-day	3.8E-01	(mg/kg-day)-1	6.1E-09	1.9E-07	mg/kg-day	5.0E-04	mg/kg-day	3.7E-04
				Cr	9E-01	mg/kg wet	1.4E-05	mg/kg-day	1.9E-01	(mg/kg-day)-1	2.7E-06	1.6E-04	mg/kg-day	3.0E-03	mg/kg-day	5.4E-02
				Cu	1E+00	mg/kg wet	1.6E-05	mg/kg-day	NA	(mg/kg-day)-1	---	1.9E-04	mg/kg-day	3.7E-02	mg/kg-day	5.0E-03
				Hg	1E-01	mg/kg wet	1.7E-06	mg/kg-day	NA	(mg/kg-day)-1	---	2.0E-05	mg/kg-day	1.0E-04	mg/kg-day	2.0E-01
				Ni	8E-02	mg/kg wet	1.4E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	7.9E-04
				Sb	1E-02	mg/kg wet	1.7E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.9E-06	mg/kg-day	4.0E-04	mg/kg-day	4.8E-03
				Se	7E-02	mg/kg wet	1.1E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-05	mg/kg-day	5.0E-03	mg/kg-day	2.7E-03
				Zn	8E+00	mg/kg wet	1.2E-04	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-03	mg/kg-day	3.0E-01	mg/kg-day	4.9E-03
				Acenaphthene	2E-03	mg/kg wet	3.2E-08	mg/kg-day	NA	(mg/kg-day)-1	---	3.8E-07	mg/kg-day	6.0E-02	mg/kg-day	6.3E-06
				Acenaphthylene	1E-04	mg/kg wet	2.1E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.5E-08	mg/kg-day	NA	mg/kg-day	---
				Anthracene	2E-03	mg/kg wet	3.1E-08	mg/kg-day	NA	(mg/kg-day)-1	---	3.6E-07	mg/kg-day	3.0E-01	mg/kg-day	1.2E-06
				Benzo(a)anthracene	1E-03	mg/kg wet	1.8E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.1E-08	2.1E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	1E-03	mg/kg wet	1.6E-08	mg/kg-day	1.2E+01	(mg/kg-day)-1	2.0E-07	1.9E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	9E-04	mg/kg wet	1.5E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.8E-08	1.7E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	7E-04	mg/kg wet	1.2E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.4E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	1E-03	mg/kg wet	1.9E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.3E-08	2.2E-07	mg/kg-day	NA	mg/kg-day	---
				Chrysene	3E-03	mg/kg wet	5.0E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	6.0E-09	5.9E-07	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	7E-05	mg/kg wet	1.2E-09	mg/kg-day	4.1E+00	(mg/kg-day)-1	4.8E-09	1.4E-08	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	5E-03	mg/kg wet	8.3E-08	mg/kg-day	NA	(mg/kg-day)-1	---	9.7E-07	mg/kg-day	4.0E-02	mg/kg-day	2.4E-05
				Fluorene	2E-03	mg/kg wet	2.6E-08	mg/kg-day	NA	(mg/kg-day)-1	---	3.1E-07	mg/kg-day	4.0E-02	mg/kg-day	7.7E-06
				Indeno(1,2,3-cd)pyrene	4E-04	mg/kg wet	5.9E-09	mg/kg-day	1.2E+00	(mg/kg-day)-1	7.1E-09	6.9E-08	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	1E-04	mg/kg wet	1.6E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.8E-08	mg/kg-day	4.0E-03	mg/kg-day	4.5E-06
				Naphthalene	3E-04	mg/kg wet	4.6E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	5.5E-10	5.4E-08	mg/kg-day	2.0E-02	mg/kg-day	2.7E-06
				Phenanthrene	9E-03	mg/kg wet	1.4E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.7E-06	mg/kg-day	NA	mg/kg-day	---
				Pyrene	5E-03	mg/kg wet	7.5E-08	mg/kg-day	NA	(mg/kg-day)-1	---	8.7E-07	mg/kg-day	3.0E-02	mg/kg-day	2.9E-05
				2,4'-DDD	2E-05	mg/kg wet	2.5E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	6.0E-11	2.9E-09	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	7E-05	mg/kg wet	1.1E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.6E-10	1.2E-08	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	3E-03	mg/kg wet	4.6E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.6E-08	5.3E-07	mg/kg-day	5.0E-04	mg/kg-day	1.1E-03
				4,4'-DDD	6E-03	mg/kg wet	1.0E-07	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.5E-08	1.2E-06	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	6E-03	mg/kg wet	9.7E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.3E-08	1.1E-06	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	2E-02	mg/kg wet	3.7E-07	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.2E-07	4.3E-06	mg/kg-day	5.0E-04	mg/kg-day	8.6E-03
				alpha-Chlordane	4E-04	mg/kg wet	7.1E-09	mg/kg-day	1.3E+00	(mg/kg-day)-1	9.2E-09	8.2E-08	mg/kg-day	5.0E-04	mg/kg-day	1.6E-04
				Dieldrin	2E-04	mg/kg wet	3.6E-09	mg/kg-day	1.6E+01	(mg/kg-day)-1	5.8E-08	4.2E-08	mg/kg-day	5.0E-05	mg/kg-day	8.4E-04
				Endosulfan II	4E-06	mg/kg wet	6.8E-11	mg/kg-day	NA	(mg/kg-day)-1	---	7.9E-10	mg/kg-day	6.0E-03	mg/kg-day	1.3E-07
				Endrin aldehyde	8E-05	mg/kg wet	1.2E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-08	mg/kg-day	NA	mg/kg-day	---
				gamma-Chlordane	3E-04	mg/kg wet	4.1E-09	mg/kg-day	1.3E+00	(mg/kg-day)-1	5.3E-09	4.7E-08	mg/kg-day	5.0E-04	mg/kg-day	9.5E-05
				Total PCBs	3E-01	mg/kg wet	4.9E-06	mg/kg-day	5.0E+00	(mg/kg-day)-1	2.4E-05	5.7E-05	mg/kg-day	2.0E-05	mg/kg-day	2.8E+00
				TBT	4E-02	mg/kg wet	6.3E-07	mg/kg-day	NA	(mg/kg-day)-1	---	7.4E-06	mg/kg-day	3.0E-04	mg/kg-day	2.5E-02
			Exp. Route Total								5.9E-05					3.3E+00
		Exposure Point Total									5.9E-05					3.3E+00
	Exposure Medium Total										5.9E-05					3.3E+00
Medium Total											6.1E-05					3.3E+00
							Total of Receptor Risks Across All Media				6.1E-05	Total of Receptor Hazards Across All Media				3.3E+00

Table 7.1.RME. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	IR Site 20	Combined (Ingestion and Dermal)	Ag	1.72E-01	mg/kg dry	7.8E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.8E-08	mg/kg-day	5.0E-03	mg/kg-day	3.6E-06
				As	7.04E+00	mg/kg dry	3.4E-07	mg/kg-day	9.5E+00	(mg/kg-day)-1	3.2E-06	8.0E-07	mg/kg-day	3.0E-04	mg/kg-day	2.7E-03
				Cd	2.56E-01	mg/kg dry	1.1E-08	mg/kg-day	3.8E-01	(mg/kg-day)-1	4.3E-09	2.6E-08	mg/kg-day	5.0E-04	mg/kg-day	5.2E-05
				Cr	3.37E+02	mg/kg dry	1.5E-05	mg/kg-day	1.9E-01	(mg/kg-day)-1	2.8E-06	3.4E-05	mg/kg-day	3.0E-03	mg/kg-day	1.1E-02
				Cu	6.85E+01	mg/kg dry	3.1E-06	mg/kg-day	NA	(mg/kg-day)-1	---	7.2E-06	mg/kg-day	3.7E-02	mg/kg-day	2.0E-04
				Hg	2.45E+00	mg/kg dry	1.1E-07	mg/kg-day	NA	(mg/kg-day)-1	---	2.6E-07	mg/kg-day	1.0E-04	mg/kg-day	2.6E-03
				Ni	7.71E+01	mg/kg dry	3.5E-06	mg/kg-day	NA	(mg/kg-day)-1	---	8.2E-06	mg/kg-day	2.0E-02	mg/kg-day	4.1E-04
				Sb	1.03E+01	mg/kg dry	4.7E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-06	mg/kg-day	4.0E-04	mg/kg-day	2.7E-03
				Se	2.08E-01	mg/kg dry	9.4E-09	mg/kg-day	NA	(mg/kg-day)-1	---	2.2E-08	mg/kg-day	5.0E-03	mg/kg-day	4.4E-06
				Zn	1.21E+02	mg/kg dry	5.5E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-05	mg/kg-day	3.0E-01	mg/kg-day	4.3E-05
				Acenaphthene	7.62E-02	mg/kg dry	5.3E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-08	mg/kg-day	6.0E-02	mg/kg-day	2.1E-07
				Acenaphthylene	9.56E-02	mg/kg dry	6.7E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.6E-08	mg/kg-day	NA	mg/kg-day	---
				Anthracene	4.07E-01	mg/kg dry	2.8E-08	mg/kg-day	NA	(mg/kg-day)-1	---	6.6E-08	mg/kg-day	3.0E-01	mg/kg-day	2.2E-07
				Benzo(a)anthracene	5.87E-01	mg/kg dry	4.1E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	4.9E-08	9.5E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	7.28E-01	mg/kg dry	5.1E-08	mg/kg-day	1.2E+01	(mg/kg-day)-1	6.1E-07	1.2E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	6.24E-01	mg/kg dry	4.3E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	5.2E-08	1.0E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	4.34E-01	mg/kg dry	3.0E-08	mg/kg-day	NA	(mg/kg-day)-1	---	7.1E-08	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	4.61E-01	mg/kg dry	3.2E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	3.9E-08	7.5E-08	mg/kg-day	NA	mg/kg-day	---
				Chrysene	8.05E-01	mg/kg dry	5.6E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	6.7E-09	1.3E-07	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	1.23E-01	mg/kg dry	8.6E-09	mg/kg-day	4.1E+00	(mg/kg-day)-1	3.5E-08	2.0E-08	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	7.54E-01	mg/kg dry	5.3E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-07	mg/kg-day	4.0E-02	mg/kg-day	3.1E-06
				Fluorene	1.14E-01	mg/kg dry	7.9E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.9E-08	mg/kg-day	4.0E-02	mg/kg-day	4.6E-07
				Indeno(1,2,3-cd)pyrene	2.86E-01	mg/kg dry	2.0E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.4E-08	4.6E-08	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	2.21E-02	mg/kg dry	1.5E-09	mg/kg-day	NA	(mg/kg-day)-1	---	3.6E-09	mg/kg-day	4.0E-03	mg/kg-day	9.0E-07
				Naphthalene	3.96E-02	mg/kg dry	2.8E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	3.3E-10	6.4E-09	mg/kg-day	2.0E-02	mg/kg-day	3.2E-07
				Phenanthrene	4.77E-01	mg/kg dry	3.3E-08	mg/kg-day	NA	(mg/kg-day)-1	---	7.8E-08	mg/kg-day	NA	mg/kg-day	---
				Pyrene	1.37E+00	mg/kg dry	9.6E-08	mg/kg-day	NA	(mg/kg-day)-1	---	2.2E-07	mg/kg-day	3.0E-02	mg/kg-day	7.4E-06
				2,4'-DDD	3.84E-03	mg/kg dry	2.0E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	4.8E-11	4.7E-10	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	2.57E-04	mg/kg dry	1.3E-11	mg/kg-day	3.4E-01	(mg/kg-day)-1	4.6E-12	3.1E-11	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	4.14E-02	mg/kg dry	2.2E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	7.4E-10	5.1E-09	mg/kg-day	5.0E-04	mg/kg-day	1.0E-05
				4,4'-DDD	1.26E-02	mg/kg dry	6.6E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	1.6E-10	1.5E-09	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	4.78E-03	mg/kg dry	2.5E-10	mg/kg-day	3.4E-01	(mg/kg-day)-1	8.5E-11	5.8E-10	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	1.90E-01	mg/kg dry	9.9E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.4E-09	2.3E-08	mg/kg-day	5.0E-04	mg/kg-day	4.6E-05
				alpha-Chlordane	1.25E-03	mg/kg dry	6.5E-11	mg/kg-day	1.3E+00	(mg/kg-day)-1	8.5E-11	1.5E-10	mg/kg-day	5.0E-04	mg/kg-day	3.0E-07
				Dieldrin	9.80E-04	mg/kg dry	5.1E-11	mg/kg-day	1.6E+01	(mg/kg-day)-1	8.2E-10	1.2E-10	mg/kg-day	5.0E-05	mg/kg-day	2.4E-06
				Endosulfan II	4.67E-04	mg/kg dry	2.4E-11	mg/kg-day	NA	(mg/kg-day)-1	---	5.7E-11	mg/kg-day	6.0E-03	mg/kg-day	9.5E-09
				Endrin aldehyde	1.34E-02	mg/kg dry	7.0E-10	mg/kg-day	NA	(mg/kg-day)-1	---	1.6E-09	mg/kg-day	NA	mg/kg-day	5.5E-06
				gamma-Chlordane	2.15E-03	mg/kg dry	1.1E-10	mg/kg-day	1.3E+00	(mg/kg-day)-1	1.5E-10	2.6E-10	mg/kg-day	5.0E-04	mg/kg-day	5.2E-07
				Total PCBs	4.51E-01	mg/kg dry	3.1E-08	mg/kg-day	5.0E+00	(mg/kg-day)-1	1.6E-07	7.3E-08	mg/kg-day	2.0E-05	mg/kg-day	3.7E-03
				TBT	3.16E-02	mg/kg dry	1.9E-09	mg/kg-day	NA	(mg/kg-day)-1	---	4.5E-09	mg/kg-day	3.0E-04	mg/kg-day	1.5E-05
			Exp. Route Total								7.0E-06					2.4E-02
		Exposure Point Total									7.0E-06					2.4E-02
	Exposure Medium Total										7.0E-06					2.4E-02

Table 7.1.RME. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Reasonable Maximum Exposure, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk (a)	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value (a)	Units	Value	Units		Value	Units	Value	Units	
	Fish Tissue	Shellfish in IR Site 20	Ingestion	Ag	4.87E-03	mg/kg wet	1.6E-07	mg/kg-day	NA	(mg/kg-day)-1	---	3.8E-07	mg/kg-day	5.0E-03	mg/kg-day	7.5E-05
				As	2.47E+00	mg/kg wet	8.2E-05	mg/kg-day	9.5E+00	(mg/kg-day)-1	7.7E-04	1.9E-04	mg/kg-day	3.0E-04	mg/kg-day	6.4E-01
				Cd	4.94E-03	mg/kg wet	1.6E-07	mg/kg-day	3.8E-01	(mg/kg-day)-1	6.2E-08	3.8E-07	mg/kg-day	5.0E-04	mg/kg-day	7.6E-04
				Cr	1.06E+01	mg/kg wet	3.5E-04	mg/kg-day	1.9E-01	(mg/kg-day)-1	6.6E-05	8.2E-04	mg/kg-day	3.0E-03	mg/kg-day	2.7E-01
				Cu	1.72E+00	mg/kg wet	5.7E-05	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-04	mg/kg-day	3.7E-02	mg/kg-day	3.6E-03
				Hg	4.95E-03	mg/kg wet	1.6E-07	mg/kg-day	NA	(mg/kg-day)-1	---	3.8E-07	mg/kg-day	1.0E-04	mg/kg-day	3.8E-03
				Ni	1.38E-01	mg/kg wet	4.5E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-05	mg/kg-day	2.0E-02	mg/kg-day	5.3E-04
				Sb	3.28E-01	mg/kg wet	1.1E-05	mg/kg-day	NA	(mg/kg-day)-1	---	2.5E-05	mg/kg-day	4.0E-04	mg/kg-day	6.3E-02
				Se	1.29E-01	mg/kg wet	4.3E-06	mg/kg-day	NA	(mg/kg-day)-1	---	9.9E-06	mg/kg-day	5.0E-03	mg/kg-day	2.0E-03
				Zn	9.75E+00	mg/kg wet	3.2E-04	mg/kg-day	NA	(mg/kg-day)-1	---	7.5E-04	mg/kg-day	3.0E-01	mg/kg-day	2.5E-03
				Acenaphthene	4.54E-03	mg/kg wet	1.5E-07	mg/kg-day	NA	(mg/kg-day)-1	---	3.5E-07	mg/kg-day	6.0E-02	mg/kg-day	5.8E-06
				Acenaphthylene	1.02E-02	mg/kg wet	3.4E-07	mg/kg-day	NA	(mg/kg-day)-1	---	7.9E-07	mg/kg-day	NA	mg/kg-day	---
				Anthracene	3.08E-02	mg/kg wet	1.0E-06	mg/kg-day	NA	(mg/kg-day)-1	---	2.4E-06	mg/kg-day	3.0E-01	mg/kg-day	7.9E-06
				Benzo(a)anthracene	7.40E-02	mg/kg wet	2.4E-06	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.9E-06	5.7E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	8.33E-02	mg/kg wet	2.8E-06	mg/kg-day	1.2E+01	(mg/kg-day)-1	3.3E-05	6.4E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	7.91E-02	mg/kg wet	2.6E-06	mg/kg-day	1.2E+00	(mg/kg-day)-1	3.1E-06	6.1E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	1.84E-02	mg/kg wet	6.1E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.4E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	4.97E-02	mg/kg wet	1.6E-06	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.0E-06	3.8E-06	mg/kg-day	NA	mg/kg-day	---
				Chrysene	8.03E-02	mg/kg wet	2.7E-06	mg/kg-day	1.2E-01	(mg/kg-day)-1	3.2E-07	6.2E-06	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	3.58E-03	mg/kg wet	1.2E-07	mg/kg-day	4.1E+00	(mg/kg-day)-1	4.9E-07	2.8E-07	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	1.74E-01	mg/kg wet	5.8E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-05	mg/kg-day	4.0E-02	mg/kg-day	3.4E-04
				Fluorene	5.21E-03	mg/kg wet	1.7E-07	mg/kg-day	NA	(mg/kg-day)-1	---	4.0E-07	mg/kg-day	4.0E-02	mg/kg-day	1.0E-05
				Indeno(1,2,3-cd)pyrene	8.77E-03	mg/kg wet	2.9E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	3.5E-07	6.8E-07	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	NA	mg/kg wet	NA	mg/kg-day	NA	(mg/kg-day)-1	---	NA	mg/kg-day	4.0E-03	mg/kg-day	NA
				Naphthalene	1.27E-02	mg/kg wet	4.2E-07	mg/kg-day	1.2E-01	(mg/kg-day)-1	5.0E-08	9.8E-07	mg/kg-day	2.0E-02	mg/kg-day	4.9E-05
				Phenanthrene	1.45E-02	mg/kg wet	4.8E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-06	mg/kg-day	NA	mg/kg-day	---
				Pyrene	4.58E-01	mg/kg wet	1.5E-05	mg/kg-day	NA	(mg/kg-day)-1	---	3.5E-05	mg/kg-day	3.0E-02	mg/kg-day	1.2E-03
				2,4'-DDD	8.64E-04	mg/kg wet	2.9E-08	mg/kg-day	2.4E-01	(mg/kg-day)-1	6.9E-09	6.7E-08	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	4.91E-05	mg/kg wet	1.6E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	5.5E-10	3.8E-09	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	1.93E-02	mg/kg wet	6.4E-07	mg/kg-day	3.4E-01	(mg/kg-day)-1	2.2E-07	1.5E-06	mg/kg-day	5.0E-04	mg/kg-day	3.0E-03
				4,4'-DDD	3.30E-03	mg/kg wet	1.1E-07	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.6E-08	2.5E-07	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	2.41E-03	mg/kg wet	8.0E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	2.7E-08	1.9E-07	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	3.43E-02	mg/kg wet	1.1E-06	mg/kg-day	3.4E-01	(mg/kg-day)-1	3.9E-07	2.6E-06	mg/kg-day	5.0E-04	mg/kg-day	5.3E-03
				alpha-Chlordane	1.31E-04	mg/kg wet	4.3E-09	mg/kg-day	1.3E+00	(mg/kg-day)-1	5.6E-09	1.0E-08	mg/kg-day	5.0E-04	mg/kg-day	2.0E-05
				Dieldrin	1.06E-03	mg/kg wet	3.5E-08	mg/kg-day	1.6E+01	(mg/kg-day)-1	5.6E-07	8.2E-08	mg/kg-day	5.0E-05	mg/kg-day	1.6E-03
				Endosulfan II	NA	mg/kg wet	NA	mg/kg-day	NA	(mg/kg-day)-1	---	NA	mg/kg-day	6.0E-03	mg/kg-day	NA
				Endrin aldehyde	NA	mg/kg wet	NA	mg/kg-day	NA	(mg/kg-day)-1	---	NA	mg/kg-day	NA	mg/kg-day	---
				gamma-Chlordane	NA	mg/kg wet	NA	mg/kg-day	1.3E+00	(mg/kg-day)-1	NA	NA	mg/kg-day	5.0E-04	mg/kg-day	NA
				Total PCBs	1.03E-01	mg/kg wet	3.4E-06	mg/kg-day	5.0E+00	(mg/kg-day)-1	1.7E-05	7.9E-06	mg/kg-day	2.0E-05	mg/kg-day	4.0E-01
				TBT	4.63E-03	mg/kg wet	1.3E-07	mg/kg-day	NA	(mg/kg-day)-1	---	2.9E-07	mg/kg-day	3.0E-04	mg/kg-day	9.7E-04
			Exp. Route Total								9.0E-04					1.4E+00
		Exposure Point Total									9.0E-04					1.4E+00

Table 7.1.RME. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Reasonable Maximum Exposure, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk (a)	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value (a)	Units	Value	Units		Value	Units	Value	Units	
		Forage Fish in IR Site	Ingestion	Ag	7.74E-04	mg/kg wet	5.1E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-06	mg/kg-day	5.0E-03	mg/kg-day	2.4E-04
				As	2.10E-01	mg/kg wet	1.4E-04	mg/kg-day	9.5E+00	(mg/kg-day)-1	1.3E-03	3.2E-04	mg/kg-day	3.0E-04	mg/kg-day	1.1E+00
				Cd	9.99E-04	mg/kg wet	6.6E-07	mg/kg-day	3.8E-01	(mg/kg-day)-1	2.5E-07	1.5E-06	mg/kg-day	5.0E-04	mg/kg-day	3.1E-03
				Cr	8.76E-01	mg/kg wet	5.8E-04	mg/kg-day	1.9E-01	(mg/kg-day)-1	1.1E-04	1.4E-03	mg/kg-day	3.0E-03	mg/kg-day	4.5E-01
				Cu	9.93E-01	mg/kg wet	6.6E-04	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-03	mg/kg-day	3.7E-02	mg/kg-day	4.1E-02
				Hg	1.09E-01	mg/kg wet	7.2E-05	mg/kg-day	NA	(mg/kg-day)-1	---	1.7E-04	mg/kg-day	1.0E-04	mg/kg-day	1.7E+00
				Ni	8.48E-02	mg/kg wet	5.6E-05	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-04	mg/kg-day	2.0E-02	mg/kg-day	6.5E-03
				Sb	1.03E-02	mg/kg wet	6.8E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.6E-05	mg/kg-day	4.0E-04	mg/kg-day	4.0E-02
				Se	7.16E-02	mg/kg wet	4.7E-05	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-04	mg/kg-day	5.0E-03	mg/kg-day	2.2E-02
				Zn	7.81E+00	mg/kg wet	5.2E-03	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-02	mg/kg-day	3.0E-01	mg/kg-day	4.0E-02
				Acenaphthene	2.02E-03	mg/kg wet	1.3E-06	mg/kg-day	NA	(mg/kg-day)-1	---	3.1E-06	mg/kg-day	6.0E-02	mg/kg-day	5.2E-05
				Acenaphthylene	1.34E-04	mg/kg wet	8.9E-08	mg/kg-day	NA	(mg/kg-day)-1	---	2.1E-07	mg/kg-day	NA	mg/kg-day	---
				Anthracene	1.95E-03	mg/kg wet	1.3E-06	mg/kg-day	NA	(mg/kg-day)-1	---	3.0E-06	mg/kg-day	3.0E-01	mg/kg-day	1.0E-05
				Benzo(a)anthracene	1.11E-03	mg/kg wet	7.4E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	8.8E-07	1.7E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	1.02E-03	mg/kg wet	6.7E-07	mg/kg-day	1.2E+01	(mg/kg-day)-1	8.1E-06	1.6E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	9.36E-04	mg/kg wet	6.2E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	7.4E-07	1.4E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	7.38E-04	mg/kg wet	4.9E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.1E-06	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	1.20E-03	mg/kg wet	7.9E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	9.5E-07	1.9E-06	mg/kg-day	NA	mg/kg-day	---
				Chrysene	3.14E-03	mg/kg wet	2.1E-06	mg/kg-day	1.2E-01	(mg/kg-day)-1	2.5E-07	4.8E-06	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	7.38E-05	mg/kg wet	4.9E-08	mg/kg-day	4.1E+00	(mg/kg-day)-1	2.0E-07	1.1E-07	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	5.20E-03	mg/kg wet	3.4E-06	mg/kg-day	NA	(mg/kg-day)-1	---	8.0E-06	mg/kg-day	4.0E-02	mg/kg-day	2.0E-04
				Fluorene	1.65E-03	mg/kg wet	1.1E-06	mg/kg-day	NA	(mg/kg-day)-1	---	2.5E-06	mg/kg-day	4.0E-02	mg/kg-day	6.4E-05
				Indeno(1,2,3-cd)pyrene	3.71E-04	mg/kg wet	2.5E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.9E-07	5.7E-07	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	9.73E-05	mg/kg wet	6.4E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-07	mg/kg-day	4.0E-03	mg/kg-day	3.8E-05
				Naphthalene	2.89E-04	mg/kg wet	1.9E-07	mg/kg-day	1.2E-01	(mg/kg-day)-1	2.3E-08	4.5E-07	mg/kg-day	2.0E-02	mg/kg-day	2.2E-05
				Phenanthrene	8.96E-03	mg/kg wet	5.9E-06	mg/kg-day	NA	(mg/kg-day)-1	---	1.4E-05	mg/kg-day	NA	mg/kg-day	---
				Pyrene	4.66E-03	mg/kg wet	3.1E-06	mg/kg-day	NA	(mg/kg-day)-1	---	7.2E-06	mg/kg-day	3.0E-02	mg/kg-day	2.4E-04
				2,4'-DDD	1.57E-05	mg/kg wet	1.0E-08	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.5E-09	2.4E-08	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	6.67E-05	mg/kg wet	4.4E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.5E-08	1.0E-07	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	2.86E-03	mg/kg wet	1.9E-06	mg/kg-day	3.4E-01	(mg/kg-day)-1	6.4E-07	4.4E-06	mg/kg-day	5.0E-04	mg/kg-day	8.8E-03
				4,4'-DDD	6.49E-03	mg/kg wet	4.3E-06	mg/kg-day	2.4E-01	(mg/kg-day)-1	1.0E-06	1.0E-05	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	6.06E-03	mg/kg wet	4.0E-06	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.4E-06	9.3E-06	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	2.29E-02	mg/kg wet	1.5E-05	mg/kg-day	3.4E-01	(mg/kg-day)-1	5.2E-06	3.5E-05	mg/kg-day	5.0E-04	mg/kg-day	7.1E-02
				alpha-Chlordane	4.41E-04	mg/kg wet	2.9E-07	mg/kg-day	1.3E+00	(mg/kg-day)-1	3.8E-07	6.8E-07	mg/kg-day	5.0E-04	mg/kg-day	1.4E-03
				Dieldrin	2.25E-04	mg/kg wet	1.5E-07	mg/kg-day	1.6E+01	(mg/kg-day)-1	2.4E-06	3.5E-07	mg/kg-day	5.0E-05	mg/kg-day	6.9E-03
				Endosulfan II	4.25E-06	mg/kg wet	2.8E-09	mg/kg-day	NA	(mg/kg-day)-1	---	6.6E-09	mg/kg-day	6.0E-03	mg/kg-day	1.1E-06
				Endrin aldehyde	7.79E-05	mg/kg wet	5.2E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-07	mg/kg-day	NA	mg/kg-day	---
				gamma-Chlordane	2.54E-04	mg/kg wet	1.7E-07	mg/kg-day	1.3E+00	(mg/kg-day)-1	2.2E-07	3.9E-07	mg/kg-day	5.0E-04	mg/kg-day	7.8E-04
				Total PCBs	3.04E-01	mg/kg wet	2.0E-04	mg/kg-day	5.0E+00	(mg/kg-day)-1	1.0E-03	4.7E-04	mg/kg-day	2.0E-05	mg/kg-day	2.3E+01
				TBT	3.97E-02	mg/kg wet	2.6E-05	mg/kg-day	NA	(mg/kg-day)-1	---	6.1E-05	mg/kg-day	3.0E-04	mg/kg-day	2.0E-01
			Exp. Route Total								2.4E-03					2.7E+01
		Exposure Point Total									2.4E-03					2.7E+01
	Exposure Medium Total										3.3E-03					2.9E+01
Medium Total											3.4E-03					2.9E+01
							Total of Receptor Risks Across All Media				3.4E-03					2.9E+01

Table 7.2.RME. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	IR Site 20	Combined (Ingestion and Dermal)	Ag	1.72E-01	mg/kg dry	1.4E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.7E-07	mg/kg-day	5.0E-03	mg/kg-day	3.4E-05
				As	7.04E+00	mg/kg dry	6.2E-07	mg/kg-day	9.5E+00	(mg/kg-day)-1	5.9E-06	7.2E-06	mg/kg-day	3.0E-04	mg/kg-day	2.4E-02
				Cd	2.56E-01	mg/kg dry	2.1E-08	mg/kg-day	3.8E-01	(mg/kg-day)-1	7.9E-09	2.4E-07	mg/kg-day	5.0E-04	mg/kg-day	4.9E-04
				Cr	3.37E+02	mg/kg dry	2.7E-05	mg/kg-day	1.9E-01	(mg/kg-day)-1	5.2E-06	3.2E-04	mg/kg-day	3.0E-03	mg/kg-day	1.1E-01
				Cu	6.85E+01	mg/kg dry	5.7E-06	mg/kg-day	NA	(mg/kg-day)-1	---	6.7E-05	mg/kg-day	3.7E-02	mg/kg-day	1.8E-03
				Hg	2.45E+00	mg/kg dry	2.1E-07	mg/kg-day	NA	(mg/kg-day)-1	---	2.4E-06	mg/kg-day	1.0E-04	mg/kg-day	2.4E-02
				Ni	7.71E+01	mg/kg dry	6.5E-06	mg/kg-day	NA	(mg/kg-day)-1	---	7.5E-05	mg/kg-day	2.0E-02	mg/kg-day	3.8E-03
				Sb	1.03E+01	mg/kg dry	8.7E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.0E-05	mg/kg-day	4.0E-04	mg/kg-day	2.5E-02
				Se	2.08E-01	mg/kg dry	1.7E-08	mg/kg-day	NA	(mg/kg-day)-1	---	2.0E-07	mg/kg-day	5.0E-03	mg/kg-day	4.1E-05
				Zn	1.21E+02	mg/kg dry	1.0E-05	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-04	mg/kg-day	3.0E-01	mg/kg-day	3.9E-04
				Acenaphthene	7.62E-02	mg/kg dry	8.8E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.0E-07	mg/kg-day	6.0E-02	mg/kg-day	1.7E-06
				Acenaphthylene	9.56E-02	mg/kg dry	1.1E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.3E-07	mg/kg-day	NA	mg/kg-day	---
				Anthracene	4.07E-01	mg/kg dry	4.7E-08	mg/kg-day	NA	(mg/kg-day)-1	---	5.5E-07	mg/kg-day	3.0E-01	mg/kg-day	1.8E-06
				Benzo(a)anthracene	5.87E-01	mg/kg dry	6.8E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	8.1E-08	7.9E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	7.28E-01	mg/kg dry	8.4E-08	mg/kg-day	1.2E+01	(mg/kg-day)-1	1.0E-06	9.8E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	6.24E-01	mg/kg dry	7.2E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	8.7E-08	8.4E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	4.34E-01	mg/kg dry	5.0E-08	mg/kg-day	NA	(mg/kg-day)-1	---	5.9E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	4.61E-01	mg/kg dry	5.3E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	6.4E-08	6.2E-07	mg/kg-day	NA	mg/kg-day	---
				Chrysene	8.05E-01	mg/kg dry	9.3E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	1.1E-08	1.1E-06	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	1.23E-01	mg/kg dry	1.4E-08	mg/kg-day	4.1E+00	(mg/kg-day)-1	5.8E-08	1.7E-07	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	7.54E-01	mg/kg dry	8.7E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.0E-06	mg/kg-day	4.0E-02	mg/kg-day	2.5E-05
				Fluorene	1.14E-01	mg/kg dry	1.3E-08	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-07	mg/kg-day	4.0E-02	mg/kg-day	3.8E-06
				Indeno(1,2,3-cd)pyrene	2.86E-01	mg/kg dry	3.3E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	4.0E-08	3.9E-07	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	2.21E-02	mg/kg dry	2.6E-09	mg/kg-day	NA	(mg/kg-day)-1	---	3.0E-08	mg/kg-day	4.0E-03	mg/kg-day	7.5E-06
				Naphthalene	3.96E-02	mg/kg dry	4.6E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	5.5E-10	5.3E-08	mg/kg-day	2.0E-02	mg/kg-day	2.7E-06
				Phenanthrene	4.77E-01	mg/kg dry	5.5E-08	mg/kg-day	NA	(mg/kg-day)-1	---	6.4E-07	mg/kg-day	NA	mg/kg-day	---
				Pyrene	1.37E+00	mg/kg dry	1.6E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.8E-06	mg/kg-day	3.0E-02	mg/kg-day	6.2E-05
				2,4'-DDD	3.84E-03	mg/kg dry	3.6E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	8.5E-11	4.2E-09	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	2.57E-04	mg/kg dry	2.4E-11	mg/kg-day	3.4E-01	(mg/kg-day)-1	8.1E-12	2.8E-10	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	4.14E-02	mg/kg dry	3.8E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.3E-09	4.5E-08	mg/kg-day	5.0E-04	mg/kg-day	9.0E-05
				4,4'-DDD	1.26E-02	mg/kg dry	1.2E-09	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.8E-10	1.4E-08	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	4.78E-03	mg/kg dry	4.4E-10	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.5E-10	5.2E-09	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	1.90E-01	mg/kg dry	1.8E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	6.0E-09	2.1E-07	mg/kg-day	5.0E-04	mg/kg-day	4.1E-04
				alpha-Chlordane	1.25E-03	mg/kg dry	1.2E-10	mg/kg-day	1.3E+00	(mg/kg-day)-1	1.5E-10	1.4E-09	mg/kg-day	5.0E-04	mg/kg-day	2.7E-06
				Dieldrin	9.80E-04	mg/kg dry	9.1E-11	mg/kg-day	1.6E+01	(mg/kg-day)-1	1.5E-09	1.1E-09	mg/kg-day	5.0E-05	mg/kg-day	2.1E-05
				Endosulfan II	4.67E-04	mg/kg dry	4.3E-11	mg/kg-day	NA	(mg/kg-day)-1	---	5.1E-10	mg/kg-day	6.0E-03	mg/kg-day	8.4E-08
				Endrin aldehyde	1.34E-02	mg/kg dry	1.2E-09	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-08	mg/kg-day	NA	mg/kg-day	4.8E-05
				gamma-Chlordane	2.15E-03	mg/kg dry	2.0E-10	mg/kg-day	1.3E+00	(mg/kg-day)-1	2.6E-10	2.3E-09	mg/kg-day	5.0E-04	mg/kg-day	4.7E-06
				Total PCBs	4.51E-01	mg/kg dry	5.2E-08	mg/kg-day	5.0E+00	(mg/kg-day)-1	2.6E-07	6.1E-07	mg/kg-day	2.0E-05	mg/kg-day	3.0E-02
				TBT	3.16E-02	mg/kg dry	3.3E-09	mg/kg-day	NA	(mg/kg-day)-1	---	3.8E-08	mg/kg-day	3.0E-04	mg/kg-day	1.3E-04
			Exp. Route Total								1.3E-05					2.2E-01
		Exposure Point Total									1.3E-05					2.2E-01
	Exposure Medium Total										1.3E-05					2.2E-01

Table 7.2.RME. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Reasonable Maximum Exposure, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Fish Tissue	Forage Fish in IR Site 20	Ingestion	Ag	7.74E-04	mg/kg wet	4.9E-08	mg/kg-day	NA	(mg/kg-day)-1	---	5.7E-07	mg/kg-day	5.0E-03	mg/kg-day	1.1E-04
				As	2.10E-01	mg/kg wet	1.3E-05	mg/kg-day	9.5E+00	(mg/kg-day)-1	1.2E-04	1.5E-04	mg/kg-day	3.0E-04	mg/kg-day	5.1E-01
				Cd	9.99E-04	mg/kg wet	6.3E-08	mg/kg-day	3.8E-01	(mg/kg-day)-1	2.4E-08	7.3E-07	mg/kg-day	5.0E-04	mg/kg-day	1.5E-03
				Cr	8.76E-01	mg/kg wet	5.5E-05	mg/kg-day	1.9E-01	(mg/kg-day)-1	1.0E-05	6.4E-04	mg/kg-day	3.0E-03	mg/kg-day	2.1E-01
				Cu	9.93E-01	mg/kg wet	6.2E-05	mg/kg-day	NA	(mg/kg-day)-1	---	7.3E-04	mg/kg-day	3.7E-02	mg/kg-day	2.0E-02
				Hg	1.09E-01	mg/kg wet	6.8E-06	mg/kg-day	NA	(mg/kg-day)-1	---	8.0E-05	mg/kg-day	1.0E-04	mg/kg-day	8.0E-01
				Ni	8.48E-02	mg/kg wet	5.3E-06	mg/kg-day	NA	(mg/kg-day)-1	---	6.2E-05	mg/kg-day	2.0E-02	mg/kg-day	3.1E-03
				Sb	1.03E-02	mg/kg wet	6.5E-07	mg/kg-day	NA	(mg/kg-day)-1	---	7.6E-06	mg/kg-day	4.0E-04	mg/kg-day	1.9E-02
				Se	7.16E-02	mg/kg wet	4.5E-06	mg/kg-day	NA	(mg/kg-day)-1	---	5.3E-05	mg/kg-day	5.0E-03	mg/kg-day	1.1E-02
				Zn	7.81E+00	mg/kg wet	4.9E-04	mg/kg-day	NA	(mg/kg-day)-1	---	5.7E-03	mg/kg-day	3.0E-01	mg/kg-day	1.9E-02
				Acenaphthene	2.02E-03	mg/kg wet	1.3E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.5E-06	mg/kg-day	6.0E-02	mg/kg-day	2.5E-05
				Acenaphthylene	1.34E-04	mg/kg wet	8.4E-09	mg/kg-day	NA	(mg/kg-day)-1	---	9.8E-08	mg/kg-day	NA	mg/kg-day	---
				Anthracene	1.95E-03	mg/kg wet	1.2E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.4E-06	mg/kg-day	3.0E-01	mg/kg-day	4.8E-06
				Benzo(a)anthracene	1.11E-03	mg/kg wet	7.0E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	8.4E-08	8.2E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(a)pyrene	1.02E-03	mg/kg wet	6.4E-08	mg/kg-day	1.2E+01	(mg/kg-day)-1	7.7E-07	7.5E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(b)fluoranthene	9.36E-04	mg/kg wet	5.9E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	7.1E-08	6.9E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(g,h,i)perylene	7.38E-04	mg/kg wet	4.6E-08	mg/kg-day	NA	(mg/kg-day)-1	---	5.4E-07	mg/kg-day	NA	mg/kg-day	---
				Benzo(k)fluoranthene	1.20E-03	mg/kg wet	7.5E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	9.0E-08	8.8E-07	mg/kg-day	NA	mg/kg-day	---
				Chrysene	3.14E-03	mg/kg wet	2.0E-07	mg/kg-day	1.2E-01	(mg/kg-day)-1	2.4E-08	2.3E-06	mg/kg-day	NA	mg/kg-day	---
				Dibenz(a,h)anthracene	7.38E-05	mg/kg wet	4.6E-09	mg/kg-day	4.1E+00	(mg/kg-day)-1	1.9E-08	5.4E-08	mg/kg-day	NA	mg/kg-day	---
				Fluoranthene	5.20E-03	mg/kg wet	3.3E-07	mg/kg-day	NA	(mg/kg-day)-1	---	3.8E-06	mg/kg-day	4.0E-02	mg/kg-day	9.5E-05
				Fluorene	1.65E-03	mg/kg wet	1.0E-07	mg/kg-day	NA	(mg/kg-day)-1	---	1.2E-06	mg/kg-day	4.0E-02	mg/kg-day	3.0E-05
				Indeno(1,2,3-cd)pyrene	3.71E-04	mg/kg wet	2.3E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.8E-08	2.7E-07	mg/kg-day	NA	mg/kg-day	---
				2-Methylnaphthalene	9.73E-05	mg/kg wet	6.1E-09	mg/kg-day	NA	(mg/kg-day)-1	---	7.1E-08	mg/kg-day	4.0E-03	mg/kg-day	1.8E-05
				Naphthalene	2.89E-04	mg/kg wet	1.8E-08	mg/kg-day	1.2E-01	(mg/kg-day)-1	2.2E-09	2.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.1E-05
				Phenanthrene	8.96E-03	mg/kg wet	5.6E-07	mg/kg-day	NA	(mg/kg-day)-1	---	6.6E-06	mg/kg-day	NA	mg/kg-day	---
				Pyrene	4.66E-03	mg/kg wet	2.9E-07	mg/kg-day	NA	(mg/kg-day)-1	---	3.4E-06	mg/kg-day	3.0E-02	mg/kg-day	1.1E-04
				2,4'-DDD	1.57E-05	mg/kg wet	9.9E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.4E-10	1.2E-08	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDE	6.67E-05	mg/kg wet	4.2E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.4E-09	4.9E-08	mg/kg-day	NA	mg/kg-day	---
				2,4'-DDT	2.86E-03	mg/kg wet	1.8E-07	mg/kg-day	3.4E-01	(mg/kg-day)-1	6.1E-08	2.1E-06	mg/kg-day	5.0E-04	mg/kg-day	4.2E-03
				4,4'-DDD	6.49E-03	mg/kg wet	4.1E-07	mg/kg-day	2.4E-01	(mg/kg-day)-1	9.8E-08	4.8E-06	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDE	6.06E-03	mg/kg wet	3.8E-07	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.3E-07	4.4E-06	mg/kg-day	NA	mg/kg-day	---
				4,4'-DDT	2.29E-02	mg/kg wet	1.4E-06	mg/kg-day	3.4E-01	(mg/kg-day)-1	4.9E-07	1.7E-05	mg/kg-day	5.0E-04	mg/kg-day	3.4E-02
				alpha-Chlordane	4.41E-04	mg/kg wet	2.8E-08	mg/kg-day	1.3E+00	(mg/kg-day)-1	3.6E-08	3.2E-07	mg/kg-day	5.0E-04	mg/kg-day	6.5E-04
				Dieldrin	2.25E-04	mg/kg wet	1.4E-08	mg/kg-day	1.6E+01	(mg/kg-day)-1	2.3E-07	1.6E-07	mg/kg-day	5.0E-05	mg/kg-day	3.3E-03
				Endosulfan II	4.25E-06	mg/kg wet	2.7E-10	mg/kg-day	NA	(mg/kg-day)-1	---	3.1E-09	mg/kg-day	6.0E-03	mg/kg-day	5.2E-07
				Endrin aldehyde	7.79E-05	mg/kg wet	4.9E-09	mg/kg-day	NA	(mg/kg-day)-1	---	5.7E-08	mg/kg-day	NA	mg/kg-day	---
				gamma-Chlordane	2.54E-04	mg/kg wet	1.6E-08	mg/kg-day	1.3E+00	(mg/kg-day)-1	2.1E-08	1.9E-07	mg/kg-day	5.0E-04	mg/kg-day	3.7E-04
				Total PCBs	3.04E-01	mg/kg wet	1.9E-05	mg/kg-day	5.0E+00	(mg/kg-day)-1	9.6E-05	2.2E-04	mg/kg-day	2.0E-05	mg/kg-day	1.1E+01
				TBT	3.97E-02	mg/kg wet	2.5E-06	mg/kg-day	NA	(mg/kg-day)-1	---	2.9E-05	mg/kg-day	3.0E-04	mg/kg-day	9.7E-02
			Exp. Route Total								2.3E-04					1.3E+01
		Exposure Point Total									2.3E-04					1.3E+01
	Exposure Medium										2.3E-04					1.3E+01
Medium Total											2.5E-04					1.3E+01
							Total of Receptor Risks Across All Media				2.5E-04	Total of Receptor Hazards Across All Media				1.3E+01

Table 7.3.RME. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult/Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	IR Site 20	Combined (Ingestion and Dermal)	Ag	1.72E-01	mg/kg dry	2.1E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	5.0E-03	mg/kg-day	N/A
				As	7.04E+00	mg/kg dry	9.0E-07	mg/kg-day	9.5E+00	(mg/kg-day)-1	8.5E-06	N/A	mg/kg-day	3.0E-04	mg/kg-day	N/A
				Cd	2.56E-01	mg/kg dry	3.0E-08	mg/kg-day	3.8E-01	(mg/kg-day)-1	1.1E-08	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				Cr	3.37E+02	mg/kg dry	3.9E-05	mg/kg-day	1.9E-01	(mg/kg-day)-1	7.4E-06	N/A	mg/kg-day	3.0E-03	mg/kg-day	N/A
				Cu	6.85E+01	mg/kg dry	8.2E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.7E-02	mg/kg-day	N/A
				Hg	2.45E+00	mg/kg dry	2.9E-07	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	1.0E-04	mg/kg-day	N/A
				Ni	7.71E+01	mg/kg dry	9.3E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	2.0E-02	mg/kg-day	N/A
				Sb	1.03E+01	mg/kg dry	1.2E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-04	mg/kg-day	N/A
				Se	2.08E-01	mg/kg dry	2.5E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	5.0E-03	mg/kg-day	N/A
				Zn	1.21E+02	mg/kg dry	1.5E-05	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-01	mg/kg-day	N/A
				Acenaphthene	7.62E-02	mg/kg dry	1.3E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	6.0E-02	mg/kg-day	N/A
				Acenaphthylene	9.56E-02	mg/kg dry	1.6E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Anthracene	4.07E-01	mg/kg dry	7.0E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-01	mg/kg-day	N/A
				Benzo(a)anthracene	5.87E-01	mg/kg dry	1.0E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.2E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(a)pyrene	7.28E-01	mg/kg dry	1.2E-07	mg/kg-day	1.2E+01	(mg/kg-day)-1	1.5E-06	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(b)fluoranthene	6.24E-01	mg/kg dry	1.1E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	1.3E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(g,h,i)perylene	4.34E-01	mg/kg dry	7.4E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(k)fluoranthene	4.61E-01	mg/kg dry	7.9E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	9.5E-08	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Chrysene	8.05E-01	mg/kg dry	1.4E-07	mg/kg-day	1.2E-01	(mg/kg-day)-1	1.7E-08	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Dibenz(a,h)anthracene	1.23E-01	mg/kg dry	2.1E-08	mg/kg-day	4.1E+00	(mg/kg-day)-1	8.6E-08	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Fluoranthene	7.54E-01	mg/kg dry	1.3E-07	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-02	mg/kg-day	N/A
				Fluorene	1.14E-01	mg/kg dry	2.0E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-02	mg/kg-day	N/A
				Indeno(1,2,3-cd)pyrene	2.86E-01	mg/kg dry	4.9E-08	mg/kg-day	1.2E+00	(mg/kg-day)-1	5.9E-08	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				2-Methylnaphthalene	2.21E-02	mg/kg dry	3.8E-09	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-03	mg/kg-day	N/A
				Naphthalene	3.96E-02	mg/kg dry	6.8E-09	mg/kg-day	1.2E-01	(mg/kg-day)-1	8.1E-10	N/A	mg/kg-day	2.0E-02	mg/kg-day	N/A
				Phenanthrene	4.77E-01	mg/kg dry	8.2E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Pyrene	1.37E+00	mg/kg dry	2.3E-07	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-02	mg/kg-day	N/A
				2,4'-DDD	3.84E-03	mg/kg dry	5.2E-10	mg/kg-day	2.4E-01	(mg/kg-day)-1	1.2E-10	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				2,4'-DDE	2.57E-04	mg/kg dry	3.5E-11	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.2E-11	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				2,4'-DDT	4.14E-02	mg/kg dry	5.6E-09	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.9E-09	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				4,4'-DDD	1.26E-02	mg/kg dry	1.7E-09	mg/kg-day	2.4E-01	(mg/kg-day)-1	4.1E-10	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				4,4'-DDE	4.78E-03	mg/kg dry	6.4E-10	mg/kg-day	3.4E-01	(mg/kg-day)-1	2.2E-10	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				4,4'-DDT	1.90E-01	mg/kg dry	2.6E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	8.7E-09	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				alpha-Chlordane	1.25E-03	mg/kg dry	1.7E-10	mg/kg-day	1.3E+00	(mg/kg-day)-1	2.2E-10	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				Dieldrin	9.80E-04	mg/kg dry	1.3E-10	mg/kg-day	1.6E+01	(mg/kg-day)-1	2.1E-09	N/A	mg/kg-day	5.0E-05	mg/kg-day	N/A
				Endosulfan II	4.67E-04	mg/kg dry	6.3E-11	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	6.0E-03	mg/kg-day	N/A
				Endrin aldehyde	1.34E-02	mg/kg dry	1.8E-09	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				gamma-Chlordane	2.15E-03	mg/kg dry	2.9E-10	mg/kg-day	1.3E+00	(mg/kg-day)-1	3.8E-10	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				Total PCBs	4.51E-01	mg/kg dry	7.7E-08	mg/kg-day	5.0E+00	(mg/kg-day)-1	3.9E-07	N/A	mg/kg-day	2.0E-05	mg/kg-day	N/A
				TBT	3.16E-02	mg/kg dry	4.8E-09	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-04	mg/kg-day	N/A
			Exp. Route Total								1.8E-05					N/A
		Exposure Point Total									1.8E-05					N/A
	Exposure Medium Total										1.8E-05					N/A

Table 7.3.RME. Calculation of Chemical Cancer Risks and Non-Cancer Hazards, Reasonable Maximum Exposure, IR Site 20

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Fish Tissue	Forage Fish in IR	Ingestion	Ag	7.74E-04	mg/kg wet	4.6E-07	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	5.0E-03	mg/kg-day	N/A
				As	2.10E-01	mg/kg wet	1.2E-04	mg/kg-day	9.5E+00	(mg/kg-day)-1	1.2E-03	N/A	mg/kg-day	3.0E-04	mg/kg-day	N/A
				Cd	9.99E-04	mg/kg wet	5.9E-07	mg/kg-day	3.8E-01	(mg/kg-day)-1	2.2E-07	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				Cr	8.76E-01	mg/kg wet	5.2E-04	mg/kg-day	1.9E-01	(mg/kg-day)-1	9.8E-05	N/A	mg/kg-day	3.0E-03	mg/kg-day	N/A
				Cu	9.93E-01	mg/kg wet	5.9E-04	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.7E-02	mg/kg-day	N/A
				Hg	1.09E-01	mg/kg wet	6.4E-05	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	1.0E-04	mg/kg-day	N/A
				Ni	8.48E-02	mg/kg wet	5.0E-05	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	2.0E-02	mg/kg-day	N/A
				Sb	1.03E-02	mg/kg wet	6.1E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-04	mg/kg-day	N/A
				Se	7.16E-02	mg/kg wet	4.2E-05	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	5.0E-03	mg/kg-day	N/A
				Zn	7.81E+00	mg/kg wet	4.6E-03	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-01	mg/kg-day	N/A
				Acenaphthene	2.02E-03	mg/kg wet	1.2E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	6.0E-02	mg/kg-day	N/A
				Acenaphthylene	1.34E-04	mg/kg wet	7.9E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Anthracene	1.95E-03	mg/kg wet	1.2E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-01	mg/kg-day	N/A
				Benzo(a)anthracene	1.11E-03	mg/kg wet	6.6E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	7.9E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(a)pyrene	1.02E-03	mg/kg wet	6.0E-07	mg/kg-day	1.2E+01	(mg/kg-day)-1	7.2E-06	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(b)fluoranthene	9.36E-04	mg/kg wet	5.5E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	6.6E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(g,h,i)perylene	7.38E-04	mg/kg wet	4.4E-07	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Benzo(k)fluoranthene	1.20E-03	mg/kg wet	7.1E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	8.5E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Chrysene	3.14E-03	mg/kg wet	1.9E-06	mg/kg-day	1.2E-01	(mg/kg-day)-1	2.2E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Dibenz(a,h)anthracene	7.38E-05	mg/kg wet	4.4E-08	mg/kg-day	4.1E+00	(mg/kg-day)-1	1.8E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Fluoranthene	5.20E-03	mg/kg wet	3.1E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-02	mg/kg-day	N/A
				Fluorene	1.65E-03	mg/kg wet	9.8E-07	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-02	mg/kg-day	N/A
				Indeno(1,2,3-cd)pyrene	3.71E-04	mg/kg wet	2.2E-07	mg/kg-day	1.2E+00	(mg/kg-day)-1	2.6E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				2-Methylnaphthalene	9.73E-05	mg/kg wet	5.8E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	4.0E-03	mg/kg-day	N/A
				Naphthalene	2.89E-04	mg/kg wet	1.7E-07	mg/kg-day	1.2E-01	(mg/kg-day)-1	2.1E-08	N/A	mg/kg-day	2.0E-02	mg/kg-day	N/A
				Phenanthrene	8.96E-03	mg/kg wet	5.3E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				Pyrene	4.66E-03	mg/kg wet	2.8E-06	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-02	mg/kg-day	N/A
				2,4'-DDD	1.57E-05	mg/kg wet	9.3E-09	mg/kg-day	2.4E-01	(mg/kg-day)-1	2.2E-09	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				2,4'-DDE	6.67E-05	mg/kg wet	3.9E-08	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.3E-08	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				2,4'-DDT	2.86E-03	mg/kg wet	1.7E-06	mg/kg-day	3.4E-01	(mg/kg-day)-1	5.8E-07	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				4,4'-DDD	6.49E-03	mg/kg wet	3.8E-06	mg/kg-day	2.4E-01	(mg/kg-day)-1	9.2E-07	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				4,4'-DDE	6.06E-03	mg/kg wet	3.6E-06	mg/kg-day	3.4E-01	(mg/kg-day)-1	1.2E-06	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				4,4'-DDT	2.29E-02	mg/kg wet	1.4E-05	mg/kg-day	3.4E-01	(mg/kg-day)-1	4.6E-06	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				alpha-Chlordane	4.41E-04	mg/kg wet	2.6E-07	mg/kg-day	1.3E+00	(mg/kg-day)-1	3.4E-07	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				Dieldrin	2.25E-04	mg/kg wet	1.3E-07	mg/kg-day	1.6E+01	(mg/kg-day)-1	2.1E-06	N/A	mg/kg-day	5.0E-05	mg/kg-day	N/A
				Endosulfan II	4.25E-06	mg/kg wet	2.5E-09	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	6.0E-03	mg/kg-day	N/A
				Endrin aldehyde	7.79E-05	mg/kg wet	4.6E-08	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	N/A	mg/kg-day	N/A
				gamma-Chlordane	2.54E-04	mg/kg wet	1.5E-07	mg/kg-day	1.3E+00	(mg/kg-day)-1	2.0E-07	N/A	mg/kg-day	5.0E-04	mg/kg-day	N/A
				Total PCBs	3.04E-01	mg/kg wet	1.8E-04	mg/kg-day	5.0E+00	(mg/kg-day)-1	9.0E-04	N/A	mg/kg-day	2.0E-05	mg/kg-day	N/A
				TBT	3.97E-02	mg/kg wet	2.3E-05	mg/kg-day	N/A	(mg/kg-day)-1	---	N/A	mg/kg-day	3.0E-04	mg/kg-day	N/A
			Exp. Route Total								2.2E-03					N/A
		Exposure Point Total									2.2E-03					N/A
	Exposure Medium Total										2.2E-03					N/A
Medium Total											2.2E-03					N/A
							Total of Receptor Risks Across All Media				2.2E-03	Total of Receptor Hazards Across All Media				N/A

Table 9.1.CT. Summary of Receptor Risks and Hazards for COPCs, Central Tendency, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	4.72E-07	N/A	N/A	4.72E-07
			As	1.35E-07	N/A	N/A	N/A	1.35E-07	liver/kidney/bladder	3.70E-04	N/A	N/A	3.70E-04
			Cd	1.60E-10	N/A	N/A	N/A	1.60E-10	kidney	6.57E-06	N/A	N/A	6.57E-06
			Cr	1.05E-07	N/A	N/A	N/A	1.05E-07	liver/kidney	1.43E-03	N/A	N/A	1.43E-03
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	2.54E-05	N/A	N/A	2.54E-05
			Hg	---	N/A	N/A	N/A	---	developmental	3.37E-04	N/A	N/A	3.37E-04
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	5.30E-05	N/A	N/A	5.30E-05
			Sb	---	N/A	N/A	N/A	---	blood	3.55E-04	N/A	N/A	3.55E-04
			Se	---	N/A	N/A	N/A	---	N/A	5.71E-07	N/A	N/A	5.71E-07
			Zn	---	N/A	N/A	N/A	---	blood	5.54E-06	N/A	N/A	5.54E-06
			Acenaphthene	---	N/A	N/A	N/A	---	liver	3.55E-08	N/A	N/A	3.55E-08
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	3.79E-08	N/A	N/A	3.79E-08
			Benzo(a)anthracene	2.53E-09	N/A	N/A	N/A	2.53E-09	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	3.14E-08	N/A	N/A	N/A	3.14E-08	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	2.69E-09	N/A	N/A	N/A	2.69E-09	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	1.99E-09	N/A	N/A	N/A	1.99E-09	N/A	---	N/A	N/A	---
			Chrysene	3.47E-10	N/A	N/A	N/A	3.47E-10	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	1.81E-09	N/A	N/A	N/A	1.81E-09	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	5.27E-07	N/A	N/A	5.27E-07
			Fluorene	---	N/A	N/A	N/A	---	liver	7.96E-08	N/A	N/A	7.96E-08
			Indeno(1,2,3-cd)pyrene	1.23E-09	N/A	N/A	N/A	1.23E-09	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	1.55E-07	N/A	N/A	1.55E-07
			Naphthalene	1.71E-11	N/A	N/A	N/A	1.71E-11	liver/CNS	5.53E-08	N/A	N/A	5.53E-08
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	1.28E-06	N/A	N/A	1.28E-06
			2,4'-DDD	2.11E-12	N/A	N/A	N/A	2.11E-12	N/A	---	N/A	N/A	---
			2,4'-DDE	2.00E-13	N/A	N/A	N/A	2.00E-13	N/A	---	N/A	N/A	---
			2,4'-DDT	3.22E-11	N/A	N/A	N/A	3.22E-11	CNS/reproductive/liver	1.47E-06	N/A	N/A	1.47E-06
			4,4'-DDD	6.92E-12	N/A	N/A	N/A	6.92E-12	N/A	---	N/A	N/A	---
			4,4'-DDE	3.72E-12	N/A	N/A	N/A	3.72E-12	N/A	---	N/A	N/A	---
			4,4'-DDT	1.48E-10	N/A	N/A	N/A	1.48E-10	CNS/reproductive/liver	6.75E-06	N/A	N/A	6.75E-06
			alpha-Chlordane	3.71E-12	N/A	N/A	N/A	3.71E-12	liver	4.44E-08	N/A	N/A	4.44E-08
			Dieldrin	3.59E-11	N/A	N/A	N/A	3.59E-11	liver/CNS	3.49E-07	N/A	N/A	3.49E-07
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	1.39E-09	N/A	N/A	1.39E-09
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	7.97E-07	N/A	N/A	7.97E-07
			gamma-Chlordane	6.39E-12	N/A	N/A	N/A	6.39E-12	liver	7.65E-08	N/A	N/A	7.65E-08
			Total PCBs	8.11E-09	N/A	N/A	N/A	8.11E-09	CNS/iimmune system/liver	6.31E-04	N/A	N/A	6.31E-04
			TBT	---	N/A	N/A	N/A	---	Immune system	2.41E-06	N/A	N/A	2.41E-06
			Chemical Total	2.9E-07	N/A	N/A	N/A	2.9E-07		3.2E-03	N/A	N/A	3.2E-03
		Exposure Point Total						2.9E-07					3.2E-03
	Exposure Medium							2.9E-07					3.2E-03

Table 9.1.CT. Summary of Receptor Risks and Hazards for COPCs, Central Tendency, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
	Fish Tissue	Shellfish in IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	5.56E-06	N/A	N/A	5.56E-06
			As	1.72E-05	N/A	N/A	N/A	1.72E-05	liver/kidney/bladder	4.71E-02	N/A	N/A	4.71E-02
			Cd	1.38E-09	N/A	N/A	N/A	1.38E-09	kidney	5.65E-05	N/A	N/A	5.65E-05
			Cr	1.48E-06	N/A	N/A	N/A	1.48E-06	liver/kidney	2.01E-02	N/A	N/A	2.01E-02
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	2.65E-04	N/A	N/A	2.65E-04
			Hg	---	N/A	N/A	N/A	---	developmental	2.83E-04	N/A	N/A	2.83E-04
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	3.93E-05	N/A	N/A	3.93E-05
			Sb	---	N/A	N/A	N/A	---	blood	4.69E-03	N/A	N/A	4.69E-03
			Se	---	N/A	N/A	N/A	---	N/A	1.47E-04	N/A	N/A	1.47E-04
			Zn	---	N/A	N/A	N/A	---	blood	1.86E-04	N/A	N/A	1.86E-04
			Acenaphthene	---	N/A	N/A	N/A	---	liver	4.33E-07	N/A	N/A	4.33E-07
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	5.87E-07	N/A	N/A	5.87E-07
			Benzo(a)anthracene	6.53E-08	N/A	N/A	N/A	6.53E-08	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	7.35E-07	N/A	N/A	N/A	7.35E-07	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	6.97E-08	N/A	N/A	N/A	6.97E-08	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	4.38E-08	N/A	N/A	N/A	4.38E-08	N/A	---	N/A	N/A	---
			Chrysene	7.08E-09	N/A	N/A	N/A	7.08E-09	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	1.08E-08	N/A	N/A	N/A	1.08E-08	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	2.49E-05	N/A	N/A	2.49E-05
			Fluorene	---	N/A	N/A	N/A	---	liver	7.44E-07	N/A	N/A	7.44E-07
			Indeno(1,2,3-cd)pyrene	7.73E-09	N/A	N/A	N/A	7.73E-09	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	NA	N/A	N/A	NA
			Naphthalene	1.12E-09	N/A	N/A	N/A	1.12E-09	liver/CNS	3.62E-06	N/A	N/A	3.62E-06
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	8.72E-05	N/A	N/A	8.72E-05
			2,4'-DDD	1.52E-10	N/A	N/A	N/A	1.52E-10	N/A	---	N/A	N/A	---
			2,4'-DDE	1.23E-11	N/A	N/A	N/A	1.23E-11	N/A	---	N/A	N/A	---
			2,4'-DDT	4.81E-09	N/A	N/A	N/A	4.81E-09	CNS/reproductive/liver	2.20E-04	N/A	N/A	2.20E-04
			4,4'-DDD	5.82E-10	N/A	N/A	N/A	5.82E-10	N/A	---	N/A	N/A	---
			4,4'-DDE	6.01E-10	N/A	N/A	N/A	6.01E-10	N/A	---	N/A	N/A	---
			4,4'-DDT	8.57E-09	N/A	N/A	N/A	8.57E-09	CNS/reproductive/liver	3.92E-04	N/A	N/A	3.92E-04
			alpha-Chlordane	1.25E-10	N/A	N/A	N/A	1.25E-10	liver	1.49E-06	N/A	N/A	1.49E-06
			Dieldrin	1.25E-08	N/A	N/A	N/A	1.25E-08	liver/CNS	1.21E-04	N/A	N/A	1.21E-04
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	NA	N/A	N/A	NA
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			gamma-Chlordane	NA	N/A	N/A	N/A	NA	liver	NA	N/A	N/A	NA
			Total PCBs	3.77E-07	N/A	N/A	N/A	3.77E-07	CNS/iimmune system/liver	2.93E-02	N/A	N/A	2.93E-02
			TBT	---	N/A	N/A	N/A	---	Immune system	7.21E-05	N/A	N/A	7.21E-05
			Chemical Total	2.00E-05	N/A	N/A	N/A	2.00E-05		1.0E-01	N/A	N/A	1.0E-01
		Exposure Point Total						2.00E-05					1.0E-01

Table 9.1.CT. Summary of Receptor Risks and Hazards for COPCs, Central Tendency, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
		Forage Fish in IR Site	Ag	---	N/A	N/A	N/A	---	N/A	1.77E-05	N/A	N/A	1.77E-05
			As	2.91E-05	N/A	N/A	N/A	2.91E-05	liver/kidney/bladder	7.99E-02	N/A	N/A	7.99E-02
			Cd	5.58E-09	N/A	N/A	N/A	5.58E-09	kidney	2.28E-04	N/A	N/A	2.28E-04
			Cr	2.44E-06	N/A	N/A	N/A	2.44E-06	liver/kidney	3.34E-02	N/A	N/A	3.34E-02
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	3.07E-03	N/A	N/A	3.07E-03
			Hg	---	N/A	N/A	N/A	---	developmental	1.25E-01	N/A	N/A	1.25E-01
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	4.85E-04	N/A	N/A	4.85E-04
			Sb	---	N/A	N/A	N/A	---	blood	2.96E-03	N/A	N/A	2.96E-03
			Se	---	N/A	N/A	N/A	---	N/A	1.64E-03	N/A	N/A	1.64E-03
			Zn	---	N/A	N/A	N/A	---	blood	2.98E-03	N/A	N/A	2.98E-03
			Acenaphthene	---	N/A	N/A	N/A	---	liver	3.85E-06	N/A	N/A	3.85E-06
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	7.44E-07	N/A	N/A	7.44E-07
			Benzo(a)anthracene	1.96E-08	N/A	N/A	N/A	1.96E-08	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	1.80E-07	N/A	N/A	N/A	1.80E-07	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	1.65E-08	N/A	N/A	N/A	1.65E-08	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	2.12E-08	N/A	N/A	N/A	2.12E-08	N/A	---	N/A	N/A	---
			Chrysene	5.53E-09	N/A	N/A	N/A	5.53E-09	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	4.45E-09	N/A	N/A	N/A	4.45E-09	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	1.49E-05	N/A	N/A	1.49E-05
			Fluorene	---	N/A	N/A	N/A	---	liver	4.72E-06	N/A	N/A	4.72E-06
			Indeno(1,2,3-cd)pyrene	6.55E-09	N/A	N/A	N/A	6.55E-09	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	2.78E-06	N/A	N/A	2.78E-06
			Naphthalene	5.10E-10	N/A	N/A	N/A	5.10E-10	liver/CNS	1.65E-06	N/A	N/A	1.65E-06
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	1.77E-05	N/A	N/A	1.77E-05
			2,4'-DDD	5.55E-11	N/A	N/A	N/A	5.55E-11	N/A	---	N/A	N/A	---
			2,4'-DDE	3.33E-10	N/A	N/A	N/A	3.33E-10	N/A	---	N/A	N/A	---
			2,4'-DDT	1.43E-08	N/A	N/A	N/A	1.43E-08	CNS/reproductive/liver	6.54E-04	N/A	N/A	6.54E-04
			4,4'-DDD	2.29E-08	N/A	N/A	N/A	2.29E-08	N/A	---	N/A	N/A	---
			4,4'-DDE	3.03E-08	N/A	N/A	N/A	3.03E-08	N/A	---	N/A	N/A	---
			4,4'-DDT	1.15E-07	N/A	N/A	N/A	1.15E-07	CNS/reproductive/liver	5.24E-03	N/A	N/A	5.24E-03
			alpha-Chlordane	8.42E-09	N/A	N/A	N/A	8.42E-09	liver	1.01E-04	N/A	N/A	1.01E-04
			Dieldrin	5.29E-08	N/A	N/A	N/A	5.29E-08	liver/CNS	5.14E-04	N/A	N/A	5.14E-04
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	8.10E-08	N/A	N/A	8.10E-08
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			gamma-Chlordane	4.86E-09	N/A	N/A	N/A	4.86E-09	liver	5.81E-05	N/A	N/A	5.81E-05
			Total PCBs	2.24E-05	N/A	N/A	N/A	2.24E-05	CNS/iimmune system/liver	1.74E+00	N/A	N/A	1.74E+00
			TBT	---	N/A	N/A	N/A	---	Immune system	1.51E-02	N/A	N/A	1.51E-02
			Chemical Total	5.4E-05	N/A	N/A	N/A	5.4E-05		2.01E+00	N/A	N/A	2.0E+00
		Exposure Point Total						5.4E-05					2.0E+00
	Exposure Medium							7.4E-05					2.1E+00
Medium Total								7.5E-05					2.1E+00
Receptor Total							Receptor Risk Total	7.5E-05				Receptor HI Total	2.1E+00

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =	
Total Organ 2 HI Across All Media =	

Table 9.2.CT. Summary of Receptor Risks and Hazards for COPCs, Central Tendency, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	4.31E-06	N/A	N/A	4.31E-06
			As	7.91E-07	N/A	N/A	N/A	7.91E-07	liver/kidney/bladder	3.25E-03	N/A	N/A	3.25E-03
			Cd	9.96E-10	N/A	N/A	N/A	9.96E-10	kidney	6.12E-05	N/A	N/A	6.12E-05
			Cr	6.51E-07	N/A	N/A	N/A	6.51E-07	liver/kidney	1.33E-02	N/A	N/A	1.33E-02
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	2.32E-04	N/A	N/A	2.32E-04
			Hg	---	N/A	N/A	N/A	---	developmental	3.08E-03	N/A	N/A	3.08E-03
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	4.83E-04	N/A	N/A	4.83E-04
			Sb	---	N/A	N/A	N/A	---	blood	3.24E-03	N/A	N/A	3.24E-03
			Se	---	N/A	N/A	N/A	---	N/A	5.21E-06	N/A	N/A	5.21E-06
			Zn	---	N/A	N/A	N/A	---	blood	5.06E-05	N/A	N/A	5.06E-05
			Acenaphthene	---	N/A	N/A	N/A	---	liver	2.78E-07	N/A	N/A	2.78E-07
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	2.96E-07	N/A	N/A	2.96E-07
			Benzo(a)anthracene	1.32E-08	N/A	N/A	N/A	1.32E-08	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	1.64E-07	N/A	N/A	N/A	1.64E-07	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	1.40E-08	N/A	N/A	N/A	1.40E-08	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	1.04E-08	N/A	N/A	N/A	1.04E-08	N/A	---	N/A	N/A	---
			Chrysene	1.81E-09	N/A	N/A	N/A	1.81E-09	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	9.45E-09	N/A	N/A	N/A	9.45E-09	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	4.12E-06	N/A	N/A	4.12E-06
			Fluorene	---	N/A	N/A	N/A	---	liver	6.22E-07	N/A	N/A	6.22E-07
			Indeno(1,2,3-cd)pyrene	6.42E-09	N/A	N/A	N/A	6.42E-09	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	1.21E-06	N/A	N/A	1.21E-06
			Naphthalene	8.89E-11	N/A	N/A	N/A	8.89E-11	liver/CNS	4.32E-07	N/A	N/A	4.32E-07
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	9.98E-06	N/A	N/A	9.98E-06
			2,4'-DDD	1.20E-11	N/A	N/A	N/A	1.20E-11	N/A	---	N/A	N/A	---
			2,4'-DDE	1.14E-12	N/A	N/A	N/A	1.14E-12	N/A	---	N/A	N/A	---
			2,4'-DDT	1.83E-10	N/A	N/A	N/A	1.83E-10	CNS/reproductive/liver	1.26E-05	N/A	N/A	1.26E-05
			4,4'-DDD	3.94E-11	N/A	N/A	N/A	3.94E-11	N/A	---	N/A	N/A	---
			4,4'-DDE	2.12E-11	N/A	N/A	N/A	2.12E-11	N/A	---	N/A	N/A	---
			4,4'-DDT	8.40E-10	N/A	N/A	N/A	8.40E-10	CNS/reproductive/liver	5.77E-05	N/A	N/A	5.77E-05
			alpha-Chlordane	2.11E-11	N/A	N/A	N/A	2.11E-11	liver	3.79E-07	N/A	N/A	3.79E-07
			Dieldrin	2.04E-10	N/A	N/A	N/A	2.04E-10	liver/CNS	2.98E-06	N/A	N/A	2.98E-06
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	1.18E-08	N/A	N/A	1.18E-08
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	6.80E-06	N/A	N/A	6.80E-06
			gamma-Chlordane	3.64E-11	N/A	N/A	N/A	3.64E-11	liver	6.53E-07	N/A	N/A	6.53E-07
			Total PCBs	4.23E-08	N/A	N/A	N/A	4.23E-08	CNS/iimmune system/liver	4.93E-03	N/A	N/A	4.93E-03
			TBT	---	N/A	N/A	N/A	---	Immune system	1.95E-05	N/A	N/A	1.95E-05
			Chemical Total	1.7E-06	N/A	N/A	N/A	1.7E-06		2.9E-02	N/A	N/A	2.9E-02
		Exposure Point Total						1.7E-06					2.9E-02
	Exposure Medium							1.7E-06					2.9E-02

Table 9.2.CT. Summary of Receptor Risks and Hazards for COPCs, Central Tendency, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
	Fish Tissue	Forage Fish in IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	2.89E-05	N/A	N/A	2.89E-05
			As	3.17E-05	N/A	N/A	N/A	3.17E-05	liver/kidney/bladder	1.31E-01	N/A	N/A	1.31E-01
			Cd	6.07E-09	N/A	N/A	N/A	6.07E-09	kidney	3.73E-04	N/A	N/A	3.73E-04
			Cr	2.66E-06	N/A	N/A	N/A	2.66E-06	liver/kidney	5.45E-02	N/A	N/A	5.45E-02
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	5.01E-03	N/A	N/A	5.01E-03
			Hg	---	N/A	N/A	N/A	---	developmental	2.03E-01	N/A	N/A	2.03E-01
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	7.92E-04	N/A	N/A	7.92E-04
			Sb	---	N/A	N/A	N/A	---	blood	4.83E-03	N/A	N/A	4.83E-03
			Se	---	N/A	N/A	N/A	---	N/A	2.67E-03	N/A	N/A	2.67E-03
			Zn	---	N/A	N/A	N/A	---	blood	4.86E-03	N/A	N/A	4.86E-03
			Acenaphthene	---	N/A	N/A	N/A	---	liver	6.28E-06	N/A	N/A	6.28E-06
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	1.21E-06	N/A	N/A	1.21E-06
			Benzo(a)anthracene	2.14E-08	N/A	N/A	N/A	2.14E-08	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	1.96E-07	N/A	N/A	N/A	1.96E-07	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	1.80E-08	N/A	N/A	N/A	1.80E-08	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	2.30E-08	N/A	N/A	N/A	2.30E-08	N/A	---	N/A	N/A	---
			Chrysene	6.02E-09	N/A	N/A	N/A	6.02E-09	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	4.84E-09	N/A	N/A	N/A	4.84E-09	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	2.43E-05	N/A	N/A	2.43E-05
			Fluorene	---	N/A	N/A	N/A	---	liver	7.71E-06	N/A	N/A	7.71E-06
			Indeno(1,2,3-cd)pyrene	7.13E-09	N/A	N/A	N/A	7.13E-09	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	4.54E-06	N/A	N/A	4.54E-06
			Naphthalene	5.55E-10	N/A	N/A	N/A	5.55E-10	liver/CNS	2.70E-06	N/A	N/A	2.70E-06
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	2.90E-05	N/A	N/A	2.90E-05
			2,4'-DDD	6.04E-11	N/A	N/A	N/A	6.04E-11	N/A	---	N/A	N/A	---
			2,4'-DDE	3.63E-10	N/A	N/A	N/A	3.63E-10	N/A	---	N/A	N/A	---
			2,4'-DDT	1.56E-08	N/A	N/A	N/A	1.56E-08	CNS/reproductive/liver	1.07E-03	N/A	N/A	1.07E-03
			4,4'-DDD	2.49E-08	N/A	N/A	N/A	2.49E-08	N/A	---	N/A	N/A	---
			4,4'-DDE	3.30E-08	N/A	N/A	N/A	3.30E-08	N/A	---	N/A	N/A	---
			4,4'-DDT	1.25E-07	N/A	N/A	N/A	1.25E-07	CNS/reproductive/liver	8.56E-03	N/A	N/A	8.56E-03
			alpha-Chlordane	9.17E-09	N/A	N/A	N/A	9.17E-09	liver	1.65E-04	N/A	N/A	1.65E-04
			Dieldrin	5.76E-08	N/A	N/A	N/A	5.76E-08	liver/CNS	8.39E-04	N/A	N/A	8.39E-04
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	1.32E-07	N/A	N/A	1.32E-07
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			gamma-Chlordane	5.29E-09	N/A	N/A	N/A	5.29E-09	liver	9.50E-05	N/A	N/A	9.50E-05
			Total PCBs	2.43E-05	N/A	N/A	N/A	2.43E-05	CNS/iimmune system/liver	2.84E+00	N/A	N/A	2.84E+00
			TBT	---	N/A	N/A	N/A	---	Immune system	2.47E-02	N/A	N/A	2.47E-02
			Chemical Total	5.9E-05	N/A	N/A	N/A	5.9E-05		3.3E+00	N/A	N/A	3.3E+00
		Exposure Point Total						5.9E-05					3.3E+00
	Exposure Medium							5.9E-05					3.3E+00
Medium								6.1E-05					3.3E+00
Receptor							Receptor Risk Total	6.1E-05				Receptor HI Total	3.3E+00

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =
Total Organ 2 HI Across All Media =

Table 9.1.RME. Summary of Receptor Risks and Hazards for COPCs, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	3.64E-06	N/A	N/A	3.64E-06
			As	3.25E-06	N/A	N/A	N/A	3.25E-06	liver/kidney/bladder	2.67E-03	N/A	N/A	2.67E-03
			Cd	4.26E-09	N/A	N/A	N/A	4.26E-09	kidney	5.23E-05	N/A	N/A	5.23E-05
			Cr	2.79E-06	N/A	N/A	N/A	2.79E-06	liver/kidney	1.14E-02	N/A	N/A	1.14E-02
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	1.96E-04	N/A	N/A	1.96E-04
			Hg	---	N/A	N/A	N/A	---	developmental	2.60E-03	N/A	N/A	2.60E-03
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	4.08E-04	N/A	N/A	4.08E-04
			Sb	---	N/A	N/A	N/A	---	blood	2.74E-03	N/A	N/A	2.74E-03
			Se	---	N/A	N/A	N/A	---	N/A	4.40E-06	N/A	N/A	4.40E-06
			Zn	---	N/A	N/A	N/A	---	blood	4.27E-05	N/A	N/A	4.27E-05
			Acenaphthene	---	N/A	N/A	N/A	---	liver	2.07E-07	N/A	N/A	2.07E-07
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	2.21E-07	N/A	N/A	2.21E-07
			Benzo(a)anthracene	4.91E-08	N/A	N/A	N/A	4.91E-08	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	6.09E-07	N/A	N/A	N/A	6.09E-07	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	5.22E-08	N/A	N/A	N/A	5.22E-08	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	3.86E-08	N/A	N/A	N/A	3.86E-08	N/A	---	N/A	N/A	---
			Chrysene	6.73E-09	N/A	N/A	N/A	6.73E-09	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	3.52E-08	N/A	N/A	N/A	3.52E-08	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	3.07E-06	N/A	N/A	3.07E-06
			Fluorene	---	N/A	N/A	N/A	---	liver	4.63E-07	N/A	N/A	4.63E-07
			Indeno(1,2,3-cd)pyrene	2.39E-08	N/A	N/A	N/A	2.39E-08	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	9.00E-07	N/A	N/A	9.00E-07
			Naphthalene	3.31E-10	N/A	N/A	N/A	3.31E-10	liver/CNS	3.22E-07	N/A	N/A	3.22E-07
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	7.43E-06	N/A	N/A	7.43E-06
			2,4'-DDD	4.82E-11	N/A	N/A	N/A	4.82E-11	N/A	---	N/A	N/A	---
			2,4'-DDE	4.57E-12	N/A	N/A	N/A	4.57E-12	N/A	---	N/A	N/A	---
			2,4'-DDT	7.36E-10	N/A	N/A	N/A	7.36E-10	CNS/reproductive/liver	1.01E-05	N/A	N/A	1.01E-05
			4,4'-DDD	1.58E-10	N/A	N/A	N/A	1.58E-10	N/A	---	N/A	N/A	---
			4,4'-DDE	8.51E-11	N/A	N/A	N/A	8.51E-11	N/A	---	N/A	N/A	---
			4,4'-DDT	3.38E-09	N/A	N/A	N/A	3.38E-09	CNS/reproductive/liver	4.63E-05	N/A	N/A	4.63E-05
			alpha-Chlordane	8.49E-11	N/A	N/A	N/A	8.49E-11	liver	3.05E-07	N/A	N/A	3.05E-07
			Dieldrin	8.20E-10	N/A	N/A	N/A	8.20E-10	liver/CNS	2.39E-06	N/A	N/A	2.39E-06
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	9.51E-09	N/A	N/A	9.51E-09
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	5.46E-06	N/A	N/A	5.46E-06
			gamma-Chlordane	1.46E-10	N/A	N/A	N/A	1.46E-10	liver	5.25E-07	N/A	N/A	5.25E-07
			Total PCBs	1.57E-07	N/A	N/A	N/A	1.57E-07	CNS/iimmune system/liver	3.67E-03	N/A	N/A	3.67E-03
			TBT	---	N/A	N/A	N/A	---	Immune system	1.50E-05	N/A	N/A	1.50E-05
			Chemical Total	7.0E-06	N/A	N/A	N/A	7.0E-06		2.4E-02	N/A	N/A	2.4E-02
		Exposure Point Total						7.0E-06					2.4E-02
	Exposure Medium							7.0E-06					2.4E-02

Table 9.1.RME. Summary of Receptor Risks and Hazards for COPCs, Reasonable Maximum Exposure, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
	Fish Tissue	Shellfish in IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	7.51E-05	N/A	N/A	7.51E-05
			As	7.73E-04	N/A	N/A	N/A	7.73E-04	liver/kidney/bladder	6.36E-01	N/A	N/A	6.36E-01
			Cd	6.21E-08	N/A	N/A	N/A	6.21E-08	kidney	7.63E-04	N/A	N/A	7.63E-04
			Cr	6.64E-05	N/A	N/A	N/A	6.64E-05	liver/kidney	2.72E-01	N/A	N/A	2.72E-01
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	3.58E-03	N/A	N/A	3.58E-03
			Hg	---	N/A	N/A	N/A	---	developmental	3.82E-03	N/A	N/A	3.82E-03
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	5.30E-04	N/A	N/A	5.30E-04
			Sb	---	N/A	N/A	N/A	---	blood	6.33E-02	N/A	N/A	6.33E-02
			Se	---	N/A	N/A	N/A	---	N/A	1.98E-03	N/A	N/A	1.98E-03
			Zn	---	N/A	N/A	N/A	---	blood	2.51E-03	N/A	N/A	2.51E-03
			Acenaphthene	---	N/A	N/A	N/A	---	liver	5.84E-06	N/A	N/A	5.84E-06
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	7.93E-06	N/A	N/A	7.93E-06
			Benzo(a)anthracene	2.94E-06	N/A	N/A	N/A	2.94E-06	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	3.31E-05	N/A	N/A	N/A	3.31E-05	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	3.14E-06	N/A	N/A	N/A	3.14E-06	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	1.97E-06	N/A	N/A	N/A	1.97E-06	N/A	---	N/A	N/A	---
			Chrysene	3.19E-07	N/A	N/A	N/A	3.19E-07	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	4.85E-07	N/A	N/A	N/A	4.85E-07	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	3.36E-04	N/A	N/A	3.36E-04
			Fluorene	---	N/A	N/A	N/A	---	liver	1.00E-05	N/A	N/A	1.00E-05
			Indeno(1,2,3-cd)pyrene	3.48E-07	N/A	N/A	N/A	3.48E-07	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	NA	N/A	N/A	NA
			Naphthalene	5.03E-08	N/A	N/A	N/A	5.03E-08	liver/CNS	4.89E-05	N/A	N/A	4.89E-05
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	1.18E-03	N/A	N/A	1.18E-03
			2,4'-DDD	6.86E-09	N/A	N/A	N/A	6.86E-09	N/A	---	N/A	N/A	---
			2,4'-DDE	5.52E-10	N/A	N/A	N/A	5.52E-10	N/A	---	N/A	N/A	---
			2,4'-DDT	2.16E-07	N/A	N/A	N/A	2.16E-07	CNS/reproductive/liver	2.97E-03	N/A	N/A	2.97E-03
			4,4'-DDD	2.62E-08	N/A	N/A	N/A	2.62E-08	N/A	---	N/A	N/A	---
			4,4'-DDE	2.71E-08	N/A	N/A	N/A	2.71E-08	N/A	---	N/A	N/A	---
			4,4'-DDT	3.85E-07	N/A	N/A	N/A	3.85E-07	CNS/reproductive/liver	5.29E-03	N/A	N/A	5.29E-03
			alpha-Chlordane	5.61E-09	N/A	N/A	N/A	5.61E-09	liver	2.01E-05	N/A	N/A	2.01E-05
			Dieldrin	5.61E-07	N/A	N/A	N/A	5.61E-07	liver/CNS	1.64E-03	N/A	N/A	1.64E-03
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	NA	N/A	N/A	NA
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			gamma-Chlordane	NA	N/A	N/A	N/A	NA	liver	NA	N/A	N/A	NA
			Total PCBs	1.70E-05	N/A	N/A	N/A	1.70E-05	CNS/immune system/liver	3.96E-01	N/A	N/A	3.96E-01
			TBT	---	N/A	N/A	N/A	---	Immune system	9.74E-04	N/A	N/A	9.74E-04
			Chemical Total	9.00E-04	N/A	N/A	N/A	9.0E-04		1.4E+00	N/A	N/A	1.4E+00
		Exposure Point Total						9.0E-04					1.4E+00

Table 9.1.RME. Summary of Receptor Risks and Hazards for COPCs, Reasonable Maximum Exposure, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk (b)					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
		Forage Fish in IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	2.39E-04	N/A	N/A	2.39E-04
			As	1.31E-03	N/A	N/A	N/A	1.31E-03	liver/kidney/bladder	1.08E+00	N/A	N/A	1.08E+00
			Cd	2.51E-07	N/A	N/A	N/A	2.51E-07	kidney	3.08E-03	N/A	N/A	3.08E-03
			Cr	1.10E-04	N/A	N/A	N/A	1.10E-04	liver/kidney	4.50E-01	N/A	N/A	4.50E-01
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	4.14E-02	N/A	N/A	4.14E-02
			Hg	---	N/A	N/A	N/A	---	developmental	1.68E+00	N/A	N/A	1.68E+00
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	6.54E-03	N/A	N/A	6.54E-03
			Sb	---	N/A	N/A	N/A	---	blood	3.99E-02	N/A	N/A	3.99E-02
			Se	---	N/A	N/A	N/A	---	N/A	2.21E-02	N/A	N/A	2.21E-02
			Zn	---	N/A	N/A	N/A	---	blood	4.02E-02	N/A	N/A	4.02E-02
			Acenaphthene	---	N/A	N/A	N/A	---	liver	5.19E-05	N/A	N/A	5.19E-05
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	1.00E-05	N/A	N/A	1.00E-05
			Benzo(a)anthracene	8.84E-07	N/A	N/A	N/A	8.84E-07	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	8.08E-06	N/A	N/A	N/A	8.08E-06	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	7.42E-07	N/A	N/A	N/A	7.42E-07	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	9.52E-07	N/A	N/A	N/A	9.52E-07	N/A	---	N/A	N/A	---
			Chrysene	2.49E-07	N/A	N/A	N/A	2.49E-07	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	2.00E-07	N/A	N/A	N/A	2.00E-07	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	2.01E-04	N/A	N/A	2.01E-04
			Fluorene	---	N/A	N/A	N/A	---	liver	6.37E-05	N/A	N/A	6.37E-05
			Indeno(1,2,3-cd)pyrene	2.95E-07	N/A	N/A	N/A	2.95E-07	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	3.75E-05	N/A	N/A	3.75E-05
			Naphthalene	2.29E-08	N/A	N/A	N/A	2.29E-08	liver/CNS	2.23E-05	N/A	N/A	2.23E-05
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	2.40E-04	N/A	N/A	2.40E-04
			2,4'-DDD	2.50E-09	N/A	N/A	N/A	2.50E-09	N/A	---	N/A	N/A	---
			2,4'-DDE	1.50E-08	N/A	N/A	N/A	1.50E-08	N/A	---	N/A	N/A	---
			2,4'-DDT	6.43E-07	N/A	N/A	N/A	6.43E-07	CNS/reproductive/liver	8.83E-03	N/A	N/A	8.83E-03
			4,4'-DDD	1.03E-06	N/A	N/A	N/A	1.03E-06	N/A	---	N/A	N/A	---
			4,4'-DDE	1.36E-06	N/A	N/A	N/A	1.36E-06	N/A	---	N/A	N/A	---
			4,4'-DDT	5.15E-06	N/A	N/A	N/A	5.15E-06	CNS/reproductive/liver	7.07E-02	N/A	N/A	7.07E-02
			alpha-Chlordane	3.79E-07	N/A	N/A	N/A	3.79E-07	liver	1.36E-03	N/A	N/A	1.36E-03
			Dieldrin	2.38E-06	N/A	N/A	N/A	2.38E-06	liver/CNS	6.94E-03	N/A	N/A	6.94E-03
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	1.09E-06	N/A	N/A	1.09E-06
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			gamma-Chlordane	2.19E-07	N/A	N/A	N/A	2.19E-07	liver	7.85E-04	N/A	N/A	7.85E-04
			Total PCBs	1.01E-03	N/A	N/A	N/A	1.01E-03	CNS/immune system/liver	2.35E+01	N/A	N/A	2.35E+01
			TBT	---	N/A	N/A	N/A	---	Immune system	2.04E-01	N/A	N/A	2.04E-01
			Chemical Total	2.4E-03	N/A	N/A	N/A	2.4E-03		2.71E+01	N/A	N/A	2.7E+01
		Exposure Point Total						2.4E-03					2.7E+01
	Exposure Medium Total							3.3E-03					2.9E+01
Medium Total								3.4E-03					2.9E+01
Receptor Total							Receptor Risk Total	3.4E-03				Receptor HI Total	2.9E+01

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =
Total Organ 2 HI Across All Media =

Table 9.2.RME. Summary of Receptor Risks and Hazards for COPCs, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	3.36E-05	N/A	N/A	3.36E-05
			As	5.87E-06	N/A	N/A	N/A	5.87E-06	liver/kidney/bladder	2.42E-02	N/A	N/A	2.42E-02
			Cd	7.95E-09	N/A	N/A	N/A	7.95E-09	kidney	4.88E-04	N/A	N/A	4.88E-04
			Cr	5.21E-06	N/A	N/A	N/A	5.21E-06	liver/kidney	1.07E-01	N/A	N/A	1.07E-01
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	1.81E-03	N/A	N/A	1.81E-03
			Hg	---	N/A	N/A	N/A	---	developmental	2.40E-02	N/A	N/A	2.40E-02
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	3.76E-03	N/A	N/A	3.76E-03
			Sb	---	N/A	N/A	N/A	---	blood	2.53E-02	N/A	N/A	2.53E-02
			Se	---	N/A	N/A	N/A	---	N/A	4.06E-05	N/A	N/A	4.06E-05
			Zn	---	N/A	N/A	N/A	---	blood	3.94E-04	N/A	N/A	3.94E-04
			Acenaphthene	---	N/A	N/A	N/A	---	liver	1.71E-06	N/A	N/A	1.71E-06
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	1.83E-06	N/A	N/A	1.83E-06
			Benzo(a)anthracene	8.14E-08	N/A	N/A	N/A	8.14E-08	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	1.01E-06	N/A	N/A	N/A	1.01E-06	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	8.65E-08	N/A	N/A	N/A	8.65E-08	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	6.40E-08	N/A	N/A	N/A	6.40E-08	N/A	---	N/A	N/A	---
			Chrysene	1.12E-08	N/A	N/A	N/A	1.12E-08	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	5.83E-08	N/A	N/A	N/A	5.83E-08	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	2.54E-05	N/A	N/A	2.54E-05
			Fluorene	---	N/A	N/A	N/A	---	liver	3.84E-06	N/A	N/A	3.84E-06
			Indeno(1,2,3-cd)pyrene	3.96E-08	N/A	N/A	N/A	3.96E-08	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	7.46E-06	N/A	N/A	7.46E-06
			Naphthalene	5.49E-10	N/A	N/A	N/A	5.49E-10	liver/CNS	2.67E-06	N/A	N/A	2.67E-06
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	6.16E-05	N/A	N/A	6.16E-05
			2,4'-DDD	8.55E-11	N/A	N/A	N/A	8.55E-11	N/A	---	N/A	N/A	---
			2,4'-DDE	8.11E-12	N/A	N/A	N/A	8.11E-12	N/A	---	N/A	N/A	---
			2,4'-DDT	1.31E-09	N/A	N/A	N/A	1.31E-09	CNS/reproductive/liver	8.97E-05	N/A	N/A	8.97E-05
			4,4'-DDD	2.81E-10	N/A	N/A	N/A	2.81E-10	N/A	---	N/A	N/A	---
			4,4'-DDE	1.51E-10	N/A	N/A	N/A	1.51E-10	N/A	---	N/A	N/A	---
			4,4'-DDT	5.99E-09	N/A	N/A	N/A	5.99E-09	CNS/reproductive/liver	4.11E-04	N/A	N/A	4.11E-04
			alpha-Chlordane	1.51E-10	N/A	N/A	N/A	1.51E-10	liver	2.70E-06	N/A	N/A	2.70E-06
			Dieldrin	1.46E-09	N/A	N/A	N/A	1.46E-09	liver/CNS	2.12E-05	N/A	N/A	2.12E-05
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	8.43E-08	N/A	N/A	8.43E-08
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	4.85E-05	N/A	N/A	4.85E-05
			gamma-Chlordane	2.59E-10	N/A	N/A	N/A	2.59E-10	liver	4.66E-06	N/A	N/A	4.66E-06
			Total PCBs	2.61E-07	N/A	N/A	N/A	2.61E-07	CNS/immune system/liver	3.04E-02	N/A	N/A	3.04E-02
			TBT	---	N/A	N/A	N/A	---	Immune system	1.28E-04	N/A	N/A	1.28E-04
			Chemical Total	1.3E-05	N/A	N/A	N/A	1.3E-05		2.2E-01	N/A	N/A	2.2E-01
		Exposure Point Total						1.3E-05					2.2E-01
	Exposure Medium							1.3E-05					2.2E-01

Table 9.2.RME. Summary of Receptor Risks and Hazards for COPCs, Reasonable Maximum Exposure, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
	Fish Tissue	Forage Fish in IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	1.13E-04	N/A	N/A	1.13E-04
			As	1.25E-04	N/A	N/A	N/A	1.25E-04	liver/kidney/bladder	5.13E-01	N/A	N/A	5.13E-01
			Cd	2.39E-08	N/A	N/A	N/A	2.39E-08	kidney	1.47E-03	N/A	N/A	1.47E-03
			Cr	1.05E-05	N/A	N/A	N/A	1.05E-05	liver/kidney	2.14E-01	N/A	N/A	2.14E-01
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	1.97E-02	N/A	N/A	1.97E-02
			Hg	---	N/A	N/A	N/A	---	developmental	7.99E-01	N/A	N/A	7.99E-01
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	3.11E-03	N/A	N/A	3.11E-03
			Sb	---	N/A	N/A	N/A	---	blood	1.90E-02	N/A	N/A	1.90E-02
			Se	---	N/A	N/A	N/A	---	N/A	1.05E-02	N/A	N/A	1.05E-02
			Zn	---	N/A	N/A	N/A	---	blood	1.91E-02	N/A	N/A	1.91E-02
			Acenaphthene	---	N/A	N/A	N/A	---	liver	2.47E-05	N/A	N/A	2.47E-05
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Anthracene	---	N/A	N/A	N/A	---	liver	4.77E-06	N/A	N/A	4.77E-06
			Benzo(a)anthracene	8.41E-08	N/A	N/A	N/A	8.41E-08	N/A	---	N/A	N/A	---
			Benzo(a)pyrene	7.68E-07	N/A	N/A	N/A	7.68E-07	N/A	---	N/A	N/A	---
			Benzo(b)fluoranthene	7.06E-08	N/A	N/A	N/A	7.06E-08	N/A	---	N/A	N/A	---
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Benzo(k)fluoranthene	9.05E-08	N/A	N/A	N/A	9.05E-08	N/A	---	N/A	N/A	---
			Chrysene	2.37E-08	N/A	N/A	N/A	2.37E-08	N/A	---	N/A	N/A	---
			Dibenz(a,h)anthracene	1.90E-08	N/A	N/A	N/A	1.90E-08	N/A	---	N/A	N/A	---
			Fluoranthene	---	N/A	N/A	N/A	---	liver	9.54E-05	N/A	N/A	9.54E-05
			Fluorene	---	N/A	N/A	N/A	---	liver	3.03E-05	N/A	N/A	3.03E-05
			Indeno(1,2,3-cd)pyrene	2.80E-08	N/A	N/A	N/A	2.80E-08	N/A	---	N/A	N/A	---
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	1.78E-05	N/A	N/A	1.78E-05
			Naphthalene	2.18E-09	N/A	N/A	N/A	2.18E-09	liver/CNS	1.06E-05	N/A	N/A	1.06E-05
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			Pyrene	---	N/A	N/A	N/A	---	kidneys	1.14E-04	N/A	N/A	1.14E-04
			2,4'-DDD	2.37E-10	N/A	N/A	N/A	2.37E-10	N/A	---	N/A	N/A	---
			2,4'-DDE	1.43E-09	N/A	N/A	N/A	1.43E-09	N/A	---	N/A	N/A	---
			2,4'-DDT	6.11E-08	N/A	N/A	N/A	6.11E-08	CNS/reproductive/liver	4.20E-03	N/A	N/A	4.20E-03
			4,4'-DDD	9.78E-08	N/A	N/A	N/A	9.78E-08	N/A	---	N/A	N/A	---
			4,4'-DDE	1.29E-07	N/A	N/A	N/A	1.29E-07	N/A	---	N/A	N/A	---
			4,4'-DDT	4.90E-07	N/A	N/A	N/A	4.90E-07	CNS/reproductive/liver	3.36E-02	N/A	N/A	3.36E-02
			alpha-Chlordane	3.60E-08	N/A	N/A	N/A	3.60E-08	liver	6.47E-04	N/A	N/A	6.47E-04
			Dieldrin	2.26E-07	N/A	N/A	N/A	2.26E-07	liver/CNS	3.30E-03	N/A	N/A	3.30E-03
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	5.20E-07	N/A	N/A	5.20E-07
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	---	N/A	N/A	---
			gamma-Chlordane	2.08E-08	N/A	N/A	N/A	2.08E-08	liver	3.73E-04	N/A	N/A	3.73E-04
			Total PCBs	9.56E-05	N/A	N/A	N/A	9.56E-05	CNS/immune system/liver	1.12E+01	N/A	N/A	1.12E+01
			TBT	---	N/A	N/A	N/A	---	Immune system	9.69E-02	N/A	N/A	9.69E-02
			Chemical Total	2.3E-04	N/A	N/A	N/A	2.3E-04		1.29E+01	N/A	N/A	1.3E+01
		Exposure Point Total						2.3E-04					1.3E+01
	Exposure Medium							2.3E-04					1.3E+01
Medium Total								2.5E-04					1.3E+01
Receptor Total							Receptor Risk Total	2.5E-04				Receptor HI Total	1.3E+01

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =	
Total Organ 2 HI Across All Media =	

Table 9.3.RME. Summary of Receptor Risks and Hazards for COPCs, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			As	8.47E-06	N/A	N/A	N/A	8.47E-06	liver/kidney/bladder	N/A	N/A	N/A	N/A
			Cd	1.14E-08	N/A	N/A	N/A	1.14E-08	kidney	N/A	N/A	N/A	N/A
			Cr	7.44E-06	N/A	N/A	N/A	7.44E-06	liver/kidney	N/A	N/A	N/A	N/A
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	N/A	N/A	N/A	N/A
			Hg	---	N/A	N/A	N/A	---	developmental	N/A	N/A	N/A	N/A
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	N/A	N/A	N/A	N/A
			Sb	---	N/A	N/A	N/A	---	blood	N/A	N/A	N/A	N/A
			Se	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Zn	---	N/A	N/A	N/A	---	blood	N/A	N/A	N/A	N/A
			Acenaphthene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Anthracene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Benzo(a)anthracene	1.21E-07	N/A	N/A	N/A	1.21E-07	N/A	N/A	N/A	N/A	N/A
			Benzo(a)pyrene	1.50E-06	N/A	N/A	N/A	1.50E-06	N/A	N/A	N/A	N/A	N/A
			Benzo(b)fluoranthene	1.28E-07	N/A	N/A	N/A	1.28E-07	N/A	N/A	N/A	N/A	N/A
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Benzo(k)fluoranthene	9.49E-08	N/A	N/A	N/A	9.49E-08	N/A	N/A	N/A	N/A	N/A
			Chrysene	1.65E-08	N/A	N/A	N/A	1.65E-08	N/A	N/A	N/A	N/A	N/A
			Dibenz(a,h)anthracene	8.65E-08	N/A	N/A	N/A	8.65E-08	N/A	N/A	N/A	N/A	N/A
			Fluoranthene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Fluorene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Indeno(1,2,3-cd)pyrene	5.88E-08	N/A	N/A	N/A	5.88E-08	N/A	N/A	N/A	N/A	N/A
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	N/A	N/A	N/A	N/A
			Naphthalene	8.14E-10	N/A	N/A	N/A	8.14E-10	liver/CNS	N/A	N/A	N/A	N/A
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Pyrene	---	N/A	N/A	N/A	---	kidneys	N/A	N/A	N/A	N/A
			2,4'-DDD	1.24E-10	N/A	N/A	N/A	1.24E-10	N/A	N/A	N/A	N/A	N/A
			2,4'-DDE	1.18E-11	N/A	N/A	N/A	1.18E-11	N/A	N/A	N/A	N/A	N/A
			2,4'-DDT	1.90E-09	N/A	N/A	N/A	1.90E-09	CNS/reproductive/liver	N/A	N/A	N/A	N/A
			4,4'-DDD	4.07E-10	N/A	N/A	N/A	4.07E-10	N/A	N/A	N/A	N/A	N/A
			4,4'-DDE	2.19E-10	N/A	N/A	N/A	2.19E-10	N/A	N/A	N/A	N/A	N/A
			4,4'-DDT	8.69E-09	N/A	N/A	N/A	8.69E-09	CNS/reproductive/liver	N/A	N/A	N/A	N/A
			alpha-Chlordane	2.19E-10	N/A	N/A	N/A	2.19E-10	liver	N/A	N/A	N/A	N/A
			Dieldrin	2.11E-09	N/A	N/A	N/A	2.11E-09	liver/CNS	N/A	N/A	N/A	N/A
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	N/A	N/A	N/A	N/A
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			gamma-Chlordane	3.76E-10	N/A	N/A	N/A	3.76E-10	liver	N/A	N/A	N/A	N/A
			Total PCBs	3.87E-07	N/A	N/A	N/A	3.87E-07	CNS/iimmune system/liver	N/A	N/A	N/A	N/A
			TBT	---	N/A	N/A	N/A	---	Immune system	N/A	N/A	N/A	N/A
			Chemical Total	1.8E-05	N/A	N/A	N/A	1.8E-05		N/A	N/A	N/A	N/A
		Exposure Point Total						1.8E-05					N/A
	Exposure Medium Total							1.8E-05					N/A

Table 9.3.RME. Summary of Receptor Risks and Hazards for COPCs, Reasonable Maximum Exposure, IR Site 20, continued

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
	Fish Tissue	Forage Fish in IR Site 20	Ag	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			As	1.17E-03	N/A	N/A	N/A	1.17E-03	liver/kidney/bladder	N/A	N/A	N/A	N/A
			Cd	2.25E-07	N/A	N/A	N/A	2.25E-07	kidney	N/A	N/A	N/A	N/A
			Cr	9.85E-05	N/A	N/A	N/A	9.85E-05	liver/kidney	N/A	N/A	N/A	N/A
			Cu	---	N/A	N/A	N/A	---	gastrointestinal	N/A	N/A	N/A	N/A
			Hg	---	N/A	N/A	N/A	---	developmental	N/A	N/A	N/A	N/A
			Ni	---	N/A	N/A	N/A	---	skin/kidney/reproductive	N/A	N/A	N/A	N/A
			Sb	---	N/A	N/A	N/A	---	blood	N/A	N/A	N/A	N/A
			Se	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Zn	---	N/A	N/A	N/A	---	blood	N/A	N/A	N/A	N/A
			Acenaphthene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Acenaphthylene	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Anthracene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Benzo(a)anthracene	7.91E-07	N/A	N/A	N/A	7.91E-07	N/A	N/A	N/A	N/A	N/A
			Benzo(a)pyrene	7.24E-06	N/A	N/A	N/A	7.24E-06	N/A	N/A	N/A	N/A	N/A
			Benzo(b)fluoranthene	6.65E-07	N/A	N/A	N/A	6.65E-07	N/A	N/A	N/A	N/A	N/A
			Benzo(g,h,i)perylene	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Benzo(k)fluoranthene	8.52E-07	N/A	N/A	N/A	8.52E-07	N/A	N/A	N/A	N/A	N/A
			Chrysene	2.23E-07	N/A	N/A	N/A	2.23E-07	N/A	N/A	N/A	N/A	N/A
			Dibenz(a,h)anthracene	1.79E-07	N/A	N/A	N/A	1.79E-07	N/A	N/A	N/A	N/A	N/A
			Fluoranthene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Fluorene	---	N/A	N/A	N/A	---	liver	N/A	N/A	N/A	N/A
			Indeno(1,2,3-cd)pyrene	2.64E-07	N/A	N/A	N/A	2.64E-07	N/A	N/A	N/A	N/A	N/A
			2-Methylnaphthalene	---	N/A	N/A	N/A	---	lung	N/A	N/A	N/A	N/A
			Naphthalene	2.05E-08	N/A	N/A	N/A	2.05E-08	liver/CNS	N/A	N/A	N/A	N/A
			Phenanthrene	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			Pyrene	---	N/A	N/A	N/A	---	kidneys	N/A	N/A	N/A	N/A
			2,4'-DDD	2.23E-09	N/A	N/A	N/A	2.23E-09	N/A	N/A	N/A	N/A	N/A
			2,4'-DDE	1.34E-08	N/A	N/A	N/A	1.34E-08	N/A	N/A	N/A	N/A	N/A
			2,4'-DDT	5.76E-07	N/A	N/A	N/A	5.76E-07	CNS/reproductive/liver	N/A	N/A	N/A	N/A
			4,4'-DDD	9.21E-07	N/A	N/A	N/A	9.21E-07	N/A	N/A	N/A	N/A	N/A
			4,4'-DDE	1.22E-06	N/A	N/A	N/A	1.22E-06	N/A	N/A	N/A	N/A	N/A
			4,4'-DDT	4.61E-06	N/A	N/A	N/A	4.61E-06	CNS/reproductive/liver	N/A	N/A	N/A	N/A
			alpha-Chlordane	3.39E-07	N/A	N/A	N/A	3.39E-07	liver	N/A	N/A	N/A	N/A
			Dieldrin	2.13E-06	N/A	N/A	N/A	2.13E-06	liver/CNS	N/A	N/A	N/A	N/A
			Endosulfan II	---	N/A	N/A	N/A	---	Immune system/liver	N/A	N/A	N/A	N/A
			Endrin aldehyde	---	N/A	N/A	N/A	---	N/A	N/A	N/A	N/A	N/A
			gamma-Chlordane	1.96E-07	N/A	N/A	N/A	1.96E-07	liver	N/A	N/A	N/A	N/A
			Total PCBs	9.01E-04	N/A	N/A	N/A	9.01E-04	CNS/immune system/liver	N/A	N/A	N/A	N/A
			TBT	---	N/A	N/A	N/A	---	Immune system	N/A	N/A	N/A	N/A
			Chemical Total	2.2E-03	N/A	N/A	N/A	2.2E-03		N/A	N/A	N/A	N/A
		Exposure Point Total						2.2E-03					N/A
	Exposure Medium Total							2.2E-03					N/A
Medium Total								2.2E-03					N/A
Receptor Total							Receptor Risk Total	2.2E-03				Receptor HI Total	N/A

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =	
Total Organ 2 HI Across All Media =	

Table 10.1.CT. Risk Summary, Central Tendency, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Fish Tissue	Shellfish in IR Site 20	As	1.72E-05	N/A	N/A	N/A	1.72E-05	N/A	N/A	N/A	N/A	N/A
			Cr	1.48E-06	N/A	N/A	N/A	1.48E-06	N/A	N/A	N/A	N/A	N/A
			Chemical Total	1.9E-05	N/A	N/A	N/A	1.9E-05		N/A	N/A	N/A	N/A
		Exposure Point Total						1.9E-05					N/A
		Forage Fish in IR Site 20	As	2.91E-05	N/A	N/A	N/A	2.9E-05	N/A	N/A	N/A	N/A	N/A
			Cr	2.44E-06	N/A	N/A	N/A	2.4E-06	N/A	N/A	N/A	N/A	N/A
			Total PCBs	2.24E-05	N/A	N/A	N/A	2.2E-05	CNS/immune system/liver	1.74E+00	N/A	N/A	1.74E+00
			Chemical Total	5.4E-05	N/A	N/A	N/A	5.4E-05		N/A	N/A	N/A	1.7E+00
		Exposure Point Total						5.4E-05					1.7E+00
	Exposure Medium Total							7.3E-05					1.7E+00
Medium Total								7.3E-05					1.7E+00
Receptor Total							Receptor Risk Total	7.3E-05				Receptor HI Total	1.7E+00

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =
Total Organ 2 HI Across All Media =

Table 10.2.CT. Risk Summary, Central Tendency, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Fish Tissue	Forage Fish in IR Site 20	As	3.17E-05	N/A	N/A	N/A	3.17E-05	N/A	N/A	N/A	N/A	N/A
			Cr	2.66E-06	N/A	N/A	N/A	2.66E-06	N/A	N/A	N/A	N/A	N/A
			Total PCBs	2.43E-05	N/A	N/A	N/A	2.43E-05	CNS/immune system/liver	2.84E+00	N/A	N/A	2.84E+00
			Chemical Total	5.9E-05	N/A	N/A	N/A	5.9E-05		2.8E+00	N/A	N/A	2.8E+00
		Exposure Point Total						5.9E-05					2.8E+00
	Exposure Medium							5.9E-05					2.8E+00
Medium Total								5.9E-05					2.8E+00
Receptor Total							Receptor Risk Total	5.9E-05				Receptor HI Total	2.8E+00

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =	
Total Organ 2 HI Across All Media =	

Table 10.1.RME. Risk Summary, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	As	3.25E-06	N/A	N/A	N/A	3.25E-06	N/A	N/A	N/A	N/A	N/A
			Cr	2.79E-06	N/A	N/A	N/A	2.79E-06	N/A	N/A	N/A	N/A	N/A
			Chemical Total	6.0E-06	N/A	N/A	N/A	6.0E-06	N/A	N/A	N/A	N/A	N/A
		Exposure Point Total						6.0E-06					N/A
	Exposure Medium Total							6.0E-06					N/A
	Fish Tissue	Shellfish in IR Site 20	As	7.73E-04	N/A	N/A	N/A	7.73E-04	liver/kidney/bladder	N/A	N/A	N/A	N/A
			Cr	6.64E-05	N/A	N/A	N/A	6.64E-05	liver/kidney	N/A	N/A	N/A	N/A
			Benzo(a)anthracene	2.94E-06	N/A	N/A	N/A	2.94E-06	N/A	N/A	N/A	N/A	N/A
			Benzo(a)pyrene	3.31E-05	N/A	N/A	N/A	3.31E-05	N/A	N/A	N/A	N/A	N/A
			Benzo(b)fluoranthene	3.14E-06	N/A	N/A	N/A	3.14E-06	N/A	N/A	N/A	N/A	N/A
			Benzo(k)fluoranthene	1.97E-06	N/A	N/A	N/A	1.97E-06	N/A	N/A	N/A	N/A	N/A
			Total PCBs	1.70E-05	N/A	N/A	N/A	1.70E-05	CNS/immune system/liver	N/A	N/A	N/A	N/A
			Chemical Total	9.0E-04	N/A	N/A	N/A	9.0E-04		N/A	N/A	N/A	N/A
		Exposure Point Total						9.0E-04					N/A
		Forage Fish in IR Site 20	As	1.31E-03	N/A	N/A	N/A	1.31E-03	liver/kidney/bladder	1.08E+00	N/A	N/A	1.08E+00
			Cr	1.10E-04	N/A	N/A	N/A	1.10E-04	N/A	N/A	N/A	N/A	N/A
			Hg	N/A	N/A	N/A	N/A	N/A	developmental	1.68E+00	N/A	N/A	1.68E+00
			Benzo(a)pyrene	8.08E-06	N/A	N/A	N/A	8.08E-06	N/A	N/A	N/A	N/A	N/A
			4,4'-DDD	1.03E-06				1.03E-06	N/A	N/A	N/A	N/A	N/A
			4,4'-DDE	1.36E-06	N/A	N/A	N/A	1.36E-06	N/A	N/A	N/A	N/A	N/A
			4,4'-DDT	5.15E-06	N/A	N/A	N/A	5.15E-06	N/A	N/A	N/A	N/A	N/A
			Dieldrin	2.38E-06	N/A	N/A	N/A	2.38E-06	N/A	N/A	N/A	N/A	N/A
			Total PCBs	1.01E-03	N/A	N/A	N/A	1.01E-03	CNS/immune system/liver	2.35E+01	N/A	N/A	2.35E+01
			Chemical Total	2.4E-03	N/A	N/A	N/A	2.4E-03		2.62E+01	N/A	N/A	2.6E+01
		Exposure Point Total						2.4E-03		N/A	N/A	N/A	2.6E+01
	Exposure Medium Total							3.3E-03					2.6E+01
Medium Total								3.3E-03					2.6E+01
Receptor Total							Receptor Risk Total	3.3E-03				Receptor HI Total	2.6E+01

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =	
Total Organ 2 HI Across All Media =	

Table 10.2.RME. Risk Summary, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	As	5.87E-06	N/A	N/A	N/A	5.87E-06	N/A	N/A	N/A	N/A	N/A
			Cr	5.21E-06	N/A	N/A	N/A	5.21E-06	N/A	N/A	N/A	N/A	N/A
			Benzo(a)pyrene	1.01E-06	N/A	N/A	N/A	1.01E-06	N/A	N/A	N/A	N/A	N/A
			Chemical Total	1.2E-05	N/A	N/A	N/A	1.2E-05	N/A	N/A	N/A	N/A	N/A
		Exposure Point Total						1.2E-05					N/A
	Exposure Medium Total							1.2E-05					N/A
		Forage Fish in IR Site 20	As	1.25E-04	N/A	N/A	N/A	1.25E-04	N/A	N/A	N/A	N/A	N/A
			Cr	1.05E-05	N/A	N/A	N/A	1.05E-05	N/A	N/A	N/A	N/A	N/A
			Total PCBs	9.56E-05	N/A	N/A	N/A	9.56E-05	CNS/immune system/liver	1.12E+01	N/A	N/A	1.12E+01
			Chemical Total	2.3E-04	N/A	N/A	N/A	2.3E-04		1.1E+01	N/A	N/A	1.1E+01
		Exposure Point Total						2.3E-04					1.1E+01
	Exposure Medium Total							2.3E-04					1.1E+01
Medium Total								2.4E-04					1.1E+01
Receptor Total							Receptor Risk Total	2.4E-04				Receptor HI Total	1.1E+01

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =
Total Organ 2 HI Across All Media =

Table 10.3.RME. Risk Summary, Reasonable Maximum Exposure, IR Site 20

Scenario Timeframe: Current/Future
Receptor Population: Fisher
Receptor Age: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion & Dermal	Inhalation	Dermal (a)	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion & Dermal	Inhalation	Dermal (a)	Exposure Routes Total
Sediment	Sediment	IR Site 20	As	8.47E-06	N/A	N/A	N/A	8.47E-06	N/A	N/A	N/A	N/A	N/A
			Cr	7.44E-06	N/A	N/A	N/A	7.44E-06	N/A	N/A	N/A	N/A	N/A
			Benzo(a)pyrene	1.50E-06	N/A	N/A	N/A	1.50E-06	N/A	N/A	N/A	N/A	N/A
			Chemical Total	1.7E-05	N/A	N/A	N/A	1.7E-05	N/A	N/A	N/A	N/A	N/A
		Exposure Point Total						1.7E-05					N/A
	Exposure Medium Total							1.7E-05					N/A
	Fish Tissue	Forage Fish in IR Site 20	As	1.17E-03	N/A	N/A	N/A	1.17E-03	N/A	N/A	N/A	N/A	N/A
			Cr	9.85E-05	N/A	N/A	N/A	9.85E-05	N/A	N/A	N/A	N/A	N/A
			Benzo(a)pyrene	7.24E-06	N/A	N/A	N/A	7.24E-06	N/A	N/A	N/A	N/A	N/A
			4,4'-DDE	1.22E-06	N/A	N/A	N/A	1.22E-06	N/A	N/A	N/A	N/A	N/A
			4,4'-DDT	4.61E-06	N/A	N/A	N/A	4.61E-06	N/A	N/A	N/A	N/A	N/A
			Dieldrin	2.13E-06	N/A	N/A	N/A	2.13E-06	N/A	N/A	N/A	N/A	N/A
			Total PCBs	9.01E-04	N/A	N/A	N/A	9.01E-04	N/A	N/A	N/A	N/A	N/A
			Chemical Total	2.19E-03	N/A	N/A	N/A	2.2E-03	N/A	N/A	N/A	N/A	N/A
		Exposure Point Total						2.2E-03					N/A
	Exposure Medium Total							2.2E-03					N/A
Medium Total								2.2E-03					N/A
Receptor Total							Receptor Risk Total	2.2E-03				Receptor HI Total	N/A

(a) Ingestion and dermal exposure to sediment were evaluated as a combined exposure route.

Total Organ 1 HI Across All Media =
Total Organ 2 HI Across All Media =

APPENDIX G

RESPONSE TO AGENCY COMMENTS

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Response to Agency Comments on the Draft RI Report for IR Sites 20 and 24 Revision 1, Dated February 2007
Alameda Point, Alameda, California

Comment No.	Comment	Response
	General Comments from Ms. Xuan-Mai Tran, U.S. EPA (dated April 27, 2007)	
1	Based on the RI results, the Human Health Risk Assessment (HHRA) found an excess cancer risk of 9 x 10-4 for shellfish consumption (primarily due to arsenic, chromium, polynuclear aromatic hydrocarbons [PAHs], and polychlorinated biphenyls [PCBs]) and an excess cancer risk of 2.2 x 10-3 for fish consumption (mostly due to arsenic and PCBs). The total reasonable maximum exposure (RME) hazard for adult fish consumption is 27.13 and for children the total RME hazard 12.9, based on all data and 22.8, based on 2005 surface sediment data. Although the text states that these IR Site 20 risks are similar to risks associated with the reference area, the text needs to expand to include more supporting information to show why NFA is recommended (i.e., (1) future dredging will reduce the contamination in surface sediment; (2) high percentage of cancer risk is associated with arsenic in the fish and shellfish consumption; however, according to ATSDR, "most of the arsenic in fish and shellfish is the less harmful organic form"; (3) there is a fish and shellfish consumption advisory in place; etc.). The supporting information would help the reader to understand better why NFA is recommended for IR Site 20.	The Draft Final IR Site 20/24 RI Report has been revised to include additional information to further support the No Further Action recommendation for IR Site 20 based on the results of the Human Health Risk Assessment. The following information has been added to Section 9.1.3 – Human Health Risk Assessment Conclusions. • Under the proposed reuse plan, IR Site 20 will remain a viable shipping channel; therefore it is likely that regular maintenance dredging will be conducted by the USACE and the Port of Oakland. Future dredging may reduce concentrations in surface sediment. In addition, direct exposures to sediments may decrease slightly at IR Site 20 as a result of potential future dock construction. • The majority of assumptions regarding EPCs and exposure parameters made in the human health risk assessment are conservative, and tend to overestimate exposure and risk; therefore, the incremental risks to the defined receptor populations from exposure to chemicals of concern at IR Site 20 are likely to be overestimated. For example, the calculation of risk and hazard from arsenic in fish and shellfish tissue assumes that all of the arsenic present is the more toxic inorganic form because the toxicity information used is for the more toxic form. However, the United States Department of Food and Agriculture (DFA, 1993) and the Agency for Toxic Substances and Disease Registry (ATSDR, 2005) both specify that most of the arsenic present in fish and shellfish tissue is the less toxic, organic form, and that inorganic arsenic accounts for only about 10% of the arsenic in these tissues. Therefore, the conservative assumptions of the HHRA likely overestimate the actual risk and hazard of arsenic by 90%. • Risk associated with ingestion of local sport fish catch is a bay-

Comment No.	Comment	Response
		wide issue that has resulted in health advisories on all major waterways in the San Francisco Bay Area (SFEI, 1999). Most of the sport fish targeted by recreational anglers have extensive foraging ranges; therefore, it is difficult to distinguish the risk attributed to the site from risk associated with other point sources along IR Site 20 or bay-wide conditions. In addition, the HHRA conservatively assumed that 100% of the fish and shellfish consumption exposures were associated with IR Site 20. A discussion of the likely overestimation of risk and hazard from arsenic via fish and shellfish ingestion, due to the assumption that all of the arsenic present is the more toxic inorganic form, has also been added to the uncertainty section (Section 8) of the Draft Final RI Report.
Specific Comments from Ms. Xuan-Mai Tran, U.S. EPA (dated April 27, 2007)		
1	**Executive Summary, Page viii, Section 9.2.1, Nature and Extent of Sediment Contamination, Page 9-3 and Response to Specific Comment 1**: It is unclear why the text in these sections and in the response indicates that silver is naturally occurring at IR Site 24. If it was naturally occurring, one would expect that the distribution would be fairly uniform, but the highest concentrations of silver were detected in sediments near Outfall J. Since silver had many industrial uses, including battery cathodes, electroplated bearings used in aircraft engines, for brazing, for soldering (including copper pipe), electroplating, photography, and for electrical components, it is likely that the silver found in Site 24 sediments is related to former industrial activities at Alameda Point. The Navy also experimented with	The text has been revised as follows: "In the open water portions of IR Site 24, all analytical results for metals were below the ER-M values in all surface sediment samples collected during the 2005 remedial investigation, with the exception of silver and nickel. For silver, one sample in each of three open water studies (1996, 1998, and 2005) showed an elevated concentration in the northeast corner adjacent to outfall J, indicating that Navy industrial activities were the likely source. However, silver concentrations drop down to levels indistinguishable from background concentrations throughout the rest of the open water area. Nickel concentrations throughout the open water area were not statistically different from background; however given the highest concentration was found under the road at PA C-24, Navy operations may have released a small amount of nickel."

Comment No.	Comment	Response
	using silver as an anti-fouling additive to marine paint. Please delete all references to naturally occurring silver and discuss industrial activities that may have resulted in release of silver to Site 24 sediment. Similarly, the text in these sections and in the response indicates that nickel is naturally occurring, but it appears that there are areas near the outfalls where there are higher concentrations of nickel in sediment. The concentration of nickel in surface sediment appears to be higher than in subsurface sediment, when a natural distribution would be more uniform. Since nickel is a constituent of most steel alloys, and is also used in electronics, batteries, for plating and electroplating, and in various other industrial and construction applications, it is likely that former industrial activities at Alameda resulted in releases of nickel through the outfalls. Please delete references to naturally occurring nickel and discuss the industrial activities that may have resulted in releases of nickel through to the outfalls.	
2	**Section 4.2.1.3, Subsurface Sediment Spatial Distribution, Page 4-7 and 4-8**: Although the text states that the distributions of copper, lead, and nickel are uniform across depth, a comparison of the bubble plots in Appendix A indicates that the concentrations of these metals vary with depth. In addition, the distribution of other metals, like cadmium, is not discussed in the text. Please revise the text to indicate that the distribution of copper, lead, and nickel is not uniform across depth and discuss the distribution of the other metals.	With the exception of one sample location, C-2 where the 25-50 cm depth showed elevated concentrations of copper, lead, and zinc, concentrations of these metals are fairly uniform. The bubble plots in Appendix A show this pattern. Note: Incorrect box plots for metals at IR Site 20 (Figures A32 - A37) were inserted into Appendix A of the Draft RI Revision 1 report, and the correct plots have been included in the Draft Final RI report. In these corrected plots, there also is no apparent difference in concentrations of nickel across depth in the 2005 cores. The text in the Draft Final RI report has been updated to indicate

Comment No.	Comment	Response
		that cadmium concentrations observed are generally uniform with depth, except at station C-2 where concentrations increase with depth with the highest value observed in the 25-50 cm interval. The following text was also added to the Draft Final report: "At IR Site 20, concentrations across all depths were less than the ER-M for antimony, arsenic, cadmium, chromium, selenium, and silver. Subsurface concentrations for copper, lead, mercury, and zinc were below the ER-M at all locations except one, C-2. Nickel concentrations at IR Site 20 exceeded the ER-M in some samples, but site concentrations were less than ambient levels."
3	**Section 4.3.1.1, Surface Sediment Spatial Distribution, Pages 4-11 and 4-12**: It is unclear why this discussion does not include the 2006 data, since it appears that the concentrations of cadmium, chromium, lead, nickel, selenium, silver, and zinc exceed their effects range median (ERM) values. Please revise the text to include a discussion of the 2006 data.	Section 4.3.1.1 of the Draft RI Revision 1 report does discuss 2006 results (see Page 4-12) and lists the constituents exceeding ER-Ms: "However, the 2006 sampling showed that concentrations of cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc each exceeded their respective ER-Ms in at least one sample from underneath the roadway." The 2006 data is then discussed in the draft report in more detail in the second paragraph on Page 4-12: "The 2006 data collected underneath the roadway shows the same pattern, with concentrations of cadmium, chromium, lead, mercury, selenium, and silver highest in the samples closest to Pier 1, with concentrations declining toward Pier 2. Examples of the pattern of distribution for these constituents are shown in Figures 4-17 and 4-18. Arsenic and nickel were not elevated or only slightly elevated in the northeast corner compared to the rest of IR Site 24. Zinc was elevated in one 2006 sample (PAC-25) adjacent to outfall K, but was otherwise rather uniformly distributed over the rest of IR Site 24. Figures 4-19 and 4-20 are provided as examples of the pattern of

Comment No.	Comment	Response
		distribution of these chemicals." The discussions were separated to facilitate an understanding of what the 2006 study, which was conducted under the roadway, revealed, and to separate a discussion of open water conditions from under the road conditions. No changes to this text in the Draft Final RI report have been made.
4	**Section 4.3.2.3, Surface Sediment Spatial Distribution, Page 4-15**: The 2006 data do not support the statement in the text, "A visual examination of the concentrations by depth on the box plots in Appendix A shows that concentrations of PAHs are relatively uniform or decrease across sampling depth." Beneath the roadway, it appears that the highest concentrations of some PAHs like anthracene, acenaphthene, naphthalene and fluorene, is in the 5 to 25 centimeter depth interval. Please delete or revise the quoted statement.	The text has been revised to indicate that a visual examination of the 2005 data exhibited in the box plots in Appendix A shows that concentrations of PAHs are relatively uniform or decrease across sampling depth. A visual examination of the 2006 box plots and bubble plots in Appendix A shows that beneath the roadway, especially at station PA C-2 in the northeast corner, concentrations of several PAHs, including acenaphthene, naphthalene, and flourene, exhibit their highest concentration in the 5-25 cm depth level. The highest concentrations of anthracene are in the surface interval.
5	**Section 9.2.3, Human Health Risk Assessment, Page 9-5 and Section 7.2.1.2, IR Site 24, Page 7-3**: It is unclear whether the exposure pathways assessment includes the area under the roadway at Site 24. A description of the water depth has not been provided, and in places the text calls this area a "sediment shelf," which implies a depth shallower than 40 feet that could possibly support clam beds. During the Regulatory Agency site visit, sediment was visible in the vicinity of Outfall J, which suggests that there may be habitat for clams. Please provide a more complete description of the area beneath the piers and roadway. If there are areas where	The Draft Final RI report has been revised to include a more complete description of the area beneath the piers and roadway, including water depths, accessibility, and the lack of clam habitat. The proposed reuse of IR Site 24 is as a commercial marina, which will be used to berth cruise ships and historical landmark vessels. The Community Reuse Plan for Alameda Point (ARRA, 1996) does not include any plans to tear down the piers. Therefore, future access to this area for recreational purposes also will be limited. Based on lack of habitat as well as current and future use, the risk assessment was not revised in the draft final report.

Comment No.	Comment	Response
	clams could live under the roadway, please calculate the risk for this pathway, since it is possible that the roadway could be removed or require replacement in the future.	
6	**Section 9.3, Recommendations, Pages 9-5 and 9-6**: Since Site 24 was apparently recommended for evaluation in an FS based on exceedences of the ERMs, all areas that have exceedences of the ERMs, including open-water areas south of Piers 1 and 2 should be included in the FS. Please revise the recommendation for an FS also to include open-water areas where the ERMs are exceeded .	The IR Site 24 evaluation and recommendation are not based on locations where chemistry exceeds the ER-M. Instead, the ER-Ms are simply included to help the reader by providing a benchmark. Ecological risks were carefully and conservatively evaluated, and a determination was made that no unacceptable risks are associated with contaminant concentrations in the open water area. In fact, even when the higher concentrations under the road are considered in an overall evaluation, there may not be unacceptable risk. Therefore, results of the risk assessment do not show that the open-water areas should proceed to a FS. However, it is clear that elevated concentrations of several contaminants are located near outfalls under the road. Due to this apparent pattern, uncertainties, and the fact that if this area is examined separately, concentrations do appear to be of concern (using conservative assumptions about the area over which an organism would be exposed), the recommendation was made to take a portion of the area under the road to an FS. The RI report has been revised to clarify that the area recommended for evaluation in an FS includes the portion of sediment under the road as represented by samples C-26, C-27, C-23, C-24 and C-21.
Comments on the HHRA from Ms. Xuan-Mai Tran, U.S. EPA (dated April 27, 2007)		
1	Food-related ingestion pathways could represent significant potential exposure to contaminants of potential concern (COPCs) such as polychlorinated biphenyls (PCBs), due primarily to bioaccumulation potential and food chain impacts. Despite the fact that health advisories are in effect with regard to all major waterways within the San Francisco Bay Area, this report	The risk assessment was conducted based on data from studies of shellfish consumption in the Bay area considered representative of the surrounding populace that indicate low probability of exposure for children; this approach is also consistent with previously conducted risk assessments at Alameda and other bases. In addition, because of the longer exposure duration and higher consumption rate used for adult RME, it is expected that for shellfish, the adult would be

Comment No.	Comment	Response
	attempts to minimize the impact of and potential for shellfish ingestion exposure attributable to children. Recreational exposure through ingestion of shellfish by local residents is a complete exposure pathway – and is relevant for adult and children. Arguments to support exclusion of child exposures based on small exposed population sizes are not relevant given that the pathways associated with these exposures are reasonable and complete. This risk evaluation, as a baseline, will help to form the basis for site risk management decisions. The HHRA must be more representative of the surrounding populace. Please revise the HHRA to address shellfish ingestion by children. Additional exposure routes, such as infant exposure to PCBs via the ingestion of mother's breast milk may also be considered viable pathways of exposure. This pathway has not been considered in the Conceptual Site Model (Figure 7.1. Human Health Conceptual Site Model [CSM]). Addition of this pathway to the quantitative analysis does not appear to be critical. However, please consider adding a qualitative assessment of the associated potential risk to a nursing infant to the Uncertainty Analysis.	protective of children, as is the case for fish at this site. Based on estimates of sport fish consumption from the 2002 SFEI study, only 13% of the San Francisco Bay anglers interviewed reported that they share their catch with children under the age of six. Given that only 5% of the overall seafood consumption among San Francisco Bay anglers is comprised of shellfish (Wong, 1997), it can be assumed that less than 1% (i.e., 0.65%) of Bay-area children under the age of six may be consuming shellfish from San Francisco Bay. Overall, there is a low probability of child exposure (with respect to intake amounts and frequency of exposure); as such, this pathway is considered a potentially complete but insignificant exposure route. In addition, this approach is consistent with the methodology used at other Navy sites (i.e., Seaplane Lagoon at Alameda Point and Hunter's Point), where children under the age of six were unlikely to consume shellfish, and risks to children were calculated for sediment and fish exposures only. Section 8.3.2 (the uncertainty section)of the Draft Final RI has been revised to include a full description of the uncertainty of the shellfish consumption exposure parameters, including those for children and pregnant and breastfeeding women.
2	The 95th percentile soil ingestion rate value used to evaluate sediment ingestion is one-half the recommended value presented in USEPA's 2006 Child-Specific Exposure Factors Handbook (ChEFH). Please consult the 2006 ChEFH during the selection of pertinent exposure parameter values (e.g., fish tissue ingestion rates) during HHRA development in the future.	U.S. EPA's Draft 2006 Child-Specific Exposure Factors Handbook (ChEFH) (U.S. EPA, 2006) was recently re-opened for public comment (January 2007). It is anticipated that the final version of the handbook will be published in 2007. Battelle will consult the ChEFH for pertinent exposure parameter values in future human health risk assessments.
3	It appears the HHRA considered only detected compounds during the COPC screening process. To the	The Human Health Risk Assessement Section 7.1, Data Evaluation and Identification of Chemicals of Concern, has been revised in the

Comment No.	Comment	Response
	greatest extent practicable, the HHRA should represent a stand-alone document. A discussion should be included in the text to indicate that all non-detect results were reviewed to ensure that the associated reporting limit was sufficiently sensitive (in comparison to the most relevant health-based screening criterion) to ascertain whether or not the contaminant at issues was present at a concentration capable of eliciting an adverse human health effect. Non-detect results associated with an elevated appropriate reporting limit (e.g., a sample quantitation limit [SQL], rather than a method detection limit [MDL]) should identify that associated target analyte as a site COPC. Please verify that COPC screening considered reporting limits during the evaluation of non-detect results.	Draft Final RI as follows: "The first step of the human health risk assessment process is an evaluation of the available data to: (1) characterize the site, (2) develop a data set for use in the risk assessment, and (3) identify chemicals of potential concern (COPCs). For the human health risk assessment, the All Years sediment data set described in Section 4.1.1 and the 28-day *M. nasuta* bioaccumulation data were evaluated to identify COPCs. Analytes that were detected at least once in sediment in any year **(1993/94, 2001, and 2005)** or in *M. nasuta* tissue (1993) were selected as COPCs; only those analytes that were never detected in both media were eliminated from consideration. **As a result of this COPC screen, *alpha*-BHC, endosulfan I, endosulfan sulfate, endrin, *gamma*-BHC, and heptachlor were eliminated as COPCs. The non-detect sediment results for these contaminants were reviewed to verify that the associated detection limits were sufficiently sensitive. They were compared to U.S. EPA preliminary remediation goals (PRG) (U.S. EPA, 2004) to ascertain whether or not these contaminants were present at concentrations capable of eliciting an adverse human health effect. The maximum sediment detection limits reported for these six pesticides were all well below U.S. EPA's industrial PRGs (Table 4-3). In addition, human health risks and hazards for these six pesticides that were not detected were evaluated, and all cancer risks and hazard quotients for these contaminants were well below the target cancer risk of 1 x 10^{-6} and hazard quotient of 1.** As described in Section 5.5, **two approaches were used to calculate EPCs for *M. nasuta* tissue. Analytes that were detected in historical *M. nasuta* tissue data were used to calculate tissue**

Comment No.	Comment	Response
		EPCs. However, many of the organic compounds were non-detect, and detection limits were elevated. Therefore, for analytes detected in sediment, but not detected in historical site-specific tissue, EPCs were modeled by multiplying the sediment EPCs by a BAF."
4	In the next version of this document, care should be taken to differentiate between risk and hazard, in particular, Section 7.4.3 (Risk Characterization Results) and corresponding tables (i.e., Tables 7-6 through 7-14). These terms are not interchangeable and proper terminology usage will facilitate understanding. Please revise the text to use the terms risk and hazard correctly in the text and tables.	The terminology in the human health risk assessment text and associated tables has been revised to correctly use the terms "risk" and "hazard".
Specific Comments on the HHRA from Ms. Xuan-Mai Tran, U.S. EPA (dated April 27, 2007)		
1	**Table 4.2. RME. Reasonable Maximum Exposure Values Used for Daily Intake Calculations for IR Site 20, Page F-22**: The exposure duration (ED) value for an adult fisher ingestion of forage fish scenario reflects central tendency, rather than RME, conditions (i.e., 9 years). Please revise Table 4.2 so that this ED is changed from 9 years to the RME ED of 30 years and ensure the associated quantitative expressions of site-related risk and hazard are updated, as necessary.	Table 4.2 Reasonable Maximum Exposure Values Used for Daily Intake Calculations for IR Site 20 on Page F-22 of Appendix F has been revised in the Draft Final RI to reflect the correct RME exposure duration value of 30 years. The correct RME ED value (30 years) was used for all site-related risk and hazard calculations in the Draft RI report.
Comments on the Responses to EPA Comments from Ms. Xuan-Mai Tran, U.S. EPA (dated April 27, 2007)		
1	Response to General Comment #3: The response partially addresses the comment. The Navy did not address the uncertainties that may arise from the spatial and temporal gaps between measurement endpoint sampling efforts.	The following text has been added to the Uncertainty Analysis, Section 8.2.1.4. "There was also uncertainty associated with the measurement endpoints used in the ecological risk assessment. This source of uncertainty was due to the spatial and temporal gaps in data collection activities. For example, toxicity bioassays and

Comment No.	Comment	Response
		bioaccumulation assays were only conducted on a subset of the sampling locations and sampling events. In some cases, the range of concentrations measured in sediment was greater than the range captured by the bioassays. The impact of this uncertainty in the interpretation of toxicity bioassay data is discussed in more detail in Section 8.2.3.1. For the bioaccumulation assays, conservatism was ensured by supplementing this data with modeled tissue data using the full range of sediment data and by choosing the higher of either the modeled or measured concentration (see 8.2.1.3)."
2	**Response to Specific Comment #4**: The response does not address the comment. Although it is understood that the approach has been approved and supported by EPA, additional supporting information should be provided in the Remedial Investigation (RI) Report to summarize the approach and results of the documents used to justify removal of radiological contaminants of potential ecological concern (COPECs) from further consideration at the site. The information does not need to be provided in Section 2.1.2. Please revise the document to include a summary of past study results, along with complete references to these documents.	The two past studies cited in EPA's Specific Comment #4 are discussed in Section 2.4.2 of the RI report, not Section 2.1.2. Complete references to these documents were included in the Draft RI report. The Draft Final RI report has been revised to include a brief summary of the results for these two radiological studies.
3	**Response to Specific Comment #11**: The response indicates the text of Section 2.1.2 has been modified to include a reference to the Storm-Sewer Study Report for Alameda Point, Alameda, California; however this reference was already included in the previous version of the RI report. It may be helpful to state in the text that the building locations and their associated IR sites are further described in the Storm-Sewer Study Report, as the current citation of this report is not related to building locations and respective activities.	The text in Section 2.1.2 has been modified to include the following: "The Storm-Sewer Study Report for Alameda Point, Alameda, California (TtEMI, 2000) identifies these buildings and the IR sites with which they are associated."

Comment No.	Comment	Response
4	**Response to Specific Comment #15**: The response addresses the comment by adding text to the RI report; however, groundwater discharge and other mechanisms (wave action, harbor activity, and bioturbidity) have not been added to Figure 3-1 as requested in the original comment.	Figure 3-1 has been revised to include groundwater discharge and the other release mechanisms (wave action, harbor activity, and bioturbidity) identified in the original comment.
5	**Response to Specific Comment #16**: The response partially addresses the comment regarding the rationale for excluding surface water as a potential contaminated media at the site. The response does specify the contaminants of potential ecological concern (COPEC) detected at the site for the first listed rationale, as requested. However, the text should still be expanded to include a more complete rationale for each of the three presented points, in order to justify excluding surface water as an exposure pathway. For example, for the first listed rationale, in addition to specifying the COPECs, provide a general discussion on site-specific sediment and water chemistry, and include further information on these COPECs to justify the statement that they are fairly insoluble and will not partition under site-specific conditions, among others. The second and third presented points also require more detailed rationale. Please revise the RI Report to include this information.	The discussion of surface water not being considered a primary exposure medium has been revised to include a more detailed rationale for each of the three points (see below). Surface water is not considered a primary exposure medium in accordance with the approved final work plan, which states "Surface water is not considered a significant exposure medium due to tidal action and San Francisco Bay currents, which result in rapid dilution. Consequently, exposures via surface water are not proposed for quantitative evaluation." The following information is included in the Draft Final RI report. (1) Primary chemicals of concern (metals, pesticides, PAHs, and PCBs, discussed further in Section 4.0) are relatively insoluble, meaning that partitioning from sediment to surface water will be low. Hydrophobic, nonpolar organic contaminants, such as PCBs, DDT, and some species of metals, are primarily associated with sediments and tend to adsorb to fine-grained sediment, which is present at IR Sites 20 and 24. Adsorption onto sediment particles limits the degree to which dissolution and contamination of overlying water occurs. The transport and fate of these contaminants are controlled by the movement of the sediment particles.

Comment No.	Comment	Response
		(2) Continuing onshore sources of surface water to the offshore areas have been controlled. The storm sewer system at Alameda Point (designated as IR Site 18) served as a primary transport route for chemicals from industrial operations and for surface water runoff to reach the offshore sites. In 1975, the direct discharge of industrial wastewater through the storm-sewer network was terminated and a pollution prevention program was initiated. In 1991, the Navy initiated several removal actions, designed to remove residual contaminated sediments from the sewer lines. Sediments from the upgradient storm-sewer lines leading to outfalls A, B, D, and E along IR Site 20 (Figure 2-3) were removed during a 1997 removal action. In Phase I of the removal action, sediments and debris were vacuumed from the storm-sewer catch basins; Phase II of the removal action included cleaning the system lines (TtEMI, 2000). The effectiveness of these actions was documented through closed circuit television surveys, and the Navy issued a technical memorandum in February 2000 that removed Site 18 as a specific IR site (DON, 2000). (3) Tidal action and San Francisco Bay currents result in rapid dilution and/or transport of constituents. Surface water data were collected from three locations (E02, E06, and E10) in IR Site 20 as part of the 1993/1994 ecological assessment of Alameda Point. These data are reported in the Alameda Naval Air Station Operable Unit 4 Ecological Risk Assessment (PRC, 1996) and are summarized in Table 7-8 of that report. Total metals concentrations were below detection limits, with the exception of chromium, lead, and zinc, which were detected at concentrations less than the

Comment No.	Comment	Response
		chronic and acute marine ambient water quality criteria (AWQC) (Tables C-3.1 and C-3.2 in PCR, 1996). Dissolved metals were not detected in surface water, except for lead at station E10, which had concentrations below the AWQC. Metals detection limits were adequate for most of the constituents (exceptions included copper, mercury, nickel, and silver) to allow comparison to AWQC. Concentrations of PAHs, pesticides, PCBs, and organotins in surface water collected at IR Site 20 were all not detected (see Tables C-3.2 and 3.3 of PRC, 1996), although elevated detection limits preclude comparisons of most pesticides to AWQC. Based on available data, surface water is not a significant exposure medium to chemical contaminants. The final work plan also stated that surface water is not considered a significant exposure medium due to tidal action and San Francisco Bay currents; consequently, the work plan specified that exposures via surface water were not proposed for quantitative evaluation.
6	**Response to Specific Comment #23**: The response partially addressed the comment by removing the sentence stating that "locations of higher concentrations were sporadic and not consistent through time." However, the text of the RI report was not modified to include the contaminant associations specified in the original comment. Please revise the text to include the contaminant associations discussed in the comment.	In Specific Comment #23, U.S. EPA noted three areas where possible associations with observed contaminants may indicate that the Navy's statement that higher concentrations were "sporadic" was inappropriate. The data collected during the RI does not support these "associations" specified in this U.S. EPA comment, so the RI report was not revised. These three areas are further evaluated below. 1) Areas offshore of IR Site 28 (U.S. EPA noted presence of copper, mercury, and zinc.) • In Section 4.2.1.3, the RI report states that copper, mercury, lead, and zinc were elevated at station C-2 in the 25-50 cm depth interval. This station is offshore of IR Site 28. While

Comment No.	Comment	Response
		the Navy agrees that these metals have been used in marine paints, the fact that other samples taken in areas closer to the outfall (C-3, E-10, or OIH 10) and closer to the nearby active shipyard (C-1, OIH 20, or OIH 51) had lower concentrations of these metals at all depth intervals, makes any speculation on the potential source of the observed concentrations highly uncertain. 2) Western portion of IR Site 20 (EPA noted high concentrations of antimony and cadmium.) • The slightly elevated cadmium and antimony concentrations measured in the 1993 study were not confirmed in any subsequent sampling event. In fact, Section 4.2.1.1 of the Draft RI Revision 1 report explains that elevated antimony results from the 1993 sampling campaign throughout Alameda were never confirmed and are believed to be erroneous (see Attachment 4 from the March 2006 RTC). The highest Cd concentrations observed in 1993 at station E-07 (0.9 ppm) were well below conservative ecological screening levels. The closest stations sampled in 2005 were C-10 (0.3 ppm) and C-9 (0.13 ppm). Given the lack of any consistent spatial patterns emerging from the studies, there are no clear associations to be discussed for these contaminants. 3) In the vicinity of Stations 28 and 57 (U.S. EPA noted high concentrations of copper, lead and chromium.) • Concentrations of copper, lead, and chromium in 2001 samples appeared to be locally higher in stations OIH 28 and OIH 57; however, subsequent sampling in 2005 between, and on either side of, these stations did not confirm

Comment No.	Comment	Response
		the 2001 results, as noted on Page 4-7 of the Draft RI report. There is no apparent pattern indicative of a release from an outall, such as an increase in concentrations closer to outfalls, which are located both to the west and east of these samples. The Navy refers U.S. EPA to Section 3.1, which describes the Conceptual Site Model for IR Site 20, including the potential sources of chemical contamination and transport mechanisms at the site, and to Section 2.0, which indicates that historical Naval operations may have impacted IR Site 20 through a number of routes.
7	**Response to Specific Comment #26**: The response partially addresses the comment; however, the text was not modified to discuss the potential that the observed contaminant distribution is the result of discharges from the outfalls. The Navy states that use of the term "urban background" is intended to imply that the site has been affected by a wide variety of sources. While this term is intended to encompass outfall discharges, please specifically state that discharges from the outfalls are a potential source of contamination.	The Navy has deleted the sentence referring to a number of sources, including urban background on Page 4-8 of the Draft Final RI. U.S. EPA is referred to the more detailed evaluation of potential sources of chemical contamination in Section 3.1, where the Alameda storm-sewer system is mentioned as the primary transport route for chemicals and surface water runoff to the offshore sites.
8	**Response to Specific Comment #30**: The response partially addresses the comment. The referenced sentence, as currently written, acknowledges that the samples between years are not co-located and concludes that "the elevated pesticide concentrations observed in the surface sediment in 1996 are not currently present in IR Site 24 surface sediment (e.g. alpha-chlordane), or are confined to very small areas in the immediate vicinity of the outfalls and eastward of the quay wall (e.g. dieldrin	The two stations where *alpha*-chlordane was previously observed in 1996 were extremely close to locations re-sampled in 2005/2006; therefore, the statement that concentrations previously observed are not currently present, seems appropriate. Statements regarding dieldrin and 4,4'-DDx are based on the examination of all years of data, which are indeed confined to the area mentioned. Therefore, o change has been made to the text of the Draft Final RI report.

Comment No.	Comment	Response
	and 4,4'-DDx)." This statement implies that pesticide concentrations declined over time, based on elevated pesticide results from a 1996 data set as compared to the 1998 and 2005 data set, when the more recent data sets were not co-located with the 1996 data set. Please revise the text to acknowledge that this apparent decrease over time may be associated with the distance between sampling locations, or remove the statement from the RI Report.	
9	**Response to Specific Comment #33**: The response addresses the comment; however, the Navy states that the expanded text added to the Executive Summary has been added to this section. A review of the RI Report text indicates that some, not all, of this expanded text has been added to Section 4.3.5. Please include the full expanded text in this section.	The full expanded text added to the Executive Summary has been added to Section 4.3.5 of the Draft Final RI report.
10	**Response to Specific Comment 37**: The response addresses the comment. However, this information should be included in the RI Report.	The referenced materials from the RTCs have been incorporated into the Draft Final RI report.
General Comments from DTSC HERD (dated May 2, 2007)		
1	The Ecological Risk Assessment (ERA) of the IR Site 20 and IR Site 24 and the Human Health Risk Assessment (HHRA) evaluation of IR Site 20 exposure, for collection and consumption of shellfish, are concise and well written. HERD has only minor comments on presentation and methodology listed below. Human exposure to sediments (dermal and incidental ingestion) during collection and ingestion fish and shellfish in IR Site 20 appear similar to reference areas. While the ecological hazard for IR Site 20 and IR Site 24 appear to be minimal when averaged over the entire area of each	Comment noted.

Comment No.	Comment	Response
	IR, HERD agrees that further investigation or consideration of remedial alternatives should be evaluated for the northeastern area of IR Site 24 along the eastern quay wall where this area of sediments display elevated concentrations of inorganic elements and organic compounds.	
Specific Comments - Ecological Risk Assessment - from DTSC HERD (dated May 2, 2007)		
1	Three separate sediment data sets based on year collected and depth were evaluated in the ERA: Surface sediments (0-5 cm) for all years; 2005 surface sediments (0-5 cm); and, 2005 subsurface sediments in two groups, of 5-25 cm and 25-50 cm (Executive Summary, page vii; Section 4.1.1, page 4-1). HERD concurred with this division during development of the work plan. These divisions do not capture the entire depth of sediments available to burrowing organisms in one sediment group. However, the sediment groups utilized allow some consideration of changes in surface sediment concentrations over the time interval of 1993 through 2005. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted.
2	One local reference core was collected outside the boundary of IR Site 24 (Section 2.4.2, page 2-7). HERD concurred with the location of this sample during development of the work plan to represent 'localized' sediment concentrations in an area with sediment characteristics similar to the other IR Site 24 samples, but removed some distance from the IR Site 24 samples taken to investigate potential releases. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted.

Comment No.	Comment	Response
3	HERD previously requested clarification and agreement in the discussion of the surrogate value used where chemical results were reported as nondetect (Section 4.1.1, page 4-1, second bulleted item). The discussion of surrogate values has been augmented and is acceptable. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted.
4	HERD agrees that antimony reported at extremely high sediment concentrations from 1993, which were not detected in IR 20 sediments during the 2002 and 2005 sampling (Section 4.2.1.1, page 4-6), can be eliminated as a Contaminant of Potential Ecological Concern (COPEC). This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted.
5	Sediment concentrations elevated above screening criteria are evident in several discrete sample locations (e.g., IR Site 20 C-2 and IR Site 24 C-13 and C-16) in the 2005 samples (Section 4.2 and Section 4.3, pages 4-6 through 4-17; Section 6.5, pages 6-36 through 6-44). The 2006 sampling, under the wharf roadway, indicates inorganic COPECs elevated above National Oceanic and Atmospheric Administration (NOAA) Effects Range-Media (ER-M) (Section 4.3.1.1, page 4-11) in at least one 2006 sample. Several organic COPECs exceeded ER-M concentrations in the IR Site 24 2006 surface sediment samples (Section 4.3.2.1, page 4-13 and 4-14) under the wharf roadway. However, average sediment concentrations, as represented by the 1996 through 2005 surface sediment samples, do not indicate IR-wide	Comment noted.

Comment No.	Comment	Response
	extremely elevated sediment concentrations. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	
6	Based on the radioisotope concentrations in three 2005 radioisotope sediment cores obtained (Section 4.3.3, page 4-16) from IR Site 24, there does not appear to have been a significant release of radium (Ra226 or Ra228) associated with site activities. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted.
7	The IR Site 24 Conceptual Site Model (CSM) (Section 6.2.2, page 6-4; Figure 6-4) has been modified, as previously requested, to include an additional Primary Release Mechanism for physical sloughing of creosote-treated pier and quay wall material to sediments, in addition to dissolution of creosote into IR Site 24 water. The direct sampling and assessment of sediments already performed account for this release mechanism. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted.
8	Prey Ingestion Rates (IR prey) are estimated for the surf scoter and the Least tern using a Field Metabolic Rate allometric regression (Nagy, 1999) and then converting the metabolic rate to Dry Weight (DW) IRprey using the mean of the insectivore and piscivore avian conversion rates (Section 6.3.1.3, page 6-14 and Section 6.1.3.4, page 6-15). HERD previously recommended that rather than calculate the free-ranging FMR (Nagy, 1999) and then converting this value to DW IR prey, the more recent publication by the same author (Nagy, 2001) should be used. These more recent regression equations	Comment noted.

Comment No.	Comment	Response
	directly provide DW IRprey which can differ slightly from the values calculated. A discussion has been added to the Uncertainty Section (Section 8.2.2.2, page 8-6) to address the significance in the different methods of calculating IRprey. This amendment and additional discussion is adequate. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	
9	There is a typographic error in the listing of the insectivore conversion factors in units of kJ/g DW while the piscivore conversion rate is in units of kJ/day DW (Section 6.1.3, page 6-14). This typographic error should be corrected to provide the correct units for each feeding guild.	The typographic error in Section 6.3.1.3, page 6-14 has been corrected to say, "Therefore, the mean of the insectivore (18.0 kJ/g DW) and the piscivore (16.2 kJ/g DW) avian conversion factor was used for the scoter: 17.1 kJ/g DW."
10	HERD reviewed the components of the Screening Level Ecological Risk Assessment (SLERA) and, other than the specific items listed above, has no recommendations on the methodology used. Rather than providing specific comments for each, the components for which HERD has no recommendations or requirements are: a. Sediment Exposure Point Concentration (EPC) (Section 5.4, page 5-4); b. *Macoma nasuta* tissue EPC (Section 5.5, page 5-5); c. Fish tissue EPC (Section 5.6, page 5-6 and 5-7); d. Assessment Endpoints (Section 6.2.3, page 6-5); e. Vertebrate Representative Species (Section 6.2.4, page 6-6 through 6-10); f. Vertebrate Exposure Parameters, except	Comment noted.

Comment No.	Comment	Response
	Ingestion Rate (IR_{prey}) (Section 6.3.1.3, page 6-13 through Section 6.1.3.5, page 6-16); g. Benthic Invertebrate Direct Contact Benchmarks (Section 6.3.2.1, page 6-17 and page 6-18); and, h. Vertebrate Toxicity Reference Value Selection Hierarchy (Section 6.3.2.2, page 6-18). This list is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.	
11	Ecotoxicity Reference Values (ERVs), based on critical tissue concentrations for fish, are draft values which were developed by the Navy for Pearl Harbor ERA and currently under review by the U.S. EPA Region 9 (Section 6.4.3.1.1, page 6-29). HERD generally requires that ecological screening values be final values which have been reviewed and approved of by the appropriate regulatory agencies and trustees. HERD defers to the U.S. EPA Region 9 regarding the application of the draft ERVs to NASA IR Site 20 and IR Site 24.	Comment noted.
12	HERD does not agree that estimates of distance traveled to forage, when used to develop a strictly geometric estimate of foraging area (e.g., using distance traveled to forage as the radius for the area of a circular forage range), are accurate representations of the actual Site Use Factor (SUF) (e.g., surf scoter and double crested cormorant). However, HERD accepts use of the geometric estimates given that incremental values for Site Use Factor (SUF) of 1, 0.5, 0.25 are presented in addition to the receptor-specific geometric estimate (Section 6.4.4.1.1, page 6-31).	Comment noted.

Comment No.	Comment	Response
13	Based on the generally lower, and in some cases much lower, sediment concentrations detected in the recent sediment sampling, HERD agrees that the IR-wide current ecological hazard posed by IR Site 20 surface sediments is comparable to reference stations (Section 6.5, pages 6-36 through 6-44). However, this conclusion applies only to the surface sediments (i.e., 0 to 5 cm) within the entire IR Site 20 boundary and not the subsurface sediments, particularly in the undredged sediment shelf approximately 75 m in width (Section 2.2.1, page 2-3) present along the inshore boundary of IR Site 20.	Comment noted.
14	Based on the generally lower, and in some cases much lower, sediment concentrations detected in the recent sediment sampling HERD agrees that the IR-wide current ecological hazard posed by IR Site 24 surface sediments is generally comparable to reference stations (Section 6.5, pages 6-36 through 6-44). However, this does not apply to the sediment under the wharf roadway in the northeastern corner of IR Site 24 that was the focus of the 2006 sampling and was not available to historical dredging (Section 2.2.2, page 2-3). Sediment samples collected in all sampling events, particularly 2006, demonstrate the highest concentrations in this same area immediately adjacent to the wharf (Figures 4-17 through 4-30) outfalls J and K. HERD agrees that further investigation or evaluation of remedial alternatives in a Feasibility Study (FS) for this area beneath the wharf roadway (Section 9.3, page 9-6) should be performed.	Comment noted.

Comment No.	Comment	Response
	Specific Comments - Human Health Risk Assessment - from DTSC HERD (dated May 8, 2007)	
15	HERD agrees with the estimated ingestion rates for fish and shellfish (Section 7.2.3, page 7-4) based on the San Francisco Estuary Institute (SFEI, 2002) as reasonable protective estimates for adults and children consuming shellfish. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.	Comment noted.
16	HERD previously commented that the Dermal Absorption Factor (DAF) used should be those outlined in the DTSC Preliminary Endangerment Assessment (PEA) Manual (DTSC, 1994) where these values are more protective than those presented by the U.S. EPA Region 9 (Section 7.2.3, page 7-5). Minor additions to the HHRA (Appendix F) and Attachment 6 to the Response to Comments, which outlines the relatively minor differences in DAFs are acceptable. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.	Comment noted. Please note that Revision 1 of the Draft IR Site 20/24 RI report was updated to use the more conservative DAF values from the DTSC PEA Manual, even though these DAFs had a minor impact on the risk and hazard values calculated for the dermal exposure pathway at IR Site 20.
17	The U.S. EPA Region 9 Preliminary Remediation Goal (PRG) for soil lead in the residential use scenario is used as a qualitative screening value for the maximum lead concentration in surface sediment of 225.5 mg/kg (Section 7.2.4, page 7-6). This qualitative comparison is made while acknowledging the difference in media, exposure parameters and exposure pathways. HERD previously commented that the same qualitative screening for sediment lead should be presented using the Cal-modified Region 9 PRG for lead of 150 mg/kg. This comparison has been included in the HHRA for lead (Section 7.2.4, page 7-6). This comment is meant for the	Comment noted.

Comment No.	Comment	Response
	DTSC Project Manager and no response is required from the Navy or Navy contractor.	
18	HERD accepts the Contaminant of Concern (COC) toxicity criteria hierarchy as presented (Section 7.3, page 7-7). This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted.
19	Cumulative cancer risk associated with shellfish consumption (9.0x10-4) is less than the cumulative cancer risk associated with reference conditions (1.3x10-3) for IR Site 20 evaluation (Section 7.4.2, page 7-11) of the Reasonable Maximum Exposure (RME) scenario. In addition, 85.9 % of the cancer risk is associated with arsenic in shellfish. The majority of arsenic in fish and shellfish is known to be organic arsenic compounds (USDFA, 1993) which are much less toxic than the inorganic arsenic compounds on which the arsenic cancer slope factor is based. The USDFA recommended proportion of arsenic in fish and shellfish tissue is 10 percent inorganic arsenic to 90 percent organic arsenic. Adjustment of the total arsenic fish and shellfish concentration for a 10 percent inorganic arsenic concentration would greatly reduce the magnitude of the total cancer risk estimates for both IR Site 20 and the reference areas. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	Comment noted, and a discussion of the likely overestimation of risk and hazard from arsenic via fish and shellfish ingestion, due to the assumption that all of the arsenic present is the more toxic inorganic form, has been added to the uncertainty section (Section 8.3) of the Draft Final RI Report.
20	HERD accepts the conclusion that incremental cancer risk and non-cancer hazard associated with collection of and human ingestion of fish and shellfish from IR Site 20 do not appear to differ significantly from the health risk	Comment noted.

Comment No.	Comment	Response
	or hazard associated with ingestion of fish and shellfish from the reference locations (Section 9.1.3, page 9-2).	
21	Lack of habitat, lack of shellfish populations, restricted access due to ship berthing activities, and projected continued future use for ship berthing effectively eliminate the shellfish ingestion pathway for IR Site 24 (Section 9.2.3, page 9-5). This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.	Comment noted.
	Conclusions - from DTSC HERD (dated May 8, 2007)	
1	HERD recommended minor changes in some of the exposure parameters for the ERA and HHRA. These modifications are unlikely to significantly change the risk and hazard estimates to a degree which would modify the Navy conclusions, but should be made in the Draft Final document for consistency and scientific accuracy. It appears from the results of the sediment sampling from 1993 to 2005 that surface sediment (0 to 5 cm) concentrations are decreasing, possibly due to deposition of cleaner sediments exposed during the continued dredging of the Oakland Inner Harbor Channel. If this mechanism is correct, the surface sediments in IR Site 20 are likely to be covered by more clean sediments during the funded 2006 dredge project to 15 meters thereby decreasing potential exposure. Based on the results of the 2006 sediment sampling in IR Site 24, HERD recommends that remedial alternatives be evaluated for the sediments along the quay wall under the wharf roadway in IR Site 24.	Comment noted.

Comment No.	Comment	Response
	Based on the analysis for radium (Ra226 and Ra228) there does not appear to have been a release of radium associated with site activities at IR Site 24. These results agree with previous determinations, and concurrence of EPA, by the Navy.	
Comments from California F&G, Office of Spill Prevention and Response (dated March 28, 2007)		
1	DFG-OSPR appreciates this opportunity to provide guidance on the planned cleanup at Alameda Point. This memorandum will serve to inform the Navy of our continuing interest in coordinating any natural resource issues, as one of the designated State natural resource trustees. This may be necessary should release(s) of any hazardous materials at the subject site affect State natural resources.	Comment noted.
2	This review focused on whether DFG-SOPR's comments on the previous version (memorandum by Dr. Stanton dated June 5, 2006) were adequately addressed. The responses to comments show a good faith effort by the Navy to address those concerns. We have no further comments for the Draft Revision 1 RI.	Comment noted.
Comments from U.S. Fish and Wildlife Service (dated May 9, 2007)		
1	For each of the four sites, Oakland Inner Harbor, Pier Area, Western Bayside, and Breakwater Beach, the Tier 1 screening-level risk estimates for avian receptors, and specifically least terns, identified a number of constituents requiring further evaluation. The exposure estimates in these conservative Tier 1 screenings are based on a site use factor (SUF) of 1.0, i.e., all foraging occurs on-site. However, based on the refined baseline ecological risk assessments (BERA), no further action	The USFWS is correct in noting that the Navy calculated the BERA risk estimates using a range of SUFs and reference (i.e., ambient) sediment concentrations to represent the contribution of offsite areas to the exposure dose, which was in accordance with the Final Offshore Sediment Study Workplan (Battelle et al., 2005). The Navy acknowledges that this approach does not include the potential contribution of other Alameda offshore sites to the dose estimates. However, the Navy does not agree that this approach underestimates the dose and resultant hazard quotients (HQs). In fact, a SUF of one

Comment No.	Comment	Response
	was recommended for each site based on acceptable ecological risks. The dose model in the BERAs reduces the SUF to a percentage based on the average of 10 years of data on distributional patterns of foraging terns at Alameda Point. The dose from non-site use is calculated from prey concentrations modeled assuming reference sediment concentrations. The least tern foraging distribution data, from which the SUFs are estimated (provided in Table 6-2 of the Remedial Investigation Report), indicate that the major foraging areas comprise a number of Alameda Point sites with elevated concentrations of organic and inorganic constituents sampled from sediments. The site use estimates for Breakwater Beach (Study Area 1), Site 24 (Study Area 4), Western Bayside (Study Areas 7, 8, 9, and 10), Site 20 (Study Area 13/15), and Seaplane Lagoon (Study Area 14) total over 75% of the average yearly foraging distribution (and as much as 93% of the foraging distribution in one of the years). These percentages may be higher as they do not include Study Area 12 or Study Area 3 as being associated with IR sites (see Figure 6-5). The foraging data contradict the assumption in the BERA that reference sediment concentrations are adequate to estimate the non-site dose. The current approach in the BERA for each individual site evaluates risks to terns as if it exists in isolation, surrounded by foraging areas only with ambient background concentrations. This approach clearly underestimates the dose and the resultant hazard	was presented in the BERA to provide conservative HQ estimates. An estimate based on a SUF of one bounds the high end of the actual risk posed by the individual sites. While using a SUF equal to one is a conservative exposure scenario, it is unrealistic because it only considers exposure at a single IR Site, which is smaller than the total foraging range of terns studied at Alameda Point (Collins and Feeney, 1995). Furthermore, this is likely an overestimate of potential risk because, based on foraging studies at Alameda Point, the least tern forages approximately 75% of the time within the study areas where the Alameda study sites (IR Site 20, IR Site 24, Western Bayside [WBS], Breakwater Beach [BB], and IR Site 17) are located (Collins and Feeney, 1995), and approximately 25% of the time in areas with ambient concentrations. Additionally, it should be noted that study areas set by Collins and Feeney (1995) included IR Sites as well as outlying sediment areas. Therefore, terns assessed in the Draft RI Revision 1 report as foraging at IR Sites were also foraging in the ambient sediment areas included as part of the study areas. This is likely to result in an overestimate of foraging time spent exclusively at the IR Sites. Using a conservative SUF of one for each site, the least tern high TRV HQs were typically below one; only mercury at IR Site 20 had a high TRV HQ slightly greater than one (1.18). While the low TRV HQs exceeded one for some contaminants, the magnitude of the HQs were generally low (HQ<10). This indicates that even under the most conservative scenario (i.e., SUF=1), effects are possible but not clearly predicted for any of the sites. The Navy acknowledges that more realistic estimates of exposure to the least tern would ideally include exposure to: (1) site-specific sediment, (2) sediment from adjacent sites at Alameda Point, and (3)

Comment No.	Comment	Response
	quotients [HQ = dose/toxicity reference values (TRV)] upon which the food-chain BERA is based. In order to evaluate the assessment endpoint, i.e., sufficient rates of survival, growth, and reproduction to sustain the avian community in the area, including special-status species, the measurement endpoints must be properly estimated. Assuming all non-site doses for the least tern are based on reference or ambient concentrations results in HQs that are biased low, making it difficult to evaluate potential impacts. More realistic estimates would include the site-specific doses to the least tern calculated with non-site doses modeled from sediment concentrations representative of the specific foraging areas rather than assuming these concentrations are at background or ambient concentrations. The Service recommends recalculating the least tern site-specific doses and HQs with more realistic estimates for the non-site doses and re-evaluating the ecological risks associated with these sites based on the revised food-chain BERAs. Recalculating with more realistic estimates is required to properly evaluate the risk to least terns.	ambient sediments. However, it is not possible to determine sediment concentrations representative of all the specific foraging areas where terns feed. Because the actual contribution of IR Site-impacted and ambient foraging areas to the total offsite foraging is highly uncertain, a range of SUFs was provided in the Draft RI Revision 1 report to be conservative and facilitate decisions despite the uncertainty in the offsite concentrations. Theoretically, doses could be calculated for onsite, other IR sites, and ambient offsite then area-weighted. However, in doing this, the implied assumption is that there will be no action at any of the IR sites that would reduce the contribution of offsite sources in the future. In the case of Seaplane Lagoon, this assumption is false because future sediment concentrations in this area will be reduced by remedial actions. The use of a range of SUFs provides a range of risk estimates to support IR Site-specific risk management decisions, without assumptions regarding future risk management at other sites. To provide an example addressing the USFWS concerns, the Navy has calculated both low and high TRV HQs for lead, total DDx, and total PCBs assuming SUFs for each site from the RI report (2005 surface dataset) and SUFs that account for the contribution of other study sites as follows (see also Table 1): • "SUF = 1" for each study site; conservative yet unrealistic assumption that all foraging occurs at the specific IR Site • "Best estimate SUF plus ambient exposure": IR Site-specific SUF (based on Collins and Feeney, 1995) with outside foraging occurring only in ambient areas

Comment No.	Comment	Response
		• "Alameda Point": exposure calculated for Alameda Point as a whole, taking into account the combined exposure to the four study sites. This estimate includes Site-specific SUFs and an ambient area SUF (based on Collins and Feeney, 1995; see Table 1) • "Ambient": estimate of exposure assumes all foraging in areas representative of ambient conditions in the Bay. In general, the HQs (based on both low and high TRVs) are highest when the SUF = 1 for each site. This is consistent with the observation that this exposure scenario is the most conservative (Table 1). Other estimates of potential risk based on site exposure plus exposure from other foraging locations, whether it is modeled by the "best estimate SUF plus ambient", or the "Alameda Point" estimate, are similar and are lower than when modeled using a SUF of one. Any exceedances of the low TRV-based HQ are low (approximately 10 or less) and all the high TRV-based HQs are significantly less than one. In summary, the risk estimates provided in the RI report for IR Sites 20 and 24 are conservative and provide a range of assumptions and estimates that are adequate for making informed decisions. Accounting for the contribution of neighboring offshore sites versus including only ambient exposure has little impact on the risk estimates. The method used in the RI report is sufficient to provide information to the risk managers on which to base decisions regarding possible remediation. Additional calculations would not appreciably change the risk estimates. Therefore, the Navy proposes no changes to the Draft Final RI report in response to the comment.
2	In addition to the comments regarding recalculating above, we would also like to have a better understanding	The Draft Final RI report has been revised to include a more complete description of the area beneath the piers and roadway,

Comment No.	Comment	Response
	of the area with limited potential for adverse effects eastward of the quay wall as discussed in Section 6.6 of the Draft Remedial Investigation Report , IR Site 20. Please provide more information to help the reader understand the location of the area and the basis for the statement.	including water depths, accessibility, and the lack of clam habitat.
Comments from San Francisco Bay Water Board (May 29, 2007)		
1	Upon review of the subject document we concur with proceeding to either further evaluation or a Feasibility Study at IR Site 24. Furthermore, we concur with EPA's Specific Comment #6, submitted to the Navy on April 27, 2007. EPA suggests that all open water areas exceeding ER-Ms also be included in the FS, not just the area between Outfalls J and K. Please revise the test to indicate that the areas to be addressed include the area between Outfalls J and K as well as the open water areas with exceedances of ER-Ms.	The assumption in the U.S. EPA comment about use ERMs was incorrect; U.S. EPA commented "Since Site 24 was apparently recommended for evaluation in an FS based on exceedences of the ERMs, all areas that have exceedences of the ERMs, including open-water areas south of Piers 1 and 2 should be included in the FS." The IR Site 24 evaluation and recommendation are not based on locations where chemistry exceeds the ER-M. Instead, the ER-Ms are simply included to help the reader by providing a benchmark. Ecological risks were carefully and conservatively evaluated, and a determination was made that no unacceptable risks are associated with contaminant concentrations in the open water area. In fact, even when the higher concentrations under the road are considered in an overall evaluation, there may not be unacceptable risk. Therefore, results of the risk assessment do not show that the open-water areas should proceed to a FS. However, it is clear that elevated concentrations of several contaminants are located near outfalls under the road. Due to this apparent pattern, uncertainties, and the fact that when this area is examined separately, concentrations do appear to be of concern (using conservative assumptions about the area over which an organism would be exposed), the recommendation was made to take a portion of the area under the

Comment No.	Comment	Response
		road to an FS. The RI report has been revised to clarify that the area recommended for evaluation in an FS includes the portion of sediment under the road as represented by samples C-26, C-27, C-23, C-24 and C-21.

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Table 1: Comparison of Low and High TRV-Based HQs for Least Tern Using 2005 Surface Data and Different Methods of Calculating Exposure

Low TRV					High TRV				
Site Area of Concern	SUF = 1[1]	Best Estimate SUF plus ambient exposure[2]	Alameda Point[3]	Ambient[4]	Site Area of Concern	SUF = 1[1]	Best Estimate SUF plus ambient exposure[2]	Alameda Point[3]	Ambient[4]
Lead					Lead				
IR 20	9.89	6.24	5.68	6.20	IR 20	0.02	0.02	0.01	0.02
IR 24	10.70	6.33	5.68	6.20	IR 24	0.03	0.02	0.01	0.02
WBS	4.93	5.47	5.68	6.20	WBS	0.01	0.01	0.01	0.02
BWB	7.21	6.24	5.68	6.20	BWB	0.02	0.02	0.01	0.02
Total PCBs[5]					Total PCBs[5]				
IR 20	1.08	0.14	0.44	0.13	IR 20	0.09	0.01	0.04	0.01
IR 24	1.36	0.16	0.44	0.13	IR 24	0.11	0.01	0.04	0.01
WBS	0.42	0.30	0.44	0.13	WBS	0.03	0.02	0.04	0.01
BWB	2.76	0.23	0.44	0.13	BWB	0.23	0.02	0.04	0.01
Total DDX					Total DDX				
IR 20	2.04	0.97	1.12	0.96	IR 20	0.02	0.01	0.01	0.01
IR 24	1.41	0.97	1.12	0.96	IR 24	0.02	0.01	0.01	0.01
WBS	1.17	1.08	1.12	0.96	WBS	0.01	0.01	0.01	0.01
BWB	1.38	0.97	1.12	0.96	BWB	0.02	0.01	0.01	0.01

Notes
WBS = Western Bayside; BWB = Breakwater Beach
1. SUF is set at 1 for each site. Assumes 100% of the time the tern is foraging at that site.
2. Exposure is assumed to be the best estimate SUF (as reported in the literature) for each site plus ambient exposure.
3. Alameda exposure was estimated using the following SUFs based on a conservative interpretation of foraging time in Collins and Feeney (1995):
IR 20 = 0.012; IR 24 = 0.029; WBS = 0.574; BB = 0.038; Ambient = 0.347
This scenario assumes no action at any of the four sites (IR 20, IR 24, WBS, and BB) and accounts for the contribution of other IR Sites.
Seaplane Lagoon was excluded due to planned remediation.
4. Assumes 100% exposure to ambient conditions in San Francisco Bay
5. Total PCBs were calculated using non-detects equal to zero.

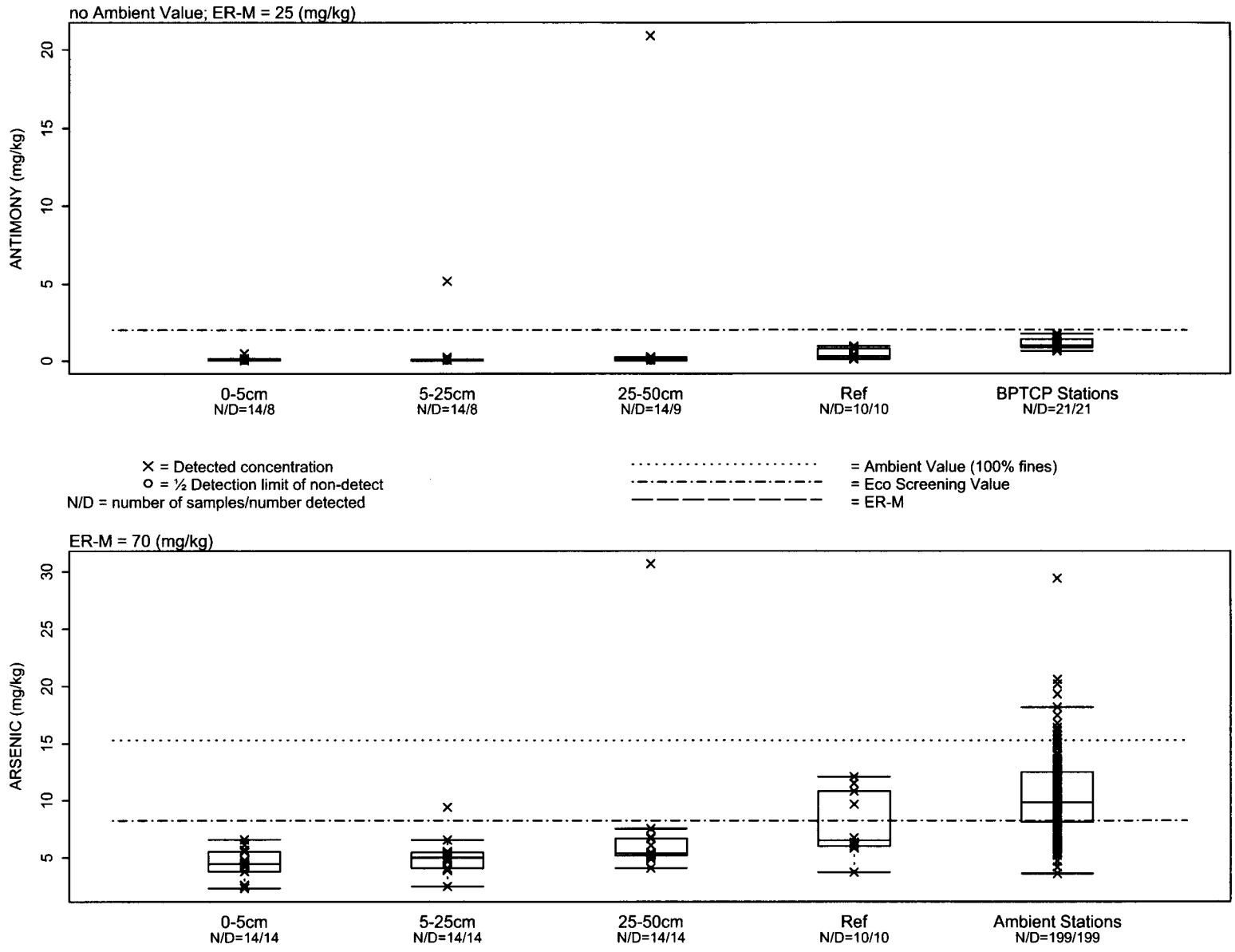

Figure A-32. Box Plots of Antimony and Arsenic Concentrations in 2005 Core Samples in IR Site 20 by Depth.

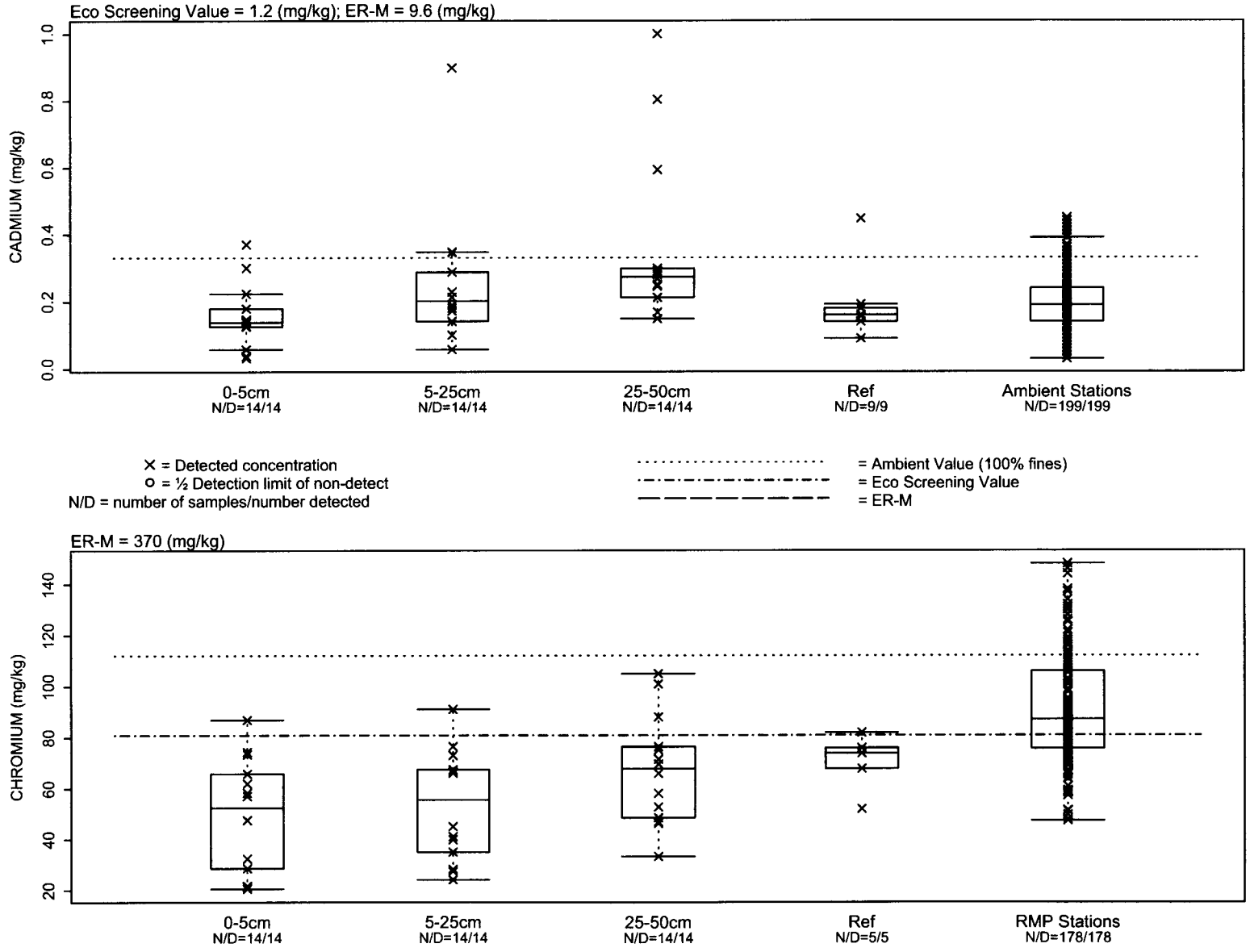

Figure A-33. Box Plots of Cadmium and Chromium Concentrations in 2005 Core Samples in IR Site 20 by Depth.

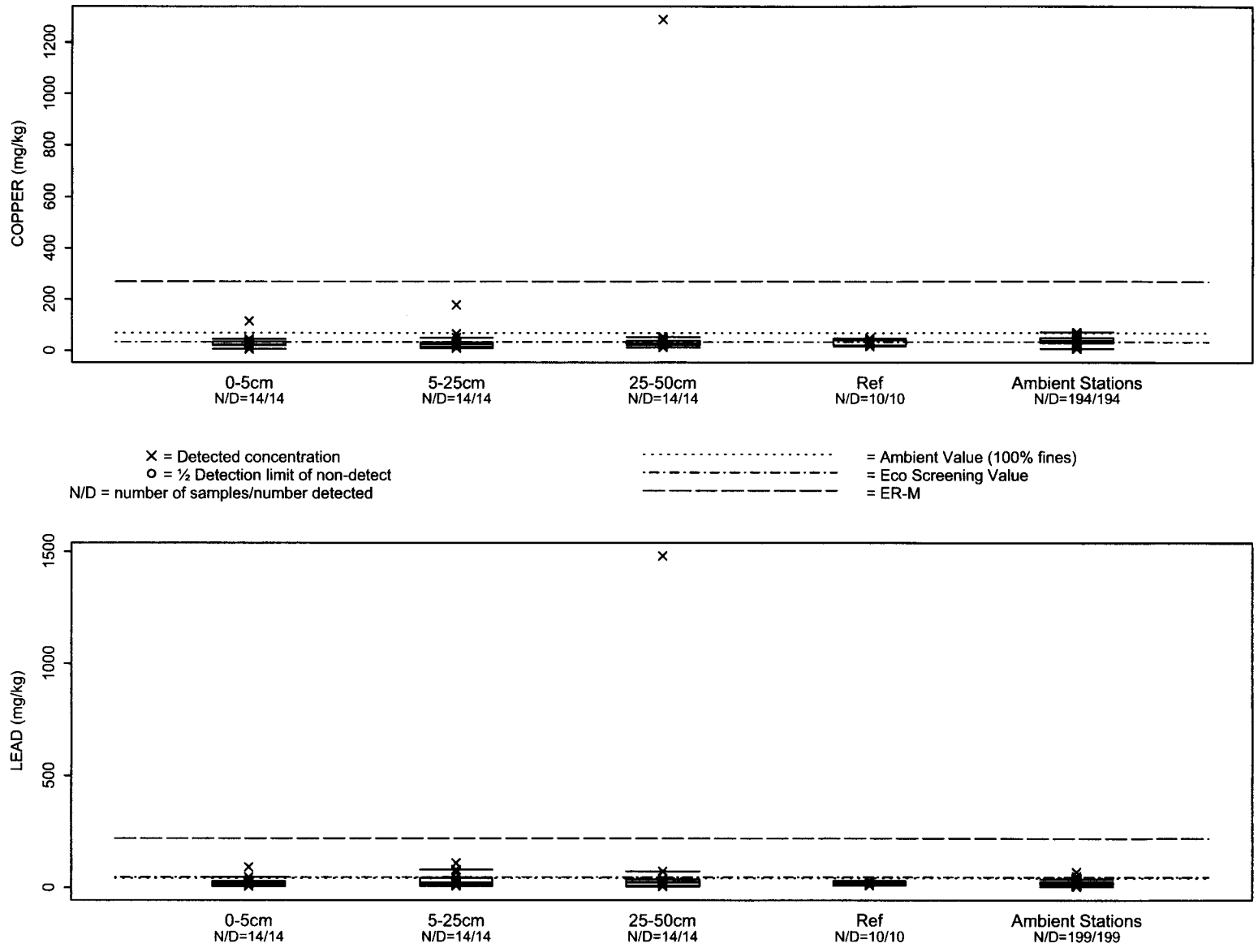

Figure A-34. Box Plots of Copper and Lead Concentrations in 2005 Core Samples in IR Site 20 by Depth.

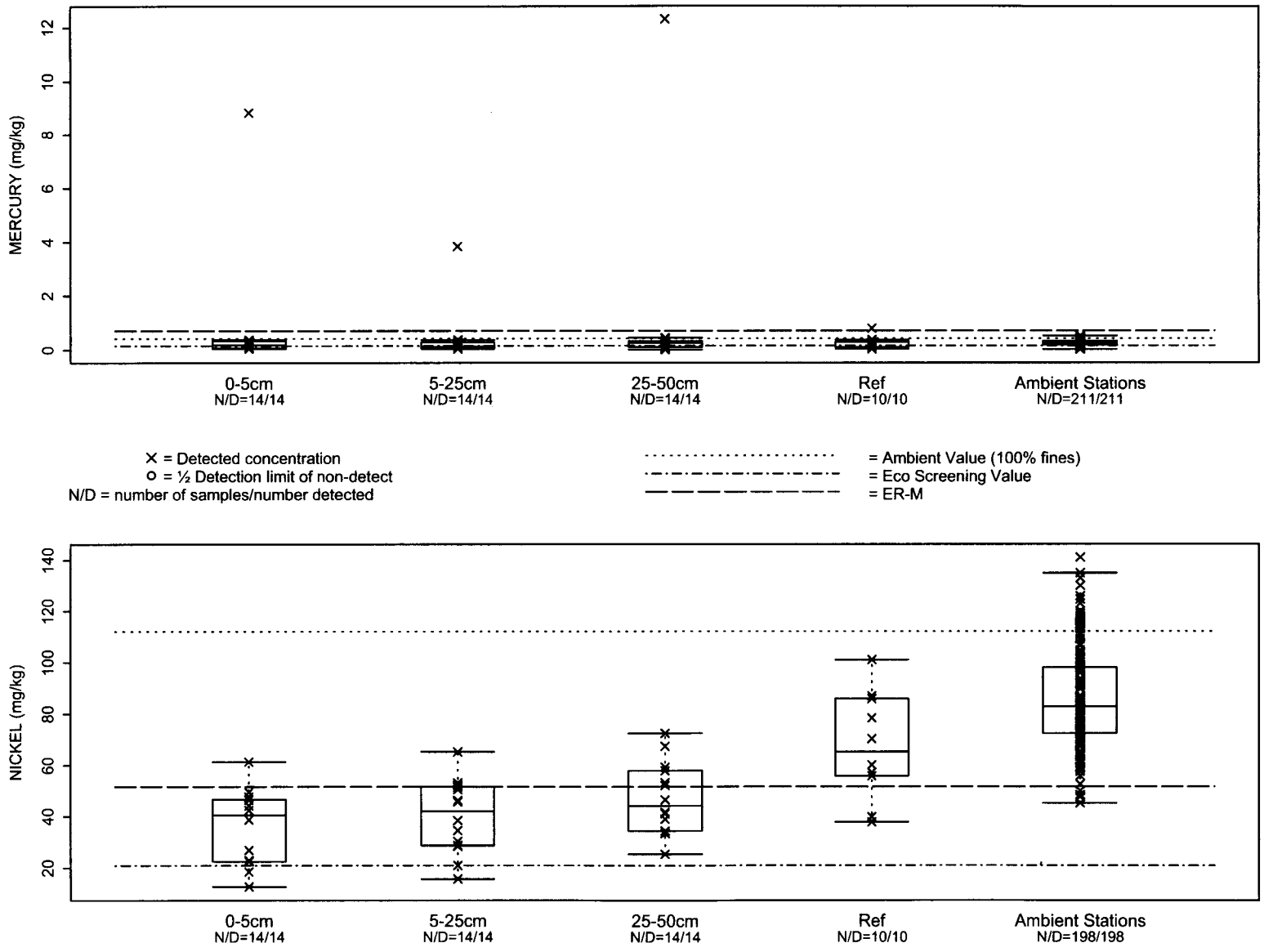

Figure A-35. Box Plots of Mercury and Nickel Concentrations in 2005 Core Samples in IR Site 20 by Depth.

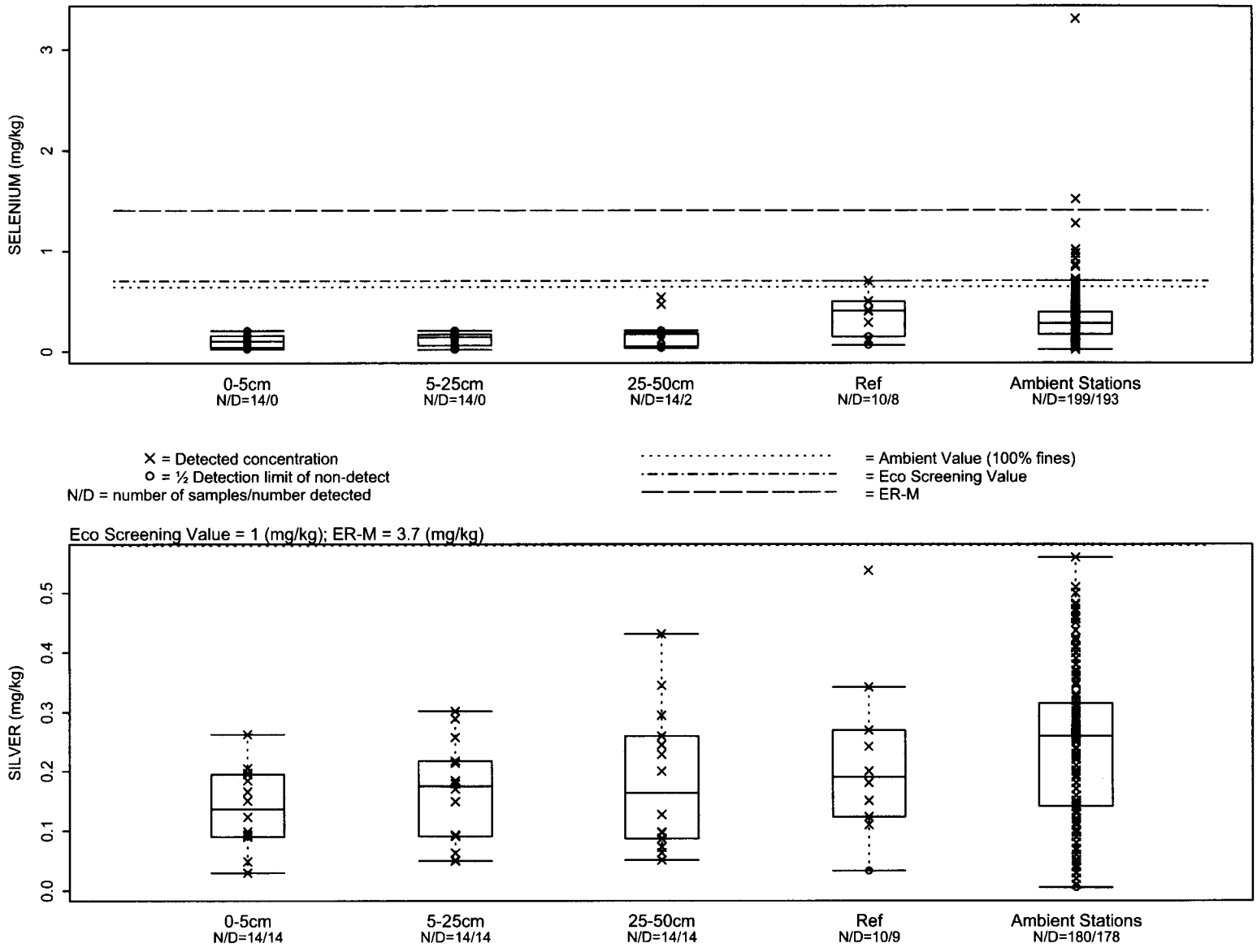

Figure A-36. Box Plots of Selenium and Silver Concentrations in 2005 Core Samples in IR Site 20 by Depth.

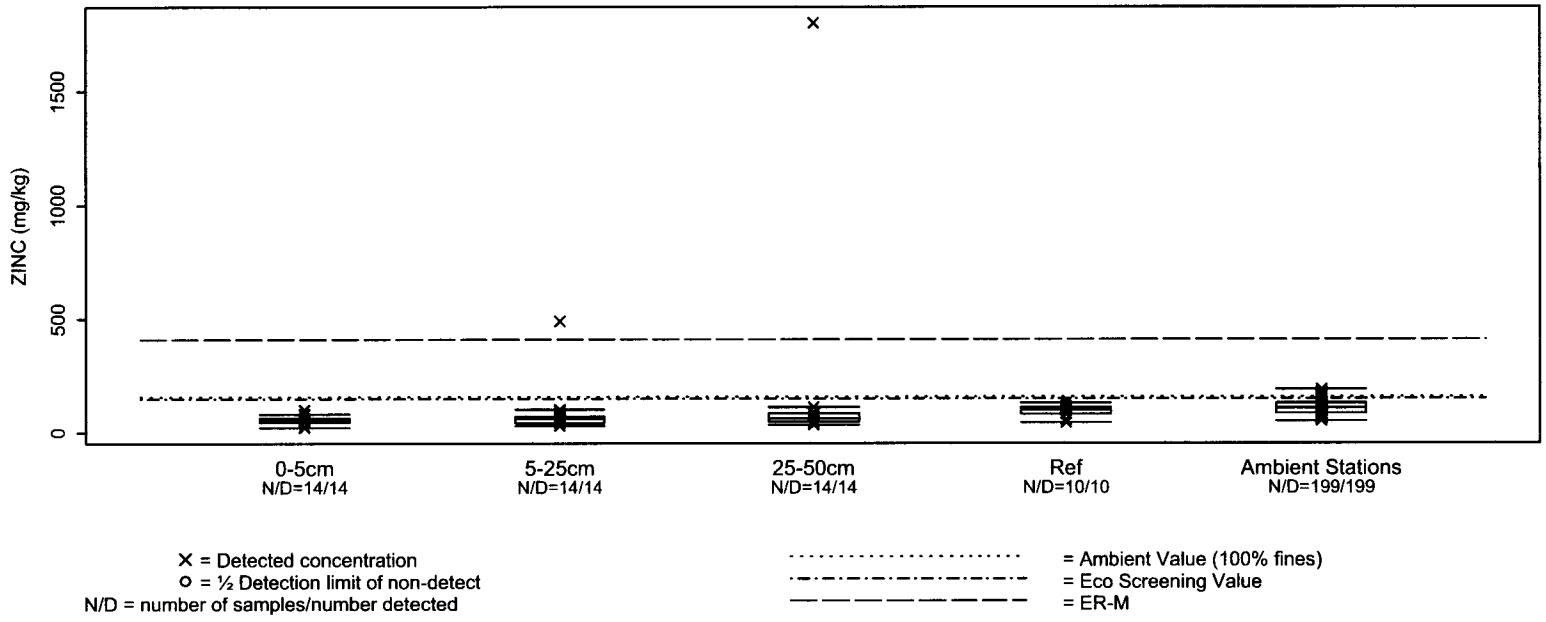

Figure A-37. Box Plot of Zinc Concentrations in 2005 Core Samples in IR Site 20 by Depth.

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Response to U.S. EPA July 11, 2007 E-mail Comments on the Draft RTCs for Draft Revision 1 Remedial Investigation Report, IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area)

U.S. EPA Response to General Comment (GC) 1 RTC: The response partially addresses the comment. It is unclear if Oakland Inner Harbor dredging would include the areas close to the shoreline; if not, areas that are not likely to be dredged should be recommended for evaluation in a Feasibility Study (FS). Please clarify whether dredging is likely to include areas near the shoreline of IR Site 20 and if not, recommend those areas that would not be dredged for consideration in an FS.

Navy Response to RTC Question GC 1: Dredging is only a minor potential factor at IR Site 20, and text to be added to the RI Report to discuss dredging is based on U.S. EPA's comment, as specified in the Navy's original RTC. The Navy cannot dictate the area for future dredging, but that information is not relevant to the no further action recommendation. The sequence of the additional RI text specified in the original draft RTC is based on the sequence in U.S. EPA's comment request, not the importance of the factor. More importantly, in accordance with CERCLA, the rationale for no further action at IR Site 20 is the results of the human health and ecological risk assessments, which were conducted in accordance with U.S. EPA guidance and are based on conservative assumptions and multiple lines of evidence that strongly support the no further action conclusion.

In the Draft RI Report, the principal rationale for recommending No Further Action (NFA) from a human health perspective at IR Site 20 was the conclusion that human health risks posed by IR Site 20 were similar to risks from ambient conditions within San Francisco Bay. Specifically, U.S. EPA's comment cited "an excess cancer risk of 9×10^{-4} for shellfish consumption" (site RME for all years). For shellfish consumption in the reference area, the corresponding RME value is 1.3×10^{-3} (Table 7-7 in the Draft RI Report). Therefore, the site risk is less than the reference/ambient risk. U.S. EPA's comment cited "an excess cancer risk of 2.2×10^{-3} for fish consumption" (site RME). For fish consumption in the reference area, the corresponding RME value is 2.3×10^{-3}. Therefore, the site risk is similar, but slightly less than the reference/ambient risk. Sediments at IR Site 20 pose human health risks that are similar to (or less than, as shown by the risks referenced in U.S. EPA's comment) ambient conditions. Therefore, in accordance with U.S. EPA guidance as well as Navy guidance, no further action was recommended at IR Site 20. Results of the ecological risk assessment also support a recommendation of no further action at IR Site 20. Consequently, in accordance with CERCLA requirements, it is not appropriate to recommend that any sediments at IR Site 20 be evaluated further in a feasibility study.

To summarize the Navy's original response to General Comment 1, the RTC addressed the EPA's request that additional information to supplement the NFA recommendation for IR Site 20 based on the results of the human health and ecological risk assessments be added to the report. The Navy's response included three additional supporting points (ordered by U.S. EPA's comment), which briefly summarized are:

1. Ongoing maintenance navigational dredging may further reduce contaminant concentrations.
2. Exposure point concentrations and exposure parameters used in the human health risk assessment are conservative, and tend to overestimate exposure and risk; therefore, the incremental risks to the defined receptor populations from exposure to chemicals of concern at IR Site 20 are likely to be overestimated.
3. Risk associated with ingestion of local sport fish is a bay-wide issue that has resulted in health advisories on all major waterways in the San Francisco Bay Area (SFEI, 1999), and due to the large foraging ranges of most species of sport fish, it is difficult to distinguish the risk attributed to the site from risk associated with other point sources along IR Site 20 or bay-wide conditions.

U.S. EPA Response to Specific Comment (SC) 2 RTC: When looking at the bubble plots for soil sampling for nickel and lead, surface sediment concentrations appear to be higher than concentrations at depths. When looking at box plots, nickel concentrations appear to increase at depth, since more samples contain nickel concentrations above the effects range median (ERM) value. Additionally, the scale of the box plots for copper and lead is small and difficult to read. Please consider using an alternative scale, such as a logarithmic scale, to render the box plots more usable.

Please revise the statement that the distributions of copper, lead, and nickel are uniform at depth to include the information above. The response indicates a discussion of cadmium has been added to the text, but does not address the distribution of other metals. Please discuss the remaining metals in the text.

Navy Response to RTC Question SC 2: The Navy's observations regarding uniform distributions of the named constituents are substantiated by the box plots and analytical results presented in the draft RI report. Almost no shift in the median concentration occurs between surface and subsurface samples. Plots for copper, lead, and mercury are similar to other metals, and are effective. Therefore, the scale was not changed to a logarithmic scale.

The text in the draft RI report that specifies uniform distributions at depth and concentrations that are not different from ambient, with the exception of one station (C-2), is accurate and reflects the analytical results. With the exception of cadmium, for which new text was specified in the original RTC, all other metals were discussed in Section 4.2.1.3 of the draft RI report. Since your comment mentioned ER-M, the Navy added the text below to the draft final RI report.

"At IR Site 20, concentrations across all depths were less than the ER-M for antimony, arsenic, cadmium, chromium, selenium, and silver. Subsurface concentrations for copper, lead, mercury, and zinc were below the ER-M at all locations except one, C-2. Nickel concentrations at IR Site 20 exceeded the ER-M in some samples, but site concentrations were less than ambient levels."

U.S. EPA Response to SC 6 RTC: The response does not address the comment. A review of the bubble plot figures indicates contaminants are found in open water areas south of Piers 1 and 2 at concentrations exceeding ecological screening values. These contaminants include: total high molecular weight polynuclear aromatic hydrocarbons (HPAH), total low molecular weight PAHs (LPAH), chromium, copper, mercury, nickel, zinc, individual PAHs such as benzo(a)anthracene and benzo(a)pyrene, and 4,4'-DDx. Similar areas at Seaplane Lagoon were considered in the FS and it is possible that future use of Site 24 may disturb sediment in the open water areas. Please revise the recommendation for an FS also to include open-water areas where the ERMs or other ecological screening values were exceeded.

Navy Response to RTC Question SC 6: There appears to be confusion about the CERCLA ecological risk assessment process and how the need for further action is determined. Therefore, the use of ER-Ms, per the authors who developed them, and the process for conducting an ecological risk assessment under CERCLA follows, with references provided at the end of the discussion.

ER-Ms, as discussed by the authors who developed them (Long *et al.*, 1995), are meant to be used as screening tools to evaluate sediment chemistry data and to identify those areas where there is a potential for biological effects. However, once a benchmark is exceeded, site-specific measures (such as toxicity or bioaccumulation tests) provide the best estimate of the potential for site-specific toxicity. As described by Long *et al.* (1995), "they are not intended to preclude the use of toxicity tests or other measures of biological effects" (pg 95). Additionally, the use of screening benchmarks such as ER-Ms as a means of identifying areas for evaluation in a FS is not supported by EPA guidance. For example in the US EPA Guidance entitled, "Ecotox Thresholds", these benchmarks are defined as " media-specific contaminant concentrations above which there is sufficient concern regarding adverse ecological effects to warrant further site investigation.....they are to be used for screening purposes only; they are not regulatory criteria, site-specific cleanup standards, or remediation goals" (pg 2).

The CERCLA ecological risk assessment process is briefly described in the approved final work plan for these sites. This final work plan states that the risk assessment shall be conducted in accordance with U.S. EPA and Navy guidance and states (on page 25) that, in accordance with U.S. EPA and Navy guidance, "a tiered process will be followed (Figure 3-2). In the first tier, a screening-level ecological risk assessment (SLERA) will be conducted (encompassing Steps 1 and 2 of the U.S. EPA guidance) consisting of a preliminary problem formulation, and screening-level dose assessment using conservative assumptions. The second tier, or baseline ecological risk assessment (BERA) (Steps 3 through 7 of the U.S. EPA process), will use the output of the SLERA to refine the problem formulation and to further evaluate the potential for adverse effects to receptors of concern by using site-specific data." Figure 3-2 outlines the ecological risk assessment process per U.S. EPA and Navy guidance, including the criteria of moving to a baseline risk assessment based on the screening level assessment and then determining the need for further action based on the baseline ecological risk assessment.

The ecological risk assessments for IR Sites 20 and 24 were conducted in accordance with the approved RI work plan and both U.S. EPA and Navy guidance (U.S. EPA 1996, 1997, 2005; DON 2001 and 2003). Consistent with the guidance, screening-level benchmarks such as ER-Ls

and ER-Ms were used to focus the evaluation from the screening step to the baseline step. The baseline risk assessment step then, in accordance with U.S. EPA and Navy guidance, used more sophisticated means (e.g., toxicity bioassays and dose modeling) of evaluating potential ecological risks to benthos than ER-Ms.

As such, ecological risks were carefully and conservatively evaluated in the baseline risk assessment step, and a determination was made that no unacceptable risks are associated with contaminant concentrations in the open water area. In fact, even when the higher concentrations under the road are considered in an overall evaluation, there may not be unacceptable risk. The methodology of using the results of the baseline risk assessment to identify areas requiring further evaluation in the FS is consistent with the above U.S. EPA and Navy guidance as well as with the way decisions have been made at other Navy sediment IR Sites, including IR Site 17 (Seaplane Lagoon). Therefore, results of the ecological risk assessment do not show that the open-water areas should proceed to a FS.

It is clear, however, that elevated concentrations of several contaminants are located near outfalls under the road. Due to this apparent pattern, uncertainties, and the fact that when this area is examined separately, concentrations do appear to be of concern (using conservative assumptions about the area over which an organism would be exposed), the recommendation was made to take a portion of the area under the road to an FS. The RI report has been revised to clarify that the area recommended for evaluation in an FS includes the portion of sediment under the road as represented by samples C-26, C-27, C-23, C-24 and C-21.

Literature Cited:

Long, E.R., D. Macdonald, S. Smith and F. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. *Environ. Manage.* 19(1):81-97.

U.S. Department of the Navy (DON). 2001. Navy Guidance for Conducting Ecological Risk Assessments: Ecological Risk Assessment Process. Available at: web.ead.anl.gov/ecorisk/process/pdf/ index.cfm.

U.S. Department of the Navy (DON). 2003. Implementation Guide for Assessing and Managing Contaminated Sediment at Navy Facilities. NFESC User's Guide UG-2053-ENV.

US EPA 1996. Ecotox Thresholds. *Eco Update.* 3(2):1-12. EPA/540/F-95/038.

US EPA 1997. Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. EPA 540-R-97-006.

US EPA 2005.Contaminated Sediment Remediation Guidance for Hazardous Waste Sites. EPA 540-R-05-012.

U.S. EPA Response to Comment #7 (Response to Response to SC26): The Navy indicates that they have deleted the sentence that refers to a number of sources, including urban background, on Page 4-8 of the Draft Final RI. A review of the Draft RI shows that the sentence preceding this deleted sentence also references urban background, stating, "...the relative composition of the 16 priority pollutant PAHs evaluated is very similar to that attributed to urban background at the other locations." Please clarify whether all references attributing PAH concentrations to urban background have been deleted. If they have not, please remove all references to PAH concentrations being attributed to urban background.

Navy Response to RTC Question C 7: The sentence specified in the Navy's original RTC as deleted was related to potential sources at IR Site 20. Since potential sources were discussed in detail in Section 3.1, the more general text was removed from Section 4. The remaining discussion of PAH concentrations and urban background in this paragraph in Section 4.2.2.1 is technically correct, so was not revised. For additional information, please refer to Stout *et al.*, 2004, which was specified in the draft RI report and provides the technical basis for this comparison to urban background.

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