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FINAL REMEDIAL INVESTIGA
SITE 15
NAVAL AIR STATION
PENSACOLA, FLORIDA

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CONTRACT NUMBER:
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Naval Air Station
Pensacola, Florida

Prepared by:

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The Contractor, EnSafe, hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0318 is complete, accurate, and complies with all requirements of the contract.

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19. Abstract
A remedial investigation (RI) was performed for Site 15, the Pesticide Rinsate Disposal Area, at Naval Air Station (NAS) Pensacola, to determine the source, nature, and extent of soil and groundwater contamination. The RI also conducted to evaluate the risk to human health and the environment from onsite contaminated media through the baseline risk assessment (BRA) process. Analytical data generated from the RI were compared to specific State of Florida and/or federal standards and risk-based guidance concentrations. These standards and concentrations, previously agraed upon by the Tier I Partnering Team, were designated as Preliminary Remedietion Goals (PRGs).

From 1963 to the present, the golf course maintenance facility has stored, handled, and mixed fertilizers, pesticides, and herbicides applied to the NAS Pensacola golf course. Associated application equipment also has been stored, cleaned, and maintained at the facility, which is approximately 600 feet south of Bayou Grande. Land surface across the site is generally level and unpaved except for minimal paved areas used for equipment wash down. Several potential contaminant source areas identified during the preinvestigation contaminant source survey included a former pesticide/drum storage area, equipment rinsate/pesticide handling areas, equipment storage areas, and a nearby area where the contents of an underground holding tank have been disposed.

Several inorganic and organic parameters exceeding PRGs were detected in site soil samples. Elevated inorganics can be attributed to past and current handling and storage of fertilizers, commonly containing iron and manganese as 'essential nutrients.' Detected arsenic can be attributed to the handling of various arsenic-based herbicides and pesticides. Volatile organic compounds and semivolatile organic compounds detected in soil collected near equipment wash-down pads and storage areas can be attributed to fuel, lubricant, and solvent residues from this machinery. Polychlorinated biphenyls detected at a limited number of surface soil sample locations along the unpaved road are suspected to be a result of past waste oil application for dust control. Pesticide detections, including relatively persistent aldrin and dieldrin, can also be attributed to the past handling and storage of these materials. However, based on magnitude and frequency of detection, arsenic and dieldrin are the primary parameters of concern in soil.

Arsenic was detected in soil across the site. Relatively higher arsenic concentrations were limited to the following four portions of the site: the previous drum storage area just northeast of Building 2692; the asphalt pad area northwest of Building 2640; the concrete pad wash-down area west-northwest of Building 3586; and at boring location 15S53, in the area where the contents of a holding tank were reportedly spread.

Dieldrin was detected primarily across the site's western-southwestern portion near storage Building 2692, equipment storage Building 2640, and its associated asphalt pad. Relatively higher dieldrin concentrations were limited to the soil surrounding the asphalt wash-down pad, northwest of Building 2640, and at boring location 15S50, north of Building 3447.

Only arsenic was commonly detected above its PRG and reference concentrations (RC), and is the primary parameter of interest in groundwater based on magnitude and frequency of detection. Arsenic was not elevated in intermediate depth groundwater samples, indicating no appreciable downward migration of arsenic has occurred.

Three areas of shallow groundwater arsenic PRG exceedances were identified onsite: the area immediately surrounding the asphalt pad at Building 2640's northwestern corner, an area north of Building 2692, and an area north of Building 3586. These exceedance areas are downgradient of elevated arsenic soil concentrations. Groundwater samples from the most downgradient Phase III monitoring wells did not contain elevated arsenic, indicating that arsenic-impacted groundwater does not extend beyond the golf course. Rather, given its distribution, magnitude, and relatively immobile fate characteristics, elevated arsenic in groundwater is limited to the site and immediate downgradient areas which extend beneath the golf course.

Transport of detected parameters at Site 15 is downward from surface soil through subsurface soil to groundwater. The primary receiving body of site impact is the surficial zone of the Sand and Gravel Aquifer. However, it is not used as a potable water supply source at NAS Pensacola due to its high iron and aluminum content. Arsenic PRG exceedances are limited to the upper portion of the surficial zone. Other potential receptors of surficial zone contaminants are Bayou Grande, associated tidal ponds, and associated biota. These resources are not expected to be impacted by site contaminants due to their distance from the site, and the magnitude and limited extent of impacted shallow groundwater.

Arsenic, dieldrin, chlordane, and benzo(a)pyrene equivalents (BEQ) have been identified as chemicals of concern in the human health component of the BRA with regard to specific land use scenarios. each contributing to the estimated risk for one or more evaluated exposure pathways. The ecological risk BRA indicates potential sublethal effects to evaluated native species from maximum detected arsenic, mercury, and possibly pesticide concentrations in surface soil. However, associated calculations for both BRA components are based on conservative assumptions and land use scenarios. Downgradient surface water, sediment, and biota (within Bayou Grande and Wetland 65) were not found to be at risk from the site. The bayou and wetland will be further evaluated in the upcoming Site 40, Bayou Grande, and 41, NAS Pensacola Wetlands, RIs.

Site contamination has been adequately evaluated and used to calculate the potential risk estimates for Site 15. Given the estimated risk to human health and biota at Site 15, the Navy recommends that a Feasibility Study be performed using the data collected during this investigation to select appropriate risk management alternatives and actions for the site.

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List of Acronyms and Abbreviations

bls	below land surface
BNA	Base-neutrallacid extractable organic compound
COC	Chemical of Concern
CG	Cleanup Goal
CLP	Contract Laboratory Program
CSAP	Comprehensive Sampling and Analysis Plan
CSS	Contaminant Source Survey
E/A&H	EnSafe/Allen & Hoshall
E&E	Ecology & Environment, Inc.
FDEP	Florida Department of Environmental Protection
FSDWS	Florida Secondary Drinking Water Standard
ft/day	feet per day
G&M	Geraghty & Miller
MCL	Maximum Contaminant Level
mEq/100g	milliequivalents per 100 grams
msl	mean sea level
μg/kg	microgram per kilogram
μg/L	microgram per liter
mg/kg	milligram per kilogram
NAS	Naval Air Station
NTU	Nephelometric turbidity unit
PCB	polychlorinated biphenyl
ppb	part per billion
ppm	part per million
PRG	Preliminary Remediation Goal
PSC	Preliminary Site Characterization
PVC	polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
RBC	Risk-Based Concentration
RC	Reference Concentration
SMCL	Secondary Maximum Contaminant Level
SSV	Soil Screening Value
TAL	Target Analyte List
TCL	Target Compound List
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound

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EXECUTIVE SUMMARY
SITE 15
NAVAL AIR STATION PENSACOLA

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Three areas of shallow groundwater arsenic PRG exceedances were identified onsite: the area immediately surrounding the asphalt pad at Building 2640's northwestern comer, an area north of Building 2692, and an area north of Building 3586. These exceedance areas are downgradient of elevated arsenic soil concentrations. Groundwater samples from the most downgradient Phase III monitoring wells did not contain elevated arsenic, indicating that arsenic-impacted groundwater does not extend beyond the golf course. Rather, given its distribution, magnitude, and relatively immobile fate characteristics, elevated arsenic in groundwater is limited to the site and immediate downgradient areas which extend beneath the golf course.

Transport of detected parameters at Site 15 is downward from surface soil through subsurface soil to groundwater. The primary receiving body of site impact is the surficial zone of the Sand-and Gravel-Aquifer. However, it is not used as a potable water supply source at NAS Pensacola due to its high iron and aluminum content. Arsenic PRG exceedances are limited to the upper portion of the surficial zone. Other potential receptors of surficial zone contaminants are Bayou Grande, associated tidal ponds, and associated biota. These resources axe not expected to be impacted by site contaminants due to their distance from the site, and the magnitude and limited extent of impacted shallow groundwater,

Arsenic, dieldrin, chlordane, and benzo(a)pyrene equivalents (BEQ) have been identified as chemicals of concern in the human health component of the BRA with regard to specific land use scenarios, each contributing to the estimated risk for one or more evaluated exposure pathways. The ecological risk BRA indicates potential sublethal effects to evaluated native species from maximum detected arsenic, mercury, and possibly pesticide concentrations in surface soil. However, associated calculations for both BRA components are based on conservative assumptions and land use scenarios. Downgradient surface water, sediment, and biota (within Bayou Grande and Wetland 65) were not found to be at risk from the site. The bayou and wetland will be further evaluated in the upcoming Site 40, Bayou Grande, and 41, NAS Pensacola Wetlands, RIs.

Site contamination has been adequately evaluated and used to calculate the potential risk estimates for Site 15. Given the estimated risk to human health and biota at Site 15, the Navy recommends that a Feasibility Study be performed using the data collected during this investigation to select appropriate risk management alternatives and actions for the site.

1.0 INTRODUCTION

Under the authority of the U.S. Navy Comprehensive Long-Term Environmental Action Navy (CLEAN) program, a Remedial Investigation (RI) was recently completed at Site 15 – the Pesticide Rinsate Disposal Area, Naval Air Station (NAS) Pensacola. Site 15 is in the northeastern portion of the air station, approximately 600 feet south of Bayou Grande, inside the golf course maintenance facility.

This site is listed in the Site Management Plan (SMP) of the Installation Restoration Program (IRP) for NAS Pensacola (SOUTHNAVFACENGCOM, 1996). The investigation was undertaken by EnSafe/Allen & Hoshall (E/A&H) to meet the requirements of the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) program, which administers the investigation and cleanup of hazardous waste sites. The RI report summarizes the activities, results, and conclusions of the investigation, including a Baseline Risk Assessment (BRA), and provides the basis for a feasibility study (FS) to be completed at the site. The objectives are outlined below.

Objectives of the RI

- To determine the source, nature, and the extent of soil and groundwater contamination, and to characterize the surface soil within the site.

- To evaluate the risk to human health and the environment from onsite contaminated media. This objective is accomplished through the BRA process.

After the RI is complete, an FS will be conducted to determine appropriate methods of addressing site contamination, based on data generated during the RI process.

1.1 Project Organization

The RI was executed in three parts. First, all available previous investigation reports in the administrative record were reviewed to develop a comprehensive understanding of the site history and background to develop the Sampling and Analysis Plan (SAP, E/A&H 1996). Next, a contaminant source survey (CSS) was performed to gain additional information on the history of the site, including past and present activities which may have contributed to site impact. Finally, a field investigation was performed where soil borings were advanced and monitoring wells were installed to collect soil and groundwater samples for chemical and physical analyses.

1.2 Purpose of Report

This RI report summarizes the activities, results, and conclusions of the overall investigation, and provides the basis for an FS to be completed and, ultimately, a Record of Decision (ROD) for the site. The report also documents the data collection and analytical methods used during the investigation.

2.0 SITE DESCRIPTION AND HISTORY

Contaminant Source Survey

The CSS was completed for Site 15 before fieldwork commenced to determine past and present site activities. The CSS reviewed previous investigations, aerial photographs, maps, information on underground utilities, as well as interviews with NAS Pensacola personnel. Its purpose was to establish information relevant to past and present sources of contamination. The CSS findings have been incorporated into the following site description and history discussion.

2.1 Site Description

As shown on Figures 2-1 and 2-2, Site 15 is inside the golf course maintenance facility at NAS Pensacola, in the northern portion of the air station. The maintenance facility is approximately 600 feet south of Bayou Grande, and is accessible from the west via an unpaved road. Land surface across the site is generally level and unpaved except for minimal paved areas used for equipment wash down. These include three concrete wash-down pads, each covering approximately 250 square feet or less, and two relatively small (less than 50 square feet) asphalt pads (Figure 2-2). Several buildings are in the immediate site vicinity – Buildings 2640, 747, 3447, 1851, 1776, and 3586. These buildings are currently used as follows:

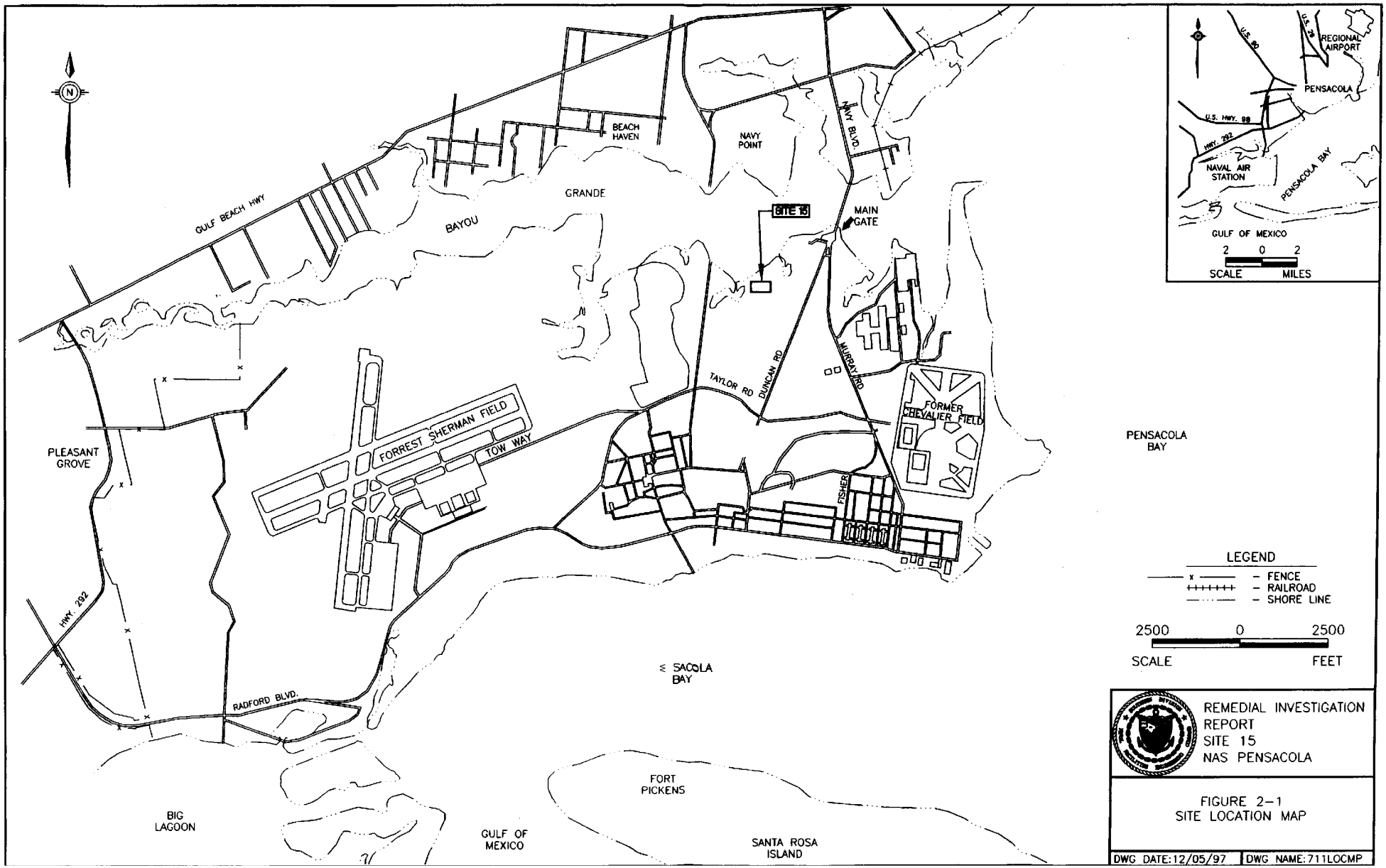
- Building 2640 for large equipment (tractor/mower) storage;
- Building 747 for office space;
- Building 3447 for equipment maintenance and storage;
- Buildings 1851 and 1776 for equipment storage; and,
- Building 3586 for controlled storage of bulk quantities of fertilizers, pesticides, and herbicides.

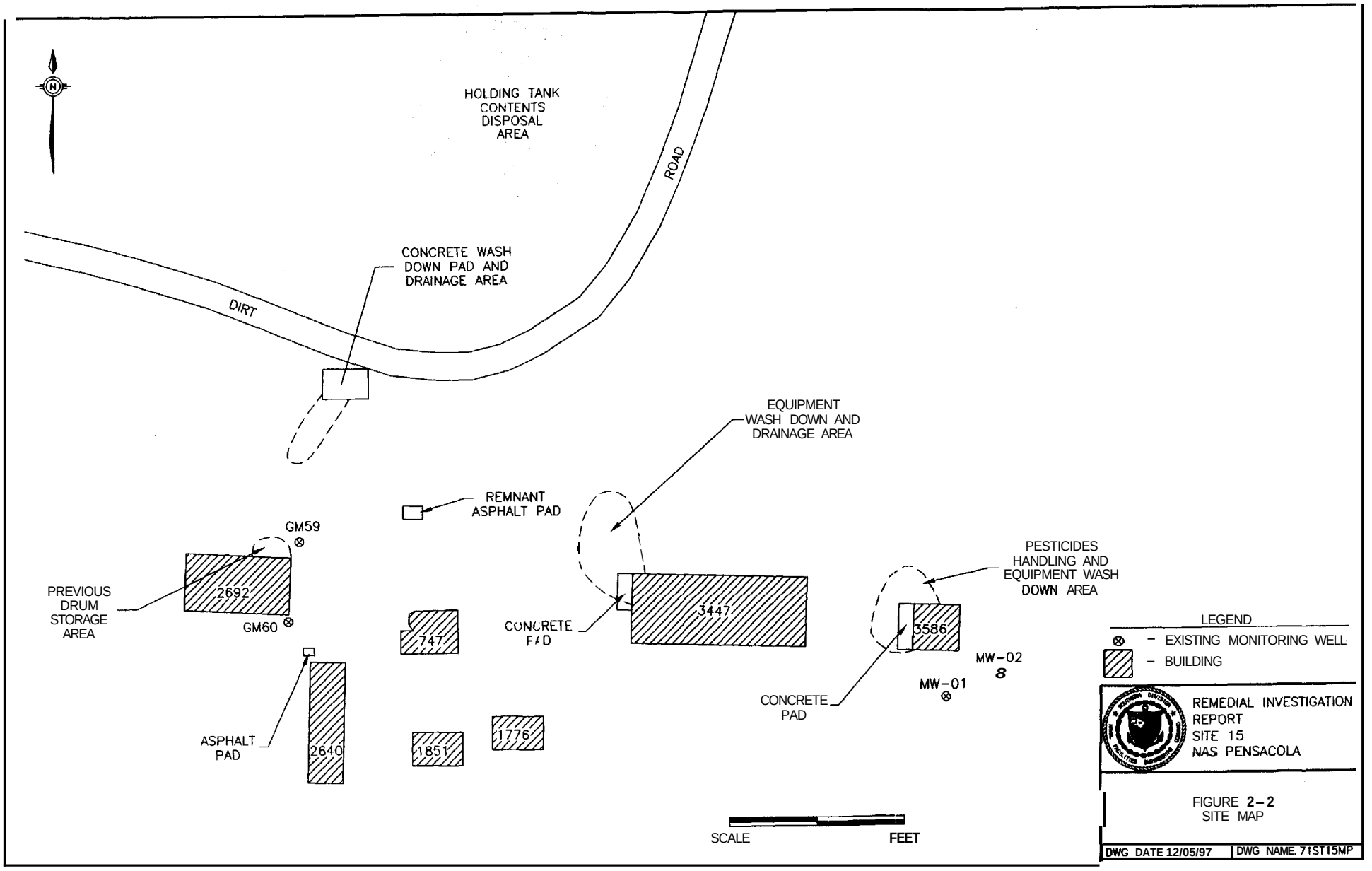
Additionally, a Building 2692 was on the site's western portion from the 1960s until early 1996 when its aboveground portion was razed; the concrete slab floor of the building is still onsite. This building was used for dry material (sand and fertilizer) storage. Currently, large equipment (tractors and large mowers) are rinsed on the concrete wash-down pads northeast of Building 2692 and northwest of Building 3447. Additionally, equipment rinsing and pesticide/herbicide handling occurs on the concrete pad adjacent to Building 3586.

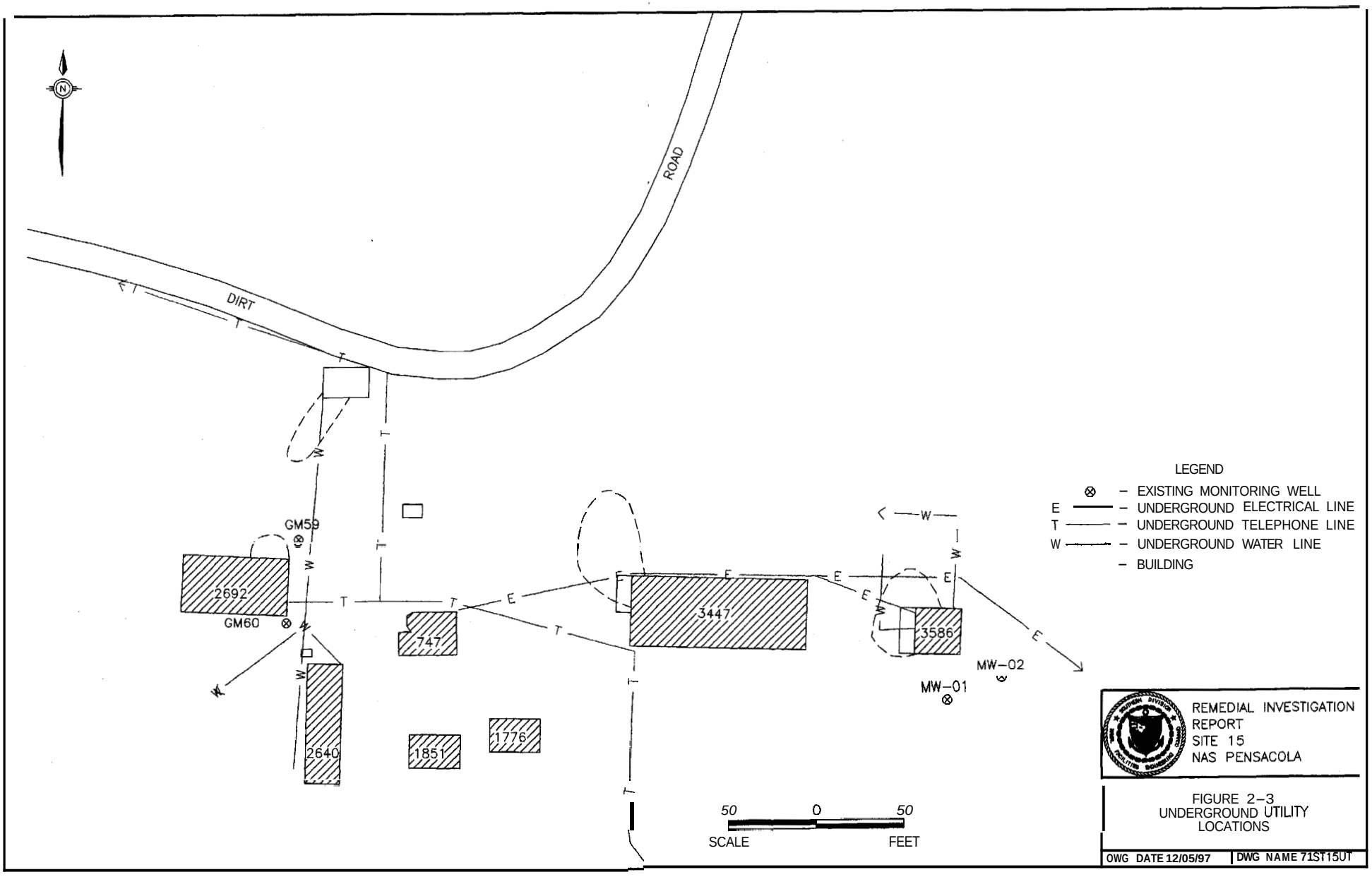
Several onsite underground utilities, including electric cable, telephone, and water line, were located during the investigation. Figure 2-3 illustrates the locations of these utility comdors across the site.

Potential contaminant source areas identified during the CSS included the following (see Figure 2-2):

- Pesticide/drum storage areas in and adjacent to Building 2692;
- Four equipment rinsate/pesticide handling areas (the asphalt pad northwest of Building 2640, the concrete wash-down pad and drainage area northeast of Building 2692, the wash down and drainage area at Building 3447's northwest comer, and the pesticide handling area adjacent to Building 3586's west side);
- Equipment storage Building 2640; and,
- A nearby area north of the site where the contents of an underground holding tank have been disposed.


N
GULF BEACH HWY
BEACH HAVEN
NAVY POINT
NAVY BLVD.
GRANDE
BAYOU
SITE 15
MAIN GATE
TAYLOR RD
DUNCAN RD
MURRAY RD
FORMER CHEVALIER FIELD
FISHER
FORREST SHERMAN FIELD
TOW WAY
PLEASANT GROVE
HWY. 292
RADFORD BLVD.
SACOLA BAY
PENSACOLA BAY
FORT PICKENS
BIG LAGOON
GULF OF MEXICO
SANTA ROSA ISLAND
U.S. 90
U.S. 29
REGIONAL AIRPORT
PENSACOLA
U.S. HWY. 98
HWY. 292
NAVAL AIR STATION
PENSACOLA BAY
GULF OF MEXICO
2 0 2
SCALE MILES
LEGEND
FENCE
RAILROAD
SHORE LINE
2500 0 2500
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 2-1
SITE LOCATION MAP
DWG DATE:12/05/97
DWG NAME:711LOCMP


HOLDING TANK CONTENTS DISPOSAL AREA
ROAD
DIRT
CONCRETE WASH DOWN PAD AND DRAINAGE AREA
EQUIPMENT WASH DOWN AND DRAINAGE AREA
REMNANT ASPHALT PAD
GM59
PREVIOUS DRUM STORAGE AREA
2692
GM60
747
CONCRETE PAD
3447
PESTICIDES HANDLING AND EQUIPMENT WASH DOWN AREA
3586
MW-02
MW-01
CONCRETE PAD
ASPHALT PAD
2640
1851
1776
SCALE
FEET
LEGEND
- EXISTING MONITORING WELL
- BUILDING
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 2-2
SITE MAP
DWG DATE 12/05/97
DWG NAME. 71ST15MP


N
DIRT
ROAD
GM59
GM60
2692
2640
747
1851
1776
3447
3586
MW-01
MW-02
LEGEND
⊗ – EXISTING MONITORING WELL
E – UNDERGROUND ELECTRICAL LINE
T – UNDERGROUND TELEPHONE LINE
W – UNDERGROUND WATER LINE
– BUILDING
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 2-3
UNDERGROUND UTILITY LOCATIONS
OWG DATE 12/05/97
DWG NAME 71ST15UT

Recent inventory listings of pesticide and herbicide products and quantities stored in Building 3586 are presented in Appendix A.

Four existing monitoring wells are onsite. Two shallow wells, GM-59 and GM-60, were installed near Building 2692 as part of the 1986 Characterization Study by Geraghty and Miller, Inc. (G&M, 1986). Two additional shallow (approximately 18 feet deep) monitoring wells, MW-01 and MW-02, were installed in 1993 near Building 3586 during the closure of an underground holding tank (Rettew, pers. com. 1995). Well GM-59 is 17 feet deep, and well GM-60 is 15 feet deep. No additional construction details are available for the 1993 wells. Construction details for the two GM wells are presented in Table 2-1.

Table 2-1
Construction Details of Previously Installed Monitoring Wells on Site 15

Well Designation	Surface Elevation (ft msl)	TOC Elevation (ft msl)	Total Depth (ft bls)	Screened Interval (ft bls)	Depth to Filter Pack (ft bls)
GM-59	16.00	16.54	17.0	14.5-17.0	8.0
GM-60	15.00	17.51	15.0	12.5-15.0	10.0
MW-01	15.06*	14.91*	18.1*	—	—
MW-02	14.98*	14.71*	18.2*	—	—

Notes:
Source: Geraghty & Miller, Inc. 1986

TOC = Top of casing
ft = Feet
msl = mean sea level
* = Information determined during E/A&H RI/FS
— = Information not known
bls = Below land surface

2.2 Site History

From 1963 to the present, fertilizer, pesticide, and herbicide materials applied to the NAS Pensacola golf course have been stored and mixed, and associated application equipment rinsed, at the golf course maintenance facility. The original Site 15 area identified in previous

investigations included Building 2692, the pesticide storage area just off 2692's northeastern corner, and the asphalt wash-down pad northwest of Building 2640.

Commercial application equipment (tractors, sprayer tanks, spreaders, etc.) are used in routine golf course maintenance. Cleaning the equipment at the asphalt wash pad released dilute rinsate solutions directly onto the surrounding ground surface. These rinsates, reportedly containing organic phosphates, chlorinated hydrocarbons, carbaryl, and carbamates, infiltrated directly into the sandy soil (Geraghty & Miller [G&M], 1984).

From 1963 to 1979, Building 2692 and the adjacent outdoor area were used for pesticide storage (G&M, 1986). Neither the floor of the building nor the outdoor area were previously cemented or paved, thus creating the potential for direct infiltration of spilled or leaking pesticides. However, this building was refloored with concrete in recent years for dry storage.

Building 3586, approximately 375 feet east of Building 2692, has been and is currently used for herbicides and pesticides storage and handling since its 1979 construction. Previously, a sink on the outside of the building and a drain in a concrete pad north of the building collected pesticide/herbicide residue wastes and discharged them to an underground holding tank. The contents were periodically pumped out by a contracted agent prior to the tank's removal in approximately 1993.

Previous Investigations

Site 15 has been studied as part of several previous investigations at NAS Pensacola. The scope and findings of these investigations are summarized in the following subsections. Applicable analytical results from previous investigations are referenced in the following discussion and presented in Appendix B.

1983 — Initial Assessment Study

The Initial Assessment Study (IAS) report conducted by the Naval Energy and Environmental Support Activity (NEESA) identified sites potentially posing a threat to human health or the environment due to contamination from past hazardous materials operations. Historical records, aerial photographs, field inspections, and personnel interviews were used to identify 29 potentially contaminated sites at NAS Pensacola. Site 15 was among those identified for evaluation by this study. The IAS concluded discarded pesticide rinsates were not sufficiently concentrated to constitute a threat to human health or the environment. Further study was not recommended (NEESA, 1983). Since environmental sampling and laboratory analyses were not performed, the information required for a thorough assessment of the magnitude and extent of residual contamination was not available.

Confirmation Study

In 1984, G&M was retained by the Navy to perform a Confirmation Study at NAS Pensacola. The Confirmation Study consisted of two parts: a Verification Study in 1984 and a subsequent Characterization Study in 1986.

1984 — Verification Study

The 1984 Verification Study examined the asphalt wash-down pad and the pesticide storage area adjacent to Building 2692. Three soil borings were each completed to 2 feet below land surface (bls) with associated sample collection. Samples were analyzed for arsenic and pesticides. The analytical results indicated arsenic and organic pesticides in site soil, with concentrations consistently decreasing with depth. Detected total arsenic concentrations ranged from 1.6 parts per million (ppm) to 31 ppm; total pesticides ranged from 0.02 ppm to 23.4 ppm. Appendix B Table B-1 presents the analytical results from this investigation. The installation of shallow monitoring wells and additional soil borings was recommended to assess groundwater quality and define the extent of soil impact (G&M, 1984).

1986 — Characterization Study

Two shallow monitoring wells (GM-59 and GM-60) and six additional soil borings (also 2 feet deep) were completed during the 1986 Characterization Study (G&M, 1986). Groundwater samples were analyzed for pesticides, polychlorinated biphenyls (PCBs), and arsenic; soil was analyzed for arsenic only using the extraction procedure (EP) toxicity methodology. The only analyzed parameter detected in groundwater was arsenic (0.153 ppm), detected in the sample collected from well GM-59. Arsenic was also detected in several soil samples. Two of the concentrations exceeded the EP toxicity maximum contaminant level (MCL) of 5 milligrams per liter (mg/l). Appendix B Tables B-2 and B-3 present the analytical results of this investigation. A program of delineating the areal extent of soil contamination was recommended, with soil removal to appropriate levels, along with monitoring well resampling and analysis for arsenic (G&M, 1986).

1991 — Contamination Assessment/Remedial Activities Investigation

As a part of the Navy's IRP, Ecology and Environment, Inc. (E&E), performed Phase I of a Contamination Assessment/Remedial Activities Investigation at Site 15. The objective of Phase I was to identify principal areas and primary contaminants of concern, and to recommend any subsequent investigations.

Fieldwork included site reconnaissance, surface emission surveys, particulate air screening, utilities surveys, collection and laboratory analyses of soil and groundwater samples, and a hydrologic assessment. It should be noted, only screening-level analyses were performed on most samples (all soil and temporary well groundwater samples), except for Contract Laboratory Program (CLP) — level analyses performed on groundwater samples from permanent wells GM-59 and GM-60, to focus additional investigation efforts on areas of significant screening detections. Additionally, groundwater samples were often turbid and most were analyzed unfiltered, which has been associated with erroneously high metal concentrations.

The investigation results indicated metals (particularly arsenic), total recoverable petroleum hydrocarbons (TRPHs), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and pesticides were potentially present in site soil. Detected in the groundwater samples were relatively low metals (particularly arsenic) and dieldrin/4,4-DDE concentrations. Appendix B tables B-4, B-5, and B-6 present the analytical results of this investigation. Limited additional assessment was recommended for Site 15. Complete investigation results are presented in an Interim Data Report for the site (E&E, 1991).

Building 3586 UST Removal

The underground rinsate holding tank immediately south of Building 3586 was removed along with associated soil during approximately 1993. The contents of the removed tank were spread across a nearby portion of the golf course, approximately 200 feet north-northwest of Building 3447 (Figure 2-2). No analytical or other specific information was available for this removal activity.

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3.0 ENVIRONMENTAL SETTING

3.1 Physiography

NAS Pensacola is in the Gulf Coast lowlands on a peninsula bounded by Pensacola Bay to the south and east and Bayou Grande to the north. The main topographic feature is a bluff paralleling the southern and eastern shorelines of the peninsula. Landward of the bluff is a gently rolling upland with elevations up to 40 feet above mean sea level (msl) (USGS, 1970a, b). In the eastern part of the base, a low and nearly level marine terrace lies east of the bluff with elevations of approximately 5 feet or less above msl, comprising the areas of Chief of Naval Education and Training (CNET) and Magazine Point.

Sandy soils typify the NAS Pensacola area. Consequently, most rainfall infiltrates directly into the subsurface, resulting in few natural streams. Streams on base generally are man-made and channelized. Numerous natural wetlands occur in low-lying areas.

3.2 Stratigraphy and Hydrogeology

Stratigraphy beneath the Florida Panhandle generally consists of Quaternary marine terrace and fluvial deposits, underlain by a thick sequence of interlayered fine-grained clastic deposits and carbonate strata of Tertiary age (Southeastern Geological Society [SEGS], 1986). Three main regional hydrogeologic units have been described within this stratigraphic column (in descending order): the surficial/Sand-and-Gravel Aquifer, the Intermediate System, and the Floridian Aquifer System. Figure 3-1 provides a generalized cross section of these hydrogeologic units in northwest Florida.

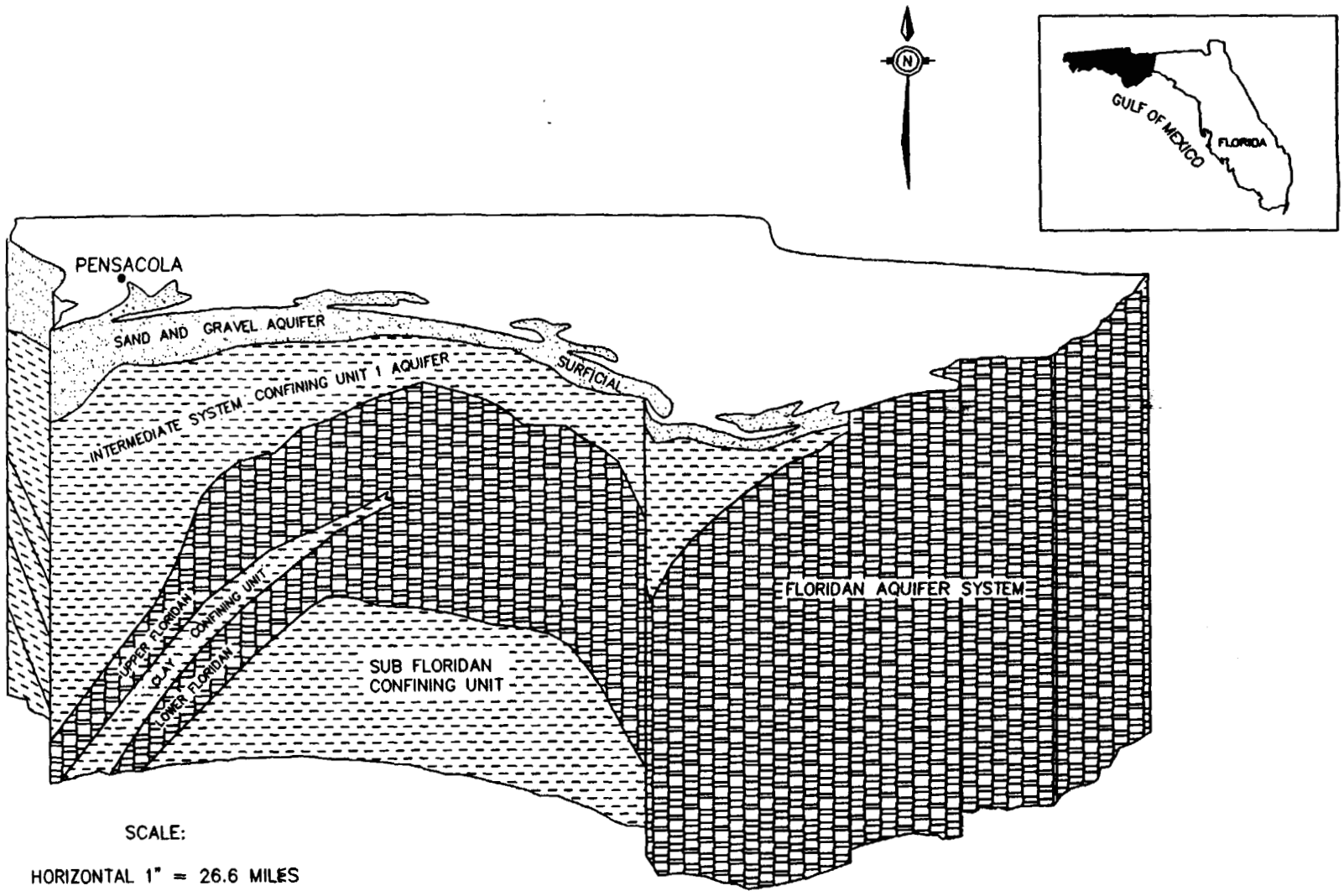
Surficial/Sand-and-Gravel Aquifer

The Surficial Aquifer, comprising primarily unconsolidated siliciclastic sediments, is approximately 300 feet thick at NAS Pensacola. These sediments belong to undifferentiated Pleistocene-Holocene terrace deposits, the Pliocene Citronelle formation, and underlying Miocene

coarse clastics (Wilkins et al., 1985). West of the Choctawhatchee River in northwest Florida, the Surficial Aquifer is referred to as the Sand-and-Gravel Aquifer, and is a major source of drinking water (SEGS, 1986). The Florida Department of Environmental Protection (FDEP) classification of the surficial aquifer is G-1 with a U.S. Environmental Protection Agency (USEPA) classification of IIA. Because the Sand-and-Gravel Aquifer is the uppermost unit contiguous with land surface and receives recharge through direct infiltration, it is susceptible to contamination from surface activities. Near NAS Pensacola, the unit has been subdivided into three distinct zones based on hydrogeologic differences (in descending order): *the surficial* zone, *the low permeability zone,* and *the main producing zone* (Wilkins et al., 1985). This investigation focuses on the upper (shallow depth) and basal (intermediate depth) portions of the surficial zone. A g——·—— cross section of the Sand-&-Gravel Aquifer produced by G&M (1984), as shown in Figure 3-2, illustrates the stratigraphic relationship of these zones.

Surficial Zone

The surficial zone is contiguous with land surface and contains groundwater under water table or perched conditions. At NAS Pensacola, the surficial zone is approximately 40 to 60 feet thick and is generally composed of a poorly graded quartz sand (G&M, 1984, 1986). Beneath the western side of the base, a substantial stratum of sand with abundant Organic matter occurs within the zone and pinches out to the east. Depth to groundwater ranges from 0 to 20 feet depending on ground surface elevation. Aquifer tests have yielded high hydraulic conductivities, on the order of 10^{+1} to 10^{+2} feet/day (E&E, 1990). The lower contact with the low permeability zone is transitional, resulting in a fining downward sequence in the lower portion of the surficial zone proper. Generally, the low permeability zone is thicker to the west, and thins to the east. This increased clay content in the transition from surficial to the low permeability zone is responsible for lower hydraulic conductivities that have been measured in the base of the surficial zone.



SCALE:

HORIZONTAL 1" = 26.6 MILES

VERTICAL 1" = 500 FEET

VERTICAL EXAGGERATION = 281

SOURCE: E&E 1992c.

REMEDIAL INVESTIGATION
REPORT
SITE 15
NAS PENSACOLA

FIGURE 3-1
GENERALIZED GEOLOGIC
CROSS SECTION OF
HYDROGEOLOGIC UNITS IN
NORTHWEST FLORIDA

DATE: 05/15/97 DWG NAME: 71GGCSH1

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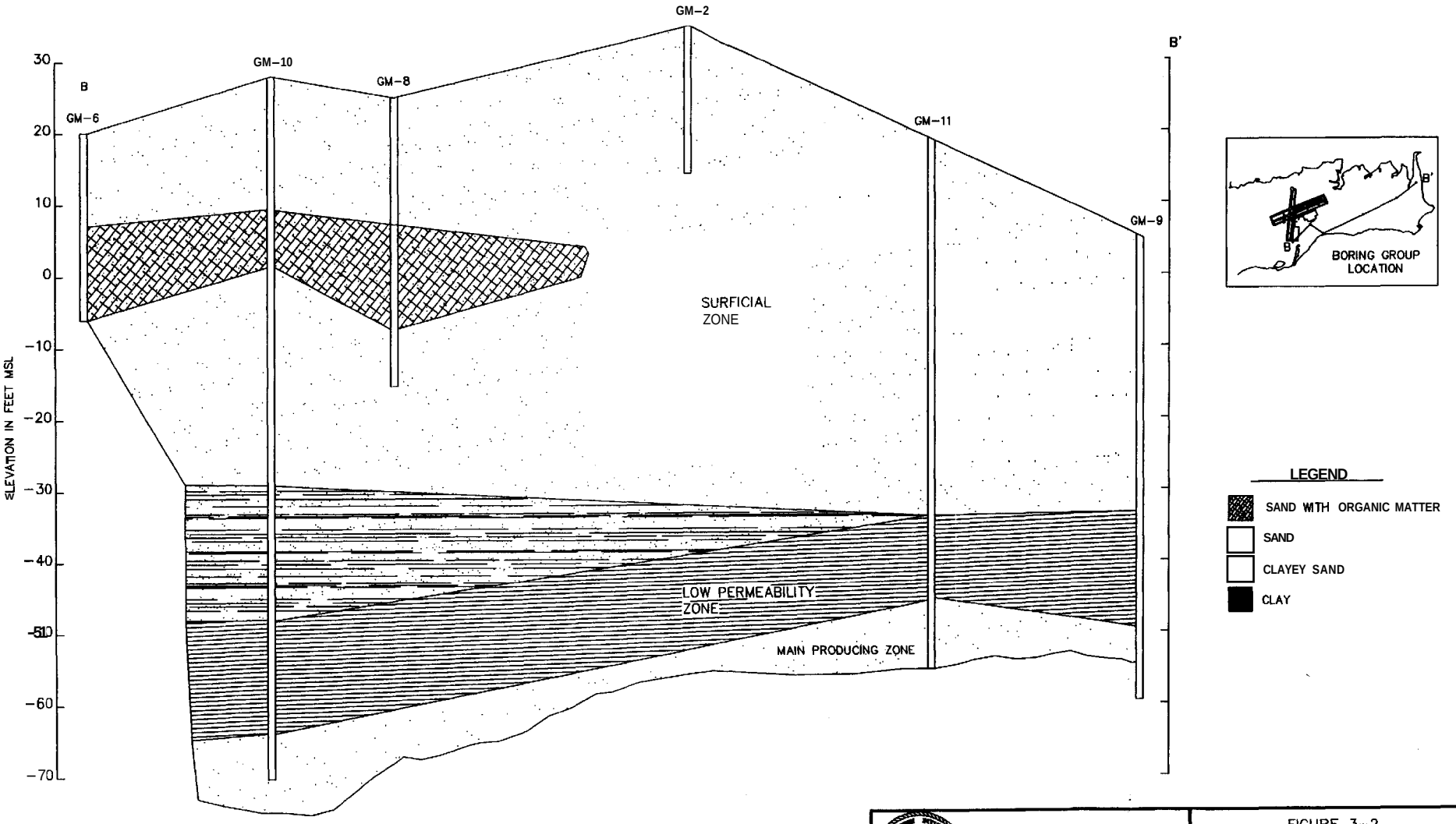

SOURCE GERAGHTY & MILLER, 1986

REMEDIAL INVESTIGATION
REPORT
SITE 15
NAS PENSACOLA

FIGURE 3-2
GEOLOGICAL CROSS SECTION
OF THE SURFICIAL AQUIFER
AT NAS PENSACOLA

DATE: 05/15/97 | DWG NAME: 71GCSSA1

Shallow groundwater flow in the surficial zone is generally influenced by topography, usually flowing toward and discharging to the nearest surface water body.

Low Permeability Zone

The low permeability zone underlies the surficial zone and is characterized by clay and silt-sized sediments. At NAS Pensacola, this zone is composed of gray to blue-gray sandy and silty marine clay with some shell fragments and clayey sands, with total thickness ranging from 8 to 40 feet (G&M, 1984, 1986). The upper contact is transitional with the overlying surficial zone; however, the top of the low permeability zone is marked by the first Occurrence of a stiff blue-gray clay. Studies at NAS Pensacola indicate the low permeability zone is continuous beneath the air station. Hydraulic conductivities of the low permeability zone are much lower than the overlying surficial zone, ranging between the orders of 10^{-4} feet/day for clays and 10^{+0} feet/day for clayey sands (G&M, 1986). Hence, the low permeability zone acts as a confining or semiconfining layer to inhibit groundwater flow between the overlying surficial and underlying main producing zone.

Main Producing Zone

The main producing zone underlies the low permeability zone and comprises the bottom portion of the Sand-and-Gravel Aquifer. Regionally, depth to the top of the zone ranges from 60 to 120 feet. The zone is composed of sand and gravel with thin beds of silt and clay, and is estimated to be approximately 300 feet thick at NAS Pensacola. Of the three zones in the Sand-and-Gravel Aquifer, this one is generally the most permeable and is the principal source of water supply for the Pensacola area (Wilkins et al., 1985). Groundwater in this zone generally is confined. It recharges primarily north of southern Escambia County and is supplemented by leakage in the northern parts of the county where it is present at the surface. Regional groundwater flows generally east toward Pensacola Bay and south toward the Gulf of Mexico. Three supply wells at NAS Pensacola produce water from this zone; however, they are used only as an emergency supplement to the base water supply, to supply irrigation to the base golf course,

and fire protection due to the water's high iron content (G&M, 1984, 1986). For potable water, NAS Pensacola depends on an offsite water source provided from main producing zone wells at Corry Field, approximately three miles to the north.

Intermediate System

The Intermediate System, a regionally and vertically extensive, laterally persistent hydrologic unit, underlies the Surficial/Sand-and-Gravel Aquifer. The system is comprised of fine-grained clastic units of Miocene age (Pensacola Clay, Alum Bluff Group) that lie beneath coarse clastics of the overlying Sand-&-Gravel Aquifer. In the NAS Pensacola vicinity, depth to the top of the unit is approximately 300 feet, with a thickness of approximately 1,100 feet (Wilkins et al., 1985; SEGS, 1986). The system is regionally characterized by poor to non-water-bearing conditions. Permeabilities are much lower than those of the overlying Sand-and-Gravel Aquifer and the underlying Floridian Aquifer System, and consequently the system functions as a confiig unit for the underlying Floridian Aquifer System (SEGS, 1986).

Floridian Aquifer System

The Floridian Aquifer System underlies the Intermediate System at an approximate depth of 1,400 feet in the NAS Pensacola area. The unit is composed predominantly of limestone, but is separated into upper and lower units by a significant clay layer called the Bucatunna Clay (see Figure 3-1). Groundwater within the Floridian System is highly mineralized in the area of NAS Pensacola and is not used for water supply (Wagner et al., 1984). However, groundwater from the Upper Floridian Aquifer is used for water supply as close as approximately 25 miles east of NAS Pensacola.

3.3 Ecological Setting

3.3.1 Regional Ecological Setting

According to Wolfe *et* al. (1988), the Florida Panhandle has a wide variety of surface waters and physiographic regions, leading to an ecological diversity found in few other areas of the United States. Watersheds of the panhandle support a diverse array of habitats and vegetative communities. Bottom land hardwoods predominate in river flood plains and pines, mixed with a variety of other shrubs, prevail in upland areas. Wetlands are prevalent along the coastal fringe and river flood plains. Barrier islands support dune vegetation communities and salt marshes. Bays supporting seagrass meadows and oyster reefs *are* present in intertidal and subtidal areas.

Seven major rivers in the region discharge into seven bar-built estuaries formed at the mouths of the rivers. The Florida Panhandle is a crossroads where animals and plants from the Gulf Coastal Plain reach their eastward distributional limits, and where many northern species reach their southern limits. Many peninsular Florida species *are* also distributed there. Due to the wet temperate climate of the region, the panhandle area may support the highest diversity of species of any other similar-size temtory in the U.S.

The high annual rainfall and low, gently sloping terrain creates numerous wetlands in the region. Bogs, swamps, marshes, wet prairies, and wet flatwoods provide a diversity of wetland types supporting a wide variety of flora and fauna. Terrestrial vegetation includes open pine woods and hardwood forests; most *are* second-growth forests of pines and encroaching hardwoods.

The Florida Panhandle's estuaries and nearshore marine habitats are some of the greatest natural and economic assets of the region. Important commercial organisms (such as oysters and fish) abound in these areas and contribute to the economy of the region. Coastal saltmarsh habitats provide critical nursery, feeding, and refuge for these important commercial species. Seagrass beds within estuaries also are vital to the seafood industry.

33.2 Ecological Setting at NAS Pensacola

NAS Pensacola, which occupies approximately 5,800 acres, is bounded by Bayou Grande to the north and Pensacola Bay to the east and south. To the west, the installation transitions to less developed swampy lowlands. NAS Pensacola's eastern portion is largely developed, with military and industrial facilities and historical/cultural sites. Most of the installation's activities are on the eastern side of the base. The less developed west side of the base has approximately 3,500 acres of natural or seminatural beach areas, forests, and wetlands.

NAS Pensacola is the setting for numerous aquatic and terrestrial habitats, from coastal strand and estuarine environments along the bay and bayou to inland pine flatwoods communities. Wetland environments include a broad spectrum of both estuarine and palustrine wetlands, as well as various disturbed habitats, many in states of recovery as they undergo reforestation or return to their natural condition.

Vegetation Communities

NAS Pensacola natural vegetation Communities fall into several broad categories: (1) coastal dune scrub communities, (2) pine flatwoods communities, (3) hardwood/pine communities, (4) sand pine scrub communities, (5) bay swamps, (6) freshwater marshes, and (7) estuarine coastal marshes (USFWS, 1987). Coastal dune scrub communities are associated with shorelines subject to high-energy waves. The vegetation consists of salt-tolerant plants able to establish themselves in shifting sands. Pine flatwood communities in coastal lowlands are characterized by trees that can tolerate various soil moisture conditions. Tree species in flatwoods communities are short, with a wide variety of small shrubs and herbaceous plants in the understory. Hardwood/pine communities are a highly diverse mixture of hardwood trees and pines. Sand pine scrub communities on well-drained sandy soils contain sand pines, oaks, and various shrubs. Bay swamps are wetlands with titi and cypress swamps known to contain permanent standing water and high accumulations of organic pest. Freshwater marshes occur as grass/sedge/rush/herb

communities in areas with high soil saturation or standing water. Estuarine coastal marshes, including salt marshes, occur along low-energy shorelines and in tidal bayous (USFWS, 1987).

Wildlife

NAS Pensacola habitats provide potential ranges for a wide variety of animal life such as deer, squirrel, opossum, raccoon, fox, beaver, and bobcat. The station's beaches Serve as resting, feeding, and nesting areas for various shorebirds. Ospreys have been observed nesting along undeveloped shoreline areas of the Big Lagoon, southeast of the Forrest Sherman Airfield. Numerous small mammals, amphibians, and reptiles also inhabit the base. The coastal marsh, submerged grass bed, and shallow water habitats at NAS Pensacola help support fishery communities within the Pensacola Bay estuarine complex. Approximately 180 species of bony fishes form the basis of the Pensacola Bay fish community (USFWS, 1987).

Threatened and Endangered Species

Appendix A of the ***Comprehensive Natural Resources Management Plan for NAS Pensacola and Outlying Field Bronson*** lists the rare, threatened, and endangered species that may be found within NAS Pensacola boundaries (USFWS, 1987). E/A&H investigations of different areas of NAS Pensacola have identified osprey, great blue heron (as well as other shorebirds), alligator snapping turtle, Godfrey's golden aster, Carolina lilaeopsis, white-top pitcher plant, and narrow-leaved sundew. All are considered rare or endangered for Escambia County, Florida, by the Florida Natural Areas Inventory (FNAI, 1995).

3.3.3 Site-Specific Setting

Site **Topography**

Land surface at Site 15 is approximately 14.5 to 15.5 feet above msl, and relatively level. The only significant variation is a slight mound/topographic high approximately 250 feet north of the site, on the adjacent golf course fairway. This high is shown in Section 5 on Figure 5-2.

Northward from the site's northern boundary, land surface rises gently to this mound, peaking at slightly greater than 20 feet above msl. Traveling from the site, the surrounding land surface gently slopes to the tidal pond about 400 feet to the west, Bayou Grande approximately 600 feet to the northwest, and a second tidal pond 750 feet to the northeast. To the south, land surface remains level across other portions of the golf course.

Most land surfaces in the site area are unpaved with minimal scrub grass vegetation, except for the occasional asphalt/concrete paved wash-down pads near the maintenance facility buildings. Area surface soil is primarily sand, allowing rapid infiltration of precipitation. As a result, neither surface water nor appreciable surface water flow occurs onsite.

Habitat and Biota Survey

A Phase I habitat/biota survey for Site 15 was conducted by an E/A&H biologist following procedures outlined in Section 8 of the Comprehensive Sampling and Analysis Plan (CSAP; E/A&H, 1994). The primary objective of the survey was to describe site habitats and support the development of a preliminary risk evaluation.

Site 15 is in and around the maintenance area for the A.C. Read golf course at NAS Pensacola. The site area contains various buildings and equipment storage sheds. No natural plant or animal habitats exist onsite, which contains areas of weedy, disturbed vegetation and scattered trees. The golf course surrounding the site contains manicured turf landscaped with scattered trees and shrubs. Wetland 4D is a large pond about 400 feet west of the site; Wetland 65 is an estuarine wetland roughly 750 feet northeast of Site 15, also associated with a tidal pond. Bayou Grande lies approximately 600 feet north of the site. Animals inhabiting the site area include squirrels, rodents, birds, and insects that can be found in similar developed areas on the base. No threatened or endangered species are found onsite.

3.4 *Area* Climate

The Pensacola area has a mild, subtropical climate, with average annual temperature ranging from 55°F in the winter to 81°F in the summer. Daily temperatures can be more extreme, ranging fmm less than 7°F in the winter to more than 102°F in the summer. Thunderstorms, which occur on approximately half the summer days, can cause a precipitous drop in temperature of 10 to 20 degrees in a matter of minutes (E&E, 1992a).

November is the driest month of the year, with an average rainfall of 3.2 inches, based on climatological data from 1962 to 1991. Rainfall averages approximately 60 inches a year, with the highest amounts in July and August when thunderstorms occur almost daily. Thunderstorms resulting in 3 to 4 inches of rain in an hour are common. Rainfall is lowest during spring and fall (4 inches average per month). In general, spring and fall rains are less intense, last longer, and produce less surface runoff, but higher rates of infiltration and net recharge (E&E, 1992a).

Winds, which prevail from the north during the winter and the south during the summer, are generally moderate in velocity, except during thunderstorms. A difference in the ocean-land temperature produces the sea-breeze effect, a daily clockwise mtation in the surface wind direction near the coast. Hurricanes and tornadoes can substantially damage the nearshore environment. Since 1980, eight hurricanes have passed within 50 miles of Pensacola, including Hurricanes E M and Opal, which both struck the Pensacola area during August and October 1995, respectively.

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4.0 FIELD INVESTIGATION AND METHODS

Sections 4.1 through 4.4 present detailed discussions of this investigation's activities. The following discussions summarize these activities to provide a preliminary overview of the investigation.

Field Investigation Summary

The field investigation was divided into multiple phases. Phase I of the investigation took place in August and September 1995, and included advancing 28 soil borings, installing eight shallow temporary monitoring wells, and collecting associated soil and groundwater samples. The Phase I fieldwork was conducted in conjunction with the other sites at NAS Pensacola, in accordance with the SAP for Site 15 (E/A&H, 1995). The results of the Phase I investigation were summarized in a technical memorandum submitted to the Tier One Partnering Team in November 1995.

Phase II of the investigation occurred in March and April 1996 and included the installing of nine additional temporary wells (seven shallow and two intermediate depth) and advancing 24 additional soil borings within the site area. The Phase 11 work addressed issues agreed upon by the Tier One Team in February 1996, reflecting the decision that a more complete delineation effort required this additional fieldwork. A SAP addendum was prepared and submitted to the Tier One Team in February 1996 outlining the agreed upon proposed Phase 11 sample locations.

Upon review of the Phase 11 data, limited additional Phase 11 fieldwork (Phase 11-B) further delineated Phase 11 Preliminary Remedial Goal (PRG) exceedances in groundwater. Three additional temporary shallow wells were installed downgradient of locations exhibiting PRG exceedances using hand auger boring equipment; these wells were installed and sampled in May 1996. Selected other Phase 11 wells were also resampled during Phase 11-B to confirm earlier PRG exceedances.

The three hand-installed Phase II-B temporary wells were replaced by drill rig installed temporary shallow wells in July 1996 for Phase III conformational groundwater sampling. This Phase III sampling also included resampling selected Phase I and II wells for confirmation of previously detected groundwater PRG exceedances. Due to the variability in detected parameter concentrations exceeding PRGs, Phase III-B sampling was performed in August 1996 to again confirm earlier exceedances. A final set of permanent wells was installed downgradient of Site 15 and sampled in September 1996 as Phase III-C, to document the quality of shallow groundwater discharging to Bayou Grande and a nearby tidal pond (Wetland 65).

Analytical Methods Summary

Phase I, 11, and III field methods followed guidelines set forth in the Final CSAP for NAS Pensacola (E/A&H, 1994). Phase I samples were analyzed for the full Target Analyte List/Target Compound List (TAL/TCL) in accordance with CLP procedures. These analyses included TCL VOCs, TCL semivolatile organic compounds (SVOCs), TCL pesticides, TCL PCBs, TAL metals (unfiltered for groundwater), and TCL cyanide. Phase II samples were analyzed only for parameters detected during Phase I at concentrations exceeding PRGs. Phase II analyses were performed using SW 846 methods and included selected metals by Method 6010, pesticides/PCBs by Method 8080, SVOCs by Method 8270, and VOCs by Method 8240. Additional samples were also collected during Phase II for Physical Parameters Soil (PPS), Physical Parameters Water (PPW) and Grain Size (GS) analyses. Phase 11-B samples were analyzed only for arsenic using SW 846 methods. The Phase III confirmation groundwater samples were analyzed for only selected PRG exceedances parameters (TAL inorganics) using CLP methods. Phase III-B confirmation groundwater samples were analyzed only for arsenic using SW 846 methods. The final Phase III-C groundwater samples were analyzed for the full TAL/TCL in accordance with CLP procedures.

All Phase I, 11, and III chemical analyses were performed by Savannah Laboratories, Inc., of Savannah, Georgia. Phase 11 PPS, PPW, and GS samples were analyzed by Savannah Laboratories and Thompson Engineering and Testing, Inc., of Mobile, Alabama.. Strict quality assurance/quality *(QNQC)* control procedures were followed during the investigation as outlined in Section 15 of the *CSAP.* These included collecting numerous *QNQC* samples such as field blank, equipment rinsate blank, trip blank, material blank, duplicate, matrix spike (MS), and matrix spike duplicate (MSD) samples. Sample collection dates and times were noted in field logbooks or field sample forms. All samples collected during this investigation were labeled, processed, packaged, and shipped in accordance with Section 12 of the *CSAP.*

Soil and groundwater sample analytical results are discussed in Sections 6.1 and 6.2 of this report, respectively. Soil boring logs and well construction diagrams for this investigation *are* presented in Appendix *C.*

4.1 Phase I Investigation Activities

Figure 4-1 illustrates soil boring and monitoring well locations for Phase I of this investigations. Table 4-1 lists the sample location, associated sample identification number, and analytical parameters for each Phase I sample. The last two digits of the sample identification number indicate the sample collection depth in feet bls for soil samples or, for groundwater samples, the last two numbers generally indicate the collection event (i.e., 015GGR0301 represents the first sample event for well 015GR03). Phase I soil and groundwater sample locations were selected based on site history and previous investigation information to target areas likely impacted by current and past site activities.

The full TAL/TCL analysis suite was performed on Phase I samples to identify and characterize a full spectrum of potential contaminants onsite.

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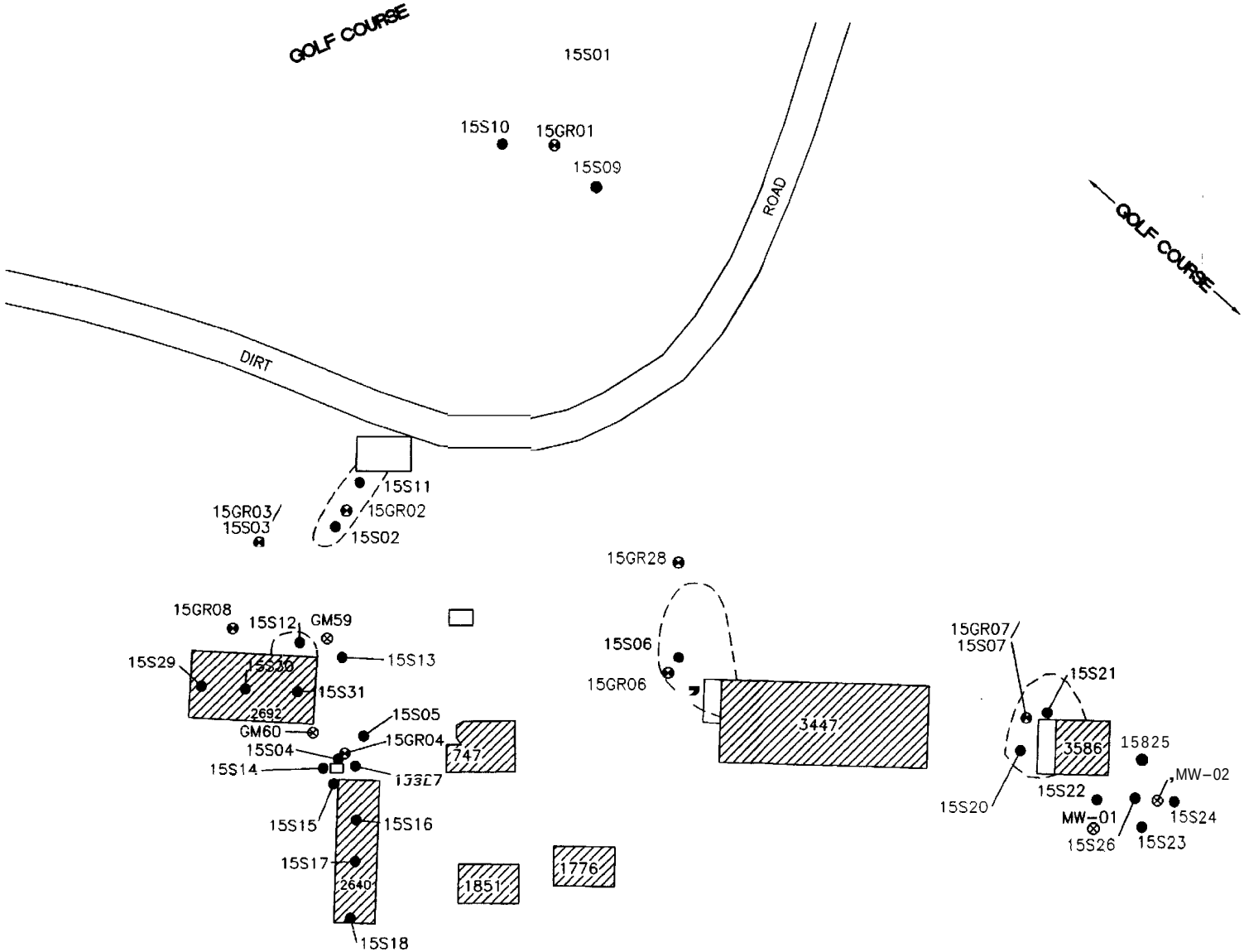

LEGEND

- ● – PHASE I SOIL BORING
- ⊖ – PHASE I TEMPORARY MONITORING WELL
- ⊗ – EXISTING MONITORING WELL
- ▨ – BUILDING

50 0 50

SCALE FEET

REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA

FIGURE 4-1
PHASE I SOIL BORING AND MONITORING WELL LOCATIONS

DWG DATE 12/09/97 | DWG NAME: 71ST15MW

Table 4-1
Phase I
Sample Location Identification and Analytical Parameters

Media	Location	Sample ID	Analytical Parameters
soil	Boring 15S01	015S000101 015S000105 015S000110	TAL/TCL
	Boring 15S02	015S000201 015S000205 015S000209	T W C L
	Boring 15S03	015S000301 015S000305 015S000309	TAL/TCL
	Boring 15S04	015S000401 015C000401* 015S000405 015S000410	TAUTCL
	Boring 15S05	015S000501 015S000505 024S000510	TAUTCL
	Boring 15S06	015S000601 015C000601* 015S000605 015S000609	T W C L
	Boring 15S07	015S000701 015S000705	TAL/TCL
	Boring 15S09	015S000901 015S000905 015S000910	TALITCL
	Boring 15S10	015S001001 015C001001* 015S001005 015S001010	T M C L
	Boring 15S11	015S001101 015C001101* 015S001105 015S001109	TAUTCL
	Boring 15S12	015S001201 015S001205 015S001210	T M C L
	Boring 15S13	015S001301 015S001305 015S001310	TAL/TCL
	Boring 15S14	015S001401 015S001405 015S001410	TALITCL

Table 4-1
Phase I
Sample Location Identification and Analytical Parameters

Media	Location	Sample ID	Analytical Parameters
Soil	Boring 15S15	015S001501 015S001505 015S001510	TAL/TCL
	Boring 15S16	015S001601 015S001605 015S001610	TAL/TCL
	Boring 15S17	015S001701 015S001705 015S001710	TAL/TCL
	Boring 15S18	015S001801 015S001805 015S001810	TAL/TCL
	Boring 15S20	015S002001 015C002001* 015S002005 015S002008	TAL/TCL
	Boring 15S21	015S002101 015S002105 015S002108	TAL/TCL
	Boring 15S22	015S002201 015S002205 015S002208	TAL/TCL
	Boring 15S23		TAL/TCL
	Boring 15S24	015S002405 015S002409	TAL/TCL
	Boring 15S25	015S002501 015S002505 015S002508	TAL/TCL
	Boring 15S26	015S002601 015S002605 015S002608	TAL/TCL
	Boring 15S27	015S002701 015S002705 015S002710	TAL/TCL
	Boring 15S29	015S002901 015S002905 015S002910	TAL/TCL
	Boring 15S30	015S003001 015S003005 015S003010	TAL/TCL

Table 4-1
Phase I
Sample Location Identification and Analytical Parameters

Media	Location	Sample ID	Analytical Parameters
Soil	Boring 15S31	015S003101 015S003105 015S003110	TAYTCL
Groundwater	MW-15GR01	015GGR0101	T M C L
	MW-15GR02	015GGR0201 015HGR0201*	TAL/TCL
	MW-15GR03	015GGR0301	TAYTCL
	MW-15GR04	015GGR0401	TAUTCL
	MW-15GR06	015GGR0601	TAL/TCL
	MW-15GR07	015GGR0701	TAL/TCL
	MW-15GR08	015GGR0801	TAL/TCL
	MW-15GR28	015GGR2801	TAL/TCL
	MW-GM59	015GGM5901	T M C L
	MW-GM60	015GGM6001	TAL/TCL
	MW-01 (Bldg. 3586)	015GMW0101	TAL/TCL
	M W M (Bldg 3586)	015GMW0201	TAL/TCL

Notes:
TAL/TCL = Contract Laboratory Program Target Analyte List/Target Compound List: TAL metals (plus cyanide), TCL VOCs, SVOCs, pesticides, and PCB analyses
MW = Monitoring well
* = Duplicate sample

4.1.1 Phase I Soil Assessment

Eighty-two soil samples (not including QA/QC samples) were collected from August 30 through September 7, 1995, at boring locations 15S01 through 15S31 (except for boring numbers 15S08, 15S19, and 15828, which were not used) for laboratory analysis in conjunction with the installation of temporary monitoring wells. Soil samples were collected with stainless-steel hand augers, as described in Section 4 of the CSAP. Samples were collected across discrete intervals,

beginning at land surface as follows: 0 to 1 foot bls, then one 2-foot interval per 5 feet in depth (i.e., 3 to 5 feet bls, 8 to 10 feet bls, *etc.*.) until the water table was reached. The last two digits of the sample identification number indicate the sample collection depth in feet bls.

Before homogenizing soil samples, representative sample aliquots were collected directly from the auger bucket and containerized for VOC analysis to avoid degassing. Sample depth, lithologic descriptions, organic vapor concentrations, and other pertinent information were noted in boring logs or field logbooks during the sample collection process.

4.1.2 Phase I Groundwater Assessment

Monitoring Well Installation

Bonngs for well installation were completed on August 31 and September 1, 1995, using hollow-stem auger drilling techniques with 4.25-inch inside diameter (ID) augers. Borings were advanced to a depth sufficient to install the temporary monitoring wells with screened intervals bracketing the water table. All Site 15 wells were assembled through the annulus of the augers as described in Section 5.3 of the *CSAP*. Each well was constructed of flush-threaded, 2-inch diameter, stainless-steel well casing terminating with a 5-foot long, 0.01-inch continuous slotted, stainless-steel well screen. A graded 20-30 *size* quartz sand filter pack was installed above each well screen to approximately 2 to 3 feet bls. Bentonite pellets were carefully placed above the filter pack and hydrated with analyte-free water to form an approximate 1.5- to 2-foot *seal*. Due to the temporary nature of these wells, no grout collar or concrete pad was constructed at land surface. Instead, each well was completed with 2 to 3 feet of stainless-steel well casing stickup, and fitted with a locking well cap.

Well Development and Groundwater Sampling

Monitoring wells were developed September 12, 1995, prior to groundwater sampling, as described in Section 5.4 of the *CSAP*. Well development occurred within approximately two

weeks of installation, but no sooner than 24 hours after well completion. Development involved alternating surging and pumping of the well using a centrifugal pump and decontaminated polyvinyl chloride (PVC) tubing until field parameters stabilized and adequate groundwater clarity was obtained. At least 25 gallons were purged from each well during development.

Groundwater samples were collected from all newly installed and existing wells on September 13 and 14, 1995, using quiescent sampling techniques as described in Section 6.3 of the CSAP. Collected samples were analyzed for the full TAL/TCL suite. Before sample collection, at least three well volumes were purged from each well using a peristaltic pump and decontaminated Teflon tubing. Purging was performed at a slow, controlled (approximately 0.25 gallons per minute [gpm] or less) pumping rate while turbidity and field parameters were monitored. Field parameter stabilization and relatively low turbidity readings (approximately 20 nephelometric turbidity units [NTUs] or less) were obtained within four volumes at each well.

Groundwater samples were collected immediately after well purging. Using the Same peristaltic pump and Teflon tubing, groundwater was collected under low vacuum pressure via an in-line collection/transfer bottle apparatus. This apparatus consisted of a two-aperture Teflon cap attached to a 300-series laboratory-certified, 80-ounce glass container (using a clean container for each well). Teflon tubing from the well was attached to one aperture while the tubing from the peristaltic pump was attached to the second. The vacuum created by the pump was sufficient to lift groundwater from the well, filling the collection/transfer bottle at a low controlled flow rate (approximately 0.1 gpm). This technique allowed groundwater with minimal turbidity to be collected and transferred to the appropriate metals, SVOCs, pesticides, PCBs, and cyanide analyses containers. However, sample volumes for VOC analysis were collected before starting the transfer bottle process by removing the groundwater-filled Teflon tubing from the well and allowing unagitated groundwater in the tubing to flow slowly backward into 40-milliliter (ml) volatile organic analysis vials.

4.2 Phase 11 and III Investigation Activities

Figure 4-2 illustrates soil boring and monitoring well locations for Phases II and III of this investigation. Table 4-2 lists the sample locations, associated sample identification numbers, and analytical parameters for Phase II/III samples. The last two digits of the sample identification number indicate the sample collection depth in feet bls for soil samples or, for groundwater samples, the last two numbers generally indicate the collection event (i.e., 015GGR0702 represents the second sample event for well 015GR07). Phase 11 and III sampling activities were designed to delineate Phase I parameter concentrations exceeding PRGs. Resultantly, these sampling locations were chosen to provide outlying areal coverage of Phase I exceedance locations, and with respect to surface soil, representative coverage of the overall site area. Phase Ii and III sample analyses were also generally limited to parameters previously detected at concentrations exceeding PRGs. However, Phase III-C groundwater samples were analyzed for the full TAL/TCL list to fully characterize downgradient groundwater quality.

4.2.1 Phase 11 Soil Assessment

Forty-seven soil samples (not including QA/QC and PPS/GS samples) were collected from March 13 through 21, 1996, at boring locations 015832, 015839, and 015S41 through 015S64 for laboratory analysis in conjunction with the installation of temporary monitoring wells. Soil samples were collected with stainless-steel hand augers in the same manner as those collected during Phase I. At most locations, samples were collected across two discrete intervals beginning at land surface as follows: 0 to 1 foot bls, and the 2-foot interval just above the water table (generally the water table was encountered at 9 to 12 feet bls). However, only the 0 to 1 foot bls interval sample was collected at locations 015S53 through 015S55.

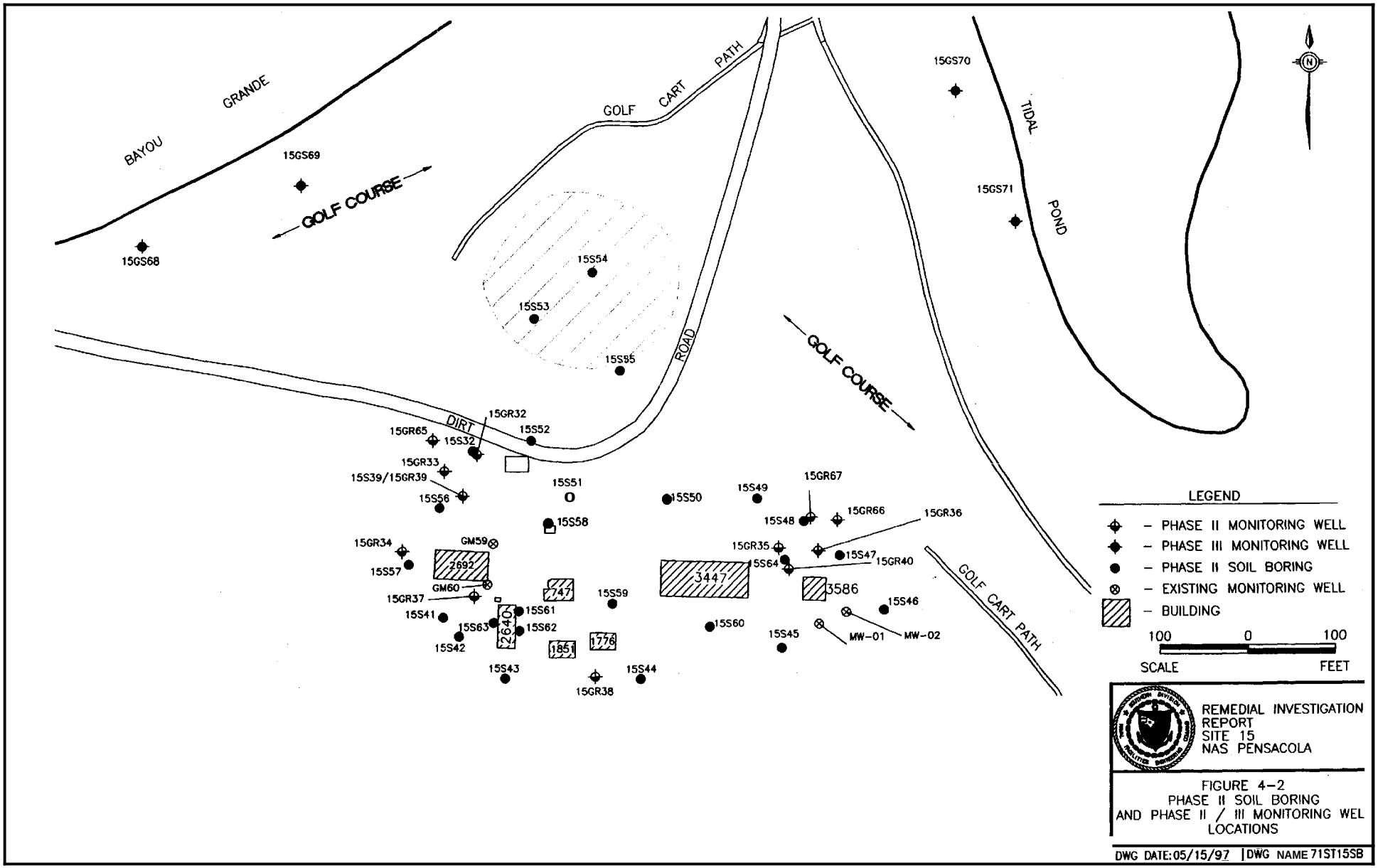
BAYOU GRANDE
GOLF COURSE
GOLF CART PATH
DIRT ROAD
TIDAL POND
15GS68
15GS69
15GS70
15GS71
15S54
15S53
15S55
15GR32
15S52
15GR65
15S32
15GR33
15S39/15GR39
15S56
15S51
15S58
15S50
15S49
15GR67
15S48
15GR66
15GR36
15GR35
15S47
15S64
15GR40
15GR34
15S57
GM59
7692
GM60
15GR37
15S41
15S63
15S42
15S61
15S62
2640
747
1851
1776
15S59
15S43
15GR38
15S44
3447
15S60
15S45
MW-01
MW-02
3586
15S46
LEGEND
– PHASE II MONITORING WELL
– PHASE III MONITORING WELL
– PHASE II SOIL BORING
– EXISTING MONITORING WELL
– BUILDING
100 0 100
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 4-2
PHASE II SOIL BORING
AND PHASE II / III MONITORING WEL
LOCATIONS
DWG DATE:05/15/97
DWG NAME 71ST15SB

Table 4-2
Phase II and III
Sample **Location** Iden ——ion and **Analytical Parameters**

Media	Location	Sample ID	Sample Phase	Analytical Parameters
Soil	Boring 15S32	015S003201	II	As,Mn/Pest
		015S003210	II	As,Mn/Pest
	Boring 15S39	015S003912	II	GS
		015S003943	II	GS
	Boring 15S41	015S004101	II	As,Mn/Pest
		015S004112	II	As,Mn/Pest
	Boring-I5842	015S004201	II	As,Mn/Pest
		015S004212	II	As,Mn/Pest
	Boring-15S43	015S004301	II	As,Mn/Pest
		015C004301*	II	As,Mn/Pest
		015S004312	II	As,Mn/Pest
	Boring-15S44	015S004401	II	As,Mn/Pest
		015S004410	II	As,Mn/Pest
	Boring-15S45	015S004501	II	As,Mn/Pest/SVOC
		015S004510	II	As,Mn/Pest/SVOC
	Boring-15S46	015S004601	II	As,Mn/Pest/SVOC
		015S004609	II	As,Mn/Pest/SVOC
	Boring-15S47	015S004701	II	As,Mn/Pest/SVOC
		015S004710	II	As,Mn/Pest/SVOC
	Boring-15S48	015S004801	II	As,Mn/Pest/SVOC
		015S004810	II	As,Mn/Pest/SVOC
	Boring-15S49	015S004901	II	As,Mn/Pest
		015S004910	II	As,Mn/Pest
	Boring 15S50	0158005001	II	As,Mn/Pest
		015S005010	II	As,Mn/Pest
	Boring 15S51	015S005101	II	As,Mn/Pest
		015S005110	II	As,Mn/Pest
	Boring 15S52	015S005201	II	As,Mn/Pest
		015S005210	II	As,Mn/Pest
	Boring 15S53	015S005301	II	As,Mn/Pest
	Boring 15S54	015S005401	II	As,Mn/Pest
	Boring 15S55	015S005501	II	As,Mn/Pest
	Boring 15856	0158005601	II	As,Mn/Pest
		015S005610	II	As,Mn/Pest
		015S005609	II	PPS
	Boring 15S57	015S005701	II	As,Mn/Pest
		015S005710	II	As.Mn/Pest

Table 4-2
Phase II and III
Sample Location Identification and Analytical Parameters

Media	Location	Sample ID	Sample Phase	Analytical Parameters
Soil	Boring 15S58	015S005801	II	As,Mn/Pest
		015S005810	II	As,Mn/Pest
	Boring 15S59	015S005901	II	As,Mn/Pest
		015S005910	II	As,Mn/Pest
	Boring 15S60	015S006001	II	As,Mn/Pest
		015S006009	II	As,Mn/Pest
	Boring 15S61	015S006101	II	As,Mn/Pest/VOC
		015C006101*	II	As,Mn/Pest/VOC
		015S006110	II	As,Mn/Pest/VOC
	Boring 15S62	015S006201	II	As,Mn/Pest/VOC
		015S006210	II	As,Mn/Pest/VOC
	Boring 15S63	015S006301	II	As,Mn/Pest/VOC
		015S006310	II	As,Mn/Pest/VOC
	Boring 15S64	015S006401	II	As,Mn/Pest/SVOC
		015C006401*	II	As,Mn/Pest/SVOC
		015S006409	II	As,Mn/Pest/SVOC
		015S006408	II	PPS
Groundwater	MW-15GR03	015GGR0302	II-B	As Only
		015GGR0303	III	TAL Inorganics
		015HGR0303*	III	TAL Inorganics
	MW-15GR07	015GGR0702	II	Al,As,Fe,Mn/Pest/SVOC/PPW
		015GGR0703	II-B	As Only
		015HGR0703*	II-B	As Only
		015GGR0704	III	TAL Inorganics
		015GGR0705	III-B	As Only
	MW-15GR32	015GGR3201	II	Al,As,Fe,Mn/Pest
		015GGR3203	III	TAL Inorganics
	MW-15GR33	015GGR3301	II	Al,As,Fe,Mn/Pest
	MW-15GR34	015GGR3401	II	Al,As,Fe,Mn/ Pest/PPW
	MW-15GR35	015GGR3501	II	Al,As,Fe,Mn/ Pest/SVOC
		015HGR3501*	II	Al,As,Fe,Mn/ Pest/SVOC
	MW-15GR36	015GGR3601	II	Al,As,Fe,Mn/ Pest/SVOC
	MW-15GR37	015GGR3701	II	Al,As,Fe,Mn/Pest
	MW-15GR38	015GGR3801	II	Al,As,Fe,Mn/Pest

Table 4-2
Phase II and III
Sample Location Identification and Analytical Parameters

Media	Location	Sample ID	Sample Phase	Analytical Parameters
Groundwater	MW-15GR39	015GGR3901	II	Al, As, Fe, Mn/Pest
		015GGR3903	III	TAL Inorganics
	MW-15GR40	015GGR4001	II	Al, As, Fe, Mn/Pest/SVOC
		015GGR4003	IU	TAL Inorganics
	MW-15GR65	015GGR6501	II-B	As Only
	MW-15GR65-B	015GGR6503	m	TAL Inorganics
		015GGR6504	IU-B	As Only
		015HGR6504*	III-B	As Only
	MW-15GR66	015GGR6601	U-B	As Only
	MW-15GR66-B	015GGR6603	III	TAL Inorganics
		015GGR6604	III-B	As Only
	MW-I5GR67	015GGR6701	II-B	As Only
	MW-15GR67-B	015GGR6703	IU	TAL Inorganics
		015GGR6704	IU-B	As Only
	MW-15GS68	015GGS6801	III-C	TAL/TCL
	MW-15GS69	015GGS6901	III-C	T W C L
		015HGS6901*	III-C	TAVTCL
	MW-150S70	015GGS7001	III-C	TAL/TCL
	MW-15GS71	01GGS7101	III-C	TAL/TCL

Notes:

Al, As, Fe, Mn	=	Phase II aluminum, arsenic, iron, and manganese analyses by SW-846 Method 6010
As Only	=	Phase II-B and IU-B arsenic analysis by SW-846 Method 6010
Pest	=	Phase II pesticide/PCB analysis by SW-846 Method 8080
SVOC	=	Phase II semivolatile organic compound analysis by SW-846 Method 8270
VOC	=	Phase II volatile organic compound analysis by SW-846 Method 8240
TAL Inorganics	=	Phase III inorganics confirmation analyses using CLP methods
TAL/TCL	=	Phase III Contract Laboratory Program Target Analyte List/Target Compound List: TAL metals (plus cyanide), TCL volatiles. semivolatiles, pesticides, and polychlorinated biphenyl (PCB) analyses
MW	=	Monitoring well
*	=	Duplicate sample
PPS	=	Physical parameter analyses for soil: total phosphorus, nitrate-n. total Kjeldah/nitrogen (TKN), heterotrophic plate count, total organic carbon (TOC), and cation exchange capacity
PPW	=	Physical parameter analyses for water: 5-day biological oxygen demand (BOD), chemical oxygen demand (COD), hardness, total suspended solids (TSS), alkalinity. total phosphorus, nitraten, TKN, and heterotrophic plate count
GS	=	Grain sue analysis plus porosity, permeability, bulk density, specific gravity, and moisture content

4.2.2 Phase II and III Groundwater Assessment

Monitoring Well Installation

Most borings for Phase 11 temporary well installation were completed on March 12 through 15, 1996, using hollow-stem auger drilling techniques with 4.25-inch ID augers. However, a single intermediate depth temporary well (015GR40) was installed with mud-rotary drilling techniques on March 18, 1996, and three additional Phase 11 shallow temporary wells (015GR65, 015GR66, and 015GR67) were installed in hand augered borings on May 15 and 16, 1996. Phase III temporary wells (015GR65-B, 015GR66-B, and 015GR67-B) were installed with hollow-stem auger drilling techniques on July 10, 1996, to replace the hand augered installed temporary wells (of the same well number). Additional Phase III permanent wells (015GS68 through 015GS71) were installed downgradient of the site, two each along the coastline of Bayou Grande and a nearby tidal pond, with hollow-stem auger drilling techniques on September 3 and 4, 1996. The purpose of Phase III well installation was to evaluate downgradient shallow groundwater quality prior to its discharge to the adjacent surface water bodies.

Borings were advanced to a depth sufficient to install the shallow temporary monitoring wells with screened intervals bracketing the water table, or in the case of intermediate depth temporary wells, with the screened interval immediately above the first potentially confining clay unit encountered. Phase II and III temporary wells were assembled through the annulus of the augers, or directly inside the open borehole (for the mud-rotary and hand augered wells), as described in Section 5.3 of the CSAP. Each well was constructed of flush threaded, 2-inch PVC well casing terminating with a 5-foot long, 0.01-inch factory slotted, PVC well screen. A graded 20-30 size quartz sand filter pack was installed around and at least 2 feet above each well screen, generally extending to a depth of 2 to 3 feet. Bentonite pellets were carefully placed above the filter pack and hydrated with analyte-free water to form an approximate 2-foot thick or greater seal. Due to the temporary nature of these wells, no grout collar or concrete pad was constructed at land surface. Instead,

each well was completed with 2 to 3 feet of PVC well casing stickup, and fitted with a locking well cap.

Phase III permanent wells 015GS68 through 015GS71 were assembled and constructed the same as temporary shallow wells except that each well received a 10-foot long, 0.01-inch continuously wound (or V-wrapped), PVC well screen, and a permanent concrete pad with a flush-mount, steel bolt-down protective casing at land surface.

Well Development and Groundwater Sampling

All drill rig installed wells sampled during Phases 11 and III were developed March 22 and 28, July 12, and September 9, 1996, prior to groundwater sampling, as described in Section **5.4** of the ***CSAP***. Wells were developed in the same manner as during Phase I, by alternating surging and pumping using a centrifugal pump and decontaminated PVC tubing until field parameters stabilized and adequate groundwater clarity was obtained. The three hand augered temporary wells (015GR65, 015GR66, and 015GR67) were micro-purged of several well volumes until field parameters stabilized and groundwater cleared adequately prior to groundwater sampling.

All Phase II and III groundwater samples were collected using quiescent sampling techniques as described for Phase I. Phase 11 groundwater samples were collected from all newly installed Phase II wells and Phase I temporary well 15GR07 on April 16, 1996, and analyzed for Phase I PRG exceedances parameters aluminum, arsenic, iron, manganese, pesticides, and SVOCs (SVOCs **only** at locations 15GR07, 15GR35, 15GR36, and 15GR40). Phase II-B samples were collected on May 17, 1996, and included sampling Phase II wells 015GR65 through 015GR67 and resampling 015GR03 and 015GR07, all for arsenic analysis only. Phase III confirmation groundwater samples were collected July **26, 1996,** and included Phase III wells 015GR65-B through 015GR67-B and the resampling of 015GR03, 015GR07, 015GR32, 015GR39, and 015GR40, all for **TAL** inorganics analyses. Phase III-B samples were collected August 22, 1996,

and included resampling wells 015GR65-B through 015GR67-B, and 015GR07, all for arsenic analysis only. The Phase III-C sampling of downgradient permanent wells 015GS68 through 015GS71 was performed September 11, 1996; these samples were analyzed for the full TAL/TCL parameter list.

4.3 Hydrologic Assessment

Water Levels and Groundwater Flow Determination

All sampling and monitoring well locations for all fieldwork phases were surveyed and well top-of-casing elevations determined to an accuracy of ± 2 millimeters with either a global positioning system, or conventional survey methods, after sampling events were completed. Water levels were measured below each well top of casing to the nearest 0.01 foot with an electronic water-level indicator. Based on these measurements, the site's piezometric surface was mapped and shallow groundwater flow direction and gradient determined. Hydrologic assessment results are presented in Section 5.2 of this report.

Specific Capacity Testing

Specific capacity tests were conducted during Phase III of the investigation to calculate first estimates of aquifer parameters for site characterization. Aquifer parameters were calculated from specific data using a computer program developed by Bradbury and Rothschild (1985), based on equations presented in Lohman (1972). This program corrects specific capacity data for partial penetration and well loss, and through an iterative technique, estimates aquifer transmissivity and hydraulic conductivity.

Specific capacity tests were performed on two shallow and two intermediate depth site wells selected to provide beneficial areal coverage of the surficial aquifer across the site. Newly installed temporary wells were tested by measuring the initial water level in the well and then withdrawing groundwater at a constant rate for a documented length of time. Water was

withdrawn from each well using a centrifugal pump and suction line. Water level drawdown and discharge rate were recorded throughout the test. When the pumping water level stabilized, it was noted along with the elapsed time and confirmed discharge rate. Then pumping was ended and water level recovery was noted. Water levels were recorded with an electronic water-level indicator, and discharge rates were measured with a graduated bucket of known volume and a stopwatch.

For each well tested, a number of variables were input into the computer program that characterized the aquifer and the pumping system. These variables included the initial water level, pumping (stabilized) water level, well construction information, the thickness of the aquifer, and the duration of pumping. Aquifer thickness was calculated as the approximate saturated thickness of the surficial aquifer above the confining clay at each well. The two assumed variables entered into the specific capacity program were the storage coefficient and well-loss coefficient. A storage coefficient of 0.25 was estimated for unconfined fine- to medium-grain sand aquifers from Todd (1980). A well-loss coefficient of 0.75 was selected from Todd to represent well screens and sand packs with mild deterioration and clogging (however, during sensitivity analysis the program was found to be relatively insensitive to these parameters). The program output includes estimates of specific capacity, transmissivity, and hydraulic conductivity. Copies of the input and output information for each tested well are presented in Appendix C.

Once hydraulic conductivity values were calculated, the geometric mean of the values for each zone (shallow vs. intermediate) were calculated using the following formula:

$$\textit{Geometric Mean} = \textit{nth} \sqrt{(X_1)(X_2)(X_3)\ldots(X_n)}$$

(the nth root of the product of n values)

Because hydrologic conductivity values frequently can vary by more than two orders of magnitude within the same hydrogeologic unit, and in that hydrologic data are typically lognormally distributed, the geometric mean offers a more representative value of the central tendency of these data (Fetter, 1988).

Using the geometric mean for each depth zone, an estimated horizontal pore velocity for shallow groundwater flow at the site was calculated using the following formula:

$$V = Ki/n_e$$

Where:

V	=	horizontal groundwater velocity
K	=	hydraulic conductivity
I	=	horizontal hydraulic gradient
n_e	=	effective porosity

An effective porosity of 35% (0.35) was estimated for the site's fine- to medium-grained unconsolidated sand based on a laboratory determined total porosity result of 44.22% for a shallow zone sample collected onsite.

Hydrologic investigation results are discussed in Section 5.2.

4.4 Equipment Decontamination

Equipment used in the field investigation was decontaminated following procedures described in Section 11 of the CSAP. All exploration and drilling equipment was decontaminated before its use at each sampling station, while sampling equipment that came into contact with the actual sampled material was decontaminated before sample collection, and between sample

intervals, at any given station. All investigation-derived wastes, which included soil cuttings, development and purge water, decontamination liquids, plastic sheeting, and personal protective equipment, were drummed and labeled as described in Section 13 of the *CSAP*.

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5.0 GEOLOGIC AND HYDROLOGIC ASSESSMENT RESULTS

5.1 Site-Specific Geology

Subsurface lithologies observed across the site during drilling generally consisted of 4 to 6 inches of surficial, light to dark brown, silty sand loam with decayed organics and root traces, underlain by buff white to tan to light gray to brown, fine- to medium-grained quartz sand to the water table. Intermittent lenses of varying, but relatively small amounts of silt-sized organic material were also encountered sporadically across the site. Once saturated by groundwater, site soil commonly darkened to a brown, dark brown, or gray sand. The depth to the water table observed during drilling varied from approximately 15 feet bls along the site's northern boundary (well location 15GR01) to approximately 9 feet bls at the southeastern boundary (well 15GR07). The only significant lithology change noted below the water table was a low permeability sandy clay encountered during intermediate well installation. This unit, which corresponds to the top of the low permeability zone of the Sand- and Gravel-Aquifer at NAS Pensacola, occurred as a highly plastic, medium gray, clayey fine-grained sand to sandy clay, and was encountered at approximately 33 feet bls at well 15GR39, and 40 feet bls at 15GR40.

5.2 Hydrologic Interpretation

Water Level Elevation and Groundwater Flow

Water levels were measured in the newly installed and existing wells at Site 15 on October 27, 1995, May 7, 1996, and February 7, 1997, to determine the shallow groundwater flow direction and gradient. Water-level data and well construction information are shown on Table 5-1. Water levels were approximately 1 foot higher in October 1995 than in the following May 1996 and generally 1 foot lower in February 1997 than in the previous May 1996, reflecting fluctuations in seasonal conditions and rainfall. However, the overall shallow groundwater flow direction and gradient are similar among all three dates. Figures 5-1 and 5-2 present the site's piezometric surface based on the May 1996 and February 1997 measurements.

Table 5-1
Monitoring Well Construction Information and Water Level Elevations[a]

Location	Total Well Depth[b] (BTOC)	Screened Interval (BTOC)	Top of Casing Elevation[c]	Depth to Water 10/27/95	Depth to Water 5/7/96	Depth to Water 2/7/97	Water Level Elevation 10/27/95	Water Level Elevation 5/7/96	Water Level Elevation 2/7/97
015GR01	19.80	14.80-19.80	19.68	16.55	17.63	–	3.06[d]	2.05	–
015GR02	14.90	9.90-14.90	15.60	10.96	12.16	–	4.54[d]	3.44	–
015GR03	14.90	9.90-14.90	15.52	10.92	12.11	–	4 . 4	3.41	–
015GR04	14.90	9.90-14.90	16.26	10.89	12.10	13.34	5.22[d]	4.16	2.92
015GR06	14.90	9.90-14.90	16.93	11.15	12.28	–	5.52[d]	4.65	–
015GR07	14.90	9.90-14.90	17.25	11.14	12.41	–	6.13[d]	4.84	–
015GR08	14.90	9.90-14.90	16.12	11.40	–	–	4.64[d]	–	–
015GR28	14.90	9.90-14.90	16.82	11.37	–	–	5.22[d]	–	–
015GR32	19.25	14.25-19.25	17.87	–	14.85	15.79	–	3.02	2.08
015GR33	18.50	13.50-18.50	17.30	–	14.22	15.14	–	3.08	2.16
015GR34	19.00	14.00-19.00	18.13	–	14.80	15.83	–	3.33	2.30
015GR35	15.50	10.50-15.50	15.78	–	11.25	–	–	4.53	–
015GR36	15.25	10.25-15.25	15.52	–	10.93	12.37	–	4.59	3.15**
015GR37	17.90	12.90-17.90	18.52	–	14.42	15.59	–	4.10	2.93
015GR38	17.10	12.10-17.10	17.63		12.36	–	–	5.27	–
015GR39'	33.20	23.20-33.20	15.74	–	12.56	–	–	3.18	–
015GR40*	40.50	30.50-40.50	17.09	–	12.69	–	–	4.40	–
015GR65	14.90	9.90-14.90	INA	–	–	–	–	–	–
015GR66	14.90	9.90-14.90	INA	–	–	–	–	–	–
015GR67	14.90	9.90-14.90	INA	–	–	–	–	–	–
015GR65-B	20.30	15.30-20.30	17.60	–	15.75*	15.70	–	1.85*	1.90

Table 5-1
Monitoring Well Construction Information and Water Level Elevations'

Location	Total Well Depth[b] (BTOC)	Screened Interval (BTOC)	Top of Casing Elevation'	Depth to Water 10/27/95	Depth to Water 5/7/96	Depth to Water 2/7/97	Water Level Elevation 10/27/95	Water Level Elevation 5/7/96	Water Level Elevation 2/7/97
015GR66-B	18.10	13.10-18.10	17.98	—	14.59*	14.69	—	3.39*	3.29
015GR67-B	17.73	12.73 - 17.73	17.03	—	13.72*	13.80	—	3.31*	3.23
015GS68[f]	12.61	2.61 - 12.61	5.55	—	—	5.37	—	—	0.18
015GS69[f]	19.59	9.59 - 19.59	14.72	—	—	14.43	—	—	0.29
015GS70[f]	15.10	5.10 - 15.10	8.93	—	—	8.61	—	—	0.32
015GS71[f]	12.68	2.68-12.68	5.56	—		5.07	—	—	0.49
GM-59	18.00	15.50-18.00	15.81	11.12	12.05	—	4.69	3.76	—
GM-60	17.90	15.40-17.90	16.58	11.54	12.74	14.12	3.06	3.84	2.46**
MW-01[f]	18.10	INA	14.91	8.36	9.65	11.09	6.55	5.26	3.82
MW-02[f]	18.20	INA	14.71	8.25	9.53	10.90	6.46	5.18	3.81

Notes:
a = All elevations measured in feet above msl.
b = Total well depth includes an approximate .5-foot well point.
c = With the exception of Phase III permanent wells surveyed in January 1997, reported TOC elevations were surveyed in April 1996; Phase I well TOCs were resurveyed due to well movement which had occurred since the October 1995 measurement were tnken (see Note d).
d = Water level elevations for October 27, 1995 were calculated based on TOC elevations surveyed October 1995 (not shown on table).
e = Intermediate depth temporary well.
f = Flush-mount well, top of casing approximate with land surface.
BTOC = Below top of well casing
INA = Information not available
— = Water level not measured.
* = Water level measured July 26, 1996, during Phase III sampling.
** = Water level suspect; not considered in piezometric surface construction.

All site wells are shallow (i.e., bracket the water tnble) unless noted otherwise.
Temporary wells constructed of 2-inch stainless-steel or PVC riser with 5-foot long, 0.01-inch slotted screen, and completed with approximately 1- to 2- foot stickups. Permanent wells were constructed with IO-foot long PVC well screens and finished at land surface with flush-mounted protective casings and concrete pads.

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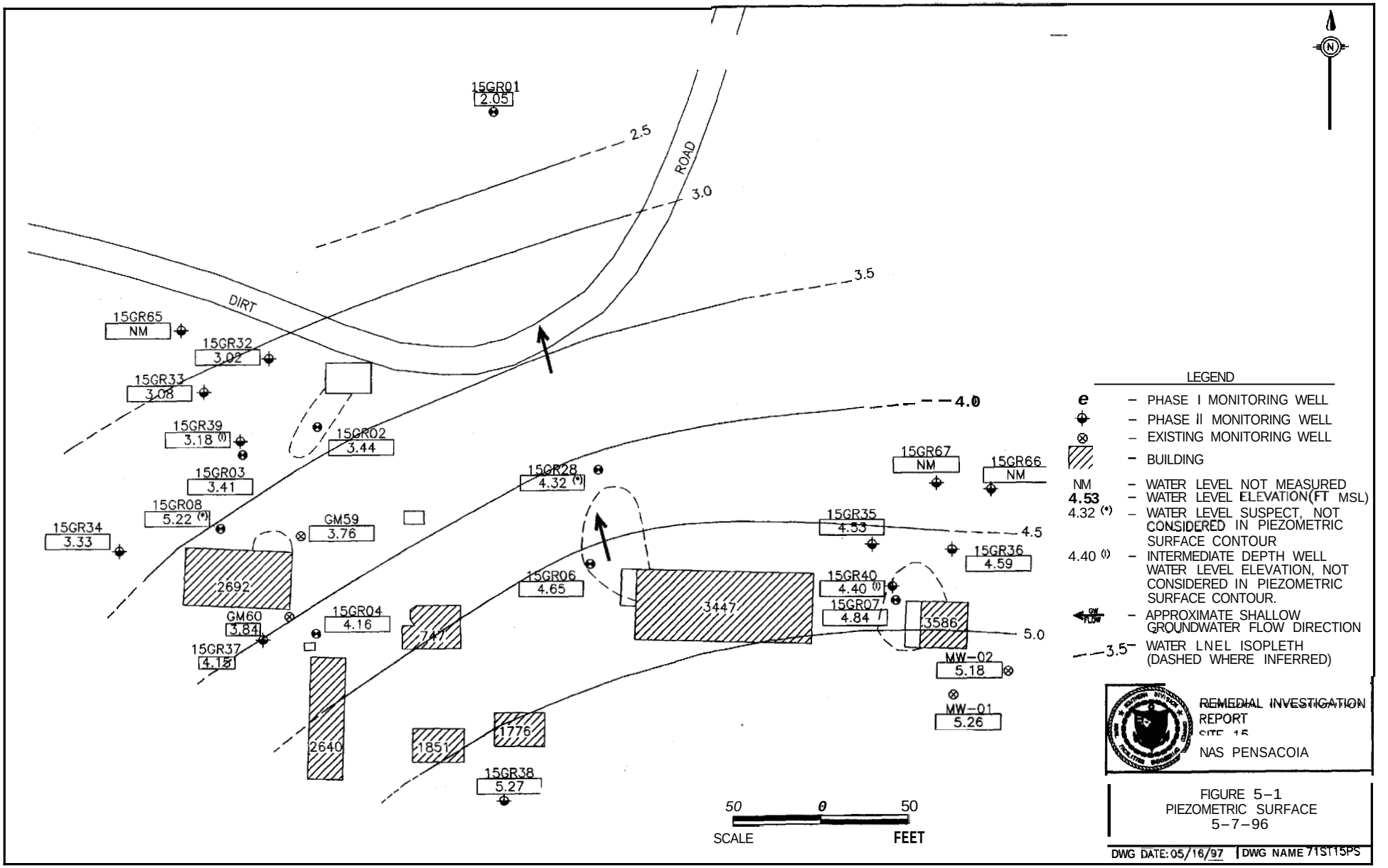
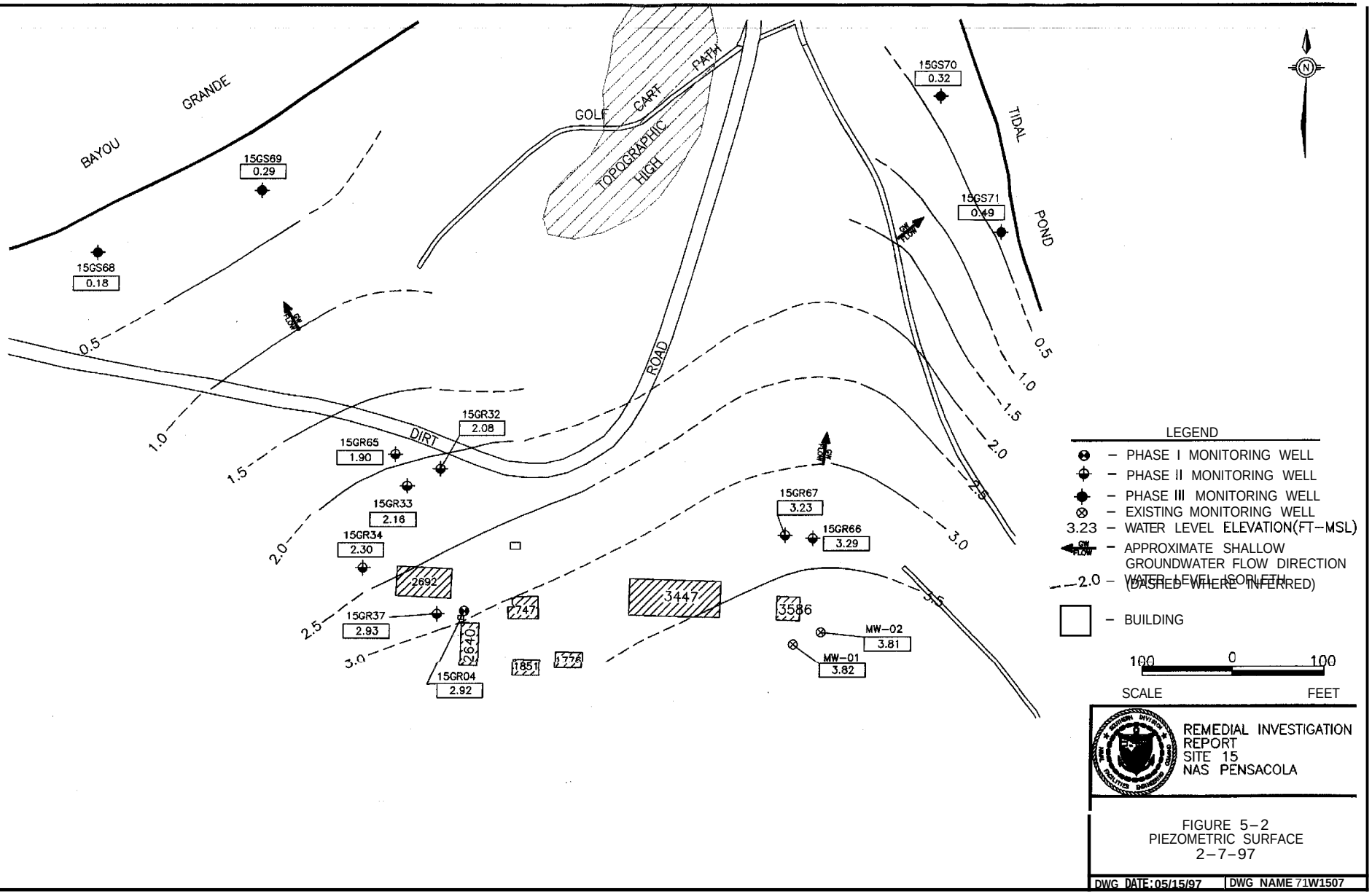

15GR01
2.05
2.5
ROAD
3.0
3.5
DIRT
15GR65
NM
15GR32
3.02
15GR33
3.08
15GR39
3.18 (I)
15GR02
3.44
15GR03
3.41
15GR08
5.22 (*)
15GR34
3.33
GM59
3.76
2692
GM60
3.84
15GR04
4.16
15GR37
4.15
747
2640
1851
1776
15GR38
5.27
15GR28
4.32 (*)
4.0
15GR06
4.65
3447
15GR67
NM
15GR66
NM
15GR35
4.53
4.5
15GR36
4.59
15GR40
4.40 (I)
15GR07
4.84
3586
5.0
MW-02
5.18
MW-01
5.26
50
0
50
SCALE
FEET
N
LEGEND
– PHASE I MONITORING WELL
– PHASE II MONITORING WELL
– EXISTING MONITORING WELL
– BUILDING
NM – WATER LEVEL NOT MEASURED
4.53 – WATER LEVEL ELEVATION(FT MSL)
4.32 (*) – WATER LEVEL SUSPECT, NOT CONSIDERED IN PIEZOMETRIC SURFACE CONTOUR
4.40 (I) – INTERMEDIATE DEPTH WELL WATER LEVEL ELEVATION, NOT CONSIDERED IN PIEZOMETRIC SURFACE CONTOUR.
– APPROXIMATE SHALLOW GROUNDWATER FLOW DIRECTION
3.5 – WATER LNEL ISOPLETH (DASHED WHERE INFERRED)
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOIA
FIGURE 5-1
PIEZOMETRIC SURFACE
5-7-96
DWG DATE: 05/16/97
DWG NAME 71ST15PS


BAYOU GRANDE
GOLF CART PATH
TOPOGRAPHIC HIGH
TIDAL POND
DIRT ROAD
15GS69 0.29
15GS68 0.18
15GS70 0.32
15GS71 0.49
15GR32 2.08
15GR65 1.90
15GR33 2.16
15GR34 2.30
15GR37 2.93
15GR04 2.92
15GR67 3.23
15GR66 3.29
MW-02 3.81
MW-01 3.82
2692
2747
2640
1851
1776
3447
3586
0.5
1.0
1.5
2.0
2.5
3.0
3.5
GW FLOW
LEGEND
– PHASE I MONITORING WELL
– PHASE II MONITORING WELL
– PHASE III MONITORING WELL
– EXISTING MONITORING WELL
3.23 – WATER LEVEL ELEVATION(FT–MSL)
– APPROXIMATE SHALLOW GROUNDWATER FLOW DIRECTION
2.0 – WATER LEVEL ISOPLETH (DASHED WHERE INFERRED)
– BUILDING
100 0 100
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 5–2
PIEZOMETRIC SURFACE
2–7–97
DWG DATE: 05/15/97
DWG NAME 71W1507

Water level elevations indicate shallow groundwater flows generally to the north-northwest toward Bayou Grande and north-northeast toward an adjacent tidal inlet/pond, where it likely discharges to both water bodies. Overall, this flow regime generally mimics site topography, with land surface gently sloping from south to north across the central portion of the site. However, as shown on Figure 5-2, a topographic high on the golf course north of the site likely influences groundwater flow and locally divides groundwater flow to the northeast and northwest. The average hydraulic gradient across the site is a relatively low 0.006 to 0.008.

Specific Capacity Test Results

Specific capacity tests were performed at two shallow and two intermediate depth Site 15 temporary monitoring wells, as described in Section 5.4.2 of the CSAP. These tests were performed following well development and groundwater sampling activities. Table 5-2 presents the results of the specific capacity tests performed at the site.

Using the data from Table 5-2, the geometric mean for hydraulic conductivity was calculated for the shallow well depth interval. As discussed in Section 4.3, because hydrologic conductivity data are generally lognormally distributed, the geometric mean offers the most representative value of the central tendency of these data. The range of hydraulic conductivity values and the geometric mean for the tested shallow well interval are as follows:

Hydraulic Conductivity (feet/day)

Well Depth	Range of Values	Geometric Mean
Shallow	54.95 - 83.30	67.65
Intermediate	7.21 - 33.76	15.60

Table 5-2
Site 15
Specific Capacity Test Results

Well Number	Well Depth (BTOC)	Specific Capacity (gpm/ft)	Transmissivity (ft^2/day)	Hydraulic Conductivity (ft/day)
Shallow				
015GR34	19.00	3.33	1832.70	83.30
015GR35	15.50	2.21	1538.37	54.94
Intermediate				
015GR39	33.20	2.59	742.83	33.76
015GR40	40.50	0.54	201.80	7.21

Notes:
BTOC = Below top of well casing
gpm = Gallons per minute
ft = Feet

This information indicates the lower extent (intermediate well depth) of the surficial zone of the Sand-and-Gravel Aquifer at Site 15 has lower hydraulic conductivity than its upper portion (shallow well depth). Because each intermediate depth well was installed at or near the top of the low permeability zone, the generally lower conductivities in the intermediate well specific capacity data are most likely a result of the relatively more abundant finer-grain material (silty-clayey sand and/or sandy clay) present at or near the base of the surficial zone.

Groundwater Velocity Estimate

Based on an average shallow groundwater gradient of 0.007 for the site, the calculated geometric mean hydraulic conductivity of 67.65 feet per day (ft/day) for the shallow zone obtained from the specific capacity testing, and an effective porosity estimate of 35% (estimated based on a shallow zone soil sample total porosity analysis result of 44.22%), calculated average horizontal pore velocities for shallow groundwater flow at the site are approximately 1.35 ft/day. The intermediate well zone had insufficient data points to determine groundwater flow or gradient; therefore, groundwater velocity for this zone is not estimated.

6.0 NATURE AND EXTENT OF CONTAMINATION

Sections 6.1 and 6.2 discuss the analytical results for Site 15 soil and groundwater samples, respectively, collected during this investigation. Section 6.3 summaries these results. Conclusions and recommendations based on these results are presented in Section 10.

Establishment of Preliminary Remediation Goals

State of Florida and/or USEPA Risk Based Concentrations (RBCs), guidance concentrations, and promulgated standards have been defined as PRGs for this investigation. These PRGs have been used to evaluate Site 15 analytical results for contamination distribution and risk assessment. Discussions of the analytical results specifically address the relationship between detected parameter concentrations and the PRGs listed below. Parameters concentrations detected below PRGs are not discussed.

Soil

- RBCs soil ingestion scenario for residential surface soil, and soil screening levels (SSLs) transfer scenario from soil to groundwater for subsurface soil (USEPA, 1996a).

- Selected Soil Cleanup Goals (CGs) residential scenario for surface soil, and leaching scenario (CGLs) for subsurface soil (FDEP, 1995, [with 1996 and 1997 revisions]).

- **USEPA,** Office of Solid Waste and Emergency Response draft revised *Interim Soil* Lead *Guidance* (USEPA, 1994a).

- Title 40 Code of Federal Regulations (CFR) Part 761.125 Requirements for PCB Spill Cleanup (USEPA, 1988).

- USESA, Office of Solid Waste and Emergency Response Soil Screening Guidance (USEPA, 1994b).

Groundwater

- USEPA Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs) (USESA 1996b).

- Florida Primary/Secondary Drinking Water Standards (FPDWS/FSDWS) and Florida Groundwater Guidance Concentrations (FGGC; FDEP, 1994b).

All soil and groundwater PRGs are listed in *Appendix* D. Appendix I contains FDEP memorandums regarding Florida CG and CGL revisions that have occurred during the course of this investigation and been used in evaluating the RI-derived data. Appendix E contains summarized soil and groundwater sample analytical results that exceed one or more PRGs (i.e., PRG exceedances only). A complete set of validated analytical results is contained in Appendix F. Additionally, *figures* illustrating the distribution of PRG exceedances at Site 15 are presented in the following results discussions (Sections 6.1 and 6.2). For the soil assessment, surface soil is defined as the 0 to 1 foot bls, while subsurface soil is defined as the interval from 1-foot bls to the water table.

Establishment of Background

In addition to the PRGs, Site 15 soil and groundwater inorganics results were compared to NAS Pensacola-specific reference concentrations (RCs) developed by the Navy. These RCs were developed from background sample data and have been used to define a range of concentrations for each detected inorganic parameter considered representative of ambient conditions. *An* RC has been calculated for each inorganic parameter, equal to two times the parameter's mean concentration. In instances where an analyzed parameter was not detected in background samples

above the quantitation limit, a value of one-half the reported detection limit was used to calculate the mean RC concentration. Calculated RCs for detected inorganic parameters, along with the summary analytical results for NAS Pensacola background soil and groundwater samples, are presented in Appendix G.

Figure 6-1 shows background sample locations. Background soil samples were collected while installing background wells 01GS67, 01GI68, 01GS69, and 01GI70 during the 1993 Site 1 RI (E/A&H, 1996). These shallow and intermediate depth wells were sampled in 1993 (using Teflon bailers) and, due to sample turbidity, were resampled in July 1994 using low-flow rate quiescent sampling techniques. Deep supply wells 01DSW50 and 01DSW51 were also sampled during the 1993 Site 1 RI to obtain the remaining deep zone background data (because supply wells contained operable turbine pumps, these wells were sampled directly from a valve at the wellhead without using a bailer; these samples exhibited low turbidities comparable to those collected from the shallow wells using low-flow techniques).

Inorganic parameters detected in site samples are discussed in the following sections relative to RCs only when a specific parameter exceeds a PRG or when no PRG is available for a parameter. As evident by the RCs and background data, concentrations of aluminum and iron detected in background groundwater samples exceeded secondary drinking water standards for all wells, indicating that these metals naturally occur at relatively high concentrations in the NAS Pensacola groundwater. Specifically, the lithology of the surficial zone of the Sand and Gravel Aquifer can locally contain high percentages of ferrous/manganese hydroxides, clays, and detrital shell material, so the abundance of aluminum, iron, manganese, and calcium is not unexpected.

6.1 Soil

Phase I and II soil sample results indicated several inorganic, pesticide, SVOC, and VOC parameters exceeded PRG concentrations (no soil samples were collected after Phase II). These exceedances are discussed in the following sections and shown on Figures 6-2 through 6-4 by

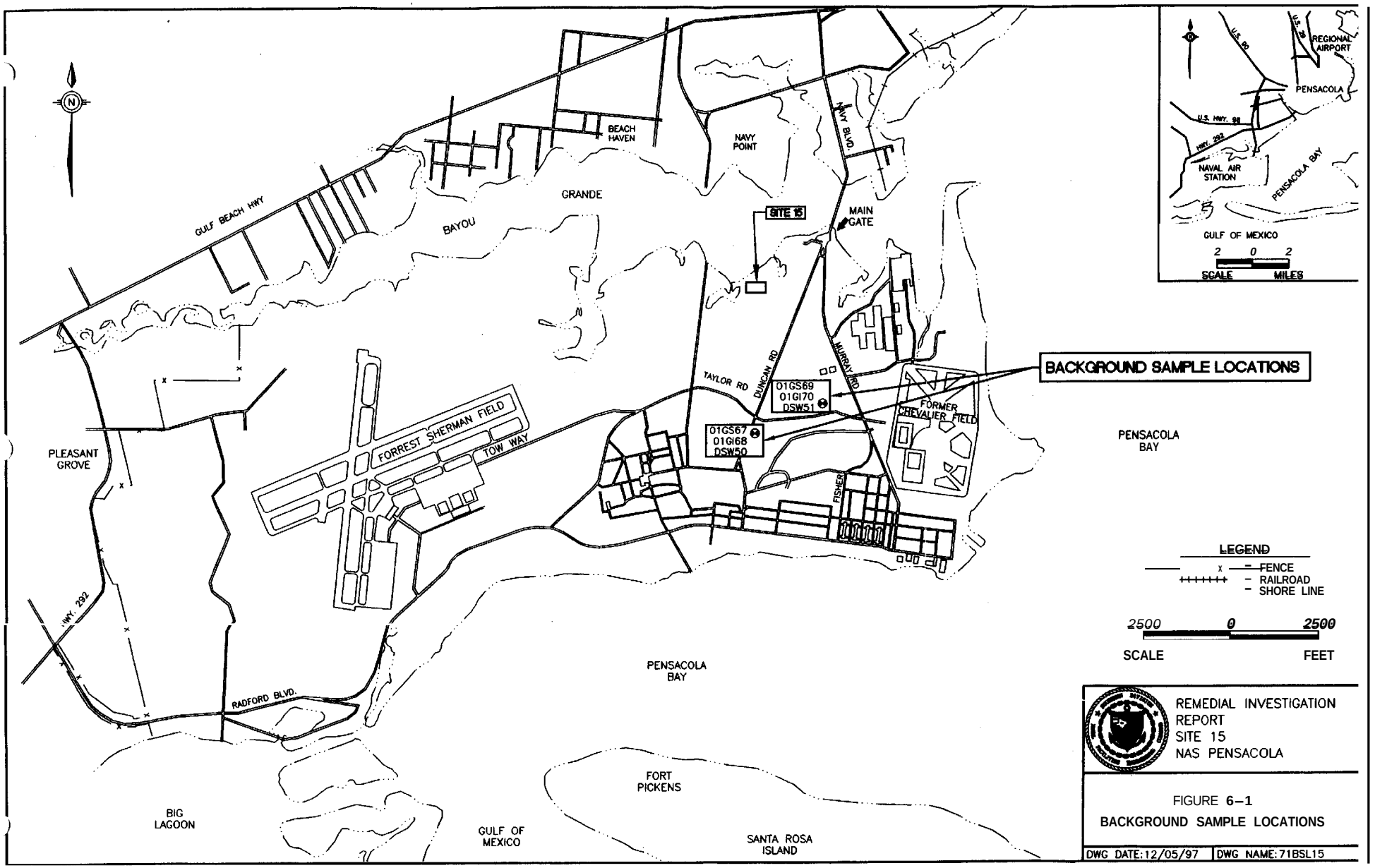
parameter group (e.g., inorganics versus pesticides, etc.). A complete list of Site 15 soil PRG exceedances is contained in Appendix E.

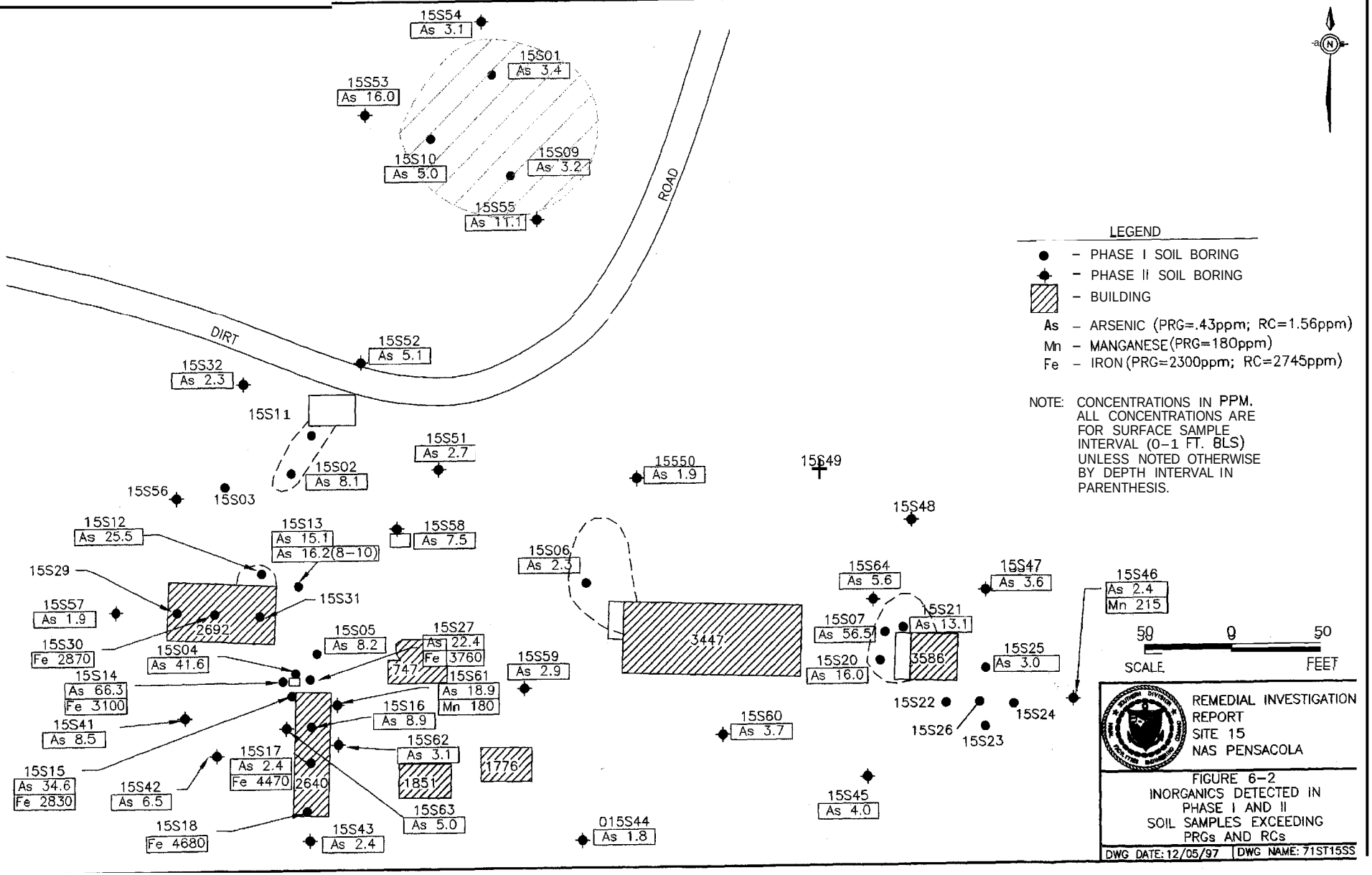
6.1.1 Inorganics

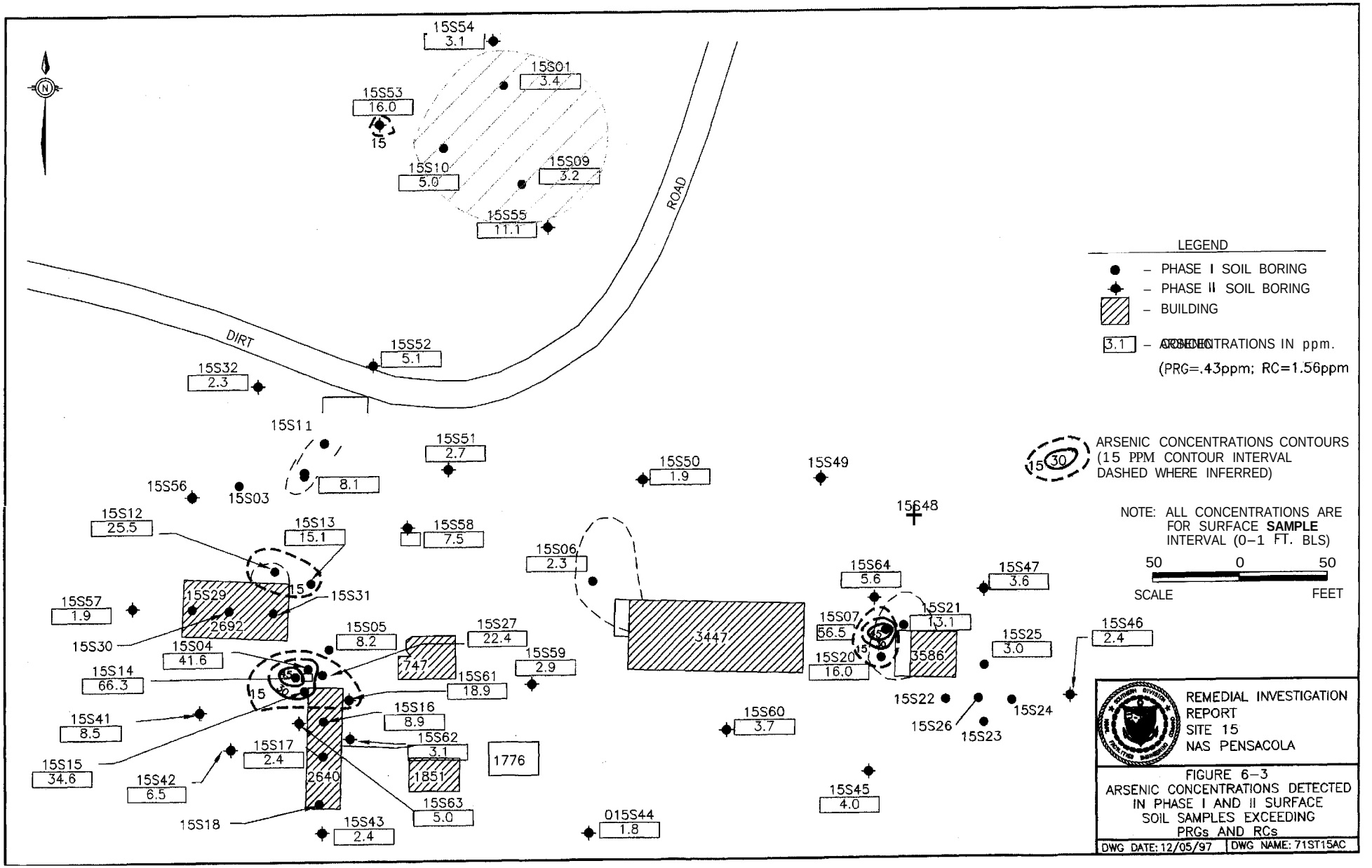
Figure 6-2 shows all inorganics exceeding both PRGs and RCs detected in Phase I and 11 soil samples. Figure 6-3 shows only arsenic PRG and RC exceedances detected in Phase I and II surface soil samples. As shown on Figure 6-3, arsenic was widely detected across the site. A contour interval value of 15 ppm was subjectively selected for this figure to identify areas of relatively higher arsenic surface soil concentrations.

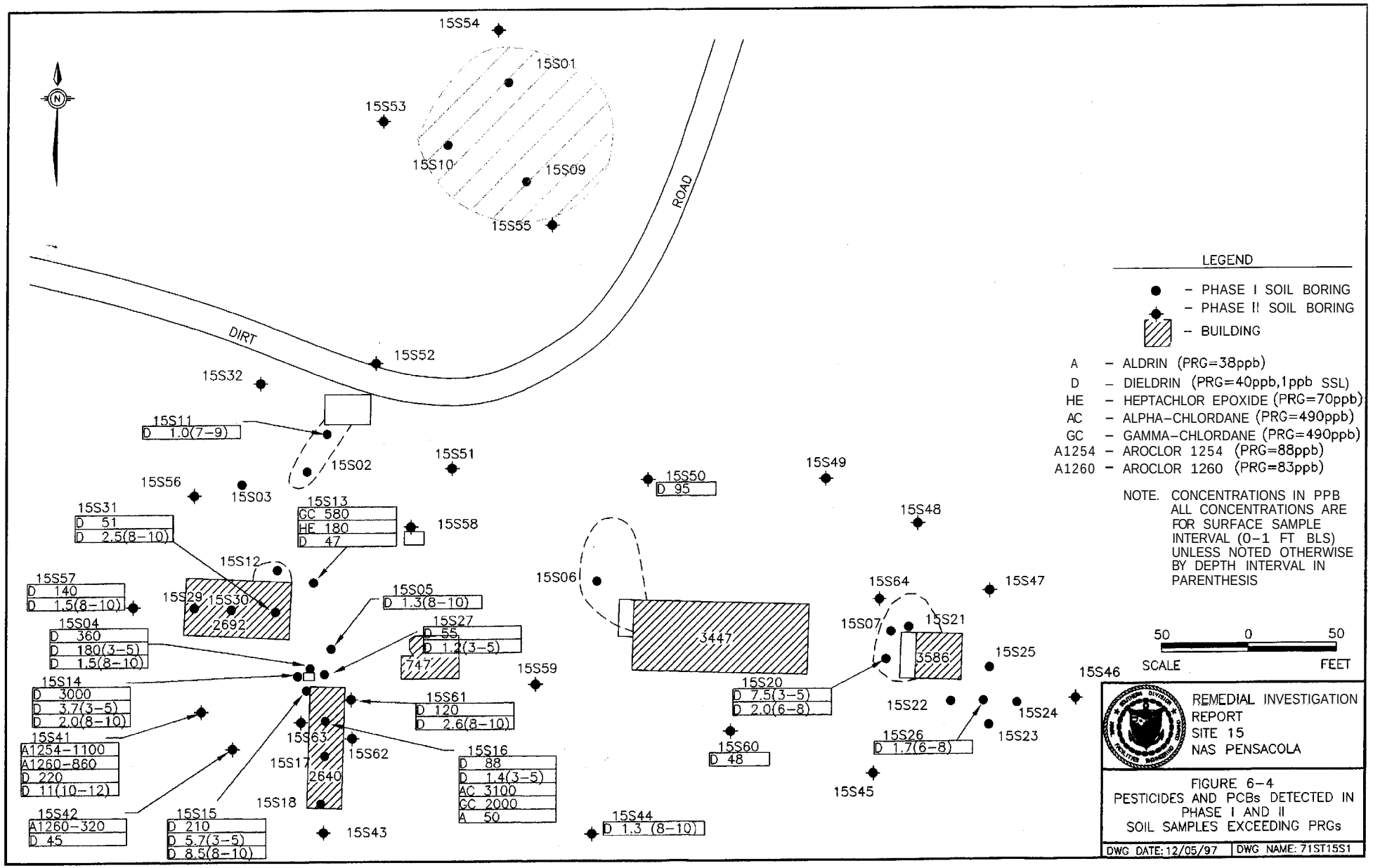
Arsenic concentrations detected during Phase I frequently exceeded the current soil RBC PRG and RC (0.43 and 1.56 ppm, respectively). Iron concentrations occasionally exceeded the soil RBC PRG and RC (2,300 and 2,745 ppm, respectively). Detected concentrations ranged from 0.94 to 66.3 ppm for arsenic and 2,320 to 4,680 ppm for iron. Several detected concentrations (arsenic and/or iron from locations 15S03, 15S11, 15S12, 15S18, 13S24, 15S25, 15S29, and 15S31, not shown on figures) exceeded RBCs, but were below their respective NAS Pensacola RCs. This information indicates ambient soil conditions exceed the respective arsenic and iron RBCs. A single subsurface arsenic concentration (16.2 ppm) exceeding the USEPA SSL PRG of 15 ppm was detected at location 015S0013 in the 8- to 10-foot bls sample interval.

Phase 11 soil samples were analyzed only for arsenic and manganese, the two Phase I PRG exceedances of primary concern. Several Phase II surface soil arsenic concentrations ranging up to 18.9 ppm exceeded the PRG, although concentrations from locations 15S48, 15S49, and 15S56 were below the 1.56 ppm RC. Additionally, two manganese surface soil concentrations, ranging up to 215 ppm, exceed the current RBC of 180 ppm.


BACKGROUND SAMPLE LOCATIONS
SITE 15
MAIN GATE
BEACH HAVEN
NAVY POINT
NAVY BLVD.
GRANDE
BAYOU
GULF BEACH HWY
TAYLOR RD
DUNCAN RD
MURRAY RD
FISHER
01GS69
01GI70
DSW51
01GS67
01GI68
DSW50
FORMER CHEVALIER FIELD
FORREST SHERMAN FIELD
TOW WAY
PLEASANT GROVE
HWY. 292
RADFORD BLVD.
PENSACOLA BAY
PENSACOLA BAY
FORT PICKENS
BIG LAGOON
GULF OF MEXICO
SANTA ROSA ISLAND
REGIONAL AIRPORT
PENSACOLA
U.S. HWY. 98
HWY. 292
NAVAL AIR STATION
PENSACOLA BAY
GULF OF MEXICO
2 0 2
SCALE MILES
LEGEND
FENCE
RAILROAD
SHORE LINE
2500 0 2500
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-1
BACKGROUND SAMPLE LOCATIONS
DWG DATE:12/05/97
DWG NAME:71BSL15


15S54
As 3.1
15S01
As 3.4
15S53
As 16.0
15S10
As 5.0
15S09
As 3.2
15S55
As 11.1
ROAD
DIRT
15S52
As 5.1
15S32
As 2.3
15S11
15S51
As 2.7
15S02
As 8.1
15S56
15S03
15S50
As 1.9
15S49
15S48
15S12
As 25.5
15S13
As 15.1
As 16.2(8-10)
15S58
As 7.5
15S06
As 2.3
15S29
15S31
15S57
As 1.9
2692
15S30
Fe 2870
15S05
As 8.2
15S27
As 22.4
Fe 3760
15S04
As 41.6
747
15S61
As 18.9
Mn 180
15S59
As 2.9
15S14
As 66.3
Fe 3100
15S16
As 8.9
15S41
As 8.5
15S62
As 3.1
15S17
As 2.4
Fe 4470
2640
1851
1776
15S15
As 34.6
Fe 2830
15S42
As 6.5
15S63
As 5.0
15S18
Fe 4680
15S43
As 2.4
015S44
As 1.8
3447
15S64
As 5.6
15S07
As 56.5
15S21
As 13.1
15S20
As 16.0
3586
15S47
As 3.6
15S46
As 2.4
Mn 215
15S25
As 3.0
15S22
15S24
15S26
15S23
15S60
As 3.7
15S45
As 4.0
LEGEND
- PHASE I SOIL BORING
- PHASE II SOIL BORING
- BUILDING
As - ARSENIC (PRG=.43ppm; RC=1.56ppm)
Mn - MANGANESE (PRG=180ppm)
Fe - IRON (PRG=2300ppm; RC=2745ppm)
NOTE: CONCENTRATIONS IN PPM. ALL CONCENTRATIONS ARE FOR SURFACE SAMPLE INTERVAL (0-1 FT. BLS) UNLESS NOTED OTHERWISE BY DEPTH INTERVAL IN PARENTHESIS.
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-2
INORGANICS DETECTED IN PHASE I AND II SOIL SAMPLES EXCEEDING PRGs AND RCs
DWG DATE: 12/05/97
DWG NAME: 71ST15SS


15S54
3.1
15S01
3.4
15S53
16.0
15
15S10
5.0
15S09
3.2
15S55
11.1
ROAD
DIRT
15S52
5.1
15S32
2.3
15S11
8.1
15S51
2.7
15S50
1.9
15S49
15S56
15S03
15S12
25.5
15S13
15.1
15S58
7.5
15S06
2.3
15S48
15S64
5.6
15S47
3.6
15S57
1.9
15S29
2692
15S31
15S30
15S05
8.2
15S27
22.4
15S04
41.6
747
15S59
2.9
3447
15S07
56.5
15S21
13.1
15S20
16.0
3586
15S25
3.0
15S46
2.4
15S14
66.3
15S61
18.9
15S16
8.9
15S41
8.5
15S60
3.7
15S22
15S24
15S26
15S23
15S17
2.4
15S62
3.1
1776
15S15
34.6
15S42
6.5
2640
1851
15S63
5.0
15S18
15S43
2.4
015S44
1.8
15S45
4.0
LEGEND
– PHASE I SOIL BORING
– PHASE II SOIL BORING
– BUILDING
3.1 – ARSENIC CONCENTRATIONS IN ppm.
(PRG=.43ppm; RC=1.56ppm
ARSENIC CONCENTRATIONS CONTOURS
(15 PPM CONTOUR INTERVAL
DASHED WHERE INFERRED)
NOTE: ALL CONCENTRATIONS ARE
FOR SURFACE SAMPLE
INTERVAL (0–1 FT. BLS)
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION
REPORT
SITE 15
NAS PENSACOLA
FIGURE 6–3
ARSENIC CONCENTRATIONS DETECTED
IN PHASE I AND II SURFACE
SOIL SAMPLES EXCEEDING
PRGs AND RCs
DWG DATE: 12/05/97
DWG NAME: 71ST15AC


15S54
15S01
15S53
15S10
15S09
15S55
ROAD
DIRT
15S52
15S32
15S11
D 1.0(7-9)
15S02
15S51
15S56
15S03
15S13
GC 580
HE 180
D 47
15S58
15S31
D 51
D 2.5(8-10)
15S12
15S57
D 140
D 1.5(8-10)
15S29
15S30
2692
15S04
D 360
D 180(3-5)
D 1.5(8-10)
15S05
D 1.3(8-10)
15S27
D 55
D 1.2(3-5)
747
15S14
D 3000
D 3.7(3-5)
D 2.0(8-10)
15S59
15S61
D 120
D 2.6(8-10)
15S41
A1254-1100
A1260-860
D 220
D 11(10-12)
15S63
15S62
15S17
2640
15S16
D 88
D 1.4(3-5)
AC 3100
GC 2000
A 50
15S18
15S42
A1260-320
D 45
15S15
D 210
D 5.7(3-5)
D 8.5(8-10)
15S43
15S44
D 1.3 (8-10)
15S50
D 95
15S49
15S48
15S06
3447
15S64
15S47
15S07
15S21
3586
15S25
15S46
15S20
D 7.5(3-5)
D 2.0(6-8)
15S22
15S24
15S23
15S60
D 48
15S26
D 1.7(6-8)
15S45
LEGEND
- PHASE I SOIL BORING
- PHASE II SOIL BORING
- BUILDING
A - ALDRIN (PRG=38ppb)
D - DIELDRIN (PRG=40ppb,1ppb SSL)
HE - HEPTACHLOR EPOXIDE (PRG=70ppb)
AC - ALPHA-CHLORDANE (PRG=490ppb)
GC - GAMMA-CHLORDANE (PRG=490ppb)
A1254 - AROCLOR 1254 (PRG=88ppb)
A1260 - AROCLOR 1260 (PRG=83ppb)
NOTE. CONCENTRATIONS IN PPB
ALL CONCENTRATIONS ARE FOR SURFACE SAMPLE INTERVAL (0-1 FT BLS) UNLESS NOTED OTHERWISE BY DEPTH INTERVAL IN PARENTHESIS
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-4
PESTICIDES AND PCBs DETECTED IN PHASE I AND II SOIL SAMPLES EXCEEDING PRGs
DWG DATE: 12/05/97
DWG NAME: 71ST15S1

As shown in Figures 6-2 and 6-3, locations of iron and manganese PRG exceedances were limited while arsenic exceedances were detected more frequently across the site. The highest arsenic concentrations were detected in samples from three suspected source areas identified during the contaminant source survey — the drum storage area at (former) Building 2692's northeastern comer, the asphalt pad wash-down area at Building 2640's northwestern comer, and the pesticide handling wash down area adjacent to Building 3586's western side. Manganese exceedances were detected only at sampling locations 015S0061, east of the asphalt pad, and 015S0046, east of Building 3586. Iron concentrations exceeding both the PRG and RC were detected in sample locations 15S14, 15S15, and 15S27, around the asphalt pad, and 15S17 and 15S18, within the Building 2640 storage area.

6.1.2 Organics

Pesticides and PCBs

Figure 6-4 shows all pesticide and PCB PRG exceedances detected in Phase I and II soil samples. As shown, the pesticides aldrin, dieldrin, heptachlor epoxide, alpha-chlordane, and gamma-chlordane, and the PCBs Aroclor-1254 and Aroclor-1260, were detected in site soil samples at concentrations exceeding their respective surface soil PRG (38 parts per billion [ppb], 40 ppb, 70 ppb, 490 ppb [for each alpha- and gama- chlordane], and 83 ppb [for each PCB compound]). Of these exceedances, dieldrin was most frequently detected in both phases. Figure 6-5 shows only dieldrin PRG exceedances (40 ppb) detected in Phase I and II surface soil samples (note that the 1 ppb SSL PRG applies only to subsurface samples).

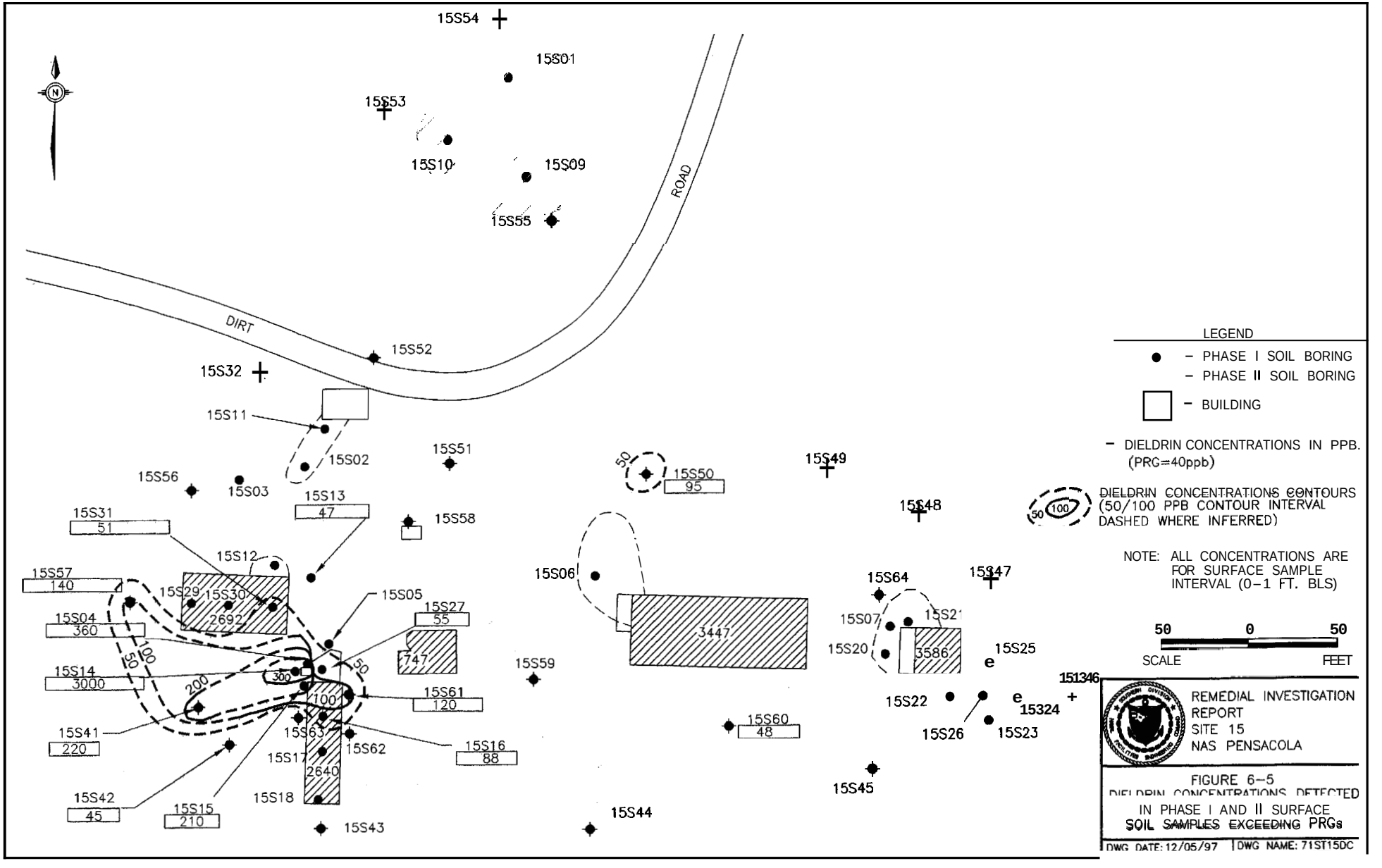
The pesticides aldrin, dieldrin, heptachlor epoxide, alpha-chlordane, and gamma-chlordane were detected in Phase I samples. No PCB concentrations exceeding PRGs were detected during Phase I. Except for dieldrin, pesticide exceedances were sporadic and infrequent, and limited to the surface depth interval. However, dieldrin was frequently detected and commonly exceeded both the 40 ppb surface PRG and the 1 ppb subsurface SSL PRG. The highest detected concentrations of the pesticides were as follows: aldrin, 50 ppb; dieldrin, 3000 ppb; heptachlor epoxide, 180 ppb; alpha-chlordane, 3,100 ppb; and gamma-chlordane, 2,000 ppb.

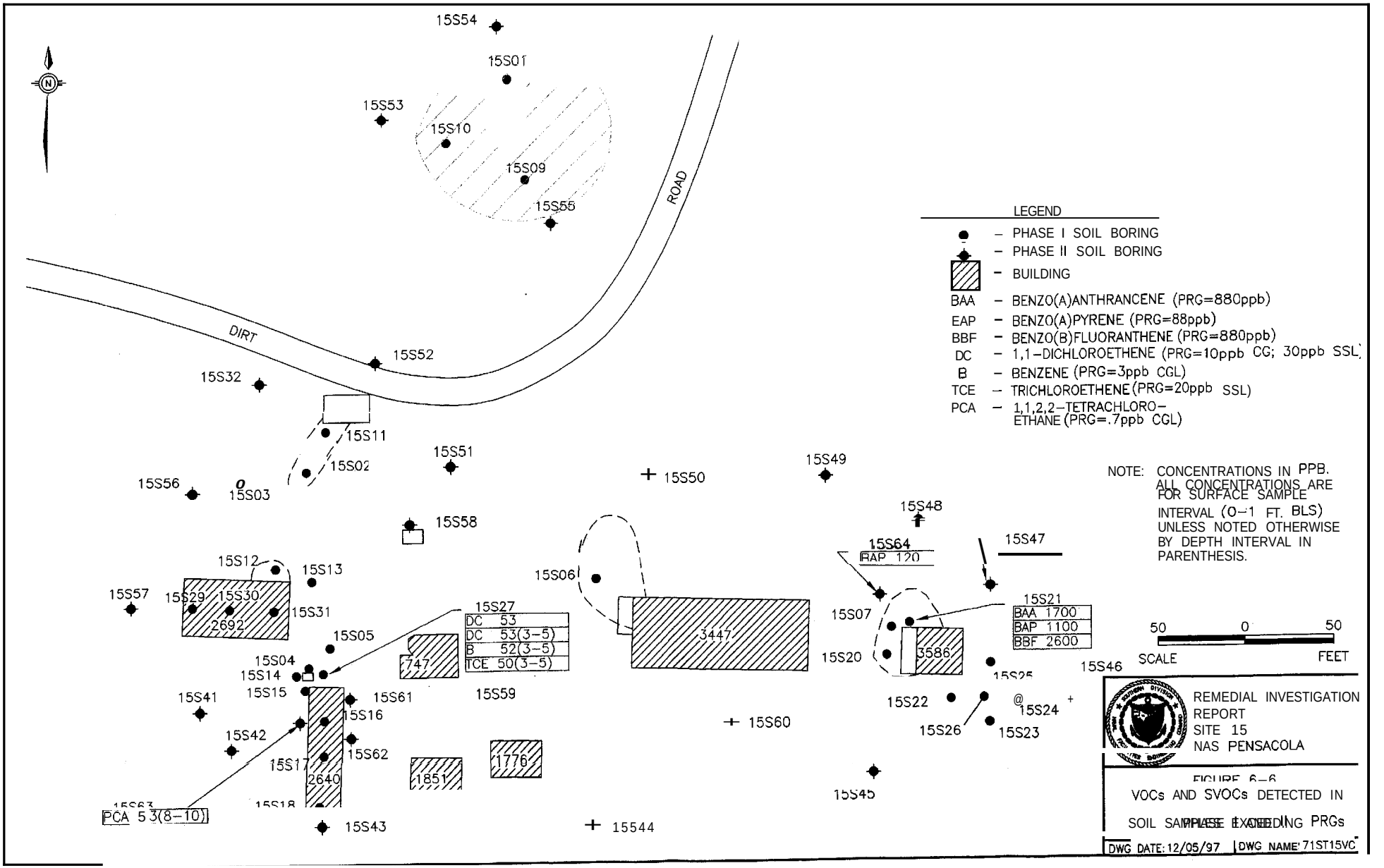
Phase II exceedances included isolated detections of the PCBs Aroclor-1254 and -1260 in surface samples, and several surface and subsurface detections of dieldrin. Phase II PCB and dieldrin concentrations ranged up to 1100 ppb (Aroclor-1254) and 220 ppb, respectively. As Figures 6-4 and 6-5 show, most pesticide exceedances, including the highest concentration of each pesticide, were detected in the site's western portion around Buildings 2692, 2640, and the asphalt wash-down pad. The PCB exceedances were detected at locations 15S41 and 15S42, along an unpaved drive at the site's southwestern boundary.

Volatiles and Semivolatiles

Figure 6-6 shows the isolated locations of detected VOC and SVOC concentrations exceeding PRGs. During Phase I, concentrations of the VOCs 1,1-dichloroethene, benzene, and trichloroethene exceeded surface and/or subsurface soil PRGs in samples collected from location 01580027, immediately east and adjacent to the asphalt wash-down pad. A 53 ppb 1,1-dichloroethene surface soil concentration from this location exceeded the recently revised 10 ppb FDEP CG. Subsurface concentrations of 1,1-dichloroethene, benzene, and trichloroethene, ranging from 50 to 53 ppb, exceeded their respective USEPA SSLs/ FDEP CGLs of 30, 3, and 20 ppb in the 3- to 5- foot bls sample, During Phase II, delineation sampling performed in this area resulted in the detection of a 1,1,2,2-tetrachlorethane concentration exceeding the 0.7 ppb CGL PRG. This Phase II exceedance was detected in the subsurface sample collected at location 015S0063, from 8 to 10 feet bls. This location is approximately 20 feet south of the asphalt pad, immediately west of the Building 2640.

Also shown on Figure 6-6, concentrations of the SVOCs benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene, mging from 1,100 to 2,600 ppb and exceeding their respective PRGs of 880, 88, and 880 ppb, were detected during Phase I. These SVOCs were each detected in a single surface sample collected adjacent to the Building 3586 wash pad at location 015S0021. Phase II delineation sampling in this area resulted in the detection of additional surface soil benzo(a)pyrene


15S54
15S01
15S53
15S10
15S09
15S55
ROAD
DIRT
15S52
15S32
15S11
15S02
15S51
15S56
15S03
15S13
47
15S58
15S31
51
15S12
15S57
140
15S29
15S30
2692
15S05
15S27
55
15S04
360
1747
15S14
3000
300
100
200
50
15S61
120
15S41
220
15S63
15S62
15S16
88
15S17
2640
15S42
45
15S15
210
15S18
15S43
15S44
15S06
3447
15S59
15S50
95
15S49
15S48
15S64
15S47
15S07
15S21
15S20
3586
15S25
15S22
15S26
15S23
15S60
48
15S45
151346
15324
LEGEND
– PHASE I SOIL BORING
– PHASE II SOIL BORING
– BUILDING
– DIELDRIN CONCENTRATIONS IN PPB. (PRG=40ppb)
DIELDRIN CONCENTRATIONS CONTOURS (50/100 PPB CONTOUR INTERVAL DASHED WHERE INFERRED)
NOTE: ALL CONCENTRATIONS ARE FOR SURFACE SAMPLE INTERVAL (0–1 FT. BLS)
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6–5
DIELDRIN CONCENTRATIONS DETECTED IN PHASE I AND II SURFACE SOIL SAMPLES EXCEEDING PRGs
DWG DATE: 12/05/97
DWG NAME: 71ST15DC


15S54
15S01
15S53
15S10
15S09
15S55
ROAD
DIRT
15S52
15S32
15S11
15S02
15S51
15S56
15S03
15S50
15S49
15S58
15S48
15S64
BAP 120
15S47
15S12
15S13
15S06
15S57
15S29
15S30
15S31
2692
15S27
DC 53
DC 53(3-5)
B 52(3-5)
TCE 50(3-5)
3447
15S07
15S21
BAA 1700
BAP 1100
BBF 2600
15S05
15S04
15S14
747
15S20
3586
15S46
15S41
15S15
15S61
15S59
15S22
15S24
15S16
15S60
15S26
15S23
15S42
15S62
15S17
2640
1851
1776
15S45
PCA 53(8-10)
15S43
15S44
LEGEND
– PHASE I SOIL BORING
– PHASE II SOIL BORING
– BUILDING
BAA – BENZO(A)ANTHRANCENE (PRG=880ppb)
EAP – BENZO(A)PYRENE (PRG=88ppb)
BBF – BENZO(B)FLUORANTHENE (PRG=880ppb)
DC – 1,1-DICHLOROETHENE (PRG=10ppb CG; 30ppb SSL)
B – BENZENE (PRG=3ppb CGL)
TCE – TRICHLOROETHENE (PRG=20ppb SSL)
PCA – 1,1,2,2-TETRACHLORO-ETHANE (PRG=.7ppb CGL)
NOTE: CONCENTRATIONS IN PPB. ALL CONCENTRATIONS ARE FOR SURFACE SAMPLE INTERVAL (0-1 FT. BLS) UNLESS NOTED OTHERWISE BY DEPTH INTERVAL IN PARENTHESIS.
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-6
VOCs AND SVOCs DETECTED IN SOIL SAMPLES EXCEEDING PRGs
DWG DATE: 12/05/97
DWG NAME: 71ST15VC

PRG exceedances at locations 015S0047 and 015S0064, approximately 25 feet northeast and northwest of Building 3586, respectively.

6.2 Groundwater

Table 6-1 presents stabilized groundwater field parameter values measured prior to sample collection during each sampling phase. Typical range of shallow groundwater pH was 5.5 to 6.5 units across the site; intermediate groundwater (wells 15GR39 and 15GR40) pH was 5.32 to 5.40 units.

Phase I, 11, and III groundwater sample results indicated several inorganic parameters exceeded PRG concentrations (because Phases II and III each consisted of multiple sampling efforts unless specified otherwise, the terms Phase 11 and Phase III will be used generically in the following discussion to refer to all Phase II or Phase III events in total). PRG exceedances are discussed in the following section and shown on Figures 6-7 through 6-12. With only one exception (a single dieldrin concentration detected during sampling Phase III-C), no organic parameters were detected in groundwater samples at concentrations exceeding PRGs. Site 15 groundwater PRG exceedances are listed in Appendix E.

6.2.1 Inorganics

Phases I and II

Figure 6-7 shows the locations sampled and all inorganic PRG exceedances detected in groundwater during the various Phase I and 11 sampling events (including Phases I, 11, and 11-B). During Phase I contaminant characterization sampling, detected arsenic concentrations exceeded the USEPA/FPDWS MCL of 50 ppb; a single manganese concentration slightly exceeded the USEPAIFSDWS MCL of 50 ppb. Subsequent sampling phases were designed to delineate the extent of these detected exceedances.

Table 6-1
Groundwater Field Parameters

Sampling Phase	Location	pH (units)	Specific Conductance (mS/cm)	Temperature (°C)
1(Sept 95)	15GR01	5.90	.203	26.0
	15GR02	6.00	.321	28.0
	15GR03	6.49	.163	28.5
	15GR04	5.73	.219	26.0
	15GR06	6.13	.219	26.4
	15GR07	6.40	.187	27.0
	15GR08	5.42	.187	26.4
	15GR28	6.08	.455	26.1
	OM59	5.54	.175	24.3
	OM60	5.94	.159	25.7
	MW-01	6.23	.163	26.1
	MW-02	6.04	.198	25.4
II (April 96)	15GR07	5.83	.170	18.8
	15GR32	6.79	.242	18.3
	15GR33	6.63	.267	18.5
	15GR34	5.57	.172	18.7
	15GR35	6.09	.123	18.8
	15GR36	5.95	.229	18.7
	15GR37	5.95	.101	19.3
	15GR38	5.88	.154	21.1
	15GR39	5.68	.189	19.2
	15GR40	5.39	.191	20.4
II-B (May 96)	15GR03	6.32	.141	21.5
	15GR07	5.90	.153	22.3
	15GR65	6.30	.220	21.0
	15GR66	4.70	.130	21.0
	15GR67	6.10	.250	21.0

Table 6-1
Groundwater Field Parameters

Sampling Phase	Location	pH (units)	Specific Conductance (mS/cm)	Temperature (°C)
III (July 96)	15GR03	5.73	.216	24.5
	15GR07	5.68	.166	25.6
	15GR32	6.31	281	24.1
	15GR39	5.32	.154	22.3
	15GR40	5.40	.174	22.2
	15GR65-B	6.30	.201	23.7
	15GR66-B	5.95	.123	23.3
	15GR67-B	6.11	.180	24.0
III-B (August 96)	1MR07	5.68	.195	25.6
	15GR65-B	6.51	.281	23.5
	15GR66-B	5.90	·120	23.6
	15GR67-B	6.05	.145	24.2
III-C (September 96)	15GS68	5.99	.276	25.9
	15GS69	6.02	.180	24.7
	15GS70	6.08	.194	24.4
	15SG71	5.36	.164	24.3

Notes:
mS/cm = milliSiemens per centimeter
°C = Degrees centigrade

Aluminum and iron were commonly detected across the site during Phases I and 11 at concentrations exceeding their respective secondary MCL PRGs. However, all detected aluminum and iron concentrations were below their respective NAS Pensacola RCs of 3,882 ppb and 1,707 ppb. As shown on Figure 6-7, the single 50.9 ppb detection of manganese in the sample collected from well location 15GR08 during Phase I slightly exceeded the SMCL PRG. However, manganese was not detected in groundwater samples collected during later fieldwork phases at concentrations exceeding a PRG, and therefore was not pursued further.

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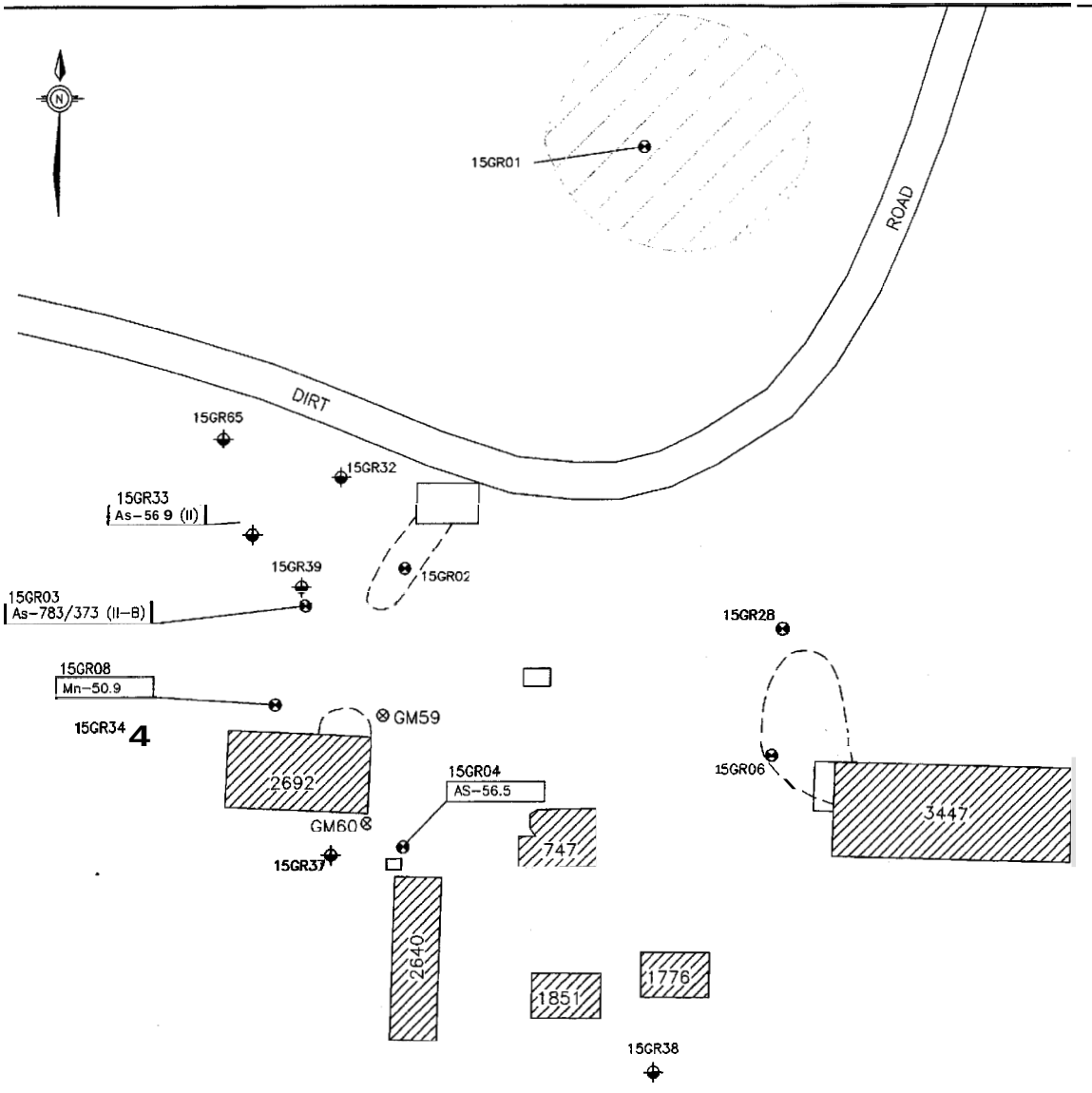


LEGEND

- PHASE I MONITORING WELL
- PHASE II MONITORING WELL
- EXISTING MONITORING WELL
- BUILDING
- As – ARSENIC (PRG=50ppb)
- Mn – MANGANESE (PRG=50ppb)

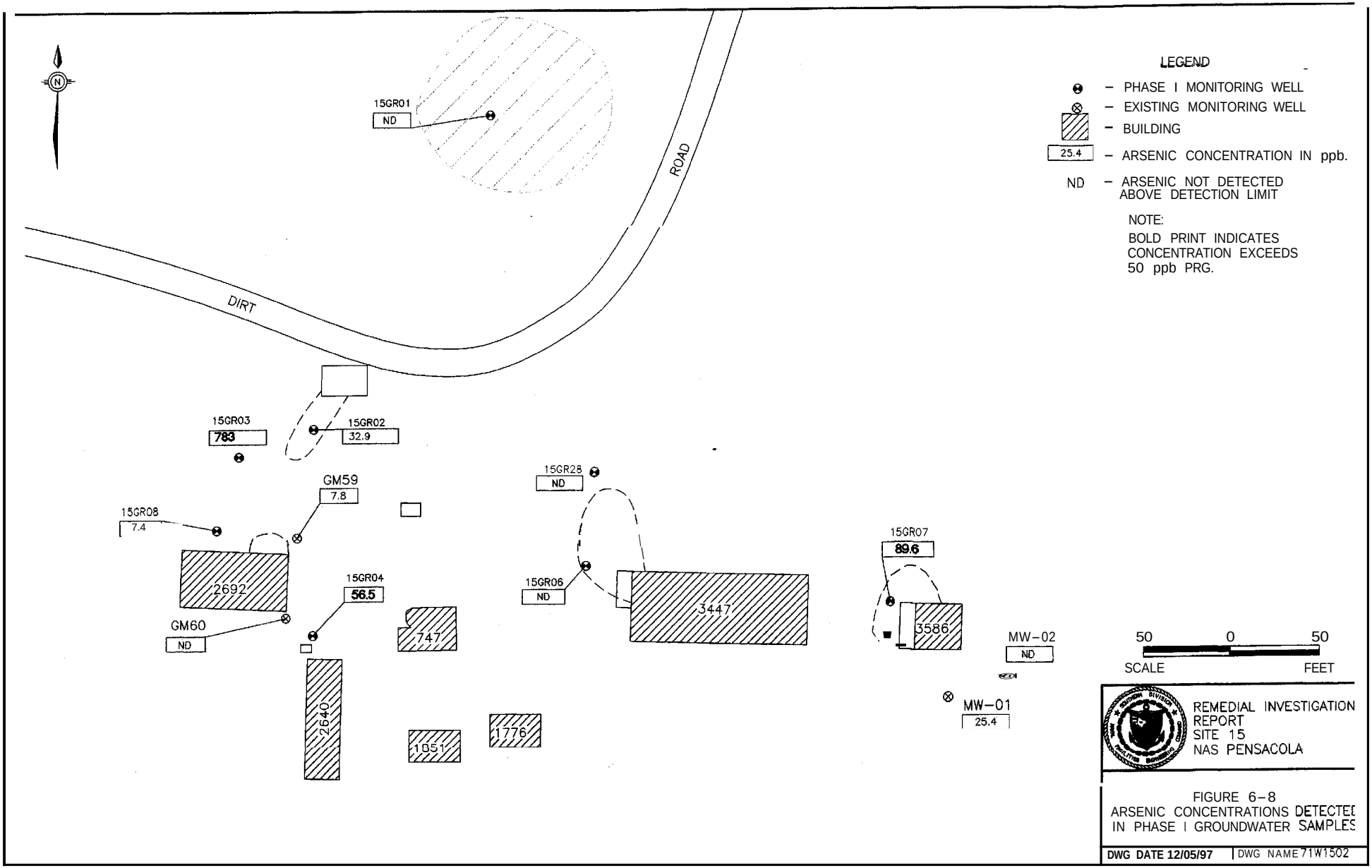
NOTE:
CONCENTRATIONS IN ppb.
ALL RESULTS ARE FOR PHASE I UNLESS NOTED OTHERWISE BY INFORMATION IN PARENTHESIS.

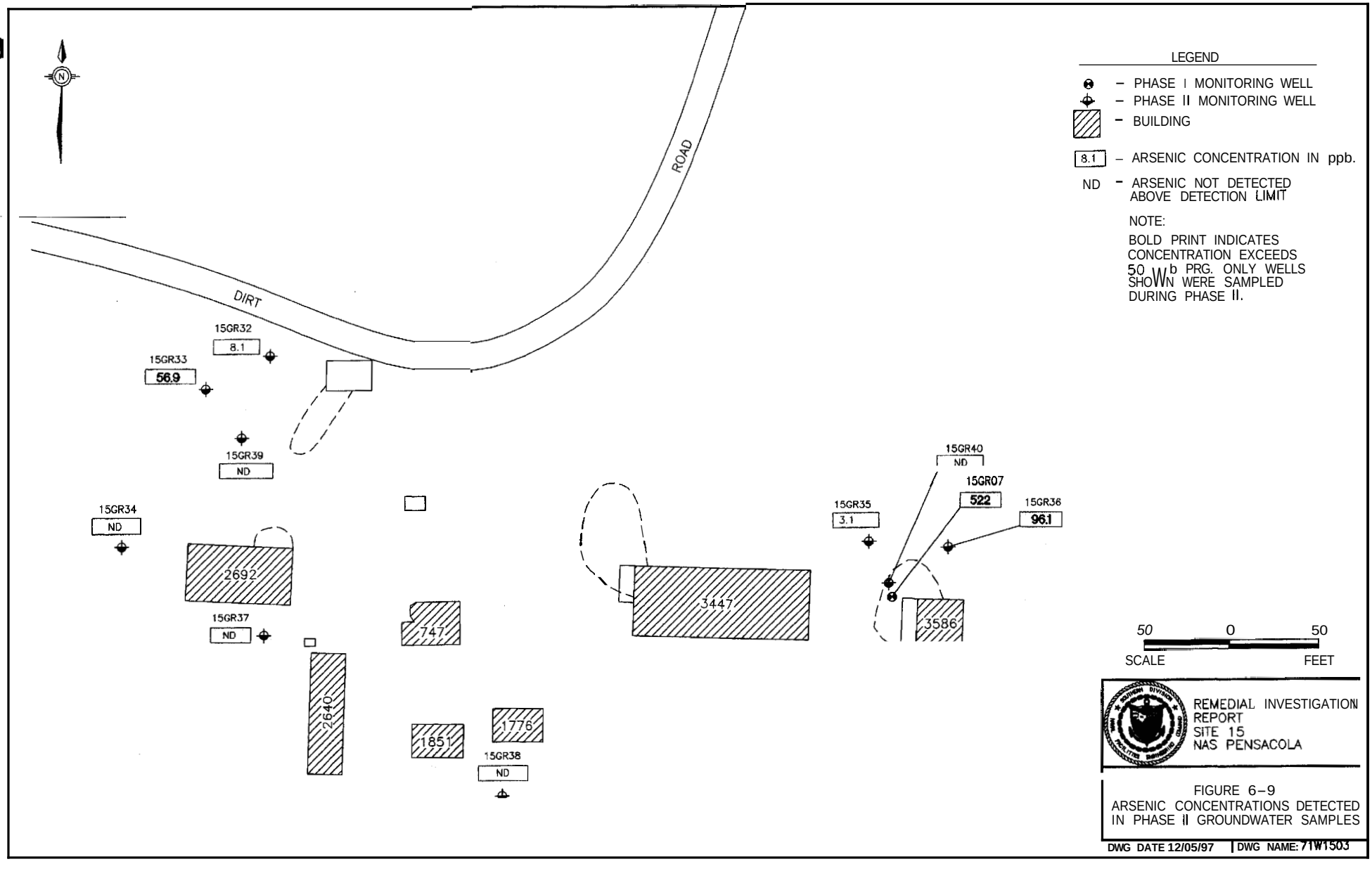
50 0 50
SCALE FEET

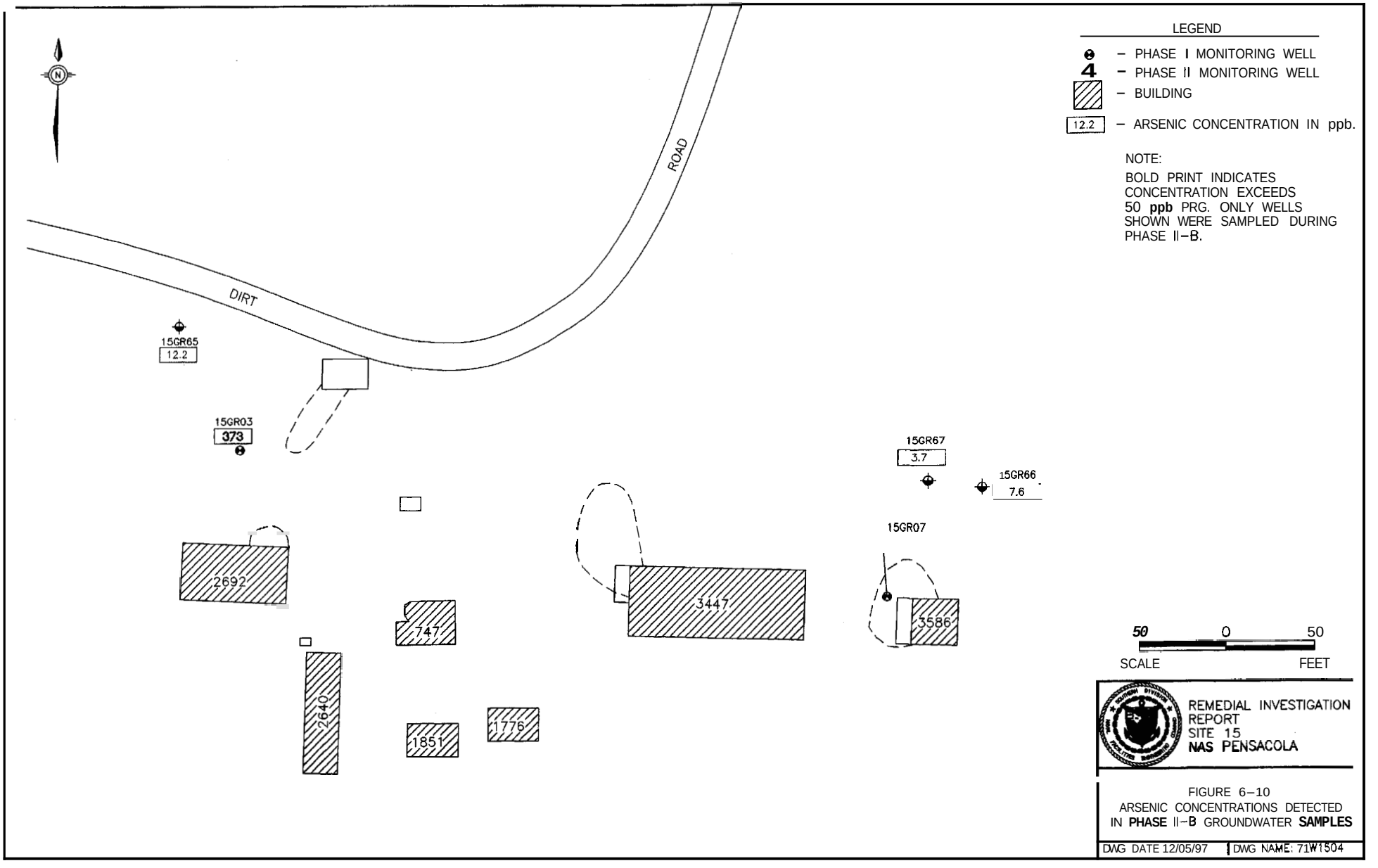
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA

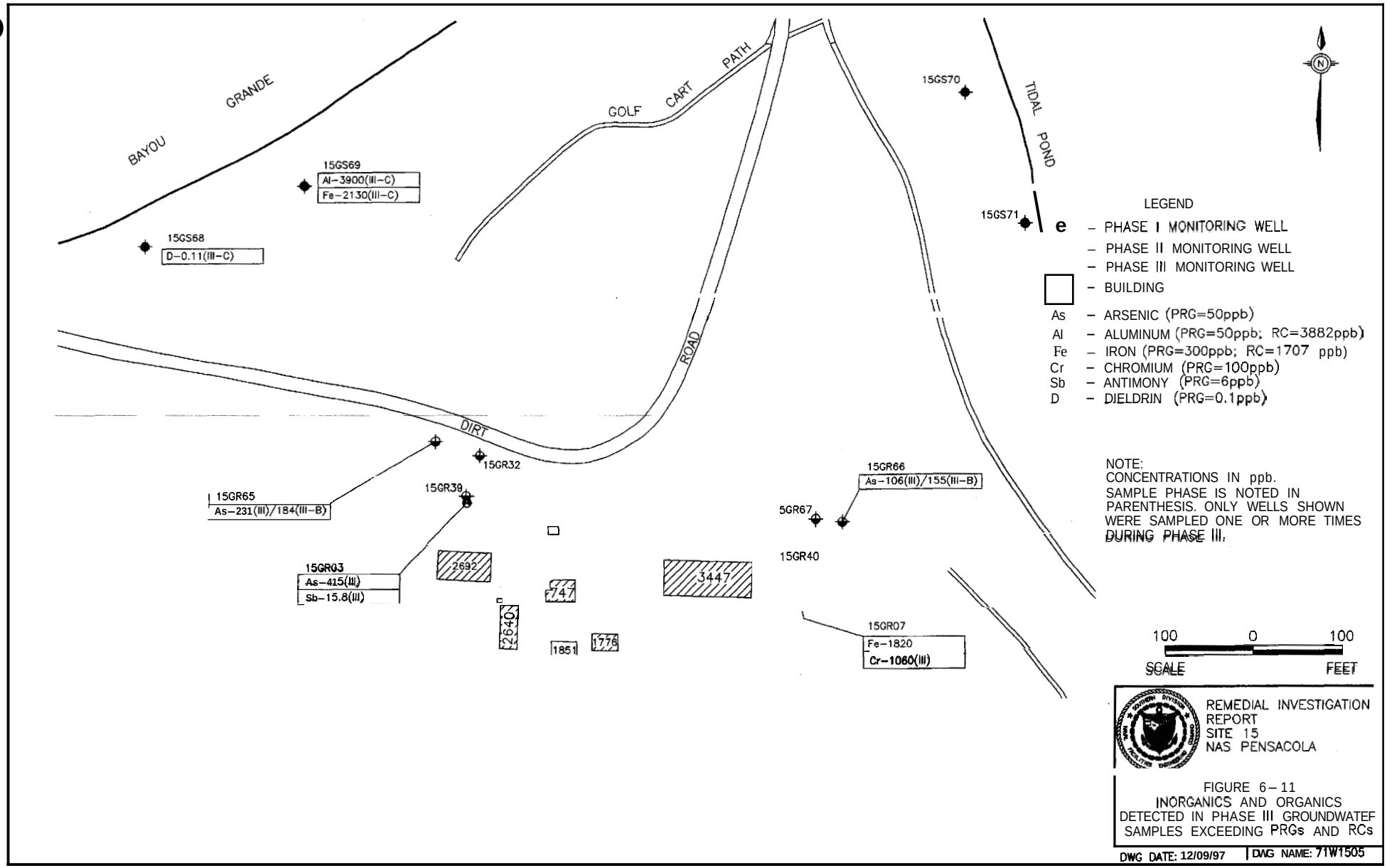
FIGURE 6-7
INORGANICS DETECTED IN PHASE I AND II GROUNDWATER SAMPLES EXCEEDING PRGs

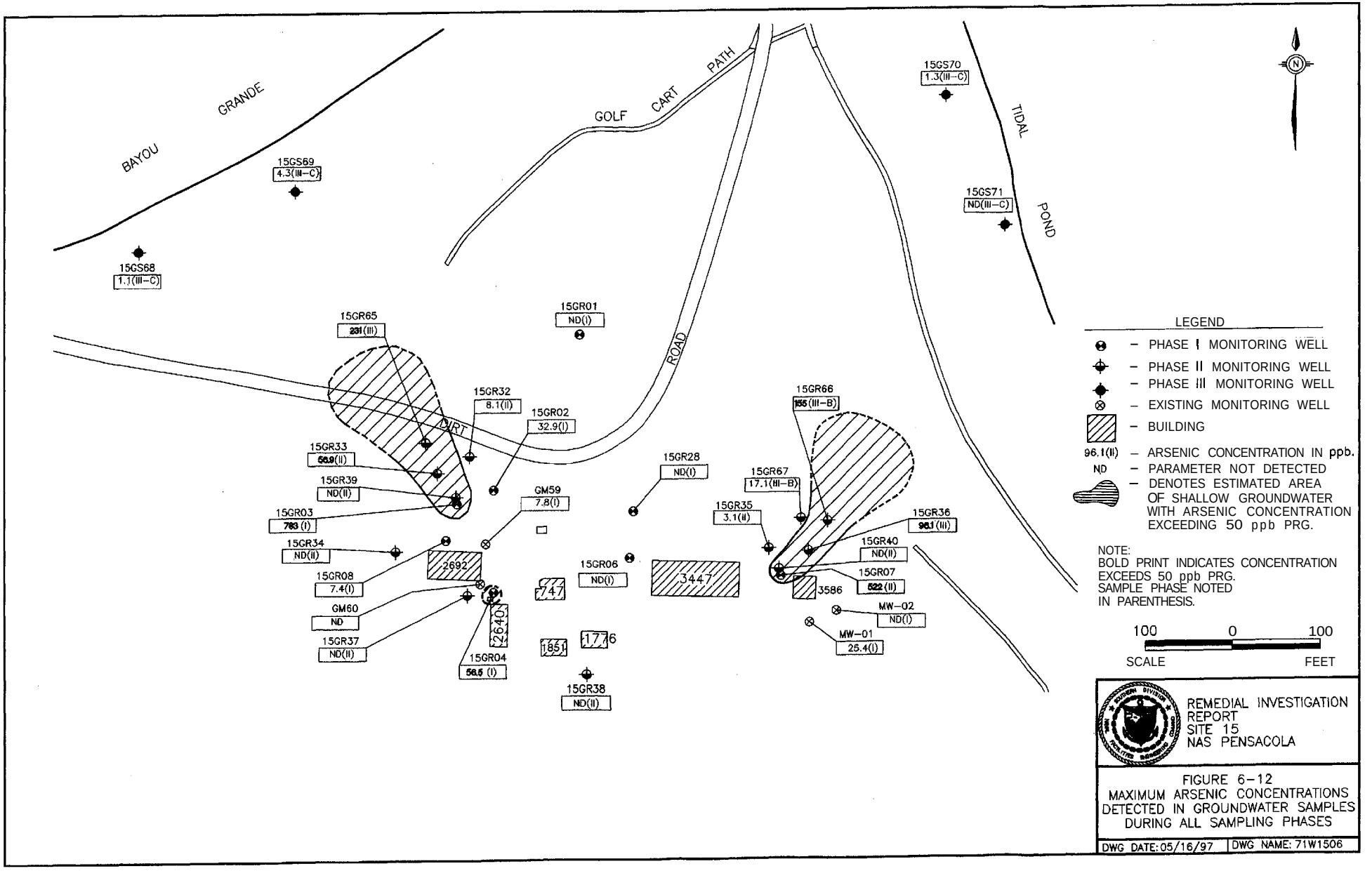
DWG DATE 12/09/97 | DWG NAME: 71W1501


LEGEND
– PHASE I MONITORING WELL
– EXISTING MONITORING WELL
– BUILDING
25.4 – ARSENIC CONCENTRATION IN ppb.
ND – ARSENIC NOT DETECTED ABOVE DETECTION LIMIT
NOTE:
BOLD PRINT INDICATES CONCENTRATION EXCEEDS 50 ppb PRG.
N
DIRT
ROAD
15GR01
ND
15GR03
783
15GR02
32.9
GM59
7.8
15GR08
7.4
2692
GM60
ND
15GR04
56.5
2640
747
1051
1776
15GR28
ND
15GR06
ND
3447
15GR07
89.6
3586
MW-02
ND
MW-01
25.4
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-8
ARSENIC CONCENTRATIONS DETECTED IN PHASE I GROUNDWATER SAMPLES
DWG DATE 12/05/97
DWG NAME 71W1502


N
DIRT
ROAD
15GR32
8.1
15GR33
56.9
15GR39
ND
15GR34
ND
2692
15GR37
ND
747
2640
1851
1776
15GR38
ND
3447
15GR40
ND
15GR07
522
15GR35
3.1
15GR36
96.1
3586
LEGEND
– PHASE I MONITORING WELL
– PHASE II MONITORING WELL
– BUILDING
8.1 – ARSENIC CONCENTRATION IN ppb.
ND – ARSENIC NOT DETECTED ABOVE DETECTION LIMIT
NOTE:
BOLD PRINT INDICATES CONCENTRATION EXCEEDS 50 ppb PRG. ONLY WELLS SHOWN WERE SAMPLED DURING PHASE II.
50 0 50
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-9
ARSENIC CONCENTRATIONS DETECTED IN PHASE II GROUNDWATER SAMPLES
DWG DATE 12/05/97
DWG NAME: 71W1503


LEGEND
– PHASE I MONITORING WELL
4 – PHASE II MONITORING WELL
– BUILDING
12.2 – ARSENIC CONCENTRATION IN ppb.
NOTE:
BOLD PRINT INDICATES CONCENTRATION EXCEEDS 50 ppb PRG. ONLY WELLS SHOWN WERE SAMPLED DURING PHASE II–B.
N
DIRT
ROAD
15GR65
12.2
15GR03
373
15GR67
3.7
15GR66
7.6
15GR07
2692
747
3447
3586
2640
1851
1776
50
0
50
SCALE
FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6–10
ARSENIC CONCENTRATIONS DETECTED IN PHASE II–B GROUNDWATER SAMPLES
DWG DATE 12/05/97
DWG NAME: 71W1504


BAYOU GRANDE
GOLF CART PATH
TIDAL POND
DIRT ROAD
15GS69
Al-3900(III-C)
Fe-2130(III-C)
15GS68
D-0.11(III-C)
15GS70
15GS71
15GR32
15GR39
15GR65
As-231(III)/184(III-B)
15GR03
As-415(III)
Sb-15.8(III)
15GR66
As-106(III)/155(III-B)
5GR67
15GR40
15GR07
Fe-1820
Cr-1060(III)
2692
747
2640
1851
1776
3447
LEGEND
e - PHASE I MONITORING WELL
- PHASE II MONITORING WELL
- PHASE III MONITORING WELL
- BUILDING
As - ARSENIC (PRG=50ppb)
Al - ALUMINUM (PRG=50ppb; RC=3882ppb)
Fe - IRON (PRG=300ppb; RC=1707 ppb)
Cr - CHROMIUM (PRG=100ppb)
Sb - ANTIMONY (PRG=6ppb)
D - DIELDRIN (PRG=0.1ppb)
NOTE:
CONCENTRATIONS IN ppb.
SAMPLE PHASE IS NOTED IN PARENTHESIS. ONLY WELLS SHOWN WERE SAMPLED ONE OR MORE TIMES DURING PHASE III.
100 0 100
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-11
INORGANICS AND ORGANICS DETECTED IN PHASE III GROUNDWATEF SAMPLES EXCEEDING PRGs AND RCs
DWG DATE: 12/09/97
DWG NAME: 71W1505


BAYOU GRANDE
GOLF CART PATH
DIRT ROAD
TIDAL POND
15GS69
4.3(III-C)
15GS68
1.1(III-C)
15GS70
1.3(III-C)
15GS71
ND(III-C)
15GR01
ND(I)
15GR65
231(III)
15GR32
8.1(II)
15GR02
32.9(I)
15GR33
56.9(II)
15GR39
ND(II)
15GR03
783(I)
15GR34
ND(II)
15GR08
7.4(I)
GM60
ND
15GR37
ND(II)
15GR04
58.5(I)
GM59
7.8(I)
2692
2640
747
1851
1776
15GR06
ND(I)
15GR28
ND(I)
3447
15GR38
ND(II)
15GR66
155(III-B)
15GR67
17.1(III-B)
15GR35
3.1(II)
15GR36
96.1(III)
15GR40
ND(II)
15GR07
522(II)
3586
MW-02
ND(I)
MW-01
25.4(I)
N
LEGEND
– PHASE I MONITORING WELL
– PHASE II MONITORING WELL
– PHASE III MONITORING WELL
– EXISTING MONITORING WELL
– BUILDING
96.1(II) – ARSENIC CONCENTRATION IN ppb.
ND – PARAMETER NOT DETECTED
– DENOTES ESTIMATED AREA OF SHALLOW GROUNDWATER WITH ARSENIC CONCENTRATION EXCEEDING 50 ppb PRG.
NOTE:
BOLD PRINT INDICATES CONCENTRATION EXCEEDS 50 ppb PRG.
SAMPLE PHASE NOTED IN PARENTHESIS.
100 0 100
SCALE FEET
REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA
FIGURE 6-12
MAXIMUM ARSENIC CONCENTRATIONS DETECTED IN GROUNDWATER SAMPLES DURING ALL SAMPLING PHASES
DWG DATE: 05/16/97
DWG NAME: 71W1506

Also shown on Figure 6-7, arsenic was the most frequently detected parameter exceeding PRGs and RCs, with several arsenic concentrations detected during Phases I and 11 exceeding the 50 ppb primary MCL. The highest detected arsenic concentration was 783 ppb detected in the Phase I sample collected from well 15GR03. Figures 6-8 through 6-10 show the locations sampled and all arsenic groundwater concentrations detected during each individual sampling phase.

As shown in Figure 6-8, detected Phase I arsenic concentrations ranged from 7.4 ppb at 15GR08 to 783 ppb at 15GR03. Samples from wells 15GR03, 15GR04 and 15GR07 exceeded the 50 ppb PRG, establishing the focus for later groundwater sampling phases.

As shown in Figure 6-9, arsenic concentrations detected during Phase 11 ranged from 3.1 ppb at 15GR35 to 522 ppb at 15GR07. During this sampling phase, samples from wells 15GR07 (resampled for confiiation), 15GR33, and 15GR36 (downgradient of Phase I exceedances at 15GR03 and 15GR07, respectively) exceeded the PRG. However, samples collected from intermediate depth wells 015GR39 and 015GR40, immediately downgradient of monitoring wells 15GR03 and 15GR07, respectively, did not exceed arsenic PRGs.

As shown in Figure 6-10, detected Phase 11-B arsenic concentrations ranged from 3.7 ppb at 15GR67 to 373 ppb at 15GR03 (resampled for confirmation). During Phase 11-B, the resampling of wells 15GR03 and 15GR07 again produced arsenic PRG exceedances. As documented by the resampling, arsenic concentrations varied between Phase I and II samples collected from wells 15GR03 and 15GR07 by up to one order of magnitude.

Phase III

Phase III sampling activities were designed to further delineate and confirm prior PRG exceedances. Resultingly, this phase focused on two discrete areas of the site where arsenic groundwater PRG exceedances had been detected: well location 15GR03 and immediately

downgradient areas, and the well location 15GR07 and immediately downgradient areas. Additionally, four permanent wells (15GS68 through 15GS71) installed opposite the golf course fairway and downgradient from Site 15, were sampled to evaluate shallow groundwater quality discharging to adjacent to surface water bodies (Bayou Grande and the Wetland 65 tidal pond).

Figure 6-11 shows the locations sampled and all PRG and RC exceedances detected during the various Phase III sampling events (Phases III, III-B, and III-C). As in earlier groundwater sampling phases, detected aluminum and iron concentrations commonly exceeded PRGs; however, except for the sample from 15GS69, all were below the RCs. The highest concentrations of aluminum and iron during Phase III sampling (and the only concentrations to exceed both the PRG and RC) were both detected in the sample collected from well 15GS69, downgradient of Site 15 (during Phase III-C).

Arsenic also exceeded PRGs in Phase 111 samples. These exceedances occurred at a location of earlier exceedance (i.e., 15GR03) and slightly downgradient locations. Arsenic exceedances ranged from 106 ppb at well 15GR66 (downgradient of 15GR07) to 415 ppb at well 15GR03 (resampled for confirmation). Downgradient locations 15GR65 and 15GR66 each exhibited arsenic exceedances (downgradient of 15GR03 and 15GR07, respectively). However, arsenic was not detected at concentrations exceeding PRGs in samples collected during Phase III-C from the most downgradient wells 15GS68 through 15GS71.

Also shown on Figure 6-11, single concentrations of antimony and chromium were detected during Phase III exceeding their respective PRGs of 6.0 ppb and 100 ppb. The antimony concentration did not exceed its 30.2 ppb RC. The sample collected from well 15GR03 contained a 15.8 ppb concentration of antimony, and well 15GR07 sample contained a 1,060 ppb chromium concentration. Neither parameter was detected at a concentration exceeding PRGs during prior sampling phases.

Phase II and III delineation/confirmation sampling events indicate arsenic exceedances in groundwater are Limited primarily to two areas, one each in the western and eastern portions of the site, in the vicinity and immediately downgradient of wells 15GR03 and 15GR07, respectively.

6.2.2 Organics

The only organic parameter detected above a PRG during any phase of fieldwork was the pesticide dieldrin. As shown on Figure 6-11, 0.11 ppb of dieldrin was detected in the sample from the downgradient well 15GS68 in sampling Phase III-C. This concentration only slightly exceeded the FGGC PRG of 0.10 ppb. Well 15GS68 was resampled on October 17, 1997, and the associated groundwater sample analyzed for dieldrin, to confirm the slight dieldrin exceedance detected during Phase III-C. Dieldrin was not detected above method detection limits in the October 1997 confirmatory sample.

6.3 Contamination Summary

6.3.1 Soil

As discussed in Section 6.1, several inorganic and organic parameters exceeding PRGs were detected in site soil samples. Elevated inorganics can be attributed to past and current handling and storage of fertilizers, commonly containing iron and manganese as "essential nutrients." Detected arsenic can be attributed to the handling of various arsenic-based herbicides and pesticides, such as the commonly used herbicide monosodium methanarsonate (MSMA). VOC and SVOC compounds detected in surface and subsurface soil collected near equipment (tractors, mowers, etc.) wash-down pads and storage areas can be attributed to fuel, lubricant, and solvent residues from this machinery. PCBs detected at a limited number of surface soil sample locations along the unpaved road are suspected to be the result of past waste oil application for dust control. Pesticide detections, including relatively persistent aldrin and dieldrin (a metabolite of aldrin), can also be attributed to the past handling and storage of these materials. However, based on magnitude and frequency of detection, arsenic and dieldrin are the primary parameters of concern

in soil. Figures 6-3 and 6-5, respectively, show elevated (exceeding PRGs) arsenic and dieldrin concentrations detected in surface soil. Contours have been placed across areas of relatively higher detected concentrations to approximate their areal extent.

As shown on Figure 6-3, arsenic was detected across the site's full extent. A contour interval value of 15 pprn was arbitrarily selected to identify areas of relatively higher arsenic surface soil concentrations. Relatively higher arsenic concentrations, exceeding 15 ppm, are present in the following portions of the site: the previous drum storage area just northeast of Building 2692; the asphalt pad area northwest of Building 2640; the concrete pad wash-down area west-northwest of Building 3586; and at boring location 15853, in the area reportedly where the contents of a previous holding tank (removed in 1993) were spread. Although arsenic PRG exceedances (greater than 0.43 ppm) were not delineated beyond the site boundary, the extent of areas exceeding 15 ppm was limited to relatively small portions of the site as this figure shows. The two areas of greatest surface soil arsenic concentration are the asphalt pad, northwest of Building 2640, and the concrete pad, west-northwest of Building 3586.

As shown on Figure 6-5, dieldrin was detected primarily across the site's western-southwestern portion, containing storage Building 2692 and equipment storage shed 2640. This portion of the site was used for pesticide storage and handling prior to 1979, after which pesticide storage was moved to newly constructed Building 3586. Given that most uses of aldrin and dieidrin were banned in 1975, the distribution of dieldrin in site soil is consistent with the suspected storage of aldrin/dieldrin prior to 1979 at Building 2692. A contour interval value of 50 ppb was arbitrarily selected to identify areas of relatively higher dieldrin surface soil concentrations on Figure 6-5. Relatively higher dieldrin concentrations, exceeding 50 ppb, were limited to the area surrounding the asphalt wash down pad, northwest of Building 2640, and at boring location 15S50, north of Building 3447. The area of greatest surface soil dieldrin concentration immediately surrounds the asphalt pad.

6.3.2 Groundwater

As discussed in Section 6.2, several inorganic parameters (aluminum, arsenic, manganese, and iron) exceeding PRGs were detected in site groundwater samples. However, with only minor exceptions, onsite aluminum and iron exceedances are within the range of ambient concentrations observed at NAS Pensacola as indicated by a comparisons to NAS Pensacola RCs, and the single manganese exceedance only slightly exceeds the applicable PRG. In contrast, arsenic was commonly detected at concentrations above its PRG and RC values, and is the primary parameter of interest detected in groundwater. Elevated arsenic was not detected in intermediate depth groundwater samples indicating appreciable downward migration of arsenic has not occurred. Figure 6-12 compiles maximum detected arsenic concentrations detected in shallow groundwater during all groundwater sampling phases. Hash marks have been placed across areas where arsenic groundwater concentrations exceed the 50 ppb PRG to approximate their areal extent.

The extent of arsenic PRG exceedances in shallow groundwater, as shown on Figure 6-12, was estimated from the most recent piezometric data (shown on Figure 5-2) and the concentration gradient of all maximum concentrations. This assumes the arsenic has traveled in the direction of shallow groundwater flow, and dissipated at the same rate as observed between locations of greatest exceedances (15GR03 and 15GR07) and the most downgradient exceedances (15GR65 and 15GR66, respectively).

Three areas of PRG exceedances are identified: the area immediately surrounding the asphalt pad at Building 2640's northwestern comer, an area north of Building 2692, and an area north of Building 3586. The areas containing the highest arsenic concentrations in shallow groundwater are north of Buildings 2692 and 3586. These exceedance areas are downgradient of areas containing elevated arsenic soil concentrations, as shown on Figure 6-3. The groundwater sampling results from the most downgradient monitoring wells, 15GS68 through 15GS71, indicate the elevated arsenic concentrations do not extend beyond the golf course to the north. Rather,

given the distribution and magnitude of detected arsenic concentrations, elevated arsenic in groundwater (as shown on Figure 6-12) is limited to the site and immediate downgradient areas which extend beneath tbe golf course.

7.0 DATA VALIDATION

Site 15 data were validated by either Heartland Environmental Services Inc. of St. Charles, Missouri, or E/A&H. The analytical work was conducted by Savannah Laboratories in Savannah, Georgia. Samples were analyzed in accordance with the following guidance documents:

- NEESA Level D QA/QC guidelines as stated in: *Sampling* and *Chemical Analysis Quality Assurance Requirements for the Navy Installation and Restoration Program (NEESA 20.2-047B).*

- Naval Facilities Engineering Service Center, *Navy Installation Restoration Laboratory Quality Assurance Guide,* Interim Document, February 1996.

- USEPA CLP, *Superfund Analytical Methodr for Low Concentration Waterfor Organic Analysis,* October 1992 (CLP Low Organic SOW).

- USEPA CLP, *Statement of Workfor Organic Analysis, Multi-Media, Multi-Concentration,* OLM01.8 (CLP Organic SOW).

- USEPA CLP, *Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration,* ILM03.0 (CLP Inorganic SOW).

- USEPA Office of Solid Waste and Emergency Response (OSWER), *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846), Third Edition, revised July 1992.

Data were validated using the following documents:

- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* February 1994 (EPA-540/R-94/012) (Organic Functional Guidelines).

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Dara Review,* February 1994 (EPA-540/R-94/013) (Inorganic Functional Guidelines).

Data validation qualifiers are listed at the end of this section.

Soil and water samples were collected in the following phases:

- Phase I — August 30 to September 14, 1995
- Phase II — March 14 to April 19, 1996
- Phase II-B — May 17, 1996
- Phase III — July 25 and 26, 1995
- Phase III-B — August 22, 1996
- Phase III-C — September 11, 1996

All samples were received by the laboratory in good condition and with the proper custody documents and seals intact. The organic and inorganic results were reported in 14 Sample Delivery Groups (SDGs): ENP03, ENP04, ENP05, ENP06, ENP07, ENP11, PJL01, PJL03, PJL04, PJL07, PJL09, PJL11, PJL13, and PJL14. Table 7-1 lists the analytical methods used during this investigation by phase, SDG, and sample. Tables 7-2 through 7-5, at the end of this section, summarize the parameters evaluated and QC outliers cited during data validation by SDG.

7.1 Organic Analysis

7.1.1 Holding Times

All technical and contractual holding times were within QC requirements for the VOC fraction. SVOC samples 015C002001RE, 015S002208RE, 015S002301RE, 015S002305RE, 015S002401RE, 015S002405RE, 015S002409RE, 015S002501RE, 15S002505RE, 015S002508RE, 015S002601RE, 015S002605RE, 015S002608RE were reanalyzed eight days outside of holding times. Pesticide/PCB sample 015GGR0201RE was reanalyzed 20 days outside of holding times. The original SVOC and pesticide/PCB sample results were chosen for investigative purposes (see Section 7.1.2); therefore, the missed holding times for the reanalyzed samples do not affect interpretation.

7.1.2 Calibrations

Instruments were initially and continually calibrated with standard solutions to verify that they were capable of producing acceptable quantitative data for these compounds. All compound quantization was analyzed against gas chromatography/mass spectroscopy (GC/MS) tunes which were within QC requirements for the VOC and SVOC fractions.

Several compounds were slightly outside the calibration QC criteria in all fractions. These observed QC deficiencies are common and occur at a rate consistent with correctly calibrated instruments. All affected sample results that were slightly outside QC criteria were qualified as estimated per the Organic Functional Guidelines.

In the VOC fraction, several continuing calibration outliers grossly exceeded QC criteria. Low response factors warranted rejection of undetected acetone and 2-butanone values in SDG ENP11 for samples 015GGR0601, 015GGR0701, 015GGR02801, 015GMW0101, 015GMW0201, and 015GGR0101. Undetected chloroethane values in SDG ENP03 were rejected in samples 015S000701, 015S000705, 015S001601, 015S001610, 015S001701, 015S001705, 015S001710, 015S001801, 015S001805, 015S001810, 015S002001, 015S002005, 015S002008, 015S002105, and 015S002108 due to poor response factors.

In the SVOC fraction, low continuing calibration response factors warranted rejection of undetected 2,4-dichlorophenol in SDG ENP04 samples 015S000101, 015S000105, 015S000110, 015S000901, 015C001001, 015C000201, and 015S002608. For samples 015S000910, 015S001005, and 015S001010 in SDG ENP05, the poor response factor for 2,4-dichlorophenol warranted rejection of undetected values.

7.1.3 Blanks

Laboratory method blanks axe used to assess the presence and magnitude of potential contamination introduced during analysis. Additionally, field-derived *field,* equipment *rinsate,* and *trip blanks* were submitted to the laboratories. The field blank is a sample of water used during decontamination activities. The equipment rinsate blank is a sample of runoff water from one or more pieces of the decontaminated equipment used to collect samples. The trip blank is a 40-milliliter (ml) volatile organic analysis (VOA) vial filled in the laboratory with certifiable water and is used to assess cross-contamination during VOC sample shipment.

Each laboratory method blank is associated with samples that were analyzed within the same 12-hour period. For data evaluation, each trip blank is associated only with the samples that were shipped in the same cooler. The field and equipment rinsate blanks are collected at frequencies of one per week. These blanks are associated with all samples that were collected during the same week. Because field-derived blanks are used with method blanks to assess potential cross-contamination of field investigative samples, no action is taken if contamination was detected in the method blanks associated with the field-derived blanks.

When chemicals are present in both samples and laboratory blanks analyzed within the same 12-hour period and/or field-derived blanks, the usability of the data depends on the blank's origin. According to Organic Functional Guidelines, a sample result should not be considered positive Unless the concentration of the compound in the sample exceeds 10 times the amount in any blank

for common laboratory contaminants (i.e., methylene chloride, acetone, 2-butanone, and phthalate esters), or five times the amount for other constituents. These are referred to as *action* levels (ALs). Because blank samples may not be prepared using the same weight or volume of sample or dilution, these variables also should be considered when using these blank criteria. The data evaluator flagged values not believed to be site-related based upon Organic Functional Guidelines. The specific action taken by the evaluator was:

- If a chemical is found in the blank but not the sample, no action is taken.

- If the sample concentration is greater than the AL, the concentration is used unqualified.

- If the sample concentration is less than the Sample Quantitation Limit (SQL) and less than the AL, the result is reported as nondetect "U" at the SQL.

  Example 1 (using **10X rule):**

Water Sample		**Diluted Water Sample**	
Blank result	1	**Blank Result**	**1**
Blank *AL*	**10**	**Dilution Factor**	**5**
SQL	**5**	**Blank *AL***	**50**
Sample result	**4J**	**Diluted SQL**	**25**
Final result	**5U**	**Sample result**	**4J**
		Final result	**25U**

  In this example, data **are not reported as 4U because it is less** than **the SQL. Also note that the dilution factor is used to calculate an AL of 50** (1 x 5 x **10).**

- If the sample concentration is greater than the SQL, but less than the AL, the concentration is reported as nondetect **"U."**

  Example 2 (using 10X rule):

Water Sample		**Soil Sample**		**Diluted Soil Sample**	
Blank result	**6**	**Blank result**	**6**	**Blank Result**	**6**
Blank AL	**60**	**% Solids**	**80**	**% Solids**	**80**
SQL	**5**	**Blank *AL***	**75**	**Dilution Factor**	**5**

Sample result	50	SQL	5	Blank AL	375
Final result	SOU	Sample result	50U	SQL	25
				Final result	50U
				Sample result	250
				Final result	250U

In this example, water sample results less than 60 (or 10 x 6) would be qualified as not detected. Soil results of less than 75 would be qualified as not detected because percent solids are used to calculate the AL: [(6 ÷ 0.8) x 10]. Results less than 375 would be qualified as not detected in the diluted soil sample because dilution factors and percent solids are used to calculate the AL: [(6 ÷ 0.8) x 10 x 5].

Several compounds were detected in the blanks associated with the investigation of Site 15. Most compounds were considered to be common laboratory artifacts: acetone, methylene chloride, 2-butanone, and phthalate esters. However, some compounds were found in blanks that are not associated with laboratory practices (i.e., ethylbenzene, xylene, styrene, bromoform, phenol, alpha-BHC, endrin, alpha-chlordane, and gamma-chlordane). Compounds detected in blanks were qualified as recommended by the Organic Functional Guidelines. Action levels were based on the highest concentration of any laboratory artifact found in associated method blank(s) or QC sample(s). No positive sample result for a common laboratory artifact was reported unless that particular artifact's concentration exceeded the action level of 10 times (10x) the amount found in any blank(s) or five times (5x) the blank amount for uncommon laboratory artifacts. All results believed to be attributed to blank contamination were flagged as undetected "U."

7.1.4 Matrix Spike/Matrix Spike Duplicates

A *matrix* spike is used to determine the accuracy of the analysis for a given matrix, and consists of a known quantity of stock solution added to the sample before its preparation and analysis. Evaluating the matrix spike data involves two calculations. First, the %R is calculated by comparing the amount of the compound recovered by the analysis to the amount added to the sample. In addition, the relative percent difference (RPD) between the MS and the MSD sample

is calculated to assess variations in the reported results due to the random differences in the handling and analysis of the matrix. These variations are referred to as the ***precision*** or the *reproducibility* of results. The MS/MSD is analyzed using the same preparation techniques and analytical methods used for all the samples of similar matrix types. This enables the MS and MSD to be used to detect matrix effects caused by contaminants during sample analysis that interfere with the compounds of interest that may also be present within the sample. No specific requirements have been established for qualifying MS/MSD data. However, guidelines for applying professional judgment are discussed in Organic Functional Guidelines.

All MS/MSD criteria were satisfactory for the VOC and pesticide/PCB fraction. The SVOC MS/MSD in SDG ENP04 was inadvertently not spiked; therefore, the laboratory reanalyzed the MS/MSD and all investigative samples in the SDG. The reanalyzed MS/MSD was within QC criteria (except for holding time exceedance). No matrix interferences were observed in the reanalyzed MS/MSD; therefore, no flags were applied to investigative samples due to matrix effects.

7.1.5 Laboratory Control Samples

The CLP Low Concentration Statement of Work requires that a Laboratory Control Sample (LCS) be performed for organic parameters. LCSs are used to demonstrate that the laboratory process for sample preparation and analysis is in control. The LCS is similar to the MS/MSD except American Society for Testing and Materials (ASTM) Type II water is spiked with known amounts of specific analytes and is carried through the entire analytical procedure with the samples. All LCS criteria were met for the SDGs analyzed using the CLP Low Organic SOW during the Site 15 investigation.

7.1.6 Surrogates

Accuracy is the degree to which a given result agrees with the *true* value. To check the accuracy in a VOC, SVOC, and pesticide/PCB analysis, the CLP Organic SOW requires adding known amounts of *surrogate compounds*. If the surrogate percent recoveries are close to the known concentrations as defined within the limits set by the CLP, the reported target compound concentrations are assumed to be accurate.

In the VOC fraction, samples 015S001201 (SDG ENP05), 015S001401 (SDG ENP07), 015S001501 (SDG ENP07), and 015S006210 (SDG PJL04) had sumgate recoveries above the QC limits. All positive results in these samples were *estimated*, indicating a potential high bias.

In semivolatile SDG ENP05, base-neutral surrogate 1,2-dichlorobenzene-$_{d4}$ had percent recoveries below 10% in sample 015S000201. Because this was a gross exceedances, positive base-neutral results for *this* sample were *estimated* and undetected base-neutral results were rejected as per the Organic Functional Guidelines.

Samples in six pesticide/PCB SDGs had sumgate recoveries below the QC limit, which may indicate a low bias. *All* positive and nondetected results reported in these samples were qualified as estimated per the Organic Functional Guidelines. The following pesticide/PCB samples were affected:

015S000701	015S000101	015S000910	015S000305	015S001305	015S000609
015S001610	015S000110	015S001010	015S001201	015S002705	015S001505
015S002008	015S000905	015S000205	015S002701	015S002905	015S000605
015S002108	015C001001	015C000401	015S002710	015S003005	015S001405
015S000705	015S000105	015S001205	015S003001	015S003101	015S001510
015S001805	015S000901	015S001005	015S003010	015S001210	
015S002205	015S001001	015S000201	015S003105	015S000505	

For pesticide/PCB sample 015GGR0201, contained in SDG ENP11, zero percent recoveries were observed on both GC columns for the surrogate tetrachloromethylxylene (TCMX). Because this was a gross exceedances, positive results for this sample were estimated and undetected results were rejected as per the Organic Functional Guidelines.

7.1.7 Internal Standards

Internal standards (IS) added to VOC and SVOC samples are used to calculate the concentrations of target compounds. Two IS QC criteria must be met when a sample is analyzed. The retention time of the IS must not vary more than 30 seconds and the IS area counts must not vary more than a factor of two (-50% to +100%) from the associated calibration standard. All VOC and SVOC SDGs met the retention time QC criteria.

VOC sample 015S001201 exhibited high areas for two ISs in SDG ENP05. Samples 015S001501 in SDG ENP07, and 015S006101, 0158006301, and 0158006310 in SDG PJL04 exhibited low IS areas. Upon reanalysis, all of these samples still had IS areas outside QC limits, indicating matrix interference. The original sample analyses were reported because of preferable holding times. Positive compounds associated with the ISs in sample 015S001201 were flagged as estimated. Positive and undetected results were flagged for compounds associated with the IS in 015S001501, 015S006101, 015S006301, and 015S006310, according to the Organic Functional Guidelines.

SVOC samples 015S001601 and 015S001701 exhibited low areas for three ISs in SDG ENP03. These samples were reanalyzed. Reanalyzed samples 015S001601 and 015S001701 were chosen for interpretation because the ISs improved. Because two IS areas were still outside QC limits, compounds associated with the poor ISs were estimated.

SVOC sample 015S002501RE (SDG ENP04) also displayed low IS areas for one standard. All positive and undetected compounds associated with the low IS were estimated.

7.1.8 Field Duplicates

m——iveness expresses the degree to which sample data accurately and precisely represent the characteristic of a population, parameter variations at a sampling point, or an environmental condition. The duplicate samples assist in indicating overall field and laboratory precision. A greater variance should be *expected* for the soil sample duplicates compared to water sample duplicates due to the differences in matrix.

The field duplicates for the VOC and SVOC fractions indicated acceptable precision. In the pesticide/PCB fraction, the field duplicate pair 015S000401 and 015C000401 in SDG ENP05 exhibited positive results for many target compounds. Only gamma-BHC required qualification. This compound was estimated due to poor duplicate precision in 015S000401 and 015C000401.

7.1.9 Compound Quantization

All SVOC samples in SDG ENP04 were reanalyzed eight days outside of holding times because the MS/MSD was not *spiked* during the original analysis. Pest/PCB sample 015GGR0201RE was reanalyzed *20* days outside holding times. The original SVOC and pest/PCB sample results were chosen for investigative purposes because of missed holding times upon reanalyses.

VOC samples 015S001401 and 015S001501 in SDG ENP07; 015S001201 in SDG ENP05; and 015S006101, 015S006301, and 015S006310 in SDG PJL04 were reanalyzed due to surrogates and/or ISs outside QC criteria. All five samples were reanalyzed and still had surrogates and/or IS areas outside QC limits, indicating matrix interference. The original sample analyses were reported because of preferable holding times.

SVOC samples 015S001601 and 015S001701 exhibited low areas for three ISs in **SDG ENP03**. These samples were reanalyzed. Reanalyzed samples 015S001601RE and 015S001701RE were chosen for interpretation because the ISs improved.

SVOC sample 015S006210 in **SDG** PJL04 was reanalyzed due to surrogates outside QC criteria. The sample was reanalyzed and still had surrogates outside QC limits, indicating matrix interference. The original sample analyses were reported because of preferable holding times.

In **SDG** ENP11, several **SVOC** samples were reextracted outside holding times because high surrogate recoveries occurred in the associated initial method blank. No positive results above the contract required quantization limits were reported in the original analysis or the reanalyzed samples, indicating that the high method blank surrogates did not affect sample quantization. Therefore, the original samples were chosen for interpretation due to preferable holding times.

The following pesticide/PCB samples were diluted because one or more compounds exceeded the calibration range (flagged " E by the laboratory):

015S000401	015S001501	015S002101	015S004401	015S004601	015S005201
015C000401	015S001601	015S002701	015S004901	015S004701	015S006101
015S000405	015S001605	015S004101	015S006001	015S004801	015S006201
015S001301	015S001701	015S004201	015S004501	015S005001	015S006301
015S001401	015S002001				

The pesticide/PCB values that exceeded the calibration range in the original samples were substituted by the diluted values. The "D" flag was left on the substituted values to alert the data user that the results were taken from a secondary dilution. The remaining values in the diluted sample should not be used for interpretation.

Two columns and two separate detectors are used in pesticide/PCB analysis. Quantization of target analytes and surrogates are generally performed and reported on both columns; however, only the lower of the two concentrations is reported. The lower of the two concentrations is used because if present, co-eluting interferences are likely to increase the calculated concentration of any target compound. For detected analytes, the percent difference between the two columns is calculated. If the percent difference between the calculated concentrations is greater than 25%, the laboratory flags the value with a "P" qualifier. This flag alerts the data user of the potential problems in quantitating the analyte.

During the validation process, the laboratory's "P" flags are dropped. The values are flagged 'J" when the percent differencebetween the calculated concentrations is greater than 25%. The validation flag alerts the data user that the pesticide/PCB value is an estimated concentration.

7.2 Inorganic Analysis

7.2.1 Holding Times

All samples were received by the laboratory in good condition with the proper custody documents and seals intact. From the date of collection to the date of sample analysis, holding times were within method and contractual requirements.

7.2.2 Calibration

Initial and continuing calibration is conducted to ensure that the instrument is capable of acceptable and quantitative performance at the beginning and throughout each analytical run. Initial and continuing calibrations were performed for the analysis of inorganics within the criteria established by the USEPA CLP Inorganics SOW.

7.2.3 Blanks

Blank results are used to determine the presence and magnitude of any contamination problems. According to Inorganic Functional Guidelines, a sample result should not be considered positive unless the concentration of the compound in the sample exceeds 5x the amount in my associated blank. Contamination was identified in the blanks of all inorganic SDGs. Action levels were set for each affected element based on the highest concentration in any associated blank. Elements attributed to blank contamination were flagged undetected ("U"). No positive sample result was reported for an element detected in any blank unless that particular artifact's concentration exceeded the action level of 5x the amount found in any blank per the CLP Inorganic SOW.

7.2.4 ICP Interference Check Sample Analyses

The inductive coupled plasma (ICP) Interference Check Sample (ICS) analysis is performed to check the laboratory's instrument and the background correction factors. An ICS was analyzed for each SDG without any indication of interferences.

7.2.5 ICP Serial Dilutions

ICP serial dilutions assess of matrix interference. One sample from each set of similar matrix type is diluted by a factor of five. For an analyte concentration that is at least 50x above the instrument detection limit, the measured concentrations of the undiluted sample and of the diluted sample should agree within 10%.

The serial dilution result for sodium was outside the QC limits in SDG ENP03. All positive barium results in SDG ENP03 were flagged as estimated. Calcium was outside the QC limits in SDG ENP04. All positive cadmium results in SDG ENP04 were flagged as estimated.

7.2.6 Laboratory Control Sample

LCSs are used to monitor the overall performance or accuracy of all steps in the analysis, including the sample preparation. All LCS criteria were met for all SDGs.

7.2.7 Laboratory Duplicates/Spikes

Laboratory duplicate samples are used to determine the precision of analytical methods for each parameter. Laboratory spiked samples provide information about the effects of the sample matrix on the digestion and measurement methodology.

Several elements had matrix spike recoveries below the QC limits: selenium in SDGs EPN03, ENP011, and ENP07; mercury and cyanide in SDG EPN04; cadmium in SDG ENP07; and arsenic in ENP07 and PJL04. When an element was below the QC limit, that analyte was flagged as estimated for all positive and undetected values for samples of similar matrix in the SDG as specified in CLP Inorganic SOW.

In SDG EPN07, manganese had an MS recovery above the QC limit. All positive barium results for samples of similar matrix in SDG EPN07 were flagged as estimated as specified in CLP Inorganic SOW.

Several elements had laboratory duplicate relative percent differences outside QC limits: arsenic in SDGs EPN03, manganese in SDGs ENP06 and ENP07, and chromium and iron in ENP07. When an element was outside the QC limit, that analyte was flagged as estimated for all positive values for samples of similar matrix in the SDG as specified in CLP Inorganic SOW.

7.2.8 Field Duplicates

Representativeness expresses the degree to which sample data accurately and precisely represent the characteristic of a population, parameter variations at a sampling point, or an environmental

condition. The duplicate samples assist in indicating overall field and laboratory precision. A greater variance should be expected for the soil sample duplicates compared to water sample duplicates due to matrix differences.

In SDG EPN05, lead and calcium had field duplicate relative percent differences greater than 50%. All positive lead and calcium results in SDG were flagged as estimated due to poor reproducibility.

7.2.9 Atomic Absorption Spike Recoveries

Four elements were analyzed by graphite furnace atomic absorption(GFAA): arsenic, lead, thallium, and selenium. For elements analyzed by GFAA, each sample is spiked by the analyst to assess matrix interference. Many Site 15 elements were outside GFAA analytical spike recovery control limits of 85%-115%. Noncompliant analytical spike recoveries are summarized below:

Arsenic: 0153002405, 015S002605, 0153003010, 015GGM6001, 015GGR0101, 015GGR0801, 015GGR3903, 015GGR4003

Lead: 015S003010, 015HGR0303, 015GGR0704, 015GGR4003

Selenium: 015S001601, 0153001701, 015S001801, 0153001805, 015S001810, 0153002001, 0153002005, 015S002008, 015C002001, 015S002305, 0153002401, 015S002405, 015S002501, 0158002505, 015S002508, 015S000201, 015S000205, 015S000309, 015S000401, 015C000401, 015S000405, 015S000410, 0153001101. 0153001105. 015S001201, 0153001205, 0153001210, 015S001301, 015S001305, 015S002701, 015S002705, 015S002901, 015S002905, 015S002910, 0153003001, 015S003005, 015S003010, 015S003101, 015S003105, 015S003110, 015S000501, 015S000505, 015S000601, 015C000601, 015S000605, 015S000609, 015S001401, 015S001405, 015S001501, 015S001505, 015GGM6001, 015GGR0101, 015GGR0201, 015HGR0201, 015GGR0301, 015GMW0101, 015GMW0201, 015GGR0401, 015GGR0601, 015GGR0701, 015GGR2801, 015GGR0303, 015HGR0303, 015GGR6503, 0153002409

Thallium: 0153002409

All arsenic, selenium, and thallium spike recoveries were below the QC limit of 85%; therefore, the results were qualified as estimated "J" for positive results and "UJ" for undetected results. All spike recoveries for lead were above the QC limit of 115%; therefore, positive results were qualified as estimated 'J."

7.3 Summary

7.3.1 Completeness

Completeness is defined as the percentage of measurements ma& which are judged to be valid. All of the samples analyzed for the investigation of Site 15 were determined to be valid with some qualification, except for the results flagged "UR." No positive results were rejected. Of 6,024 total measurements (number of unique sample and parameter pairs) validated for VOCs, SVOCs, pesticide/PCBs, and metals, 23 were flagged "UR" (greater than 99% completeness). Therefore, the data met the 95% completeness goal.

7.3.2 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set *can* be compared to another. Comparability is assured through the use of established methods of field sampling by experienced field personnel and laboratory analysis as specified by USEPA protocols. All samples for Site 15 were collected using the USEPA Region IV Standard Operating Procedures and analyzed according to CLP SOW protocols.

7.4 Conclusion

The Site 15 data were validated independently from the laboratory to assess data quality. The validation process consisted of data screening, checking, auditing, verification, flagging, certification, and review. The CLP SOWs, SW-846, and Functional Guidelines define acceptable criteria the laboratory must meet to ensure the data are adequate for the intended use.

When a QC parameter was outside the method and review criteria, the validator flagged the results to alert the data user. Many Site 15 analytes required qualification, but no positive results were rejected. Only undetected results that grossly exceeded the method or review criteria were rejected. The remaining results are usable, with the appropriate qualification, as previously detailed. Results that were estimated may be biased high or low but are acceptable for interpretation.

Field and laboratory blanks were analyzed to assess potential contamination associated with sample collection, decontamination procedures, transport, and analysis. If an analyte was detected in a blank associated with an investigative sample, the validator assessed the nature and origin of the contamination. The validator flagged analytes as undetected if they were found in the sample at a concentration less than 5x the associated blank concentration. Common contaminants – acetone, methylene chloride, 2-butanone, and phthalate esters – were flagged as undetected if they were found in the sample at a concentration less than 10x the blank concentration. Therefore, false positive results attributed to blank contamination were not used for investigative purposes and are believed to be unrelated to the Site 15 investigative samples.

Despite minor qualifications as those described above, the data are considered complete and satisfactory for the Site 15 investigation. The overall data quality of the analytical work done for Site 15 at NAS Pensacola, except for the undetected sample results that were qualified as unusable, were considered to be satisfactory and usable for site remediation and risk assessment. The data validation summary reports from E/A&H and by Heartland Environmental Services Inc. for Site 15 will be provided upon request or otherwise will become a part of the NAS Pensacola Site 15 *Final Report Reference File.*

Table 7-1
Analytical Methods Used tor Site 15 Investigation

METHODS

Phase	SDG	Sample ID	VOC CLP[a]	VOC 8240[d]	VOC LOW CLP[c]	SVOC CLP[a]	SVOC 8270[d]	SVOC LOW CLP[c]	PEST/PCB CLP[a]	PEST/PCB 8080[d]	PEST/PCB LOW CLP[c]	METALS CLP[b]	METALS 6010/7000	ARSENIC SW846 7060[d]
Phase I	ENP03	015S000701	X			X			X			X		
		015S000705	X			X			X			X		
		015S001601	X			X			X			X		
		015S001605	X			X			X			X		
		015S001610	X			X			X			X		
		015S001701	X			X			X			X		
		015S001705	X			X			X			X		
		015S001710	X			X			X			X		
		015S001801	X			X			X			X		
		015S001805	X			X			X			X		
		015S001810	X			X			X			X		
		015S002001	X			X			X			X		
		015S002005	X			X			X			X		
		015S002008	X			X			X			X		
		015S002101	X			X			X			X		
		015S002105	X			X			X			X		
		015S002108	X			X			X			X		
		015S002201	X			X			X			X		
		015S002205	X			X			X			X		
Phase I	ENP04	015C001001	X			X			X			X		
		015C002001	X			X			X			X		
		015S000101	X			X			X			X		
		015S000105	X			X			X			X		
		015S000110	X			X			X			X		
		015S000901	X			X			X			X		
		015S000905	X			X			X			X		
		015S001001	X			X			X			X		
		015S002208	X			X			X			X		
		015S002301	X			X			X			X		
		015S002305	X			X			X			X		
		015S002401	X			X			X			X		
		015S002405	X			X			X			X		
		015S002409	X			X			X			X		
		015S002501	X			X			X			X		
		015S002505	X			X			X			X		
		015S002508	X			X			X			X		
		015S002601	X			X			X			X		
		015S002605	X			X			X			X		
		015S002608												

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			METHODS											
Phase	SDG	Sample ID	VOC CLP[a]	VOC 8240[d]	VOC LOW CLP[b]	SVOC CLP[c]	SVOC 8270[d]	SVOC LOW CLP[b]	PEST/PCB CLP[c]	PEST/PCB 8080[d]	PEST/PCB LOW CLP[b]	METALS CLP[c]	METALS 6010/7000	ARSENIC SW846 7060[d]
Phase I	ENP05	015C000401	X			X			X			X		
		015C001101	X			X			X			X		
		015S000201	X			X			X			X		
		015S000205	X			X			X			X		
		015S000209	X			X			X			X		
		015S000301	X			X			X			X		
		015S000305	X			X			X			X		
		015S000309	X			X			X			X		
		015S000401	X			X			X			X		
		015S000405	X			X			X			X		
		015S000410	X			X			X			X		
		015S000910	X			X			X			X		
		015S001005	X			X			X			X		
		015S001010	X			X			X			X		
		015S001101	X			X			X			X		
		015S001105	X			X			X			X		
		015S001109	X			X			X			X		
		015S001201	X			X			X			X		
		015S001205	X			X			X			X		
Phase I	ENP06	015S001210												
		015S001301												
		015S001305												
		015S001310												
		015S002701												
		015S002705												
		015S002710												
		015S002901												
		015S002905												
		015S002910												
		015S003001												
		015S003005												
		015S003010												
		015S003101												
		015S003105												
		015S003110												

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Phase	SDG	Sample ID	VOC CLP[a]	VOC 8240[d]	VOC LOW CLP[c]	SVOC CLP[a]	SVOC 8270[d]	SVOC LOW CLP[c]	PEST/PCB CLP[a]	PEST/PCB 8080[d]	PEST/PCB LOW CLP[c]	METALS CLP[b]	METALS 6010/7000	ARSENIC SW846 7060[d]
Phase I	ENP07	015C000601	X			X			X			X		
		015S000501	X			X			X			X		
		015S000505	X			X			X			X		
		015S000510	X			X			X			X		
		015S000601	X			X			X			X		
		015S000605	X			X			X			X		
		015S000609	X			X			X			X		
		015S001401	X			X			X			X		
		015S001405	X			X			X			X		
		015S001410	X			X			X			X		
		015S001501	X			X			X			X		
		015S001505	X			X			X			X		
		015S001510	X			X			X			X		
Phase I	ENP11	015GGM5901			X			X	X			X		
		015GGM6001			X			X	X			X		
		015GGR0101			X			X	X			X		
		015GGR0201			X			X	X			X		
		015GGR0301			X			X	X			X		
		015GGR0401			X			X	X			X		
		015GGR0601			X			X	X			X		
		015GGR0701			X			X	X			X		
		015GGR0801			X			X	X			X		
		015GGR2801			X			X	X			X		
		015GMW0101			X			X	X			X		
		015GMW0201			X			X	X			X		
		015HGR0201			X			X	X			X		

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Analytical Methods Used for Site 15 Investigation

			METHODS											
Phase	SDG	Sample ID	VOC CLP[a]	VOC 8240[d]	VOC LOW CLP[c]	SVOC CLP[a]	SVOC 8270[d]	SVOC LOW CLP[c]	PEST/PCB CLP[a]	PEST/PCB 8080[d]	PEST/PCB LOW CLP[c]	METALS CLP[b]	METALS 6010/7000	ARSENIC SW846 7060[d]
Phase II	PJL01	015C004301												
		015S004101								X			X	
		015S004112								X			X	
		015S004201								X			X	
		015S004212								X			X	
		015S004301								X			X	
		015S004312								X			X	
		015S004401								X			X	
		015S004410								X			X	
		015S004901								X			X	
		015S004910								X			X	
		015S005301								X			X	
		015S005401								X			X	
		015S005501								X			X	
		015S005901								X			X	
		015S005910								X			X	
		015S006001								X			X	
		015S006009								X			X	
Phase II	PJL03	015C006401					X			X			X	
		015S004501					X			X			X	
		015S004510					X			X			X	
		015S004601					X			X			X	
		015S004609					X			X			X	
		015S004701					X			X			X	
		015S004710					X			X			X	
		015S004801					X			X			X	
		015S004810					X			X			X	
		015S005001												
		015S005010												
		015S005101												
		015S005110												
		015S005201												
		015S005210												
		015S006401												
		015S006409												

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Analytical Methods Used for Site 15 Investigation

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Phase	SDG	Sample ID	VOC CLP	VOC 8240	VOC LOW CLP	SVOC CLP	SVOC 8270	SVOC LOW CLP	PEST/PCB CLP	PEST/PCB 8080	PEST/PCB LOW CLP	METALS CLP	METALS 6010/7000	ARSENIC SW846 7060
Phase II	PJL04	015C006101		X						X			X	
		015S003201								X			X	
		015S003210								X			X	
		015S005601								X			X	
		015S005610								X			X	
		015S005701								X			X	
		015S005710								X			X	
		015S005801								X			X	
		015S005810								X			X	
		015S006101		X						X			X	
		015S006110		X						X			X	
		015S006201		X						X			X	
		015S006210		X						X			X	
		015S006301		X						X			X	
		015S006310		X						X			X	
Phase II	PJL07	015GGR0702					X			X			X	
		015GGR3201								X			X	
		015GGR3301								X			X	
		015GGR3401								X			X	
		015GGR3501					X			X			X	
		015GGR3601					X			X			X	
		015GGR3701								X			X	
		015GGR3801								X			X	
		015GGR3901								X			X	
		015GGR4001					X			X			X	
		015HGR3501					X			X			X	
Phase IIB	PJL09	015GGR0302												
		015GGR0703												
		015GGR6501												
		015GGR6601												
		015GGR6701												

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			METHODS											
Phase	SDG	Sample ID	VOC CLP[a]	VOC 8240[d]	VOC LOW CLP[c]	SVOC CLP[a]	SVOC 8270[d]	SVOC LOW CLP[c]	PEST/PCB CLP[a]	PEST/PCB 8080[d]	PEST/PCB LOW	METALS CLP[b]	METALS 6010/7000	ARSENIC SW846 7060[d]
Phase III	PJL11	015GGR0303										X		
		015GGR0704										X		
		015GGR3203										X		
		015GGR3903										X		
		015GGR4003										X		
		015GGR6503										X		
		015GGR6603										X		
		015GGR6703										X		
		015HGR0303										X		
Phase IIIB	PJL13	015GGR0705												X
		015GGR6504												X
		015GGR6604												X
		015GGR6704												X
		015HGR6504												X
Phase IIIC	PJL14	015GGS6801			X			X			X	X		
		015GGS6901			X			X			X	X		
		015GGS7001			X			X			X	X		
		015GGS7101			X			X			X	X		
		015HGS6901			X			X			X	X		
		015GGS6801			X			X			X	X		
		015GGS6901			X			X			X	X		
		015GGS7001			X			X			X	X		
		015GGS7101			X			X			X	X		
		015HGS6901			X			X			X	X		
		015GGS6801			X			X			X	X		
		015GGS6901			X			X			X	X		
		015GGS7001			X			X			X	X		
		015GGS7101			X			X			X	X		
		015HGS6901			X			X			X	X		
		015GGS6801			X			X			X	X		
		015GGS6901			X			X			X	X		
		015GGS7001			X			X			X	X		
		015GGS7101			X			X			X	X		
		015HGS6901			X			X			X	X		

Notes:
a = USEPA CLP, *Statement of Work for Organic Analysis. Multi-media, Multi-Concentration,* OLM01.8 (CLP Organic SOW).
b = USEPA CLP, *Statement of Work for Inorganic Analysis, Multi-media, Multi-Concentration,* ILM03.0 (CLP Inorganic SOW).
c = USEPA Contract Laboratory Program (CLP), *Superfund Analytical Methods for Low Concentration Water for Organic Analysis*, October *1992* (CLP Low Organic SOW).
d = USEPA (OSWER), *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846), Third Edition, revised July 1992.

Table 7-2
Site 15 Volatile SDG Summary

SDG	Holding Times	GC/MS Tunes	Ical	CCal	I.S.	Blanks	Surr.	MS/ MSD	Field Dups	Overall
ENP03			X	X		X				OK
ENP04				X		X				OK
ENP05					X	X	X			OK
ENP06										OK
ENP07				X	X	X	X			OK
ENP11			X			X				*OK*
PJL01				No VOCs Analyzed						
PJL03				No VOCs Analyzed						
PJL04					X		X			OK
PJL07				No VOCs Analyzed						
PJL09				No VOCs Analyzed						
PJL11				No VOCs Analyzed						
PJL13				No VOCs Analyzed						
PJL14										OK

Notes:
GC/MS = gar chromatography/mass spectroscopy
Ical = initial calibration
CCal = continuing calibration
I.S. = internal standards
Surr. = surrogates
MS/MSD = matrix spike/matrix spike duplicate
An "X" in a column means that *one* or more QC criteria were not met; *one* or mom samples wem qualified.

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetected may have been rejected and flagged "UR."

Table 7-3
Site 15 Semivolatle SDG Summary

SDG	Holding Times	GC/MS Tunes	Ical	CCal	I.S.	Blanks	Surr.	MSI MSD	Field Dups	Overall
ENP03				X	X					OK
ENP04	X			X	X	X				OK
ENP05				X		X	X			OK
ENP06						X				OK
ENP07				X		X				OK
ENP11				X						OK
PJL01				No SVOCs Analyzed						
PJL03										OK
PJL04										OK
PJL07										OK
PJL09				No SVOCs Analyzed						
PJL11				No SVOCs Analyzed						
PJL13				No SVOCs Analyzed						
PJL14										OK

Notes:
GC/MS = gas chromatography/mass spectroscopy
Ical = initial calibration
CCal = continuing calibration
I.S. = internal standards
Surr. = surrogates
MS/MSD = matrix spike/matrix spike duplicate

An "X" in a column means that one or more QC criteria were not met; one or more samples were qualified.

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetected may have been rejected and flagged "UR."

Table 7-4
Site 15 Pesticide SDG Summary

SDG	Holding Times	I.P	ICal	CCal	C.C.	Blanks	Surr.	MS/ MSD	Field Dups.	Overall
ENP03			X				X			OK
ENP04			X			X	X			OK
ENP05			X			X	X		X	OK
ENP06			X			X	X			OK
ENP07			X			X	X			OK
ENP11	X		X			X	X			OK
PJL01										OK
PJL03										OK
PJL04										OK
PJL07										OK
PJL09				No Pest/PCBs Analyzed						
PJL11				No Pest/PCBs Analyzed						
PJL13				No Pest/PCBs Analyzed						
PJL14										OK

Notes:
ICal = initial calibration
CCal = continuing calibration
Surr. = surrogates
I.S. = internal standards
I.P. = pesticide instrument performance
C.C. = pesticide cleanup checks
MS/MSD = matrix spike/matrix spike duplicate

An "X" in a column means that one or more QC criteria were not met; one or more samples were qualified.

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetected may have been rejected and flagged "UR."

Table 7-5
Site 15 Inorganic SDG Summary

SDG	Holding Times	Cal.	Blanks	Serial Dil.	ICP Check	LCS	MS	Lab Dup	Field Dups.	AA	Overall
ENP03			X	X			X	X		X	OK
ENP04			X	X			X			X	OK
ENP05			X						X	X	OK
ENP06			X					X		X	OK
ENP07			X				X	X		X	OK
ENP11			X				X			X	OK
PJL01			X								OK
PJM3											OK
PJL04							X				OK
PJL07			X								OK
PJL09											OK
PJL11			X							X	OK
PJL13											OK
PJL14			X								OK

Notes:

Cal.	=	Calibrations
Serial Dil.	=	Serial Dilutions
ICP. Check	=	ICP interference check
LCS	=	Laboratory Control Sample
Lab Dup.	=	Laboratory Duplicate
AA	=	Atomic Absorption Spike Recoveries
NA	=	Not applicable/not analyzed

An "X" in a column means that one or more QC criteria were not met

An "OK" in the Overall column means the data were acceptable with minor qualifications. No positive results were rejected; however, nondetected may have been rejected and flagged 'UR."

Validation Qualifiers

U **Undetected** — The analyte was analyzed for but not detected or was also found in an associated blank, but at a concentration less than 10x the blank concentration for common constituents or 5x the blank concentration for other constituents; the associated value shown is the quantization limit.

J **Estimated Value** — One or more QC parameters were outside control limits.

UJ **Undetected and Estimated** — The *analyte* was analyzed for but not detected above the listed *estimated* quantization limit, the quantization limit is estimated because one or more QC parameters were outside control limits.

D Diluted Result — The compound was reanalyzed at a secondary dilution factor. If one or more compounds are outside the calibration range during an initial analysis, the laboratory *flags* the analyte "E." When diluted, the sample results will be flagged "D." Generally, values from the initial analysis will be used except where the value exceeded the calibration range. Values exceeding the calibration range in the initial analysis will be substituted by the diluted value to ensure the most representative data. The "D" flag will remain on the value to alert the data user that a secondary dilution value was used.

R/UR Unusable Data — One or more QC parameters grossly exceeded control limits.

8.0 FATE AND TRANSPORT

Fate and transport assessment evaluates the ability of contaminants to become mobile or change in the environment, based on their chemical and physical properties and on processes that govern the interaction of the constituents with environmental media. Contaminant properties and fate and transport processes are discussed to access the likelihood of impact to potential receptors.

8.1 Contamination Summary

Environmental media sampled as part of the Site 15 RI include surface soil, subsurface soil, shallow groundwater, and intermediate groundwater. Groundwater samples were collected from the upper (shallow depth wells) and lower (intermediate depth wells) portions of the surficial zone. Section 6 summarizes the nature and extent of contamination based on comparison to soil and groundwater PRGs and RCs.

Total Exceedances

Table 8-1 presents the total number of analyzed parameters exceeding their respective PRGs in one or more surface soil, subsurface soil, shallow groundwater, and intermediate groundwater samples at Site 15.

8.2 Contaminant Migration

The following section discusses the contaminant and environmental media properties that affect the fate and transport of constituents. Potential migration pathways for Site 15 are evaluated in Section 8.3.

Properties Affecting Fate and Transport

Numerous chemical and physical properties of both the contaminant constituent(s) and the surrounding media are used to evaluate fate and transport mechanisms.

Table 8-1
Number of Parameters Exceeding PRGs and RCs at Site 15

	Surface Soil	Subsurface Soil	Shallow GW	Intermed. GW
Inorganics	3	1	4	0
VOCs	0	4	0	0
SVOCs	3	0	0	0
Pests/PCBs	7	1	1	0

Note:
PRGs include RBCs and CGs for surface soil, SSLs and CGLs for subsurface soil, and MCLs, FDWSs, and FGGCs for shallow/intermediate groundwater.

8.2.1 Contaminant Properties Affecting Fate and Transport

Chemical and physical Properties of contaminants used to evaluate fate and transport include vapor pressure, density, solubility, Henry's law constant, half-life, organic carbon/water partitioning coefficient, and molecular weight. Table 8-2 provides an overview of contaminant constituent behavior based on these properties. Table 8-3 contains chemical and physical property data for each parameter detected in Site 15 samples (soil and groundwater) that exceeded a PRG.

Chemical compounds with similar chemical and physical properties display similar fate and transport behavior. This facilitates the general grouping of contaminants, based on chemical and physical properties, into these categories: VOCs, SVOCs, pesticides/PCBs, and inorganics.

VOCs

The chemical and physical properties with the greatest influence on the fate and transport of VOCs are solubility, Henry's law constant, and vapor pressure. Typical fate and transport characteristics include the following:

Table 8-2
Contaminant Characteristics Based on Chemical and Physical Properties

Property	Critical Value	High (>)	Low (<)
Vapor Pressure (VP)	mm Hg	volatile	nonvolatile
Density[a] (D)	1.0 g/cm^3	sinks/falls	floats/rises
Solubility[a] (S)	0 to 100 mg/L	leaches from soil: mobile in water; does not readily volatilize from water	sorbs to soil; immobile in water; volatilizes from water
Henry's law constant (HL)	5×10^{-6} to 5×10^{-3} atm-m^3/mole	resistance to mass transfer in the aqueous phase	resistance to mass transfer in the gas phase
Half-life ($T_{1/2}$)	biologically dependent	does not degrade readily	degrades readily
Organic Carbon/Water Partitioning Coefficient' (K_{oc})	10 to 10,000 kg_{oc}/L_{water}	tends to sorb to organic material in soil; immobile in the soil matrix	tends not to sorb to organic material in soil; mobile in the soil matrix
Molecular Weight (MW)	400 g/mole	characteristics listed above may not hold true; more detailed evaluation necessary	all of the above generally hold true

Notes:

a	=	Determinations of the critical values were based on literature review and professional judgment.
MmHg	=	millimeters of mercury
g/cm^3	=	grams per cubic centimeter
atm-m^3/mole	=	atmospheres per cubic meter per mole
g/mole	=	grams per mole
mg/L	=	milligrams per liter

Table 8-3
Fate and Transport Properties for Organic Parameters Detected in Soil and Groundwater Samples Exceeding PRGs

Parameter	Media of Exceedence	Vapor Pressure (mmHg)	Density (g/cm³)	Solubility (mg/L)	Henry's Law Constant (atm-m3/mole)	Organic Carbon/Water Partitioning Coefficient (L/kg)
Aroclor-1254	Soil	7.70E-05	1.505	1.20E-02	2.70E-03	4.31E+05
Aroclor-1260	Soil	4.05E-05	1.566	8.00E-02	7.10E-03	8.22E+05
Benzene	Soil	9.52E+01	0.868	1.75E+03	5.40E-03	5.00E+01
Benzo(a)anthracene	Soil	2.20E-08	1.214	1.20E-02	2.30E-06	1.40E+06
Benzo(a)pyrene	Soil	5.60E-09	1.351	3.90E-03	2.40E-06	1.77E+06
Benzo(b)fluoranthene	Soil	5.00E-07	NDA	1.40E-03	1.20E-05	5.50E+05
alpha-Chlordane	Soil	1.00E-05	1.600	5.60E-02	4.80E-05	4.95E+04
gam-Chlordane	Soil	1.00E-05	1.600	5.60E-02	3.93E-03	4.95E+04
Dieldrin	Soil Groundwater	1.80E-07	1.750	2.00E-01	2.00E-05	1.34E+04
Aldrin	Soil	6.00E-06		1.8E-01	1.60E-05	9.6E+04
1,1-Dichloroethene	Soil	6.00E+02		2.25E+03	3.4E-02	65
Heptachlor epoxide	Soil	2.60E-06	NDA	3.50E-01	3.20E-05	2.09E+04
Manganese	Soil Groundwater	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	Soil	NDA	1.593	2900	NDA	118
Trichloroethene	Soil	5.78E+01	1.464	1.10E+03	9.10E-03	8.70E+01

Notes:
NDA = No data available.
L/kg = Liters per kilogram
mg/L = Milligram8 per liter
mmHg = Millimeters of mercury
atm-m³/mole = Atmospheres per cubic meter per mole
No inorganic parameters arc included due to the lack of available infomution regarding their fate and transport properties.

- **VOCs** can leach from soil into groundwater.
- **VOCs** tend to be highly mobile in both soil and groundwater.
- **VOCs** tend to volatilize from both soil and groundwater.
- **VOCs** tend to dissipate relatively quickly.

VOCs have low molecular weights, high solubilities, and high vapor pressures. Densities may be less than or greater than that of water. Because of these properties, **VOCs** are expected to be highly mobile in the environment and, therefore, quick to migrate from soil and groundwater.

SVOCS

The chemical and physical properties with the greatest influence on the fate and transport of **SVOCs** are solubility, vapor pressure, and organic carbon/water partitioning coefficient. Typical fate and transport characteristics are as follows:

- **SVOCs** tend to sorb to soil particles.
- **SVOCs** tend to be immobile in the environment.
- **SVOC** movement tends to occur more often by colloidal suspension than by diffusion (i.e., greater mobility occurs when coupled with "carrier" compounds).

SVOCs have high molecular weights, low to moderate vapor pressures, moderate to high densities, and generally high organic carbon/water partitioning coefficients. Overall, **SVOCs** are relatively immobile in soil and diffuse only slightly to groundwater. Exceptions to anticipated **SVOC** immobility in the environment are phenols, as they readily hydrolyze in water.

Pesticides/PCBs

The chemical and physical properties with the greatest influence on the fate and transport of pesticides/PCBs are solubility, Henry's law constant, and organic carbon/water partitioning coefficient. Typical fate and transport characteristics include the following:

- Pesticides/PCBs tend to sorb to soil particles.
- Pesticides/PCBs tend to be hydrophobic (avoid water).
- Pesticides/PCBs tend to be immobile in the environment.
- Pesticides/PCBs tend to degrade relatively slowly.

Pesticides/PCBs have moderate to high molecular weights, generally high densities and organic carbon/water partitioning coefficients, and generally low solubilities, vapor pressures, and Henry's law constants. Most pesticides/PCBs are immobile and persistent in the environment, not readily diffusing into groundwater. Additionally, over time some pesticides degrade to other pesticide forms; for example, the moderately persistent aldrin transforms to the more persistent dieldrin.

Inorganics

Solubility has the greatest influence on the fate and transport of inorganics. Typical fate and transport characteristics are as follows:

- Inorganics tend to sorb to soil particles.
- Inorganics are not degradable.
- Inorganics tend to have moderate to low mobility; however, in environments where pH is less than 5 (i.e., acidic conditions), inorganics can mobilize.

Properties of the surrounding environmental media (soil matrix and groundwater chemistry) tend to dictate the fate and transport mechanisms of inorganic elements. In general, inorganics tend to be relatively immobile and sorb to soil particles, not readily diffusing into groundwater.

8.2.2 Media Properties Affecting Fate and Transport

The properties of environmental media used to evaluate fate and transport are total organic carbon (TOC), normalized partition coefficient (Kd), carbon exchange capacity (CEC), oxidation/reduction (redox) conditions, pH, soil type, and retardation rate. The following paragraphs briefly discuss these properties.

Total Organic Carbon

TOC indicates the soil's sorptive capabilities. The higher the TOC, the higher the potential for a chemical, particularly an organic compound, to sorb to soil particles.

Normalized Partition Coefficient

K_d is used to predict the capacity for a contaminant constituent to partition between soil and water; it is a function of both the constituent and the soil. To estimate K_d, the constituent's organic carbon/water partitioning coefficient (K_{oc}) is adjusted by the soil's TOC: $K_d = K_{oc} * f_{oc}$, where f_{oc} = organic carbon content fraction of the soil. Soils with higher K_d s have a higher potential to sorb organic compounds.

Cation Exchange Capacity

CEC reflects the soil's capacity to adsorb ions, neutralizing ionic deficiencies on the surfaces of its particles. Generally, trivalent ions are preferentially adsorbed to soil over divalent ions, and divalent ions are preferentially adsorbed over monovalent ions. Although this relationship generally holds true, the process also depends on soil pH. Soil with high CEC values has the

potential to adsorb inorganic ions, although organic compounds with dipole moments also are affected by CEC.

Redox Conditions

Redox is the process which includes oxidation (the loss of electrons) and reduction (the *gain* of electrons). The resultant change in valence generates products that are differentfrom the parent reactants in their solubilities, toxicities, reactivities, and mobilities. Extreme redox conditions tend to mobilize contaminants, especially transition metals.

pH

The pH value is a negative inverse logarithmic measure of hydrogen ions in the soil or groundwater, indicating the acidity or alkalinity of the medium. Contaminants react differently as pHs change. Low pH conditions tend to mobilize most metals and facilitate substitution in organic compounds. High pH conditions may cause metals to precipitate and organic molecules to degrade.

soil Type

The mineral composition, particle size distribution, and organic content of soil affect chemical fate and transport. Soil characteristics influence or determine hydraulic conductivity, effective porosity, and hydraulic gradient which, in turn, dictate groundwater flow.

Retardation Factor (R_f)

The retardation factor describes the ability of the aquifer matrix to inhibit the movement of contaminants relative to that of groundwater, by preferentially binding to those with high organic carbon/water partitioning coefficients. Because dissolved constituents generally travel

more slowly through an aquifer than does groundwater itself, contaminant travel time is some multiple of groundwater travel time. The multiple is called the retardation factor, R_f:

$$R_f = 1 + (K_d \rho_b / n)$$

where K_d is the normalized partition coefficient, ρ_b is the dry bulk density of the soil, and n is the soil effective porosity. K_d is based on K_{oc} and TOC as shown above in this section, while ρ_b and n are obtained from soil analysis. The given equation for R_f assumes a linear equilibrium sorption isotherm, in which the concentration of solute sorbed on the solid phase is linearly related to the dissolved Concentration. This assumption is considered valid when the equilibrium concentration of the solute is less than half of its limit of solubility. Linear sorption isotherms are commonly used to describe sorption of chlorinated solvents, and have also been used for radionuclides and heavy metals. Use of a single retardation factor over the entire migration route is a significant simplification of reality because it assumes a constant sorptive capability of the aquifer, and ignores the potential spatial variability of hydrogeological properties. However, a R_f calculation can offer useful information as to a detected parameter's relative migration potential at a given site.

8.3 Migration Pathways

The presence of the same contaminant in both source and receptor media is considered direct evidence of past contaminant transport. Likewise, soil contaminant concentrations exceeding typical leachability screening levels, or groundwater contaminants exceeding applicable PRGs, indicate the potential for continued contaminant transport and future impact on receptors. This section of the report discusses possible pathways for contaminant transport at the site.

Site 15 land surface is generally level and unpaved. Surface soil is highly permeable sand with little to no vegetative cover. Precipitation falling on unpaved surfaces infiltrates the sandy soil and percolates into the unconfined surficial zone, which is the uppermost unit of the regional Sand-and-Gravel Aquifer. Groundwater moves from the south to the north-northwest across the site, toward nearby Bayou Grande, and north-northeast, toward a tidal pond (Wetland 65). After evaluating Site 15 for the constituent and media properties discussed in Section 8.2, and for the hydrogeologic characteristics described in Section 5, four potential routes of constituent migration have been identified for further investigation:

- Leaching of constituents from soil to groundwater
- Transport of constituents in groundwater
- Air emissions resulting from VOCs and particulates released from surface soil
- Transfer of groundwater entrained constituents to surface water and sediment

Table 8-4 summarizes the chemical and physical parameters of Site 15 soil used to evaluate fate and transport. The bulk density value reported for the site soil sample is 92.09 pounds per cubic foot (lbs/ft^3); the soil total porosity value is 44.22%. These values are consistent with a fine- to medium-grained sandy soil containing significant interconnected void space. The average CEC for site soil is 0.47 mEq/100g, with results ranging from 0.25 to 0.70. This value indicates an environment of relatively low electromagnetic attraction between site soil and detected constituents, particularly inorganics. The average pH (measured during sample preparation) of soil across the site is 7.96, with a range of 6.6 to 8.7. This soil condition indicates a relatively neutral environment that does not particularly promote the mobility or precipitation of inorganics, or the molecular substitution or degradation of organic compounds. The average TOC concentration for site soil is 1,380 mg/kg, with a range of 860 mg/kg to 1,900 mg/kg. This result indicates a relatively low soil organic content that moderately inhibits the movement of contaminants, particularly those with high K_{oc} values, due to soil adsorption.

Table 8-4
Soil Parameters Used to Evaluate Fate and Transport

Parameter	Site 15 Minimum Value	Site 15 Maximum Value	Site 15 Average Value	Units
Cation Exchange Capacity	0.25	0.70	0.47	(mEq/100g)
Total Organic Carbon	860	1900	1380	(mg/kg)
pH [a]	6.60	8.70	7.96	(pH units)
Total Porosity[b]	44.22	44.22	–	(percent)
Bulk Density[b]	92.09	92.09	–	(lbs/ft³)

Notes:
a = pH values compiled from surface and subsurface soil analysis prescreening by the laboratory.
b = Total porosity and bulk density values based on analysis of a shallow zone undisturbed soil (Shelby tube) sample.
lbs/ft3 = Pounds per cubic foot

8.3.1 Leaching from Soil to Groundwater

Contaminants may be leached from soil through percolation of rainwater or through direct continual contact with groundwater during periods of elevated water table due to heavy precipitation. The unsaturated soil zone at Site 15 is composed of unconsolidated fine- to medium- grained quartz sand with a small amount (less than 10%)of silt and clay-sized particles. This soil type characteristically has a high vertical permeability, resulting in minimal contact time between percolating water and vadose zone soil. However, the site's extensive unpaved land surface increases the susceptibility of site soil to potential surface contamination by site activities, and surface exposure to precipitation.

Sample analyses indicate parameters detected in soil have leached to groundwater. A limited number of inorganic (primarily arsenic) and organic (primarily dieldrin) parameters were detected above PRGs in surface soil, subsurface soil, and groundwater samples (however, iron and manganese detections in both media are likely associated with naturally occurring inorganic material). Anomalous arsenic and dieldrin concentrations were detected in surface and subsurface soil samples, and in groundwater samples (only an isolated detection of dieldrin in groundwater

above the PRG, however, several below PRG concentrations were detected) indicative of site impact. These parameters have adequate solubility and/or K_{oc} properties to allow their migration from soil to groundwater. In contrast, the less soluble, relatively higher K_{oc} compounds such as the SVOCs (benzo[a]pyrene equivalents) detected in surface soil, were not detected in site groundwater, indicating no appreciable leaching and migration of these have occurred. The distribution of these parameters is detailed in Sections 6.1 (soil) and 6.2 (groundwater).

8.3.2 Groundwater Transport

Shallow groundwater at Site 15 moves generally north-northwestward across the site's central portion (as shown on Figure 5-1). Just north of the site, shallow flow is divided by a topographic high on the golf course and flows northwestward toward Bayou Grande, and northeastward to the adjacent tidal pond (Wetland 65), respectively (as shown on Figure 5-2), where it likely discharges to these water bodies. A second tidal pond (Wetland 4) is located 400 feet west of the site; however, water level information indicates site groundwater likely does not discharge to this surface water. The site's flow regime occurs under a Consistently low hydraulic gradient of 0.006 to 0.008. The average shallow groundwater horizontal pore velocity calculated for the site in Section 5 was 1.35 ft/day.

As previously discussed, groundwater pH can affect the migration of groundwater entrained contaminants. Typical range of shallow groundwater pH at Site 15 was 5.5 to 6.5 units, with an average pH of approximately 5.93 across all sampling phases. This indicates the shallow groundwater zone is neutral to only slightly acidic. Under these conditions, inorganics tend to be relatively immobile, and organics relatively stable.

Arsenic was the most prevalent inorganic exceedance detected in site groundwater. Arsenic concentrations detected in samples from "hot spot" well location 15GR07 varied considerably during the investigation. Observed concentrations differed by a factor of 10 (one order of

magnitude), rising from 89.6 ppb in September 1995 (during Phase I sampling) to 522 ppb in April 1996 (Phase II), and then decreasing to 104 ppb in May 1996 (Phase II-B) and 13.4 ppb in July 1996 (Phase III). The reason for this variation is not fully understood. However, well 15GR07 is adjacent to Building 3586, the pesticide/herbicide storage and handling facility. Water-soluble products such as the arsenic-based herbicide monosodium metharsonate (MSMA) are commonly used at the facility. Given the highly permeable sandy soil at the site, and that well 15GR07 is directly adjacent to Building 3586's concrete wash down pad where product is mixed and application equipment is Msed, the periodic use of arsenic-based products and their associated residue/rinsate may have affected shallow groundwater arsenic concentrations in this area.

Due to the complexities of inorganic parameter fate and transport processes, sufficient data are not available to calculate a representative transport rate for arsenic. However, the limited spatial distribution of arsenic PRG exceedances in groundwater indicates elevated arsenic concentrations have migrated only to the site's northern boundary (i.e., arsenic concentrations exceeding PRGs do not extend to the most downgradient well locations). Fate and transport processes such as diffusion, sorption, oxidation, and reduction are known to occur to arsenic and it's associated compounds during their movement through soil and groundwater. Specifically, the aluminum, iron, and magnesium soil components, commonly available in NAS Pensacola area soil, are known to form oxides effective in the adsorption and retention of arsenic. Although the probable arsenic source — arsenic-based herbicide products — is highly water soluble and readily enters the shallow water system, the actual migration potential of arsenic is limited.

Dieldrin was the only organic PRG exeedance detected in groundwater, via only a slight exceedance at a single location. Even so, given the physical soil properties determined from laboratory analysis, an estimated R_f may be calculated for dieldrin. When combined with the horizontal groundwater velocity, an approximate travel time for dieldrin in shallow groundwater can be determined to illustrate the magnitude of the sorption process occurring during transport.

Using a literature-derived K_{oc} value of 13,400 liters per kilogram (L/kg) for dieldrin and the soil's average TOC of 1,380 milligrams per kilogram (mg/kg), the site-specific K_d is calculated to be 18.49 L/kg. Given the site soil's bulk density of 92.09 lbs/ft^3, and effective porosity estimate of 35%, an R_f estimate of 79 is calculated for dieldrin in the shallow zone at Site 15 (see Section 8.2.2 for these equations). When combined with the estimated groundwater horizontal pore velocity of 1.35 ft/day, the time required for dieldrin to travel via shallow groundwater 100 feet across the site is estimated to be approximately 16 years as follows:

Time required for shallow groundwater to travel 100 feet across the site:

$$100 \text{ ft} / 1.35 \text{ (ft/day)} = 74.07 \text{ days}$$

Time required for dieldrin to travel 100 feet

$$74.07 \text{ days} \times 79 \text{ (dieldrin } R_f) = 5851.85 \text{ days or } 16.03 \text{ years}$$

This information gives a relative indication of the degree to which the aquifer's physical properties inhibit the transport of this organic compound (primarily via sorption to organic particles) within the flow system. In reality, additional fate processes such as molecular diffusion, physical dispersion, and chemical degradation combine with sorption, further impeding the transport of organics through the flow system.

8.3.3 Surface Soil to Air Transport

The surface soil to air pathway applies to fugitive dusts and VOCs in soil released to the atmosphere. Although VOCs were identified in subsurface soil onsite, none was detected in surface soil. This indicates any previous surface release of VOCs has degraded due to sunlight and/or biological activity, or natural volatilitization, with both processes aided by the subtropical

temperatures and rainfalls native to the Pensacola area. Due to the preponderance of unpaved land surface and lack of vegetation across the site, dust emissions are potentially of concern given the pesticide (dieldrin) and inorganic (arsenic) surface soil concentrations. Dieldrin was detected in surface soil sample 015S001401 at 3,000 ppb, exceeding the 2,000 ppb soil- to- air RBC screening concentration. However, the particulate air sampling results of E&E's 1991 investigation did not indicate that Site 15 is a significant source of particulates (E&E, 1991). The surface soil exposure scenario is further evaluated in Section 9, the Baseline Risk Assessment.

8.3.4 Surface Water/Surface Drainage Pathway

No surface water bodies or significant surface drainage features are on Site 15. Given the site's relatively level topography and highly permeable soil, rainfall quickly percolates through site soil to the water table, generating little to no overland storm water flow. Bayou Grande and tidal pond/Wetland 65 are approximately 600 feet north and 400 feet northeast of the site, respectively. Given their proximity, and the site's soil characteristics, overland flow from the site to these bodies is not a viable migration pathway at Site 15. However, these surface water features are being evaluated as part of separate remedial investigations for Sites 40 and 41, the Bayou Grande and Wetlands, respectively.

8.3.5 Other Pathways

Other potential migration pathways from Site 15 include groundwater discharge to downgradient surface water bodies and (surface water body-related) sediment. As stated above, NAS Pensacola surface water bodies (Bayou Grande and wetland/tidally inlets) are being evaluated under separate investigations. However, given the limited magnitude and extent of groundwater impacted at the site, the relatively unimpaired groundwater quality observed at downgradient-most wells 15GS69 through 15GS71, and the proximity of these surface waters, no significant impact to these features is anticipated.

8.4 Current and Potential Receptors

Transport of parameters detected at Site 15 is generally downward from surface soil through subsurface soil to groundwater. The primary receiving body of site impact is the surficial zone of the Sand-and-Gravel Aquifer. Described in Section 6, the surficial zone is a porous and permeable unconfined aquifer with relatively small amounts of organic carbon, all of which make it an viable migration pathway for dissolved and entrained contaminants, particularly organic compounds. It is not used as a water-supply source in the Pensacola area due to its high iron and aluminum content and its susceptibility to local contamination. One organic compound (dieldrin, which was limited to only one exceedance), and seven inorganics (most of which may be attributed to ambient groundwater quality at NAS Pensacola) were reported at concentrations exceeding PRGs in Site 15 groundwater samples. The only distinct PRG exceedances groundwater plume is that of arsenic, which is limited to the upper portion (monitored by shallow wells) of the surficial zone. No PRG exceedances were detected in the lower portion (monitored by intermediate depth wells 15GR39 and 15GR40).

A potential receptor of surficial aquifer zone contamination from Site 15 is the main producing zone, which underlies the surficial zone and serves as a potable water source for wells several miles north and upgradient in Escambia County. Water from the main producing zone is not used as a potable supply at NAS Pensacola because of its high iron and aluminum content, but the aquifer is used as a supplementary water source for the base. The main producing zone is separated from the surficial zone by a low-permeability clay layer. A low-permeability sandy clay was documented onsite at a depth of 33 to 40 feet bls, corresponding to the low permeability zone which separates the surficial from the main producing zone. Given that no PRG exceedances were detected in the intermediate depth wells, groundwater from the low permeability and main producing zones is not expected to be impacted by site activities and was not sampled as part of this investigation.

Other potential receptors of surficial zone contaminants are Bayou Grande, associated tidal ponds, and associated biota. As previously discussed, due to the distance of the site to the these features, coupled with the magnitude and extent of detected groundwater constituents and their relatively immobile fate characteristics (Rf calculated for dieldrin in particular) appreciable impact to these receptors is not expected. However, surface water, sediment, and ecological receptors adjoining Site 15 will be evaluated fully during the Sites 40 and 41 RIs.

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9.0 BASELINE RISK ASSESSMENT

A risk assessment analyzes the potential adverse effects on actual or hypothetical human and ecological receptors that could arise from exposures to hazardous substances released from a site if no remedial actions are taken to reduce the extent of present environmental contamination. Generally, a BRA has two parts; one addresses human health risk, and another assesses ecological risk. The BRA for Site 15 includes Section 9.1, the human health risk assessment (HHRA), and Section 9.2, the Ecological Risk Assessment (ERA).

9.1 Human Health Risk Assessment

9.1.1 Introduction

General methods used in this HHRA are discussed in Section 9.1.2, and site-specific information is discussed in Section 9.1.3. Risk estimates are presented for surface soil and groundwater COCs in Sections 9.1.3.1, where specific sources of uncertainty and variability are discussed.

This HHRA for Site 15 was prepared generally in accordance with the guidelines set forth in:

- USEPA, (1988). Memorandum from USEPA Administrator Lee Thomas to Assistant Administrators; Subject: Recommended Agency Policy on the Carcinogenicity Risk Associated with the Ingestion Arsenic, dated June 21, 1988.

- *Risk Assessment Guidance for Superfund (RAGS), Volume I — Human Health Evaluation Manual (Part A)*, (USEPA, 1989a), (RAGS Part A).

- *RAGS, Volume 11 — Environmental Evaluation Manual, Interim Final,* (USEPA 1989b), USEPA/OERR, EIA/540/,89/001.

- *RAGS, Volume I — Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals),* (USEPA, 1991a), (RAGS Part B).

- *RAGS, Volume I — Human Health Evaluation Manual, Supplemental Guidance — Standard Default Exposure Factors-Interim Final.* USEPNOERR, OSWER Directive: 9285.6-03, March 25, *1991* (USEPA, 1991b). *(RAGS* Supplement).

- *Dermal Exposure Assessment: Principles and Applications — Interim Report,* Office of Research and Development, EPA/600/8-91/011B, (USEPA, 1992a).

- *RAGS, Volume I — Human Health Evaluation Manual, Supplemental Guidance — Dermal Risk Assessment —Interim Guidance,* (USEPA, 1992b), (supplemental Dermal Guidance).

- Supplemental Guidance to RAGS: *calculating the Concentration Term, (USEPA,* 1992c).

- Supplemental Guidance to RAGS: Region IV Bulletin 5, *Development of Health-Based Preliminary Remediation* Goals, *Remedial Goal Options (RGO) and Remediation Levels* (Supplemental RGO Guidance), *(USEPA,* 1995a).

- Supplemental Guidance to RAGS: Region N Bulletin 2, *Toxicity Assessment, Provisional Guidance of Quantitative Risk Assessment of PAHs,* (USEPA, 1995b) (PAH Guidance).

- Supplemental Guidance to RAGS: Region IV Bulletin 3, *Exposure Assessment,* (USEPA, 1995c).

- Supplemental *Guidance* to RAGS: Region IV Bulletin *1, Data Collection and Evaluation,* (USEPA, 1995d).

- Supplemental Guidance to RAGS Bulletin 4 *Risk Characterization* (USEPA, 1995e).

- *Exposure Factors Handbook, (USEPA,* 1989b).

- **USEPA** Region **III**, ***Risk-Based Concentration Table, January – June 1996,*** **(USEPA,** 1996a), (RBC Screening Tables).

- **FDEP,** ***Technical Memorandum – Soil Cleanup Goals for Florida,*** September 1995

Objectives

The objectives of the HHRA are to:

- Characterize the source media and determine the chemicals of potential concern **(COPCs)** for affected environmental media.

- Identify potential receptors and quantify their potential exposures under current and future conditions for all affected environmental media.

- Qualitatively and quantitatively evaluate the adverse effects associated with the site-specific COPCs in each medium.

- Characterize the potential baseline carcinogenic risk and noncarcinogenic hazards associated with exposure to impacted environmental media at Site 15 under current and future conditions.

- Evaluate the uncertainties related to exposure estimates, toxicological data, and resulting carcinogenic risk and noncarcinogenic hazard estimates.

- Establish remedial goal options (RGOs) for chemicals of concern (COCs) in each environmental medium based on risk/hazard to facilitate risk management decision-making.

Organization

An HHRA, as defined by RAGS Part A, includes the following steps:

- *Sire characterization*: evaluation of data regarding site geography, geology, hydrogeology, climate, and demographics as described in Section 9.1.2.1.

- *Data collection*: analysis of environmental media samples, including background/ reference samples as described in Section 9.1.2.2.

- *Data evaluation:* statistical analysis of analytical data to identify the nature and extent of contamination and to establish a preliminary list of COPCs from risk-based and background screening. This list will subsequently be refined to identify COCs as described in Sections 9.1.2.3 through 9.1.2.6.

- *Exposure assessment*: identification of potential receptors under current and predicted conditions, visualization of potential exposure pathways, calculation of exposure point concentrations (EPCs), and quantification of chemical intakes as described in Section 9.1.2.7.

- *Toxicity assessment*: qualitative evaluation of the adverse effects of the COPCs, and quantitative estimate of the relationship between exposure and severity or probability of effect as described in Section 9.1.2.8.

- *Risk characterization*: a combination of the outputs of the exposure assessment and the toxicity assessment to quantify the total noncancer and cancer risk to the hypothetical receptors as described in Section 9.1.2.9.

- ***Uncertainty***: discussion and evaluation of the areas of recognized uncertainty in human health risk assessments in addition to medium- and exposure pathway-specific influences as described in Section **9.1.2.10.**

- ***Risk/Hazard Summary:*** presentation and discussion of risk estimates for the potential receptors and their exposure pathways identified under current and future land use conditions as described in Section **9.1.2.11.**

- ***Remedial Goal Options:*** computation of exposure concentrations corresponding to risk projections within the **USEPA** target risk range of 1E-06 to 1E-04 **for** carcinogenic **COCs** and Hazard Quotient (HQ) goals of **0.1,** 1, and **3** for noncarcinogenic **COCs as** described in Section **9.1.2.12.**

9.1.2 Human Health Risk Assessment Methods

9.1.2.1 Site Characterization

Site **15** is inside the golf course maintenance area of NAS Pensacola in the northern portion of the air station, approximately 600 feet south of Bayou Grande, as shown on Figure **2-1** (previously presented). This site is described in detail in Sections **2** and 3 of *this* report. Comprehensive tables in Section **4** show identification numbers and analytical methods applied for each sample. At most sampling locations, sampling activities consisted of collecting surface and subsurface soil samples. USEPA defines surface soil as zero to 1 foot bls. Subsurface soil was sampled from various intervals beginning **1** foot bls to the water table. Sample intervals are detailed in Section **4.** In addition, groundwater samples were collected from shallow and intermediate depth monitoring wells installed in the surficial aquifer zone underlying the site. Analytical results from surface soil and shallow groundwater were used to assess possible human exposure to environmental contaminants.

9.1.2.2 Data Sources

Soil and groundwater samples were collected and analyzed to delineate the sources, nature, magnitude, and extent of any contamination associated with current or past site operations. The data used in the HHRA for Site 15 were obtained from the results of the sampling activities associated with Phase I, II, and III RI activities. All analytical results are presented in Section 6.

As discussed in the various sections, both soil and groundwater samples were collected at Site 15, and data used in this RI were compiled from several sampling events. These events are described in Sections 4 and 6 (Phase I, 11, and III). Analytical methods used for the Site 15 investigation were presented in Tables 4-1, 4-2, and 7-1. Several monitoring wells sampled during the earlier events were resampled in the subsequent phases of the investigation. Where this occurred, the most recent analytical data from a given location were evaluated. Low-flow techniques were used consistently throughout the groundwater sampling phases, as described in Section 4.

Analytical methods and data quality objectives (DQO) laboratory deliverables are summarized in Section 7. Soil and groundwater were sampled in accordance with the procedures outlined in the Site 15 SAP and the USEPA Region IV Standard Operating Procedures/Quality Assurance Manual (SOP/QAM; USEPA, 1991a). Sampling locations and methods employed by E/A&H are discussed in Section 4.

9.1.2.3 Data Validation

Data validation is an after-the-fact, independent, systematic process of evaluating data and comparing them to established criteria to confirm they are of the technical quality necessary to support the RI/FS decisions. Parameters specific to the data are reviewed to determine whether they meet the stipulated DQOs. The quality objectives address five principal parameters: precision, accuracy, completeness, comparability, and representativeness. To verify that these objectives are met, field measurements, sampling and handling procedures, laboratory analysis and

reporting, and nonconformances and discrepancies in the data are examined to determine compliance with appropriate and applicable standards. Data collected for the Site 15 RI were validated in accordance with the **USEPA CLP** Functional Guidelines, discussed in Section 7 of this report.

9.1.2.4 Management of Site-Related Data

All environmental sampling data were evaluated for suitability for use in the HHRA. Data obtained via the following methods were not appropriate for the HHRA:

- Analytical methods that are not specific for a particular chemical, such as TOC or total organic halogen.

- Field screening instruments including total organic vapor monitoring units and organic vapor analyzers.

The HHRA addresses limitations of analytical results by including estimated concentrations for nondetected chemicals. A nondetect indicates that the analyte was not detected above the method or instrument detection limit of the sample (U-qualified results), determined by the analytical method, the instrument used, and possible matrix interferences. However, a nondetected analyte could be present at any concentration between zero and the quantitation limit. For this reason, one-half the *U* value could serve as an unbiased estimate of the nondetect. J-qualified data, or estimated values, are reported below method or instrument detection limits. Because J-qualified hits are lower than the sample quantitation limits of U-qualified nondetects for organic chemicals, one-half of each *U* value was compared to one-half of the lowest hit (normally J-qualified) at the same site. The lesser of these two values was used as the best estimate of the concentration that was potentially present below the sample quantitation limit, and this assumed concentration was inserted into the adjusted data set as recommended by **USEPA.**

For inorganic chemicals, the decision rule is simpler: one-half of each *U* value represented the assumed concentration when compiling the adjusted data set. If a chemical was not detected, neither data management method was applied, and the chemical was not retained in the HHRA.

Once the data set was complete (i.e., after eliminating faulty data and quantifying censored values), statistical methods were used to evaluate the analytical results to: (1) identify COPCs and (2) establish EPCs at potential receptor locations and exposure areas. The statistical methods used in data evaluation are discussed below. The rationale used to develop this methodology and the statistical techniques to implement it are based on the following sources:

- RAGS Part A
- *Statistical Methods for Environmental Pollution Monitoring* (Gilbert, 1987)
- *Supplemental Guidance to RAGS: Calculating the Concentration Term* (USEPA, 1992c)
- *Supplemental Guidance to RAGS: Bulletin 3, Exposure Assessment* (USEPA, 1995c)

Microsoft FoxPro and Microsoft Excel[1] were used to manage data and calculate statistics. For each set of data describing the chemical concentration in a contaminated area, the following information was tabulated in accordance with USEPA's Supplemental Guidance to RAGS, Part B: frequency of detection, range of nondetected values, range of detected values, average of detected concentrations, and the calculated 95% upper confidence limit (UCL) for the mean of log-transformed values of the concentration. The procedures used to estimate exposure are detailed in Section 9.1.2.7.

[1] Reference to specific software products are not to be construed as an endorsement by the U.S. Navy or E/A&H.

9.1.2.5 Selection of Chemicals of Potential Concern

As suggested by the Tier I Partnering Team, COPCs are selected by comparison with screening concentrations (risk-based and reference). To identify a COPC as a COC, the former must contribute to an exposure pathway with an incremental lifetime excess cancer risk (ILCR) in excess of 1E-06 or a hazard index (HI) greater than 1 for any land use scenarios evaluated in the HHRA. In addition, COPCs identified as COCs due to HI must have an individual HQ greater than 0.1. ILCR, HQ, and HI are discussed in Sections 9.1.2.8 and 9.1.2.9.

Before estimating the potential excess risk/hazard associated with Site 15 media, it was first necessary to delineate the contamination onsite by denoting the chemicals detected in environmental media as "chemicals present in site samples" (CPSSs). The nature and general extent of CPSSs at each site are detailed in Section 6. Two comparisons were performed as described below to reduce the list of CPSSs and focus the risk assessment on COPCs.

Comparison of Site-Related Data to Risk-Based Screening Concentrations

The maximum concentrations of CPSSs detected in samples were compared to risk-based screening values from the ***January*** to ***June 1996 Region 111 Risk-Based Concentration Table*** (USEPA, 1996a), and subsequent versions of ***Technical Memorandum — Soil Cleanup Goals for Florida.*** In accordance with USEPA Region IV Supplemental Guidance to RAGS, ***Bulletin*** I Data ***Collection and Evaluation,*** USEPA screening concentrations were adjusted from a target HQ goal of 1.0 to 0.1 for noncarcinogens (USEPA. 1995d). A risk goal of 1E-06 was used by FDEP and USEPA to calculate screening concentrations for carcinogens. Similarly, hazard-based cleanup goals were calculated using an HQ of 1.0. Residential and industrial soil RBCs were used as the primary screening values for soils, while tap water RBCs were used as the primary screening values for groundwater. However, if no RBCs were available, comparisons were made with FDEP's screening concentrations for soil or various FDEP screening Concentrations for groundwater

In accordance with USEPA Revion IV Supplemental Guidance to RAGS, groundwater data were compared to risk-based tap water screening values, and reported soil concentrations were compared to residential soil ingestion risk-based screening values. Consistent with recent OSWER directives considering protection of a hypothetical child residents, 400 mg/kg was used as the soil screening value for lead; the lead groundwater screening value used was the USEPA Office of Water treatment technique action level of 15 micrograms per liter (µg/L).

In accordance with USEPA Region IV Supplemental Guidance to RAGS: Bulletin *2 Toxicity Assessment* (USEPA, 1995b), benzo(a)pyrene equivalents (BEQs) were computed by multiplying the reported c —— 'on of each carcinogenic PAH (cPAH) by its corresponding toxicity equivalent factor (TEF). BEQ values were summed for each sample location, and the total was compared to the benzo(a)pyrene RBC value during the screening process. Subsequent exposure. quantification and risk/hazard projections for cPAHs in soil and groundwater were performed using total BEQ values for each sampling location rather than individual chemical concentrations.

CPSSs with maximum detected concentrations exceeding their corresponding screening concentrations, goals, levels, and/or standards were retained for further evaluation and reference screening in the risk assessment. Screening values based on surrogate chemicals were used if no direct values were available. Surrogates were selected based on structural, chemical, and toxicological similarities and are noted in the screening tables.

CPSSs are compared to other screening levels in Sections 4 and 8. Other screening levels for groundwater include groundwater protection SSLs, MCLs, FDWSs, etc,. Chemicals that had been screened from the list of COPCs were included in Section 8 when appropriate, based on comparisons to other screening concentrations.

Comparison of Site-Related Data to Background Concentrations

The background reference concentration is a fixed value determined to represent naturally occurring levels for a chemical in a specific matrix. Soil and groundwater background concentrations were determined for NAS Pensacola, as described in Section 6. Data were concurrently compared to risk- and hazard-based screening values and background reference concentrations. CPSSs having maximum reported concentrations higher than both screening values were retained in the HHRA, unless they were eliminated for other reasons discussed in Section 9.1.3. This comparison helps account for chemicals that are common in nature, such as aluminum, manganese, and arsenic. By virtue of this process, risk and/or hazard associated with naturally occurring chemicals is not addressed where their concentrations are not above corresponding background.

If the maximum concentration of a CPSS was determined to be less than either background or the risk-based screening value, the CPSS was not assessed further unless deemed appropriate based on chemical-specific characteristics (e.g., degradation product with greater toxicity).

Elimination of Essential Elements: Calcium, Iron, Magnesium, Potassium, and Sodium

In accordance with RAGS Part A, essential elements that are potentially toxic only at extremely high concentrations may be eliminated as COPCs in a risk assessment. Specifically, an essential nutrient may be screened out of a risk assessment if its concentration is not associated with adverse health effects. Based on RAGS, the lack of risk-related data, and USEPA Region IV's recommendations, the following essential nutrients were eliminated from this HHRA: calcium, iron, magnesium, potassium, and sodium.

9.1.2.6 Calculation of Risk and Hazard

As previously discussed, CPSSs that exceed their respective screening values are considered COPCs. The subsequent identification of COCs is a two-phase process. First, risk estimates for

land use scenarios exceeding the screening criteria recommended by USEPA and FDEP are identified. Identifying COCs from the refined list of COPCs involves *estimating* chemical-specific cancer risks and HQs for COPCs, *estimating* exposure-pathway risk/hazard, evaluating frequency and consistency of detection and relative chemical toxicity, and *comparing* them to background concentrations. In the next *step,* COPCs which individually exceed 1E-06 ILCR or an HQ greater than 0.1 in a land use are retained as COCs. Section 9.1.2.8 discusses *cancer* risk thresholds and noncancer toxicity.

9.1.2.7 Exposure Assessment

This section of the HHRA determines the magnitude of contact a potential receptor may have with site-related COPCs. Exposure assessment involves four stages:

- Characterizing the physical setting and land use of the site;
- Identifying COPC release and migration pathway(s);
- Identifying the potential receptors, under various land use or site condition scenarios, and the pathways through which they might be exposed; and
- Quantifying the intake or contact rates of COPCs.

Exposure *Setting* and Land Use

Section 9.1.3.3 describes the basic layout of the individual site as well as the suspected source(s) of contamination, while the site setting is discussed in Section 3. In addition, current and future use of the site are also discussed in Section 9.1.3.3.

Potentially Exposed Populations

This section describes who may be exposed to contaminants in environmental media. This HHRA addresses current and future site workers, as well as hypothetical future site residents. Because current site workers at Site 15 would be expected to have limited contact with contaminated media, worker-related exposure was addressed exclusively for maximally exposed future site workers. Because Site 15 is in the golf course maintenance area, a recreational golfer scenario and a maintenance worker scenario also were considered. However, a maintenance worker's exposure is expected to be greater than that of a golfer, but less than the future worker's scenario. Therefore, the more-conservative future site worker scenario was assessed. This approach, while providing a reasonably conservative assessment of future site worker risk/hazard, also renders a highly conservative approximation of risk/hazard for current site workers. This approach accounts for the fact that the specific nature of future industrial uses cannot be definitively stated. In addition, the construction worker land use scenario was evaluated for subsurface soil exposure in Section 9.1.3.3.

Exposure Pathways

This section summarizes how potential human receptors (site workers, residents, etc.) may be exposed to contaminated media. In general, soil matrix-related pathways include incidental ingestion and dermal contact. For groundwater, ingestion and inhalation of volatilized contaminants were the primary pathways of exposure evaluated. Table 9-1 summarizes exposure pathways and receptors for current and future land use and justifies including or excluding various exposure pathways.

Exposure Point Concentrations

The EPC is the contaminant concentration in an exposure medium that will be contacted by a real or hypothetical receptor. Determining the EPC depends on factors such as:

- Availability of data
- Amount of data available for statistical analysis
- Reference concentrations not attributed to site impacts
- Location of the potential receptor

USEPA Region IV Supplemental Guidance to RAGS *calls* for assuming lognormal distributions for environmental data and calculating the 95% UCL for the mean of concentrations to quantify *exposure* (Bulletin 3; USEPA, 1995c). Applying *the* UCL is generally inappropriate with fewer than 10 samples (Gilbert, 1987).

Table 9-1
Exposure Pathways Summary — Site 15
NAS Pensacola
Pensacola, Florida

Potentially Exposed Population	Medium and Exposure Pathway	Pathway Selected for Evaluation?	Reason for Selection or Exclusion
		Current Land Uses	
Current Site Users/Maintenance	Air — Inhalation of gaseous contaminants emanating from soil	No	No significant VOC concentrations were reponed in surface soil.
	Air — Inhalation of chemicals entrained in fugitive dust	No	The particulate emission factor would result in orders of magnitude less exposure than that which would be estimated for direct exposure pathways. such as incidental soil ingestion.
	Groundwater — Ingestion of contaminants during potable or general use	No	Groundwater is not currently used as a source of potable or nonresidential water at NAS Pensacola.
	Groundwater — Inhalation of volatilized groundwater contaminants	No	Groundwater is not currently used as a source of potable or nonresidential water at NAS Pensacola.
	Soil — Incidental ingestion	No (Qualified)	Future land use assessment is considered protective of current receptors.
	Soil — Dermal contact	No (Qualified)	Future land use assessment is considered protective of current receptors.

Table 9-1
Exposure Pathways Summary – Site 15
NAS Pensacola
Pensacoh, Florida

Potentially Exposed Population	Medium and Exposure Pathway	Pathway Selected for Evaluation?	Reason for Selection or Exclusion
		Future Land Uses	
Future Site Construction Worker	Air – Inhalation of gaseous contaminants emanating from soil	Yes	A screening level assessment is presented in Section 9.1.3.3.
	Air – Inhalation of chemicals entrained in fugitive dust	No	The particulate emission factor would result in orders of magnitude less exposure than that which would be estimated for direct exposure pathways, such as incidental soil ingestion.
	Groundwater – Ingestion of contaminants during potable or general use	No	Groundwater use as drinking water was assessed.
	Groundwater – Inhalation of volatilized groundwater contaminants	No	Groundwater use as drinking water was assessed.
	Subsurface Soil – Incidental Ingestion	Yes	A screening level assessment is presented in Section 9.1.3.3.
	Subsurface Soil – Dermal contact	No	The screening level assessment in Section 9.1.3.3 includes only the incidental ingestion pathway. This method is recommended by USEPA Region IV for other land use scenarios, so a consistent method was applied for the construction worker scenario.
Future Site Residents (child and Adult) and Future Site Worker	Air – Inhalation of gaseous contaminants emanating from soil	No	No significant VOC concentrations were reported in surface soil. and portions of the site area are paved/covered by buildings.
	Air – Inhalation of chemicals entrained in fugitive dust	No	Unpaved areas are vegetated, limiting fugitive dust generation. The particulate emission factor would result in orders of magnitude less exposure than that which would be estimated for direct exposure pathways, such as incidental soil ingestion.

Table 9-1
Exposure Pathways Summary — Site 15
NAS Pensacola
Pensacola, Florida

Potentially Exposed Population	Medium and Exposure Pathway	Pathway Selected for Evaluation?	Reason for Selection or Exclusion
Future Site Residents (child and Adult) and Future Site Worker	Groundwater — Ingestion of contaminants during potable or general use	Yes	COPCs were identified based on the screening process described in Section 9.1.2.5.
	Groundwater — Inhalation of volatilized contaminants during domestic use	Yes	COPCs were identified based on the screening process described in Section 9.1.2.5.
	Soil — Incidental ingestion	Yes	COPCs were identified based on the screening process described in Section 9.1.2.5.
	Soil — Dermal contact	Yes	COPCs were identified based on the screening process described in Section 9.1.2.5.
	Wild game or domestic animals — Ingestion of tissue impacted by media contamination	No	Hunting/taking of game and/or raising livestock is prohibited at NAS Pensacola.
	Fruits and vegetables — Ingestion of plant tissues grown in media	No	The potential for significant exposure via this pathway is low relative to that of other exposure pathways assessed.

Note:
The term "qualified" indicates this exposure pathway was considered and assessed using a similar. more conservation assumption (the future site worker assumption).

For sample sets of 10 and greater, the UCL was calculated for a lognormal distribution e^x as follows:

$$X = \left(\bar{a} + 0.5 s_a^2 + \frac{H_{0.95} \; x \; s_a}{\sqrt{n-1}} \right)$$

where:

e	=	inverse of a natural log (2.718)
$\bar{a}$	=	$\Sigma a/n$ = sample arithmetic mean of the log-transformed data, a = ln(x)
s_a	=	sample standard deviation of the log-transformed data
n	=	number of samples in the data set
$H_{0.95}$	=	value for computing the one-sided 95% upper confidence limit for a lognormal mean from standard statistical tables (Gilbert, 1987)

The calculated values for the 95% UCL are presented in Table 9-12 in Section 9.1.3.3, which summarizes COPCs for surface soil. Included for each COPC are the number of samples analyzed, mean and standard deviation of the natural log-transformed data (including the nondetect values), the H-statistic, the maximum of detected concentrations, the EPC, assumed concentrations, and background concentrations (where available).

USEPA Region IV recommends using the arithmetic mean of chemical concentrations in the most concentrated area of a plume as an EPC for estimating groundwater exposure. This is stated in the Supplemental Guidance to RAGS: Region IV Bulletin 3 Exposure Assessment (USEPA, 1995c). Two areas were identified containing higher concentrations of arsenic, and each "plume" was assessed separately. The EPC for each "plume" was estimated to be the arithmetic mean of samples within each area, as shown in Tables 9-13 and 9.14, presented in Section 9.1.3.3. The most recent data were used from each sample location. COPCs from sampling locations other than Exposure Areas 1 or 2 are addressed in Section 9.1.3 as well.

For chemicals detected more frequently in surface soil, either the UCL or the maximum detected concentration was used as the EPC. To determine which concentration to use as EPC, the UCL

Was first compared to the maximum reported concentration. The lesser value was used as the EPC, as shown in Table 9-12 in Section 9.1.3.3.

In addition to the standard tabular presentation of risk estimates in Section 9.1.3, point estimate maps summarizing risk and hazard were plotted for soil and groundwater to provide a visual supplement (Section 9.1.4). As an extension of conventional data presentation, excess cancer risk and hazard were each estimated for each sample location. Tables were generated by summing the contributions of each COC detected in the corresponding sample. Each mapped sample location was then color-coded to signify a cumulative range of risk or hazard. Relevant maps are referenced in the site-specific HHRA and are included in Tables 9-37 through 9-52 of Section 9.1.4; and are shown in Figures 9-1 through 9-17, also presented in Section 9.1.4. This information supplements the HHRA to clarify the spatial distribution of chemicals and their relative risk estimates for specific land use scenarios and to facilitate remedial alternative screening as part of the FS.

Figures presented in this report are approximations which include many uncertainties. Site-specific uncertainties arc discussed in Section 9.1.3.6, and should be considered when making risk management decisions. Point estimates of risk and hazard were developed assuming a residential exposure pathway, using the lifetime weighted average (LWA) to estimate ILCR and the child resident to estimate HIs shown on the figures and tables.

Quantification of Exposure

This section describes the models, equations, and intake model variables used to quantify doses or intakes of the COPCs for the surface soil and groundwater exposure pathways. The models are designed to estimate route- and medium-specific factors, which are multiplied by the EPC to estimate chronic daily doses. The intake model variables generally reflect 50th or 95th percentile values which, when applied to the EPC, ensure that the estimated intakes represent the reasonable

maximum exposure (RME, which is considered 95th percentile). Formulas are derived from RAGS, Part A unless otherwise indicated. Table 9-2a lists RME intake model variables used to compute chronic daily intake (CDI) for potential receptors exposed to surface soil and/or groundwater contaminants. CT model variables are presented in Table 9-2b.

In accordance with RAGS, the adult and child intake variables will be combined to estimate exposure to carcinogens. This factor is referred to as the LWA. The LWA considers the difference in daily ingestion rates for soil and drinking water, body weights, and exposure durations for children (ages 1 to 6) and adults (ages 7 to 31). The exposure frequency is assumed to be identical for the adult and child exposure groups, and an example is shown after the equations are presented below.

Before quantifying soil exposure, it is first necessary to derive the appropriate fraction ingested or contacted (FI/FC) from contaminated area factors for each applicable COPC. These factors are derived by evaluating the spatial distribution of COPCs. The FI/FC was not computed because UCLs were used to provide upper-bound EPCs.

A CPSS not eliminated from the HHRAs based on the screening comparisons still could be eliminated as a COPC if the UCL concentration does not exceed the corresponding background concentration or RBC. This is discussed where appropriate in Section 9.1.3. In addition, groundwater COPCs were eliminated if they were detected in Phase I samples but not in subsequent sampling rounds.

Table 9-2a
RME Parameters Used to Estimate CDI

Pathway Parameters	Resident Adult	Resident Child	Adult Worker	Tre[redacted] child (age 7-16)	Units
Surface Soil Ingestion and Dermal Contact					
Ingestion Rate (soil)	100[a]	200[a]	50[a]	100[a]	mg/day
Ingestion Rate (water)	2	1	1	NA	L/day
Exposure Frequency	350[b]	350[b]	250[b]	52[f]	days/year
Exposure Duration	24[c]	6[c]	25[c]	10[g]	years
Dermal Contact Area	4,100[a]	2,900[a]	4,100[a]	4,100[a]	cm^2
Skin Adherence Factor	1	1	1	1	mg/cm^2
Absorption Factor	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	unitless
Oral Absorption Efficiency	0.8 (VOCs) 0.5 (other organic chemicals) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organic chemicals) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organic chemicals) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organic chemicals) 0.2 (inorganics)	unitless
Conversion Factor	1E-6	1E-6	1E-6	1E-6	kg/mg
Body Weight	70[a]	15[a]	70[a]	45[a]	kg
Averaging Time, Noncancer	8,760[d]	2,190[d]	9,125[d]	3,650[d]	days
Averaging Time, Cancer	25,550[e]	25,550[e]	25,550[e]	25,550[e]	days

Notes:

a = USEPA (198%) *Risk Assessment Guidance for Superfund Vol. I, Human Health Evaluation Manual (Pan A).*
b = USEPA (1991a) *Risk Assessment Guidance for Superfund Vol. I: Human Health Evaluation Manual Supplemental Guidance, Standard Default Exposure Factors, Interim Final*, OSWER Directive: 9285.6-03.EPA/600/8-89/043.
c = USEPA (1991b), *Risk Assessment Guidance for Superfund: Vd. I — Human Health Evaluation Manual (PanB, Development of Risk-Based Preliminary Remediation Goals)*, OSWER Directive 9285.7-01B.
d = Calculated as the product of exposure duration (years) x 365 days/year.
e = Calculated as the product of 70 years (assumed lifetime) x 365 days per yur.
f = Assuming one day per week exposure.
g = Assuming trespassing occurs during the 10-year adolescent/teenage period.
NA = Not applicable.
L/day = liters per day
cm^2 = square centimeter
mg/cm^2 = milligrams per square centimeter
mg/day = milligrams per dry
kg/mg = kilograms per milligram

Table 9-2b
Central Tendency Parameters Used to Estimate CDI

Pathway Parameters	Resident Adult	Resident Child	Adult Worker	Units
ingestion Rate (soil)	50[a]	100[a]	50[a]	mg/day
ingestion Rate (water)	1.4 x 0.75	1 xo.75	1 x 0.75	L/day
Exposure Frequency	234[b]	234[b]	219[b]	days/year
Exposure Duration	7[c]	2[c]	5[c]	years
Dermal Contact Area	4,100[a]	2,900[a]	4,100[a]	cm^2
Skin Adherence Factor	I	1	1	mg/cm^2
Absorption Factor	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	0.01 (organics) 0.001 (inorganics)	unitless
Oral Absorption Efficiency	0.8 (VOCs) 0.5 (other organic compounds) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organic compounds) 0.2 (inorganics)	0.8 (VOCs) 0.5 (other organic compounds) 0.2 (inorganics)	unitless
Conversion Factor	1E-6	1E-6	1E d	kg/mg
Body Weight	70[a]	15[1]	70[a]	kg
Averaging Tune. Noncancer	2,555[d]	703[d]	1,825[d]	days
Averaging Time, Cancer	25,550[e]	25,550[e]	25,550[e]	days

Notes:
a = USEPA (198%) *Risk Assessment Guidance for Superfund Vol. I, Human Health Evaluation Manual (Pan A).*
b = USEPA (1991b) *Risk Assessment Guidance for Superfund Vol. I: Human Health Evaluation Manual Supplemental Guidance, Standard Default Exposure Factors. Interim Final.* OSWER Directive: 9285.6-03.EPA/600/8-89/043.
c = USEPA (1991a), *Risk Assessment Guidance for Superfund: Vol. I – Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals)*, OSWER Directive 9285.7-01B.
d = Calculated as the product of ED (years) x 365 days/year.
e = Calculated as the product of 70 years (assumed lifetime) x 365 days per year.
f = Assuming one day per week exposure.
NA = Not applicable.

Surface Soil Pathway Exposure – Ingestion of COPCs in Surface Soil

The following equation is used to estimate the ingestion of noncarcinogenic COPCs in soil:

$$CDI, = (EPC_s)(IR)(EF)(ED)(F)(FI)/(BW)(AT)$$

where:

CDI_s = ingested dose (mg/kg-day)

EPC_s = exposure point concentration of contaminant in soil (mg/kg)

IR = ingestion rate (milligrams per day [mg/day])

EF = exposure frequency (days/year)

ED = exposure duration (years)

F = conversion factor (1E-6 kg/mg)

FI = fraction ingested from contaminated source (unitless)

BW = body weight (kg)

AT = averaging time (days)

The LWA is used to calculate carcinogenic CDI for site residents. An example of the LWA calculation is shown below for the soil ingestion pathway, and LWAs are similarly calculated for subsequent equations.

$$LWA = [(IR_a \times ED_a)/BW_a] + [(IR_c \times ED_c)/BW_c]$$

where:

LWA = lifetime weighted average

IR = ingestion rate (milligrams per day [mg/day])

ED = exposure duration (years)

BW = body weight (kg)

a = adult

c = child

Consequently, CDI for carcinogens would be calculated as follows for site residents:

$$CDI_s = (EPC_s)(EF)(LWA)(F)(FI)/(AT)$$

where:

CDI_s = ingested dose (mg/kg-day)

EPC, = exposure point concentration of contaminant in soil (mg/kg)

EF = exposure frequency (days/year)

F = conversion factor **(1E-6** kg/mg)

FI = fraction ingested from contaminated source (unitless)

AT = averaging time (days)

LWA = lifetime weighted average

Dermal Contact with **COPCs** in Surface **Soil**

The following equation is used to estimate **intake** due **to** dermal contact **with** COPCs in soil:

$$CDI_{sd} = (EPC_s)(CF)(EF)(ED)(F)(FC)(ABS)(AF)/(BW)(AT)$$

where:

CDI,, = dermal dose (mg/kg-day)

EPC, = exposure point concentration of contaminant in soil (mg/kg)

CF = contact factor (square centimeters)

EF = exposure frequency (days/year)

ED = exposure duration (years)

F = conversion factor (1**E-6** kg/mg)

FC = fraction contacted from contaminated source (unitless)

ABS = absorption factor (unitless value, specific to organic versus inorganic chemicals)

AF = adherence factor (milligrams per square centimeter [mg/cm^2])

BW = body weight (kg)

AT = averaging time (days)

Groundwater Pathway Exposure — Ingestion and Inhalation of COPCs in Groundwater

The following equation is used to estimate the ingestion and/or inhalation of COPCs in groundwater:

$$CDI_w = (EPC_w)(IR)(EF)(ED)(FI)/(BW)(AT)$$

where:

CDI_w = ingested/inhaled dose (mgkgday)

EPC_w = exposure point concentration of contaminant in water (mg/L)

I R = ingestion rate (liters per day)

EF = exposure frequency (days/year)

ED = exposure duration (years)

FI = fraction ingested from contaminated source (unitless)

BW = body weight (kg)

AT = averaging time (days)

HHRAs are composed of many tables, and intake tables serve only as an intermediate check when reviewing the document. The CDI equations above *can* be solved assuming a concentration of 1, and the result can be used as a universal multiplier. Multipliers developed for each land use scenario are shown in Table 9-3a. Therefore, a significant number of tables in this HHRA were eliminated. An example of the abbreviated CDI method is shown below:

$$CDI = (EPC)(M)$$

where:

CDI = chronic daily intake (mg/kg-day)

EPC = exposure point concentration (mg/kg or mg/L)

M = multiplier specific to the exposure scenario, land use, and potential receptor selected

Because multipliers can be reviewed separately, CDIs are incorporated into the risk and hazard equations and are not presented separately.

Table 9-3a
Multipliers[a] Used to Estimate Chronic Daily Intake

		Soil		Groundwater
		Ingestion	*Dermal Contact*	*Zngestion*
Exposure Scenario	**Exposure Type**	**All Chemicals**	**Organics[b]**	**All Chemicals[c]**
Resident	Noncarcinogens (adult)	1.37E-6	5.62E-7	2.74E-2
	Noncarcinogens (child)	1.28E-5	1.85E-6	6.3952
	Carcinogens (LWA)	I.57E-6	3.51E-7	1.49E-2
Sire Worker	Noncarcinogens	4.89E-7	4.01E-7	9.78E-3
	Carcinogens	1.75E-7	1.43E-7	3.49E-3

Notes:
NA = Not applicable
[a] = The product of the multiplier and the EPC equals the CDI for a given chemical assuming an RME scenario.
[b] = The multiplier for inorganics is multiplied by a factor of 0.1 to account for the dermal absorption factor of 0.001 for inorganics; the multiplier for organic chemicals includes the 0.01 factor.
[c] – The ingestion intake is also used to address inhalation risk in accordance with USEPA's Supplemental Guidance to RAGS Bulletin 3, *Exposure Assessment*; ingestion risk is approximately equal to risk posed by dermal and inhalation exposure while showering, and this is applied to VOCs only.

9.1.2.8 Toxicity Assessment

Carcinogenicity and Noncancer Effects

USEPA has established a classification system for rating the potential carcinogenicity of environmental contaminants based on the weight of scientific evidence. Cancer weight-of-evidence class "A" (human carcinogens) means that human toxicological data have shown a proven correlation between exposure and the onset of cancer (in varying forms). The "B1" classification indicates some human exposure studies have implicated the chemical as a probable carcinogen.

Weight-of-evidence class "B2" indicates a possible human carcinogen, a description based on carcinogenicity in laboratory animals but lacking confirmatory human data. Weight-of-evidence class "C" identifies possible human carcinogens, and class "D" indicates a chemical not classifiable for its carcinogenic potential. The USEPA has established slope factors (SFs) for carcinogenic chemicals. The SF is defined as a "plausible upper-bound estimate of the probability of a response (cancer) per unit intake of a chemical over a lifetime" (USEPA, 1989a).

In addition to potential carcinogenic effects, most chemicals also can produce other toxic responses at doses greater than experimentally derived threshold concentrations. The USEPA has derived reference dose (RfD) values for these chemicals. A chronic RfD is defined as, "an estimate (with uncertainty spanning perhaps an order of magnitude or greater) of a daily exposure concentration for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a lifetime." These toxicological values are used when estimating risk to assess the upper-bound level of cancer risk and noncancer hazard associated with exposure to a given contaminant concentration.

For carcinogens, the potential excess risk posed by a chemical is computed by multiplying the CDI (mg/kg-day) by the SF (kg-day/mg). The HQ (for noncarcinogens) is computed by dividing the CDI by the RfD (mg/kg-day). The USEPA has set standard limits (or points of departure) for carcinogens and noncarcinogens to evaluate whether significant risk is posed by a chemical (or combination of chemicals). For carcinogens, the point of departure is 1E-06, with a generally accepted range of 1E-06 to 1E-04. These risk values correlate with a one-in-10,000 and a one-in-1 million excess cancer incidence resulting from exposure to xenobiotics.

For noncarcinogens, other toxic effects are generally considered possible if the HQ (or sum of HQs for a pathway, HI) exceeds 1.0. Although both cancer risk and noncancer hazard are generally additive (within each group) only if the target organ is common to multiple chemicals,

a most conservative estimate of each may be obtained by summing the individual risks or hazards, regardless of target organ. The following HHRAs have taken the universal summation approach for each class of toxicant. Risk formulae applied to site data are detailed in the Risk Characterization section of this document.

Critical studies used in establishing SFs and RfDs by USEPA are shown in the Integrated Risk Information System (IRIS) database (primary source) and/or Health Effects Assessment Summary Tables (HEAST), Fiscal Year 1995 (secondary source). If toxicological information is unavailable in IRIS or HEAST, values were obtained from reports issued by the Environmental Criteria and Assessment Office (ECAO)/National Center for Environmental Assessment (NCEA). Where applicable, these values were also included in the database for this HHRA.

Toxicity Profiles for COPCs

In accordance with RAGS, this HHRA includes brief toxicological profiles for all COPCs identified at either site. Most information for the profiles was gleaned from IRIS and HEAST, as mentioned in the preceding text and listed in Table 9-3b. Any additional references are noted specifically in the profiles. The profiles summarize adverse effects of COPCs and the amounts associated with such effects.

Aldrin is a man-made insecticide which was used widely by farmers from the 1950s to the early 1970s. Aldrin was also used for soil treatment as well as by exterminators to kill termites through the treatment of soil under houses. The main effects of short-term elevated concentrations of aldrin are headaches, dizziness, irritability, loss of appetite, nausea, muscle twitching, convulsions, and loss of consciousness and death. Most symptoms disappear with time after removal from exposure. The effects of long-term exposure to aldrin in humans have not been clearly demonstrated. Aldrin fed to mice have caused liver cancer.

Table 9-3b
Toxicological Reference Information
for Chemicals of Potential Concern
Site 15
NAS Pensacola

	Non-Carcinogenic Toxicity Data										*Carcinogenic Toxicity Data*					
Chemical	Oral Reference Dose (mg/kg-day)		Confidence Level	Critical Effect	Uncertainty Factor Oral	Inhalation Reference Dose (mg/kg-day)		Confidence Level	Critical Effect	Uncertainty Factor Inhalation	Oral Slope Factor (kg-day/mg)		Inhalation Slope Factor (kg-day/mg)		Weight of Evidence	Tumor Type
Aldrin	3E-05	a	M	liver toxicity	1,000	NA		NA	NA	NA	17	a	17.1	a	12	liver carcinoma
Aluminum	I	b	NA	NA	NA	NA		NA	NA	NA	NA		NA		NA	NA
Arsenic	0.0003	a	M	hyperpigmentation	3	NA		NA	NA	NA	1.5	a	IS.I	a	A	various
BEQ	NA		NA	NA	NA	NA		NA	NA	NA	7.3	a	6.1	c	B2	mutagen
Chlordane	6E-05	a	L	liver hypertrophy	NA	NA		NA	NA	NA	1.3	a	NA		82	liver carcinoma
Chromium III	I	a	L	NA	100/10	NA		NA	NA	NA	NA		42	a	D	NA
Dieldrin	5E-05	a	M	liver lesions	Ta,	NA		NA	NA	NA	16	a	NA		B2	hepatocarcinoma
Heptachlor epoxide	0.000013	a	L	liver weight increase	1000	NA		NA	NA	NA	9.1	a	NA		12	liver carcinoma
Manganese (food)	0.017	a	NA	neurological effects	I	NA		NA	NA	NA	NA		NA		D	NA
Manganese (water)	0.023	a	NA	neurological effects	I	1.43E-05	a	M	neurological effects	1000	NA		NA		D	NA

Notes:

a = Integrated Risk Information System (IRIS)
b = EPA NCM - Cincinnati (provisional)
c = Withdrawn from IRIS/HEAST
NA = Not applicable a not available
L = Low confidence
M = Medium confidence
mg/kg-day = milligrams per kilogram per day
kg-day/mg = kilograms per day per milligram

There is inconclusive evidence in humans, but more evidence in animals, that aldrin exposure of a pregnant mother may harm the fetus. Aldrin is absorbed into the blood from the gastrointestinal tract, through the skin, or by inhalation. The percentage of an oral dose absorbed has not been accurately determined because of the enterohepatic circulation system. In humans, 20% to 50% of inhaled aldrin is retained, and about 8% of a dermal dose of aldrin is absorbed (five days). Aldrin is rapidly converted to epoxide dieldrin, which results in aldrin rarely being found in the blood or tissues. Excretion is primarily in the feces via the bile. In humans and animals, urinary excretion is minor. An oral RfD for aldrin has been determined as 3.00E-05 mg/kg-day based on a low observed adverse effects limit (LOAEL) of 0.5 ppm and an uncertainty factor of 1,000 in a hepatic effects study performed on rats. The modifying factor is 1. Cancer Sfs have also been determined for aldrin. The oral SF is 1.70E+01 kg-day/mg, and the inhalation SF is 1.71E+01 kg-day/mg (IRIS, 1996).

Aluminum is one of the most abundant metals in the earth's crust (7% aluminum), and it is ubiquitous in air and water, as well as soil. This metal is water-soluble, silvery, and ductile, which suggests its usefulness in many processes. Ingesting aluminum can affect the absorption of other elements within the gastrointestinal tract and can alter intestinal function. Aluminum can potentially interfere with the absorption of essential nutrients and cholesterol. Another effect on the gastrointestinal system is the inhibition of acetylcholine-induced contractions, which are part of the neuro-muscular system controlling bowel muscles. (The effect could explain why aluminum-containing antacids often produce constipation and indicates aluminum could affect the uptake of other chemicals.) Aluminum dust is moderately flammable and explosive in heat. Inhaling this dust can cause fibrosis (aluminosis) (Klaassen et al., 1986; Dreisbach et al., 1987). No data are available on an applicable SF or the USEPA cancer group. The USEPA Region IV Office of Health Assessment suggested using the provisional oral RfD of 1.0 mg/kg-day. The aesthetic-based SMCL for drinking water is 50 to 200 μg/L.

Arsenic exposure via the ingestion route darkens and hardens the skin in chronically exposed humans. Inhalation exposure to arsenic causes neurological deficits, anemia, and cardiovascular effects (Klaassen et al., 1986). USEPA set 0.3 micrograms per kilogram per day (μg/kg-day) as the oral RfD for arsenic based on a no observed adverse effects level (NOAEL) of 0.8 μg/kg-day in a human exposure study. Arsenic's effects on the nervous and cardiovascular systems are primarily associated with acute exposure to higher concentrations. Exposure to arsenic-containing materials has been shown to cause cancer in humans. Inhaling these materials can lead to increased lung cancer risk, and ingestion is associated with increased skin cancer rates. Arsenic has been classified as a group A carcinogen by USEPA, which set the 1.5 kg-day/mg oral SF for arsenic. As listed in IRIS (9/1/95), the classification is based on sufficient evidence from human data. An increased lung cancer mortality was observed in multiple human populations exposed primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic. Human milk contains about 3 μg/L arsenic (Klaassen et al., 1986). The RBC for arsenic in tap water is 0.038 μg/L. As listed in IRIS, the critical effect of this chemical is hyperpigmentation, keratosis, and possible vascular complications. The uncertainty factor was 3 and the modifying factor was 1 (IRIS, 1995).

Chlordane is a polycyclic chlorinated pesticide. Acute exposure to high doses of chlordane causes tremors and convulsions. Chronic exposure can cause emotional and neuromuscular disturbances. Exposed individuals revert to normal approximately one week after the source is removed (Dreisbach et al., 1987). USEPA has established an oral RfD of 6E-5 mg/kg-day and an oral SF of 1.3 kg-day/mg.

Chromium exists in two stable, natural forms: trivalent (CrIII) and hexavalent (CrVI). Acute exposure to chromium can result in kidney damage following oral exposure or damage to the nasal mucosa and septum following inhalation exposure. Chronic inhalation exposure to hexavalent

chromium has resulted in kidney and respiratory tract damage, as well as excess lung cancer in both animals and humans following occupational exposure. Only hexavalent chromium is believed to be carcinogenic by inhalation (IRIS, *1995).* Oral RfD values for both forms of chromium are 1.0 mg/kg-day and 5E-3 mg/kg-day. For trivalent chromium, the RfD is based on liver toxicity in the rat. For the hexavalent form, the RfD is based on unspecified pathological changes observed in rat studies. In addition, hexavalent chromium is considered a group A carcinogen for inhalation exposures with an inhalation SF of 42 kg-day/mg. Vitamin supplements contain approximately 0.025 mg of chromium. As listed in IRIS (6/28/95), no critical effects were observed for chromium (III). The uncertainty factor was 100 and the modifying factor was 10. As listed in IRIS, no critical effects were observed for chromium (VI). The uncertainty factor was 500 and the modifying factor was 1.

Dieldrin is a polycyclic chlorinated pesticide. Short-term exposure to high doses of dieldrin causes tremors and convulsions. Chronic exposure can cause emotional and neuromuscular disturbances. Exposed individuals revert to normal approximately one week after the dieldrin source is removed. Dieldrin is classified as a B2 carcinogen by USEPA; the oral SF, inhalation SF, and oral RfD were set to 16 kg-day/mg, 16.1 kg-day/mg, and 0.00005 mg/kg-day, respectively (Dreisbach et al., 1987).

Heptachlor epoxide is the more toxic form of the insecticide heptachlor which was used to control flies, mosquitoes, and field insects. Benign and malignant liver tumors were induced in three strains of mice of both sexes. Heptachlor epoxide has been linked to liver carcinoma (Dreisbach et al., 1987). USEPA determined this chemical to be a class B2 carcinogen, and determined the oral SF and the inhalation SF to be 9.1 kg-day/mg. The primary target organs for this pesticide are the liver and kidneys, and USEPA determined the oral RfD to be 1.3E-05 mg/kg-day (IRIS, 1996).

Manganese is an essential nutrient, but chronic exposure (0.8 mg/kg-day) causes mental disturbances. Studies have shown that manganese uptake from water is greater than manganese uptake from food, and the elderly appear to be more sensitive than children (Klaassen et al., 1986; Dreisbach et al., 1987). USEPA determined the oral RfD to be 0.14 mg/kg-day based on dietary uptake. USEPA recommended using a modifying factor of 3 when estimating intake from soil and water. In addition, the body is roughly twice as efficient absorbing manganese in water compared to manganese in food. Inhalation of manganese dust causes neurological effects and increased incidence of pneumonia. The inhalation RfD was set to 0.0000143 mg/kg-day. According to USEPA, manganese cannot be classified as to its carcinogenicity, therefore, its cancer class is group D. As listed in IRIS (7/3/96), the classification is based on studies that are inadequate to assess the carcinogenicity of manganese. Manganese is an essential for human health. The typical vitamin supplement dose of manganese is 2.5 mg/day. As listed in IRIS, the critical effects of this chemical in water in the oral summary are central nervous system (CNS) effects. The uncertainty factor was 1 and the recommended modifying factor of 3 was used to estimate soil and groundwater intake. The critical effects of this chemical in food are CNS effects. As listed in IRIS, the critical effect of this chemical in the inhalation summary is impairment of neuro-behavioral function. For inhalation uptake, the uncertainty factor was 1,000 and the modifying factor was 1. The IRIS RfC is 0.00005 milligrams per cubic meter (mg/m^3).

Polyaromatic Hydrocarbons or BEQs include the following list of COPCs:

Benzo(a)anthracene	TEF	0.1
Benzo(b)fluoranthene	TEF	0.1
Dibenz(a,h)anthracene	TEF	1.0
Benzo(k)fluoranthene	TEF	0.01
Benzo(a)pyrene	TEF	1.0
Indeno(1,2,3-cd)pyrene	TEF	0.1
Chrysene	TEF	0.001

Some PAHs are toxic to the liver, kidney, and blood. However, the toxic effects of the PAHs above have not been well established. There are no RfDs for the PAHs above due to a lack of data. All PAHs listed above are classified by USEPA as B2 carcinogens, and their carcinogenicity is addressed relative to that of benzo(a)pyrene (BAP), having an oral SF 7.3 kg-day/mg. TEFs, also set by USEPA, are multipliers applied to the detected concentrations which are subsequently used to calculate excess cancer risk. These multipliers are discussed further in the exposure and toxicity assessment sections. Most carcinogenic PAHs have been classified as such due to animal studies using large doses of purified PAHs. There is some doubt as to the validity of these listings, and the SFs listed in USEPA's RBC table are provisional. However, these PAHs are carcinogens when the exposure involves a mixture of other carcinogenic substances (e.g., coal tar, soot, cigarette smoke, etc.). As listed in IRIS (6/28/95), the B2 classification is based on insufficient human data specifically linking BAP to a carcinogenic effect. Multiple animal studies in many species have demonstrated BAP to be carcinogenic by numerous routes.

BAP has produced positive results in numerous genotoxicity assays. This section provides information on three aspects of the carcinogenic risk assessment for the agent in question: The USEPA classification and quantitative estimates of exposure are two aspects. The classification reflects a weight-of-evidence judgment of the likelihood that the agent is a human carcinogen. The quantitative risk estimates are presented in application of a low-dose extrapolation procedure and presented as the risk per mg/kg-day. The unit risk is the quantitative estimate in terms of either risk per μg/L drinking water or risk per micrograms per cubic meter ($\mu g/m^3$) air breathed. The third form in which risk is presented is drinking water or air concentration providing cancer risks of one in 10,000 or one in 1 million.

As listed in IRIS, dibenz(a,h)anthracene and benzo(b)fluoranthene are classified B2 based on sufficient data from animal bioassays but no human data. Benzo(b)fluoranthene produced tumors in mice after lung implantation, intraperitoneal or subcutaneous injection, and skin painting. As

listed in IRIS, the benzo(a)anthracene is classified B2 based on sufficient data from animal bioassays but no human data. Benzo(a)anthracene produced tumors in mice exposed by gavage; intraperitoneal, subcutaneous, or intramuscular injection; and topical application. Benzo(a)anthracene produced mutations in bacteria and in mammalian cells, and transformed mammalian cells in culture. As listed in IRIS, benzo(k)fluoranthene is classified B2 based on sufficient data from animal bioassays but no human data. Benzo(k)fluoranthene produced tumors after lung implantation in mice and when administered with a promoting agent in skin-painting studies. Equivocal results have been found in a lung adenoma assay in mice. Benzo(k)fluoranthene is mutagenic in bacteria (Klaassen et al., 1986).

Other PAHs — those not classified by USEPA as carcinogens — are toxic to the liver, kidney and blood. This group of PAHs includes chemicals such as *pyrene, acenaphthene, acenaphthylene, benzo(g,h,i)perylene*, and *phenanthrene*. USEPA determined RfDs for only two of these chemicals: pyrene's oral IUD of 0.03 mg/kg-day is also used as a surrogate oral RfD for phenanthrene. The oral RfD for acenaphthene was *0.06* mg/kg-day. Carbazole is another PAH which is a carcinogen. USEPA determined the carbazole oral SF to be *0.02* kg-day/mg, which is listed in HEAST.

9.1.2.9 Risk Characterization

Risk characterization combines the results of the exposure and toxicity assessments to yield qualitative and quantitative expressions of risk and/or hazard for hypothetically exposed receptors. The quantitative component expresses the probability of developing cancer, or a nonprobabalistic comparison of the estimated dose with a reference dose for noncancer effects. These quantitative estimates are developed for individual chemicals, exposure pathways, and source media, and for each receptor for all media to which a receptor may be exposed. The qualitative component usually involves comparing COC concentrations in media with established criteria or standards

for chemicals for which there are no corresponding toxicity values. The risk characterization is used to guide risk management decisions.

Generally, the risk characterization follows the methodology prescribed by **RAGS Part A,** as modified by more recent information and supplemental guidance cited earlier. The **USEPA** methods are, appropriately, designed to be health-protective, and tend to overestimate, rather than underestimate, risk. The risk results, therefore, are generally overly conservative, because risk characterization involves multiplying the conservative assumptions built into the exposure and toxicity assessments.

Section 9.1.3.5 characterizes the health risks associated with the intake of chemicals originating from the respective sites. The USEPA methods used to estimate the types and magnitudes of health effects associated with exposure to chemicals have been supplemented by graphical representations of risk and hazard. The objective of presenting this supplemental information is to more clearly depict the spatial distribution.

Risk Characterization Methodology

Risk to humans following exposure to COPCs is estimated in accordance with **USEPA** Supplemental Guidance to RAGS Bulletin ***4 Risk Characterization*** **(USEPA,** 1995e). These health-protective methods are likely to overestimate risk. Risks from hazardous chemicals are calculated for either carcinogenic or noncarcinogenic effects. Some carcinogenic chemicals may also pose a noncarcinogenic hazard. The potential human health effects associated with chemicals that produce systemic toxic and carcinogenic influences are characterized for both types of health effects. As mentioned in Section 9.1.2.7, inhalation exposure-related risk and hazard were computed using appropriate route-specific (inhalation) SFs and RfDs (where available).

Unlike the methods for estimating inhaled or ingested dose of COPCs, which quantify the dose presented to the barrier membranes (the pulmonary or gastrointestinal mucosa, respectively), dermal dose is estimated as that which crosses the skin and is systemically absorbed. For this reason, oral toxicity values must be adjusted to reflect the dermally absorbed dose.

Appendix A of RAGS Volume I Part A states that, in the absence of chemical-specific data, an assumption of 5% oral absorption efficiency would be relatively conservative. In accordance with Supplemental Guidance to RAGS: Region IV Bulletin 3 Exposure Assessment (USEPA, 1995c), oral to dermal adjustment factors (ABFs) of 80% for VOCs, 50% for SVOCs, and 20% for inorganics were used in the HHRA and are reflected in the applicable risk/hazard tables and estimates.

Dermal RfD values and SFs are derived from the corresponding oral values. In deriving a dermal RfD, the oral RfD is multiplied by the ABF, expressed as a decimal fraction. The resulting dermal RfD is based on the absorbed dose, the appropriate value with which to compare a dermal dose, because dermal doses are expressed as absorbed rather than administered (intake) doses. For the same reasons, a dermal SF is derived by dividing the oral SF by the ABF. The oral SF is divided rather than multiplied because SFs are expressed as reciprocal doses.

Carcinogenic Effects of Chemicals

The risk attributed to exposure to carcinogens is estimated as the probability of an individual developing cancer over a lifetime as a result of exposure to a potential carcinogen. In the low-dose range, which would be expected for most environmental exposures, cancer risk is estimated from the following linear equation (RAGS, Part A):

$$ILCR = (CDI)(SF)$$

where:

ILCR = incremental lifetime excess cancer risk, a unitless expression of the probability of developing cancer, adjusted for reference incidence

CDI = chronic daily intake, averaged over 70 years (mg/kg-day)

SF = cancer slope factor (kg-day/mg)

For a given pathway with simultaneous exposure of a receptor to several carcinogens, the following equation is used to sum cancer risks:

$$\text{Risk}_t = \text{ILCR}(\text{chem}_1) + \text{ILCR}(\text{chem}_2) + \ldots \text{ILCR}(\text{chem}_i)$$

where:

Risk_t = total pathway risk of cancer incidence

$\text{ILCR}(\text{chem}_i)$ = incremental lifetime excess cancer risk for a specific chemical

Cancer risk for a given receptor across pathways and across media is summed in the same manner.

Noncarcinogenic Effects of Chemicals

The risks associated with the noncarcinogenic effects of chemicals are evaluated by comparing an exposure level or intake with a reference dose. The HQ, defined as the ratio of intake to RfD, is defined as (RAGS, Part A):

$$HQ = CDI/RfD$$

where:

HQ	=	hazard quotient (unitless)
CDI	=	intake of chemical (mg/kg-day)
RfD	=	reference dose (mg/kg-day)

Chemical noncarcinogenic effects are evaluated on a chronic basis, using chronic RFD values. An HQ of unity or 1 indicates that the estimated *intake equals* the RfD. If the HQ is greater than unity, there may be a concern for potential adverse health effects.

For simultaneous exposure of a receptor to several chemicals, an HI will be calculated as the sum of the HQs by:

$$HI = HQ_1 + HQ_2 + \ldots HQ_i$$

where:

HI	=	Hazard Index (unitless)
HQ	=	Hazard Quotient (unitless)

Risk and hazard estimates are summarized following the general discussions of risk and hazard quantification methods. The following subsections are included in site-specific HHRAs.

Surface Soil Pathways

This section of each HHRA summarizes estimated surface soil risk/hazard for each receptor group. In addition, the primary contributors to carcinogenic risk and/or noncarcinogenic hazard are discussed.

Groundwater Pathways

This section of each HHRA summarizes estimated groundwater risk/hazard for each receptor group. In addition, the primary contributors to carcinogenic risk and/or noncarcinogenic hazard are discussed.

COCs Identified

Tables in each HHRA summarize risk and hazard estimates and identify COCs for each impacted environmental medium. COCs are identified for each medium based on cumulative (all pathway) risk and hazard projected for each site, and are shown in tabular form (where necessary). USEPA has established a generally acceptable risk range of 1E-04 to 1E-06, and an HI threshold of 1.0 (unity). As recommended by FDEP, a COC was considered to be any chemical contributing to a cumulative land use scenario risk level of 1E-06 or greater and/or a cumulative HI above 1.0, and noncarcinogens having an HQ greater than 0.1 were also identified as COCs. For carcinogens, this approach is relatively conservative, as a cumulative land use scenario risk of 1E-04 (and individual ILCR of 1E-06) is generally recognized by USEPA Region IV as the actionable trigger for establishing COCs. The COC selection method presented was used to more comprehensively evaluate chemicals contributing to carcinogenic risk or noncarcinogenic hazard during the RGO development process.

Under the traditional risk-based COC trigger provisions, no carcinogenic COCs would be identified for Site 15 surface soil because the overall cumulative site risk estimate is less than 1E-04. However, as described in Section 9.1.2.8 of this report, the cumulative risk threshold recommended by FDEP to identify COCs in the following HHRAs is two orders of magnitude more conservative, 1E-06.

9.1.2.10 Risk Uncertainty

This section of the HHRAs presents and discusses the uncertainty and/or variability inherent in the risk assessment process in addition to medium-specific and exposure pathway-specific influences. Risk assessment sections are discussed separately below, and specific examples of uncertainty sources are included where appropriate.

General

Uncertainty is a factor in each step of the exposure and toxicity assessments summarized above. Overall, uncertainties associated with the initial stages of the risk assessment process become magnified when they are combined with other uncertainties. Together, the use of high-end estimates of potential exposure concentrations, frequencies, durations, and rates leads to conservative estimates of CDI. Toxicological values for chemicals derived from USEPA databases and other sources are generally derived from animal studies. Uncertainty and modifying factors are applied to extrapolate the results of these studies to predict potential human responses, providing a margin of safety based upon confidence in the studies. During the risk characterization process, individual chemical risk is added to determine the incremental excess cancer risk for each exposure pathway. If the individual exposure predictions were calculated based on the upper limit estimates of exposure to each chemical, the margin of safety of the cumulative incremental risk is the sum of all the individual safety margins applied throughout the process. Use of these safety margins during all exposure and risk/hazard computations provides an extremely conservative means of predicting potential human health effects. The margins of safety or "conservatisms" inherent in each step of the human health risk assessment are addressed in the Risk Uncertainty discussions. It is not possible to eliminate all uncertainties or potential variability in the risk assessment process; however, recognizing the influences of these factors is fundamental to understanding and subsequently using risk assessment results.

Section 9.1.3.6 presents the uncertainty and/or variability of site-specific and medium/pathway-specific factors introduced as part of the risk assessment process, in addition to other factors influencing the uncertainty of the calculated incremental excess cancer risks and hazard quotients/indices. Risk and hazard estimates reflect the underlying variability of the analytical results that they are based on; they also embody uncertainty about potentially unsampled maxima and minima in the analytes. The exposure pathways selected in Section 9.1.3.3 of the site-specific HHRA are extremely conservative.

Assumptions are made as part of the risk assessment process based on population studies and USEPA guidance. This guidance divides the assumptions into two basic categories: the upper bound (90th to 95th percentile) and the mean or 50th percentile central tendency (CT) exposure assumptions. As discussed in the Exposure Assessment section, the RME exposure is based on the upper-bound assumptions, and CT exposure is based on mean assumptions. Therefore, risk and hazard estimates calculated using RME exposure assumptions are generally overestimates rather than underestimates. The following paragraphs discuss sources of uncertainty and variability pertinent to each exposure pathway evaluated.

Quality of Data

Data collected and validated during the investigation of Site 15 are presented in Section 7. Data validation verifies that the QC requirements of the data set have been met and characterizes the weakness of questionable data.

Most analytical results for environmental samples have inherent uncertainty. This uncertainty is a function of the matrix characteristics and heterogeneity, the precision and accuracy of sampling, and preparation and analysis methods employed. Although data are typically considered exact values, they are in reality the laboratory's best estimate within a range defined by method control

limits. As a result, reported concentrations for any chemical can under or overestimate actual concentrations.

Exposure Pathways and Contaminants of Concern

As discussed in Section 9.1.2.5 comparisons were made using the most conservative set of screening values (residential land use) recommended by the Tier I Partnering Team for each exposure medium. Many CPSSs were eliminated from the formal assessment on this basis. Although potential cumulative effects associated with multiple chemicals dismissed through this process are a valid concern, the fact that maximum detected concentrations were used in the screening comparison in concert with low range risk/hazard goals alleviates much uncertainty. A large number of chemicals (i.e., more than 10) would have to be present at near-RBC concentrations to substantiate a concern for cumulative effects. Although the screening method is highly conservative, inhalation and dermal exposure are not incorporated into the soil screening values calculated by USEPA. If these pathways were the primary concern (as opposed to ingestion), the screening method could eliminate contaminants that should otherwise be considered COPCs.

Comparison to Reference Concentrations (Background)

Because the intent of the HHRA is to estimate the excess cancer risk or health hazard posed by COPCs, individual sample data values of inorganic chemicals were compared to background reference concentrations presented in Section 6 after comparing them to risk-based screening values. Additional uncertainty is introduced by comparing site data to nonspecific screening reference data. Although the background concentrations are specific to NAS Pensacola, they are not site-specific.

Background or non-site-related contamination was not considered in identifying organic COPCs for NAS Pensacola sites. One of the most frequently identified soil pathway-related COPCs were

cPAHs, which were addressed in terms of BEQs, as described in Section 9.1.2.5. The chemicals that make up this group are commonly found in association with tar, asphalt, used oils, and combustion by-products. At NAS Pensacola, all three types of cPAH sources existed at some time. During RI activities, cPAHs were frequently detected where surface soil samples were collected near roadways and parking lots. Tar has been used extensively across NAS Pensacola as a base for roads and parking lots. Because coal and combustion generate cPAHs, the detection of cPAHs in soil near asphalt or containing asphalt runoff is expected.

Elimination of Essential Nutrients

In accordance with RAGS, the following nutrients were eliminated from the Site 15 HHRAs: calcium, sodium, potassium, magnesium, and iron. Toxicity from overexposure to the nutrients listed above is possible only if human receptors are exposed to extremely high doses. USEPA recommends eliminating these chemicals from formal risk assessments. Because no screening comparison was performed, the HIs calculated in the HHRA could be positively influenced by the nutrient concentrations detected onsite. Therefore, the HIs are possibly underestimates. With respect to essential nutrients, however, their contribution would be small relative to other chemical concentrations reported in Site 15 media.

Characterization of **Exposure** Setting **and** Identification of **Exposure** Pathways

The potential for high bias is introduced through the exposure setting and pathway selection due to the highly conservative assumptions (e.g., future residential use) recommended by USEPA Region IV when assessing potential and current exposure. The exposure assumptions made in the site worker scenario are also very conservative and would tend to overestimate exposure. Current site workers are not exposed to site groundwater and contact with soil is expected to be minimal due to coverage by existing features.

Future residential use of Site 15 resulting m exposure to current soil conditions is unlikely. If this area were developed as residential sites, most of the present buildings would be demolished and the surface soil conditions would likely change — the existing soil could be covered with roads, paved driveways, landscaping soil, and/or houses — or parts of the property could be made into playgrounds. These factors indicate that exposure pathways assessed in the HHRA would generally overestimate the risk and hazard posed to current site workers and future site residents.

Groundwater is not currently used at NAS Pensacola as a source of potable or process water. Water is obtained from a wellfield across Bayou Grand at NAS *Cony* Station. As a result, groundwater would not be expected to be used under future site *use* scenarios. Therefore, the scenario established to project risk/hazard associated with groundwater exposure is highly conservative, and associated pathways are not expected to be completed in the future.

Determination of Exposure Point Concentrations

Based on the guidance provided by USEPA, EPCs are concentrations used to estimate CDI. The uncertainty associated with EPCs stems primarily from their statistical determination or the imposition of maximum concentrations, described below.

Statistical Estimation of Exposure Point Concentrations

USEPA's *Supplemental Guidance to RAGS: Calculating the Concentration Term* guidance (1992c), outlines a statistical estimation of EPC. These calculated concentrations are *95%* UCLs for the mean, which are based on certain assumptions. USEPA assumes that most (if not all) environmental data are lognormally distributed. This assumption can lead to over- or underestimation of the concentration term because many environmental data are neither normally nor lognormally distributed.

The **UCL** calculation method includes a statistical value, the H-statistic, which is based on the number of samples analyzed for each **COPC** and the standard deviation of the results. To obtain this number, a table must **be** referenced, and the value must be interpolated (an estimation) from the table. The equation for the H-statistic has not been provided in the supplemental guidance, nor does the document referred to in the guidance provide the equation. Although the statistic appears to be nonlinear, local linearity was assumed to facilitate its interpolation for each **COPC** addressed in the HHRA.

Linear interpolation provides a good estimate of H; however, both the **UCL** formula and **H** are natural log values. The effect of multiplying natural log numbers is not equivalent to multiplying untransformed values. When data are log-transformed, adding two numbers is the equivalent of multiplying them if they were not transformed. The effect of multiplying a number while in log form is exponential; and here, H is applied as a multiplier. In summary, using this method to calculate the UCL has the effect of overestimating, often providing concentrations greater than the maximum detected onsite. The limited number of soil and groundwater samples used to assess site conditions often resulted in considerable variability between data points, and thus relatively high standard deviations about the mean. The high standard deviation elevates UCL projections.

Although **RAGS** advocates using neither worst-case scenarios nor maximum concentrations as EPCs, the use of the H-statistic often necessitates using the reported maximum concentration for the EPC. In accordance with RAGS, the lesser of either the maximum concentration or the UCL is used as the EPC. As reviewed above, summation of risk based on maximum concentrations overestimates exposure, especially in the case of low detection frequency or spatially segregated COPCs. This concept is further discussed below.

Frequency of Detection and Spatial Distribution

Because of the influence of standard deviation on EPC, low frequency of detection can cause COPCs to be addressed inappropriately in the risk assessment. More specifically, COPCs detected only once or twice in all samples analyzed (having concentrations exceeding the RBCs and reference concentrations) would be expected to have relatively higher standard deviations as concentration variability or range widens. Higher standard deviation results in a high H-statistic, typically leading to a UCL greater than the maximum concentration detected onsite. If that is the case, then using the UCL or maximum concentration detected as EPC (or possibly the inclusion of the COPC in question as a COC) may not be appropriate when EPC is assumed to be distributed equally across the site. It is not feasible for a receptor to be simultaneously exposed to maximum concentrations of different contaminants at several locations. The use of the maximum concentrations (or the UCL) is questionable for these contaminants, and the calculated risk and hazard could be skewed upward due to the low frequency of detection.

Maximum reported concentrations in groundwater were used as the EPC at Site 15, as discussed in Section 9.1.2.7. The Site 15 HHRA references the EPC tables, which are presented in Section 9.1.3.3.

Toxicity Assessment Information

There is a generally recognized uncertainty in human toxicological risk values developed from experimental data primarily due to the uncertainty of data extrapolation in the areas of (1) high-to low-dose exposure and (2) animal data to human experience. The site-specific uncertainty is mainly in the degree of accuracy of the exposure assumptions. Most of the assumptions used in this and any risk assessment have not been verified. For example, the degree of chemical absorption from the gut or through the skin or the amount of soil contact is not known with certainty.

The uncertainty of toxicological values from the **IRIS** and **HEAST** databases provided by **USEPA** is summarized (where available) in Section **9.1.2.8.** The uncertainty factors assigned to these values account for acute to chronic dose extrapolation, study inadequacies, and sensitive subpopulations, among other factors. Although uncertainty factors for a specific chemical may be 1,000 or higher, these safety factors are applied by **USEPA** to make the overall assessment of risk/hazard conservative toward human health concerns. In the presence of such uncertainty, the USEPA and the risk assessor are obligated to make conservative assumptions **so** that the chance is very small for the actual health risk to **be** greater **than** what the process determines. Conversely, the process is not intended to yield overly conservative risk values that have no basis in actual conditions. This balance was kept in mind in developing exposure assumptions and pathways and in interpreting data and guidance.

Evaluation of Chemicals for Which No Toxicity Values Are Available

In addition to the typical uncertainties inherent **in** toxicity values, chemicals that do not have corresponding RBCs due to the lack of approved toxicological values were not included in the CDI calculation **data.** This does not indicate that chemicals lacking approved toxicological values pose no risk/hazard. **As** stated previously, essential nutrients were eliminated based on their low potential for toxicity. Therefore, these chemicals were not assessed further.

Quantification of Risk/Hazard

This section of each HHRA discusses potential sources of uncertainty or variability identified in the quantification of risk and hazard that are not covered in preceding sections. Each exposure medium addressed in the formal risk assessment process is discussed.

Mapping Risk/Hazard

Maps were constructed to show cumulative risk and hazard estimates for sample locations, based on the location-specific data for the medium of interest. Location-specific totals were summed and plotted to illustrate ranges of total risk or hazard.

Risk and hazard point mapping is useful for determining whether hot spots (or isolated areas of gross contamination) exist within an otherwise unimpacted area. This information is important because heterogeneous contaminant concentrations can affect the manner in which receptors are exposed to the affected media. As discussed earlier, it is sometimes appropriate to estimate the FI/FC from the contaminated source in computing CDI. Point maps allow for visual analysis of risk and hazard distributions and facilitate estimation of the extent of hot spots relative to the overall site area. These maps also support preliminary scoping of remedial requirements as well as assessment of potential cleanup alternatives in the FS.

Cumulative risk maps could be misleading when different chemicals contribute to elevated risk estimates in a cluster of sample locations. The area would appear to be a hot spot, when chemicals with different toxicology were reported at each location. For this reason, it is important to support the figures with tables showing individual chemical concentrations along with risk and hazard estimates. These tables are sorted by sample location and also show cumulative values for each location.

Graphical representations of risk estimates were developed assuming a residential land use scenario, so risk would be overestimated for site workers.

9.1.2.11 Risk Summary

In the site-specific HHRA, this section summarizes the risk and hazard projected for each receptor group, exposure medium, and exposure pathway.

9.1.2.12 Remedial Goal Options

RGOs are chemical concentrations computed to equate with specific risk and/or hazard goals that may be established for a particular site. As previously discussed, a COC is any COPC that significantly contributes to a pathway of concern. A pathway having an ILCR greater than 1E-06 or an HI greater than 1 is defined as a pathway of concern, and an individual chemical which contributes 0.1 HQ to a cumulative HI exceeding 1.0 is considered to significantly contribute to the pathway ILCR or HI. Based on this method, COCs were identified which required calculating RGOs. These are listed in the Risk Characterization section of the HHRA for each site. Inclusion in the RGO table does not necessarily indicate that remedial action will be required to address a specific chemical. Instead, RGOs are provided to facilitate risk management decisions.

In accordance with USEPA Region IV Supplemental Guidance to RAGS, Development of *Risk-Based Remedial Options* (USEPA, 1995a), RGOs were calculated at 1E-04, 1E-05, and 1E-06 risk levels for carcinogenic COCs and HQ goals of 3, 1, and 0.1 for noncarcinogenic COCs. RGOs for carcinogens were based on the LWA and the adult site worker. Groundwater RGOs for the site resident and site worker are presented in separate tables (where applicable) in each site-specific HHRA. Hazard-based RGOs were calculated based on either the hypothetical child resident or the adult site worker, as noted in the each corresponding table.

9.1.3 Site 15 Human Health Risk Assessment

The following sections present the HHRA for Site 15. The HHRA is presented and organized as described in Section 9.1.2.

9.1.3.1 Site Background and Investigative Approach

The Site 15 investigation assessed the effects of past operations, including pesticide storage and equipment cleaning activities around the golf course maintenance facility at NAS Pensacola. Samples were collected during multiphase events described in Section 4. For risk assessment

purposes, surface soil and groundwater results were the only media analyzed. Analytical methods are described in Table 7-1. A construction worker scenario was used to assess subsurface soil, and is described in Section 9.1.3.3. Phase I samples consisted of 28 surface soil samples and 12 groundwater samples. Phases II and IIB consisted of 25 surface soil samples and 10 and five groundwater samples, respectively. Phases III, IIIB, and IIIC consisted of eight groundwater samples, four groundwater samples, and four groundwater samples, respectively. Surface soil samples in Phase 11 were collected from sampling points other than those in Phase I. Therefore, surface soil samples were combined into one data set for analytical purposes. Groundwater samples, however, were collected over five sampling events in which many sampling points were resampled. Hence, to establish baseline risk for groundwater, the most recent data were assumed to represent the baseline groundwater conditions at Site 15.

9.1.3.2 COPC Identification

Surface Soil

Based on the screening comparisons described in Section 9.1.2.5 of this RI and presented in Table 94, this HHRA focuses on the following COPCs: aldrin, alpha-chlordane, arsenic, BEQ, dieldrin, gamma-chlordane, heptachlor epoxide, and manganese.

Groundwater

As shown in Tables 9-5 through 9-10, the COPCs identified in groundwater for this site are: aluminum, Aroclor-1260, arsenic, chloroform, chromium, dieldrin, heptachlor epoxide, and manganese. Although these chemicals were initially identified as COPCs, all were eliminated except arsenic and dieldrin through the tiered sampling approach described in Section 6.3. Aluminum was eliminated because only one reported concentration exceeded the RC by 17 ppb in Phase IIIC. Aroclor-1260 and chloroform were eliminated due to low frequency of detection, as they were reported in only one groundwater sample in the earliest sampling phase. Chromium and heptachlor epoxide were eliminated due to low frequency of detection, and because they were

Tahle 9-4
Chemicals Present in Surface Soil Samples – All Sampling Phases
N M Pensacola Site 15
Pensacola, FL

Chemical	Units	Frequency of Detection	Range of Nondetected Concentration	Range of Detected Concentrations	Average Detected Concentration	Screening Concentration	Notes	Number Over Screening	NASP RC	Number Over RC
1,1,1-Trichloroethane	pgkg	2 128	10 - 12	1 - 2	1.5	270,000	USEPA-RBC			
1,1-Dichloroethene	µg/kg	I 128	10 - 12	53 - 53	53	100	FDEP-CG			
2-Butanone (MEK)	µg/kg	I / 28	10 - 12	05 - 0.5	0.5	2,200,000	FDEP-CG			
4,4'-DDD	µg/kg	11 / 28	3.4 - 4.1	1.7 - 160	26	2,700	USEPA-RBC			
4,4'-DDE	µg/kg	25 120	3.4 - 4.1	0.4 - 220	39.5	1,900	USEPA-RBC			
4,4'-DDT	µg/kg	25 128	3.4 - 3.4	1.8 - 630	62.3	1,900	USEPA-RBC			
Acenaphthylene	µg/kg	I / 28	340 - 410	100 - 100	100	470,000	USEPA-RBC			
* Aldrin	µg/kg	2 128	1.8 - 2.1	2.4 - 50	26.2	38	USEPA-RBC	I		
• alpha-Chlordane	µg/kg	19 / 28	1.8 - 1.9	0.58 - 3.100	197	490	USEPA-RBC	1		
Aluminum (Al)	mg/kg	28 128		688 - 4.940	2,095	7,800	USEPA-RBC		1661	17
Anthracene	µg/kg	2 / 28	340 - 410	10 - 230	120	2,300,000	USEPA-RBC			
Antimony (Sb)	mg/kg	I 128	0.96 - 2.1	2.7 - 2.7	2.7	3.I	USEPA-RBC		2.912	
Aroclor-1260	µg/kg	2 / 28	34 - 340	111 - 52	36	320	USEPA-RBC			
* Arsenic (As)	mg/kg	51 153	0.22 - 0 22	0.29 - 66.3	8.78	0.43	USEPA-RBC	48	1.56	40
Barium (Ba)	mg/kg	28 128		1.5 - 16.9	6.23	550	USEPA-RBC		4.63	17
Benzene	µg/kg	I 128	10 - 12	53 - 53	53	1,400	FDEP-CG			
* BEQ	pgkg	16 133	95 - 370	8.89 - 1.615	154	88	USEPA-RBC	5		
Benzo(a)anthracene	µg/kg	14 133	340 - 360	10 - 1.700	159	880	USEPA-RBC	I		
Benzo(a)pyrene	µg/kg	15 133	95 - 150	8 - 1,100	112	88	USEPA-RBC	3		
Benzo(b)fluoranthene	µg/kg	15 133	340 - 360	18 - 2,600	246	880	USEPA-RBC	I		
Benzo(k)fluoranthene	µg/kg	11 133	340 - 370	15 - 830	112	8,800	USEPA-RBC			
Chrysene	µg/kg	15 133	340 - 360	12 - 2,200	1%	88,000	USEPA-RBC			
Dibenz(a,h)anthracene	pgkg	2 / 28	140 - 160	8 - 15	11.5	88	USEPA-RBC			
Indeno(1,2,3-cd)pyrene	µg/kg	14 133	340 - 360	8 - 740	93.4	880	USEPA-RBC			
Benzo(g,h,i)perylene	µg/kg	15 133	340 - 360	11 - 600	85.1	14,000	FDEP-CG			
Beryllium (Be)	mg/kg	8 128	0.03 - 0.066	0.03 - 0.12	0.053	0.15	USEPA-RBC		0.41	
beta-BHC	pgkg	1 128	1.8 - 18	3.9 - 3.9	3.9	350	USEPA-RBC			
bis(2-Ethylhexyl)phthalate (BEHP)	µg/kg	3 128	340 - 420	41 - 95	607	46,000	USEPA-RBC			
Butylbenzylphthalate	µg/kg	4 / 28	340 - 410	14 - 35	24.5	1,600,000	USEPA-RBC			
Calcium (Ca)	mg/kg	28 128		50.6 - 23,900	3.954	0	b		912.37	13
Carbazole	µg/kg	I / 28	340 - 410	110 - 110	110	32,000	USEPA-RBC			
Chlorobenzene	µg/kg	I 128	10 - 12	54 - 54	54	44,000	FDEP-CC			
Chromium (Cr)	mg/kg	27 / 28	1.1 - 1.1	13 - 17.4	5.56	7,800	USEPA-RBC		6.13	12
Cobalt (Co)	mg/kg	14 128	0.16 - 0.35	0.17 - 4.6	0.74	470	USEPA-RBC		1.87	I
Copper (Cu)	mg/kg	18 / 28	1.2 - 6.1	1.3 - 9.5	4.09	310	USEPA-RBC		5.74	3
Cyanide (CN)	mglkg	I 128	0.26 - 0.28	I - 1	1	160	USEPA-RBC		0.52	1
delta-BHC	µg/kg	4 / 28	1.8 - 18	0.44 - 3.3	2.14	23,000	FDEP-CG			
Di-n-butylphthalate	µg/kg	7 128	340 - 410	17 - 54	34.3	780,000	USEPA-RBC			
• Dieldrin	µg/kg	25 128	3.4 - 3.5	0.52 - 3,000	159	40	USEPA-RBC	7		
Diethylphthalate	µg/kg	1 128	340 - 410	47 - 47	47	6,300,000	USEPA-RBC			
Endosulfan I	pgkg	10 128	1.8 - 2.1	0.46 - 1,000	101	47,000	USEPA-RBC			
Endrin	µg/kg	9 128	3.4 - 34	0.34 - 16	5.22	2,300	USEPA-RBC			
Endrin aldehyde	µg/kg	2 / 28	3.4 - 34	1.6 - 2.6	2.I	2,300	USEPA-RBC			

Table 9-4
Chemicals Present In Surface Soil Samples – All Sampling Phases
NAS Pensacola Site IS
Pensacola, FL

Chemical	Units	Frequency of Detection	Range of Nondetected Concentration	Range ot Detected Concentrations	Average Detected Concentration	Screening Concentration	Notes	Number Over Screening	NASP RC	Number Ova RC
Endrin ketone	µg/kg	7 / 28	3.4 - 34	0.038 - 19	3.29	2,300	USEPA-RBC			
Fluoranthene	µg/kg	21 / 33	340 - 350	6 - 1,900	133	310,000	USEPA-RBC			
gamma-BHC (Lindane)	µg/kg	2 / 28	1.8 - 18	2.6 - 26	14.3	490	USEPA-RBC			
* gamma-Chlordane	µg/kg	19 / 26	1.8 - 1.9	0.54 - 2,000	153	490	USEPA-RBC	2		
Heptachlor	µg/kg	5 / 28	1.8 - 18	0.82 - 59	12.6	140	USEPA-RBC			
* Heptachlor epoxide	µg/kg	7 / 28	1.8 - 18	16 - 180	30.7	70	USEPA-RBC	1		
Iron (Fe)	mg/kg	28 / 28		666 - 4,680	2,050	2,300	b	10	2745	6
Lead (Pb)	mg/kg	27 / 28	0.52 - 0.52	1.7 - 109	20	400	a		1.32	21
Magnesium (Mg)	mg/kg	28 / 28		21.4 - 1,440	198	0	b		133.33	12
* Manganese (Mn)	mg/kg	53 / 53		1 - 215	71	180	USEPA-RBC	2	21.36	44
Mercury (Hg)	mg/kg	19 / 28	0.008 - 0.05	0.008 - 1.9	0.14	2.3	USEPA-RBC		0.1	4
Methylene chloride	µg/kg	1 / 28	10 - 12	3 - 3	3	16,000	FDEP-CG			
Nickel (Ni)	mg/kg	10 / 28	0.39 - 0.84	0.43 - 6.8	1.32	160	USEPA-RBC		6.38	1
Phenanthrene	µg/kg	12 / 33	340 - 360	1 - 290	46.9	230,000	USEPA-RBC			
Potassium (K)	mg/kg	28 / 28		19 - 272	58.8	0	b		460.67	
Pyrene	µg/kg	21 / 33	340 - 350	9 - 2,200	149	230,000	USEPA-RBC			
Sodium (Na)	mg/kg	18 / 28	5.3 - 17.1	3 - 167	48	0	b		107.65	3
Tetrachloroethene	µg/kg	1 / 28	10 - 12	0.9 - 0.9	0.9	12,000	FDEP-CG			
Thallium (Tl)	mg/kg	5 / 28	0.05 - 0.12	0.11 - 0.23	0.16	0.63	USEPA-RBC		0.82	
Toluene	µg/kg	3 / 31	5.6 - 12	1.8 - 56	20.2	520,000	FDEP-CG			
Trichloroethene	µg/kg	1 / 28	10 - 12	51 - 51	51	6,500	FDEP-CG			
Vanadium (V)	mg/kg	27 / 28	1.5 - 1.5	1.4 - 14	5.17	55	USEPA-RBC		5.83	9
Xylene (Total)	µg/kg	11 / 28	10 - 12	0.1 - 19	2.83	13,000,000	FDEP-CG			
Zinc (Zn)	mg/kg	26/28	1.2 - 2.4	1.6 - 56.5	17.5	2,300	USEPA-RBC		16.87	12

Notes:

* - Identified chemical of potential concern
USEPA-RBC - Screening based on Residential Soil Ingestion June 3, 1996 Region III RBC tables
FDEP-CG - Based on FDEP's Screening Concentration for Surface Soil
a - Screening based on 400 mg/kg of lead in soil
b - Essential nutrients eliminated from HHRA
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram
RC - NAS Pensacola reference concentration
BEQ - Benzo(a)pyrene equivalent

Tahle 9-5
Chemicals Present in Groundwater Samples – Phase I (in µg/L)
NAS Pensacola Site IS
Pensacola, FL

Chemical	Frequency of Detection	Range of Nondetected Concentrations	Range of Detected Concentrations	Average Detected Concentration	Screening Concentration	Notes	Number over Screening	NASP RC	Number over RC
4,4'-DDE	2 / 12	0.02 - 0.02	0.002 - 0.0022	0.0021	0.1	FGGC			
4,4'-DDT	1 I I2	0.02 - 0.02	0.0048 - 0.0048	0.0048	0.I	FGGC			
alpha-Chlordane	2 I 12	0.01 - 0.01	0.011 - 0.019	0.015	0.052	RBCTAP			
Aluminum (Al)	11 I 12	112 - 112	133 - 2230	738.5	50	EPASMCL	11	3,882.80	
Antimony (Sb)	3 / 12	2.3 - 2.3	2.5 - 4.4	3.3	6	FPDWS		30.2	
• Aroclor-1260	I I 12	0.2 - 0.2	0.32 - 0.32	0.32	0.0087	RBCTAP			
• Arsenic (As)	7 I 12	1.2 - 1.2	7.4 - 783	143.2	0.045	RBCTAP	3	2.8	7
Barium (Ba)	10 I 12	4.5 - 5.1	6.1 - 19.2	11.12	260	RBCTAP		13.2	3
Beryllium (Be)	1 I 12	0.14 - 0.14	0.31 - 0.31	0.31	0.016	RBCTAP		1.1	
Calcium (Ca)	12 I 12		12.200 - 70,400	24.950		b		17,560	8
• Chloroform	1 / 12	1 - 1	0.8 - 0.8	0.8	0.15	RBCTAP			
delta-BHC	1 I I2	0.01 - 0.01	0.0064 - 0.0064	0.0064	0.05	FCCC			
Dibromochloromethane	1 I 12	1 - 1	0.8 - 0.8	0.8	1	FGGC			
• Dieldrin	6 / I2	0.02 - 0.02	0.0023 - 0.033	0.0151	0.0042	RBCTAP			
gamma-BHC (Lindane)	I I 12	0.01 - 0.01	0,014 - 0.014	0.014	0.052	RBCTAP			
gamma-Chlordane	2 / 12	0.01 - 0.1	0.0079 - 0.022	0.015	0.052	RBCTAP			
• Heptachlor epoxide	3 I 12	0.01 - 0.01	0.0015 - 0.005	0.0028	0.0012	RBCTAP			
Iron (Fe)	I2 I 12		54.3 - 1480	403.31	300	FSDWS,b	5	1,707.80	
Lead (Pb)	8 I 12	0.75 - 0.75	0.89 - 2.3	1.45	15	FPDWS		1.6	2
Magnesium (Mg)	12 / I2		1.420 - 5.470	3,658		b		2,872.60	a
• Manganese (Mn)	10 I 12	3.3 - 7.8	6.8 - 50.9	13.43	50	FSDWS	1	22	1
Mercury (Hg)	10 I 12	0.06 - 0.06	0.06 - 0.17	0.085	1.1	RBC TAP		0.2	
Nickel (Ni)	1 / 12	3 - 4.9	3.3 - 3.3	3.3	73	RBC TAP		39.9	
Potassium (K)	12 I 12		3,400 - 8,640	5,168		b		12,167.60	
Selenium (Se)	5 / 12	1 - 1	1.4 - 2.3	I.76	18	RBC TAP		3.9	
Silver (Ag)	1 I 12	1.5 - 1.5	1.7 - 1.7	1.7	18	RBC TAP		4	
Sodium (Na)	12 I I2		4,380 - 12,900	6,907.50	160000	FPDWS,b		18.345	
Thallium (Tl)	2 I 12	0.95 - 0.95	1.1 - 1.5	1.3	0.29	RBC TAP		3.6	
Vanadium (V)	5 / 12	2.1 - 2.1	2.5 - 8.1	4.88	26	RBC TAP		9.6	
Zinc (Zn)	1 I 12	5.7 - 22.9	205 - 205	205	1100	RBCTAP		153.2	1

Notes:

* - Identified as a chemical of potential concern
FGGC - Screening based on FDEP screening concentration for groundwater - FGGC
FPDWS - Screening based on FDEP screening concentration for groundwater - FPDWS
EPA SMCL - Screening based on USEPA screening concentration for groundwater - EPA SMCL
FSDWS - Screening based on FDEP screening concentration for groundwater - FSDWS
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June, 1996
b - Essential nutrients eliminated from HHRA
µg/L - micrograms per liter
RC - NAS Pensacola reference concentration
BEQ - Benzo(a)pyrene equivalent

Table 9-6
Chemicals Present in Groundwater Samples – Phase II (in µg/L)
NAS Pensacola Site IS
Pensacola, FL

Chemical	Frequency of Detection	Range of Nondetected Concentrations	Range of Detected Concentrations	Average Detected Concentration	Screening Concentration	Notes	Number over Screening	NASPRC	Number over RC
4,4'-DDE	2 / 10	0.1 - 0.1	0.0036 - 0.084	0.0438	0.1	FGGC			
4,4'-DDT	2 / 10	0.1 - 0.1	0.0099 - 0.013	0.0115	0.1	FGGC			
Alumimum (Al)	8 / 10	51.7 - 82.9	298 - 1,580	638.125	50	EPASMCL	8	3882.8	
• Arsenic (As)	5 / 10	2 - 2	3.1 - 522	137.24	0.045	RBC TAP	3	2.8	5
• Dieldrin	2 / 10	0.1 - 0.1	0.016 - 0.039	0.0275	0.0042	RBC TAP			
Endosulfan I	1 / 10	0.05 - 0.05	0.0055 - 0.0055	0.0055	0.35	FGGC			
Endosulfan sulfate	1 / 10	0.1 - 0.1	0.018 - 0.018	0.018	0.3	FGGC			
• Heptachlor epoxide	3 / 10	0.05 - 0.05	0.009 - 0.19	0.085	0.0012	RBC TAP			
Iron (Fe)	10 / 10		86.4 - 638	328.84	300	FSDWS,b	4	1707.8	
Manganese (Mn)	6 / 10	1.7 - 2.8	4.9 - 37.4	10.8833	50	FSDWS		22	1

Notes:

• - Identified as a chemical of potential concern
FGGC - Screening based on FDEP screening concentration for groundwater - FGGC
FPDWS - Screening based on FDEP screening concentration for groundwater - FPDWS
EPA SMCL - Screening based on USEPA screening concentration for groundwater - EPA SMCL
FSDWS - Screening based on FDEP screening concentration for groundwater - FSDWS
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June 1996
b - Essential nutrients eliminated from HHRA
µg/L - micrograms per liter
RC - NAS Pensacola reference concentration

Table 9-7
Chemicals Present in Groundwater Samples - Phase IIB (in µg/L)
NAS Pensacola Site 15
Pensacola, FL

Chemical	Frequency of Detection	Range of Nondetected Concentrations	Range of Detected Concentrations	Average Detected Concentration	Screening Concentration	Notes	Number over Screening	NASP RC	Number over RC
* Arsenic (As)	5 / 5	-	3.7 - 373	100.1	0.045	RBC TAP	2	2.8	5

Notes:
* - Identified as a chemical of potential concern
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June 1996
µg/L- micrograms per liter
RC - NAS Pensacola reference Concentration

Table 9-8
Chemicals Present in Groundwater Samples – **Phase III (in µg/L)**
NAS Pensacola Site 15
Pensacola, FL

Chemical	Frequency of Detection	Range of Nondetected Concentration	Range of Detected Concentrations	Average Detected Concentration	Screening Concentration	Notes	Number over Screening	Number over NASP RC	Number over RC
Aluminum (AI)	6 1 8	35.8 - 139	253 - 1.630	721	50	EPASMCL	6	3,883	
Antimony (Sb)	3 1 8	3 - 3	3 - 15.8	7.7	6	FPDWS	1	30.2	
* **Arsenic (As)**	8 / 8		1.5 - 415	98.6	0.045	RBC TAP	3	2.8	7
Barium (Ba)	8 / 8	-	1.9 - 22.4	7.53	260	RBC TAP		13.2	1
Calcium (Ca)	8 / 8	-	13,400 - 52,000	24,088		b		17,560	4
* Chromium (Cr)	2 1 8	4.1 - 4.1	4.3 - 1,060	532	18	RBC TAP	I	35	1
Cobalt (Co)	I 1 8	1.9 - 1.9	2.6 - 2.6	2.6	220	RBC TAP		4.1	
Iron (Fe)	7 1 8	83.5 - 83.5	202 - 1,820	614	300	FSDWS,b	3	1,708	1
Lead (Pb)	4 1 8	0.6 - 0.6	0.71 - 1.8	I.40	15	FPDWS		1.6	2
Magnesium (Mg)	8 / 8		1,640 - 5,050	3,196		b		2,873	3
Manganese (Mn)	8 / 8		1.3 - 31	6.64	50	FSDWS		22	1
Nickel (Ni)	1 / 8	4.2 - 4.2	5.8 - 5.8	5.8	73	RBC TAP		39.9	
Potassium (K)	8 / 8		2,800 - 7,980	5.330		b		12,168	
Selenium (Se)	2 / 8	1.6 - 1.6	2.5 - 3.4	2.95	18	RBC TAP		3.9	
Sodium (Na)	8 / 8		2.230 - 15,100	7.633	160,000	FPDWS,b		18,345	
Vanadium (V)	3 1 8	2.3 - 2.3	2.5 - 7	5.03	26	RBC TAP		9.6	
Zinc (Zn)	6 / 8	1.8 - 1.8	3.1 - 7.7	4.42	1,100	RBCTAP		153.2	

Notes:

* - Identified as a chemical of potential concern
FPDWS - Screening based on FDEP screening concentration for groundwater - FPDWS
EPA SMCL - Screening based on USEPA screening concentration for groundwater - EPA SMCL
FSDWS - Screening based on FDEP screening concentration for groundwater - FSDWS
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June. 1996
b - Essential nutrients eliminated from HHRA
µg/L - micrograms per liter
RC - NAS Pensacola reference concentration

Table 9-9
Chemicals Present in Groundwater Samples – Phase IIIB (in µg/L)
NAS Pensacola Site 15
Pensacola, FL

Chemical	Frequency of Detection	Range of Nondetected Concentrations	Range of Detected Concentrations	Average Detected Concentration	Screening Concentration	Notes	Number over Screening	Number over NASP RC	Number over RC
* Arsenic (As)	4 / 4	-	17.1 - 184	94.3	0.045	RBC TAP	2	2.8	4

Notes:
* - Identified as a chemical of potential concern
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June 1996
µg/L - micrograms per liter
RC - NAS Pensacola reference concentration

Table 9-10
Chemicals **Resent In Groundwater Samples – Phase IIIC (in µg/L)**
NAS Pensacola Site 15
Pensacola, FL

Chemical	Frequency of Detection	Range of Nondetected Concentrations	Range of Detected Concentrations	Average Detecte Concentration	Screening Concentratio	Notes	Number over Screening	NASP RC	Number over RC
4,4'-DDE	2 / 4	0.02 - 0.02	0.0012 - 0.0015	0.0014	0.1	FGGC			
• Aluminum (AI)	4 1 4		703 - 3,900	1,645	50	EPA SMCL	4	3,883	1
• Arsenic (As)	3 1 4	1 - 1	1.1 - 4.3	2.23	0.045	RBC TAP		2.8	1
Barium (Ba)	4 1 4		13.2 - 32.5	19.5	260	RBC TAP		13.2	4
Calcium (Ca)	4 / 4		12,400 - 33,800	22,125		b		17.560	3
Di-n-octyl phthalate	1 / 4	5 - 5	0.6 - 0.6	0.6	73	RBC TAP			
• Dieldrin	1 1 4	0.02 - 0.02	0.11 - 0.11	0.11	0.0042	RBC TAP	I		
Iron (Fe)	4 1 4		382 - 2,130	852	300	FSDWS,b	4	1.708	1
Lead (Pb)	4 1 4		0.8 - 4.9	2.08	15	FPDWS		1.6	2
Magnesium (Mg)	4 1 4		3.700 - 6,600	4.645		b		2.873	4
Manganese (Mn)	4 1 4		3.1 - 25.8	13.5	50	FSDWS		22	1
Potassium (K)	4 1 4		6,030 - 11.700	7,740		b		12,168	
Selenium (Se)	1 / 4	1.6 - 1.6	2.9 - 2.9	2.9	18	RBC TAP		3.9	
Sodium (Na)	4 / 4		8,040 - 10,100	8,973	160,000	FPDWS,b		18,345	
Vanadium (V)	1 1 4	2.3 - 2.3	4.5 - 4.5	4.5	26	RBC TAP		9.6	
Zinc (Zn)	4 1 4		4.1 - 11.1	6.43	1,100	RBCTAP		153.2	

Notes:

* - Identified as a chemical of potential concern
FGGC - Screening based on FDEP screening concentration for groundwater - **FGGC**
FPDWS - Screening based on FDEP screening concentration for groundwater - FPDWS
EPA SMCL - Screening based on USEPA screening concentration for groundwater - EPA SMCL
FSDWS - Screening based on FDEP screening concentration for groundwater - FSDWS
RBC TAP - Screening based on USEPA's Region 111 Risk-Based Concentration Table, January to June 1996
b - Essential nutrients eliminated from **HHRA**
µg/L - micrograms per liter
RC - NAS Pensacola reference concentration

not detected in later sampling founds. Similarly, manganese was eliminated because the only reported manganese exceedance occurred in the first round of sampling, and it exceeded the screening concentration by 0.9 ppm. All COPCs that were eliminated from the HHRA were analyzed on a sample-by-sample basis in Tables 9-23 through 9-26, presented in Section 9.1.3.6. However, these chemicals were not considered COPCs and were not included in risk summary tables and figures.

9.1.3.3 Exposure Assessment

Exposure Setting

Site 15 is in the golf course maintenance facility at NAS Pensacola (Figure 2-1) where equipment, fertilizer, and pesticides are handled and stored. Future site use is expected to continue as the golf course maintenance facility. The exposure setting and history of Site 15 are in Section 2.

Potentially Exposed Populations

Potentially exposed populations are current and future site workers. Hypothetical future site residents were also included as potentially exposed populations for the risk assessment, even though future site use is not expected to change. The hypothetical future site worker scenario assumed soil sample locations are unpaved, workers are continuously exposured to surface soil conditions, and groundwater would be used as a potable water source. Current site workers' exposure would be less than that assumed for the hypothetical future site worker scenario, because of their limited soil contact and the fact that groundwater is not currently used onsite as potable or process water.

Construction work generally requires less than one year to complete a project, and chronic exposure is typically seven years or more. The current site worker scenario used in this assessment assumes 25-year exposure. Therefore, future worker assessment is considered to be protective of both current site use and future construction/maintenance exposure scenarios for

surface soil. The future site resident scenario assumed existing buildings would be removed and replaced with dwellings. In addition, the future site residents and workers were assumed to use the onsite underlying aquifers as a source of drinking water.

Risk Based Corrective Action/American Society for Testing and Materials (RBCNASTM) guidance contains some suggestions for the construction worker scenario, which have been modified based on discussions with USEPA Region IV's risk assessment review contractor. Most assumptions used to estimate construction worker's exposure are default site worker assumptions. The three exposure assumptions modified in accordance with RBCA/ASTM standards or based on professional judgement are shown below:

Exposure Duration = 1 year (RBCA/ASTM)
Exposure Frequency = 45 days/year (RBCA/ASTM)
Ingestion Rate = 200 mg/day (modified as discussed below)

The modified ingestion rate is based on the time-weighted average, assuming a worker would be exposed to a hole in the ground, incidentally ingesting 480 mg/day (RBCNASTM) for 0.25 year, and 50 mg/day for 0.75 year (Supplemental Guidance to RAGS, *Bulletin* 3 Exposure Assessment, USEPA Region IV, 1995). The weighted average is 195 mg/day, which was rounded to 200 mg/day. Intake multipliers were calculated in accordance with RAGS as discussed in Quantification of Exposure, a subsection of Section 9.2.7.

Assuming a soil concentration of 1 mg/kg and applying the modified exposure assumptions presented above, this results in the following intake multipliers:

- Ingestion Hazard Multiplier = 3.52E-07
- Ingestion ILCR Multiplier = 5.03E-09

As presented in Quantification of Exposure, a subsection of Section 9.2.7 the residential intake multipliers are:

- Ingestion Hazard Multiplier = 1.28E-07
- Ingestion ILCR Multiplier = 1.57E-09

RBCs were calculated by USEPA Region III using similar multipliers. The following equation can be used to calculate the RBC for a site resident exposed to soil:

$$RBC = \frac{\text{Target Risk Goal}}{\text{Ingestion Hazard Multiplier} \times \text{Slope Factor}}$$

For example, the slope factor for arsenic is 1.5 kg-day/mg. Using arsenic as an example with a target risk goal of 1E-6 and the residential multiplier for carcinogens shown above, the RBC would equal approximately 0.43 mg/kg, the same value shown in USEPA Region III's RBC tables. Applying the multiplier for the construction worker scenario results in an RBC for a construction worker scenario approximately equal to 134 mg/kg, which is shown in Table 9-11.

Because a linear relationship exists between the two land use scenarios, residential RBCs for noncarcinogens and carcinogens can be related to construction worker RBCs using the following multipliers:

- Noncarcinogens = 36 * RBC, (residential) = RBC, (construction worker)
- Carcinogens = 312 * RBC_C (residential) = RBC_C (construction worker)

Table 9-11
Construction Worker Scenario Screening Site 15
NAS Pensacola
Pensacola, FL

CAS	Chemical	MAX	RBC res	RBC const	NOTE	RC
71556	1,1,1-Trichloroethane	1	270,000	9,720,000	N	
79345	1,1,2,2-Tetrachloroethane	5	3,200	998,400	C	
75354	1,1-Dichloroethene	53	1,100	343,200	C	
78933	2-Butanone (MEK)	1	4,700,000	169,200,000	N	
72548	4,4'-DDD	2	2,700	842,400	C	
72559	4,4'-DDE	12	1,900	592,800	C	
50293	4.4'-DDT	12	1,900	592,800	C	
534521	4,6-Dinitro-2-methylphenol	8	NA	NA		
208968	Acenaphthylene		470,000	16,920,000	a	
309002	Aldrin	2	38	11,856	C	
5103719	alpha-Chlordane	59	470	146,640	C	
7429905	Aluminum (Al)	1,740	7,800	280,800	N	1,661
7440360	Antimony (Sb)	1	3	112	N	3
7440382	Arsenic (As)	16	0.43	134	C	2
7440393	Barium (Ba)	4	550	19,800	N	5
71432	Benzene	52	22,000	6,864,000	C	
56553	Benzo(a)anthracene	6	880	274,560	C	
205992	Benzo(b)fluoranthene	54	880	274,560	C	
191242	Benzo(g,h,i)perylene	19	310,000	11,160,000	b	
7440417	Beryllium (Be)		0.15	47	C	
319857	beta-BHC	2	350	109,200	C	
117817	bis(2-Ethylhexyl)phthalate	16	46,000	14,352,000	C	
85687	Butylbenzylphthalate	28	1,600,000	57,600,000	N	
7440702	Calcium (Ca)	3,360	NA	NA		912
108907	Chlorobenzene	54	160,000	5,760,000	N	
7440473	Chromium (Cr)	3	39	1,404		6
7440484	cobalt (Co)	1	470	16,920	N	2
7440508	Copper (Cu)	4	310	11,160	N	6
57125	Cyanide (CN)	5	160	5,760	N	1
319868	delta-BHC	2	490	17,640	d	
84742	Di-n-butylphthalate	15	780,000	28,080,000	N	
117840	Di-n-octyl phthalate	5	160,000	5,760,000	N	
60571	Dieldrin	180	40	12,480	C	
84662	Diethylphthalate	18	6,300,000	226,800,000	N	
959988	Endosulfan I	1	47,000	1,692,000	N	
72208	Endrin	4	2,300	82,800	N	
7421934	Endrin aldehyde	1	2,300	82,800	e	
100414	Ethylbenzene	4	780,000	28,080,000	N	
206440	Fluoranthene	7	310,000	11,160,000	N	
86737	Fluorene	1	310,000	11,160,000	N	
58899	gamma-BHC (Lindane)	2	490	152,880	C	
5103742	gamma-Chlordane	64	470	146,640	C	
76448	Heptachlor	3	140	43,680	C	

Table 9-11
Construction Worker Scenario Screening Site 15
NAS Pensacola
Pensacola. FL

CAS	Chemical	MAX	RBC res	RBC const	NOTE	RC
1024573	Heptachlor epoxide	5	70	21,840	C	
193395	Indeno(1,2,3-cd)pyrene	20	880	274,560	C	
7439896	Iron (Fe)	1,470	2.300	82,800	N	2,745
7439921	Lead (Pb)	22	400	14,400	f	7
7439954	Magnesium (Mg)	154	NA	NA		133
7439965	Manganese (Mn)	48	180	6,480	N	21
7439976	Mercury (Hg)		2.3	83	N	
75092	Methylene chloride	2	85,000	26,520,000	C	
7440020	Nickel (Ni)	1	160	5,760	N	6
85018	Phenanthrene	14	310,000	11,160,000	b	
7440097	Potassium (K)	66	NA	NA		461
129000	Pyrene	7	230,000	8,280,000	N	
7440235	Sodium (Na)	31	NA	NA		108
7440280	Thallium (Tl)	6	0.63	23	N	1
108883	Toluene	56	1,600,000	57,600,000	N	
79016	Trichloroethene	50	58,000	18,096,000	C	
7440622	Vanadium (V)	3	55	1,980	N	6
1330207	Xylene (Total)	3	16,000,000	576,000,000	N	
7440666	Zinc (Zn)	10	2,300	82,800	N	17

Notes:

MAX - Maximum reported concentration in subsurface soil
RBC res - Screening based on Residential Soil Ingestion June 3, 1996 Region III RBC tables
RBC const - Screening based on construction worker soil ingestion as per RBCA/ASTM guidance
RC - NASP reference concentration
NA - Not applicable/not available
N - Noncarcinogen
C - Carcinogen
a - acenaphthene used as surrogate
b - fluoranthene used as surrogate
d - gamma-BHC used as surrogate
e - endrin used as surrogate
f - industrial cleanup goals used at other federal facilities

For example, the arsenic RBC which is based on carcinogenicity, is 0.43 mg/kg. Multiplying this value by 312 results in the construction worker RBC of 134 mg/kg shown in Table 9-11. Similar calculations were performed for noncarcinogens, and a screening level assessment was performed for Site 15 subsurface soil by comparing all chemicals reported in subsurface soil to construction worker RBCs. As shown in Tabk 9-11, no COPCs were identified for the construction worker land use scenario.

Exposure Pathways

Exposure pathways for the site workers and future residents are dermal contact and incidental ingestion of surface soil, as well as ingestion of groundwater COPCs through potable use. Table 9-1, previously presented, summarizes the exposure pathways assessed in this HHRA. Uniform exposure was assumed for all sample locations.

Exposure Point Concentrations

Surface Soil

Fifty-three surface soil samples were analyzed for this site. Table 9-12 presents the EPCs for the COPCs identified in surface soil.

Groundwater

Forty-three groundwater samples were analyzed separately in all sampling events. As shown in Figure 6-12 (previously presented), the primary arsenic exceedances are in two apparent plumes, which are considered potential hot spots. Each hot spot is located north of Building 2692 and Building 3586. The westernmost hot spot, north of Building 2692, encompasses wells locations 15GR03, 15GR33, and 15GR65. The easternmost hot spot, north of Building 3586, encompasses well locations 15GR07, 15GR36, and 15GR66. In the remainder of this section, these hot spots are referred to as Areas 1 and 2, respectively. Dieldrin concentrations were more sporadic, but the greatest reported concentrations were near the same exposure areas. To establish EPCs for

Table 9-12
Statistical Analysis of COPCs
Surface Soil
NAS Pensacola

COPC	n	Natural Log Transformed mean	SD	H-stat	95% UCL ug/kg	MAX ug/kg	EPC mg/kg
Aldrin	28	0.0731471	0.774816	2.207	2.02	50	0.0020
alpha-Chlordane	28	1.1671168	2.3985786	4.552	466.41	3.100	0.466
Arsenic (As)	53	8.168892	1.4558593	2.828	18,026	66,300	18.03
BEQ	33	2.6801734	1.5119795	3.074	104.06	1,615	0.104
Dieldrin	28	2.1607979	2.3153726	4.418	906.92	3,000	0.907
gamma-Chlordane	28	1.2922769	2.5322764	4.769	918.35	2,000	0.918
Heptachlor epoxide	28	0.4413856	1.2031498	2.731	6.04	180	0.0060
Manganese (Mn)	53	10.882483	0.8247587	2.135	95,493.65	215,000	95.5

Notes:

COPC - Chemical of potential concern
BEQ - Benzo(a)pyrene equivalent
EPC - Exposure point concentration
H-stat - Parameter from the H-stat statistical method
MAX - Maximum detected concentration
n - number of samples
UCL - Upper confidence limit
SD - Standard Deviation
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram

arsenic and dieldrin in groundwater, concentrations reported in the most recent sampling rounds at each potential hot spot were averaged, and the arithmetic mean concentration for arsenic and dieldrin at each exposure area was used as the EPC for each respective plume, in accordance with *Supplemental Guidance to RAGS, Bulletin 3 Exposure Assessment* (USEPA, 1995c). Tables 9-13 through 9-14 present EPCs for arsenic in groundwater in each potential exposure area; Tables 9-15 through 9-16 present EPCs for dieldrin in groundwater in each potential exposure area.

Quantification of Exposure

Risk and hazard estimates for ingestion and dermal contact of soil and ingestion of groundwater were calculated using the multipliers described in Section 9.1.2.7, and are presented in Tables 9-17 through 9-21 in Section 9.1.3.5. As discussed in Section 9.1.2.7, CDI is not presented and was incorporated into the calculations in Section 9.1.3.5.

9.1.3.4 Toxicity Assessment

Toxicity assessment terms and methods are discussed in Section 9.1.2.8 of this report. This information was used to quantify risk and hazard associated with soil and groundwater contaminants. Toxicological profiles for each COPC are provided in Section 9.1.2.8.

9.1.3.5 Risk Characterization

Risk estimates for soil and groundwater pathways are summarized in Table 9-17, including chemical-specific as well as multipathway risk estimates.

Surface Soil Patbways

Exposure to surface soil onsite was evaluated under residential and industrial (site worker) scenarios. Exposure pathways evaluated are incidental ingestion and dermal contact. For future site residents, HQs were estimated separately for child and adult exposure, and the LWA was used to estimate ILCR assuming a receptor would be exposed *during* childhood and as an adult. ILCRs

Table 9-13
Arsenic Concentrations at Exposure Area 1 from Most Recent Sampling Phases
Site 15
NAS Pensacola

Sample ID	Sampling Phase	Detected Concentration (µg/L)	PRG	Source	NASP RC
015-G-GR33-01	II	56.9	0.045	RBCTAP	2.8
015-G-GR03-03	III	415	0.045	RBC TAP	2.8
015-G-GR65-04	IIIB	184	0.045	RBC TAP	2.8
Average Detected Concentration:		218.63			

Notes:
µg/L - micrograms per liter
PRG - Preliminary remediation goals
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June 1996
RC - NASP Reference Concentration

Table 9-14
Arsenic Concentrations at Exposure Area 2 from Most Recent Sampling Phases
Site 15
NAS Pensacola

Sample ID	Sampling Phase	Detected Concentration (µg/L)	PRG	Source	NASP RC
015-G-GR66-04	IIIB	155	0.045	RBC TAP	2.8
015-G-GR36-01	II	96.1	0.045	RBCTAP	2.8
015-G-GR07-05	IIIB	21.1	0.045	RBCTAP	2.8
Average Detected Concentration:		90.73			

Notes:
µg/L - micrograms per liter
PRG - Preliminary remediation goals
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June 1996
RC - NASP Reference Concentration

Tabk 9-15
Dieldrin Concentrations at Exposure Area **1 from Most** Recent **Sampling** Phases
Site 15
NAS Pensacola

Sample ID	Sampling Phase	Detected Concentration (µg/L)	PRG	Source	NASP RC
015-G-GR33-01	II	0.016	0.0042	RBC TAP	NA
015-G-GR03-01	I	0.0098	0.0042	RBCTAP	NA
Mean concentration:		0.0129			

Notes:
µg/L - micrograms per liter
PRG - Preliminary remediation goals
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June 1996
RC - NASP Reference Concentration

Table 9-16
Dieldrin Concentrations at Exposure Area 2 **from Most** Recent Sampling Phases
Site 15
NAS **Pensacola**

Sample ID	Sampling Phase	Detected Concentration (µg/L)	PRG	Source	NASP RC
015-G-GR07-02	II	0.039	0.0042	RBCTAP	NA

Notes:
µg/L - micrograms per liter
PRG - Preliminary remediation goals
RBC TAP - Screening based on USEPA's Region III Risk-Based Concentration Table, January to June 1996
RC - NASP Reference Concentration

Table 9-17
Summary Risk Estimates
All Exposure Pathways
Site 15
NAS Pensacola

		Site Resident			*Site Worker*	
		Adult	*Child*	*LWA*	*Adult*	
Medium	**Exposure Pathway**	**HI**	**HI**	**ILCR**	**HI**	**ILCR**
Soil	Incidental Ingestion	0.1	1.4	7E-05	0.05	8E-06
	Dermal Contact	0.06	0.21	2E-05	0.05	7E-06
	Sum	0.2	1.6	9E-05	0.1	1E-05
Groundwater - Exposure Area 1	Ingestion	20	47	5E-03	7	1E-03
Soil & Shallow Groundwater	Sum	20	49	5E-03	7	1E-03
Groundwater - Exposure Area 2	Ingestion	8	19	2.E-03	3	5E-04
Soil & Shallow Groundwater	Sum	8	21	2E-03	3	5E-04

Notes:
ILCR = Incremental lifetime excess cancer risk
HI = Hazard Index
NA = Not applicable
LWA = Lifetiem weighted average

Table 9-18
Risk Estimates
Incidental Ingestion of Surface Soil
Site 15
NAS Pensacola

				Site Resident			Site Worker	
				Adult	*Child*	*LWA*	*Adult*	
Chemical	EPC (mg/kg)	Oral RfD (mg/kg-day)	Oral SF (kg-day/mg)	HQ	HQ	ILCR	HQ	ILCR
Aldrin	0.002	0.00003	17	0.000091	0.0009	5.3E-08	0.000033	6.0E-09
alpha-Chlordane	0.466	6.00E-05	1.3	0.011	0.099	9.5E-07	0.0038	1.1 E-07
Arsenic	18.03	0.0003	1.5	0.082	0.77	4.2E-05	0.029	4.7E-06
BEQ	0.104	NA	7.3	NA	NA	1.2E-06	NA	1.3E-07
Dieldrin	0.907	5.00E-05	16	0.025	0.23	2.3E-05	0.0089	2.5E-06
gamma-Chlordane	0.918	6.00E-05	1.3	0.021	0.20	I.9E-06	0.0075	2.IE-07
Heptachlor epoxide	0.006	0.000013	9.1	0.00063231	0.0059	8.6E-08	0.00022569	9.6E-09
Manganese	95.5	2.30E-02	NA	0.0057	0.053	NA	0.0020	NA
Cumulative HI or ILCR				0.1	1.4	7E-05	0.05	8E-06

Notes:
EPC = Exposure point concentration
RfD = Reference dose
SF = Slope factor
HQ = Hazard quotient
ILCR = Incremental lifetime excess cancer risk
HI = Hazard Index
NA = Not Applicable
LWA = Lifetime weighted average

Table 9-19
Risk Estimates
Dermal Contact with Surface Soil
Site 15
NAS Pensacola

						Site Resident			Site Worker	
						Adult	Child	LWA	Adult	
Chemical	EPC (mg/kg)	Inorganic	DAF	Dermal RfD (mg/kg-day)	Dermal SF (kg-day/mg)	HQ	HQ	ILCR	HQ	ILCR
Aldrin	0.002	no	0.5	0.000015	34	0.000075	0.00024667	2.48-08	0.000053	9.7E-09
alpha-Chlordane	0.466	no	0.5	0.00003	2.6	0.009	0.029	4.38-07	0.0062	1.7E-07
Arsenic	18.03	yes	0.2	0.00006	7.5	0.017	0.056	4.78-06	0.012	1.9E-06
BEQ	0.104	no	0.5	NA	14.6	NA	NA	5.3E-07	NA	2.2E-07
Dieldrin	0.907	no	0.5	0.000025	32	0.020	0.067	1.0E-05	0.015	4.2E-06
gamma-Chlordane	0.918	no	0.5	0.00003	2.6	0.017	0.057	8.4E-07	0.012	3.4E-07
Heptachlor epoxide	0.006	no	0.5	0.0000065	18.2	0.00051877	0.0017	3.8E-08	0.00037015	1.6E-08
Manganese	95.5	yes	0.2	0.0046	NA	0.0012	0.0038	NA	0.000832511	NA
Cumulative HI or ILCR						0.06	0.2	2E-05	0.05	7E-06

Nates:
EPC = Exposure point concentration
RfD = Reference dose
SF = Slope factor
HQ = Hazard quotient
ILCR = Incremental lifetime excess cancer risk
HI = Hazard index
DAF = Dermal adjustment factor, used to account for gastrointestinal absorbtion efficiency in accordance with RAGS
Inorganic = In accordance with RAGS, dermal absorption factors of 0.01 and 0.001 were used to account for the fraction crossing the skin barrier for organics and inorganics, respectively; dermal intake was estimated in accordance with RAGS and E/A&H's Technical Memorandum
NA = Not Applicable
LWA = Lifetime weighted average

Table 9-20
Risk Estimates
Incidental Ingestion of Groundwater
Exposure Area 1
NAS Pensacola

				Site Resident			Site Worker	
				Adult	Child	LWA	Adult	
	EPC (m /L)	Oral RfD (mg/kg-day)	Oral SF (kg-day/mg)	HI	HI	ILCR	HI	ILCR
Arsenic	0.219	0.0003	1.5	20	47	4.9E-03	7.1	1.1E-03
Dieldrin	0.0000129	0.00005	16	0.0071	0.016	3.1E-06	0.0025	7.2E-07
			Summary:	20	47	5E-03	7	1E-03

Notes:
EPC - Exposure Point Concentration
RfD - Reference Dose
SF - Slope Factor
HI - Hazard Index
ILCR - Incremental Lifetime Excess Cancer Risk
LWA - Lifetime Weighted Average

Table 9-21
Risk Estimates
Incidental Ingestion of Groundwater
Exposure Area 2
NAS Pensacola

				Site Resident			*Site Worker*	
				Adult	*Child*	*LWA*	*Adult*	
Chemical	**EPC (mg/L)**	**Oral RfD (mg/kg-day)**	**Oral SF (kg-day/mg)**	**HI**	**HI**	**ILCR**	**HI**	**ILCR**
Arsenic	0.091	0.0003	1.5	8.0	19	2.0E-03	3	5.0E-04
Dieldrin	0.000039	0.00005	16	0.021	0.050	9.3E-06	0.0076	2.2E-06
			Summary:	**8**	**19**	2E-03	3	5E-04

Notes:
EPC - Exposure Point Concentration
RfD - Reference Dose
SF - Slope Factor
HI - Hazard Index
ILCR - Incremental Lifetime Excess Cancer Risk
LWA - Lifetime Weighted Average

and HQs associated with the incidental ingestion of and dermal contact with site surface soil are *summarized* in Tables 9-18 and 9-19, respectively.

Groundwater Pathways

Exposure to groundwater onsite was evaluated under both residential and industrial scenarios. The pathways were evaluated assuming that site groundwater will be used for potable and/or domestic purposes and that an unfiltered well will be installed, drawing from the corresponding water-bearing zone. In accordance with RAGS, future site residents' HI was computed separately for child and adult receptors. Groundwater samples were grouped into two areas of highest reported arsenic concentrations. In accordance with *Supplemental* Guidance *to RAGS, Bulletin* 3 Exposure Assessment (USEPA, 1995c), the arithmetic mean of the maximum detected concentrations from the most recent sampling events in each area were used as EPCs for both arsenic and dieldrin, and each exposure area was addressed separately as described in Section 9.2. ILCRs and HQs for the ingestion pathway in each area are summarized in Tables 9-20 and 9-21.

Hypothetical Site Residents

Soil

The sum soil ILCR estimate for site residents is 9E-05. The ingestion ILCR for surface soil is 7E-05, while the dermal pathway ILCR is 2E-05. Arsenic, dieldrin, gamma-chlordane, and BEQ are the primary contributors for the ingestion pathway, with arsenic and dieldrin also contributing significantly to the dermal pathway.

The sum soil HI estimate for the adult and child residents are 0.2 and 1.6, respectively. HI estimates for the adult and child residents are 0.1 and 1.4, respectively, for the soil ingestion pathway. HIs for the adult and child dermal contact pathways are *0.06* and 0.21. Arsenic was the primary contributor for the soil ingestion pathway and dieldrin was the primary contributor for the dermal contact pathway.

Groundwater Exposure Area 1

The groundwater ingestion ILCR estimate for Exposure Area 1 is 5E-03 for the site resident receptor. Arsenic is the primary contributor to the ingestion ILCR. HI estimates for the adult and child resident are 20 and 47, respectively, for the ingestion pathway.

Groundwater Exposure Area 2

The groundwater ingestion ILCR estimate for Exposure Area 2 is 2E-03 for the site resident receptor. Arsenic is the primary contributor to the ingestion ILCR. HI estimates for the adult and child resident are 8 and 19, respectively, for the ingestion pathway.

Hypothetical Site Workers

Soil

The sum soil ILCR estimate for the site worker is 1E-05. Site worker ILCR is 8E-06 for the soil ingestion pathway, and site worker ILCR is 7E-06 for the dermal contact pathways. Arsenic and dieldrin are the primary contributors for both pathways. The sum soil HI estimate is 0.1 for the site worker. HIs are 0.05 for both pathways.

Groundwater Exposure Area 1

The ingestion groundwater ILCR estimate for Exposure Area 1 is 1E-03 for the site worker receptor, of which arsenic is the only contributor. The HI for the ingestion pathway is 7.

Groundwater Exposure *Area* 2

The ingestion groundwater ILCR estimate for Exposure Area 2 is 5E-04 for the site worker receptor, with arsenic as the only contributor. The HI for the ingestion pathway is 3.

Current Site Workers

Groundwater is not currently used as a potable water source for NAS Pensacola. In the absence of completed exposure pathways, no threat to human health is posed by reported groundwater contamination.

COCs Identified

COCs were identified based on either cumulative risk or hazard estimated for soil or groundwater onsite. USEPA has established a generally acceptable risk range of 1E-4 to 1E-6, and an HI threshold of 1.0. As recommended by FDEP, a COC was considered to be any chemical contributing to a cumulative risk level of 1E-6 or greater and/or a cumulative HI above 1.0, and whose individual ILCR exceeds 1E-6 or whose hazard quotient exceeds 0.1. For carcinogens, this approach is relatively conservative, because a cumulative risk level of 1E4 (and individual ILCR of 1E-6) is recommended by USEPA Region IV as the trigger for establishing COCs. FDEP, however, recommends a more stringent risk goal of 1E-6. The COC selection method presented was used to provide a more comprehensive evaluation of chemicals contributing to carcinogenic risk or noncarcinogenic hazard during the RGO development process. Table 9-22 summarizes COCs identified in each medium based on contribution to cumulative ILCR or HI.

9.1.3.6 Risk Uncertainty

Characterization of Exposure Setting and Identification of Exposure Pathways

The potential for high bias is introduced through the exposure setting and pathway selection due to the highly conservative residential assumptions recommended by USEPA Region IV and FDEP when assessing exposure. The exposure assumptions in this HHRA are highly protective and would generally tend to overestimate exposure, because actual exposure would likely be limited relative to the assumed exposure conditions used to estimate risk in this HHRA.

Table 9-22
COC *summary*
Site 15 — NAS Pensacola

	Residential Scenario			Worker Scenario	
COC	HQ (adult)	HQ (child)	ILCR (LWA)	HQ	ILCR
Arsenic	c	c	a,b,c	c	a,b,c
BEQ			a		
Dieldrin			a,b		a,b
alpha-Chlordane			d		
gamma-Chlordane			a		

Notes:
a = Identified as a COC for the surface soil ingestion exposure pathway.
b = Identified as a COC for the dermal contact with surface soil exposure pathway.
c = Identified as a COC for the groundwater ingestion exposure pathway.
d = alpha-Chlordane was included, although only gamma-chlordane exceeds FDEP's thresholds to identify COCs.

Residential use of the site is not expected, based on current site uses and the nature of the surrounding area. If this area were become a residential site, the buildings would be demolished, the asphalt surface removed, and the surface soil conditions would likely change dramatically. Because construction onsite would change surface soil conditions, exposure to current surface soil conditions would not be likely under a true future residential scenario. These factors indicate that exposure pathways assessed in this HHRA would overestimate the risk and hazard posed to current site workers and future site residents.

Future site workers' exposure projections are overestimates for the same reasons — construction would dramatically change current soil conditions. A construction worker land use scenario changes during the construction period, so a weighted average ingestion rate was determined assuming 480 mg/day and 50 mg/day for different periods of construction. No specific construction plans are available, and continued use of the site is expected. Consequently, exposure

pathways for a construction worker scenario will remain incomplete. Minor construction, such as irrigation lines for the golf course, would be addressed in the site worker scenario, which would overestimate such an exposure due to a higher exposure frequency and duration.

In addition, a construction worker scenario would be subchronic or acute in duration, because RAGS specifies chronic exposure as seven years or more. In the Site 15 construction worker screening assessment for subsurface soil, chronic SFs and RfDs were used, which could overestimate risk and hazard.

Shallow groundwater is not currently used at NAS Pensacola for potable or industrial purposes. Drinking water is provided from NAS Corry Station across Bayou Grand. This system will remain in operation under the current base reuse plan. Consequently, shallow groundwater use would not be expected under future site use scenarios. In addition, shallow groundwater contains high aluminum, iron, sodium and other inorganics which would make its use as a drinking water source unlikely. Therefore, the scenario established to estimate exposure to groundwater is highly conservative, and groundwater exposure pathways are not expected to be completed in the future.

Determination of Exposure Point Concentrations

A 95% UCL was calculated for COCs in surface soil, and either the UCL or maximum reported concentration was applied as the EPC used to estimate soil risk and hazard. The arithmetic means of the maximum reported concentrations during the most recent sampling events in Areas 1 and 2 were each used as EPCs. This approach conservatively estimates the maximum likely contaminant concentrations in groundwater, but not unreasonably so (e.g., using the maximum reported concentration).

Frequency of Detection and Spatial Distribution

As discussed in Section 9.1.3.2, several chemicals were eliminated from further evaluation due to low frequency of detection. Elimination of these chemicals could potentially underestimate exposure in groundwater. However, the COPCs eliminated because of frequency of detection were just slightly above PRGs and seem to be consistent with ambient conditions. Therefore, even if they were included in the quantification of risk, they would not exceed individual ILCR or HQ thresholds and would not be considered COCs. However, ILCRs and HQs for individual COPCs eliminated from the HHRA were calculated on a sample-by-sample basis where detected, and are presented in Tables 9-23 through 9-26.

Quantification of Risk/Hazard

As indicated by the discussions above, great uncertainty is inherent in the risk assessment process. In addition, many site-specific factors have affected the uncertainty of this assessment that would upwardly bias the risk and hazard estimates. Exposure pathway-specific sources of uncertainty are discussed below.

Arsenic was assessed as a carcinogen, and arsenic ILCR was a primary contributor to risk estimates for all exposure pathways. USEPA evaluated the cancer potency of arsenic based on certain studies from the literature. Limitations in these studies and the methods used by USEPA would result in overestimates of arsenic risk. For example, arsenic's USEPA MCL is 50 μg/L. Yet, exposure to drinking water with 50 μg/L arsenic would equate with unacceptable risk. The technology-based method used to calculate the MCL for arsenic is not the same as risk-based methods used to assess risk.

USEPA derived the oral SF from a Taiwanese study of human exposures to groundwater containing arsenic (Tseng et al., 1968). The assumptions used by USEPA to derive the SF may have underestimated dietary exposure to arsenic (Yost et al., 1994). More recent water intake

Table 9-23
ILCR and HQ for COPCs in Groundwater by Sampling Point – Phase I
Site 15
NAS Pensacola

Sample ID	Chemical	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR04-01	Chloroform	0.0008	7.3E-08	0.0022	0.0051	1.7E-08	0.0008
015-G-GR06-01	Aroclor-1260	0.00032	1.9E-06	NA	NA	4.5E-07	NA
015-G-GR02-01	Heptachlor epoxide	0.0000019	2.6E-07	0.0040	0.0093	6.0E-08	0.0014
015-G-GR04-01	Heptachlor epoxide	0.0000015	2.0E-07	0.0032	0.0074	4.8E-08	0.0011
015-G-GR08-01	Heptachlor epoxide	0.000005	6.8E-07	0.0105	0.0246	1.6E-07	0.0038
015-G-GM59-01	Manganese	0.0103	NA	0.012	0.029	NA	0.0044
015-G-GR02-01	Manganese	0.0082	NA	0.010	0.023	NA	0.0035
015-G-GR03-01	Manganese	0.0128	NA	0.015	0.036	NA	0.0054
015-G-GR04-01	Manganese	0.0097	NA	0.012	0.027	NA	0.0041
015-G-GR06-01	Manganese	0.0078	NA	0.009	0.022	NA	0.0033
015-G-GR07-01	Manganese	0.0095	NA	0.011	0.026	NA	0.0040
015-G-GR08-01	Manganese	0.0509	NA	0.061	0.141	NA	0.0216
015-G_GR28-01	Manganese	0.0079	NA	0.009	0.022	NA	0.0034
015-G-MWO1-01	Manganese	0.0104	NA	0.012	0.029	NA	0.0044
015-G-MW02-01	Manganese	0.0068	NA	0.008	0.019	NA	0.0029

Notes:
HQ - Hazard Quotient
ILCR - Incremental Excess Lifetime Cancer Risk
mg/L - milligrams per liter

Table 9-24
ILCR and HQ for COPCs in Groundwater by Sampling Point – Phase II
Site 15
NAS Pensacola

Sample ID	Chemical	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR07-02	Heptachlor epoxide	0.000056	7.6E-06	0.12	0.28	1.8E-06	**0.042**
015-G-GR36-01	Heptachlor epoxide	0.00019	2.6E-05	0.40	0.93	6.0E-06	0.14
015-G-GR40-01	Heptachlor epoxide	0.000009	1.2E-06	0.019	0.044	2.9E-07	0.0068

Notes:
HQ - Hazard Quotient
ILCR - Incremental Excess Lifetime Cancer Risk
mg/L - milligrams per liter

Table 9-25
ILCR and HQ for COPCs in Groundwater by Sampling Point – Phase III
Site 15
NAS Pensacola

Sample ID	Chemical	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR03-03	Chromium	0.0043	NA	0.00012	0.00027	NA	0.000042
015-G-GR07-04	Chromium	0.0054	NA	0.00015	0.00035	NA	0.000053

Notes:
HQ - Hazard Quotient
ILCR - Incremental Excess Lifetime Cancer Risk
mg/L - milligrams per liter

Table 9-26
ILCR and HQ for COPCs in Groundwater by Sampling Point – Phase IIIC
Site 15
NAS Pensacola

Sample ID	Chemical	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR68-01	Aluminum	0.703	NA	**0.019**	0.045	NA	0.0069
015-G-GR69-01	Aluminum	3.9	NA	0.107	**0.249**	NA	0.0381
015-G-GR70-01	Aluminum	0.867	NA	**0.024**	0.055	NA	0.0085
015-G-GR71-01	Aluminum	1.11	NA	0.030	0.071	NA	0.0109

Notes:
HQ - Hazard Quotient
ILCR - Incremental Excess Lifetime Cancer Risk
mg/L - milligrams per liter

values were available for the Taiwanese population. These values are higher than the historical data used by USEPA. Using higher water intake values would reduce the expected cancer potency. In addition, toxic effects of arsenic could have been exacerbated because the study population was reportedly undernourished and many had chronic liver disease (Hsueh et al., 1995).

The calculation method USEPA used to determine the SF may also have overestimated the cancer-causing potential of arsenic. A linear dose response curve was assumed by USEPA, and the dose-response curve for arsenic may be sublinear (Loehr et al., 1989). In 1989, the USEPA Science Advisory Board concluded that, "at dose levels below 200-250 micrograms arsenic per day there is a possible detoxification mechanism that may substantially reduce cancer risk from the levels USEPA has calculated using a linearquadratic model fit to the Tseng data."

The Tseng study was based on water ingestion, and many studies indicate arsenic is more bioavailable from water than soil. Ingesting arsenic in soil may not elicit toxic responses, while the same amount of arsenic ingested from groundwater may be toxic (ATSDR, 1992). Relative bioavailabilities of arsenic in soil to arsenic in groundwater range from 20% to 78% (Freeman et al., 1993, 1994).

USEPA determined that risk-based concentrations for arsenic should be multiplied by 10 to account for the uncertainty in arsenic's carcinogenicity (USEPA, 1988). For example, a risk-based concentration of 0.001 mg/L would be changed to 0.01 mg/L. In addition, the mean relative bioavailability of 78% is recommended by USEPA to address arsenic in soil. In summary, a risk-based concentration of 1 mg/kg would be modified (e.g., 1/0.78 = 1.282 mg/kg) to approximately 1.28 mgkg. The 1.28 mg/kg concentration in soil would also be adjusted to account for the uncertainty in arsenic's SF, resulting in an adjusted value of 12.8 mg/kg. The relative bioavailability factor would not be applicable to groundwater concentrations, so a risk-

based groundwater concentration of 0.001 mg/L would be modified to 0.01 mg/L. Therefore, risk and hazard estimates are potentially overestimates.

Soil

Of the organic **CPSSs** screened and eliminated from formal assessment, none was reported at a concentration within approximately **10%** of the RBC. This **minimizes** the likelihood of potentially significant cumulative risk/hazard based on the eliminated organic **CPSSs.**

Although the future land use of Site **15** is unknown, worker and residential exposure scenarios were assessed in this HHRA. As previously discussed, it is likely that these scenarios would lead to overestimates of risk and/or hazard. Tables 9-27 and 9-28 summarize CT risk estimates for incidental ingestion of and dermal contact with surface soil.

Groundwater

Of the organic **CPSSs** screened and eliminated from formal assessment, none was reported at a concentration within approximately 10% of the **RBC.** The maximum concentrations of antimony and thallium exceeded the corresponding RBCs, and these inorganics were eliminated based on the corresponding RCs.

Groundwater is not currently used at NAS Pensacola for potable or industrial purposes. Drinking water is provided **from** NAS Corry Station across Bayou Grand. This system will remain in operation under the current base reuse plan. **As** previously mentioned, it is highly unlikely that the site will **be** developed as a residential area, and it is unlikely that a potable-use well would **be** installed onsite. It is probable that, if residences were constructed onsite and an unfiltered well were installed, the salinity and dissolved solids would preclude this aquifer from being an acceptable potable water source. Therefore, the scenario established to estimate exposure to groundwater is **highly** conservative and would likely overestimate exposure to chemicals in

Table 9-27
Risk Estimates
Incidental Ingestion of Surface Soil - CT
Site 15
NAS Pensacola

				Site Resident			Site Worker	
				Adult	Child	LWA	Adult	
Chemical	EPC (mg/kg)	Oral RfD (mg/kg-day)	Oral SF (kg-day/mg)	HQ	HQ	ILCR	HQ	ILCR
Aldrin	0.002	0.00003	17	0.000031	0.000285	5.7E-09	0.000033	1.2E-09
alpha-Chlordane	0.466	6.00E-05	1.3	0.0036	0.033	1.0E-07	0.0038	2.1E-08
Arsenic	18.03	0.0003	1.5	0.028	0.26	4.5E-06	0.029	9.5E-07
BEQ	0.104	NA	7.3	NA	NA	1.3E-07	NA	2.7E-08
Dieldrin	0.907	5.00E-05	16	0.0083	0.078	2.4E-06	0.0089	5.1E-07
gamma-Chlordane	0.918	6.00E-05	1.3	0.0070	0.065	2.0E-07	0.0075	4.2E-08
Heptachlor epoxide	0.006	0.000013	9.1	0.000211	0.0020	9.2E-09	0.000226	1.9E-09
Manganese	95.5	2.30E-02	NA	0.0019	0.018	NA	0.002	NA
Cumulative HI or ILCR				0.05	0.5	7E-06	0.05	2E-06

Notes:
EPC = Exposure point concentration
RfD = Reference dose
SF = Slope factor
HQ = Hazard quotient
ILCR = Incremental lifetime excess cancer risk
HI = Hazard Index
NA = Not Applicable
LWA = Lifetime weighted average

Table 9-28
Risk Estimates
Dermal Contact with Surface Soil – CT
Site 15
NAS Pensacola

						Site Resident			Site Worker	
						Adult	Child	LWA	Adult	
Chemical	EPC (mglkg)	Inorganic	DAF	Dermal RfD (mg/kg-day)	Dermal SF (kg-day/mg)	HQ	HQ	ILCR	HQ	ILCR
Aldrin	0.002	no	0.5	0.000015	34	0.0000501	0.000165	5.0E-09	0.000054	2.0E-09
alpha-Chlordane	0.466	no	0.5	0.00003	2.6	0.0058	0.019	8.88-08	0.0062	3.5E-08
Arsenic	18.03	yes	0.2	0.00006	7.5	0.011	0.037	9.9E-07	0.012	3.9E-07
BEQ	0.104	no	0.5	NA	14.6	NA	NA	1.1E-07	NA	4.48-08
Dieldrin	0.907	no	0.5	0.000025	32	0.014	0.045	2.1E-06	0.015	8.38-07
gamma-Chlordane	0.918	no	0.5	0.00003	2.6	0.012	0.038	1.7E-07	0.012	6.8E-08
Heptachlor epoxide	0.006	no	0.5	0.0000065	18.2	0.000347	0.0011	8.0E-09	0.00037	3.18-09
Manganese	95.5	yes	0.2	0.0046	NA	0.00078	0.0026	NA	0.000833	NA
Cumulative HI or ILCR						0.04	0.1	3E-06	0.05	18-06

Notes:
EPC = Exposure point concentration
RfD = Reference dose
SF = Slope factor
HQ = Hazard quotient
ILCR = Incremental lifetime excess cancer risk
HI = Hazard index
DAF = Dermal adjustment factor, used to account for gastrointestinal absorbtion efficiency in accordance with RAGS
Inorganic = In accordance with RAGS, dermal absorption factors of 0.01 and 0.001 were used to account for the fraction crossing the skin barrier for organics and inorganics, respectively; dermal intake was estimated in accordance with RAGS and E/A&H's Technical Memorandum
NA = Not Applicable
LWA = Lifetime weighted average

groundwater. Tables 9-29 and 9-30 summarize CT risk estimates for ingestion of groundwater at Exposure Areas 1 and 2, respectively.

9.1.3.7 Risk Summary

The risks and hazards posed by chemicals at Site 15 were assessed for the hypothetical site worker and the hypothetical future site resident under RME assumptions. For surface soil, the incidental ingestion and dermal contact pathways were assessed in this HHRA. The ingestion pathway was evaluated for groundwater. Table 9-17 (previously presented) summarizes the risk for each pathway/receptor group evaluated for Site 15.

9.1.3.8 Remedial Goal Options

Soil

Tables 9-31 and 9-32 present RGOs for COCs identified in soil.

Groundwater

Tables 9-33 through 9-36 present RGOs for COCs identified in groundwater.

Table 9-29
Central Tendency Risk Estimates
Incidental Ingestion of Groundwater at Exposure Area 1
Site 15
NAS Pensacola

				Site Resident			*Site Worker*	
				Adult	*Child*	*LWA*	*Adult*	
Chemical	**EPC (mg/L)**	**Oral RfD (mg/kg-day)**	**Oral SF (kg-day/mg)**	**HI**	**HI**	**ILCR**	**HI**	**ILCR**
Arsenic	0.219	0.0003	1.5	7.0	23	6.2E-04	6.6	2.1E-04
Dieldrin	0.0000129	0.00005	16	0.0025	0.0083	3.9E-07	0.0023	1.3E-07
			Summary:	7	23	6E-04	7	2E-04

Notes:
EPC - Exposure Point Concentration
RfD - Reference Dose
SF - Slope Factor
HI - Hazard Index
ILCR - Incremental lifetime excess cancer risk
LWA - Lifetime weighted average
mg/L - milligrams per liter
mg/kg-day - milligrams per kilogram per day
kg-day/mg - kilograms per day per milligram

Table 9-30
Central Tendency Risk Estimates
Incidental Ingestion of Groundwater at Exposure Area 2
Site 15
NAS Pensacola

				Site Resident			Site Worker	
				Adult	Child	LWA	Adult	
Chemical	EPC (mg/L)	Oral RfD (mg/kg-day)	Oral SF (kg-day/mg)	HQ	HQ	ILCR	HQ	ILCR
Arsenic	0.091	0.0003	1.5	2.9	10	2.6E-04	2.7	8.8E-05
Dieldrin	0.000039	0.00005	16	0.0075	0.025	1.2E-06	0.0070	4.0E-07
			Summary:	3	10	3E-04	3	9E-05

Notes:
EPC - Exposure Point Concentration
RfD - Reference Dose
SF - Slope Factor
HI - Hazard Index
ILCR - Incremental lifetime excess cancer risk
LWA - Lifetime weighted average
mg/L - milligrams per liter
mg/kg-day - milligrams per kilogram per day
kg-day/mg - kilograms per day per milligram

Table 9-31
Surface Soil Remedial Goal Options
Calculated in Accordance with RAGS Including the Site Resident
Incidental Ingestion and Dermal Contact Exposure Pathways
Site 15
NAS Pensacola

			Site Resident						
Chemical	EPC (mg/kg)	HI	HI = 0.1	HI = 1.0	HI = 3.0	ILCR	ILCR = 1E-6	ILCR = 1E-5	ILCR = 1E-4
Arsenic	18.03	0.78	2.31	23.1	69.4	4.38-05	0.416	4.16	41.6
alpha-Chlordane	0.466	0.11	0.41	4.1	12.3	1.28-06	0.401	4.01	40.1
BEQ	0.104	NA	NA	NA	NA	1.5E-06	0.071	0.71	7.1
Dieldrin	0.907	0.27	0.34	3.4	10.2	2.8E-05	0.033	0.33	3.3
gamma-Chlordane	0.918	0.22	0.41	4.1	12.3	2.38-06	0.401	4.01	40.1

Notes:
RGO - Remedial Goal Option, calculated in accordance with RAGS, based on the child receptor for site residents
EPC - Exposure Point Concentration
HI - Hazard Index
ILCR - Incremental Lifetime Excess Cancer Risk
mg/kg - milligrams per kilogram

Table 9-32
Surface Soil Remedial Goal Options
Calculated in Accordance with RAGS Including the Site Worker
Incidental Ingestion and Dermal Contact Exposure Pathways
Site 15
NAS Pensacola

			Site Worker						
Chemical	EPC (mg/kg)	HI	HI = 0.1	HI = 1.0	HI = 3.0	ILCR	ILCR = 1E-6	ILCR = 1E-5	ILCR = 1E-4
Arsenic	18.03	0.032	56.7	567	1700	5E-06	3.53	35.3	353
alpha-Chlordane	0.466	0.0069	6.7	67	202	2E-07	2.42	24.2	242
BEQ	0.104	NA	NA	NA	NA	2E-07	0.43	4.3	43
Dieldrin	0.907	0.016	5.6	56	168	5E-06	0.20	2.0	20
gamma-Chlordane	0.918	0.014	6.7	67	202	4E-07	2.42	24.2	242

Notes:

RGO - Remedial Goal Option, calculated in accordance with RAGS, based on the child receptor for site residents
EPC - Exposure Point Concentration
HI - Hazard index
ILCR - Incremental Lifetime Excess Cancer Risk
mg/kg - milligrams per kilogram

Table 9-33
Groundwater Remedial Goal Options
Calculated in Accordance with RAGS Including the Site Resident
Ingestion Exposure Pathway
Site 15 – Exposure Area 1
NAS Pensacola

			Site Resident						
Chemical	**EPC (mg/L)**	**HI**	**HI = 0.1**	**HI = 1.0**	**HI = 3.0**	**ILCR**	**ILCR = 1E-6**	**ILCR = 1E-5**	**ILCR = 1E-4**
Arsenic	0.219	47	0.00047	0.0047	0.014	4.9E-03	0.000045	0.00045	0.0045
Dieldrin	0.0000129	0.0165	0.00008	0.0008	0.002	3.1E-06	0.0000042	0.000042	0.00042

Notes:
RGO - Remedial Goal Option, calculated in accordance with RAGS, based on the child receptor for site residents
EPC - Exposure Point Concentration
HI - Hazard Index
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-34
Groundwater Remedial Goal Options
Calculated in Accordance with RAGS Including the Site Worker
Ingestion Exposure Pathway
Site 15 - Exposure Area I
NAS Pensacola

			Site Worker						
Chemical	EPC (mg/L)	HI	HI = 0.1	HI = 1.0	HI = 3.0	ILCR	ILCR = 1E-6	ILCR = 1E-5	ILCR = 1E-4
Arsenic	0.219	7.1	0.0031	0.031	0.092	1.1E-03	0.00019	0.0019	0.019
Dieldrin	0.0000129	0.0025	0.00051	0.0051	0.015	7.2E-07	0.000018	0.00018	0.0018

Notes:
RGO - Remedial Goal Option, calculated in accordance with RAGS, based on the child receptor for site residents
EPC - Exposure Point Concentration
HI - Hazard Index
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-35
Groundwater Remedial Goal Options
Calculated in Accordance with RAGS Including the Site Resident
Ingestion Exposure Pathway
Site 15 – Exposure Area 2
NAS Pensacola

			Site Resident						
Chemical	**EPC (mg/L)**	**HI**	**HI = 0.1**	**HI = 1.0**	**HI = 3.0**	**ILCR**	**ILCR = 1E-6**	**ILCR = 1E-5**	**ILCR = 1E-4**
Arsenic	0.091	47	0.00020	0.0020	0.0059	4.98-03	0.000019	0.00019	0.0019
Dieldrin	0.000039	0.0165	0.00024	0.0024	0.0071	3.1E-06	0.000013	0.00013	0.0013

Notes:
RGO - Remedial Goal Option, calculated in accordance with RAGS, based on the child receptor for site residents
EPC - Exposure Point Concentration
HI - Hazard Index
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-36
Groundwater Remedial Goal Options
Calculated in Accordance with RAGS Including the Site Worker
Ingestion Exposure Pathway
Site IS – Exposure Area 2
NAS Pensacola

			Site Worker						
Chemical	EPC (mg/L)	HI	HI = 0.1	HI = 1.0	HI = 3.0	ILCR	ILCR = 1E-6	ILCR = 1E-5	ILCR = 1E-4
Arsenic	0.091	7.1	0.0013	0.013	0.038	1.1E-03	0.00008	0.0008	0.008
Dieldrin	0.000039	0.0025	0.00155	0.0155	0.046	7.2E-07	0.000054	0.00054	0.0054

Notes:
RGO - Remedial Goal Option, calculated in accordance with RAGS, based on the child receptor for site residents
EPC - Exposure Point Concentration
HI - Hazard Index
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

9.1.4 Graphical Presentation of Risk Estimates

In addition to the standard tabular presentation of risk estimates in Section 9.1.3, point estimate maps were plotted for soil and groundwater to clarify the spatial distribution for risk managers. As an extension of conventional data presentation, excess cancer risk and hazard estimates were calculated for each sample location. Point estimates of risk and hazard were developed for both residential and industrial land use scenarios.

Tables were generated to present risk estimates for each COPC at each sample location using the ratio of the reported concentration to the corresponding RGO and risk estimate used to develop the RGO. For example, the residential RGO for arsenic is 0.416 mg/kg when estimated at 1E-6 risk for an LWA residential receptor. A soil arsenic concentration of 18.03 mg/kg would result in a risk estimate of 4.3E-5. This method incorporates both incidental ingestion and dermal contact exposure pathways, the basis for calculating RGOs.

COPCs were not detected at all sample locations. However, since low pesticide concentrations may exist at the golf course, concentrations were assumed to be present in site samples slightly below sample quantitation limits, when COPCs were reported as nondetects. As discussed in Section 9.1.2, the assumed concentration for a specific organic COPC equals either one-half of the lowest reported hit or one-half the reported sample quantitation limit. Using one-half the lowest reported hit accounts for any elevated sample quantitation limits that could bias risk estimates and overestimate risk by using some other assumed concentration. Assumed concentrations for inorganics equal one-half of the reported sample quantitation limit, as discussed in Section 9.1.2. After estimating risk for each COPC and each sample location, risk estimates were summed to provide cumulative risk estimates for each sample location and land use scenario. Tables presenting hazard estimates were similarly developed.

ArcView, a graphical data presentation and geographic information system software package, was used to plot risk and hazard estimates on base maps. The risk or hazard for individual locations was plotted using corresponding northing and easting data. All graphical presentations of risk and corresponding tables are based on RME exposure assumptions and RGOs presented in Section 9.1.3. Figures were developed for an industrial land use scenario only. Point estimates for a residential land use scenario are shown in corresponding tables.

Risk and hazard point mapping is useful for determining whether hot spots (or isolated areas of gross contamination) exist within an otherwise unimpacted area and in identifying areas where remedial activities would be more effective. This information is important because heterogeneous contaminant concentrations can affect the manner in which receptors are exposed to the affected media. As discussed earlier, it is sometimes appropriate to estimate the FI/FC from the contaminated source in computing CDI. Point maps allow for visual analysis of risk and hazard distributions and facilitate estimation of the extent of hot spots relative to the overall site area. These maps also support preliminary scoping of remedial requirements as well as assessment of potential cleanup alternatives in the FS.

Cumulative risk maps could be misleading when different chemicals contribute to elevated risk estimates in a cluster of sample locations. Such an area could appear to be a hot spot, when chemicals with different toxicology were reported at each location. For this reason, it is important to support the figures with tables showing individual chemical concentrations along with risk and hazard estimates. These tables are sorted by sample location and also show cumulative values for each location.

Figures presented in this report are approximations which include many uncertainties. Groundwater quality and the availability of drinking water from Corry Station would make using onsite groundwater highly unlikely, and groundwater exposure pathways would not likely be completed. Point estimates shown in tables and figures below would overestimate risk and hazard for the groundwater pathways. The numerous uncertainties in risk and hazard estimates presented

in tables and figures below should be considered by risk management when making decisions regarding the potential for exposure to site media. If an exposure pathway will not be completed, that pathway poses no risk.

Risk figures were developed for soil risk, groundwater risk, and groundwater hazard. Figures and corresponding tables are listed in Table 9-37. As previously discussed, figures were developed only for an industrial land use scenario, although estimates assuming residential land use are provided in corresponding tables. In some instances, chemicals contributed to very little risk or hazard at very few sample locations. In these instances, color figures were not informative and were not developed, and these instances are detailed below.

Table 9-38 presents risk and hazard estimates for these chemicals sorted by sample location. Arsenic was the primary contributor to soil risk presented in Table 9-39. Table 9-40 shows BEQ risk estimates, which exceeded 1E-6 at only one sample location, 15S21. Table 9-41 shows dieldrin risk estimates greater than 1E-6 at three locations, 15S04, 15S14, and 15S14, and these locations are grouped very closely, as shown on Figure 9-1. Risk estimates for alpha-Chlordane exceeded 1E-6 at only one sample location, 15S16, as shown in Table 9-42. Soil risk estimates were below 1E-6 at all soil sample locations for gamma-Chlordane, as shown in Table 9-43. Because the spatial distribution of risk posed by the majority of the soil COPCs is limited and the information is presented in tables referenced above, a soil risk figure was developed only for arsenic.

Similarly, figures presenting hazard in soil were not developed because only one sample location would have been highlighted, 15S14. As shown in Table 9-39, the hazard estimate for arsenic at this location is between 0.1 and 0.5, and the figure would not be informative. Table 9-38 presents cumulative risk and hazard estimates for soil sample locations.

Separate figures showing dieldrin hazard estimates in groundwater were not developed because dieldrin contributed less than 0.1 hazard at all sample locations in all phases sampled. As shown in Tables 9-44, 9-46, 9-48, 9-49, 9-50, and 9-51, arsenic was the primary contributor to groundwater hazard estimates. Tables 9-45, 9-47, and 9-52 present dieldrin hazard estimates.

Table P37
Individual Risk Estimate Maps
Site 15
NAS Pensacola

Figure	Medium	Phase	Land use	Type	Chemical	Table
9-1	surface Soil		Industrial	risk	cumulative	9-38
9-2	surface Soil		Industrial	risk	arsenic	9-39
9-3	Groundwater	I	Industrial	risk	arsenic	9-44
9 4	Groundwater	II	Industrial	risk	arsenic	945
9-5	Groundwater	IIB	Industrial	risk	arsenic	9-46
9-6	Groundwater	III	Industrial	risk	arsenic	947
9-7	Groundwater	IIIB	Industrial	risk	arsenic	9-48
9-8	Groundwater	IIIC	Industrial	risk	arsenic	949
9-9	Groundwater	I	Industrial	risk	dieldrin	9-50
9-10	Groundwater	II	Industrial	risk	dieldrin	9-51
9-11	Groundwater	IIIC	Industrial	risk	dieldrin	9-52
9-12	Groundwater	I	Industrial	hazard	arsenic	9-44
9-13	Groundwater	II	Industrial	hazard	arsenic	945
9-14	Groundwater	IIB	Industrial	hazard	arsenic	946
9-15	Groundwater	III	Industrial	hazard	arsenic	9-47
9-16	Groundwater	IIIB	Industrial	hazard	arsenic	9-48
9-17	Groundwater	IIIC	Industrial	hazard	arsenic	949
NA	Groundwater	I	Industrial	hazard	dieldrin	9-50
NA	Groundwater	II	Industrial	hazard	dieldrin	9-51
NA	Groundwater	IIIC	Industrial	hazard	dieldrin	9-52
NA	Surface Soil		Industrial	risk	alpha-chlordane	9-42
NA	Surface Soil		Industrial	hazard	alpha-chlordane	9-42
NA	Surface Soil		Industrial	hazard	arsenic	9-39
NA	Surface Soil		Industrial	risk	BEQ	9-40
NA	Surface Soil		Industrial	hazard	cumulative	9-38
NA	Surface Soil		Industrial	risk	dieldrin	9-41
NA	Surface Soil		Industrial	hazard	dieldrin	9 41
NA	Surface Soil		Industrial	risk	gamma-chlordane	9-43
NA	Surface Soil		Industrial	hazard	gamma-chlordane	943
NA	Groundwater	I	Residential	risk	arsenic	9-44
NA	Groundwater	1	Residential	hazard	arsenic	9-44
NA	Groundwater	II	Residential	risk	arsenic	9-45
NA	Groundwater	I1	Residential	hazard	arsenic	9-45
NA	Groundwater	IIB	Residential	risk	arsenic	946
NA	Groundwater	IIB	Residential	hazard	arsenic	9-46
NA	Groundwater	III	Residential	risk	arsenic	947
NA	Groundwater	III	Residential	hazard	arsenic	9-47
NA	Groundwater	IIIB	Residential	risk	arsenic	948
NA	Groundwater	IIIB	Residential	hazard	arsenic	948
NA	Groundwater	IIIC	Residential	risk	arsenic	949
NA	Groundwater	IIIC	Residential	hazard	arsenic	9-49
NA	Groundwater	I	Residential	risk	dieldrin	9-50
NA	Groundwater	I	Residential	hazard	dieldrin	9-50

Table 9-37
Individual Risk Estimate Maps
Site 15
NAS Pensacola

Figure	Medium	Phase	Land use	Type	Chemical	Table
NA	Groundwater	II	Residential	risk	dieldnn	9-51
NA	Groundwater	II	Residential	hazard	dieldrin	9-51
NA	Groundwater	IIIC	Residential	risk	dieldrin	9-52
NA	Groundwater	IIIC	Residential	hazard	dieldrin	9-52
NA	Surface Soil		Residential	risk	alpha-chlordane	9-42
NA	Surface Soil		Residential	hazard	alpha-chlordane	9-42
NA	Surface Soil		Residential	risk	arsenic	9-39
NA	Surface Soil		Residential	hazard	arsenic	9-39
NA	Surface Soil		Residential	risk	BEQ	9-40
NA	Surface Soil		Residential	risk	cumulative	9-38
NA	Surface Soil		Residential	hazard	cumulative	9-38
NA	Surface Soil		Residential	risk	dieldrin	9-41
NA	Surface Soil		Residential	hazard	dieldrin	9-41
NA	Surface Soil		Residential	risk	gammachlordane	9-43
NA	Surface Soil		Residential	hazard	gamma-chlordane	9-43

Notes:

NA = Not applicable

Table 9-38
HQs and ILCRs for Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Chemical	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0001-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0001-01	Arsenic	3.4	8.2E-06	0.15	9.6E-07	0.0060
015-S-0001-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0001-01	Dieldrin	0.0034	1.OEM	0.0010	1.7E-08	0.000061
015-S-0001-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			8.3E-06	0.1485	9.9E-07	0.006091
015-S-0002-01	alpha-Chlordane	0.0086	2.1E-08	0.002	3.6E-09	0.0001
015-S-0002-01	Arsenic	8.1	1.9E-05	0.35	2.3E-06	0.0143
015-S-0002-01	BEQ	0.10	1.4E-06	NA	2.4E-07	NA
015-S-0002-01	Dieldrin	0.0099	3.0E-07	0.00289898	5.0E-08	0.000176
015-S-0002-01	gamma-Chlordane	0.013	3.2E-08	0.0032	5.4E-09	0.000193
			2.1E-05	0.3584	2.6E-06	0.014790
015-S-0003-01	alpha-Chlordane	0.0028	7.0E-09	0.001	1.2E-09	0.000042
015-S-0003-01	Arsenic	1.1	2.6E-06	0.05	3.1E-07	0.0019
015-S–oo03-01	BEQ	0.066	9.2E-07	NA	1.5E-07	NA
015-S–oo03-01	Dieldrin	0.0062	1.9E-07	0.00181552	3.1E-08	0.000110
015-S-0003-01	gamma-Chlordane	0.0032	8.0E-09	0.0008	1.3E-09	0.000047
			3.8E-06	0.0508	5.OE-07	0.002141
015-S-0004-01	alpha-Chlordane	0.022	5.5E-08	0.005	9.1E-09	0.0003
015-S-0004-01	Arsenic	41.6	1.0E-04	1.80	1.2E-05	0.0734
015-S-0004-01	BEQ	0.021	3.0E-07	NA	5.0E-08	NA
015-S-0004-01	Dieldrin	0.36	1.lE-05	0.10541728	1.8E-06	0.006411
015-S-0004-01	gamma-Chlordane	0.037	9.2E-08	0.0090	1.5E-08	0.000549
			1.1E-04	1.9183	1.4E-05	0.080694
015-S-0005-01	alpha-Chlordane	0.0026	6.5E-09	0.001	1.lE-09	3.85871E-05
015-S-0005-01	Arsenic	8.2	2.0E-05	0.35	2.3E-06	0.0145
015-S-0005-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S–oo05-01	Dieldrin	0.014	4.3E-07	0.00409956	7.1E-08	0.000249
015-S-0005-01	gamma-Chlordane	0.0021	5.2E-09	0.0005	8.7E-10	0.000031
			2.0E-05	0.3598	2.4E-06	0.014789
015-S-0006-01	alpha-Chlordane	0.0038	9.5E-09	0.001	1.6E-09	0.0001
015-S-0006-01	Arsenic	2.3	5.5E-06	0.10	6.5E-07	0.0041
015-S-0006-01	BEQ	0.070	9.8E-07	NA	1.6E-07	NA
015-S-0006-01	Dieldrin	0.0036	1.1E-07	0.00105417	1.8E-08	0.000064
015-S-0006-01	gamma-Chlordane	0.0039	9.7E-09	0.0010	1.6E-09	0.000058

Table 9-38
HQs and ILCRs for Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Chemical	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ	Site Worker Scenario ILCR	Site Worker Scenario HQ
			6.6E-06	0.1024	8.4E-07	0.004237
015-S-OO07-01	alpha-Chlordane	0.018	4.5E-08	0.004	7.4E-09	0.0003
015-S-0007-01	Arsenic	56.5	1.4E-04	2.44	1.6E-05	0.0997
015-S-OO07-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0007-01	Dieldrin	0.013	4.0E-07	0.00380673	6.6E-08	0.000232
015-S-0007-01	gamma-Chlordane	0.016	4.0E-08	0.0039	6.6E-09	0.000237
			1.4E-04	2.4548	1.6E-05	0.100436
015-S-0009-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0009-01	Arsenic	3.2	7.7E-06	0.14	9.1E-07	0.0056
015-S-0009-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0009-01	Dieldrin	0.00052	1.6E-08	0.00015227	2.6E-09	0.000009
015-S-0009-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			7.8E-06	0.1390	9.2E-07	0.005687
015-S-0010-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0010-01	Arsenic	5	1.2E-05	0.22	1.4E-06	0.0088
015-S-0010-01	BEQ	0.043	6.0E-07	NA	9.9E-08	NA
015-S-0010-01	Dieldrin	0.0015	4.6E-08	0.00043924	7.6E-09	0.000027
015-S-0010-01	gamma-Chlordane	0.0019	4.7E-09	0.0005	7.9E-10	0.000028
			1.3E-05	0.2171	1.5E-06	0.008882
015-S-0011-01	alpha-Chlordane	0.0014	3.5E-09	0.00034146	5.8E-10	0.000021
015-S-0011-01	Arsenic	1.1	2.6E-06	0.05	3.1E-07	0.0019
015-S-0011-01	BEQ	0.030	4.2E-07	NA	6.9E-08	NA
015-S-0011-01	Dieldrin	0.0092	2.8E-07	0.002694	4.7E-08	0.000164
015-S-0011-01	gamma-Chlordane	0.0016	4.0E-09	0.0004	6.6E-10	0.000024
			3.3E-06	0.0510	4.3E-07	0.002149
015-S-0012-01	alpha-Chlordane	0.00058	1.4E-09	0.00014146	2.4E-10	0.000009
015-S-0012-01	Arsenic	25.5	6.1E-05	1.10	7.2E-06	0.0450
015-S-0012-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0012-01	Dieldrin	0.0021	6.4E-08	0.00061493	1.1E-08	0.000037
015-S-0012-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			6.1E-05	1.1037	7.3E-06	0.045070
015-S-0013-01	alpha-Chlordane	0.44	1.1E-06	0.107	1.8E-07	0.0065
015-S-0013-01	Arsenic	15.1	3.6E-05	0.65	4.3E-06	0.0266
015-S-0013-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA

Table 9-38
HQs and ILCRs for Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Chemical	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0013-01	Dieldrin	0.047	1.4E-06	0.01376281	2.4E-07	0.000837
015-S-0013-01	gamma-Chlordane	0.58	1.4E-06	0.1415	2.4E-07	0.008608
			4.0E-05	0.9154	5.0E-06	0.042621
015-S-O014-01	alpha-Chlordane	0.038	9.5E-08	**0.009**	1.6E-08	**0.0006**
015-s-o014-01	Arsenic	66.3	1.6E-04	2.87	1.9E-05	0.1170
015-S-0014-01	BEQ	0.015	2.1E-07	NA	3.5E-08	NA
015-S-0014-01	Dieldrin	3	9.2E-05	0.87847731	1.5E-05	0.053428
015-S-0014-01	gamma-Chlordane	0.052	1.3E-07	0.0127	2.1E-08	0.000772
			2.5E-04	3.7668	3.4E-05	0.171757
015-S-O015-01	alpha-Chlordane	0.016	4.0E-08	**0.004**	6.6E-09	0.0002
015-S-0015-01	Arsenic	34.6	8.3E-05	1.50	9.8E-06	0.061 1
015-S-O015-01	BEQ	0.011	1.5E-07	NA	2.6E-08	NA
015-S-O015-01	Dieldrin	0.21	6.4E-06	0.06149341	1.1E-06	0.003740
015-S-O015-01	gamma-Chlordane	0.016	4.0E-08	0.0039	6.6E-09	0.000237
			9.0E-05	1.5652	1.1E-05	0.065270
015-S-o016-01	alpha-Chlordane	3.1	7.7E-06	0.756	1.3E-06	0.0460
015-S-o016-01	Arsenic	8.9	2.1E-05	0.38	2.5E-06	0.0157
015-s-O016-01	BEQ	0.0089	1.2E-07	NA	2.1E-08	NA
015-S-O016-01	Dieldrin	0.088	2.7E-06	0.02576867	4.5E-07	0.001567
015-S-0016-01	gamma-Chlordane	2	5.0E-06	0.4878	8.3E-07	0.029682
			3.7E-05	1.6545	5.1E-06	**0.092962**
015-S-O017-01	alpha-Chlordane	0.009	2.2E-08	0.002	3.7E-09	0.000133571
015-S-0017-01	Arsenic	2.4	**5.8E-06**	0.10	6.8E-07	0.0042
015-S-O017-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-O017-01	Dieldrin	0.029	8.9E-07	0.00849195	1.5E-07	0.000516
015-S-O017-01	gamma-Chlordane	0.044	1.1E-07	0.0107	1.8E-08	**0.000653**
			6.8E-06	0.1252	8.6E-07	0.005538
015-S-O018-01	alpha-Chlordane	0.0018	4.5E-09	0.00043902	7.4E-10	0.000027
015-S-0018-01	Arsenic	0.99	2.4E-06	0.04	2.8E-07	0.0017
015-S-0018-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-O018-01	Dieldrin	0.018	5.5E-07	0.00527086	9.1E-08	0.000321
015-S-0018-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			3.0E-06	0.0490	3.8E-07	0.002121
015-S-0020-01	alpha-Chlordane	0.059	1.5E-07	0.014	2.4E-08	0.0009

Table P38
HQs and ILCRs for Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Chemical	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0020-01	Arsenic	16	3.8E-05	0.69	4.5E-06	0.0282
015-S-oO20-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-OO20-01	Dieldrin	0.018	5.5E-07	0.00527086	9.1E-08	0.000321
015-S-0020-01	gamma-Chlordane	0.11	2.7E-07	0.0268	4.5E-08	0.001633
			3.9E-05	0.7382	4.7E-06	0.031062
015-S-0021-01	alpha-Chlordane	0.0064	1.6E-08	0.002	2.6E-09	9.49837E-05
015-S-0021-01	Arsenic	13.1	3.1E-05	0.57	3.7E-06	0.0231
015-S-0021-01	BEQ	1.6	2.3E-05	NA	3.7E-06	NA
015-S-0021-01	Dieldrin	0.0072	2.2E-07	0.00210835	3.7E-08	0.000128
015-S-O021-01	gamma-Chlordane	0.0092	2.3E-08	0.0022	3.8E-09	0.000137
			5.4E-05	0.5723	7.5E-06	0.023476
015-S-0022-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0022-01	Arsenic	0.29	7.0E-07	0.0125	8.2E-08	0.0005
015-S-0022-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-o022-01	Dieldrin	0.0034	1.0E-07	0.00099561	1.7E-08	0.000061
015-S-0022-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			8.7E-07	0.0140	1.1E-07	0.000603
015-S-023-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0023-01	Arsenic	0.11	2.6E-07	0.0048	3.1E-08	0.0002
015-S-0023-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0023-01	Dieldrin	0.00059	1.8E-08	0.00017277	3.0E-09	0.000011
015-S-0023-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			3.5E-07	0.0054	4.5E-08	0.000236
015-S-0024-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0024-01	Arsenic	1.5	3.6E-06	0.06	4.3E-07	0.0026
015-S-0024-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0024-01	Dieldrin	0.00059	1.8E-08	0.00017277	3.0E-09	0.000011
015-S-0024-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			3.7E-06	***0.0655***	4.4E-07	0.002688
015-S-OO25-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0025-01	Arsenic	3	7.2E-06	0.13	8.5E-07	0.0053
015-S-0025-01	BEQ	0.037	5.2E-07	NA	8.7E-08	NA
015-S-O025-01	Dieldrin	0.0035	1.1E-07	0.00102489	1.8E-08	0.000062
015-S-0025-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			7.8E-06	0.1312	9.6E-07	0.005387

Table 9-38
HQs and ILCRs for Surface Soil *Ingestion* and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Chemical	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-O026-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-O026-01	Arsenic	0.11	2.6E-07	0.005	3.1E-08	0.0002
015-S-O026-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0026-01	Dieldrin	0.0034	1.0E-07	0.00099561	1.7E-08	0.000061
015-S-O026-01	gamma-Chlordane	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
			4.4E-07	0.0063	6.OE-08	0.000286
015-S-0027-01	alpha-Chlordane	0.0076	1.9E-08	0.002	3.1E-09	0.000112793
015-S-0027-01	Arsenic	22.4	5.4E-05	0.97	6.4E-06	0.0395
015-S-0027-01	BEQ	0.034	4.8E-07	NA	7.9E-08	NA
015-S-O027-01	Dieldrin	0.055	1.7E-06	0.01610542	2.8E-07	0.000980
015-S-O027-01	gamma-Chlordane	0.02	5.0E-08	0.0049	8.3E-09	0.000297
			5.6E-05	0.9913	6.7E-06	0.040916
015-S-O029-01	alpha-Chlordane	0.00029	7.2E-10	7.0732E-05	1.2E-10	0.000004
015-S-0029-01	Arsenic	0.29	7.0E-07	0.01	8.2E-08	0.0005
015-S-0029-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-O029-01	Dieldrin	0.0029	8.9E-08	0.00084919	1.5E-08	0.000052
015-S-OO29-01	gamma-Chlordane	0.00054	1.3E-09	0.0001	2.2E-10	0.000008
			8.5E-07	0.0136	1.1E-07	0.000576
015-S-OO30-01	alpha-Chlordane	0.0026	6.5E-09	0.0006	1.1E-09	3.85871E-05
015-S-0030-01	Arsenic	0.41	9.8E-07	0.02	1.2E-07	0.0007
015-S-0030-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0030-01	Dieldrin	0.029	8.9E-07	0.00849195	1.5E-07	0.000516
015-S-OO30-01	gamma-Chlordane	0.0021	5.2E-09	0.0005	8.7E-10	0.000031
			1.9E-06	0.0274	2.8E-07	0.001310
015-S-0031-01	alpha-Chlordane	0.0014	3.5E-09	0.0003	5.8E-10	2.07777E-05
015-S-0031-01	Arsenic	0.94	2.3E-06	0.04	2.7E-07	0.0017
015-S-0031-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0031-01	Dieldrin	0.051	1.6E-06	0.01493411	2.6E-07	0.000908
015-S-0031-01	gamma-Chlordane	0.0012	3.0E-09	0.0003	5.0E-10	0.000018
			3.9E-06	0.0562	5.4E-07	0.002606
015-S-0032-01	Arsenic	2.3	5.5E-06	0.10	6.5E-07	0.0041
015-S-0041-01	Arsenic	8.5	2.0E-05	0.37	2.4E-06	0.0150

Table 9-38
HQs and ILCRs for Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola. FL

Sample ID	Chemical	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-O042-01	Arsenic	6.5	1.6E-05	0.28	1.8E-06	0.0115
015-S-0043-01	Arsenic	2.4	5.8E-06	0.10	6.8E-07	0.0042
015-S-0044-01	Arsenic	1.8	4.3E-06	0.08	5.1E-07	0.0032
015-S-O045-01	Arsenic	4	9.6E-06	0.17	1.1E-06	0.0071
015-S-0045-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
			9.7E-06	0.17	1.1E-06	0.0071
015-S-0046-01	Arsenic	2.4	5.8E-06	0.10	6.8E-07	0.0042
015-S-0046-01	BEQ	0.0044	6.2E-08	NA	1.0E-08	NA
			5.8E-06	0.10	6.9E-07	0.0042
015-S-0047-01	Arsenic	3.6	8.6E-06	0.16	1.0E-06	0.0064
015-S-0047-01	BEQ	0.13	1.8E-06	NA	3.0E-07	NA
			1.0E-05	0.16	1.3E-06	0.0064
015-S-0048-01	Arsenic	1.5	3.6E-06	0.06	4.3E-07	0.0026
015-S-0048-01	BEQ	0.096	1.3E-06	NA	2.2E-07	NA
			4.9E-06	*0.06*	6.5E-07	*0.0026*
015-S-0049-01	Arsenic	0.66	1.6E-06	0.03	1.9E-07	0.0012
015-S-0050-01	Arsenic	1.9	4.6E-06	0.08	5.4E-07	0.0034
015-S-0051-01	Arsenic	2.7	6.5E-06	0.12	7.7E-07	0.0048
015-S-0052-01	Arsenic	5.1	1.2E-05	0.22	1.4E-06	0.0090
015-S-0053-01	Arsenic	16	3.8E-05	0.69	4.5E-06	0.0282
015-s-oo54-01	Arsenic	3.1	7.4E-06	0.13	8.8E-07	0.0055
015-S-0055-01	Arsenic	11.1	2.7E-05	0.48	3.1E-06	0.0196
015-S-0056-01	Arsenic	0.43	1.0E-06	0.02	1.2E-07	0.0008
015-S-0057-01	Arsenic	1.9	4.6E-06	0.08	5.4E-07	0.0034

Table 9-38
HQs and ILCRs far Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Chemical	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0058-01	Arsenic	7.5	1.8E-05	0.32	2.1E-06	0.0132
015-S-0059-01	Arsenic	2.9	7.0E-06	0.13	8.2E-07	0.0051
015-S-0060-01	Arsenic	3.7	8.9E-06	0.16	1.0E-06	0.0065
015-S-0061-01	Arsenic	18.9	4.5E-05	0.82	5.4E-06	0.0334
015-S-0062-01	Arsenic	3.1	7.4E-06	0.13	8.8E-07	0.0055
015-S-0063-01	Arsenic	5	1.2E-05	0.22	1.4E-06	0.0088
015-S-0064-01	Arsenic	5.6	1.3E-05	0.24	1.6E-06	0.0099
015-S-0064-01	BEQ	0.16	2.2E-06	NA	3.7E-07	NA
			1.6E-05	0.24	2.0E-06	0.0099

Notes:
HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/kg - milligrams per kilogram

Table 9-39
HQs and ILCRs for Arsenic via Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0001-01	3.4	8.2E-06	0.15	9.6E-07	0.0060
015-S–oo02-01	8.1	1.9E-05	0.35	2.3E-06	0.0143
015-S–oo03-01	1.1	2.6E-06	0.05	3.1E-07	0.0019
015-S-0004-01	41.6	1.0E-04	1.80	1.2E-05	0.0734
015-S–oo05-01	8.2	2.0E-05	0.35	2.3E-06	0.0145
015-S-0006-01	2.3	5.5E-06	0.10	6.5E-07	0.0041
015-S–oo07-01	56.5	1.4E-04	2.44	1.6E-05	0.0997
015-S-0009-01	3.2	7.7E-06	0.14	9.1E-07	0.0056
015-S-OO10-01	5	1.2E-05	0.22	1.4E-06	0.0088
015-S-0011-01	1.1	2.6E-06	0.05	3.1E-07	0.0019
015-S-oO12-01	25.5	6.1E-05	1.10	7.2E-06	0.0450
015-S-00 13-01	15.1	3.6E-05	0.65	4.3E-06	0.0266
015-S-0014-01	66.3	1.6E-04	2.87	1.9E-05	0.1170
015-S-0015-01	34.6	8.3E-05	1.50	9.8E-06	0.061 1
015-S-OO16-01	8.9	2.1E-05	0.38	2.5E-06	0.0157
015-S-0017-01	2.4	5.8E-06	0.10	6.8E-07	0.0042
015-S-0018-01	0.99	2.4E-06	0.04	2.8E-07	0.0017
015-S-0020-01	16	3.8E-05	0.69	4.5E-06	0.0282
015-S-0021-01	13.1	3.1E-05	0.57	3.7E-06	0.023 1
015-S-0022-01	0.29	7.0E-07	0.01	8.2E-08	0.0005
015-S-O023-01	0.11	2.6E-07	0.00	3.1E-08	0.0002
015-S-0024-01	1.5	3.6E-06	0.06	4.3E-07	0.0026
015-S-0025-01	3	7.2E-06	0.13	8.5E-07	0.0053
015-S-0026-01	0.11	2.6E-07	0.00	3.1E-08	0.0002
015-S-0027-01	22.4	5.4E-05	0.97	6.4E-06	0.0395
015-S-0029-01	0.29	7.0E-07	0.01	8.2E-08	0.0005
015-S-0030-01	0.41	9.8E-07	0.02	1.2E-07	0.0007
015-S-0031-01	0.94	2.3E-06	0.04	2.7E-07	0.0017
015-S-0032-01	2.3	5.5E-06	0.10	6.5E-07	0.0041
015-s-0041-01	8.5	2.0E-05	0.37	2.4E-06	0.0150
015-S-0042-01	6.5	1.6E-05	0.28	1.8E-06	0.01 15
015-S-0043-01	2.4	5.8E-06	0.10	6.8E-07	0.0042
015-S-0044-01	1.8	4.3E-06	0.08	5.1E-07	0.0032
015-S-0045-01	4	9.6E-06	0.17	1.1E-06	0.0071
015-S-0046-01	2.4	5.8E-06	0.10	6.8E-07	0.0042
015-S-0047-01	3.6	8.6E-06	0.16	1.0E-06	0.0064
015-S-0048-01	1.5	3.6E-06	0.06	4.3E-07	0.0026
015-S-0049-01	0.66	1.6E-06	0.03	1.9E-07	0.0012
015-S-0050-01	1.9	4.6E-06	0.08	5.4E-07	0.0034
015-S-0051-01	2.7	6.5E-06	0.12	7.7E-07	0.0048
015-S-OO52-01	5.1	1.2E-05	0.22	1.4E-06	0.0090

Table 9-39
HQs and ILCRs for Arsenic via Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-OO53-01	16	3.8E-05	0.69	4.5E-06	0.0282
015-S-0054-01	3.1	7.4E-06	0.13	8.8E-07	0.0055
015-S-0055-01	11.1	2.7E-05	0.48	3.1E-06	0.01%
015-S-0056-01	0.43	1.0E-06	0.02	1.2E-07	0.0008
015-S-O057-01	1.9	4.6E-06	0.08	5.4E-07	0.0034
015-S-O058-01	7.5	1.8E-05	0.32	2.1E-06	0.0132
015-S-O059-01	2.9	7.0E-06	0.13	8.2E-07	0.0051
015-S-0060-01	3.7	8.9E-06	0.16	1.0E-06	0.0065
015-S-0061-01	18.9	4.5E-05	0.82	5.4E-06	0.0334
015-S-0062-01	3.1	7.4E-06	0.13	8.8E-07	0.0055
015-S-0063-01	5	1.2E-05	0.22	1.4E-06	0.0088
015-S-0064-01	5.6	1.3E-05	0.24	1.6E-06	0.0099

Notes:
HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/kg - milligrams per kilogram

Table 9-40

HQs and ILCRs for BEQ via Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point

NAS Pensacola

Pensacola, FL

Sample ID	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0001-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-OOO2-01	0.10	1.4E-06	NA	2.4E-07	NA
015-S-0003-01	0.066	9.2E-07	NA	1.5E-07	NA
015-S-0004-01	0.021	3.0E-07	NA	5.0E-08	NA
015-S-0005-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0006-01	0.070	9.8E-07	NA	1.6E-07	NA
015-S-0007-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0009-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-s-0010-01	0.043	6.0E-07	NA	9.9E-08	NA
015-S-0011-01	0.030	4.2E-07	NA	6.9E-08	NA
015-S-0012-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0013-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0014-01	0.015	2.1E-07	NA	3.5E-08	NA
015-S-0015-01	0.011	1.5E-07	NA	2.6E-08	NA
015-S-0016-01	0.0089	1.2E-07	NA	2.1E-08	NA
015-S-0017-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0018-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0020-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0021-01	1.6	2.3E-05	NA	3.7E-06	NA
015-S-0022-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0023-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0024-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0025-01	0.037	5.2E-07	NA	8.7E-08	NA
015-S-0026-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0027-01	0.034	4.8E-07	NA	7.9E-08	NA
015-S-0029-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0030-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0031-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0045-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0046-01	0.0044	6.2E-08	NA	1.0E-08	NA
015-S-0047-01	0.13	1.8E-06	NA	3.0E-07	NA
015-S-0048-01	0.096	1.3E-06	NA	2.2E-07	NA
015-S-0064-01	0.16	2.2E-06	NA	3.7E-07	NA

Notes:

HQ - Hazard Quotient

ILCR - Incremental Lifetime Excess Cancer Risk

mg/kg - milligrams per kilogram

Tabk 9-41
HQs and ILCRs for Dieldrin via Surface Soil Ingestion and Dermal Contact at *Site* 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0001-01	0.0034	1.0E-07	0.000995608	1.7E-08	0.000061
015-S-0002-01	**0.0099**	3.0E-07	0.002898975	5.0E-08	0.000176
015-S-0003-01	**0.0062**	1.9E-07	0.00181552	3.1E-08	0.000110
015-S-0004-01	0.36	1.1E-05	0.105417277	1.8E-06	0.006411
015-S-0005-01	0.014	4.3E-07	0.004099561	7.1E-08	0.000249
015-S-0006-01	0.0036	1.1E-07	0.001054173	1.8E-08	**0.000064**
015-S-0007-01	0.013	4.OE-07	0.003806735	6.6E-08	0.000232
015-S-0009-01	0.00052	1.6E-08	0.000152269	2.6E-09	**0.000009**
015-S-0010-01	0.0015	4.6E-08	0.000439239	7.6E-09	0.000027
015-S-0011-01	**0.0092**	2.8E-07	0.002693997	4.7E-08	0.000164
015-S-OO12-01	0.0021	6.4E-08	0.000614934	1.1E-08	0.000037
015-S-O013-01	0.047	1.4E-06	0.013762811	2.4E-07	0.000837
015-S-OO14-01	3	9.2E-05	0.878477306	1.5E-05	0.053428
015-S-0015-01	0.21	6.4E-06	0.061493411	1.1E-06	0.003740
015-S-0016-01	0.088	2.7E-06	0.025768668	4.5E-07	0.001567
015-S-oO17-01	0.029	8.9E-07	0.008491947	1.5E-07	0.000516
015-S-0018-01	0.018	5.5E-07	0.005270864	9.1E-08	0.000321
015-S-0020-01	0.018	5.5E-07	0.005270864	9.1E-08	0.000321
015-S-0021-01	0.0072	2.2E-07	0.002108346	3.7E-08	0.000128
015-S-0022-01	0.0034	1.0E-07	0.000995608	1.7E-08	0.000061
015-SMn3-01	0.00059	1.8E-08	0.000172767	3.0E-09	0.000011
015-S-O024-01	0.00059	1.8E-08	0.000172767	3.0E-09	0.000011
015-S-0025-01	0.0035	1.1E-07	0.00102489	1.8E-08	0.000062
015-S-0026-01	0.0034	1.0E-07	0.000995608	**1.7E-08**	0.000061
015-S-O027-01	***0.055***	1.7E-06	0.016105417	2.8E-07	**0.000980**
015-S-0029-01	0.0029	8.9E-08	0.000849195	1.5E-08	0.000052
015-S-0030-01	0.029	8.9E-07	0.008491947	1.5E-07	0.000516
015-S-0031-01	***0.051***	1.6E-06	0.014934114	2.6E-07	0.000908

Notes:
HQ - **Hazard** Quotient
ILCR - Incremental Lifetime **Excess** Cancer **Risk**
mg/kg - milligrams per kilogram

Table 9-42
HQs and ILCRs for alpha-Chlordane via Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/kg)	Residential Scenario ILCR	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-S-0001-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.0000043
015-S-0002-01	0.0086	2.1E-08	0.002	3.6E-09	0.000127634
015-S-0003-01	0.0028	7.0E-09	0.0007	1.2E-09	0.000042
015-S-0004-01	0.022	5.5E-08	0.0054	9.1E-09	0.0003
015-S-0005-01	0.0026	6.5E-09	0.0006	1.1E-09	0.000039
015-S-0006-01	0.0038	9.5E-09	0.0009	1.6E-09	5.63966E-05
015-S-0007-01	0.018	4.5E-08	0.004	7.4E-09	0.0003
015-S-0009-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0010-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0011-01	0.0014	3.5E-09	0.000341463	5.8E-10	2.07777E-05
015-S-0012-01	0.00058	1.4E-09	0.000141463	2.4E-10	0.000009
015-S-0013-01	0.44	1.1E-06	0.107	1.8E-07	0.0065
015-S-0014-01	0.038	9.5E-08	0.009	1.6E-08	0.0006
015-S-0015-01	0.016	4.0E-08	0.004	6.6E-09	0.0002
015-S-0016-01	3.1	7.7E-06	0.756	1.3E-06	0.0460
015-S-0017-01	0.009	2.2E-08	0.002	3.7E-09	0.000133571
015-S-0018-01	0.0018	4.5E-09	0.000439024	7.4E-10	2.67142E-05
015-S-0020-01	0.059	1.5E-07	0.014	2.4E-08	0.0009
015-S-0021-01	0.0064	1.6E-08	0.002	2.6E-09	9.49837E-05
015-S-0022-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0023-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0024-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0025-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0026-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0027-01	0.0076	1.9E-08	0.002	3.1E-09	0.000112793
015-S-0029-01	0.00029	7.2E-10	7.07317E-05	1.2E-10	0.000004
015-S-0030-01	0.0026	6.5E-09	0.001	1.1E-09	3.85871E-05
015-S-0031-01	0.0014	3.5E-09	0.000341463	5.8E-10	2.07777E-05

Notes:

HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/kg - milligrams per kilogram

Table 9-43
HQs and ILCRs for gamma-Chlordane via Surface Soil Ingestion and Dermal Contact at Site 15 by Sampling Point
NAS Pensacola
Pensacola, FL

	Detected	Residential Scenario		Site Worker Scenario	
Sample ID	Concentration (mg/kg)	ILCR	HQ (Child)	ILCR	HQ
015-S-0001-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0002-01	0.013	3.2E-08	0.0032	5.4E-09	0.000193
015-S-0003-01	0.0032	8.0E-09	0.0008	1.3E-09	0.000047
015-S-0004-01	0.037	9.2E-08	0.0090	1.5E-08	0.000549
015-S-0005-01	0.0021	5.2E-09	0.0005	8.7E-10	0.000031
015-S-0006-01	0.0039	9.7E-09	0.0010	1.6E-09	0.000058
015-S-0007-01	0.016	4.0E-08	0.0039	6.6E-09	0.000237
015-S-0009-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0010-01	0.0019	4.7E-09	0.0005	7.9E-10	0.000028
015-S-0011-01	0.0016	4.0E-09	0.0004	6.6E-10	0.000024
015-S-0012-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0013-01	0.58	1.4E-06	0.1415	2.4E-07	0.008608
015-S-0014-01	0.052	1.3E-07	0.0127	2.1E-08	0.000772
015-S-0015-01	0.016	4.0E-08	0.0039	6.6E-09	0.000237
015-S-0016-01	2	5.0E-06	0.4878	8.3E-07	0.029682
015-S-0017-01	0.044	1.1E-07	0.0107	1.8E-08	0.000653
015-S-0018-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0020-01	0.11	2.7E-07	0.0268	4.5E-08	0.001633
015-S-0021-01	0.0092	2.3E-08	0.0022	3.8E-09	0.000137
015-S-0022-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S4023-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0024-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0025-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0026-01	0.0018	4.5E-09	0.0004	7.4E-10	0.000027
015-S-0027-01	0.02	5.0E-08	0.0049	8.3E-09	0.000297
015-S-0029-01	0.00054	1.3E-09	0.0001	2.2E-10	0.000008
015-S-0030-01	0.0021	5.2E-09	0.0005	8.7E-10	0.000031
015-S-0031-01	0.0012	3.0E-09	0.0003	5.0E-10	0.000018

Notes:

HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/kg - milligrams per kilogram

Table 9-44
Arsenic ILCR and HQ in Groundwater by Sampling Point – Phase I
NAS Pensacola
Pensacola, FL

	Detected	Residential Scenario			Site Worker Scenario	
Sample ID	Concentration (mg/L)	ILCR	HQ (Adult)	HQ (Child)	ILCR	HQ
015-G-GM59-01	0.008	1.7E-04	0.712	1.66	4.1E-05	0.254
015-G-GM60-01	0.0012	2.7E-05	0.110	0.256	6.3E-06	0.0391
015-G-GR01-01	0.0012	2.7E-05	0.110	0.256	6.3E-06	0.0391
015-G-GR02-01	0.033	7.4E-04	3.01	7.03	1.7E-04	1.08
015-G-GR03-01	0.783	1.8E-02	71.5	167	4.1E-03	25.5
015-G-GR04-01	0.057	1.3E-03	5.21	12.1	3.0E-04	1.86
015-G-GR06-01	0.0012	2.7E-05	0.110	0.256	6.3E-06	0.0391
015-G-GR07-01	0.0896	2.0E-03	8.18	19.1	4.7E-04	2.92
015-G-GR08-01	0.0074	1.7E-04	0.676	1.58	3.9E-05	0.241
015-G-GR28-01	0.0012	2.7E-05	0,110	0.256	6.3E-06	0.0391
015-G-MW01-0	0.0254	5.7E-04	2.32	5.41	1.3E-04	0.828
015-G-MW02-0	0.0012	2.7E-05	0.110	0.256	6.3E-06	0.0391

Notes:

HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-45
Dieldrin ILCR and HQ in Groundwater by Sampling Point – Phase I
NAS **Pensacola**
Pensacola, FL

	Detected Concentration	Residential Scenario			Site Worker Scenario	
Sample ID	(mg/L)	ILCR	HQ (Adult)	HQ (Child)	ILCR	HQ
015-G-GM59-01	**1.15E-06**	2.7E-07	0.0006	**0.0015**	6.4E-08	**0.00022**
015-G-GM60-01	1.15E-06	2.7E-07	0.0006	**0.0015**	6.4E-08	0.00022
015-G-GR01-01	1.15E-06	2.7E-07	**0.0006**	0.0015	6.4E-08	0.00022
015-G-GR02-01	6.70E-06	1.6E-06	0.0037	**0.0086**	3.7E-07	0.0013
015-G-GR03-01	9.80E-06	2.3E-06	**0.0054**	0.013	5.5E-07	0.0019
015-G-GR04-01	1.40E-05	3.3E-06	**0.0077**	**0.018**	7.8E-07	0.0027
015-G-GR06-01	1.15E-06	2.7E-07	**0.0006**	0.0015	6.4E-08	**0.00022**
015-G-GR07-01	2.30E-06	5.5E-07	0.0013	0.0029	1.3E-07	0.00045
015-G-GR08-01	3.30E-05	7.9E-06	**0.0181**	0.042	1.8E-06	**0.0065**
015-G-GR28-01	2.50E-05	6.0E-06	0.0137	0.032	1.4E-06	0.0049
015-G-MW01-01	1.15E-06	**2.7E-07**	**0.0006**	**0.0015**	6.4E-08	0.00022
015-G-MW02-01	1.15E-06	2.7E-07	**0.0006**	0.0015	6.4E-08	0.00022

Notes:

HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-46
Arsenic ILCR and HQ in Groundwater by Sampling Point – Phase II
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR07-02	0.522	1.2E-02	47.7	111	2.7E-03	17.0
015-G-GR32-01	0.0081	1.8E-04	0.740	1.73	4.2E-05	0.264
015-G-GR33-01	0.0569	1.3E-03	5.20	12.1	3.0E-04	1.85
015-G-GR34-01	0.002	4.5E-05	0.183	0.426	1.0E-05	***0.065***
015-G-GR35-01	**0.002**	4.5E-05	0.183	0.426	1.0E-05	***0.065***
015-G-GR36-01	0.0961	2.1E-03	8.78	20.5	5.0E-04	3.13
015-G-GR37-01	0.0031	6.9E-05	0.283	**0.660**	1.6E-05	0.101
015-G-GR38-01	0.002	4.5E-05	0.183	0.426	1.0E-05	**0.065**
015-G-GR39-01	0.002	4.5E-05	0.183	0.426	**1.0E-05**	***0.065***
015-G-GR40-01	0.002	4.5E-05	0.183	0.426	1.0E-05	***0.065***

Notes:

HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-47
Dieldrin ILCR and HQ in Groundwater by Sampling Point – Phase II
NAS **Pensacola**
Pensacola, FL

	Detected	Residential Scenario			Site Worker Scenario	
Sample ID	Concentration (µg/L)	ILCR	HQ (Adult)	HQ (Child)	ILCR	HQ
015-G-GR07-0	0.000039	9.3E-06	0.021	0.050	2.2E-06	0.0076
015-G-GR32-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016
015-G-GR33-0	0.000016	3.8E-06	0.0088	0.020	8.9E-07	0.0031
015-G-GR34-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016
015-G-GR35-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016
015-G-GR36-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016
015-G-GR37-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016
015-G-GR38-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016
015-G-GR39-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016
015-G-GR40-0	0.000008	1.9E-06	0.0044	0.010	4.5E-07	0.0016

Notes:
HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-48
Arsenic ILCR and HQ in Groundwater by Sampling Point – Phase IIB
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR03-02	0.373	8.3E-03	34.1	79.4	2.0E-03	12.2
015-G-GR07-03	0.104	2.3E-03	9.50	22.2	5.4E-04	3.39
015-G-GR65-01	0.0122	2.7E-04	1.11	2.60	6.4E-05	0.40
015-G-GR66-01	0.0076	1.7E-04	0.69	1.62	4.0E-05	0.25
015-G-GR67-01	0.0037	8.3E-05	0.34	0.79	1.9E-05	0.12

Notes:
HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-49
Arsenic ILCR and HQ in Groundwater by Sampling Point – Phase III
NAS **Pensacola**
Pensacola, FL

Sample ID	Detected Concentration mg/L	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR03-03	0.415	9.3E-03	37.9	88.4	2.2E-03	13.5
015-G-GR07-04	0.0134	3.0E-04	1.22	2.85	7.0E-05	0.437
015-G-GR32-03	0.0094	2.1E-04	0.859	2.00	4.9E-05	0.306
015-G-GR39-03	0.0015	3.4E-05	0.137	0.320	7.9E-06	0.049
015-G-GR40-03	0.0033	7.4E-05	0.301	0.703	1.7E-05	0.108
015-G-GR65-03	0.231	5.2E-03	21.1	49.2	1.2E-03	7.53
015-G-GR66-03	0.106	2.4B-03	9.68	22.6	5.5E-04	*3.46*
015-G-GR67-03	0.0092	2.1E-04	0.84	1.96	4.8E-05	0.300

Notes:

HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-50
Arsenic ILCR and HQ in Groundwater by Sampling Point – Phase IIIB
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GR07-05	0.0211	4.7E-04	1.93	4.49	1.1E-04	0.688
015-G-GR65-04	0.184	4.1E-03	16.8	39.2	9.6E-04	6.00
015-G-GR66-04	0.155	3.5E-03	14.2	33.0	8.1E-04	5.05
015-G-GR67-04	0.0171	3.8E-04	1.56	3.64	9.OE-05	0.557

Notes:
HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-51
Arsenic ILCR and HQ in Groundwater by Sampling Point – Phase IIIC
NAS **Pensacola**
Pensacola, FL

	Detected	Residential Scenario			Site Worker Scenario	
Sample ID	Concentration (mg/L)	ILCR	HQ (Adult)	HQ (Caw)	ILCR	HQ
015-G-GS68-01	0.0011	2.5E-05	0.100	0.234	5.8E-06	0.036
015-G-GS69-01	0.0043	9.6E-05	0.393	0.916	2.3E-05	0.140
015-G-GS70-01	0.0013	2.9E-05	0.119	0.277	6.8E-06	0.042
015-G-GS71-01	0.001	2.2E-05	0.091	0.213	5.2E-06	0.033

Notes:
HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

Table 9-52
Dieldrin JLCR and HQ in Groundwater by Sampling Point – Phase IIIC
NAS Pensacola
Pensacola, FL

Sample ID	Detected Concentration (mg/L)	Residential Scenario ILCR	Residential Scenario HQ (Adult)	Residential Scenario HQ (Child)	Site Worker Scenario ILCR	Site Worker Scenario HQ
015-G-GS68-01	0.00011	2.6E-05	0.060	0.14	6.1E-06	0.022
015-G-GS69-01	0.00001	2.4E-06	0.0055	0.013	5.6E-07	0.0020
015-G-GS70-01	0.00001	2.4E-06	0.0055	0.013	5.6E-07	0.0020
015-G-GS71-01	0.00001	2.4E-06	0.0055	0.013	5.6E-07	0.0020

Notes:
HQ - Hazard Quotient
ILCR - Incremental Lifetime Excess Cancer Risk
mg/L - milligrams per liter

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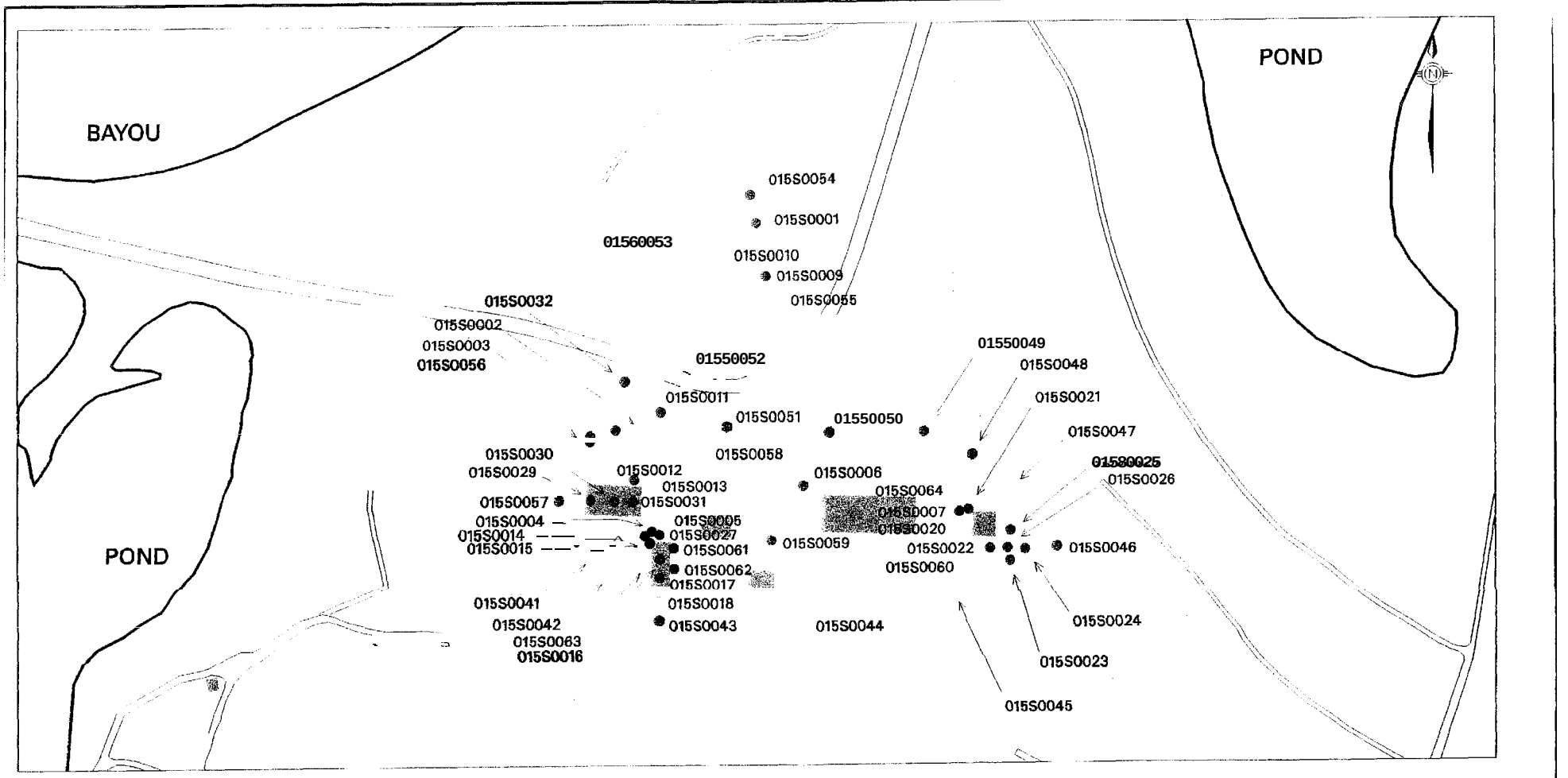


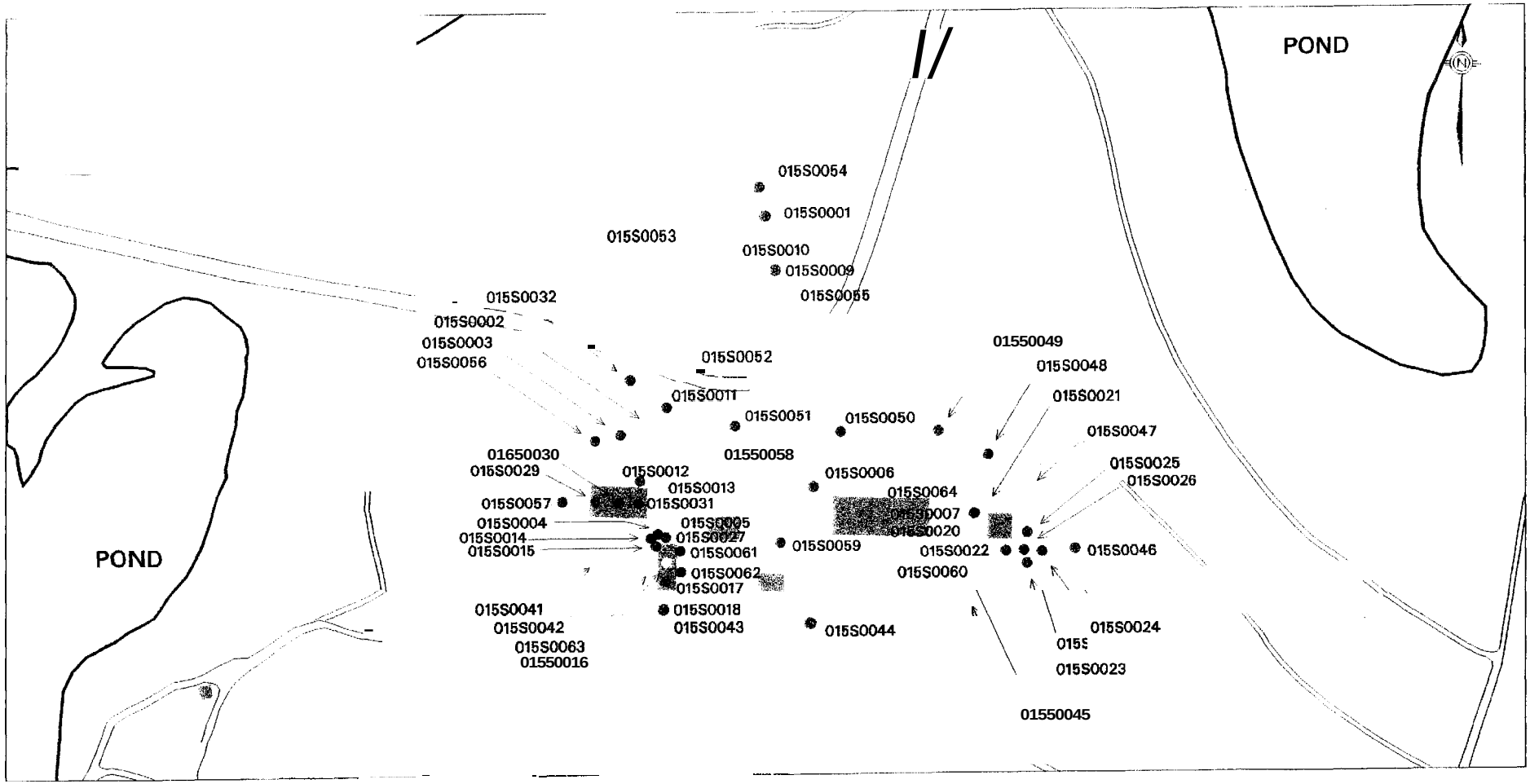
LEGEND - RISK VALUES

- e NOT SAMPLED
- < 1E-6
- 1E-6 to 5E-6
- 5E-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

SCALE
0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-1
CUMULATIVE RISK
IN SITE 15 SURFACE SOIL
INDUSTRIAL SCENARIO



LEGEND - RISK VALUES

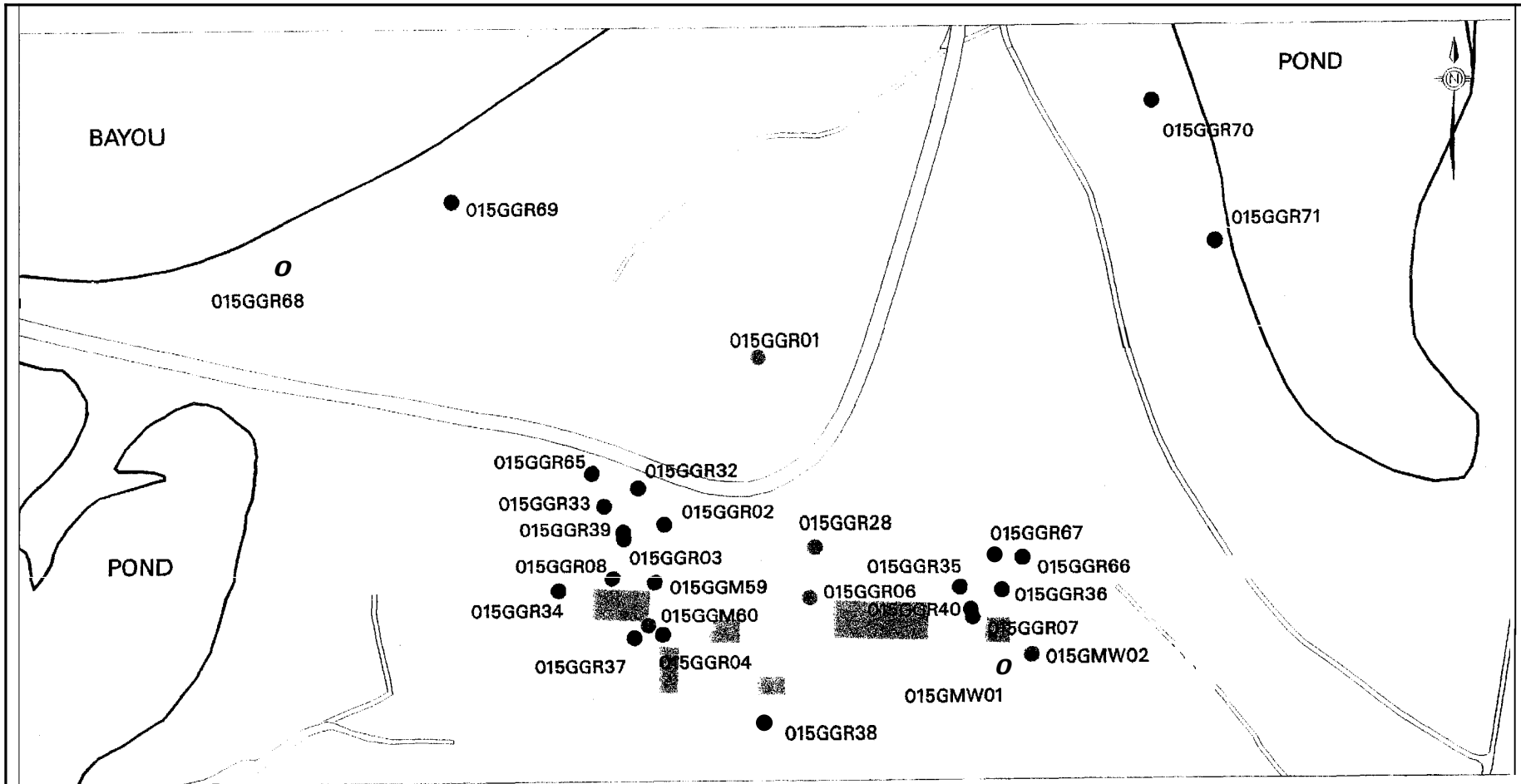
- NOTSAMPLED
- < 1E-6
- 1E-6 to 5E-6
- SE-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

SCALE

0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-2
ARSENIC RISK
IN SITE 15 SURFACE SOIL
INDUSTRIAL SCENARIO



LEGEND - RISK VALUES

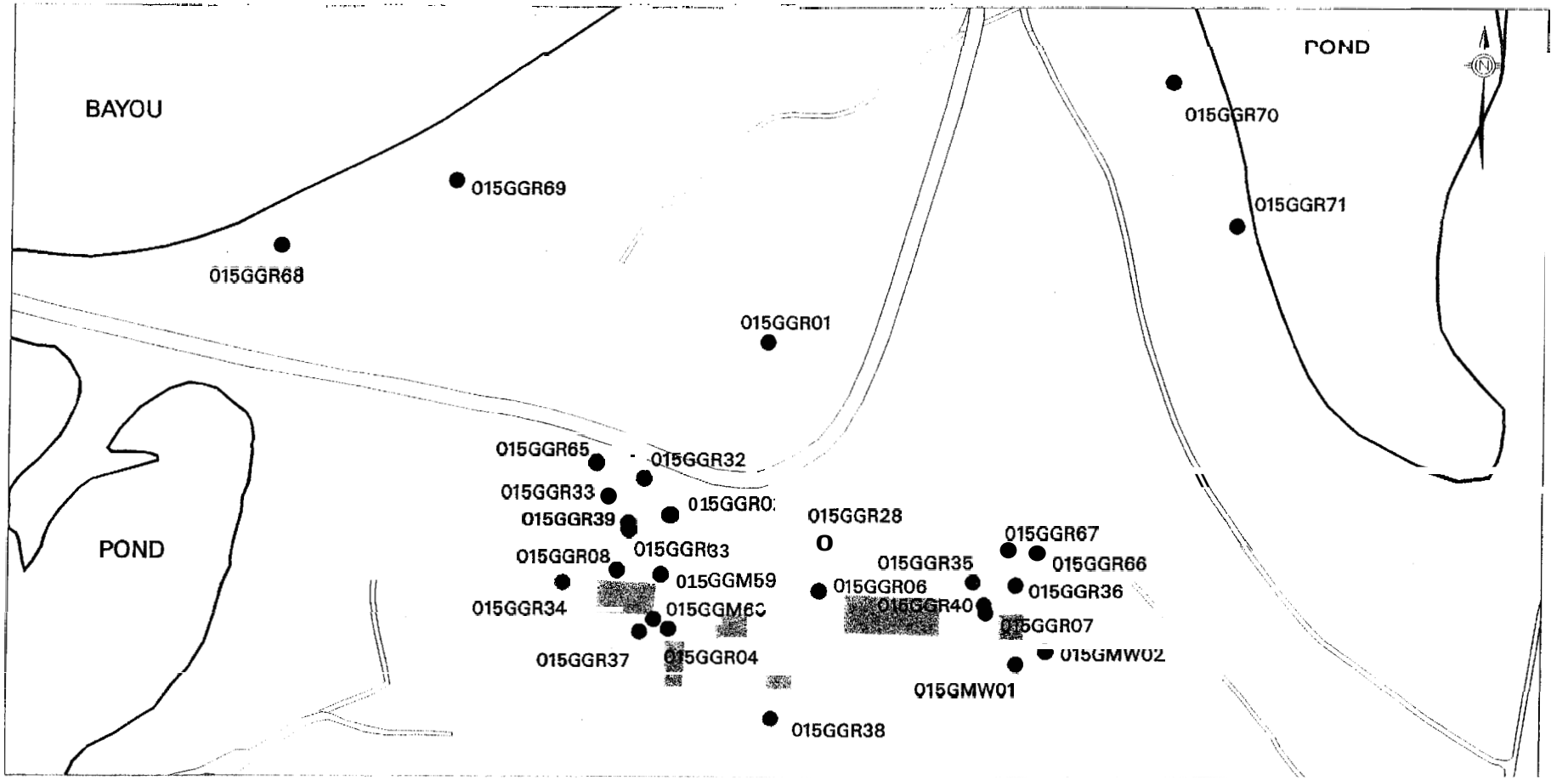
- NOTSAMPLED
- < 1E-6
- 1E-6 to 5E-6
- 5E-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

SCALE

0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-3
PHASE I - ARSENIC RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - RISK VALUES

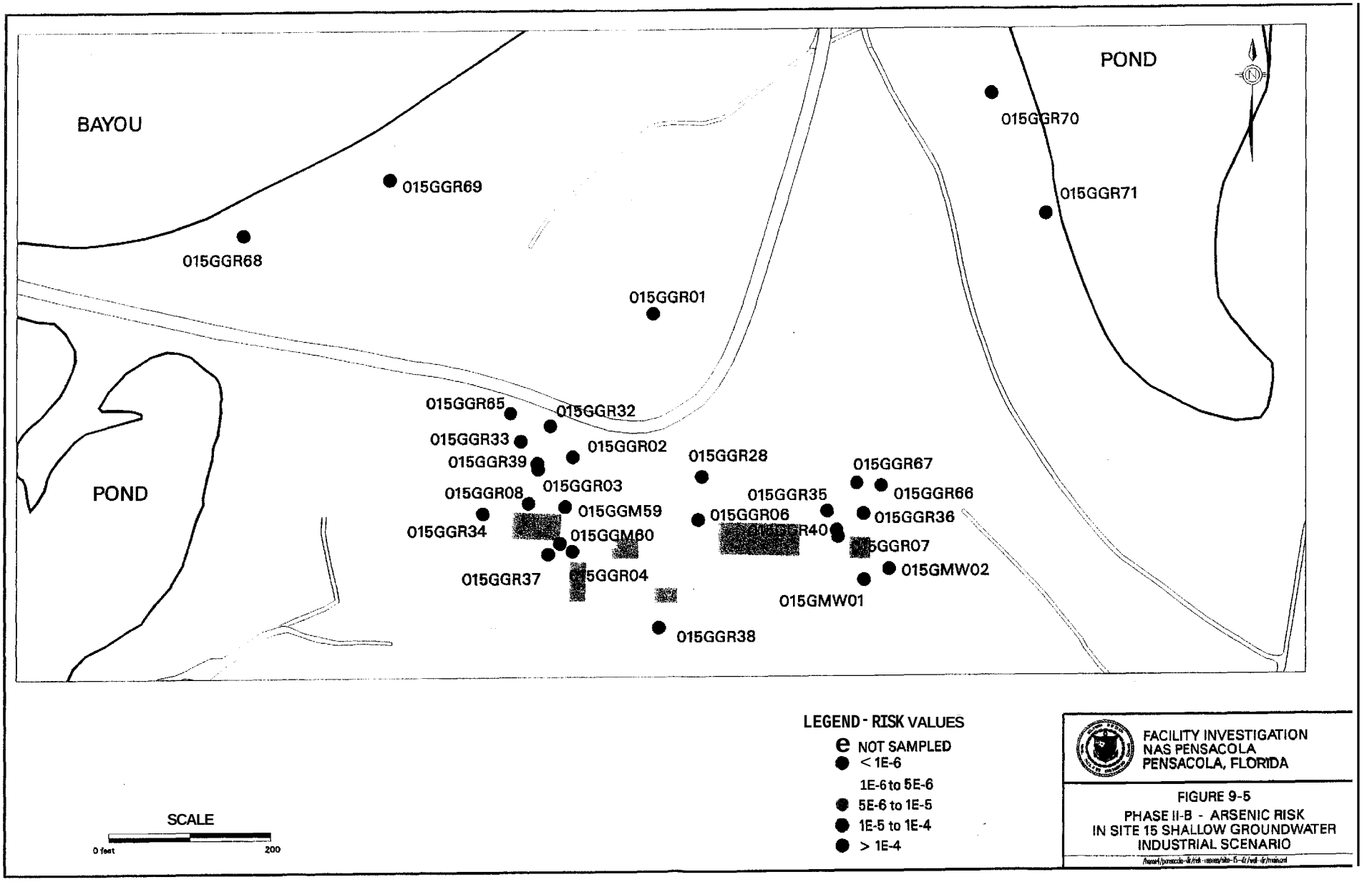
- NOTSAMPLED
- < 1E-6
- 1E-6 to 5E-6
- 5E-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

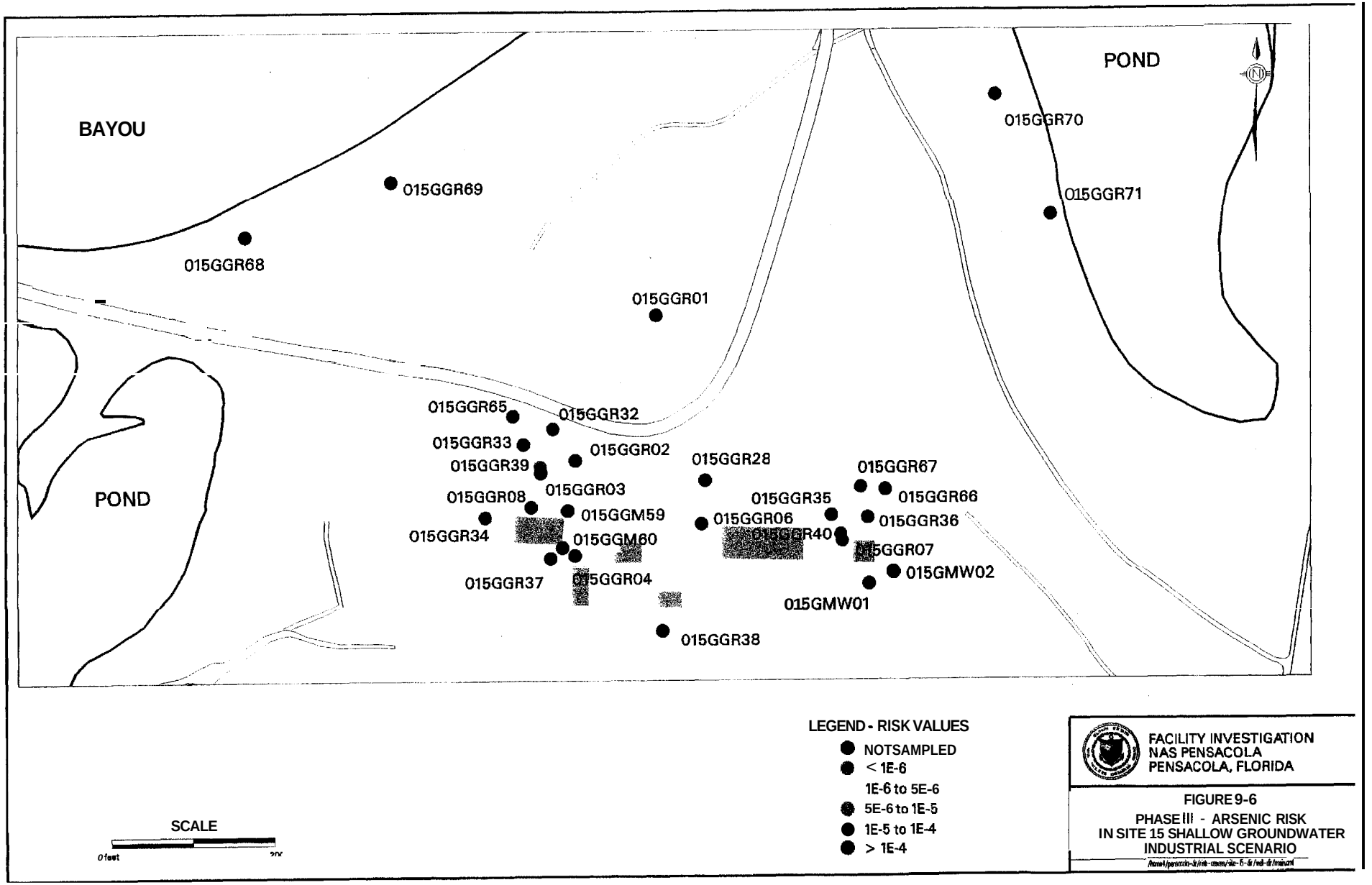
SCALE

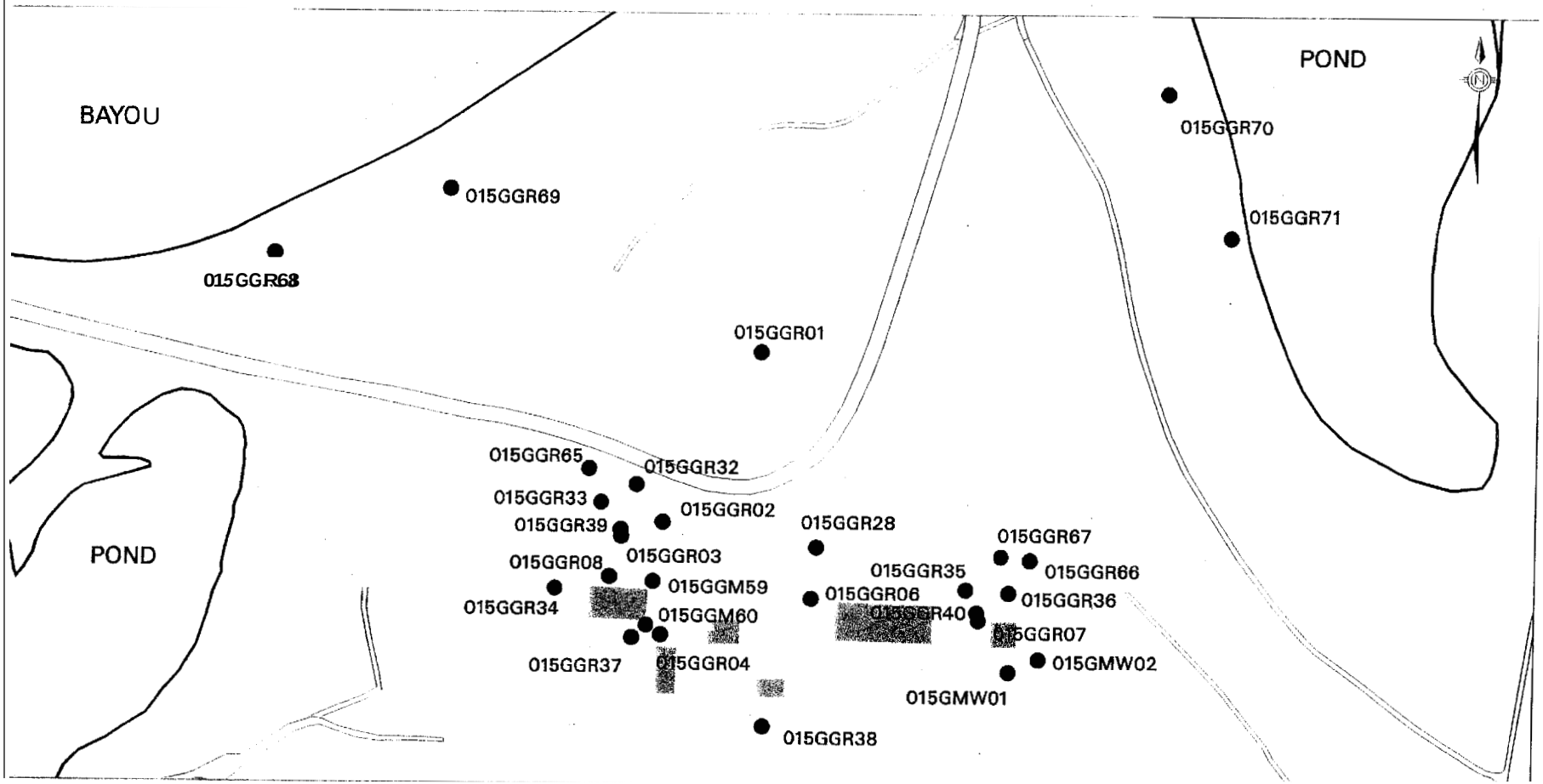
0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-4
PHASE II - ARSENIC RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO


BAYOU
POND
POND
015GGR69
015GGR68
015GGR01
015GGR70
015GGR71
015GGR65
015GGR32
015GGR33
015GGR02
015GGR39
015GGR28
015GGR67
015GGR66
015GGR08
015GGR03
015GGR35
015GGR36
015GGM59
015GGR06
015GGR34
015GGM60
015GGR07
015GMW02
015GGR37
015GGR04
015GMW01
015GGR38
LEGEND - RISK VALUES
e NOT SAMPLED
< 1E-6
1E-6 to 5E-6
5E-6 to 1E-5
1E-5 to 1E-4
> 1E-4
SCALE
0 feet
200
FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA
FIGURE 9-5
PHASE II-B - ARSENIC RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO


BAYOU
POND
POND
015GGR69
015GGR68
015GGR01
015GGR70
015GGR71
015GGR65
015GGR32
015GGR33
015GGR02
015GGR39
015GGR28
015GGR67
015GGR08
015GGR03
015GGR35
015GGR66
015GGM59
015GGR06
015GGR36
015GGR34
015GGM60
015GGR40
015GGR07
015GGR37
015GGR04
015GMW02
015GMW01
015GGR38
LEGEND - RISK VALUES
NOTSAMPLED
< 1E-6
1E-6 to 5E-6
5E-6 to 1E-5
1E-5 to 1E-4
> 1E-4
SCALE
0 feet
FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA
FIGURE 9-6
PHASE III - ARSENIC RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - RISK VALUES

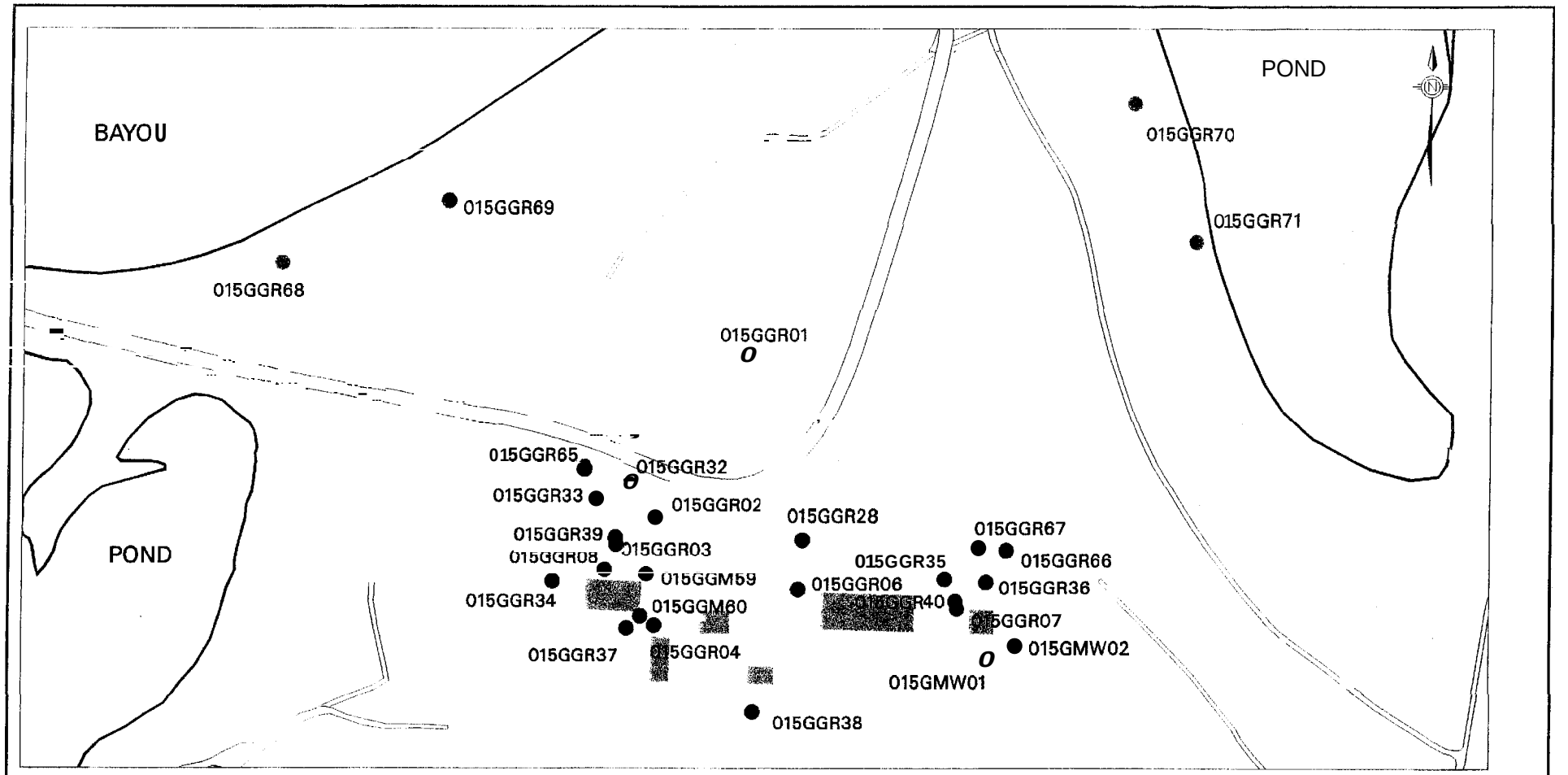
- NOTSAMPLED
- < 1E-6
- 1E-6 to 5E-6
- 5E-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

SCALE

0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-7
PHASE III-B - ARSENIC RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - RISK VALUES

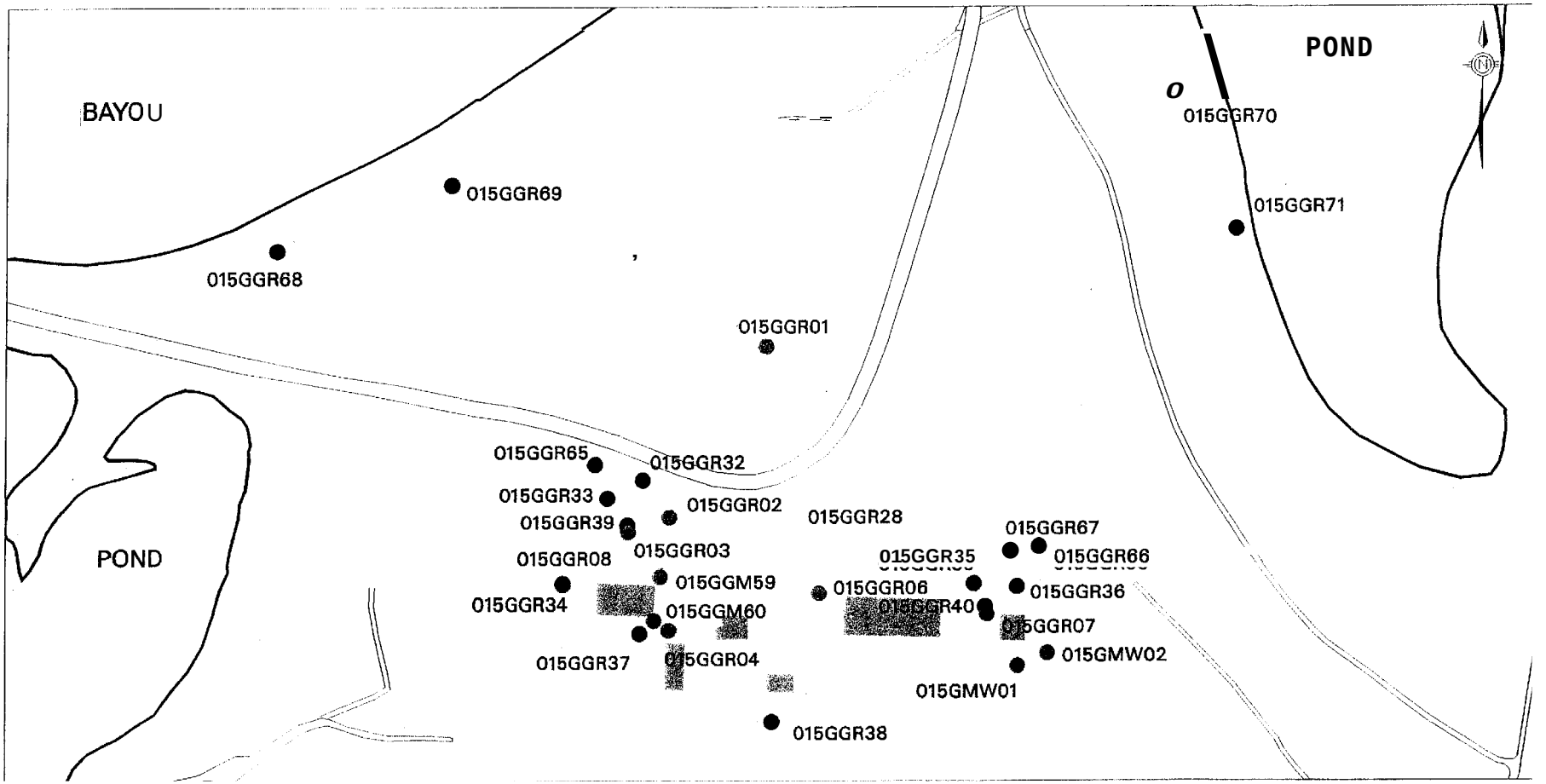
- NOTSAMPLED
- < 1E-6
- 1E-6 to 5E-6
- 5E-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

SCALE

0 feet 200

FACIL Y IN\ ES
NAS I NSA(OL
PENS :OLA FL

FIGURE 9-8
PHASE III-C - ARSENIC RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - RISK VALUES

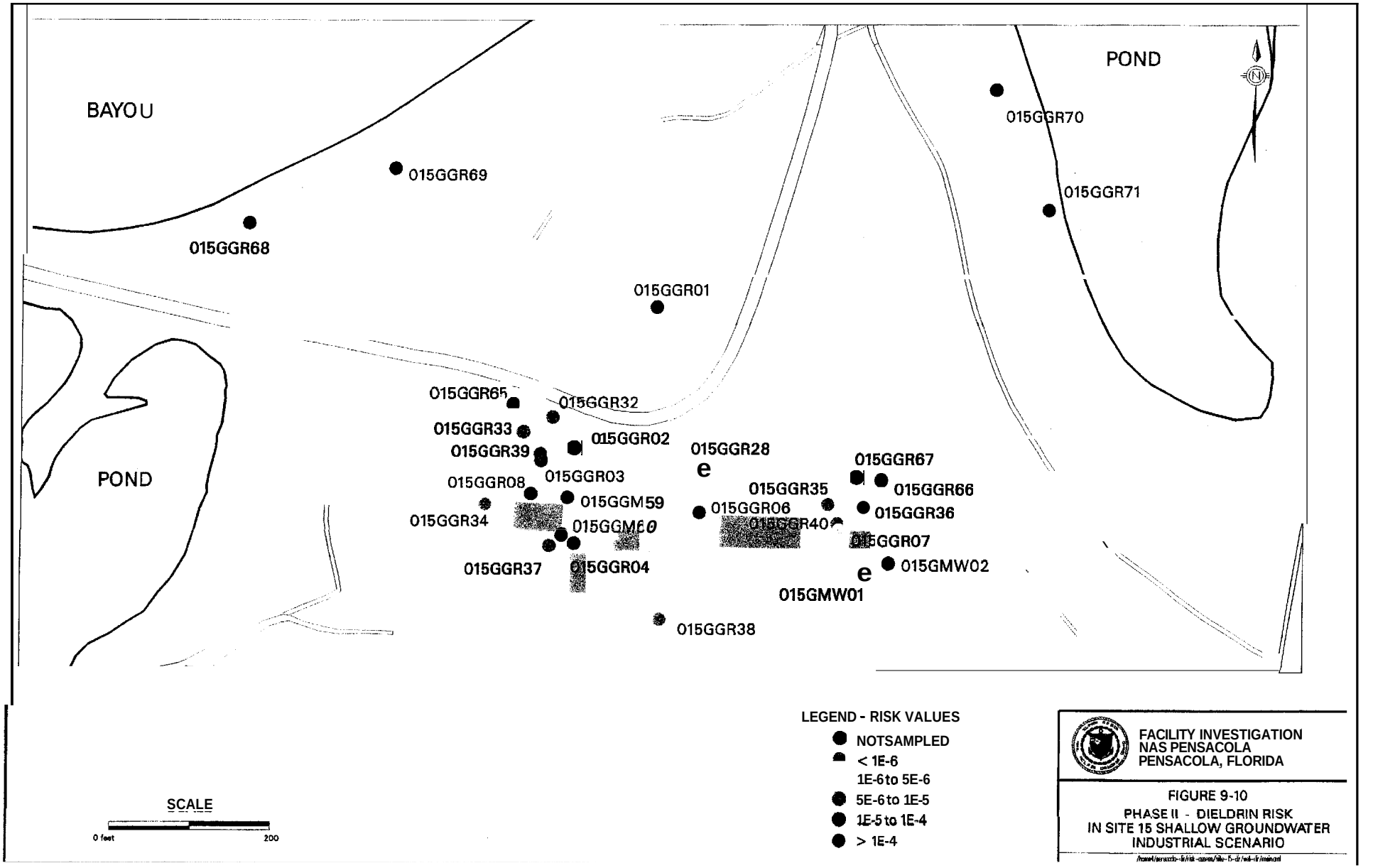
- NOTSAMPLED
- < 1E-6
- 1E-6 to 5E-6
- SE-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

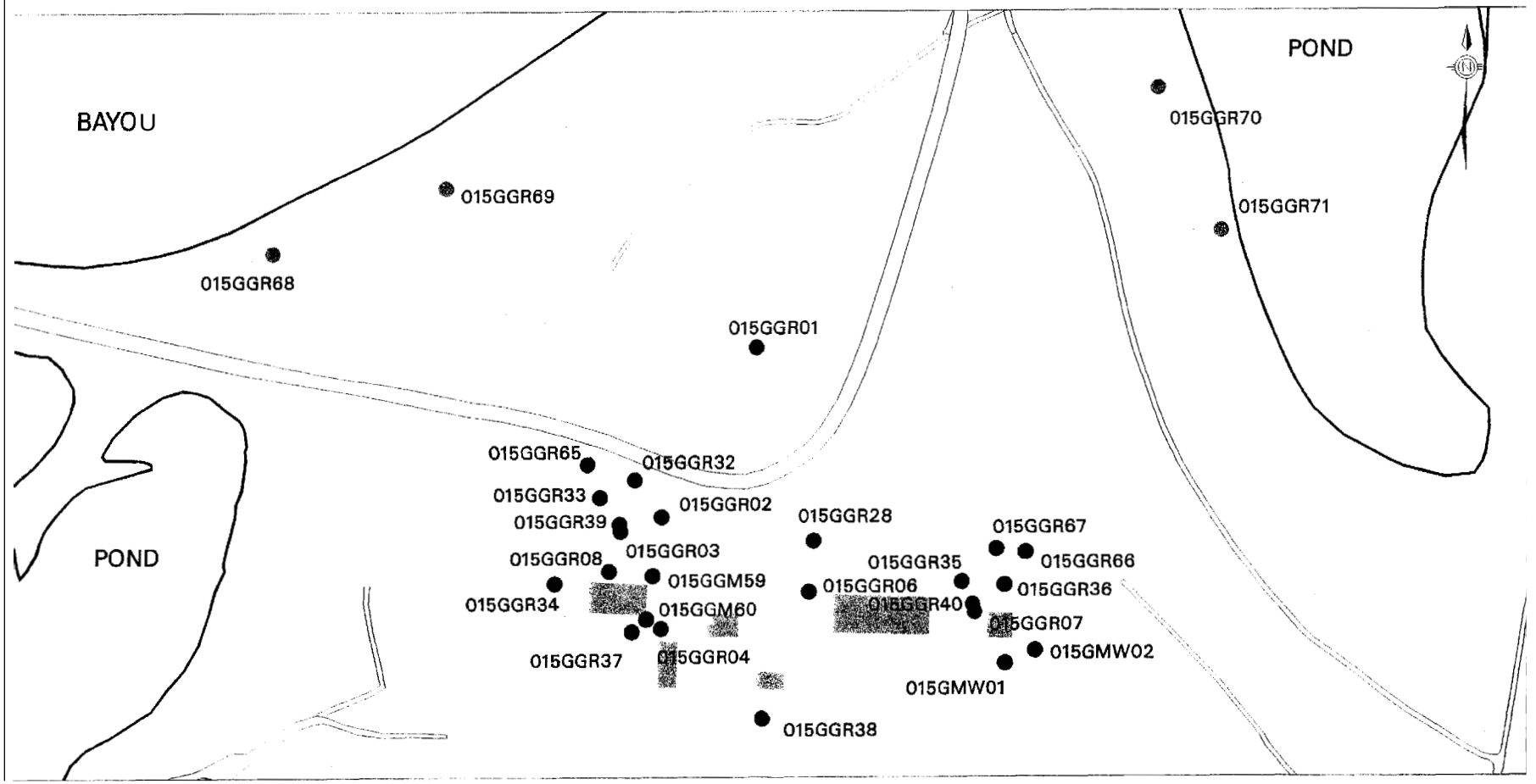
SCALE

0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-9
PHASE I - DIELDRIN RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO


BAYOU
POND
POND
015GGR69
015GGR68
015GGR70
015GGR71
015GGR01
015GGR65
015GGR32
015GGR33
015GGR02
015GGR39
015GGR28
015GGR67
015GGR08
015GGR03
015GGR66
015GGR35
015GGM59
015GGR06
015GGR36
015GGR34
015GGR40
015GGR07
015GGR37
015GGR04
015GMW02
015GMW01
015GGR38
SCALE
0 feet
200
LEGEND - RISK VALUES
NOTSAMPLED
< 1E-6
1E-6 to 5E-6
5E-6 to 1E-5
1E-5 to 1E-4
> 1E-4
FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA
FIGURE 9-10
PHASE II - DIELDRIN RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - RISK VALUES

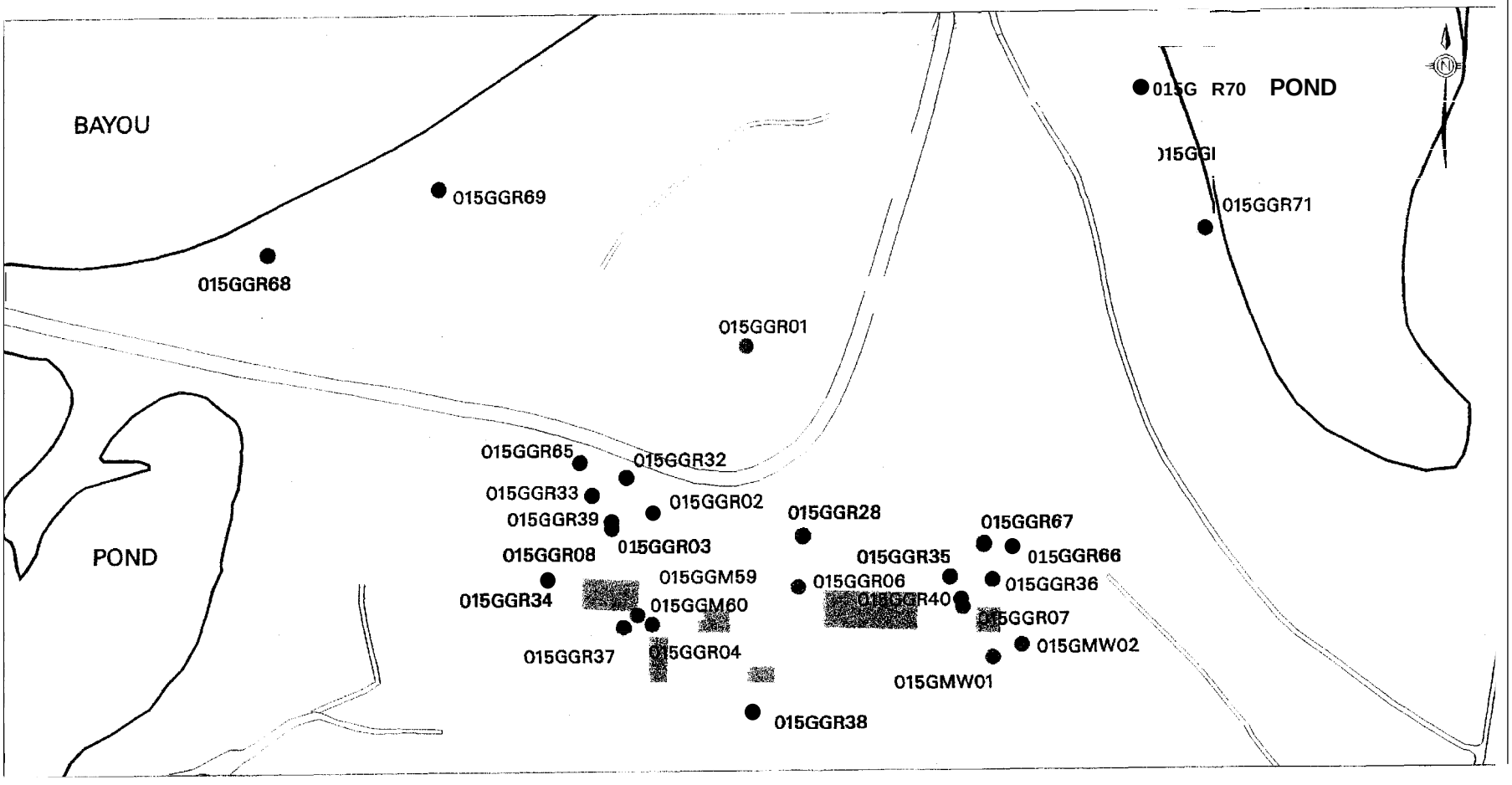
- NOTSAMPLED
- < 1E-6
- 1E-6 to 5E-6
- 5E-6 to 1E-5
- 1E-5 to 1E-4
- > 1E-4

SCALE

0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-11
PHASE III-C - DIELDRIN RISK
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - HAZARD VALUES

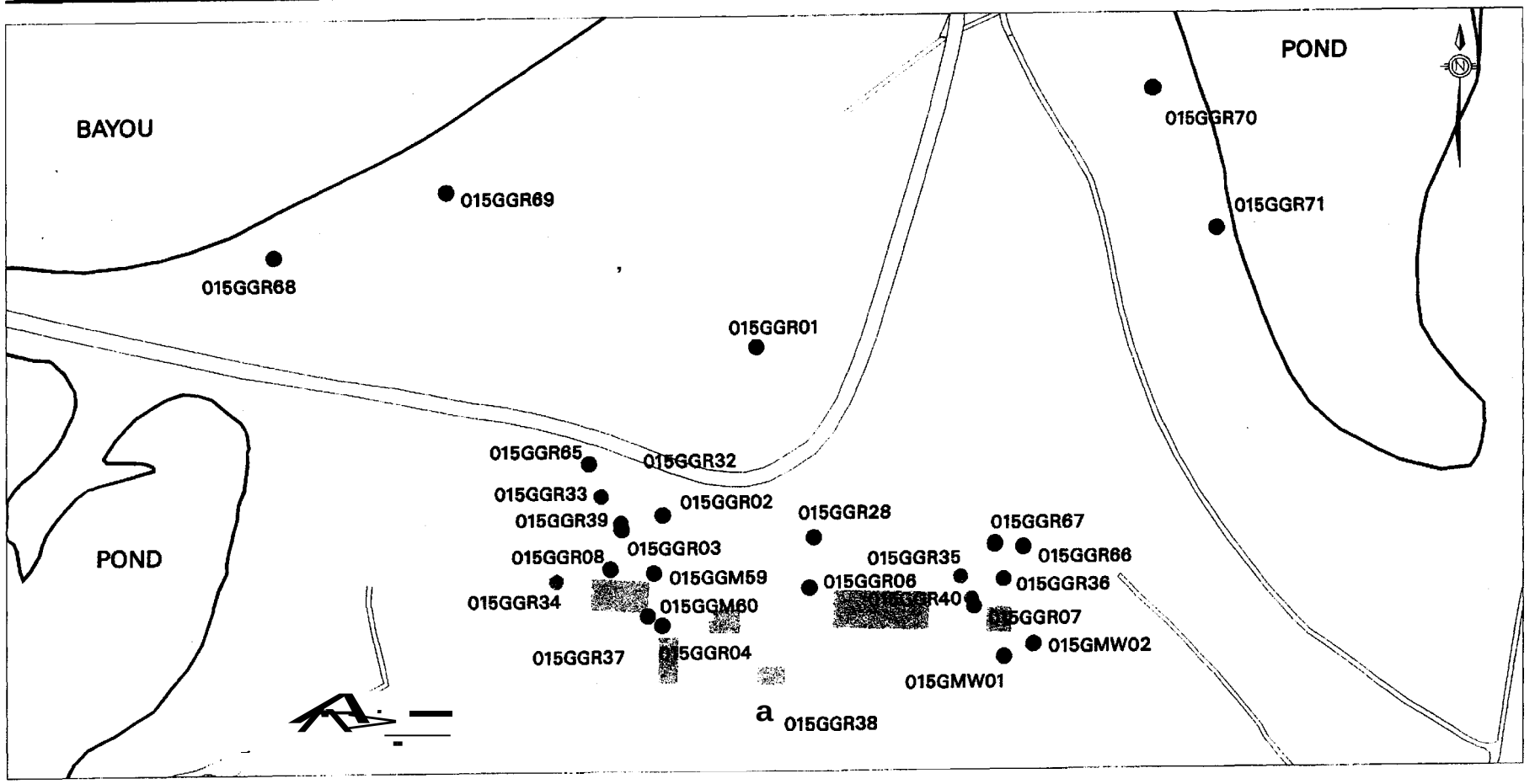
- NOTSAMPLED
- 0 to 0.1
- 0.1 to 0.5
- 0.5 to 1.0
- 1.0 to 3.0
- > 3.0

SCALE

0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-12
PHASE I - ARSENIC HAZARD
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - HAZARD VALUES

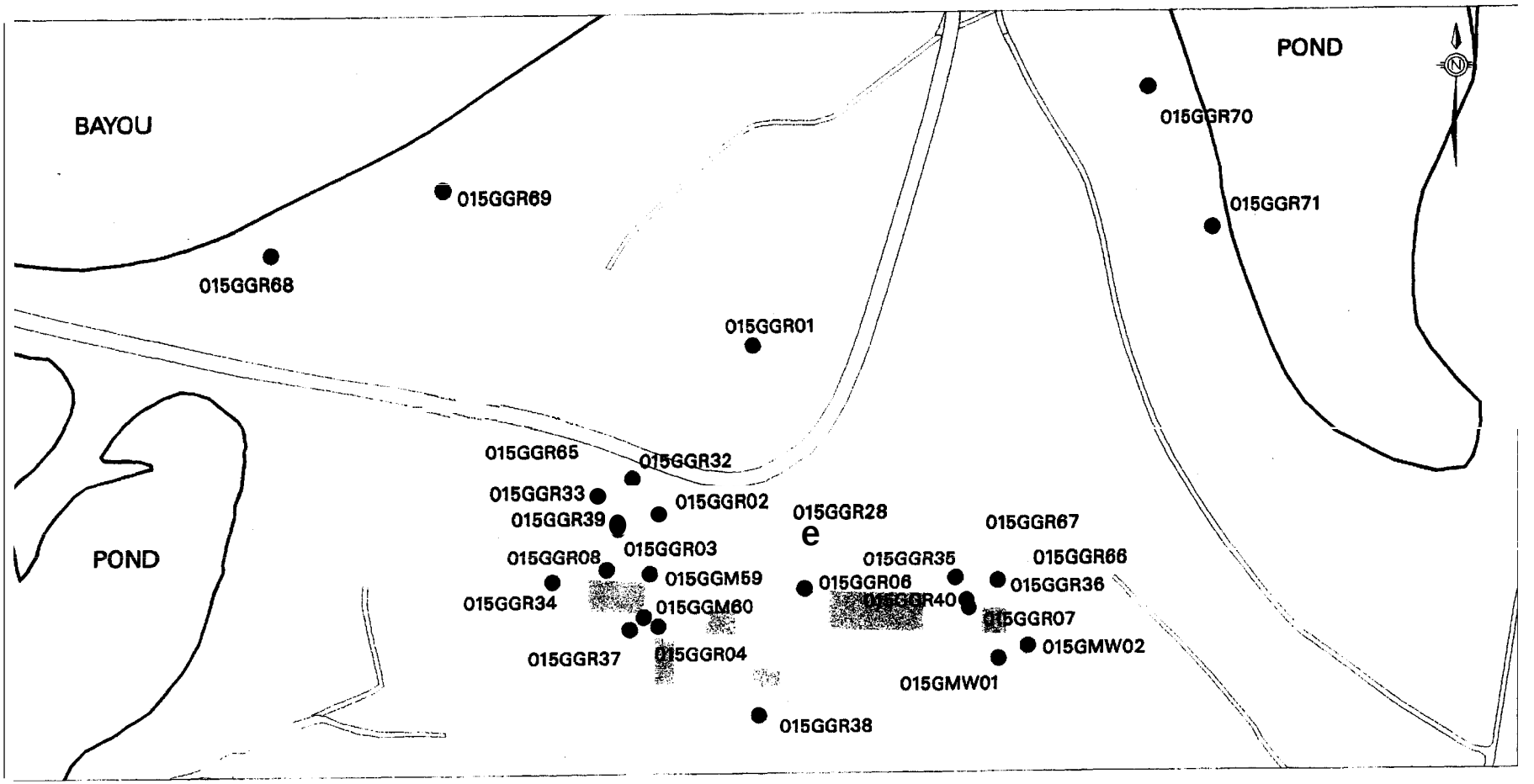
- NOTSAMPLED
- otoo.l
- 01 to 0.5
- 0.6t01.0
- 1.0 to 3.0
- > 3.0

SCALE

0 M 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-13
PHASE II - ARSENIC HAZARD
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - HAZARD VALUES

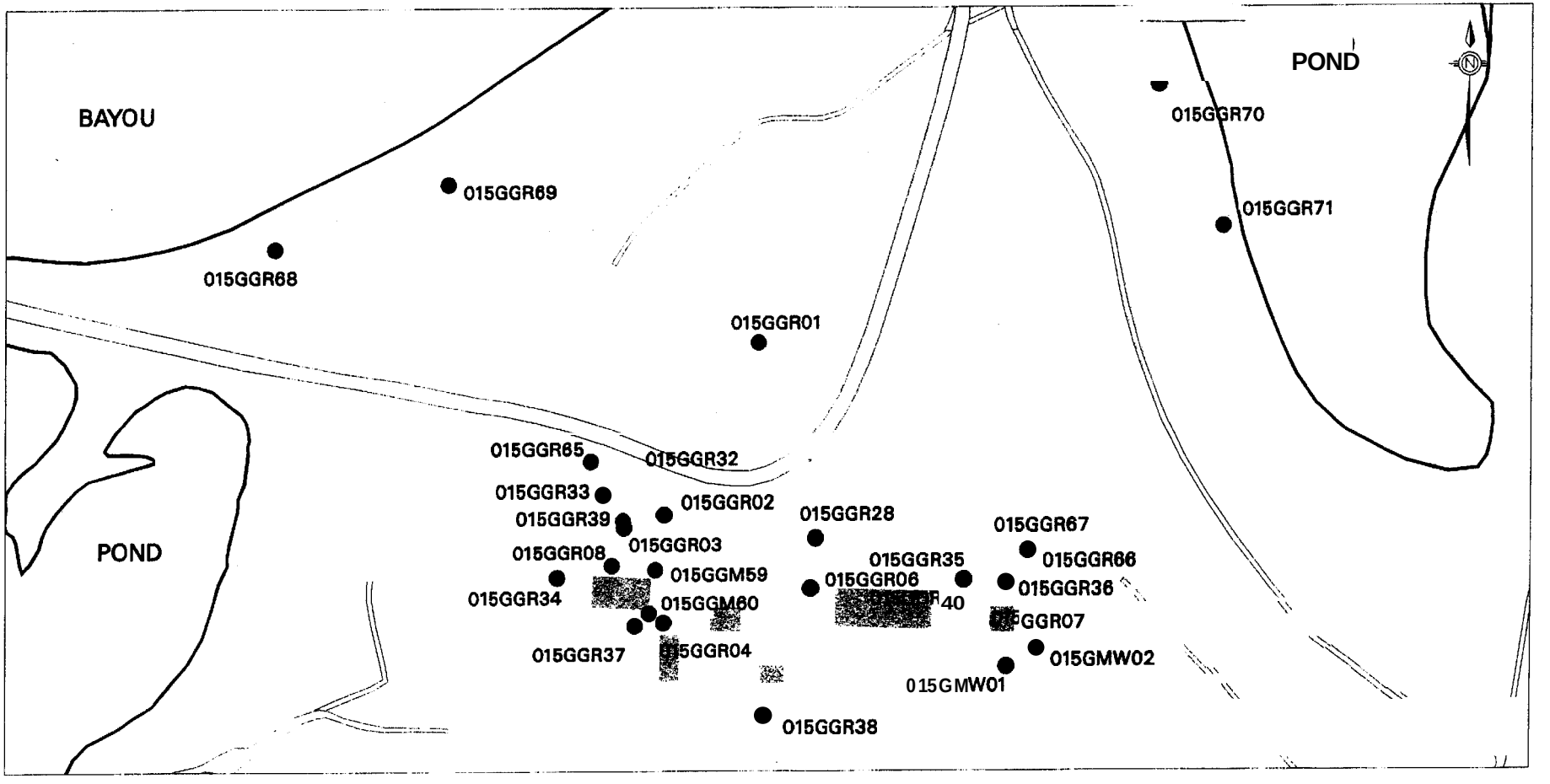
- e NOT SAMPLED
- otoo.l
- 0.1 to 0.6
- 0.6t01.0
- 1.0 to 3.0
- > 3.0

SCALE

o x 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-14
PHASE II-B - ARSENIC HAZARD
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND- HAZARD VALUES

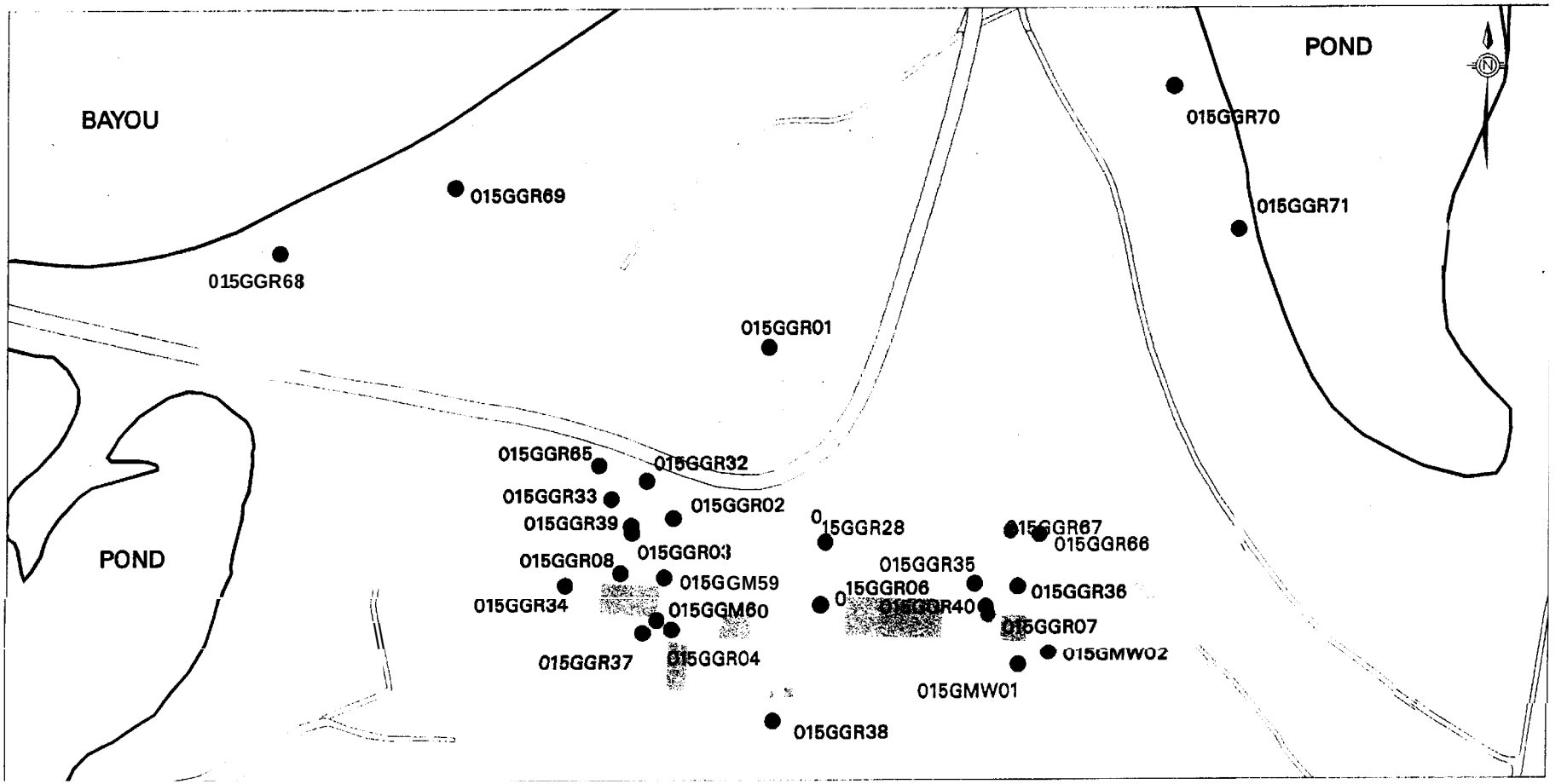
- NOTSAMPLED
- 0 to 0.1
- 0.1to 0.5
- 0.5t01.0
- 1.0 to 3.0
- > 3.0

SCALE

0 M 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-15
PHASE III - ARSENIC HAZARD
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO



LEGEND - HAZARD VALUES

- NOTSAMPLED
- otoo.l
- 0.1to 0.5
- 0.6t01.0
- 1.0 to 3.0
- > 3.0

SCALE

0 feet 200

FACILITY INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 9-16
PHASE III-B - ARSENIC HAZARD
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO

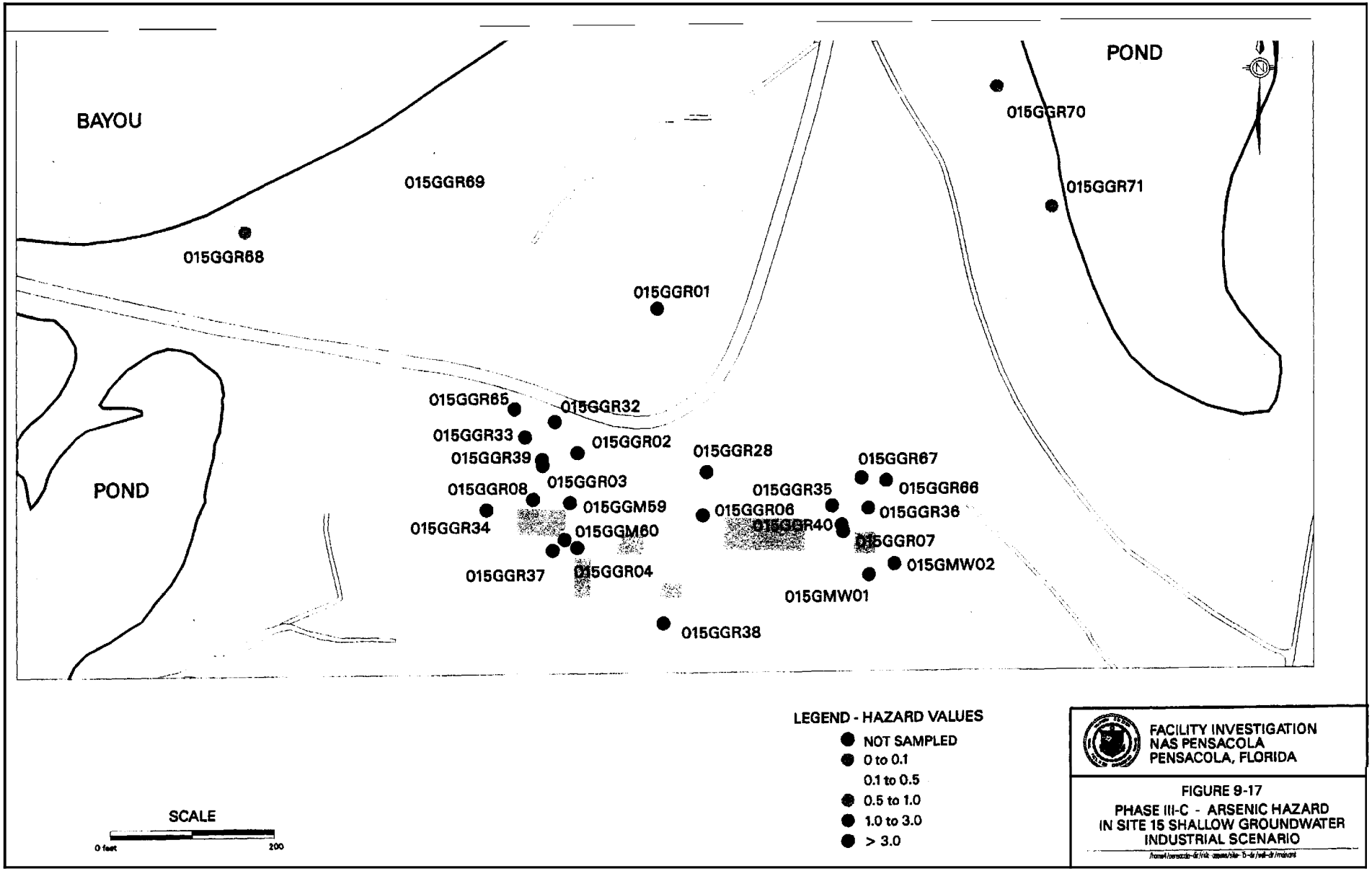


FIGURE 9-17
PHASE III-C - ARSENIC HAZARD
IN SITE 15 SHALLOW GROUNDWATER
INDUSTRIAL SCENARIO

9.2 Ecological Risk Assessment

The ecological risk assessment (ERA) is a key component of the BRA. Its purpose is to develop a qualitative and/or quantitative ecological appraisal of the actual and/or potential effects of Site 15 contamination on the surrounding ecosystem. The assessment considers environmental media and exposure pathways that could result in unacceptable levels of exposure to flora and fauna now or in the foreseeable future. The approach to assessing risk components at Site 15 was based on USEPA *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (USEPA, 1997), *Supplemental Guidance to RAGS: Region 4 Bulletins – Ecological Risk Assessment, Draft* (November 1995), and *Framework for Ecological Risk Assessment* (USEPA, 1992).

9.2.1 Problem Formulation

9.2.1.1 Environmental Setting

Site 15, which is approximately 7 acres in size, is a service area specifically used for maintenance of equipment associated with the golf course at NASP. Site area land surface is primarily unpaved. Warehouses and garages occupy a significant portion of the site. A small stand of semi-natural habitat (approximately 2 acres) is located immediately adjacent to the site's western boundary. The site is surrounded by golf course fairways. The site's available habitat is limited to use by passerine bird species and small mammals. Waterbodies near the site include Bayou Grande to the north, Wetland 4 to the west, and Wetland 65 to the northeast; each of these is approximately 400 feet away.

9.2.1.2 Threatened and Endangered Species

Based on information gathered for the RI/FS Workplan for the Site 41 investigation (E/A&H, 1995), no species of special concern are found within the general area of Site 15. Since the area of Site 15 is maintained as a golf course, the chances of any future threatened or endangered species inhabiting the area of Site 15 is considered minimal.

9.2.1.3 Selection of Ecological Chemicals of Potential Concern

Section 2.0 of this report discusses past activities at Site 15 that may have impacted the surrounding ecosystem. COCs resulting from these activities have been identified and quantified using USEPA's methods and protocols for soil, surface water, groundwater, and sediment analyses.

For ecological risk, only the results from surficial soil (0 to 1 foot bgs) are considered. It is presumed, even considering root development in the lower strata, that most biological effects will be limited to this zone. Any inorganic parameter detected at a frequency greater than 5% in site surface soil, and which exceeded or does not occur in the reference values for NAS Pensacola, (see Section 6 for a discussion of NAS Pensacola reference concentration development) is identified as an Ecological Chemical of Potential Concern (ECPC). Calcium, magnesium, potassium, and sodium were not assessed as they are naturally occurring nutrients. Any organic constituent detected in greater than 5% of the samples is considered an ECPC. Tables 9-53a and 9-53b present the soil ECPCs identified for Site 15. In evaluating risk, exposure is considered based on both the mean and maximum concentrations determined from all surface soil samples.

Because of the paucity of information available on volatile compounds' (VOCs) impacts to the terrestrial species, they will not be considered in this assessment. primarily, the only information available are laboratory animal VOC inhalation studies which have been used to predict human health effects from VOC exposure. Because VOCs are limited in occurrence, it is assumed impacts to assessment endpoint species will be negligible.

Table 9-53a
Inorganic Constituents in surface Sail
Site 15
(N=28; As, Mn=53)

Inorganic Elements	Number of Detections	Range of Concentrations (mg/kg)	Mean	NASP[b] Reference Concentration	ECPC
Aluminum	28	688 – 4,940	2094	3,833	Yes
Antimony	1	2.7	2.7	9.49	No
	49	0.29 – 66.3	9.23	1.56	Yes
Banum	28	1.5 – 16.9	6.23	4.63	Yes
Beryllium	a	0.03 – 0.12	0.053	0.41	No
chromium	27	1.3 – 17.4	5.56	6.13	Yes
Cobalt	14	0.17 – 4.6	0.735	1.87	Yes
Copper	18	1.3 – 9.5	4.09	5.74	Yes
Cyanide	I	1.0	--	0.52	NO
Iron'	28	666 – 4,680	2049	2,745	Yes
Lead	27	1.7 – 109	19.96	7.32	Yes
Mercury	19	0.008 – 1.9	0.14	0.1	Yes
Magnesium'	28	21.4 – 1,440	198	133.33	Yes
Manganese'	52	2.1 – 215	69.33	21.36	Yes
Nickel	10	0.43 – 6.8	1.32	6.38	Yes
Thallium	5	0.11 – 0.23	0.16	0.82	No
Vanadium	27	1.4 – 14.0	5.17	5.83	Yes
Zinc	26	1.6 – 56.5	17.51	16.87	Yes

Notes:
= Elements that are not included in both SW-846 and Appendix IX methods.
b = Concentrations considered representative of background conditions at NAS Pensacola; see Section 6 for a discussion of establishment of background.

Table 9-53b
Organic Constituents in Surface Soil
Site 15

Compound Name	Number of Detections	Range of Concentrations (µg/kg)	ECPC
Volatile Organic Compounds (N = 31)			
Benzene	1	53	No
Carbazole	1	110	No
Chlorobenzene	1	54	No
1,1-Dichloroethene	1	53	No
Methoxychlor	7	4.4 — 10	Yes
Methylene Chloride	1	3.0	No
Toluene	3	18 — 56.0	Yes
Tetrachloroethene	1	0.9	No
Trichloroethene	1	51	No
1,1,1- Trichloroethane	2	2.0	Yes
Xylene (total)		0.1 — 3100	Yes
Semivolatile Organic Compounds (N = 33)			
Acenaphthylene	1	100	No
Anthracene	2	10.0 — 230.0	Yes
Benzo(a)anthracene	14	10.0 — 1,700.0	Yes
Benzo(b)fluoranthene	IS	18.0 — 2,600.0	Yes
Benzo(k)fluoranthene	11	15.0 — 830.0	Yes
Benzo(g,h,i)perylene	15	11.0 — 600.0	Yes
Benzo(a)pyrene	I5	8.0 — 1,100.0	Yes
bis(2-Ethylhexyl)phthalate (BEHP)	3	41.0— 95.0	Yes
2-Butanone(MEK)	1	0.5	No
Butlybenzylphthalate	4	14.0 — 35.0	Yes
Chrysene	15	12.0 — 2200.0	Yes
Dibenzo(a,h)anthracene	2	8.0 — 15.0	Yes

Table 9-53b
Organic Constituents in Surface Soil
Site 15

Compound Name	Number of Detections	Range of Concentrations (µg/kg)	ECPC
Semivolatile Organic Compounds (N = 33) (continued)			
Di-n-butylphthalate	7	17.0 – 54.0	Yes
Dibenzo(a,h)anthracene	2	8.0 – 15.0	Yes
Diethylphthalate	1	41.0	No
Fluoranthene	21	6.0 – 1,900.0	Yes
Indeno(1,2,3-cd)pyrene	14	8.0 – 740.0	Yes
Phenanthrene	12	7.0 – 290.0	Yes
Pyrene	21	9.0 – 2,200.0	Yes
Pesticides (N = 53)			
Aldrin	2	2.4 – 50.0	No
Delta-BHC	5	0.44 – 3.3	Yes
Gamma-BHC (Lindane)	5	0.35 – 26.0	Yes
alpha-Chlordane	40	0.54 – 3,100.0	Yes
gamma-Chlordane	35	0.54 – 2,000.0	Yes
4,4'-DDD	28	1.2 – 160.0	Yes
4,4'-DDE	50	0.38 – 620.0	Yes
4,4'-DDT	49	0.93 – 630.0	Yes
Dieldrin	41	0.41 – 3,000	Yes
Endrin	15	0.34 – 16.0	Yes
Endrin Ketone	13	0.038 – 19.0	Yes
Endosulfan I	31	0.46 – 1,000.0	Yes
Endosulfan sulfate	11	1.1 – 7.7	Yes
Endrin aldehyde	3	1.6 – 2.9	Yes
Heptachlor	5	0.82 – 59.0	Yes
Heptachlor Epoxide	20	0.31 – 180.0	Yes
Polychlorinated Biphenyls (N = 28)			
Aroclor-1260	3	20.0 – 320.0	Yes

Notes:
N = Number of samples
ECPC = Ecological Chemicals of Potential Concern.
µg/kg = micrograms per kilogram

During drilling, water table depth ranged from 9 to 15 feet below land surface (Section 5.1). Because groundwater depth is considered outside of any zone capable of impacting significant biological receptors on site!, groundwater concentrations detected in the immediate site area will not be assessed for risk to terrestrial species. Wetland 4, approximately 400 feet west and cross gradient of Site 15, likely does not receive shallow groundwater discharge from Site 15. However, Bayou Grande and tidal pond/Wetland 65 are approximately 600 feet and 400 feet downgradient of Site 15, respectively. Based on their distance from the site and the limited extent of detected parameters, these surface waters are not expected to be appreciably impacted by parameters detected at Site 15. However, due to the potential for groundwater influence to surrounding water bodies, maximum groundwater concentrations from the most downgradient Site 15 monitoring wells (15GS68 through 15GS71) are compared to surface water quality criteria (Table 9-54). No sediment or surface water samples were collected as part of the Site 15 investigation.

Table 9-54
Ground Water Parameter at Selected Wells Compared to Surface Water Quality Standards and Screening Values
Site 15

Parameter (μg/L)	Well[1] Number 15GS68	15GS69	15GS70	15GS71	Effect Levels (EL)
Aluminum	703	**3900**	867	1110	1,500[a]
Arsenic	1.1	4.3	1.3	ND	36[b]
Iron	399	2130	497	**382**	300[a]
Manganese	20	25.8	3.1	4.9	50[b]
Zinc	4.1	5.2	11.1	5.3	86[a,b]
Dieldrin	0.11	ND	ND	ND	.0019[c]
4,4'-DDE	.0012	.0015	ND	ND	0.14[c]

Notes:
1 = See Figure 4-2 for well locations.
a = Florida Surface Water Standards
b = USEPA Ambient Water Quality Criteria - chronic - Saltwater
= USEPA Region IV Saltwater Surface Water Screening Value (EPA, 1995)
N D = Not Detected
Bold indicates concentrations exceeded effects level.

Stressor Characteristics

Inorganics

In general, heavy metals adversely affect survival, growth, reproduction, development, and metabolism of both terrestrial and aquatic invertebrate species, but effects are substantially modified by physical, chemical, and biological variables. Pascoe et al. **(1994)** observed that, in general, bioavailability of metals and arsenic in soil to small mammals was limited. The study also suggests that metal and arsenic intake for higher trophic species may be similarly limited. Most heavy metals do not biomagnify. In contact tests with terrestrial earthworms the order of toxicity for heavy metals from most toxic to least toxic was copper > zinc > nickel = cadmium >lead.

Arsenic naturally occurs and, with respect to cycling in the environment, is constantly changing. Many inorganic arsenicals are known teratogens and are more toxic than organic arsenicals (Eisler, **1988).** Soil biota appear to be capable of tolerating and metabolizing relatively high concentrations of arsenic. For example, Wang et al., **(1984)** demonstrated that microbiota can tolerate arsenic at concentrations of up to **1,600** mg/kg. However, adverse effects to aquatic organisms have been reported at concentrations of **19** to **48** μg/L in water. Arsenic in sediment does not appear to **magnify** within aquatic food chains.

Hexavalent chromium (Cr VI) produces more adverse effects to biota than does the trivalent phase. The solubility and potential bioavailability of waste chromium added to soil through sewage sludge are modified by soil pH and organic complexing substances. In clayey sediments, trivalent chromium dominates and benthic invertebrate bioaccumulation is limited (Neff et al., **1978).**

In soil, lead concentrates in organic-rich surface horizons (NRCC, **1973).** Estimated residence time of lead in soil is about **20** years (Nriagu, **1978).** In sediments, lead is primarily found in association with iron and manganese hydroxides and may also form associations with clays and

organic matter. Under *oxidizing* conditions, lead tends to remain tightly bound to sediments, but is released into the water column under reducing conditions. Lead may accumulate! to relatively high concentrations in aquatic biota.

Mercury is a known mutagen, teratogen, and carcinogen. It adversely affects reproduction, growth and development, motor coordination, and metabolism. Mercury has a high potential for bioaccumulation and biomagnification, and is slow to depurate. Organomercury compounds produce more adverse effects than inorganic mercury compounds. Inorganic mercury *can* be modified to organic mercury compounds through biological transformation processes.

In natural waters zinc, which is readily transported, speciates into the toxic aquo ion, other dissolved chemical species, and various inorganic and organic complexes. Most zinc introduced into aquatic environments is eventually partitioned into the sediments. Reduced conditions enhance zinc's bioavailability.

No information was available on the toxicological effects associated with other inorganic ECPCs within soil and sediment.

Organics

PAHs vary by molecular weight. With increasing molecular weight, aqueous solubility decreases and the log K_{ow} increases, suggesting increased solubility in fats, a decrease in resistance to oxidation and reduction, and a decrease in vapor pressure (Eisler, 1987). Accordingly, PAHs of different molecular weight vary substantially in *their* behavior and distribution in the environment and in their biological effects. In water, PAHs either evaporate, disperse into the water column, become incorporated into sediments, or undergo degradative processes such as photo-oxidation, chemical oxidation, and biological transformation by bacteria and animals (Neff, 1979).

Most environmental concern has focused on PAHs that range in molecular weight from 128.16 (naphthalene) to 300.36 (coronene). Generally, lower molecular weight PAH compounds containing two or three aromatic rings exhibit significant acute toxicity but are not carcinogenic. Higher molecular weight PAH compounds of four to seven rings are significantly less toxic, but are demonstrably carcinogenic, mutagenic, or teratogenic to aquatic species. PAHs show little tendency to biomagnify in food chains because most are rapidly metabolized (Eisler, 1987). Very little information is available on food chain adverse effects as a result of soil PAH contamination.

Organochlorine pesticides have been used extensively in the United States since the 1940s. They appear to be ubiquitous in the environment, being found in surface water, sediment, and biological tissues. They are readily absorbed by warm-blooded species and degradatory products are frequently more toxic than the parent form. Food chain biomagnification is usually low, except in some marine mammals. In soil invertebrates, organochlorine pesticides can accumulate to concentrations higher than those in the surrounding soil, and residues may in turn be ingested by birds and other animals feeding on earthworms (Beyer and Gish, 1980). Most environmental effects studies have been directed at mammals and birds,

PCBs are distributed worldwide with measurable concentrations recorded in fishery and wildlife resources from numerous locations (Eisler, 1986). They are known to bioaccumulate and to biomagnify within the food chain and to elicit biological effects such as death, birth defects, tumors, and a wasting syndrome. In terrestrial environments, PCBs are rapidly metabolized from the soil into the terrestrial food chain (McKee, 1992). Subsoil-dwelling organisms may directly absorb PCBs, and food chain transfer to lower-level vertebrate species may occur.

9.2.1.4 Contaminant Fate and Transport

According to information provided in the Site 41 Work Plan (E/A&H, 1995), the surface soil surrounding the site is classified as Lakeland Sand, which is characterized as excessively drained.

Boring logs from Site 15 showed the surface soil classified as fine-to medium-grained sand. This soil type is typically low in organic material with high permeability. These factors most likely limit development of a microbial community, thereby reducing the likelihood of microbial decomposition of sorbed organic contaminants. The fate of these contaminants then will be expected to: 1) remain in the soil to undergo degradation and/or 2) migrate downward.

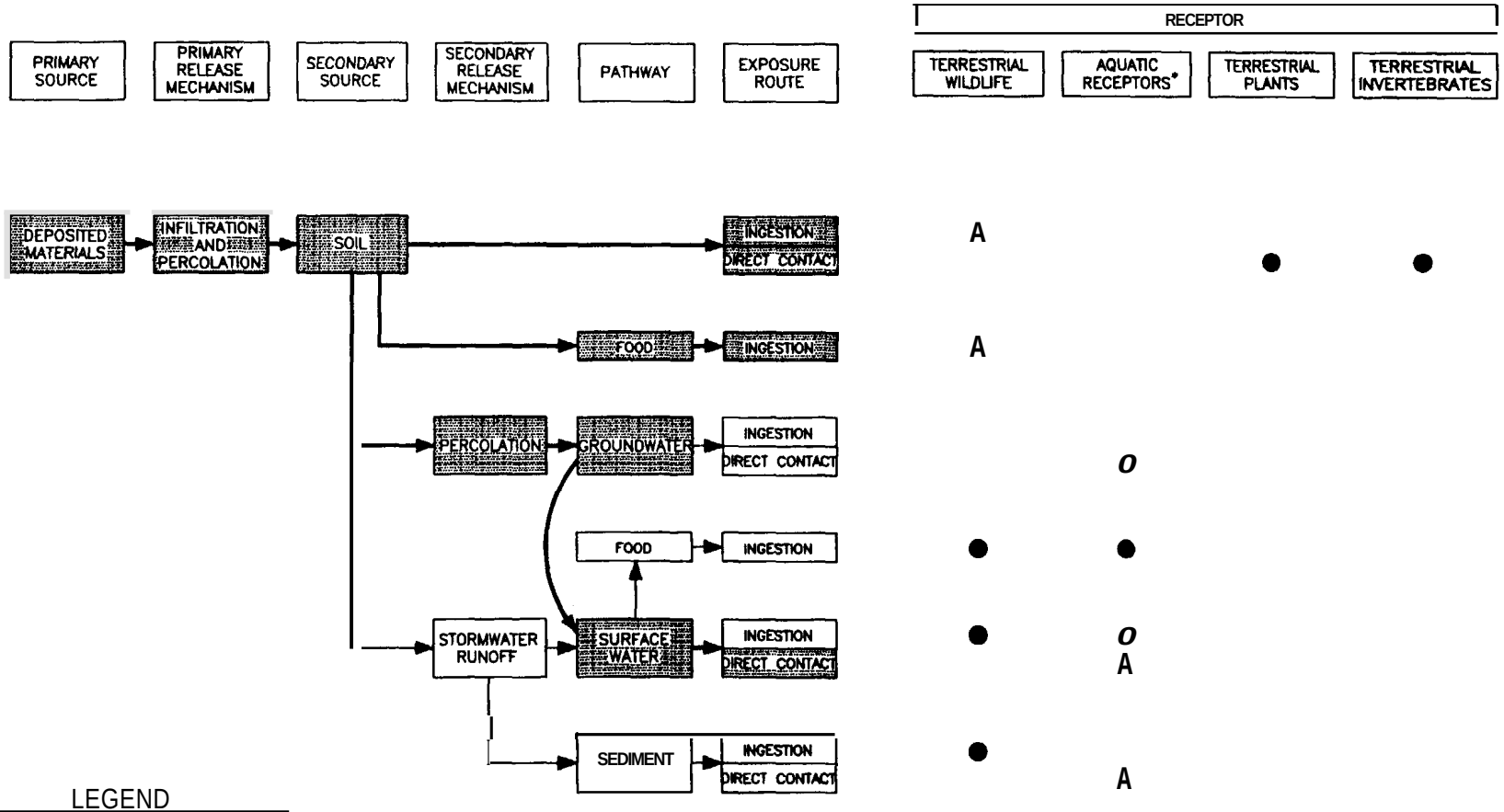
In addition, contaminants sorbed to surface soil conceivably could be transported via air or surface water runoff. However, both of these pathways are unlikely as major routes. Contaminants are not expected to spread far via surface runoff due to the highly permeable nature of the substrate and the generally flat topography. Therefore, the risk of surface water migration from Site 15 to other receptors is considered negligible. The physical adsorption of contaminants to soil particles and available organic material also limits horizontal migration. Migration via air pathways could be significant only as it relates to dispersal of upper soil layer particles during high winds typical to coastal areas. Because sand particles are relatively large and heavy, extended migration through this route is not expected. Fate and transport issues are discussed in Section 8.0.

9.2.2 Conceptual Model

Figure 9-18 presents a conceptual model of the potential contaminant pathways from source to ecological receptors for Site 15. For this assessment, exposure scenarios directly related to soil transport pathways are evaluated. Direct impacts to plants are not included in this assessment, but transfer mechanisms are considered in food chain transfer analyses. A screening assessment of groundwater concentrations exceeding surface water criteria is also provided.

9.2.3 Exposure Pathways and Assessment

For terrestrial wildlife species, exposure would include direct dermal contact, ingestion of soil particles, and food-chain transfer. Small mammals could contact contaminated soil if the area is used as a migratory corridor or if animals burrow into it. The contact time, and thus exposure,



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A – REPRESENTS EXPOSURE PATHWAY EVALUATED IN THE SITE 15 ERA

● – REPRESENTS INCOMPLEETE PATHWAY AT SITE 15: NOT EVALUATED.

*AQUATIC RECEPTORS – INVERTEBRATES, PLANTS, *ALGAE*. AMPHIBIANS, AND FISH
NOTE: SHADED BOXES, BOLO ARROWS, *AND* TRIANGLES INDICATE SELECTED PATHWAY.

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FIGURE 9–18
CONTAMINANT PATHWAY MODEL FOR ECOLOGICAL RECEPTORS

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will be limited when animals are crossing the area, but could be lengthy if burrows are established. Dermal contact by small reptiles and amphibians would be similar to that for mammals. For insect populations, direct exposure to grounddwelling species could provide a link for contaminant transfer to higher-level predators.

The assessment endpoint for terrestrial wildlife is the maintenance of well-balanced terrestrial wildlife populations and communities. Knowledge of the site and understanding of the terrestrial community was used to objectively determine which endpoint species would be used in the risk assessment. Consistent with the guidance document used (USEPA, 1997), representative wildlife species were selected as endpoints based on their exposure potential at the site (i.e., their presence at the site), their feeding regimes (both herbivorous and omnivorous species), and the potential reproductive effects from suspected or known contaminants at the site. Selected assessment endpoint wildlife species evaluated through this comparison are the Eastern cottontail rabbit (*Sylvilagus floridanus*) and the American robin (*Turdus migratorius*). Both of these species are likely to occur within Site 15. As a measure of the assessment endpoint selected, results of laboratory toxicity studies in literature that relate the oral dose of a contaminant with adverse response to growth, reproduction, or survival were used.

To assess biotransfer of contaminants along food chains, a total potential dietary exposure (PDE) has been modeled for the rabbit and the robin at Site 15. PDEs are calculated based on predicted concentrations of the ECPC in food items that the species would consume, the amount of soil it would ingest, the relative amount of different food items in its diet, body weight, and food ingestion rate (Table 9-55). The concentrations of ECPCs in food items are estimated based upon literature-reported bioaccumulation factors (BAFs), which are a ratio of the ECPC concentration in dietary items to the concentration in soil. The BAFs reported for avian and mammalian species are reported ratios of ECPCs in the tissue of the animals to the concentrations of ECPCs in their diets.

Table 9-55
Wildlife Contaminant Exposure Model for Surface Soil
Site 15

Food Contaminant Concentration (mg/kg)	=	BAF[1] x Soil Contaminant Concentration (mg/kg)
Soil Exposure (SE) (mg/kg)	=	(% of diet as soil) x Soil Contaminant Concentration (mg/kg)
PDE (mg [redacted]t/kgBW/day)	=	$\frac{[P_1 \times T_1 + P_2 + \ldots P_n \times T_n + SE] \times IR_{diet} \times SFF}{BW}$

where:

P_n	=	percent of diet composed of food item N
T_n	=	tissue concentration in food item N (mg/kg), (Food Contaminant Concentration)
IR_{diet}	=	food ingestion rate of receptor (kg of food per day)
SFF	=	site foraging factor (cannot exceed 1)
BW	=	receptor body weight (kg)
1	=	BAF from Table 9-56
PDE	=	Potential Dietary Exposure

The site foraging factor (SFF) allows for consideration of the frequency of feeding in the site area by estimating the acreage of the site relative to the receptors feeding range and by considering the fraction of the year the receptor would be exposed to site contaminants. In being conservative, a SFF of 1 was chosen for both species. This means that both the rabbit and the robin are assumed to obtain 100% of their diet from the site area.

9.2.4 Ecological Effects Assessment

Potential adverse effects associated with identified ECPCs to rabbit and robin species are based on food and incidental soil uptake potential. Available toxicity reference values (TRVs) were determined for each measurement endpoint species selected. The TRV relates the dose of a respective ECPC in an oral exposure with an adverse effect. Both lethal and sublethal TRVs were

chosen, and are based on the research provided in Appendix H. When possible, direct species comparisons were made from the data in Appendix H. When no data existed for the assessment endpoint species, substitute species were used. For example, TRVs for the rat were used in place of the rabbit for several constituents, and TRVs for the kestrel were used in place of the robin. In no situation was a bird substituted for a mammal or vice versa. If a similar species could not be used for comparison, then one was not made. Uncertainties related to use of substitute species (as well as other issues) are addressed in Section 9.2.8.

The lethal TRV has been determined to be one-fifth of the lowest reported LD_{50} value (concentration of a contaminant at which half of the exposed test population die) for the most closely related test species. One-fifth of an oral LD_{50} value is considered to be protective of lethal effects for 99.9% of individuals in a test population (USEPA, 1986). It is assumed that this level of risk to individuals within terrestrial wildlife populations across Site 15 is acceptable.

A sublethal TRV is also identified, representing a threshold for sublethal effects. Sublethal effects are defined as those that impair or prevent reproduction, growth, or survival. The sublethal TRV is the lowest effects threshold and is the basis chosen for establishing risk.

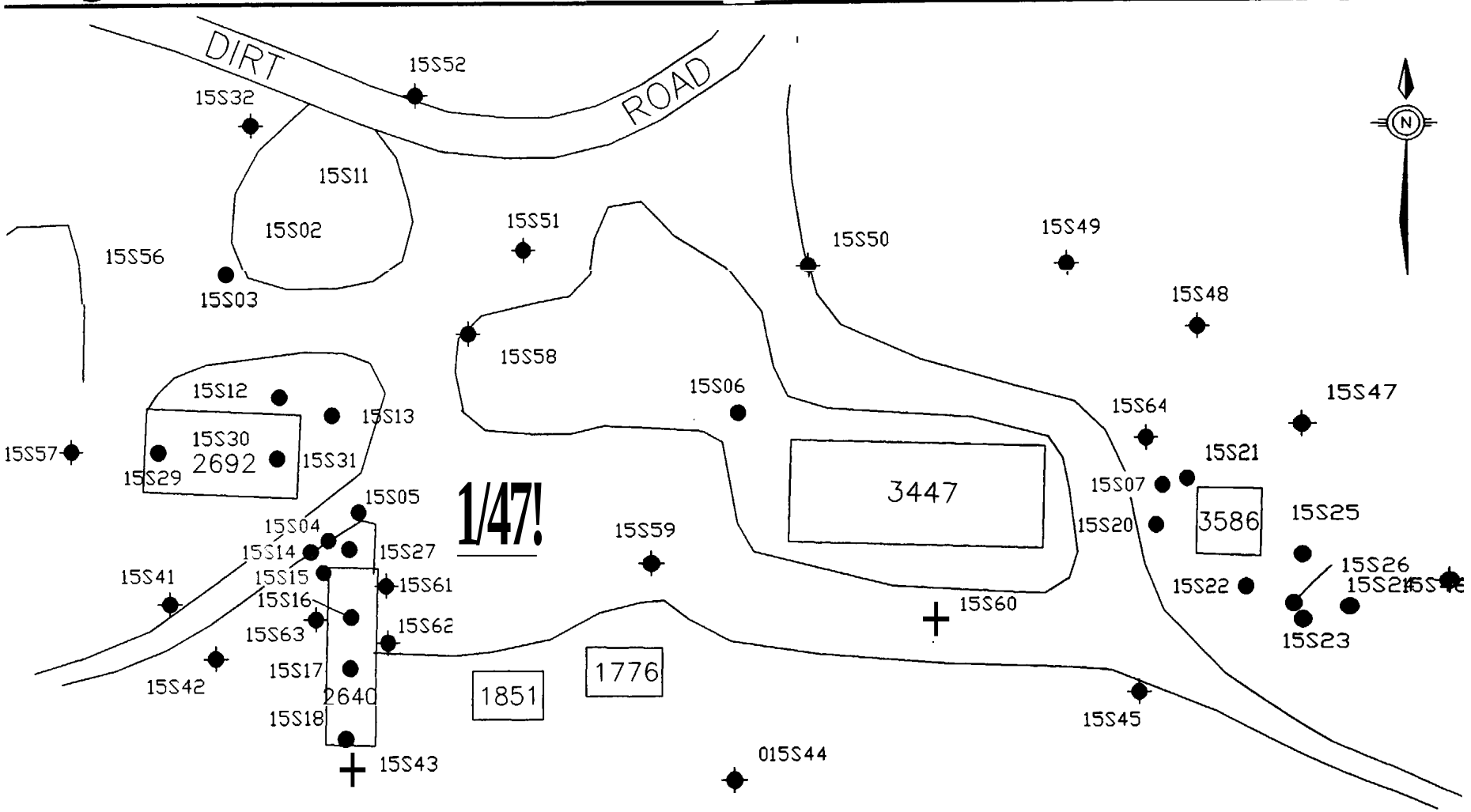
9.2.5 Risk Characterization

Risks for the representative wildlife species associated with ingestion of other contaminants in surface soil and food are quantitatively evaluated using hazard quotients (HQs), which are calculated for each ECPC by dividing the estimated dietary exposure concentration (PDE) by the toxicological benchmark (TRV). Hazard Indices (HIs) are determined for each representative wildlife species by summing the HQs for all ECPCs. When the estimated PDE is less than the TRV (HQ < 1), the contaminant exposure is assumed to fall below the range considered to be associated with adverse effects for growth, reproduction, and survival, and no risk to the wildlife populations is assumed. When the HQ or HI is greater than one, the ecological significance is

discussed and risk is assumed. When HIs are greater than 1, the HQs comprising the HI were evaluated.

For the rabbit and robin, PDEs were calculated using available bioaccumulation data (Table 9-56) for ECPCs shown in Table 9-53a and 9-53b. PDEs could not be calculated for those compounds without an associated bioaccumulation factor (BAF). Exposure parameters and assumptions for representative species at Site 15 (Table 9-57) were used to calculate food contaminant concentrations. PDE values were obtained using the model for prediction of contaminant exposure presented in Table 9-55. When the maximum concentration of an ECPC produced HQs greater than 1, back calculation for those constituents was then used to determine the soil concentration necessary to produce risk quotients (HQs) below 1. This concentration is referred to as the Significant Risk Level (SRL) and is discussed in the following sections. Also, spatial distribution of concentrations exceeding the SRL, for those ECPCs with HQs greater than 1, are presented as Figures 9-19 and 9-20. HQs for both lethal and sublethal effects for ECPCs at Site 15 were determined and are presented in Tables 9-58a through 9-58d.

Potential sublethal effects from maximum soil concentrations at Site 15 are present based on the HI values calculated for the Eastern cottontail rabbit and the American Robin (Table 9-58a). For the rabbit, only arsenic had an HQ > 1. Back-calculation, to determine at what concentration the HQ would fall below 1, showed only four locations having concentrations above the SRL of 27.3 mg/kg (Table 9-59). For the robin, only mercury had an HQ greater than 1. The maximum concentration observed at the site was the only sample exceeding the SRL for mercury of 1.17 mg/kg (Table 9-59). Mean values for those ECPCs identified as potential contributors to risk at Site 15 all produced HQs below 1 for sublethal effects (Table 9-58b).



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015S0047 ● PHASE I SOIL BORING

15S0051 ✦ PHASE II SOIL BORING

60 0 60

SCALE FEET

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FIGURE 9-19
SURFACE SOIL BORING EXCEEDING THE SIGNIFICANT RISK LEVEL FOR ARSENIC

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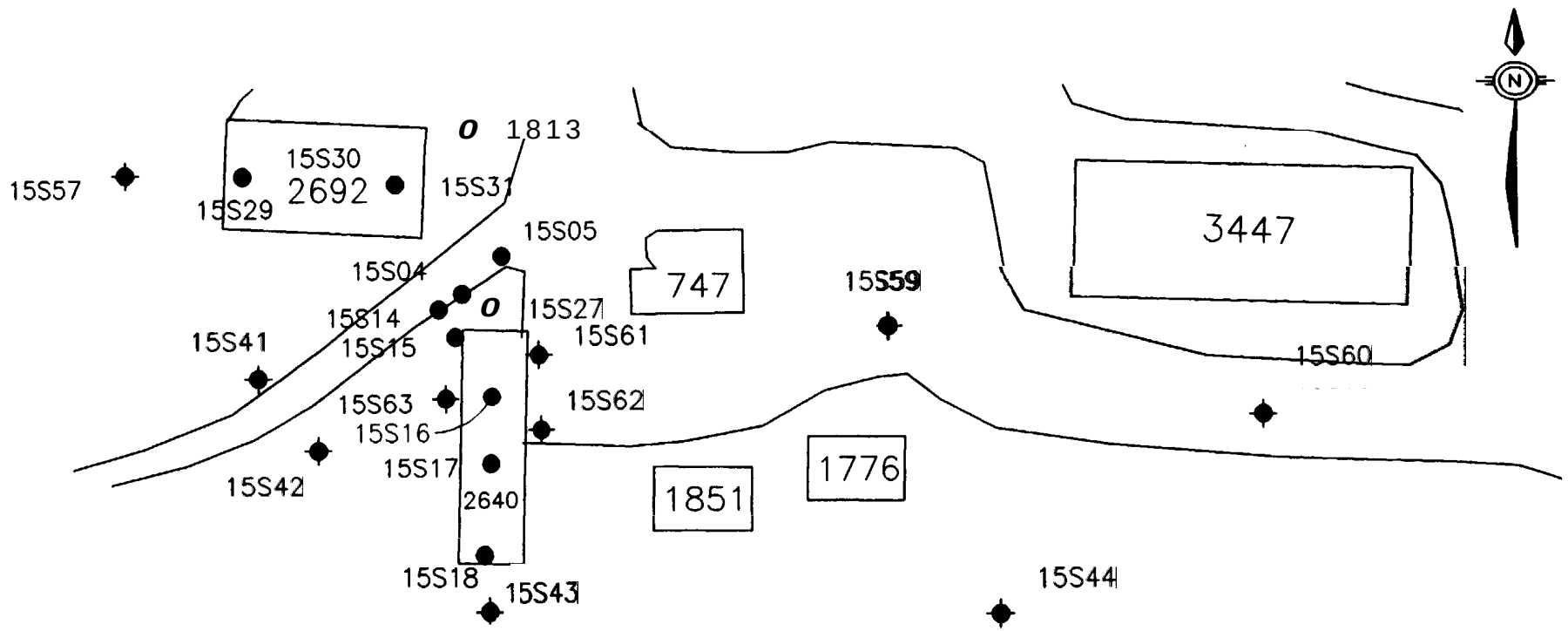

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● PHASE I SOIL BORING

✦ PHASE II SOIL BORING

50 0 50 FEET

SCALE

REMEDIAL INVESTIGATION REPORT
SITE 15
NAS PENSACOLA

FIGURE 9-20
SURFACE SOIL BORING EXCEEDING TH
SIGNIFICANT RISK LEVEL FOR **MERCUR**

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Table 9-54
Bioaccumulation Data'
Baseline Risk Assessment
Site 15

Analyte	Log K_o	Bioaccumulation or Biotransfer Factor (unitless) Plant	Terrestrial Invertebrate	Mammal	Bird
Semivolatiles					
Anthracene	4.4 [c]	NA	5.0E-03 [d]	6.30E-04 [a]	1 [ab]
Benzo(a)anthracene	5.74 [c]	1.9E-02 [e]	1.25E-02 [d]	1.38E-02 [a]	1 [ab]
Benzo(a)pyrene	6.07 [c]	1.2E-02 [e]	3.42E-02 [d]	2.95E-02 [a]	1 [ab]
Benzo(b)fluoranthene	6.32 [c]	8.0E-03 [e]	3.2E-02 [d]	5.25E-02 [a]	1 [ab]
Benzo(g,h,i)perylene	7 [c]	3.0E-03 [e]	2.4E-02 [d]	2.50E-01 [a]	1 [ab]
Benzo(k)fluoranthene	6.45 [c]	7.0E-03 [e]	2.5E-02 [d]	7.08E-02 [a]	1 [ab]
Bis(2-ethylhexyl)phthalate (BEHP)	5.3 [f]	3.3E-02 [e]	2.2E-02 [aj]	5.00E-03 [a]	1 [ab]
Butylbenzylphthalate	4.78 [g]	4.9E-02 [e]	2.2E-02 [aj]	1.50E-03 [a]	1 [ab]
Chrysene	5.71 [c]	1.9E-02 [e]	3.1E-02 [d]	1.29E-02 [a]	1 [ab]
Dibenzo(a,h)anthracene	6.42 [c]	8.0E-03 [e]	2.2E-02 [aj]	6.61E-02 [a]	1 [ab]
Di-n-butylphthalate	4.8 [h]	NA	2.2E-02 [aj]	1.60E-03 [a]	1 [ab]
Fluoranthene	5.25 [c]	3.6E-02 [e]	7.0E-03 [d]	4.50E-03 [a]	1 [ab]
Indeno(1,2,3-cd)pyrene	7.7 [c]	1.4E-03 [e]	4.2E-02 [d]	1.26 [a]	1 [ab]
Naphthalene	NA	NA	NA	NA	NA
Phenanthrene	4.43 [c]	NA	1.2E-02 [d]	6.70E-04 [a]	1 [ab]
Pyrene	5.09 [c]	4.4E-02 [e]	1.8E-02 [d]	3.10E-03 [a]	1 [ab]

Table 9-56
Bioaccumulation Data[1]
Baseline Risk Assessment
site 15

Analyte	Log K	Bioaccumulation or Biotransfer Factor (unitless)			
		Plant	Terrestrial Invertebrate	Mammal	Bird
Pesticides/Herbicides/PCBs/Dioxins					
Aroclor-1260	6 [c]	1.3E-02 [e]	1.2 [l]	1 [ak]	1 [ab]
alpha-Chlordane	2.78 [f]	2.7E-02 [ac]	8.E-01 [j]	7.1E-01 [ak]	7.1E-01 [ai]
gamma-Chlordane	3.32 [f]	2.7E-02 [ac]	8.0E-01 [j]	7.1E-01 [ak]	7.IE-01 [ai]
4,4'-DDD	5.69 [f]	2.0E-02 [e]	9.8E-01 [v]	2.91 [ak]	2.91 [l]
4,4'-DDE	5.69 [f]	2.0E-02 [e]	9.8E-01 [v]	2.91 [ak]	2.91 [l]
4,4'-DDT	4.48 [f]	2.7E-02 [ac]	9.8E-01 [v]	2.91 [ak]	2.91 [l]
Dieldrin	4.95 [f]	4.9E-02 [e]	1.2 [m]	7.10E-01 [ak]	7.1E-01 [n]
Endosulfan I	4.95 [c]	2.7E-02 [ac]	9.8E-01 [v]	NA	NA
Endrin	5.34 [ao]	3.2E-02 [e]	7.2E-01 [j]	NA	NA
Pesticides/Herbicides/PCBs/Dioxins					
Endrin aldehyde	NA	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA	NA
Heptachlor epoxide	NA	NA	NA	NA	NA
Inorganics					
Aluminum	NA	NA	NA	NA	NA
Arsenic	NA	3.0E-01 [p]	7.7E-01 [ae]	3.6E-01 [ag]	4.5E-01 [ah]
Barium	NA	5.6E-01 [ag]	7.7E-01 [ae]	3.40E-01 [af]	4.5E-01 [ah]

Table 9-56
Bioaccumulation Data[1]
Baseline Risk Assessment
Site 15

Analyte	Log K_{ow}	Bioaccumulation or Biotransfer Factor (unitless)			
		Plant	Terrestrial Invertebrate	Mammal	Bird
Inorganics					
Chromium	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA
Copper	NA	7.8E-01 [t]	1.6E-01 [l]	6.0E-01 [q]	4.5E-01 [ah]
Iron	NA	NA	NA	NA	NA
Lead	NA	0 [q]	2.2E-01 [u]	5.4E-01 [w]	4.5E-01 [ah]
Manganese	NA	5.6E-01 [ag]	7.7E-01 [ae]	3.4E-01 [ag]	4.5E-01 [ah]
Mercury	NA	5.6E-01 [ag]	3.4E-01 [x]	1.0E-02 [aa]	2.33 [aa]
Nickel	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA
Zinc	NA	6.1E-01 [t]	1.77 [l]	2.06 [w]	4.5E-01 [ah]

Notes:

[a] = Calculated using the following equation (Travis and Arms, 1988), unless otherwise noted: log BAF - log K_{ow}-7.6; result multiplied by average of ingestion rates for nonlactating and lactating test animals. There is an uncertainty involved in using this equation for PAHs, because this study did not use any PAHs in the regression analysis.

[b] = Reinecke and Nash (1984).

[c] = Geometric mean of values from USEPA (1986).

[d] = Marquerie et al. (1987). Mean of values. Converted to wet weight assuming 90% bodyweight as water.

[e] = Calculated using the following equation in Travis and Arms (1988) for analytes with log K_{ow}s >5: log (Plant Uptake Factor) = 1.588-0.578 log K_{ow}.

[f] = From USEPA (1986).

[g] = Value from Verschueren (1983).

[h] = Value from Howard (1990).
[I] = BCF for earthworms from Diercxsens. et al. (1985).
[j] = Value from Gish (1970).
[k] = Mean of values reported for soil invertebrates in Macfadyen (1980) converted from dry weight to wet weight.
[l] = Whole body pheasant BAF for 4,4'-DDT presented in USEPA (1985). derived from Kenaga (1973).
[m] = Average of values reported for soil invertebrates in Edwards and Thompson (1973).
[n] = Jeffries and Davis (1968).
[o] = Value reported for endrin from Gish (1970).
[p] = Average of BAF values reported from Wang et al. (1984), Sheppard et al. (1985) and Merry et al. (1986).
[q] = Levine et al. (1989).
[r] = Mean of values reported for *Sorex araneus* in Macfadyen (1980).
[s] = Based on accumulation of cadmium in kidneys of European quail in Pimentel et al. (1984).
[t] = Median of values reported from Levine et al. (1989).
[u] = Geometric mean of BAF values (fresh st. worm/dry st. soil) for worms and woodlice (USEPA. 1985). Fresh weight tissue concentrations calculated assuming 90% body water content.
[v] = Beyer and Gish (1980) reported dry weight to wet weight ratio.
[w] = Mean of values for *Microtus agrestis* and *Apodemus sylvaticus* in Macfadyen (1980).
[x] = Value from USEPA (1985) sludge document.
[y] = Based on reported ratio of selenium in plant tissue and iron fly ash amended soil (Stoewsand et al.. 1978).
[z] = Based on average of reported ratio of selenium in diet to liver. kidney, and breast tissue of chickens (Ort and Lafshaw, 1977).
[aa] = USEPA. 1985.
[ab] = Assumption (based on octanol-water partitioning coefficient similarity).
[ac] = Assumed value based on average of BAFs calculated for other pesticides and PCBs.
[ad] = Assumed value base on average of BAFs for Aroclor-1260, alpha-Chlordane, 4,4'-DDE, dieldrin and endrin ketone.
[ae] = Assumed value based on average of BAFs reported for other metals.
[af] = Assumed value based on average of reported BAFs for Cd, Cu, Pb and Hg.
[ag] = Assumed value based on average of reported BAFs for As. Cu, Hg and Zn.
[ah] = Assumed value based on average of reported BAF values for Cd and Se.
[ai] = Assumed value based on reported BAF for dieldrin.
[aj] = Assumed value based on average of BAFs for semivolatiles.
[ak] = Value for mammal unavailable. Bioaccumulation assumed to be the same as values reported for birds.
[am] = Polder et al. (1995).
[an] = Rose et al. (1976).
[ao] = Value from Montgomery (1955).
NA = Not available.
' = Table adapted from BRA, NAS Cecil Field, Jacksonville, Florida.

Table 9-57
Exposure Parameters and Assumptions for Representative Wildlife Species at Site 15
Prey in Diet (%)

Representative Wildlife Species	Trophic Status	Inverts	Plants	Small Mammals	Herpeto-fauna	Small Birds	Incidental soil Ingestion (%)	Home Range (acres)	ED	Site Foraging Frequency (SFF)	Ingestion Rate (kg/day)	Body Weight (kg)
American Robin[a]	Small Carnivorous Bird	83	7	0	0	0	10	1.04	1	1	0.01	0.077
Eastern Cottontail[b]	Small Herbivorous Mammal	0	97	0	0	0	3	9.3	1	1	0.08	1.2

SITE AREA: 7 acres

Notes:
a = Diet assumptions based on data from Hamilton, 1943 and Wheelwright, 1986.
Food ingestion rate (IR) from formula: $IR(kg/day) = 0.0582\ Wt^{0.651}$ (kg) (Nagy, 1987).
Body weight from Clench & Leberman, 1978.
Home range reflects interpolated values from Howell, 1942; and Weatherhead & McRae, 1990.
b = Diet assumptions based on data from Dusi, 1952; and Spencer & Chapman, 1986.
Food ingestion rate (IR) from formula: $IR(kg/day) = 0.0687 \times Wt^{0.822}$ (kg) (Nagy. 1987).
Body weight reflects interpolated values from Chapman & Morgan 1973; Pelton & Jenkins, 1970.
Home range reflects interpolated values from Althoff & Storm, 1989; and Dixon et al., 1981.
ED = Exposure Duration (percentage of year receptor is expected to be found at study area expressed as a factor, i.e., 100% = 1.0)
SFF = Site area (acres) times exposure duration (ED) divided by Home Range (HR); cannot exceed I.O.

Table 9-58a
Hazard Quotients for Potential Sublethal Effects
Maximum Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	**M u Conc (mg/kg)**	**PDE**	**TRV**	**HQ**	**PDE**	**TRV**	**HQ**
Aluminum	4,940	NA	NA	NC	NA	**1.0E+02**	NC
Arsenic	**66.3**	**6.54E+00**	NA	NC	**1.42E+00**	5.8E-01	2.45E+00
Barium	**16.9**	**1.71E+00**	NA	NC	**6.46E-01**	NA	NC
Beryllium	**0.12**	NA	NA	NC	NA	NA	NC
Chromium	17.4	NA	NA	NC	NA	NA	NC
Cobalt	4.6	NA	NA	NC	NA	NA	NC
Copper	**9.5**	**3.55E-01**	**1.1E+01**	3.2E-02	4.98E-01	**1.52E+02**	3.32E-03
Iron	4,680	NA	NA	NC	NA	NA	NC
Lead	**109**	4.00E+00	**2.5E+02**	**1.6E-02**	**2.18E-01**	**5.2E+02**	**4.19E-04**
Magnesium	**1,440**	NA	NA	NC	NA	NA	NC
Manganese	215	**2.17E+01**	NA	NC	**8.22E+00**	9.3E+02	**8.84E-03**
Mercury	1.9	**1.04E-01**	6.4E-02	**1.63E+00**	7.26E-02	5.0E-01	**1.45E-01**
Nickel	6.8	NA	NA	NC	NA	**1.6E+02**	NC
Vanadium	**14.0**	NA	NA	NC	**NA**	NA	NC
Zinc	**56.5**	1.18E+01	NA	NC	**2.34E+00**	**1.6E+02**	**1.46E-02**
Anthracene	0.230	3.11E-03	NA	NC	4.60E-04	NA	NC
Benzo(a)anthracene	**1.70**	2.47E-02	NA	**NC**	5.49E-03	NA	NC
Benzo(b)fluoranthene	2.60	4.29E-02	NA	NC	6.55E-03	NA	NC
Benzo(k)fluoranthene	0.830	1.31E-02	NA	NC	NA	NA	NC
Benzo(g,h,i)perylene	0.60	9.36E-03	NA	NC	1.32E-03	NA	NC

Table 9-58a
Hazard Quotients for Potential Sublethal Effects
Maximum Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	Max Conc (mg/kg)	PDE	TRV	HQ	PDE	TRV	HQ
Benzo(a)pyrene	1.10	1.85E-02	NA	NC	3.10E-03	**4.0E+01**	7.75E-05
bis(2-Ethylhexyl)phthalate (BEHP)	***0.095***	1.49E-03	NA	NC	3.93E-04	**3.5E+01**	1.20E-05
Butylbenzylphthalate	0.035	5.53E-04	NA	NC	1.81E-04	4.9E+03	**3.69E-08**
Chrysene	2.20	3.63E-02	NA	NC	7.10E-03	NA	NC
Dibenzo(a,h)anthracene	0.280	4.32E-03	NA	NC	7.05E-04	NA	NC
Di-n-butylphthalate	.054	NA	NA	NC	NA	NA	NC
Fluoranthene	1.90	2.67E-02	NA	NC	8.22E-03	NA	NC
Indeno(1,2,3)pyrene	0.740	1.31E-02	NA	NC	1.55E-03	NA	NC
Methoxychlor	0.10	NA	NA	NC	NA	NA	NC
Phenanthrene	0.290	NA	NA	NC	NA	NA	NC
	2.20	3.37E-02	NA	NC	**.07E-02**	NA	NC
Delta-BHC	0.0033	NA	NA	NC	NA	NA	NC
Gamma-BHC (Liane)	0.026	NA	**2.0E+01**	NC	NA	**5.8E+01**	NC
alpha-Chlordane	3.1	3.08E-01	1.1E+01	2.8E-02	.16E-02	**3.7E+00**	3.13E-03
gammaChlordane	2.0	1.99E-01	1.1E+01	1.8E-02	7.49E-03	**3.7E+00**	**2.04E-03**
4.4'-DDD	**0.160**	7.37E-02	3.9E-01	1.89E-01	2.04E-03	**1.5E+02**	1.36E-05
4,4'-DDE	0.620	7.37E-02	3.9E-01	**1.89E-01**	2.04E-03	**1.5E+02**	**1.36E-05**
4,4'-DDT	0.630	7.49E-02	1.6E-01	4.68E-01	2.36E-03	**1.5E+02**	1.57E-05
Dieldrin	3.0	4.2E-01	1.0E+01	4.2E-02	**1.55E-02**	3.3E-01	4.70E-02
Endrin	0.016	1.4E-03	1.0E-01	NC	NA	3.6E-01	NC

Table 9-58a
Hazard Quotients for Potential Sublethal Effects
Maximum Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	**Max Conc (mg/kg)**	**PDE**	**TRV**	**HQ**	**PDE**	**TRV**	**HQ**
Endrin Ketone	0.019	NA	NA	NC	NA	NA	NC
Endosulfan I	1.00	NA	1.0E+02	NC	NA	NA	NC
Endosulfan sulfate	0.0077	1.31E-02	NA	NC	1.57E-03	NA	NC
Endrin aldehyde	0.0029	NA	NA	NC	NA	NA	NC
Heptachlor	0.059	NA	NA	NC	NA	9.5E-01	NC
Heptachlor epoxide	0.180	NA	NA	NC	NA	NA	NC
Aroclor-1260	0.320	4.56E-02	9.0E-01	5.06E-02	9.09E-04	6.4E+00	1.42E-04
HI =				2.57E+00			2.67E+00

Notes:
maxconc = Maximum Concentration of Analyte.
NA = Data not available
NC = Not able to calculate value
PDE = Potential Dietary Exposure (mg/kg/BW) calculated based on equation in Table 9-38.
RTV = Toxicity Reference Value (mg/kg/BW/day) - lowest reported LOAEL from Appendix H.
HQ = Hazard Quotient - PDE divided by the TRV.
HI = Hazard Index ($HQ_1 + HQ_2 + ..HQ_n$).

Table 9-58b
Hazard Quotients for Potential Sublethal **Effects**
Mean Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	Mean **Conc (mg/kg)**	**PDE**	**TRV**	HQ	**PDE**	**TRV**	HQ
Aluminum	**2,094**	NA	NA	NC	NA	**1.0E+02**	**NC**
Arsenic	9.23	9.11E-01	NA	NC	1.98E-01	5.8E-01	3.41E-01
Barium	6.23	6.30E-01	NA	NC	2.38E-01	NA	NC
Beryllium	0.53	NA	NA	NC	NA	NA	NC
Chromium	5.56	NA	NA	NC	NA	NA	**NC**
Cobalt	0.735	NA	NA	NC	NA	NA	NC
Copper	**4.09**	1.53E-01	**1.05E+01**	1.46E-02	NA	**1.5E+02**	**NC**
Iron	2.049	NA	NA	NC	NA	NA	NC
Lead	19.96	7.33E-01	**2.5E+02**	2.93E-03	**3.99E-02**	**5.2E+02**	**7.67E-05**
Magnesium	197.57	NA	NA	NC	NA	NA	NC
Manganese	69.33	**7.01E+01**	NA	NC	**2.65E+00**	**9.3E+02**	2.85E-03
Mercury	**0.14**	7.66E-03	6.4E-02	1.20E-01	5.35E-03	5.0E-01	**1.07E-02**
Nickel	1.32	NA	NA	**NC**	NA	**1.6E+02**	NC
Vanadium	5.17	NA	NA	NC	NA	NA	NC
Zinc	17.51	3.67E+00	NA	NC	7.26E-01	**1.6E+02**	**4.54E-03**
Anthracene	0.120	1.62E-03	NA	NC	NA	NA	NC
Benzo(a)anthracene	0.159	2.31E-03	NA	NC	5.13E-04	NA	**NC**
Benzo(b)fluoranthene	0.246	4.06E-03	NA	NC	6.19E-04	NA	NC
Benzo(k)fluoranthene	**0.112**	1.76E-03	NA	NC	NA	NA	NC
Benzo(g,h,i)perylene	**0.085**	1.33E-03	NA	NC	1.86E-04	NA	NC

Table 9-58b
Hazard Quotients for Potential Sublethal Effects
Mean Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	**Mean Conc (mg/kg)**	**PDE**	**TRV**	**HQ**	**PDE**	**TRV**	**HQ**
Benzo(a)pyrene	**0.113**	**1.90E-03**	NA	NC	2.48E-04	**4.0E+01**	**6.20E-06**
bis(2-Ethylhexyl)phthalate (BEHP)	**0.061**	9.55E-04	NA	NC	**1.35E-04**	**3.5E+01**	3.90E-06
Butylbenzylphthalate	**0.025**	3.95E-04	**NA**	NC	1.29E-04	**4.9E+03**	2.63E-08
Chrysene	**0.195**	3.22E-03	NA	NC	6.30E-04	NA	NC
Dibenzo(a,h)anthracene	0.012	**1.85E-04**	NA	**NC**	**3.00E-05**	**NA**	NC
Di-n-butylphthalate	0.034	NA	NA	NC	NA	NA	NC
Fluoranthene	**0.133**	**1.87E-03**	NA	NC	5.76E-04	NA	**NC**
Indeno(1,2,3)pyrene	0.093	1.63E-03	NA	NC	1.94E-04	NA	NC
Methoxychlor	**0.0066**	NA	NA	NC	**NA**	NA	**NC**
Phenanthrene	**0.047**	NA	NA	NC	**NA**	NA	NC
Pyrene	**0.149**	2.28E-03	NA	**NC**	**7.22E-04**	**NA**	NC
Delta-BHC	**0.0019**	NA	NA	NC	NA	NA	NC
Gamma-BHC (Lindane)	**0.0062**	NA	NA	**NC**	NA	**NA**	NC
alpha-Chlordane	**0.101**	NA	NA	NC	NA	NA	NC
gamma-Chlordane	**0.090**	NA	NA	NC	NA	**NA**	NC
4,4'-DDD	**0.0205**	2.44E-03	3.9E-01	6.26E-03	6.80E-05	**1.5E+02**	5.00E-07
4,4'-DDE	0.086	**1.02E-02**	**3.9E-01**	**2.62E-02**	**2.83E-04**	**1.5E+02**	**1.90E-06**
4,4'-DDT	**0.054**	6.42E-03	**0.16**	4.01E-02	2.02E-04	**150**	1.30E-06
Dieldrin	**0.097**	NA	NA	NC	5.01E-04	0.33	1.52E-03
Endrin	0.0036	NA	**NA**	NC	NA	NA	NC

Table 9-58b
Hazard Quotients for Potential Sublethal Effects
Mean Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	Mean Conc (mg/kg)	PDE	TRV	HQ	PDE	TRV	HQ
Endrin Ketone	0.0028	NA	NA	NC	NA	NA	NC
Endosulfan I	0 043	NA	NA	NC	NA	NA	NC
Endosulfan sulfate	0.0036	NA	NA	NC	NA	NA	NC
Endrin aldehyde	0.0024	NA	NA	NC	NA	NA	NC
Heptachlor	0.013	NA	NA	NC	NA	NA	NC
Heptachlor epoxide	0.014	NA	NA	NC	NA	NA	NC
Aroclor-1260	0.131	1.87E-02	0.90	2.08E-02	3.72E-04	6.4E+00	5.81E-05
HI =				2.31E-02			3.61E-02

Notes:

maxconc = Maximum Concentration of Analyte.
NA = Data not available
NC = Not able to calculate value
PDE = Potential Dietary Exposure (mg/kg/BW) calculated based on equation in Table 9-3a.
RTV = Toxicity Reference Value (mg/kg/BW/day) - lowest reported LOAEL from Appendix H.
HQ = Hazard Quotient - PDE divided by the TRV.
HI = Hazard Index ($HQ_1 + HQ_2 + \ldots HQ_n$).

Table 9-58c
Hazard Quotients for Potential Lethal Effects
Maximum Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	**M u Conc (mg/kg)**	**PDE**	**TRV**	**HQ**	**PDE**	**TRV**	**HQ**
Aluminum	4,940	NA	NA	NC	NA	NA	NC
Arsenic	66.3	6 54E+00	NA	NC	1.42E+00	1.5E+02	9.47E-04
Barium	16.9	1.71E+00	NA	NC	6.46E-01	NA	NC
Beryllium	0.12	NA	NA	NC	NA	2.0E+00	NC
Chromium	17.4	NA	1.3E+02	NC	NA	NA	NC
Cobalt	4.6	NA	NA	NC	NA	NA	NC
Copper	9.5	NA	NA	NC	NA	NA	NC
Iron	4,680	NA	NA	NC	NA	3.2E+02	NC
Lead	109	4.00E+00	4.9E+03	NC	2.18E-01	NA	NC
Magnesium	1,440	NA	NA	NC	NA	NA	NC
Manganese	215	2.17E+01	NA	NC	8.22E+00	8.0E+01	1.03E-01
Mercury	1.9	1.04E-01	2.5E+00	4.16E-02	7.26E-02	3.6E+00	2.02E-02
Nickel	6.8	NA	NA	NC	NA	6.7E+01	NC
Vanadium	14.0	NA	9.6E+01	NC	NA	NA	NC
Zinc	56.5	NA	1.2E+01	NC	2.34E+00	5.0E+02	4.68E-02
Anthracene	0.230	3.11E-03	NA	NC	4.60E-04	NA	NC
Benzo(a)anthracene	1.70	2.47E-02	NA	NC	5.49E-03	NA	NC
Benzo(b)fluoranthene	2.60	4.29E-02	NA	NC	6.55E-03	NA	NC
Benzo(k)fluoranthene	0.830	1.31E-02	NA	NC	NA	NA	NC
Benzo(g,h,i)perylene	0.60	9.36E-03	NA	NC	1.32E-03	NA	NC

Table 9-58c
Hazard Quotients for Potential Lethal Effects
Maximum Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	Max Conc (mg/kg)	PDE	TRV	HQ	PDE	TRV	HQ
Benzo(a)pyrene	1.10	1.85E-02	NA	NC	3.IOE-03	**1.0E+01**	**3.10E-04**
bis(2-Ethylhexyl)phthalate (BEHP)	***0.095***	1.49E-03	NA	NC	3.93E-04	**6.8E+03**	5.78E-08
Butylbenzylphthalate	**0.035**	5.53E-04	NA	NC	**1.81E-04**	4.7E+02	4.00E-07
Chrysene	2.20	3.63E-02	NA	NC	7.10E-03	NA	NC
Dibenzo(a,h)anthracene	0.280	4.32E-03	NA	NC	7.05E-04	NA	NC
Di-n-butylphthalate	.054	NA	NA	NC	NA	NA	NC
Fluoranthene	**1.90**	2.67E-02	NA	NC	**8.22E-03**	NA	NC
Indeno(1,2,3)pyrene	0.740	1.31E-02	NA	NC	1.55E-03	NA	NC
Methoxychlor	0.10	NA	NA	NC	NA	NA	NC
Phenanthrene	0.290	NA	NA	NC	NA	**1.4E+02**	NC
Pyrene	2.20	3.37E-02	NA	NC	**1.07E-02**	5.4E+02	1.98E-05
Delta-BHC	0.0033	NA	NA	NC	NA	NA	NC
Gamma-BHC (Lindane)	**0.026**	NA	NA	NC	NA	NA	NC
alpha-Chlordane	3.1	NA	4.8	NC	NA	**2.0E+01**	NC
gamma-Chlordane	2.0	NA	4.8	NC	NA	2.0E+01	NC
4,4'-DDD	**0.160**	7.37E-02	**1.2E+02**	6.19E-04	2.04E-03	1.6E+02	1.28E-05
4,4'-DDE	0.620	7.37E-02	**1.2E+02**	6.19E-04	2.WE-03	**1.6E+02**	**1.28E-05**
4,4'-DDT	0.630	7.49E-02	**1.2E+02**	6.29E-04	2.36E-03	**5.0E+01**	1.72E-03
Dieldrin	3.0	4.2E-01	0.6	7.00E-01	1.55E-02	**9.0E+00**	4.70E-02
Endrin	0.016	1.4E-03	NA	NC	NA	NA	NC

Table 9-58c
Hazard **Quotients** lor **Potential Lethal Effects**
Maximum Exposure Concentrations

		American Robin			Eastern Cottontail		
Analyte	**Max Conc (mg/kg)**	**PDE**	**TRV**	**HQ**	**PDE**	**TRV**	**HQ**
Endrin Ketone	0.019	NA	NA	NC	NA	NA	NC
Endosulfan I	1.00	NA	NA	NC	NA	NA	NC
Endosulfan sulfate	0.0077	1.31E-02	NA	NC	1.57E-03	NA	NC
Endrin aldehyde	0.0029	NA	NA	NC	NA	NA	NC
Heptachlor	0.059	NA	NA	NC	NA	NA	NC
Heptachlor epoxide	0.180	NA	NA	NC	NA	NA	NC
Amlor-1260	0.320	4.56E-02	NA	5.06E-02	9.09E-04	1.0E+02	1.42E-04
HI =				7.9E-01			2.40E-01

Notes:
maxconc = **Maximum** Concentration of Analyte.
NA = Data not available
NC = Not able to **calculate value**
PDE = **Potential** Dietary Exposure (mg/kg/BW) **calculated** based on equation in Table 9-3r.
RTV = Toxicity Reference Value **(mg/kg/BW/day)** – lowest reported LD_{50}, divided by **5**, from Appendix H.
HQ = Hwrd Quotient – **PDE** divided by **the** TRV.
HI = Hazard Index ($HQ_1 + HQ_2 + ..HQ_n$).

Table 9-58d
Hazard Quotients for Potential Lethal Effects
Mean Exposure Concentrations

Analyte	**Mean** Conc (mg/kg)	American Robin PDE	American Robin TRV	American Robin HQ	Eastern Cottontail PDE	Eastern Cottontail TRV	Eastern Cottontail HQ
Aluminum	2,094	NA	NA	NC	NA	NA	**NC**
Arsenic	9.23	9.11E-01	NA	NC	1.98E-01	**1.5E+02**	1.32E-03
Barium	6.23	6.30E-01	NA	NC	2.38E-01	NA	**NC**
Beryllium	0.53	NA	NA	NC	NA	**2.0E+00**	**NC**
Chromium	**5.56**	NA	**1.26E+02**	NC	NA	NA	***NC***
Cobalt	0.735	NA	NA	NC	NA	NA	**NC**
Copper	**4.09**	NA	NA	NC	NA	NA	**NC**
Iron	2.049	NA	NA	NC	3.19E+02	NA	**NC**
Lead	19.96	7.33E-01	4.09E+03	1.79E-04	3.99E-02	NA	**NA**
Magnesium	197.57	NA	NA	NC	NA	NA	**NC**
Manganese	69.33	**7.01E+01**	NA	NC	**2.65E+00**	**8.0E+01**	3.31E-02
Mercury	**0.14**	7.66E-03	**2.5E+00**	3.06E-03	5.35E-03	**3.6E+00**	1.4E-03
Nickel	1.32	NA	NA	**NC**	**NA**	6.7E+01	***NC***
Vanadium	5.17	**9.6E+01**	NA	NC	NA	NA	**NC**
Zinc	17.51	**3.67E+00**	NA	NC	7.26E-01	**5.0E+02**	**1.45E-03**
Anthracene	0.120	1.62E-03	NA	NC	NA	NA	**NC**
Benzo(a)anthracene	0.159	2.31E-03	NA	NC	5.13E-04	NA	**NC**
Benzo(b)fluoranthene	0.246	4.06E-03	NA	NC	6.19E-04	NA	**NC**
Benzo(k)fluoranthene	**0.112**	1.76E-03	NA	NC	NA	NA	***NC***
Benzo(g,h,i)perylene	**0.085**	1.33E-03	NA	NC	1.86E-04	NA	**NC**

Table 9-58d
Hazard Quotients for Potential Lethal Effects
Mean Exposure Concentrations

Analyte	Mean Conc (mg/kg)	American Robin PDE	American Robin TRV	American Robin HQ	Eastern Cottontail PDE	Eastern Cottontail TRV	Eastern Cottontail HQ
Benzo(a)pyrene	0.113	**1.90E-03**	NA	NC	**2.48E-04**	**1.0E+01**	**2.48E-05**
bis(2-Ethylhexyl)phthalate (BEHP)	**0.061**	9.55E-04	NA	NC	1.35E-04	**6.8E+03**	**1.98E-08**
Butylbenzylphthalate	0.025	3.95E-04	NA	NC	**1.29E-04**	**4.7E+02**	3.00E-07
Chrysene	**0.195**	3.22E-03	NA	NC	6.30E-04	NA	NC
Dibenzo(a,h)anthracene	0.012	1.85E-04	NA	NC	3.00E-05	NA	NC
Di-n-butylphthalate	***0.034***	NA	NA	NC	NA	NA	NC
Fluoranthene	**0.133**	**1.87E-03**	NA	NC	**5.76E-04**	**NA**	NC
Indeno(1,2,3)pyrene	0.093	1.63E-03	NA	NC	**1.94E-04**	NA	NC
Methoxychlor	**0.0066**	NA	NA	**NC**	**NA**	**NA**	**NC**
Phenanthrene	**0.047**	NA	NA	NC	NA	**1.4E+02**	NC
Pyrene	0.149	2.28E-03	NA	NC	**7.22E-04**	**5.4E+02**	**NC**
Delta-BHC	**0.0019**	NA	NA	NC	NA	NA	NC
Gamma-BHC (Lindane)	**0.0062**	NA	NA	**NC**	**NA**	**NA**	NC
alpha-Chlordane	**0.101**	NA	**4.8E+00**	NC	NA	**2.0E+01**	NC
gamma-Chlordane	0.090	NA	**4.8E+00**	NC	NA	2.0E+01	NC
4,4-DDD	***0.0205***	2.44E-03	**1.19E+02**	**2.05E-05**	6.80E-05	**1.6E+02**	4.30E-06
4,4'-DDE	***0.086***	**1.02E-02**	**1.19E+02**	8.57E-05	2.83E-04	**1.6E+02**	**1.80E-06**
4,4'-DDT	**0.054**	6.42E-03	**1.2E+02**	5.39E-05	**2.02E-04**	**5.0E+01**	4.00E-06
Dieldrin	**0.097**	NA	6.0E-01	NC	5.01E-04	**9.0E+00**	5.57E-05
Endrin	0.0036	NA	NA	**NC**	NA	NA	NC

Table 9-58d
Hazard Quotients for Potential Lethal Effects
Mean Exposure Concentrations

Analyte	Mean Conc (mg/kg)	American Robin PDE	TRV	HQ	Eastern Cottontail PDE	TRV	HQ
Endrin Ketone	0.0028	NA	NA	NC	NA	NA	NC
Endosulfan I	0.043	NA	NA	NC	NA	NA	NC
Endosulfan sulfate	0.0036	NA	NA	NC	NA	NA	NC
Endrin aldehyde	0.0024	NA	NA	NC	NA	NA	NC
Heptachlor	0.013	NA	NA	NC	NA	NA	NC
Heptachlor epoxide	0.014	NA	NA	NC	NA	NA	NC
Aroclor-1260	0.131	1.87E-02	9.0E-01	2.08E-02	3.72E-04	1.0E+02	3.72E-06
HI =				2.42E-02			3.63-02

Notes:
maxconc = Maximum Concentration of Analyte.
NA = Data not available
NC = Not able to calculate value
PDE = Potential Dietary Exposure (mg/kg/BW) calculated based on equation in Table 9-3a.
RTV = Toxicity Reference Value (mg/kg/BW/day) – lowest reported LD_{50}, divided by 5, from Appendix H.
HQ = Hazard Quotient – PDE divided by the TRV.
HI = Hazard Index ($HQ_1 + HQ_2 + ... HQ_n$).

Table 9-59
Significant Risk Level[a]
(mg/kg)

Species	Parameter	Lethal	Sublethal	Number of Samples which Exceed Significant Risk Level
Rabbit	Arsenic	NA	>27.30	4
Robin	Mercury	NA	> 1.17	1

Notes:
a = Significant risk levels were back-calculated to determine the lowest concentration resulting in an HQ<1. Contaminant concentrations which exceed the corresponding risk level pose a risk for that species-type.
NA = Not applicable, no lethal levels exceeded.

No lethal effects are predicted to either the rabbit or robin from maximum or mean ECPC concentrations at Site 15 (Table 9.58c and 9.58d).

9.2.6 Risk Summary

By assuming an Eastern cottontail rabbit would provide 100% of its diet from vegetation associated with Site 15, the model predicts a risk to long-term reproductive capacity. Arsenic was the ECPC most responsible for the risk prediction but, the extent of concentrations above the SRL only occurred at 14% of the stations. The risk prediction somewhat contradicts recent investigations from the literature. Pascoe et al. (1994) found that the bioavailable fraction of metals and arsenic in soil to herbivores are limited. But, results of the model agree with another study which showed that transfer of metals to herbivores via plant uptake from soils is feasible (Leita et al., 1991). Measurement of plant concentrations or in-situ bioaccumulation studies of rabbits would provide actual impact risk to herbivores at Site 15.

By assuming that an American Robin would ingest 100% of its diet from the one location with the highest concentrations of mercury, the robin would be at risk from mercury ingestion. The model prediction of risk to carnivorous bird species appears to be accurate in relation to literature information. Uptake of metals by soil invertebrates, such as earthworms, to levels equal to soil concentrations has been shown (Neuhauser et al., 1985), and earthworms have been shown to be

an important food item of the American Robin (McDonald, 1983). Based on the maximum value observed at Site 15, birds preying on 100% of the soil infaunal species within the area of surface soil sample location 15S16 could be at risk. Again, in-situ bioaccumulation studies would help to reduce any uncertainty inherent in the model prediction. If required, refined calculations of mercury risk could be performed based on a more accurate site foraging factor and further research into toxicity and bioaccumulation studies. If this research does not yield useful information, measurement of plant concentrations or in-situ bioaccumulation studies of robins may also be needed to assess the actual potential for impacts at Site 15 with a greater degree of certainty.

Potential impacts from dieldrin and DDE should also be considered. These constituents are known to bioaccumulate and may pose a risk from earthworm ingestion. Because of the lack of toxicity data from pesticide ingestion, further research would also be needed to consider these effects.

9.2.7 Groundwater Characterization

As discussed in Section 8, predicted groundwater transport of contaminants to nearby surface water bodies is considered low. However, for a screening level assessment, shallow groundwater sample results from wells 15GS68, 15GS69, 15GS70, and 15GS71, installed immediately upgradient of these water bodies, have been compared to surface water effect levels (see Table 9-54). Only aluminum and iron exceeded effects levels for surface water. Transport of groundwater contaminants to surface water should be negligible and concentrations found appear to be a relatively low risk when compared to established effects levels.

9.2.8 Uncertainty

General inherent uncertainties are associated with risk assessments at the screening level. Table 9-60 provides information on the types of uncertainties which could impact final risk calculations. In order to provide a quantitative perspective to these, a plus (+) or minus (-) is

Table 9-60
Uncertainties Associated with the Ecological Risk Assessment at Site 15

Uncertainty Issue	Affect on ERA
chemical degradation for selected ECPCs	+
Specific chemical effects to biota within study area	+ or -
Effects data not available on some ECPCs	
Synergistic or antagonistic effect of ECPCs	+ or -
Assumption for effects from similar compounds	+ or -
Use of related species for risk to selected receptor species	
Dermal or inhalation pathways not evaluated	
Maximum concentrations used in exposure model	+
Assumed BAFs due to lack of information	+ or -
Actual occurrence of wildlife species within contaminated area	+
Use of literature generated ingestion rates	+ or -
Exposure assumed to be 100%	+
Actual bioavailability not measured (assumed to be 100%)	+
Use of LOAEL as basis for risk determination	+
The most bioavailable form of a chemical was used in the screening assessment	+

Na
+ = May result in overestimate or risk
= May result in underestimate of risk
+ or - = Indicates issue may result in either over or underestimate of risk.

associated with each uncertainty. A plus suggests that the uncertainty bas most likely resulted in an overestimation of risk. A minus suggests that the *uncertainty* has most likely resulted in an underestimation of risk. When both signs are given, this indicates that the uncertainty has the potential to either under or over estimate the risk.

9.2.9 Ecological Risk Assessment Conclusions

Potential risks for ecological receptors were evaluated for ECPCs in surface soil at Site 15. Risks associated with exposure to ECPCs in surface soil were evaluated for the robin and rabbit based on a model that predicts the amount of contaminant exposure via the diet and incidental ingestion of soil. Comparison of predicted doses for representative wildlife species with doses representing thresholds for both lethal and sublethal effects (TRVs) is the basis of the risk evaluation.

For the rabbit and the robin, the soil concentration necessary to produce risk quotients (HQs) below 1 were determined. This concentration is referred to as the Significant Risk Level (SRL). Those contaminant concentrations below the respective lethal and sublethal SRLs were considered to pose negligible risk to the representative species.

Potential sublethal effects from maximum inorganic concentrations (arsenic and mercury) are predicted at Site 15 based on the HQ and HI values calculated for the rabbit and robin. The concentrations of inorganics in Site 15 which exceeded the respective SRLs were primarily detected in the surface soil samples near Building 2640. Risks from pesticide compounds could not be quantified due to the lack of data for toxicity reference values.

No effects to biota in surrounding water bodies is expected from groundwater constituents.

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10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 Conclusions

Nature and Extent of Contamination

Several inorganic and organic parameters exceed PRGs in site soil. Elevated inorganics *can* be attributed to past and current handling and storage of fertilizers, commonly containing iron and manganese as "essentialnutrients." Detected arsenic can be attributed to the handling of various arsenic-based herbicides and pesticides, such as MSMA commonly used for weed control at NAS Pensacola. VOC and SVOC compounds detected in surface and subsurface soil collected near equipment (tractors, mowers, etc.) wash-down pads and storage areas can be attributed to fuel, lubricant, and solvent residues from this machinery. PCBs detected at a limited number of surface soil sample locations along the unpaved road are suspected to be a result of past waste oil application for dust control. Pesticide detections, including relatively persistent aldrin and dieldrin (a metabolite of aldrin), can also be attributed to past handling and storage of these materials. However, due to their magnitude and frequency of detection, arsenic and dieldrin are the primary parameters of concern in soil.

Arsenic is present across the site in surface soil. Although arsenic PRG exceedances (greater than 0.43 ppm) were not delineated beyond the approximate site boundary, the extent of relatively higher arsenic concentrations was limited to the following four portions of the site: the previous drum storage area just northeast of Building 2692; the asphalt pad area northwest of Building 2640; the concrete pad wash-down area west-northwest of Building 3586; and at boring location 15S53, in the area reportedly where the contents of a previous holding tank (removed in 1993) were spread. The two areas of most elevated surface soil arsenic concentration are immediately surrounding the asphalt pad, northwest of Building 2640, and the concrete pad, west-northwest of Building 3586.

Dieldrin was detected primarily across the site's western-southwestern portion, containing storage Building 2692, equipment storage Building 2640, and its associated asphalt pad. This portion of the site was used for pesticide, herbicide, and fertilizer storage and handling prior to 1979, after which pesticide and herbicide storage was moved to newly constructed Building 3586. Because most uses of aldrin and dieldrin were banned in 1975, the western concentrated distribution of dieldrin in site soil is consistent with the suspected storage of aldrin/dieldrin prior to 1979 at Building 2692. Relatively higher dieldrin concentrations (exceeding 50 ppb) were limited to the area surrounding the asphalt wash-down pad, northwest of Building 2640, and at boring location 15S50, north of Building 3447. The area of most elevated surface soil dieldrin concentration immediately surrounds the asphalt pad.

Several inorganic parameters (aluminum, arsenic, manganese, and iron) exceeded PRGs in shallow groundwater samples. However, all aluminum and iron exceedances onsite are within the range of ambient concentrations observed at NAS Pensacola as indicated by a comparison to NAS Pensacola RCs. Furthermore, the single manganese exceedance only slightly exceeds the applicable PRG. In contrast, arsenic was commonly detected at concentrations above its PRG and RC, and is the primary parameter of interest detected in groundwater based on magnitude and frequency of detection. The assessment of intermediate depth groundwater did not indicate appreciable (approximately 4 ppb or higher) downward migration of arsenic.

Three areas of shallow groundwater arsenic PRG exceedances exist onsite: a relatively small area (less than 20 feet in diameter) immediately surrounding the asphalt pad at Building 2640's northwestern corner, and two relatively larger areas (each approximately 200 feet in diameter), one north of Building 2692, and one north of Building 3586. The areas containing the most elevated arsenic concentrations in shallow groundwater are north of Buildings 2692 and 3586. These exceedance areas are also downgradient of areas containing elevated arsenic soil concentrations. Arsenic concentrations were not elevated in groundwater samples from the most

downgradient wells, 15GS68 through 15GS71. This indicates arsenic-impacted groundwater does not extend beyond the golf course to the north. Rather, given its distribution, magnitude, and relatively immobile fate characteristics, elevated arsenic in groundwater is limited to the site and immediate downgradient areas which extend beneath the golf course.

Fate and Transport

Transport of parameters detected at Site 15 is generally downward from surface soil through subsurface soil to groundwater, and then potentially to the sediments and surface waters of Bayou Grande and nearby tidal pond/Wetland 65. The primary receiving body of site impact is the surficial zone of the Sand-and-Gravel Aquifer. However, it is not used as a potable water supply at NAS Pensacola area due to its high iron and aluminum content. Arsenic, the primary PRG exceedances parameter in groundwater, is limited to the upper portion of the surficial zone. No PRG exceedances were detected in the lower portion. A potential receptor of surficial aquifer zone contamination from Site 15 is the main producing zone, which underlies the surficial zone. However, the main producing zone is separated from the surficial zone by a low-permeability clay layer which was encountered onsite 33 to 40 feet bls. Given that no PRG exceedances were detected in the surficial zone's lower portion, groundwater from the low-permeability and main producing zones is not expected to be impacted by site activities and was not sampled as part of this investigation. Other potential receptors of surficial zone contaminants are Bayou Grande, associated tidal ponds, and associated biota. These resources are not expected to be appreciably impacted by site contaminants due to their distance from the site, and the magnitude and limited extent of impacted shallow groundwater.

Baseline Risk Assessment

Arsenic, dieldrin, chlordane, and BEQ have been identified as COCs in the human health component of the BRA with regard to specific land use scenarios. It should be noted that not all exposure scenarios used in the human health BRA are realistic given the site's current and

projected use. However, this analysis has been performed for risk management decision-making purposes. Given the detected parameter concentrations in site media, the State of Florida's goal of 10^{-6} excess risk threshold, and the USEPA's 10^{-4} to 10^{-6} acceptable risk-range, estimated risk associated with detected parameters in site soil and groundwater is as follows:

- Arsenic, dieldrin, chlordane, and BEQ each contribute to the risk estimated for the one or more of the soil exposure pathways evaluated. No COCs would be identified in soil based on USEPA's acceptable risk range and associated RAGS information. However, the more conservative Florida risk threshold *goal* was used in the BRA as recommended by the Tier I partnering team.

- Arsenic and dieldrin each contribute to the risk estimated for the groundwater ingestion exposure pathway.

The Eastern Cottontail rabbit and the American robin were selected as assessment endpoint wildlife species for the ecological component of the BRA. This risk evaluation indicates potential sublethal effects to these species from maximum detected arsenic, mercury, and possibly pesticide concentrations in surface soil. However, associated calculations are based on conservative assumptions (i.e., the rabbit or robin receives 100% of its diet from areas where maximum contaminant concentrations exist), which in reality, do not occur. Downgradient surface water, sediment, and biota (within Bayou Grande and Wetland 65) were not found to be at risk from the site, given their distance from the site, the immediately upgradient shallow groundwater quality, and nature and limited extent of site impacted groundwater. The bayou and wetland will be further evaluated during the Sites 40 and 41 RIs.

10.2 Recommendation

Site contamination has been adequately evaluated and used to calculate the potential risk estimates for Site 15. The human health and ecological risk assessments must be considered when evaluating risk-based alternatives for the site. Given the estimated risk to human health and biota at Site 15, the Navy recommends that an FS be performed using the data collected during this investigation to select appropriate risk management alternatives and actions for the site.

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12.0 FLORIDA PROFESSIONAL GEOLOGIST SEAL

I have read and approve of this Remedial Investigation Report, NAS Pensacola Site **15,** and seal it in accordance with Chapter **492** of the Florida Statutes. In sealing this document, I certify the geological information contained in it is true to the best of my knowledge and the geological methods and procedures included herein are consistent with currently accepted geological practices.

Name:	Jeffrey B. Lunceford
License Number:	#1932
State:	Florida
Expiration Date:	July **31, 1998**

Jeffrey B. Lunceford, P.G.

Jeffrey B. Lunceford

JEFFREY B. LUNCEFORD LICENSE No. 1932 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

12-12-97

Date

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Appendix A

Building 3586 Pesticide/Herbicide Inventory

PESICIDE INVENTORY

DATE 5/16/96

PESTIICDE	SIZE	AMOUNT
ORTHENE	10LB BG	30
AMDRO	3LB	12
BUSHWACKER	25lb	1
DURSBAN 1%	40lb	1.5
FUNGICIDES		
MANCOZEB D.G.	6lb	46
CONSAN	2.5gl	3.75
DACONIL 2787	5lb	2
PRODIGY	5lb	2
SUBDUE	1gl	0
TERRZOLE	2LB	18
HERBICIDES		
KERB	3lb	18
SENCOR	1gl	2
MSMA 6.6	2.5gl	5
IMAGE	1gl	1
BARRICADE	5lb	3
CUTRINE PLUSE	10lb	4
PRE-M	2.5gl	4
RODEO	2.5gl	2
ROUND-UP	2.5gl	2
ILOXAN	1gl	1
BENSUMEC	1gl	0.75
POAST	1gl	2
EMBARK	1gl	1
MISC		
DEFOAMER	1202	8
EXHALT 800	1gl	5
CUTLASS	8oz	1
LESCO-WET	2.5gl	4
PRO-FOAM	1gl	2
AB-SORBOIL	25lb	1
Tracker	32oz	12
Consan P	16oz	12

Pesticide Inventory

9/11/95

Name	Cont. Size	Amount
Pesticides:		
Amdro	3 lb jug	32
Bushwhacker	25 lb bucket	1
Herbicides:		
Krenite	3 lb bags	18
Sencor	5 lb jug	1 3/4
Roundup	2.5 gal btl	2 1/2
Rodeo	2.5 gal btl	1/5
Embark	1 gal btl	1
Sulfan	2.5 gal btl	1/3
Alloxan	1 gal btl	2 1/2
Pcast	1 gal btl	2
Ivermec	2.5 gal btl	1 1/2
Barricade	5 lb bags	4
Cutline	10 lb bags	1
MSMA	2.5 gal btl	5
Image	1 gal btl	4
Pre-M	2.5 gal btl	9
Fungicides:		
Mancozeb	6 lb bags	32
Fonsan	2.5 gal btl	4
Subdue	1 gal btl	1/2
Miscell.		
Cutless	8 oz bags	1

Misc. ctd

Sorb	5 gal can	1
Exhalt	1 gal btl	4 1/2
Lenco Wet	2.5 gal btl	1
Defoamer	12 oz btl	8
Dye	2.5 gal btl	3
Pro-Foam	1 gal btl	1 1/2
Charcoal	50 lb bag	2

COMMANDING OFFICER
SOUTHNAVFACENGCOM
PO BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, SC. 29410-9010

SAFETY AND OCCUPATIONAL HEALTH MANAGER
NAVAL AIR STATION, PENSACOLA, FL 32508

HAZARDOUS HATERIALS LISTING

UIC	COMMAND/ ACTIVITY	DEPT	SHOP/ WORK CEN	BLDG #	HAS MSDS	MSDS #	ITEM NOMENCLATURE	STOCK NUMBER	MANUFACTURER/ DISTRIBUTOR	UI	QTY	MTHLY USAGE
** G/C PEST												
00204	NASP	HWR	G/C PEST	3586	YES	2731	TERRAZOLE 35% WP X	OPEN PURCHASE	UNIROYAL	BG	50	25
00204	NASP	MWR	G/C PEST	3586	YES	3107	WASP AND HORNET SPRA	OPEN- P-URC-HASE	LESCO	CN	12	6
00204	NASP	HWR	G/C PEST	3586	YES	3712	TRIUHPH 4E X	OPEN- P-URC-HASE	CIBA-GEIGY	GL	4	2
00204	NASP	MWR	G/C PEST	7586	YES	3733	WATER HAX SYNTHETIC	OPEN- P-URC-HASE	THE WATERHAX CO.	BG	4	1
00204	NASP	HWR	G/C PEST	3586	YES	3823	LESCO N-P-K FERTILIZ	OPEN- P-URC-HASE	LESCO INC.	B6	160	53
00204	HASP	HWR	G/C PEST	3586	YES	3867	AWHONIUH NITRATE	OPEN- P-URC-HASE	WR GRACE & CO.	BG	40	15
00204	NASP	HWR	G/C PEST	3586	YES	3870	BEHSUHEC X	OPEN- P-URC-HASE	PBI/GORDON CORP.	GL	10	6
00204	NASP	HWR	G/C PEST	3586	YES	3871	CALCIUH AOD HETHANEA	OPEN- P-URC-HASE	VICHEH	GL	12	10
00204	NASP	HWR	G/C PEST	3586	YES	3872	CARBARYL-4L	OPEN- P-URC-HASE	DREXEL CHEHICAL	GL	20	20
00204	NASP	MWR	G/C PEST	3586	YES	3873	CHIPCO ALLIETTE X	OPEN- P-URC-HASE	RHONE-POLLENS INC.	CS	2	1
00204	NASP	MWR	G/C PEST	3586	YES	3874	CHIPCO 26019	OPEN- P-URC-HASE	RHONE-POULENS INC.	BG	2	1
00204	NASP	MWR	G/C PEST	3586	YES	3875	CHIPCU RONSTARG X	OPEN- P-URC-HASE	RHONE-POULENS INC.	BG	200	200
00204	NASP	HWR	G/C PEST	3586	YES	3876	CHIPCO (R) (MOCAP) X	OPEN- P-URC-HASE	RHONE POULENS INC.	B6	20	20
~~00204~~	~~NASP~~	~~MWR~~	~~G/C PEST~~	~~3586~~	~~YES~~	~~3878~~	~~CRUSADE 5~~	~~OPEN- P-URC-HASE~~	~~ICI AMERICAS~~	~~BG~~	~~2~~	~~1~~
00204	NASP	HWR	G/C PEST	3586	YES	3879	CUTLESS (R)	OPEN- P-URC-HASE	DOW ELANCO	PK	4	4
00204	NASP	MWR	G/C PEST	3586	YES	3880	CUTRINE-PLUS X	OPEN- P-URC-HASE	COPPER APPLIED CHEH.	B6	4	2
00204	NASP	HWR	G/C PEST	3586	YES	3881	DACONIL 2787 X	OPEN- P-URC-HASE	DIAHOND SHAMROCK COR	CS	4	2
00204	HASP	HWR	G/C PEST	3586	YES	3883	DURSBAN HOLE CRICKET	OPEN- P-URC-HASE	SOUTHERN AGR.	B6	2	1
00204	NASP	HWR	G/C PEST	3586	YES	3886	EXHALT 800	OPEN- P-URC-HASE	PBI/GORDON CORP.	61	4	1
00204	NASP	HWR	G/C PEST	3586	YES	3887	FORE X	OPEN- P-URC-HASE	ROHH AND HAAS CO.	BG	4	2
00204	NASP	MWR	G/C PEST	3586	YES	3888	GRO-SAFE	OPEN- P-URC-HASE	AHERICAN NORIT CO.	B6	16	16
00204	NASP	MWR	G/C PEST	3586	YES	3889	IMAGE X	OPEN- P-URC-HASE	AHERICAN CYANAMID CO	61	2	1
00204	NASP	HWR	G/C PEST	3586	YES	3890	ILLOXAN X	OPEN- P-URC-HASE	HOECHST-ROUSSELL	61	4	2
00204	NASP	HWR	G/C PEST	3586	YES	3891	IRON PLUS N	OPEN- P-URC-HASE	LESCO	GL	10	4
00204	NASP	HWR	G/C PEST	3586	YES	3892	KERB 50-W X	OPEN- P-URC-HASE	ROHH AND HAAS	CS	4	2
00204	NASP	WWR	G/C PEST	3586	YES	3894	MICRONUTRIENT	OPEN- P-URC-HASE	FRIT INDUSTRIES	BG	4	2
00204	NASP	HWR	G/C PEST	3586	YES	3895	NAIAD	OPEN- P-URC-HASE	EXSL CHEHICAL	61	4	2
00201	NASP	HWR	G/C PEST	3586	YES	3896	NEHACUR 15% X 10%	OPEN- P-URC-HASE	HOBAY CHEWICAL CORP.	B6	20	20
00204	NASP	HWR	G/C PEST	3586	YES	3897	OFTANOL 51 X	OPEN- P-URC-HASE	HOBAY CHEHICAL CORP.	B6	200	200
00204	NASP	HWR	G/C PEST	3586	YES	3898	ORTHO ORTHENE 75-S X	OPEN- P-URC-HASE	CHEVRON	BG	40	20
00204	NASP	HWR	G/C PEST	3586	YES	3900	PRE-H PLUS X	OPEN- P-URC-HASE	LESCO	CS	4	2
00204	NASP	HWR	G/C PEST	3586	YES	3901	PRE-SAN	OPEN- P-URC-HASE	HALLINCKRODT	GL	16	8
00204	NASP	HWR	G/C PEST	3586	YES	3902	PRINCEP 80W	OPEN- P-URC-HASE	CIBA-GEIGY CORP.	CS	4	2
00204	NASP	MWR	G/C PEST	3586	YES	3903	PRO-GIB8 3.311	OPEN- P-URC-HASE	ABBOTT LABS	BT	4	2
00204	NASP	MWR	G/C PEST	3586	YES	3904	PRO-TURF TRIMEC X	OPEN- P-URC-HASE	PBI/GORDON CORP.	GL	8	3
00204	NASP	MWR	G/C PEST	3586	YES	3305	PRO-TURF DMC WEED X	OPEN- P-URC-HASE	O.M. SCOTT AND SONS	BT	4	4
00204	NASP	HWR	G/C PEST	3586	YES	3906	PROXOL 80 SP	OPEN- P-URC-HASE	NOR-AH CHEHICAL	CS	2	1
00204	NASP	HWR	G/C PEST	3586	YES	3907	REGAL CROWN	OPEN- P-URC-HASE	REGAL CHEWICAL CO.	GL	4	2
00204	NASP	MWR	G/C PEST	3586	YES	3908	ROUND-UP X	OPEN- P-URC-HASE	HONSANTO	GL	5	2
00204	HASP	MWR	G/C PEST	3586	YES	3903	LESCO 3WAY HERBICIDE X	OPEN- P-URC-HASE	LESCO INC.	GL	4	2
00204	NASP	HWR	G/C PEST	3586	YES	3910	SENCOR 502 WP X	OPEN- P-URC-HASE	CHEMAGRO	BG	20	8
00204	HASP	HWA	G/C PEST	3586	YES	3312	SUBDUE 2E X	OPEN- P-URC-HASE	CIBA-GEIGY	GL	4	2
00204	NASP	MWR	G/C PEST	3586	YES	3913	TERRANEB SP	OPEN- P-URC-HASE	KINCAID ENTERPRISES	CS	2	1
00204	NASP	MWR	G/C PEST	3586	YES	3311	TURF-SUPER TRIMEC	OPEN- P-URC-HASE	PBI/GORDON	GL	8	4

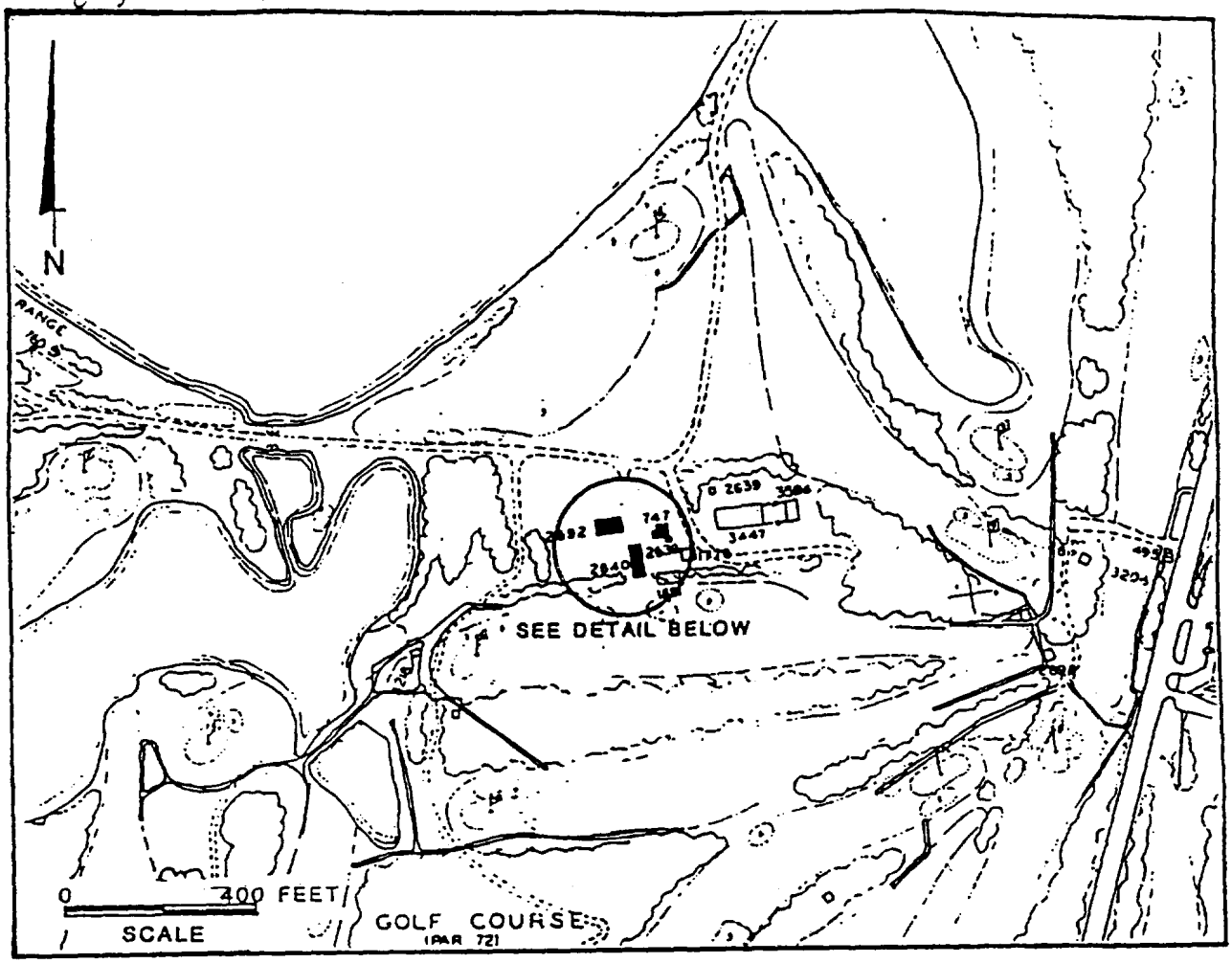
SAFETY AND OCCUPATIONAL HEALTH MANAGER
NAVAL AIR STATION, PENSACOLA, FL 32508

HAZARDOUS MATERIALS LISTING

UIC	COMMAND/ ACTIVITY	DEPT	SHOP/ WORK CEN	BLDG #	HAS MSDS	MSDS #	ITEM NOMENCLATURE	STOCK NUMBER	MANUFACTURER/ DISTRIBUTOR	UI	QTY	MTHLY USAGE
00204	NASP	MWR	G/C	PEST 3586	YES	3915	UREA	OPEN- P-URC-HASE	TRIAD CHEHICAL	B6	3	1
00204	NASP	MWR	G/C	PEST 3586	YES	3916	UREA SULFER COATED	OPEN- P-URC-HASE	PURSELL IND.	B6	3	1
00204	WASP	MWR	G/C	PEST 3586	YES	3917	VERTAC MSMA 600	OPEN- P-URC-HASE	VERTAC CHEHICAL	GL	32	16
00204	NASP	MWR	G/C	PEST 3586	YES	3918	LESCO-WET	OPEN- P-URC-HASE	LESCO INC.	GL	10	4
00204	WASP	MWR	G/C	PEST 3586	YES	3919	WATER-WAX 0284	OPEN- P-URC-HASE	WATER HAX CO.	B6	1	1
00204	NASP	MWR	G/C	PEST 3586	YES	3920	WANCOZEB X	OPEN- P-URC-HASE	LESCO INC.	CS	5	2
00204	NASP	MWR	G/C	PEST 3586	YES	3921	SURFLAN AS Y	OPEN- P-URC-HASE	DOW ELANCO	CS	10	4
00204	NASP	MWR	G/C	PEST 3586	YES	3322	POAST X	OPEN- P-URC-HASE	BASF CORP.	GL	2	1
00204	WASP	MWR	G/C	PEST 3586	YES	3923	ADMRO X	OPEN- P-URC-HASE	AMERICAN CYANAMID	B6	4	2
00204	WASP	MWR	G/C	PEST 3586	YES	3924	RODEO X	OPEN- P-URC-HASE	WONSANTO CO.	GL	5	1
~~00204~~	~~NASP~~	~~MWR~~	~~G/C~~	~~PEST 3586~~	~~YES~~	~~3925~~	~~PAGEANT R~~	~~OPEN- P-URC-HASE~~	~~DOW ELANCO~~	~~B6~~	~~4~~	~~1~~
00204	NASP	HWR	G/C	PEST 3586	YES	3326	TURCAM INSECTICIDE X	OPEN- P-URC-HASE	NOR-AW CHEHICAL	B6	4	1
00204	NASP	MWR	G/C	PEST 3586	YES	3927	TURCAH 2 112 6	OPEN- P-URC-HASE	NOR-AH CHEHICAL	B6	12	4
00204	NASP	HWR	G/C	PEST 3586	YES	4011	LESCO DEFOAHER	OPEN- P-URC-HASE	LESCO INC.	CS	1	-1
00204	NASP	MWR	G/C	PEST 3586	YES	4014	PRE-M 60 D6 HERBICID	OPEN- P-URC-HASE	LESCO, INC.	B6	25	8
00204	WASP	MWR	G/C	PEST 3586	YES	4017	ORTHENE TURF ORN INS	OPEN- P-URC-HASE	CHEVRON	CS	12	4
00204	NASP	MWR	G/C	PEST 3586	YES	4226	VIRGO-BLEND 15-0-15	OPEN- P-URC-HASE	VIRGO, INC.	B6	20	20
00204	NASP	MWR	G/C	PEST 3586	YES	4227	VIRGO BLEND 8-24-24	OPEN- P-URC-HASE	VIRGO INC.	B6	20	20
00204	NASP	MWR	G/C	PEST 3586	YES	4228	AMMO-NITE	OPEN- P-URC-HASE	AIR PRODUCTS	B6	20	20
00204	WASP	WWR	G/C	PEST 3586	YES	4229	MILORGANITE	OPEN- P-URC-HASE	WILWAUKEE METROPOLIT	TN	5	5
00204	WASP	HWR	G/C	PEST 3586	YES	4394	DURSBAN TURF & ORAME X	OPEN- P-URC-HASE	DOW ELANCO	BT	5	2
00204	NASP	HWR	G/C	PEST 3566	YES	4395	STA-GREEN	OPEN- P-URC-HASE	PARKER FERTILIZER	B6	0	0
00204	NASP	MWR	G/C	PEST 3586	YES	4396	DURSBAN 4E X	OPEN- P-URC-HASE	THOWPSON-HAYWARD CHE	BT	0	0
00204	WASP	MWR	G/C	PEST 3586	YES	4397	FERTILIZER 10-5-20	OPEN- P-URC-HASE	VIGORO INDUSTIRES	B6	SO	50
00204	NASP	MWR	G/C	PEST 3586	YES	4398	PAR EX 17-1-10 X	OPEN- P-URC-HASE	VIGORO INDUSTIRES	B6	0	0
00204	NASP	MWR	G/C	PEST 3586	YES	4475	MANZATE 200DF FUNGIC X	OPEN- P-URC-HASE	DUPONT	B6	0	0
00204	NASP	MWR	G/C	PEST 3586	YES	4746	HERBICIDE 600SEGRASS X	OPEN- P-URC-HASE	SCOTTS	B6	40	40
00204	WASP	HWR	G/C	PEST 3586	YES	4747	FERTILIZER 31-3-10	OPEN- P-URC-HASE	SCOTTS	B6	60	60
00204	WASP	MWR	G/C	PEST 3586	YES	4824	TRIPLE ACTION 20 X	OPEN- P-URC-HASE	PARKWAY RESEARCH	GL	20	10
~~00204~~	~~NASP~~	~~MWR~~	~~G/C~~	~~PEST 3586~~	~~YES~~	~~4852~~	~~PRODIGY 80DG FUNGICI~~	~~OPEN PURCHASE~~	~~LESCO~~	~~CS~~	~~4~~	~~3~~
00204	WASP	MWR	G/C	PEST 3586	YES	4853	TURF ENHANCER 50WP	OPEN PURCHASE	SCOTTS	B6	50	25
00204	NASP	HWR	G/C	PEST 3586	YES	4854	FERTILIZER 19-0-17	OPEN PURCHASE	SCOTTS	BG	50	25
00204	NASP	MWR	G/C	PEST 3586	YES	4856	SCOTTS PROGROW/TURF	OPEN PURCHASE	SCOTTS	B6	50	25
00204	NASP	MWR	G/C	PEST 3586	YES	5545	HAHH PRO FOAM	OPEN- P-URC-HASE	HAUN INC.	GL	30	10
00204	NASP	MWR	G/C	PEST 3586	YES	5815	VIR60 BLEND 13-13-13	OPEN- P-URC-HASE	VIGORO	B6	20	20
00204	NASP	MWR	G/C	PEST 3586	YES	5333	FERTILZER 18-3-12	OPEN- P-URC-HASE	LEBANON	BG	120	60
00204	NASP	MWR	G/C	PEST 3586	YES	6052	LESCO MSMA 6-6 X	OPEN-PU-RCH-ASE	LESCO	CN	6	3
00204	NASP	HWR	G/C	PEST 3586	YES	6073	FERTILIZER 15-3-15	OPEN- P-URC-HASE	VIGORO INDUSTRIES	86	50	50
00204	NASP	MWR	G/C	PEST 3586	YES	6108	TERREMEC SP	OPEN- P-URC-HASE	PBI/GORDON CORP.	LB	60	-60
00204	NASP	MWR	G/C	PEST 3586	YES	6174	~~HERBICDE~~ BARRICAD	OPEN- P-URC-HASE	SANDOZ ARGO	LB	265	200
			"		"		BASAGRAN X		BASF	GL	5	2.5

Appendix B

Previous Investigation Analytical Results Summaries



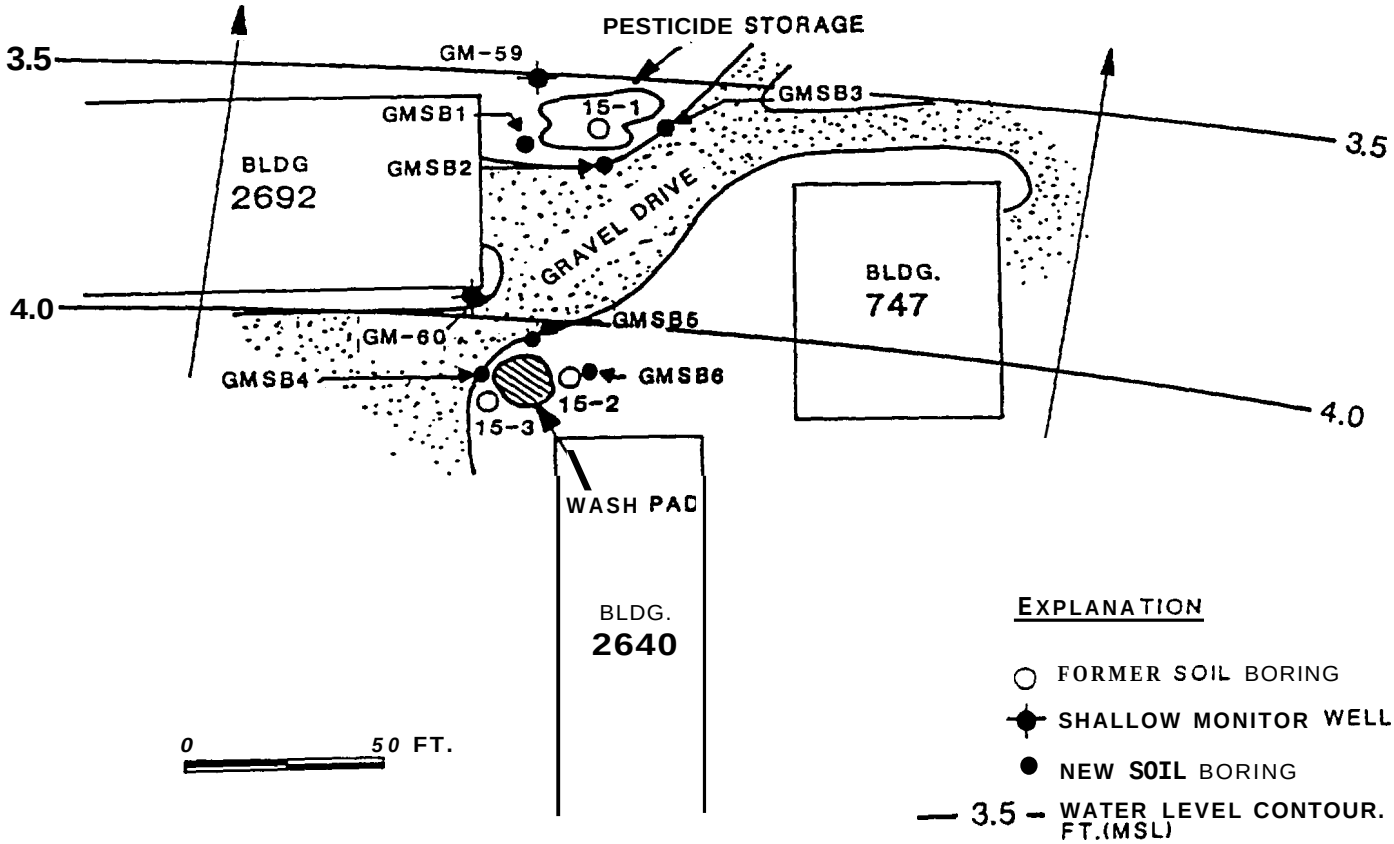


Figure 8. Locations Of Monitor Wells, Soil-Test Borings, Including Generalized Water-Table Surface (Site 15)

Table B-1

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Table 6. Summary of Chemical Analyses of Soil Samples, Verification Study, Site 15

Compound	15-1-1	15-1-12	15-1-24	15-2-1	15-2-12	15-2-24	15-3-1	15-3-12	15-3-
PESTICIDES AND PCBs									
Chlordane	21.0	6.3	0.41	1.1	0.59	-	0.29	0.06	-
4,4' - DDT	1.2	0.79	0.01	0.69	0.40	0.01	-	-	-
4,4' - DDE	1.2	-	-	-	0.19		-	-	-
Heptachlor*									
Heptachlor epoxide	-	0.16	0.03	-		-	-	-	-
Dieldrin	-	-	-	0.17	0.1	0.01	0.10	0.44	0.0
4,4' - DDD	-	-	-	-	0.03	-	-	0.01	-
BHC - beta	-	-	-	-	0.03	-	-	-	-
TOTAL PESTICIDES AND PCBs	23.4	7.25	0.45	1.96	1.34	0.02	0.39	0.51	0.0
TOTAL ARSENIC	15.0	8.0	3.2	15.0	19.0	19.0	31.0	1.6	2L

NOTE: Concentrations in ug/gm (ppm), dry weight.

* Heptachlor is a constituent of chlordane and is present in all samples containing chlordane

= Not detected

(15-1)-1 = (Soil sample no.) - depth of sample, in inches

Table B-2

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Table 7. Summary of Chemical Analyses of Soil Samples, Characterization Study, Site 15

Sample Number	EP Toxicity - Arsenic (mg/l)
GMSB-1-1	0.521
GMSB-1-12	4.4
GMSB-1-24	0.016
GMSB-2-1	12.7
GMSB-2-12	5.2
GMSB-2-24	0.615
GMSB-3-1	0.046
GMSB-3-12	-
GMSB-3-24	-
GMSB-4-1	-
GMSB-4-12	-
GMSB-4-24	-
GMSB-5-1	0.026
GMSB-5-12	0.043
GMSB-5-24	-
GMSB-6-1	-
GMSB-6-12	0.127
GMSB-6-24	0.036

(GMSB-1)-1 = (Soil sample no.) - depth of sample, in inches
- = none detected

Table C-42 Site 15 Soil Borings Arsenic

I.D. # 85-1521

Pioneer LABORATORY, INC.

11 EAST OLIVE ROAD PHONE (904) 474-1001

PENSACOLA, FLORIDA 32514

TO Geraghty & Miller

13902 North Dale Mabry Highway

Tampa, Florida 33618

REPORTS TO BE MAILED TO:

Ralph Moon

Phone

Date of Order: Jure 7, 1985

Sampled by

Customer's Order Number: T290PN2

Job Name/Number

Sample Identification/Location: NAS - SITE 15

Job Phone

Starting Date

Date Completed

Date Report Mailed: June 27. 1985

E.P. Toxicity for Arsenic

Pioneer I.D.	Sample I.D.	Results
85-1521-1	Soil Boring 6-1	<0.005
85-1521-2	Soil Boring 6-12	0.127
85-1521-3	Soil Boring 6-24	0.036
85-1521-4	Soil Boring 5-1	0.026
85-1521-5	Soil Boring 5-12	0,043
85-1521-6	Soil Boring 5-24	<0.005
85-1521-7	Soil Boring 4-1	<0.005
85-1521-8	Soil Boring 4-12	<0.005
85-1521-9	Soil Boring 4-24	<0.005
85-1521-10	Soil Boring 3-1	0,046
85-1521-11	Soil Boring 3-12	<0.005
85-1521-12	Soil Boring 3-24	<0.005
85-1521-13	Soil Boring 2-1	12.7
85-1521-14	Soil Boring 2-12	5.2
85-1521-15	Soil Boring 2-24	0,615
85-1521-16	Soil Boring 1-1	0.521
85-1521-17	Soil Boring 1-12	4.4
85-1521-18	Soil Boring 1-24	0.016

Note: All results are reported in mg/l.
mg/l = parts per million
< = less than

Notes:

Analysis by W. F. Brass

Work Authorized by

Technician

Approved by W F

Table B-3

Table C-40 Site 15 GM-59 Pesticides

Pioneer
PLI LABORATORY, INC.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

Lab I.D. 85-1766
GM 59

PRIORITY POLLUTANT ANALYSIS'

PESTICIDES

		Reported in ppb	Detection Limit ppb
1P	Aldrin	BDL	0.01
2P	a-BHC	BDL	0.01
3P	b-BHC	BDL	0.01
4P	g-BHC	BDL	0.01
5P	d-BHC	BDL	0.01
6P	Chlorodane	BDL	0.01
7P	4,4'-DDT	BDL	0.01
8P	4,4'-DDE	BDL	0.01
9P	4,4'-DDD	BDL	0.01
10P	Dieldrin	BDL	0.01
11P	a-Endosulfan I	BDL	0.01
12P	b-Endosulfan II	BDL	0.01
13P	Endosulfan Sulfate	BDL	0.01
14P	Endrin	BDL	0.07
15P	Endrin Aldehyde	BDL	0.03
16P	Heptachlor	BDL	0.01
17P	Heptachlor Epoxide	BDL	0.01
18P	PCB-1242	BDL	0.2
19P	PCB-1254	BDL	0.2
20P	PCB-1221	BDL	0.2
21P	PCB-1232	BDL	0.2
22P	PCB-1248	BDL	0.2
23P	PCB-1260	BDL	0.2
24P	PCB-1016	BDL	0.2
25P	Toxaphene	BDL	1

*EPA Method 608 - Reference: Method for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July 1982.

Notes: ppb - parts per billion
BDL - Below Detection Limits

Approved by W. F. Bowers
W. F. Bowers
Laboratory Director

Table C-40 Site 15 GM-59 Arsenic

I.D. # 85-1766

Pioneer LABORATORY. INC.

11 EAST OLIVE ROAD PHONE (904) 474-1001

PENSACOLA, FLORIDA 32514

TO Geraghty & Miller

13902 North Dale Mabry Highway

Tampa, Florida 33618

REPORTS TO BE MAILED TO:

Ralph Moon

Phon

R. Baker

Sampled by

Job Name/Number

GM 59

Sample Identification/Location

Job Phone

Date Completed

June 26, 1985

Date of Order

TR90PN2

Customer's Order Number

Starting Date

July 15, 1985

Date Report Mailed

Arsenic Analysis

0.153

Note: Results are reported in mg/l.
mg/l = parts per million
< = less than

Notes:

W. F. Bowers

Analysis by Approved by W. F. Bowers
Laboratory Director

Work Authorized by Technician

Table C-41 Site 15 GM-60 Pesticides

Pioneer
PLI LABORATORY, INC.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

Lab I.D. 85-1767
GM 60

PRIORITY POLLUTANT ANALYSIS*

PESTICIDES

		Reported in ppb	Detection Limit ppb
1P	Aldrin	BDL	0.01
2P	a-BHC	BDL	0.01
3P	b-BHC	BDL	0.01
4P	g-BHC	BDL	0.01
5P	d-BHC	BDL	0.01
6P	Chlorodane	BDL	0.01
7P	4,4'-DDT	BDL	0.01
8P	4,4'-DDE	BDL	0.01
9P	4,4'-DDD	BDL	0.01
10P	Dieldrin	BDL	0.01
11P	a-Endosulfan I	BDL	0.01
12P	b-Endosulfan II	BDL	0.01
13P	Endosulfan Sulfate	BDL	0.01
14P	Endrin	BDL	0.07
15P	Endrin Aldehyde	BDL	0.03
16P	Heptachlor	BDL	0.01
17P	Heptachlor Epoxide	BDL	0.01
18P	PCB-1242	BDL	0.2
19P	PCB-1254	BDL	0.2
20P	PCB-1221	BDL	0.2
21P	PCB-1232	BDL	0.2
22P	PCB-1248	BDL	0.2
23P	PCB-1260	BDL	0.2
24P	PCB-1016	BDL	0.2
25P	Toxaphene	BDL	1

*EPA Method 608 - Reference: Hethod for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057, July 1982.

Notes: ppb - parts per billion
BDL - Below Detection Limits

W. F. Bowers

Approved by W. F. Bowers
Laboratory Director

Table C-41 Site 15 GM-60 *Arsenic*

I.D. # 85-1767

Pioneer Laboratory, Inc.

11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

TO Geraghty & Miller
13902 North Dale Mabry Highway
Tampa, Florida 33618

REPORTS TO BE MAILED TO:
Ralph Moon

Phone

Date of Order: June 26, 1985

Sampled by: R. Baker

Customer's Order Number

Job Name/Number: GM 60

Sample Identification/Location

Job Phone

Starting Date: July 15, 1985

Date Completed

Date Report Mailed

Arsenic Analysis

<0.005

Note: Results are reported in mg/l.
mg/l = parts per million
< = less than

Notes:

Analysis by W. F. Bowers

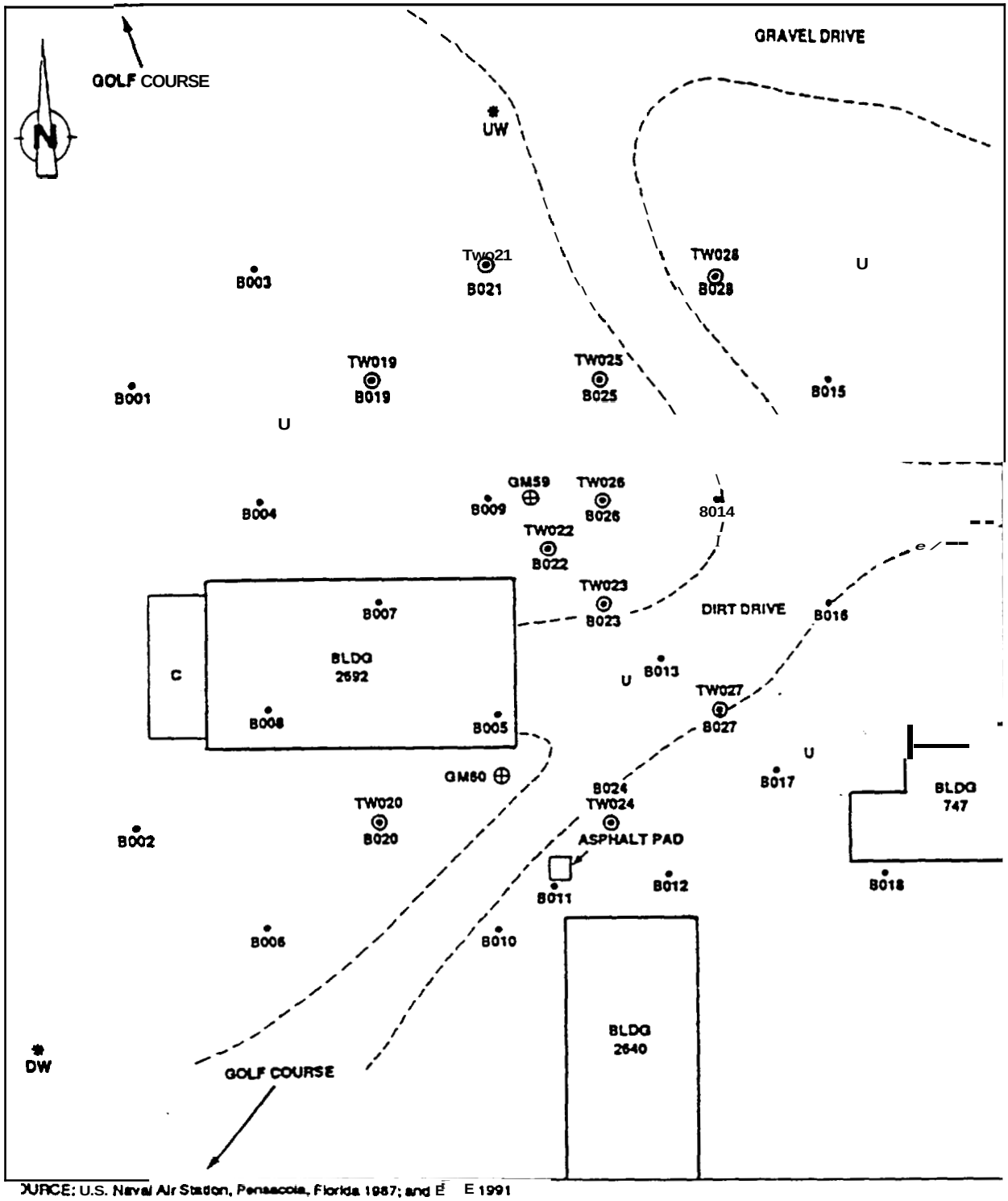
Approved by W. F. Bowers, Laboratory Director

Work Authorized by

Technician

FORM #107—METRO PRINTING INC. HUNTSVILLE AL 35801

Table B-4



SOURCE: U.S. Naval Air Station, Pensacola, Florida 1987; and E E 1991

SCALE

0 50 100 FEET

KEY:

BLDG 747	Building	○	Temporary Monitoring Well	✱	Particulate Air Sampling Locatio
	Unpaved Road	•	Soil Boring	DW/UW	Downwind/Upwind
⊕	Existing Permanent Shallow Monitoring Well	TW019	Temporary Monitoring Well Number		
C	Concrete Paved Area	B019	Soil Boring Number		
U	Unpaved Area				

Figure 2-2 PARTICULATE AIR SAMPLING, SOIL BORING, AND TEMPORARY MONITORING WELL LOCATIONS — NAS PENSACOLA SITE 15

Table 3-3

SUMMARY ANALYTICAL SCREENING RESULTS FOR SOIL SAMPLES
NAS PENSACOLA SITE 15
(All results IS µg/kg, unless noted)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P15S001A (B001A)	P15S001B (B001B)	P15S001C (B001C)	P15S002A (B002A)	P15S002B (B002B)	P15S002C (B002C)	P15S003A (B003A)	P15S003B (B003B)	P15S003C (B003C)
Arsenic (mg/kg)	7	--•	--•	--•	--	--	--	--•	--•	--•
Chromium (mg/kg)	1	8.5	1.6	--	1.5	1.4	1.1	5.9	2.0	1.3
Zinc (mg/kg)	2	7.2	2.6	4.4	2.8	--	--	2.3	2.8	--
Lead (mg/kg)	4	6.2	4.1	--	--	--	--	5.1	--	12
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	40	--	69	--	10	9.8	--	--	6.2
Toluene	1,000	1,000	--	1,000	--	--	--	--	1,000	1,100
Methylene Chloride	1,000	2,300(B)	3,000(B)	3,300(B)	--	--	1,500	3,900(B)	5,000(B)	3,100(B
Trans-1,2-Dichloroethene	1,000	--	--	--	6,800	9,000	3,800	--	--	--
1,1,1-Trichloroethane	1,000	--	--	--	1,300	2,000	1,700	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--	--
4,4-DDT		--	--	--	--	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0233/226/2

Key at end of table.

(Bold items enclosed in brackets denote
... to the last version of document)

Table 3-3 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P15S004A (B004A)	P15S004B (B004B)	P15S004C (B004C)	P15S005A (B005A)	P15S005B (B005B)	P15S005C (B005C)	P15S006A (B006A)	P15S006B (B006B)	P15S006C (B006C)
Arsenic (mg/kg)	7	--•	--•	--•	--•	--•	--•	--	--	--
Chromium (mg/kg)	1	3.1	--	2.0	1.8	1.4	1.2	1.8	1.2	1.3
Zinc (mg/kg)	2	4.6	2.3	2.7	2.7	2.8	6.2	2.7	--	--
Lead (mg/kg)	4	8.6	--	--	--	--	--	--	--	--
Cadmium (mg/kg)	0.5	--	--	--	0.76	--	--	--	--	--
TRPHs (mg/kg)	5	--	--	--	19	19	21	14	48	13
Toluene	1,000	1,100	1,200	1,100	--	--	--	--	--	--
Methylene Chloride	1,000	3,300(B)	3,000 B)	2,700(B)	--	2,500(B)	2,400(B)	--	--	--
Trans-1,2-Dichloroethene	1,000	--	--	--	--	--	--	--	5,600	--
1,1,1-Trichloroethane	1,000	--	--	--	--	--	--	1.400	1.400	1.300
PAHs as benro-e-pyrone	1,000	--	--	--	--	--	--	--	--	--
4,4-ODT		--	--	--	--	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	(L)	--	--

14[NASP]UH6047:T0233/226/2

Key at and of table.

[Bold items enclosed in kets denote
of document]

Table 3-3 (Coat.)

Parameter	[Detection Limit	Sample Number (Location and Obpth Interval)								
		P15S007A (B007A)	P15S007B (B007B)	P15S007C (B007C)	P15S008A (B008A)	P15S008B (80068)	P15S008C (B008C)	P15S009A (B009A)	P15S009B (B009B)	P15S009C (B009C)
Arsenic (mg/kg)	7	--•	--•	--•	--•	--•	--•	--•	--•	--•
Chromium (mg/kg	1	2.1	1.6	1.3	3.1	5.7	2.5	1.7	1.3	1.3
Zinc (mg/kg)	2	4.3	3.1	3.2	4.3	5.3	14	2.3	--	--
Lead (mg/kg)	4	--	--	--	--	--	--	--	--	--
Cadmium (mg/kg)	0.5	0.94	--	0.55	0.63	1.0	--	--	--	--
TRPHs (mg/kg)	5	32	44	39	22	9.6	18	—	6.0	--
Toluene	1,000	--	--	--	--	--	--	1,300	1,200	1,200
Methylene Chloride	1,000	4,300(B)	1,800(B)	1,300(B)	1,900(B)	3.500(B)	5,400(B)	2,900(B)	1,60018)	1,600(B)
Trans-1,2-Dichloroethene	1,000	--	--	--	--	--	--	--	--	--
1,1-Trichloroethane	1,000	--	--	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--	--
4,4-DDT		--	--	--	—	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	(L)	(L)	(L)	--	--	--

14[NASP]UH6047:TO233/226/2

Key at and of table.

[Bold items enclosed in brackets denote
[illegible] to the last version of document]

Table 3-3 (Cont.)

Parameter	(Detection Limit	Sample Number (Location rnd Depth Interval)								
		P15S010A (B010A)	P15S010B (B010B)	P15S010C (B010C)	P15S011A (B011A)	P15S011B (B011B)	P15S011C (B011C)	P15S012A (B012A)	P15S012B 180128)	P15S012C (B012C)
Arsenic (mg/kg)	7	--	--	--	--	--	--	--	--	--
Chromium (mg/kg)	1	2.3	1.3	1.2	1.9	1.6	1.8	2.7	1.3	2.0
Zinc (mg/kg)	2	7.3	4.9	2.2	3.7	4.7	2.8	3.4	--	5.0
Lead (mg/kg)	4	--	--	--	--	--	--	--	--	--
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	11	13	9.2	16	17	46	53	29	110
Toluene	1,000	--	--	--	1,500	1,500	1,500	--	--	--
Methylene Chloride	1,000	--	--	--	--	--	--	--	--	--
Trans-1,2-Dichloroethene	1,000	3,800	--	--	3,600	--	2,600	--	--	--
1,1,1-Trichloroethane	1,000	--	1,100	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	(L)	--	--
4,4-DDT		--	--	--	--	--	--	(L)	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	(L)	--	--

14[NASP]UH6047:T0233/226/2

Key at end of table

[Bold items enclosed in kets denote

Table 3-3 (Cont.)

Parameter	[Detection Limit	P15S013A (B013A)	P15S013B (B013B)	P15S013C (B013C)	P15S014A (B014A)	P15S014B (B014B)	P15S014C (B014C)	P15S015A (B015A)	P15S015B (B015B)	P15S015C (B015C)
		Sample Number {Location and Depth Interval}								
Arsenic (mg/kg)	7	--●	--●	--●	--●	--●	--●	--●	--●	--●
Chromium (mg/kg)	1	I.9	2.2	2.0	1.9	1.2	1.9	1.6	--	1.3
Zinc (mg/kg)	2	5.6	--	--	3.5	--	--	--	--	2.4
Lead (mg/kg)	4	--	--	--	--	--	--	--	--	--
Cadmium (mg/kg)	0.5	0.54	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	--	--	--	36	--	--	--	--	--
Toluene	1,000	1,200	1,200	1,200	,200	1,200	1,Z00	,100	1,200	1,000
Methylene chloride	I,000	1,600(B)	1,800(B)	1,300(B)	1,500(B)	1,600(B)	1,700(B)	,600(B)	1,600(B)	1,900(B)
Trans-1,2-Dichloroethene	1.000	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1,000	--	--	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--	--
4,4-DDT		--	--	--	--	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	--	--	--

14[NASP]UH6047:TO233/226/2

Key at end of table.

[Bold items enclosed in brackets denote
... the last version of document]

Table 3-3 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P15S016A (B016A)	P15S016B (B016B)	P15S016C (B016C)	P15S017A (B017A)	P15S017B (B017B)	P15S017C (B017C)	P15S018A (B018A)	P15S018B (B018B)	P15S018C (B018C)
Arsenic (mg/kg)	7	--•	--•	--•	--•	--•	--•	--	--	--
Chromium (mg/kg)	1	2.0	1.6	1.2	2.0	1.5	1.4	1.7	1.7	1.4
Zinc (mg/kg)	2	3.0	2.0	--	2.5	--	--	2.3	--	55
Lead (mg/kg)	4	--	--	--	--	--	--	5.2	--	5.8
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	180	--	--	12	--	--	36	25	95
Toluene	1,000	1,000	--	1,100	--	1,200	1,200	--	--	--
Methylene Chloride	1,000	2,200(B)	2,300(B)	2,900(B)	2,500(B)	3,500(B)	3,100(B)	--	--	--
Trans-1,2-Dichloroethene	1,000	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1,000	--	--	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--	--
4,4-DDT		--	--	--	--	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0233/226/2

Key at end of table.

[Bold items enclosed in [illegible] kets denote [illegible] the last [illegible] of document]

Table 3-3 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)							
		P15S019A (B019A)	P15S019B (B019B)	P15S019C (B019C)	P15S020A (B020A)	P15S020B (B020B)	P15S020C (B020C)	P15S021A (B021A)	P15S021AD[a] (B021A)
Arsenic (mg/kg)	7	--	--	18	--	--	--	--	--
Chromium (mg/kg)	1	2.7	1.7	1.3	2.2	1.5	1.1	4.2	20
Zinc (mg/kg)	2	3.7	2.9	2.7	2.7	--	2.3	16	4.8
Load (mg/kg)	4	--	--	--	--	--	--	--	4.6
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	--	5.6	--	--	27	--	--	--
Toluene	1,000	--	--	--	--	--	--	--	--
Methylene Chloride	1,000	--	3,500	3,700	4,100	8,200	7,500	8,900	8,500
Trans-1,2-Dichloroethene	1,000	1,200	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1,000	--	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--
4,4-DDT		--	--	--	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	--	--

14[NASP]UH6047:TO233/226/2

Key at end of table.

[Bold items enclosed in brackets denote

Table 3-3 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)							
		P15S021B (B021B)	P15S021C (B021C)	P15S022A (B022A)	P15S022AD[b] (B022A)	P15S022B (B022B)	P15S022C (B022C)	P15S023A (B023A)	P15S023AD[c] (B023A)
Arsenic	7	--	--	570	43[illegible]	65	10	110	670
Chromium (mg/kg)	1	1.3	--	1.8	2.[illegible]	2.1	1.9	1.7	4.3
Zinc (mg/kg)	2	2.2	--	2.7	2.[illegible]	--	3.2	3.5	4.3
Lead (mg/kg)	4	--	--	5.3	--	--	--	--	--
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	16	--	--	--	--	23	--	--
Toluene	1,000	--	--	--	--	--	--	--	--
Methylene Chloride	1,000	17,000	16,000	12,000	5,200	5,100	1,200	6,100	3,200
Trans-1,2-Dichloroethene	1,000	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1,000	--	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--
4,4-DDT		--	--	--	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	--	--

Key at end of table.

[Bold items enclosed i[illegible]kets denote [illegible] of document]

Table 3-3 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P15S023B (B023B)	P15S023C (B023C)	P15S024A (B024A)	P15S024AD[d] (B024A)	P15S024B (B024B)	P15S024C (B024C)	P15S025A (B025A)	P15S025B (B025B)	P15S025C (B025C)
Arsonic	7	--	--	7.5	--	--	--	44	--	7.0
Chromium (mg/kg)	1	1.4	2.1	4.3	3.9	1.6	--	1.6	--	--
Zinc (mg/kg)	2	--	2.4	4.2	4.8	--	--	--	--	--
Load (mg/kg)	4	--	--	--	6.7	--	--	--	--	--
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	120	20	16	13	22	--	--	14	12
Toluene	1,000	--	--	--	--	--	--	--	--	--
Methylene Chloride	1,000	3,000	3,200	3,800	3,500	2,500	1,600	2,500	2,300	2,000
Trans-1,2-Dichloroethene	1,000	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1,000	--	2,200	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	1,200	1,500	--	--	--	--	--
4,4-DDT		--	--	(L)	(L)	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	(L)	(L)	--	--	--	--	--

14[NASP]UH6047:T0233/226/2

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[Bold items enclosed in brackets denote
to the last version of document]

Table 3-3 (Cont.)

Parameter	[Detection Limit	Sample Number (Location and Depth Interval)								
		P15S026A (B026A)	P15S026B (B026B)	P15S026C (B026C)	P15S027A (B027A)	P15S027B (B027B)	P15S027C (B027C)	P15S028A (B028A)	P15S028B (B028B)	P15S028C (B028C)
Arsenic	7	--	--	--	--	--	--	--	--	--
Chromium (mg/kg)	1	1.5	1.3	1.7	2.1	1.9	--	1.6	--	--
Zinc (mg/kg)	2	--	--	--	3.5	--	--	3.4	--	--
Lead (mg/kg)	4	--	--	--	--	--	--	--	--	--
Cadmium (mg/kg)	0.5	--	--	--	--	--	--	--	--	--
TRPHs (mg/kg)	5	33	19	36	23	27	13	25	19	23
Toluene	1,000	--	--	--	--	--	--	--	--	--
Methylene Chloride	1,000	2,500	2,500	2,400	2,700	3,100	2,700	3,800	2,600	2,200
Trans-1,2-Dichloroethene	1,000	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	1,000	--	--	--	--	--	--	--	--	--
PAHs as benzo-a-pyrene	1,000	--	--	--	--	--	--	--	--	--
4,4-DDT		--	--	--	--	--	--	--	--	--
Dieldrin/4,4-DDE	1,000]	--	--	--	--	--	--	--	--	--

14[NASP]UH6047:T0233/226/2

Note: These results were reported on a wet-weight basis.

Key:

[a]Duplicate of sample P15S021A.
[b]Duplicate of sample P15S022A.
[c]Duplicate of sample P15S023A.
[d]Duplicate of sample P15S024A.
[[e]The detection limit for arsenic was 6.9 mg/kg in this sample.]
Dash (--) indicates compound not detected.

Qualifiers:
(B) = Compound also present in method blank.
(L) = Present below stated detection limit.

Source: Ecology and Environmrnt, Inc., 1991. .

[Bold items enclosed i[illegible]ckets denote
changes to tho last v[illegible] of document]

Table B-5

Table 3-5

SUMMARY ANALYTICAL SCREENING RESULTS FOR GROUNDWATER SAMPLES
(FROM TEMPORARY MONITORING WELLS)
NAS PENSACOLA SITE 15
(All results in μg/L)

Parameter	[Detection Limit	Sample Number (Location)						[FPDWS/ FSDWS
		P15GW019 (TW019)	P15GW020 (TW020)	P15GW020D' (TW020)	P15GW021 (TW021)	P15GW022 (TW022)	P15GW023 (TW023)	
Arsenic	70	8,000	--	--	--	510	490	SO
Chromium	10	400	120	130	260	180	110	SO
Zinc	20	2,200	150	180	560	770	340	5,000
Lead	40	240	100	66	180	100	89	50
Cadmium	5	28	6.7	6.1	18	10	5.8	10
Nickel	40	110		--	96	53	--	
Copper	15	190	50	60	140	86	56	1,000]
Methylene Chloride	10	--	--	--	--	--	--	
Dieldrin/4,4-DDE	5]	--	--	--	--	--	--	

14[NASP]UH6047:T0233/227/7

Key at end of table.

'Bold items encl n brackets denote

Table 3-5 (Cont.)

Parameter	[Detection Limit	Sample Number (Location) P15GW024 (TW024)	P15GW025 (TW025)	P15GW026 (TW026)	P15GW026D[b] (TW026)	P15GW027 (TW027)	P15GW028 (TW028I	[FPDWS/ FSDWS
Arsenic	70	--[c]	--[c]	--[c]	--[c]	--[c]	--[c]	50
Chromium	10	250	240	320	250	98	140	50
zinc	20	300	300	290	230	140	260	5,000
Lead	40	180	180	300	240	64	78	50
Cadmium	5	16	25	38	31	11	18	10
Nickel	40	49	65	71	60	--	--	
Copper	25	110	85	100	78	50	79	1,000]
Methylene Chloride	lo	--	(L,B)	(L,B)	(L,B)	--	--	
Dieldrin/4,4-DDE	5]	(L)	(L)	--	--	(L)	--	

14[NASP]UH6047:T0233/22 7/7

Key:

[a]Duplicate of sample P15GW020.
[b]Duplicate of sample P15GW026.
[c]The detection limit Cor arsonic was 69 µg/L in this sample.
FPDWS = Florida Primary Drinking Water Standard.
FSDWS = Florida Secondary Drinking Water Standard.]
Dash (--) indicates compound not detected.

Qualifiers:
(B) = Compound also present in method blank.
(L) = Present below stated detection limit.

Source: Ecology and Environment, Inc., 1991.

Table B-6

Table 3-6

SUMMARY [TAL/]TCL ANALYTICAL RESULTS FOR GROUNDWATER AND FIELD QA/QC SAMPLES
(FROM PERMANENT MONITORING WELLS)
NAS PENSACOLA SITE 15
(All results in µg/L, unless noted)

Parameter	[Detection Limit	Sample Number (Location/Type) P15W059 (GM59)	P15W060 (GM60)	P15W060D[a] (GM60D)	[FPDWS/ FSDWS
Total Metals					
Aluminum	62	41,500	16,600	17,500	
Arsonic	1	226(N)	4.9(B,N)	5.4 (W,N)	SO
Barium	10	57.518)	34.5(B)	34.2	1,000
Calcium	326	17,600	15.200	15.800	
Chromium	10	55.7	23.4	22.2	10
Cobalt	7	8.1(B)	—	—	
Coppor	10	23.218)	10.8(B)	—	1,000
Iron	19	30,300	*8.800*	9,800	*300*
Load	1	18.5.	7.5(S)*	8.5(S)*	50
Magnesiun	491	5.930	5.350	5,550	
Manganese	2	190	47	49.9	SO
Mercury	0.2	—	3.4	2.7	2
Potassium	428	6,470	6.490	6,530	
Sodium	282	13,900(E)	10.900(E)	11,500(E)	160.000
Vanadium	9	57.7	18.3(B)	15.2(B)	
Zinc	4	93.6	45.1	39.3	5,000
Dissolved Metals					
Aluminum	62	95(B)	105(B)	111(B)	
Arsonic	1	10(S,N)	—	—	50
Barium	10	—	17.7(B)	17.1	1,000
Calcium	326	17,400	18,000	17,300	
Iron	19	67(B)	76(B)	91(B)	300
Load	1	3.6*[a]	—	2.4(B)*	40
Magnesium	491	5.160	6,040	5,860	
Manganese	2	3.2(B)	2.5(B)	2.4(B)	SO
Potassium	428	6,880	7,590	7.380	
Selenium	1	1.4(B,W)		—	10
Sodium	282	16,600(E)	14,100(E)	13,400(E)	160,000
zinc	4	14.1(B)	11.1(B)	7.7(B)	5,000]
Methylene Chloride	5	5(B[a])	12(B[a])	4(B[a],J)	
Acetone	10	46(B[a])	60(B[a])	69(B[a])	
Di-n-Butyl-Phthalate	10	1(J)	2(J)	—	
Bis(2-Ethylhexyl)Phthalate	10	3(B[a],J)	4(B[a],J)	4(B[a],J)	
Tentatively Identified Compounds..					
2-Propanol		57(J)	14(J)	71(J)	
Freon-113		—	8.0(B[a],J)	—	
Hexane		22(B[a],J)	16(B[a],J)	19(B[a],J)	
Tribromophenol Isomer		14(B[a],J)	23(B[a],J)	12(B[a],J)	
Unknown Hydrocarbon		—	6(J)	(5) 44(J)	
Unknown Compound		—	—	—	
Unknown Compound		(3) 28(J)	(6) 70(J)	(3) 72(J)	
Total Alkalinity (mg/L as $CaCo_3$)	1	27	26	20	
Total Hardness (mg/L as $CaCo_3$)	1	86	91	82	
Total Organic Carbon (mg/L)	1]	35	22	24	

14[NASP]UH6047:T0233/261/15

Key at end of table

[Bold items enclosed in brackets denote changes to tho last version of document]

Table 3-6 (Cont.)

Parameter	[Detection Limit	Sample Number (Location/Type) P15WTB03[b] (Bottle Trip Blank)	P15WRB02[c] (Sampling Equipment Rinsate)	P15WTB02 (Field Blank)	P15WPB02[d] (Preservative Blank)	[FPDWS/ PSDWS
Total Metals						
Aluminum	62	NA	--	--	--	
Arsenic	1	NA	--	--	--	50
Barium	10	NA	--	--	--	1,000
Calcium	326	NA	--	--	--	
Chromium	10	NA	--	--	--	10
Cobalt	7	NA	--	--		
Copper	10	NA	--	--	--	1.000
Iron	19	NA	--	--	46(B)	300
Load	1	NA	5.5+*	5.6(S)*	--	50
Magnesium	491	NA	--	--		
Manganese	2	NA	--	--		50
Mercury	0.2	NA	--	--		2
Potassium	428	NA	--	--	--	
sodium	282	NA	--	--	--	160,000
Vanadium	9	NA	--	--		
Zinc	4	NA	--	--	5.5(B)	5,000
Dissolved Metals						
Aluminum	62	NA	--	--	--	
Arsenic	1	NA	--	--	--	50
Barium	10	NA	--	--	--	1.000
Calcium	326	NA	--	--	--	
Iron	19	NA	49(B)	6.0(S)*	--	300
Load	1	NA	--	--	--	40
Magnesium	491	NA	--	--	--	
Manganese	2	NA	--	--	--	SO
Potassium	428	NA	--	--	--	
Selenium	1	NA	--	--	--	10
Sodium	282	NA	345(B,E)	417(B,E)	--	160.000
Zinc	4	NA	--	--	--	5,000]
Methylene Chloride	5	6(B[a])	16(B[a])	7(B[a])	14(B[a])	
Acetone	10	45(B[a])	69(B[a])	57(B[a])	60(B[a])	
Dl-n-Butyl-Phthnlato	10	--	--	--	NA	
Bis(2-Ethylhexyl)Phthalate	10	--	4(B[a],J)	4(B[a],J)	NA	
Tentatively Identified Compounds**						
2-Propanol		--	--	39(J)	--	
Freon 113		--	--	--	9(B[a],J	
Hexane		24(B[a],J)	14(B[a],J)	21(B[a],J)	14(B[a],J	
Tribromophenol Isomer		--	9(B[a],J)	25(B[a],J)	--	
Unknown Hydrocarbon		--	--	--	--	
Unknown Compound		--	9(J) (2)	17(J)	(1) 6(J)	
unknown Compound		--	(3) 103(J)	--	--	
Total Alkalinity (mg/L as $CaCo_3$)	1	--	--	--	--	
Total Hardness (mg/L as $CaCo_3$)	1	--	--	--	--	
Total Organic Carbon (mg/L)	1]	--	--	--	--	

14[NASP]UH6047:T0233/261/15

Key at end of table.

[Bold items raclosrd lo brackets denote changes to thr last version of document]

Table 3-6 (Cont.)

14[NASP]UH6047:T0233/261/15

Note: The nuabor within parentheses preceding tho concontration is tho number ot tentatively identified compounds [(TICs)] in this parameter group. Tha listed concontration represents tho sum of tho individual group-member concontration,.

Key :

[FPDWS = Florida Primary Drinking Water Standard.
FSDWS = Florida Secondary Drinking Water Standard.]
NA = Analyses not performed.
Dash (—) indicates compound not detected.
*Duplicate analysis not uithin control limits.
[**Values tor tho TICs are estimated. No detection limits were established for tho TICs.]
+Correlation coefficient for tho MSA is loss than 0.995.

[a]Duplicate of sample P15W060.
[b]Analyzed for vOCs only.
[c]Analyzed tor total metals, dissolved metals, cyanide, VOCs, BNAs, posticidos, PCBs, and TRPHs only.
[d]Analyzed for total metals, cyanide, VOCs, and TRPHs only.
[*The detection limit for tho specified parameter increased by a factor of 5 in this sample.]

Qualifiers:
(B) = Reported value vas obtained from a reading that was lass than tho Contract Required Detection Limit but greater than or equal to tho Instrument Detection Limit.
(B[a]) = Present in method blank.
(E) = Identifies compounds with concentrations exceeding calibration range of tho GC/MS instrument for tho specific analysis.
(J) = [For non-TICs] estimated value; compound present [but] below dotoction limit. [Also indicates that TIC concentrations are estimated because no dotoction limits were established.]
(N) = Spiked sample recovery not within control limits.
(S) = Tho reported value was determined by tho method of standard additions.
(W) = Post digestion spike for furnace M analysis is out of control limits (85-115%), while sample absorbance is loss than 50% of spike absorbance.

Source: Ecology and Cnvironmont. Inc., 1991.

[Bold items enclosed la brackets denote changes tO the last version of document]

Appendix C

Soil Boring Logs, Well Construction Diagrams, and Specific Capacity Test Results

****
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
****

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. **A** computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER 015GR34

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 15.87
DEPTH TO WATER DURING TEST (FT) = 17.07
THE LENGTH OF THE TEST (HR) = .3
PUMPING RATE (GPM) = 4
THICKNESS OF AQUIFER (FT) = 22
OPEN INTERVAL (FT) = 5
STORAGE COEFFICIENT = .25
WELL-LOSS COEFFICIENT = 2

SPECIFIC CAPACITY (GPM/FT) = 3.333775

TRANSMISSIVITY: (FT*FT/SEC) = 2.121183E-02
(FT*FT/DAY) = 1832.702
(GAL/DAY/FT) = 13709.53
USING A STORAGE COEFFICIENT = **.25**
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 9.64174E-04
(FT/DAY) = 83.30463
(GAL/DAY/FT*FT) = 553.4359

WELL NUMBER 015GR35

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 12.65
DEPTH TO WATER DURING TEST (FT) = 13.6
THE LENGTH OF THE TEST (HR) = .2833
PUMPING RATE (GPM) = 2.1
THICKNESS OF AQUIFER (FT) = 28
OPEN INTERVAL (FT) = 5
STORAGE COEFFICIENT = .25
WELL-LOSS COEFFICIENT = 2

SPECIFIC CAPACITY (GPM/FT) = **2.210626**

TRANSMISSIVITY: (FT*FT/SEC) = 1.780514E-02

(FT*FT/DAY) = 1538.365
(GAL/DAY/FT) = 11507.74
USING A STORAGE COEFFICIENT = .25
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 6.358981E-04
(FT/DAY) = 54.94159
(GAL/DAY/FT*FT) = 365.0055

WELL NUMBER 015GR39

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 13.59
DEPTH TO WATER DURING TEST (FT) = 14.75
THE LENGTH OF THE TEST (HR) = .21
PUMPING RATE (GPM) = 3
THICKNESS OF AQUIFER (FT) = 22
OPEN INTERVAL (FT) = 10
STORAGE COEFFICIENT = .25
WELL-LOSS COEFFICIENT = 2

SPECIFIC CAPACITY (GPM/FT) = 2.586406

TRANSMISSIVITY: (FT*FT/SEC) = 8.5975493-03
(FT*FT/DAY) = 742.8283
(GAL/DAY/FT) = 5556.727
USING A STORAGE COEFFICIENT = .25
NUMBER OF ITERATIONS = 4

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 3.907977E-04
(FT/DAY) = 33.76492
(GAL/DAY/FT*FT) = 224.3179

WELL NUMBER 015GR40

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 13.96
DEPTH TO WATER DURING TEST (FT) = 19.14
THE LENGTH OF THE TEST (HR) = .8
PUMPING RATE (GPM) = 2.8
THICKNESS OF AQUIFER (FT) = 28
OPEN INTERVAL (FT) = 10
STORAGE COEFFICIENT = .25
WELL-LOSS COEFFICIENT = 2

SPECIFIC CAPACITY (GPM/FT) = .5405487

TRANSMISSIVITY: (FT*FT/SEC) = 2.335596E-03
(FT*FT/DAY) = 201.7955
(GAL/DAY/FT) = 1509.531
USING A STORAGE COEFFICIENT = .25
NUMBER OF ITERATIONS = 3

STATIC WATER LEVEL (FT) = 13.59
DEPTH TO WATER DURING TEST (FT) = 14.75
THE LENGTH OF THE TEST (HR) = .21
PUMPING RATE (GPM) = 3
THICKNESS OF AQUIFER (FT) = 22
OPEN INTERVAL (FT) = 10
STORAGE COEFFICIENT = .25
WELL-LOSS COEFFICIENT = 2

SPECIFIC CAPACITY (GPM/FT) = 2.586406

TRANSMISSIVITY: (FT*FT/SEC) = 8.597549E-03
(FT*FT/DAY) = 742.8283
(GAL/DAY/FT) = 5556.727
USING A STORAGE COEFFICIENT = .25
NUMBER OF ITERATIONS = 4

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 3.907977E-04
(FT/DAY) = 33.76492
(GAL/DAY/FT*FT) = 224.3179

WELL NUMBER 015GR40

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 13.96
DEPTH TO WATER DURING TEST (FT) = 19.14
THE LENGTH OF THE TEST (HR) = .8
PUMPING RATE (GPM) = 2.8
THICKNESS OF AQUIFER (FT) = 28
OPEN INTERVAL (FT) = 10
STORAGE COEFFICIENT = .25
WELL-LOSS COEFFICIENT = 2

SPECIFIC CAPACITY (GPM/FT) = .5405487

TRANSMISSIVITY: (FT*FT/SEC) = 2.335596E-03
(FT*FT/DAY) = 201.7955
(GAL/DAY/FT) = 1509.531
USING A STORAGE COEFFICIENT = .25
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 8.341414E-05
(FT/DAY) = 7.206982
(GAL/DAY/FT*FT) = 47.87972

THE NUMBER OF WELLS IN THIS RECORD IS 2

EnSafe/Allen & Hoshall

Boring 015S01, 015S09, 015S10

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Steve Parker*
Started at *09:45 on 9-1-95*	Surface Elevation:
Completed at *12:00 on 9-1-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: NA	Total Depth: *11 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1					Surface conditions: Sandy grass covered level land surface.	
5			HA-2				SP	Orange to brownish orange medium grained sand. Well sorted with 3-5% heavy minerals to 5'bls. Same sand from 5-10'bls becoming light orange to bulf white at 8-10'bls. Chalky, somewhat indurated medium grained sand from 10-11'bls. Moist at 11'bls.	
10			HA-3						81
15								Notes: HA = Hand Auger Sample Samples Collected: 015S000101 015S000105 015S000110 015S000901 015S000905 015S000910 015S001001 015C001001 015S001005 015S001010	
20									

EnSafe/Allen & Hoshall

Boring 015S02, 015S11

Project: *Site 15*	Location: *NAS Pensacola*
Project No: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *10:00 on 9-5-95*	Surface Elevation:
Completed at *12:00 on 9-5-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *9 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM	Surface conditions: Bare sandy soil within washdown drainage swale. Brown organic rich top soil.	
5			HA-2				SP	Brown-tan fine to medium grained quartz sand to 1'bls. Same sand becoming tan from 1-3'bls. Tan fine to medium grained quartz sand from 3-0'bls. Wet at 8'bls.	
			HA-3						5.8
10									
15									
20									

Notes:
HA = Hand Auger Sample

Samples Collected:
015S000201
0158000205
015S000208
015C001101
015S001101
015S001105
015S001108

EnSafe/Allen & Hoshall

Boring 015S03

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *11:30 on 9-5-95*	Surface Elevation:
Completed at *12:00 on 9-5-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *9 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1					Surface conditions: Sandy scrub vegetation covered land sulace.	
5			HA-2				SP	Brown silty sandy soil with concrete rubble fragments from 0-1'bls. Brown to tan fine to medium grained quartz sand from 1-9'bls. Wet at 9'bls.	
			HA-3						5.8
10									
15									
20									

Notes:
HA = Hand Auger Sample

Samples Collected:
015S000301
0155000305
015S000309

EnSafe/Allen & Hoshall	Boring 015S04, 015S27
Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: Jeff Lunceford
stated at 13:30 on 9-6-95	Surface Elevation:
Completed at 14:30 on 9-6-95	Depth to Groundwater: Measured: NA
Drilling Method: Stainless Steel Hand Auger	Groundwater Elevation: NA feet msl
Drilling Company: NA	Total Depth: 10 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1					Surface conditions: Level land surface with sandy soil.	
5			HA-2				SP	Brown fine to medium silty quartz sand to .5'bls. Tan to buff white fine to medium grained quartz sand from .5-10'bls.	
								Wet at 10'bls.	
10			HA-3						5.5
15								Notes: HA = Hand Auger Sample Samples Collected: 015S000401 015C000401 015S000405 015S000410 015S002701 015S002705 015S002710	
20									

EnSafe/Allen & Hoshall

Boring 015505, 015S14, 015S15

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *08:45 on 9-7-95*	Surface Elevation:
Completed at *10:15 on 9-7-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SP SM	Surface conditions: Sandy soil with organic debris decay. Brown-gray silty fine to medium grained organic rich soil to 1'bls.	14.5
5			HA-2				SP	Tan-brown fine to medium grained sand from 1-2.7'bls. Same sand with pea gravel from 2.5-2.7'bls in boring 015S15 only. Tan fine to medium grained quartz sand to 9.5'bls. Becoming brown moist sand to 10'bls. Wet at 10'bls.	
10			HA-3						5.5
15								Notes: HA = Hand Auger Sample Samples Collected: 015S000501 015S000505 015S000510 015S001401 015S001405 015S001410 015S001501 015S001505 015S001510	
20									

EnSafe/Allen & Hoshall

Boring 015S06

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *10:20 on 9-7-95*	Surface Elevation:
Completed at *10:50 on 9-7-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *9 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SP SP SM	Surface conditions: Silty sand bnd surface sloping north toward drainage ditch. An area of frequent drainage. Brown mdst line to medium grained sand and gravel mix.	
								Brown moist fine to medium grained silty clayey sand to 1.8'bls. Moisture due to frequent wash drainage.	12.3
5			HA-2				SP	Brown-tan fine to medium grained quartz sand from 1.8-Q'bls. Becomes dry at 3.0'bls. Wet at Q'bis.	
			HA-3						5.1
10									
15									
20									

Notes:
HA = Hand Auger Sample

Samples Collected:
015S000601
015C000601
015S000605
015S000609

EnSafe/Allen & Hoshall

Boring 015S12, 015S13

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Stated at *13:30 on 9-5-95*	Surface Elevation:
Completed at *on 9-5-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (-msl)
			HA-1				SP SM	Surface conditions: Sandy grass covered land surface. Brown silty sandy soil.	
5			HA-2				SP	Brownish orange fine to medium grained quartz sand to 1'bls. Light tan to buff white fine to medium grained quartz sand from 1-10'bls. Wet at 10'bls.	
10			HA-3						5.5
15								Notes: HA = Hand Auger Sample Samples Collected: 015S001201 0158001205 015S001210 015S001301 015S001305 015S001310	
20									

EnSafe/Allen & Hoshall

Boring 015S16

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Steve Parker*
Started at *13:00 on 8-30-95*	Surface Elevation:
Completed at *14:00 on 8-30-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1					Surface conditions: Dry silty sand.	
5			HA-2				SP	Brown to graylsh brown medium grained rooted sand. Becoming orange at 1'bls. Tan to orange medium gralned well sorted sand to 5'bls. Same tan to orange medium grained sand from 5-10'bls. Turns to dark brown medium grained well sorted silty organic sand at 10'bls. Moist at 10'bls.	
10			HA-3						5.2
15								Notes: HA = Hand Auger Sample Samples Collected: 015S001801 015S001805 015S001810	
20									

EnSafe/Allen & Hoshall

Boring 015S17

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Steve Parker*
Started at *14:00 on 8-30-95*	Surface Elevation:
Completed at *15:00 on 8-30-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM SP	Surface conditions: Sandy soil. Brown silty sand topsoil to 2"bls. Red sandy clay fill from 2-6"bls. Tan to orange medium grained well sorted sand with 3-5% heavy minerals from 6-12"bls.	4.4
5			HA-2				SP	Tan to orange medium grained well sorted sand with 3-5%heavy minerals from 1-5'bls. Tan to orange to buff white medium grained well sorted sand to 10'bls. Wet at 8.8-10'bls at buff white sand.	
10			HA-3						5.4
15								Notes: HA = Hand Auger Sample Samples Collected: 015S001701 015S001705 015S001710	
20									

EnSafe/Allen & Hoshall

Boring 015S18

Project: *Site 6*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Steve Parker*
Started at *15:00 on 8-30-95*	Surface Elevation:
Completed at *16:00 on 8-30-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SM SP	Surface conditions: Sandy topsoil. Brown silty sand to 2"bls. Red clayey sand fill from 2-8"bls. Tan to orange medium grained well sorted sand from 8-12"bls.	48
5			HA-2				SP	Tan to orange medium grained well sorted sand from 1-5'bls. Tan. orange to buff white medium grained well sorted sand to 10'bls with few 3%heavy minerals. Wet at 10'bls.	
10			HA-3						38
15								Notes: HA = Hand Auger Sample Samples Collected: 015S001801 015S001805 015S001810	
20									

EnSafe/Allen & Hoshall

Boring 015S20, 015S21

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Steve Parker*
Started at *09:00 on 8-31-95*	Surface Elevation:
Completed at *11:00 on 8-31-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *8 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1					Surface conditions: Level land surface with sandy soil and grassy fringe.	
			HA-2				SP	Tan to orange medium grained sand to 1'bls. Same sand from 1-5'bls becoming buff white well sorted medium grained sand from 5-8'bls.	
5									
			HA-3					Wet at approximately 8'bls.	
									8.8
10								Notes: HA = Hand Auger Sample Samples Collected: 0155002001 015C002001 0155002005 0158002008 0155002101 0155002105 015S002108	
15									
20									

EnSafe/Allen & Hoshall

Boring 015S22-015S26

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Steve Parker*
Started at *08:45 on 8-31-95*	Surface Elevation:
Completed at *12:00 on 8-31-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: NA	Total Depth: *8 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1				SP SM	Surface conditions: Level sandy land surface with grassy fringe. Brown silty sand, medium grained top soil.	
5			HA-2				SP	Tan to orange medium grained sand to 8'bls with approx. 5%heavy minerals. Water table varies from approximately 7.5-8.5'bls.	
10			HA-3					Notes: HA = Hand Auger Sample	
15								Samples Collected: 0158002201, 015S002205, 0158002208, 0158002301, 0158002305, 0158002401, 0158002405, 0158002408, 015S002501, 015S002505, 015S002508, 015S002601, 015S002605, 015S002608	
20									

EnSafe/Allen & Hoshall

Boring 015S29, 015S30, 015S31

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *Jeff Lunceford*
Started at *14:45 on 9-5-95*	Surface Elevation:
Completed at *16:30 on 9-5-95*	Depth to Groundwater: Measured: *NA*
Drilling Method: *Stainless Steel Hand Auger*	Groundwater Elevation: *NA feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1					Surface conditions: Thick concrete .3' floor under shed. Pea gravel from 0-.3'bls in boring 015S29.	
5			HA-2				SP	Brown line to medium silty quartz sand with clay content that is likely fill material to 1'bls. Red clayey sandy fill dirt from .3-1.5'bls and brown fine to medium grained sand from 1.5-2,bls in boring 015S29. Tan fine to medium grained quartz sand from 1-8'bls (2-8'bls in boring 015S29). Becoming buf white fine to medium grained quartz sand from 8-10'bls in all three borings.	
								Wet at 10'bls.	
10			HA-3						5.8
15								Notes: HA = Hand Auger Sample Samples Collected: 015S002901 015S002905 015S002910 015S003001 015S003005 015S003010 015S003101 015S003105 015S003110	
20									

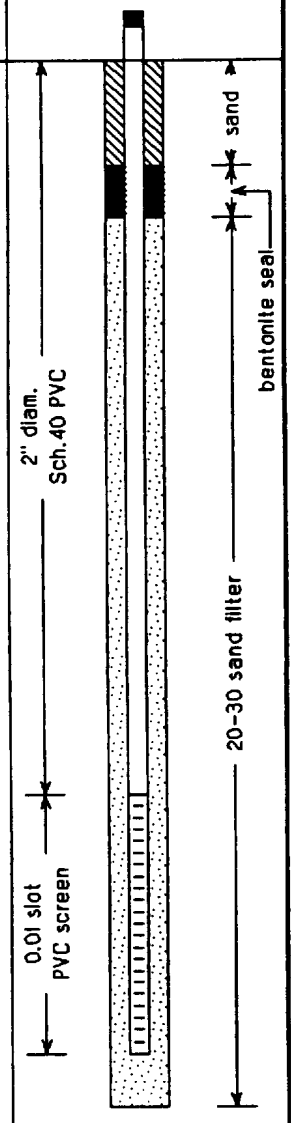
EnSafe/Allen & Hoshall

Monitoring Well 015GR01

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 18.67 feet msl
stated at 10:40 on 9-1-95	T.E Elevation: 19.61 feet msl
Completed at 845 M 9-1-95	Depth to Groundwater: 16.55 BTOC feet Measured: 10-27-95
Drilling Method: 4 1/4" Hollow Stem Auger	Groundwater Elevation: 3.06 feet msl
Drilling Company: G.Z.A. Drilling	Total Depth: 20 feet
Geologist: J. Lunceford	Well Screen: 14 to 19 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0			Surface Conditions: Denuded area with sandy land surface and minor scrub vegetation.	
5									
10							SP	Light tan to tan fine to medium grained quartz sand. Hoist at approximately 12'bls. No odors.	
15								Water level at approximately 15.7'bls.	
20									1.3
25									

WELL DIAGRAM



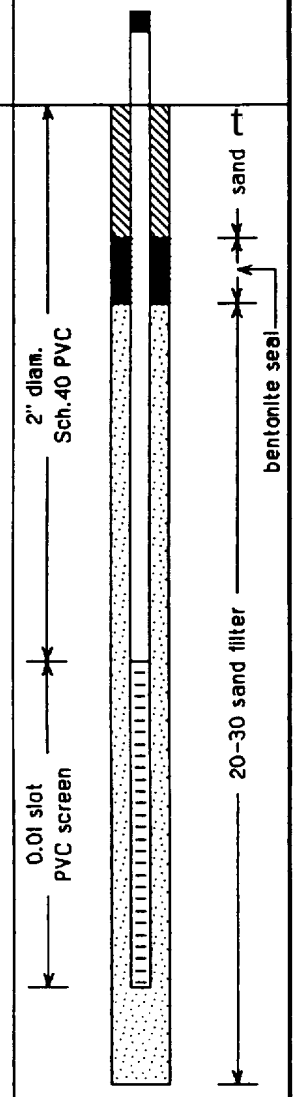
EnSafe/Allen & Hoshall

Monitoring Well 015GR02

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.08 feet msl*
Started at *09:10 on 9-1-95*	TOC Elevation: *15.5 feet msl*
Completed at *09:45 on 9-1-95*	Depth to Groundwater: *10.96 BTOC feet* Measured: *10-27-95*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *4.54 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *8.5 to 13.5 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
				0			Surface Conditions: Sandy grass debris scattered drainage outwash area/ditch. No standing water.	
5								
						SP	Slightly silty fine to medium grained quartz sand from 0-.5'bls. Tan fine to medium grained quartz sand from .5-8'bls. Becoming light tan to buff white from 8-15'bls.	
10							Water level at approximately 10'bls.	
15								9
20								

WELL DIAGRAM



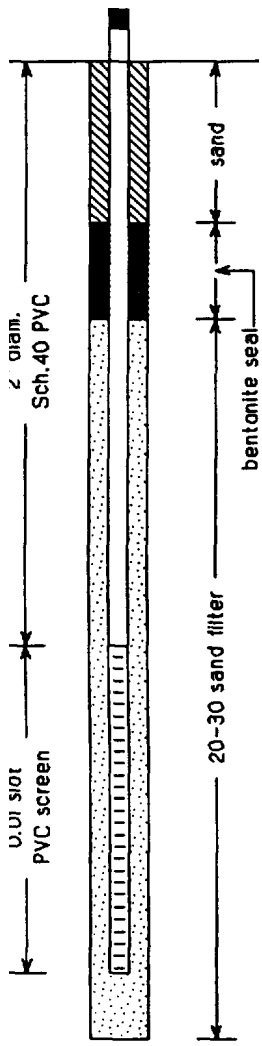
EnSafe/Allen & Hoshall

Monitoring Well 015GR03

Project: *Site 6*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.59 feet msl*
Started *at 09:50 on 9-1-95*	TOC Elevation: *638 feet msl*
Completed at *on 9-1-95*	Depth to Groundwater: *10.92 BTOC feet* Measured: *10-27-95*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *4.48 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *9 to 14 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM SP	Surface Conditions: Sandy land surface with scrub grass. Brown silty sandy soil with concrete rubble to 1'bls.	13.8
5									
							SP	Tan to light tan fine to medium grained quartz sand from 1-15'bls.	
10								Water level at approximately 10.5'bls.	
15									.4
20									

WELL DIAGRAM



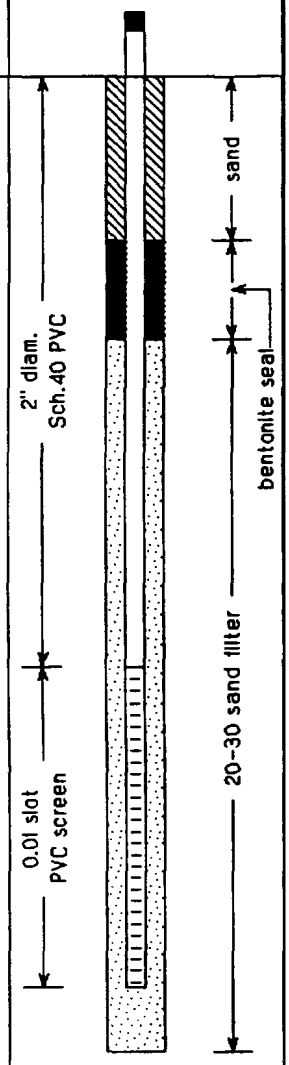
EnSafe/Allen & Hoshall

Monitoring Well 015GR04

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 15.18 feet msl
stated at 13:10 on 9-1-95	TOC Elevation: 18.11 feet msl
Completed at 13:50 on 9-1-95	Depth to Groundwater: 10.89 BTOC feet Measured: 10-27-95
Drilling Method: 4 1/4" Hollow Stem Auger	Groundwater Elevation: 5.22 feet msl
Drilling Company: G. Z. A. Drilling	Total Depth: 15 feet
Geologist: J. Lunceford	Well Screen: 9 to 14 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
								Surface Conditions: Bare sandy soil along cart pathway.	
								Brown to tan fine to medium grained quartz sand with brick fragments and pea gravel to 4'bls.	
5							SP	Tan quartz sand as above to approx. 15'bls.	
10								Water level at approximately 10.8'bls.	
15									2
20									

WELL DIAGRAM



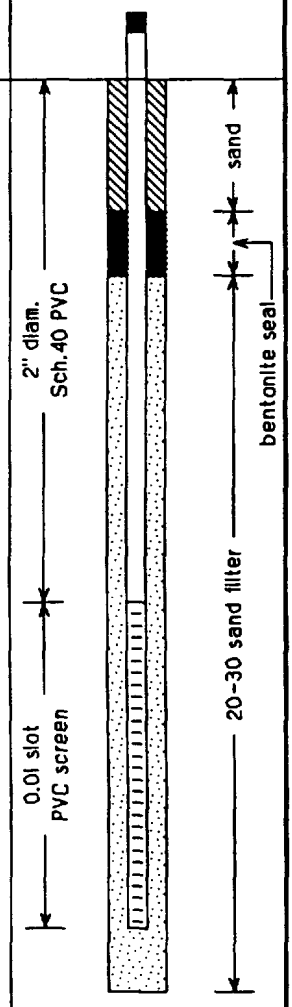
EnSafe/Allen & Hoshall

Monitoring Well 015GR06

Project *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.50 feet msl*
Start *on*	
Comp	
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *5.52 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *14 feet*
Geologist: *J. Lunceford*	Well Screen: *8 to 13 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM SP	Surface Conditions: Gravel covered land surface. Brown line to medium grained silty quartz sand to .5'bls. Becoming tan at .5'bls.	13.5
5							SP	Tan fine to medium grained quartz sand to 3'bls. Same sand becoming light tan at 4'bls. Moist at 8'bls. Wet at 9'bls. Water table at approximately 9.5'bls.	
10									
									5
15									
20									

WELL DIAGRAM



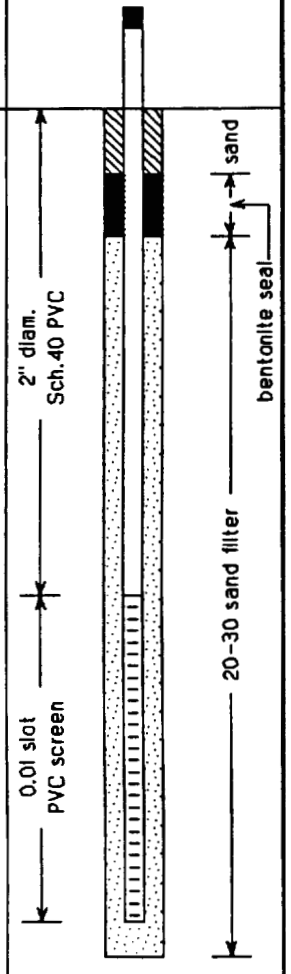
EnSafe/Allen & Hoshall

Monitoring Well 015GR07

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 14.49 feet msl
Started at 11:00 on 8-31-95	TOC Elevation: 17.27 feet msl
Completed at 12:00 on 8-31-95	Depth to Groundwater: 11.14 BTOC feet Measured: 10-27-95
Drilling Method: 4 1/4" Hollow Stem Auger	Groundwater Elevation: 8.23 feet msl
Drilling Company: G. Z. A. Drilling	Total Depth: 13 feet
Geologist: J. Lunceford	Well Screen: 7.5 to 12.5 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			HA-1		0		SM SP	Surface Conditions: Level sandy land surface. Level sandy land surface underlain by gray silty clayey sandy oyster shell fragment mix to .5'bls. Becoming tan line to medium grained quartz sand at .5'bls.	13.5
5			HA-2		0				
							SP	Same sand becoming buff white at 4'bls. Moist/wet at 7'bls.	
								Water table at approximately 9'bls.	
10									
									1.5
15									
20									

WELL DIAGRAM



Notes:
HA = Hand Auger Sample

Samples Collected:
015S000701
015S000705

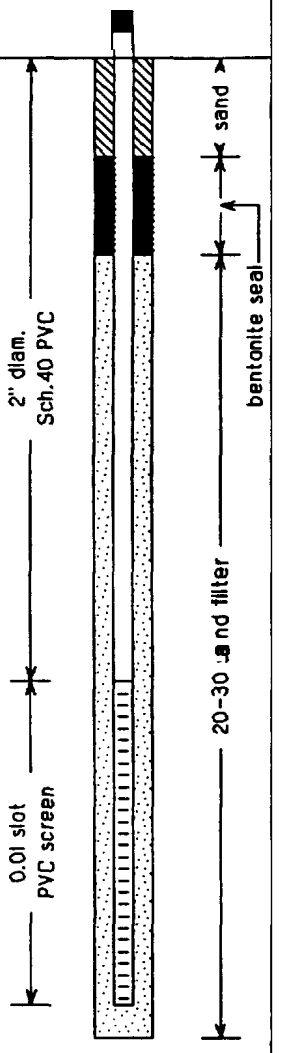
EnSafe/Allen & Hoshall

Monitoring Well 015GR08

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *15.38 feet msl*
Started at *18:15 on 8-31-95*	TOC Elevation: *18.04 feet msl*
Completed at *17:00 on 8-31-95*	Depth to Groundwater: *11.40 BTOC feet* Measured: *10-27-95*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *4.64 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *9.5 to 14.5 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
								Surface Conditions: Sandy scrub grass covered land surface.	
5									
							SP	Tan fine to medium grained quartz sand. Moist at 9.5'bls Cuttings turn darker brown at water table.	
10								Water level at approximately 11.5'bls.	
15									4
20									

WELL DIAGRAM



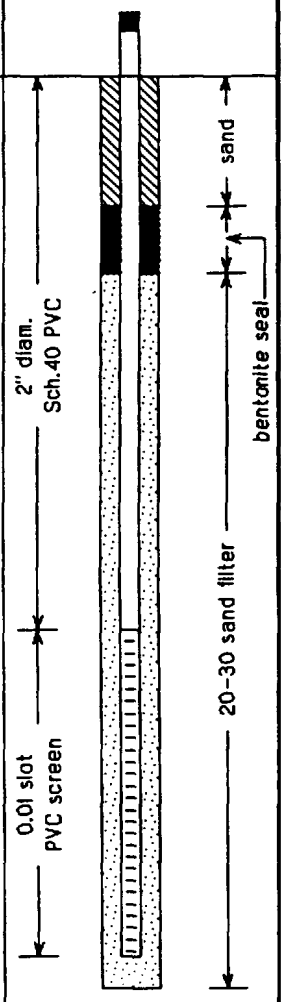
EnSafe/Allen & Hoshall

Monitoring Well 015GR28

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.92 feet msl*
Started at *14:00 on 8-31-95*	TOC Elevation: *16.59 feet msl*
Completed at *15:00 on 8-31-95*	Depth to Groundwater: *11.37 BTOC feet* Measured: *10-27-95*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *5.22 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *14 feet*
Geologist: *J. Lunceford*	Well Screen: *8.5 to 13.5 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM SP	Surface Conditions: Level sandy land surface. Brown silty sandy soil becoming gray silty sand with shell fragments to .5'bls.	
5							SP	Tan fine to medium grained quartz sand. No odors. Saturated cuttings at 8'bls.	
10								Water table at approximately 10'bls.	
									9
15									
20									

WELL DIAGRAM



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Boring 15S32

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Lunceford
Stated at 1030 m 3-21-98	Surface Elevation:
Completed at on 3-21-98	Depth to Groundwater: Measured:
Drilling Method: S.S. Hand Auger	Groundwater Elevation: feet msl
Drilling Company:	Total Depth: W feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Gray level sandy land surface no vegetation. Orangish brown silty sandy top soil from 0 to 0.5 ft bls.	
								Tan fine to medium grained quartz sand to 8 ft bls.	
5							SP		
								Light tan to bul white quai z sand. Wet at 10 ft bls. BOH.	
10									5.4
								Notes: USCS (visual only) Samples Collected: 015S003201 015S003210	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S41

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
Stated *at 1055 on 3-14-98*	Surface Elevation:
Completed at *on 3-14-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *12.5 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Sand/scrub grass. Dark brown tine to medium grained silty sand from 0 to 1 ft bis.	4.9
							SP	Orange fine to medium grained quartz sand to 2 ft bls. Clean light reddish brown sand. Clean light tan line to medium grained sand. Wet at 12.5 ft bls. BOH.	3.4
5									
10									
15								Notes: USCS (visual only) Samples Collected: 015S004101 015S004112	
20									

EnSafe/Allen & Hoshall

Boring 15S42

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
Started at *1150 on 3-14-98*	Surface Elevation:
Completed at *1210 on 3-14-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *12.5 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
								Brown line to medium grained sand from 0 to 05 It bls.	
								Brownish red line to medium grained quartz sand. Red-orange fine to medium grained fill to 1 ft bls.	
								Reddish orange fine to medium grained sand.	
5							SP		
								Clean light tan fine to medium grained sand.	
10								Wet at 125 ft bls. BOH.	
									3.1
15								Notes: USCS (visual only) Samples Collected: 0158004201 0158004212	
20									

EnSafe/Allen & Hoshall

Boring 15S43

Project *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
stated at *1425 on 3-14-98*	Surface Elevation:
Completed at *1505 on 3-14-98*	Depth to Groundwater: Measured:
Drilling Method: *SS Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *12.5 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SP	Surface Conditions: Undisturbed dirt/grass. Dark brown fine to medium grained sand mixed with top soil.	
							CL	Reddish brown sandy clay.	1.51 1.19
								Red-orange fine grained sand.	
5									
							SP	Light brown fine to medium grained sand.	
								011 white tan line clean sand.	
10								Wet at 12.5 ft bls. BOH.	
									-3.4
15								Notes: USCS (visual only)	
								Samples Collected: 0158004301 015C004301 015S004312	
20									

EnSafe/Allen & Hoshall

Boring 15S44

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Pace
stated at 0915 on 3-8-96	Surface Elevation:
Completed at 1000 on 3-15-96	Depth to Groundwater: Measured:
Drilling Method: S.S. Hand Auger	Groundwater Elevation: feet msl
Drilling Company:	Total Depth: 10.5 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
								Dark brown to gray fine to medium grained sand.	
								Tan sand.	
								Orange-red fine to medium grained sand.	
5							SP		
								Clean white-cream fine to medium grained sand.	
10								Wet at 10.5 ft bls. BOH.	
								Notes: USCS (visual only) Samples Collected: 015S004401 015S004410	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S45

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1045 on 3-19-98*	Surface Elevation:
Completed at *1245 on 3-19-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level sandy soil with minor scrub vegetation. Medium to dark brown silty sand to 8" bls.	p 4 . 4
								Tan fine to medium grained quartz sand.	
5							SP		
10									5
15									
20									

Notes:
USCS (visual only)

Samples Collected:
015S004501
015S004510

EnSafe/Allen & Hoshall

Boring 15S46

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Lunceford
stated at 1045 on 3-19-96	Surface Elevation:
Completed at 1245 on 3-23-06	Depth to Groundwater: Measured:
Drilling Method: S.S. Hand Auger	Groundwater Elevation: feet msl
Drilling Company:	Total Depth: 10 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft msl)
							SM	Surface Conditions: Level sandy soil with minor scrub vegetation. Medium to dark brown silty sand to 8" bls.	14.4
								Tan fine to medium grained quartz sand.	
5							SP		
								Wet at 9 ft bls.	
10									
								Notes: USCS (visual only)	
								Samples Collected: 015S004001 015S004809	
15									
20									

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Boring 15S47

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1045 on 3-20-98*	Surface Elevation:
Completed at *on 3-20-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Condition: Level grassy land surface. Dark brown silty sandy top soil to 10" bls.	13.8
							SP	Tan line to medium grained quartz sand.	
5									
								Light tan to bufi white fine to medium grained quartz sand. Wet at 10 ft bls. BOH.	
10									4.4
								Notes: USCS (visual only)	
								Samples Collected: 015S004701 0158004710	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S48

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Lunceford
Started at 1045 on 3-20-98	Surface Elevation:
Completed at on 3-20-98	Depth to Groundwater: Measured:
Drilling Method: S.S. Hand Auger	Groundwater Elevation: feet
Drilling Company: NA	Total Depth: 10 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level grassy land surface. Dark brown silty sandy top soil to 10" bls.	13.8
								Tan line to medium grained quartz sand.	
5							SP		
								Light tan to buff white fine to medium grained quartz sand. Wet at 10 ft bls. BOH.	
10									4.8
15									
20									

Notes:
USCS (visual only)

Samples Collected:
015S004801
015S004810

EnSafe/Allen & Hoshall	Boring 15S49
Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
Started at *1010 on 3-15-98*	Surface Elevation:
Completed at *on 3-15-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
								Surface Conditions: Covered by leaves and twigs. Dark brown fine to medium grained sand from 0 to 1 ft bls.
								Orange-red fine to medium grained sand to 8 ft bls.
5							SP	
								Light tan fine grained clean sand.
								Wet at 10 ft bls. BOH.
10								
								Notes: USCS (visual only)
								Samples Collected: 015S004901 015S004910
15								
20								

EnSafe/Allen & Hoshall

Boring 15S50

Proiect Site 6	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Lunceford
Started at 1045 on 3-20-96	Surface Elevation:
Completed at on 3-20-96	Depth to Groundwater: Measured:
Drilling Method: SS Hand Auger	Groundwater Elevation: feet msl
Drilling Company: NA	Total Depth: 10.5 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level grassy land surface. Oark brown silty sandy top soli to 1 ft bls.	
							SP	Tan fine to medium grained quartz sand.	
5									
								Light tan to buff white fine to medium grained quartz sand.	
10								Wet at 10.5 it bls. BOH.	
								Notes: USCS (visual only) Samples Collected: 015S005001 015S005010	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S51

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Lunceford
Started at 1400 on 3-20-98	Surface Elevation:
Completed at on 3-20-98	Depth to Groundwater: Measured:
Drilling Method: S.S. Hand Auger	Groundwater Elevation: feet msl
Drilling Company: NA	Total Depth: 9.5 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level sandy land surface with no vegetation. Dark brown silty sand to .5 ft bls.	
								\Reddish-orange line to medium grained silty quartz sand.	14.7
								Tan quartz sand.	
5							SP		
								Orange tan line to medium grained quartz sand. Wet at 9.5 ft bis. BOH.	8.2
10									
15									
20									

Notes:
USCS (visual only)

Samples Collected:
015S005101
015S005110

EnSafe/Allen & Hoshall

Boring 15S52

Project No.: 0071-00030	Geologist: J. Lunceford
Stated at 1400 on 3-20-96	Surface Elevation:
Completed at on 3-20-96	Depth to Groundwater: Measured
Drilling Method: S.S. Hand Auger	Groundwater Elevation: feet msl
Drilling Company: NA	Total Depth: 10 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level sandy land surface with no vegetation. Dark brown silty quartz sand to .8 ft bls.	
							SP	Tan line to medium grained quartz sand.	
5									
10								Wet at 10 ft bls. BOH.	
								Notes: USCS (visual only)	
								Samples Collected: 0158005201 015S005210	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S53

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
stated *at 1345 on 3-13-98*	Surface Elevation:
mpleted at *1355 on 3-13-98*	Depth to Groundwater: Measured:
ling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *1 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SP	Surface Conditions: Thick grass. Brown fine to medium grained sand with small amount of red-orange fill. Orange fine to medium grained sand.	
									19.2
								Notes: USCS (visual only) Samples Collected: 015S005301	
5									
10									

EnSafe/Allen & Hoshall

Boring 15S54

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Pace
Started at 1415 on 3-12-98	Surface Elevation:
Completed at 1430 on 3-12-98	Depth to Groundwater: Measured:
Drilling Method: S.S. Hand Auger	Groundwater Elevation: feet msl
Drilling Company: NA	Total Depth: 1 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Thick grass. Dark brown fine to medium grained silty sand.	
									18.9
								Notes: USCS (visual only) Samples Collected: 015S005401	
5									
10									

EnSafe/Allen & Hoshall

Boring 15S55

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
stated at *1440* on ~~3-a-96~~	Surface Elevation:
Completed at *1500* on *3-13-96*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *1 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SP	Surface Conditions: Thick unmowed grass. Brown fine to medium grained sand. Red-orange fine to medium grained sand with a trace of brown sand.	
									18.5
								Notes: USCS (visual only) Samples Collected: 0158005501	
5									
10									

EnSafe/Allen & Hoshall

Boring 15S56

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1030 on 3-21-98*	Surface Elevation:
Completed at *on 3-21-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Gray level sandy land surface no vegetation. Orangish brown silty sandy top soil from 0 to 0.5 ft bls.	
							SP	Tan fine to medium grained quartz sand to 8 ft bls.	
5									
								Light tan to buff white quartz sand. Wet at 10 ft bls. BOH.	
10									4.5
								Notes: USCS (visual only) Samples Collected: 015S005801 015S005810 015S005809 Physical Parameters Only	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S57

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1030 on 3-21-98*	Surface Elevation:
Completed at *on 3-21-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Gray level sandy land surface no vegetation. Dark brown orange clayey silty sand top soil from 0 to 1 ft bls.	
								Orange tan fine to medium grained quartz sand to 5 ft bls.	14.7
5							SP	Light tan fine to medium grained quartz sand.	
								Orange to light tan fine to medium grained quartz sand. Moist at 10 ft bls. BOH.	
10									4.7
15									
20									

Notes:
USCS (visual only)

Samples Collected:
015S005701
0158005710

EnSafe/Allen & Hoshall

Boring 15S58

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1400 on 3-20-98*	Surface Elevation:
Completed at *on 3-20-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level sandy land surface with no vegetation. Brownish red silty quartz sand to .5 ft bls.	
								Light gray fine to medium grained quartz sand.	
								Tan fine to medium grained quartz sand.	
5							SP		
								Light tan to buff white sand. Wet at 10 ft bls. BOH.	
10									4.7
								Notes: USCS (visual only)	
								Samples Collected: 015S005801 0158005810	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S59

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
stated at *1050 on 3-15-98*	Surface Elevation:
Completed at *on 3-5-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: NA	Total Depth: *10.25 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	EV. (ft-msl)
							SM	Surface Conditions: Sand underlain with 1 to 1.5" shell base in small amount of red clay.	
								Dark brown silty sand to 1 ft bls.	-14.1
								Red-orange fine grained sand.	
5							SP		
								Light tan clean line grained sand. Wet at 10 to 10.25 ft bls. BOH.	
10									-4.8
								Notes: USCS (visual only)	
								Samples Collected: 015S005901 015S005910	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S60

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Pace*
Stated at *1410 m 3-15-96*	Surface Elevation:
Completed at *1430 m 3-15-96*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: feet *msl*
Drilling Company: *NA*	Total Depth: *9.5 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SC	Surface Conditions: Hard packed sand. Brown fine to medium grained sand with red clay and shell chips to 0.5 ft bls.	
								Dark brown sand to 2 ft bls. Light tannish gold sand.	
5							SP		
								Sand becomes very clean light tan in color.	
								Brown-bronze medium grained sand with slight odor. Wet at 9.5 ft bls. BOH.	
									5.4
10								Notes: USCS (visual only)	
								Samples Collected: 015S008001 015S008009	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S61

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1430 on 3-21-96*	Surface Elevation:
Completed at *on 3-21-96*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Swiace Conditions: Sandy level land surface with no vegetation. Dark brown silty sandy top soil with tree roots to 1 it bls.	
									15.5
							SP	Orangish tan line to medium grained sand to 9 ft bls. Tree roots present to 2 it bls.	
5									
								Light tan to buff white fine to medium grained quartz sand. Wet at 10 ft bls. BOH.	
10									6.5
								Nates: USCS (visual only)	
								Samples Collected: 015S006101 015C006101 Duplicate 015S006110	
15									
20									

EnSafe/Allen & Hoshall

Boring 15S62

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1430 on 3-21-98*	Surface Elevation:
Completed at *on 3-21-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *10 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Sandy level land surface with no vegetation. Dark brown silty sandy top soil to 1 ft bls.	
							SP	Orangish tan fine to medium grained sand to 9 ft bls.	14.9
5									
								Light tan to buff white fine to medium grained quartz sand. Wet at 10 ft bls. BOH.	
10									5.9
15									
20									

Notes:
USCS (visual only)

Samples Collected:
015S008201
015S008210

EnSafe/Allen & Hoshall

Boring 15S63

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Geologist: J. Lunceford
Stated at 1430 on 3-21-98	Surface Elevation:
Completed at 1730 3-21-98	Depth to Groundwater Measured:
Drilling Method: SS Hand Auger	Groundwater Elevation: feet msl
Drilling Company: NA	Total Depth: 10 feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Sandy level land surface with no vegetation. Dark brown silty sandy top soil to 1 ft bls.	
5							SP	Orangish tan line to medium grained sand to 0 1 t bls.	
10								Light tan to buff white fine to medium grained quartz sand. Wet at 10 ft bls. BOH.	
15								Notes: USCS (visual only)	
20								Samples Collected: 0153008301 0158008310	

EnSafe/Allen & Hoshall

Boring 15S64

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Geologist: *J. Lunceford*
Started at *1045 on 3-19-98*	Surface Elevation:
Completed at *1245 on 3-19-98*	Depth to Groundwater: Measured:
Drilling Method: *S.S. Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company:	Total Depth: *9 feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level sandy soil with minor scrub vegetation. Medium to dark brown silty sand to 10" bls.	13.8
5							SP	Tan fine to medium grained quartz sand. Wet at 9 ft bls. BOH.	
									5.8
10								Notes: USCS (visual only)	
15								Samples Collected: 015S006401; 015C006401 Duplicate; 015S006408 Physical Parameters Only; 015S006409	
20									

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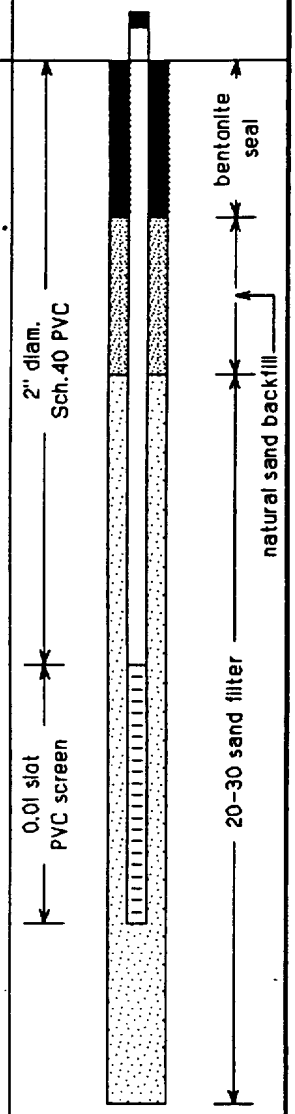
Monitoring Well 15GR32

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *15.26 feet msl*
Started at *09:15 on 3-13-98*	TOC Elevation: *17.87 feet msl*
Completed at *10:05 on 3-13-98*	Depth to Groundwater: *14.85 BTOC feet* Measured: *05-07-96*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *3.02 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *20 feet*
Geologist: *J. Lunceford*	Well Screen: *11.5 to 16.5BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM	Surface Conditions: Denuded area with sandy land surface and minor scrub vegetation.	
								Light gray slightly silty fine to medium grained sand to 15 ft bls.	13.8
5								Same tan to light tan fine to medium grained quartz sand to approximately 15 ft bls, moist/wet around 12 ft bls.	
					0				
10							SP		
15								Light gray fine to medium grained quartz sand to 20 ft bls, BOH.	
20					0				4.7
25									

Notes:
USCS (visual only)
No samples collected during well installation; samples collected earlier/later with stainless-steel hand auger.
Lithology described from soil cuttings return/disturbed sample.

WELL DIAGRAM



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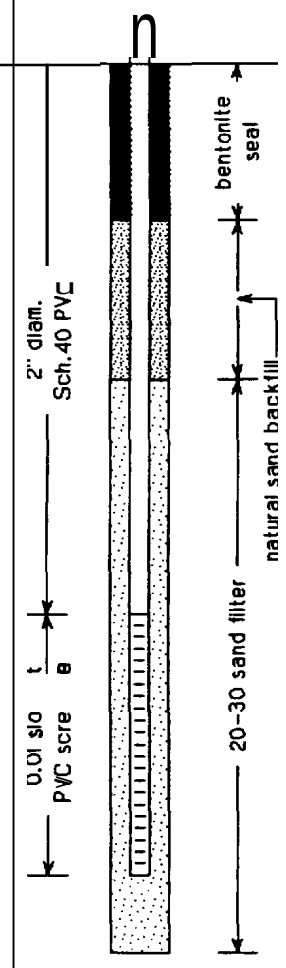
Monitoring Well 15GR33

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.62 feet msl*
Started at *1310 on 3-12-96*	TOC Elevation: *17.30 feet msl*
Completed at *1400 on 3-12-96*	Depth to Groundwater: *14.22 BTOC feet* Measured: *05-07-96*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *3.08 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *17 feet*
Geologist: *J. Lunceford*	Well Screen: *10.5 to 15.5 BLS* fee

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					.3		SM	Surface Conditions: Generally level disturbed land surface (area of previous/recent brush disposal). Medium gray silty sandy soil from 0 to 1 ft bls.	3.8
								Tan fine to medium grained quartz sand.	
5					.3			Same light tan to light gray fine to medium grained quartz sand to 17 ft bls. No odor.	
10							SP		
15									
					.3				-2.4
20								Notes: USCS (visual only) No samples collected during well installation. Lithology described from soil cuttings return/disturbed sample.	
25									

WELL DIAGRAM



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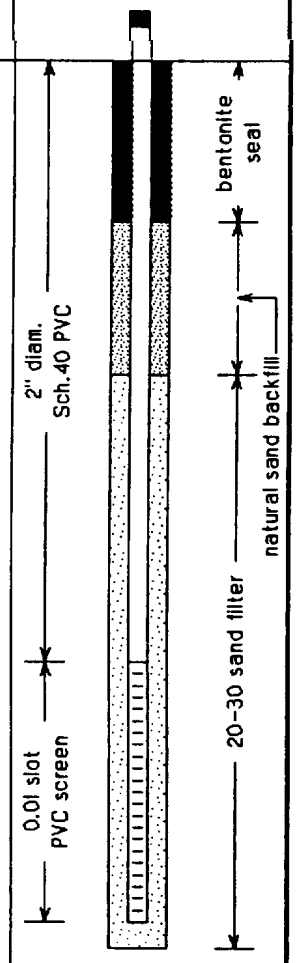
Monitoring Well 15GR34

Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 15.60 feet msl
Started at 1420 on 3-12-96	TOC Elevation: 18.13 feet msl
Completed at 1500 on 3-12-96	Depth to Groundwater: 14.80 BTOC feet Measured: 05-07-96
Drilling Method: 4 1/4" Hollow Stem Auger	Groundwater Elevation: 3.33 feet msl
Drilling Company: G. Z. A. Drilling	Total Depth: 17 feet
Geologist: J. Lunceford	Well Screen: 11.5 to 16.5 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0			Surface Conditions: Sandy level land surface. Buff white quartz sand. Medium gray quartz sand from 0.8 to 25 ft bls. Tan fine to medium grained quartz sand to 5 ft bls.	
5					0			Same tan fine to medium grained quartz sand from 5 to 10 ft bls.	
							SP		
10					.5			Tan to tannish orange fine to medium grained quartz sand. No odors.	
15									
									-14
20								Notes: USCS (visual only) No samples collected during well Installation. Lithology described from soil cuttings return/disturbed sample.	
25									

WELL DIAGRAM



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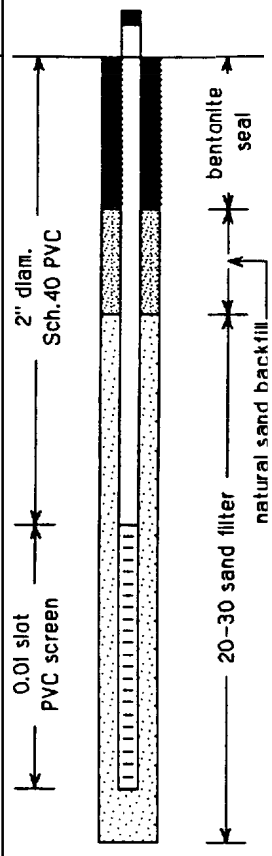
Monitoring Well 15GR35

Project: Site 25	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 14.56 feet msl
stated at 1125 on 3-13-96	TOC Elevation: 15.78 feet msl
Completed at on 3-13-96	Depth to Groundwater: 11.25 BTOC feet Measured: 05-07-96
Drilling Method: 4 1/4" Hollow Stem Auger	Groundwater Elevation: 4.53 feet msl
Drilling Company: G. Z. A. Drilling	Total Depth: 15 feet
Geologist: J. Lunceford	Well Screen: 9 to 14 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft msl)
					0		SM	Surface Conditions: Level sandy land surface. Brown silty fine to medium grained quartz sand.	13.8
								Tan fine to medium grained quartz sand.	
5								Tan fine to medium grained quartz sand to 10 ft bls.	
							SP		
10					0			Becoming light tan from 10 to 15 ft bls.	
15									-.4
20								Notes: USCS (visual only) No samples collected during well installation. Lithology described from soil cuttings return/disturbed sample.	
25									

WELL DIAGRAM



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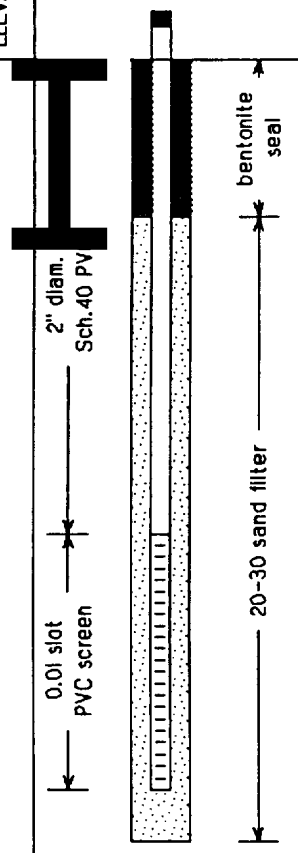
Monitoring Well 15GR36

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.31 feet msl*
Started at *1300 on 3-13-96*	TOC Elevation: *15.52 feet msl*
Completed at *1345 on 3-13-96*	Depth to Groundwater: *10.93 BTOC feet* Measured: *05-07-96*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *4.59 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *9 to 14 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM	Surface Conditions: Level grass surface. Brown silty quartz sand.	
								Tan fine to medium grained quartz sand to 4 ft bls.	
					0			Same tan fine to medium grained quartz sand from 4 to 10 ft bls.	
5									
							SP		
10								Light tan fine to medium grained quartz sand.	
15									
								Notes: USCS (visual only) No samples collected during well installation. Lithology described from soil cuttings return/disturbed sample.	
20									
25									

WELL DIAGRAM



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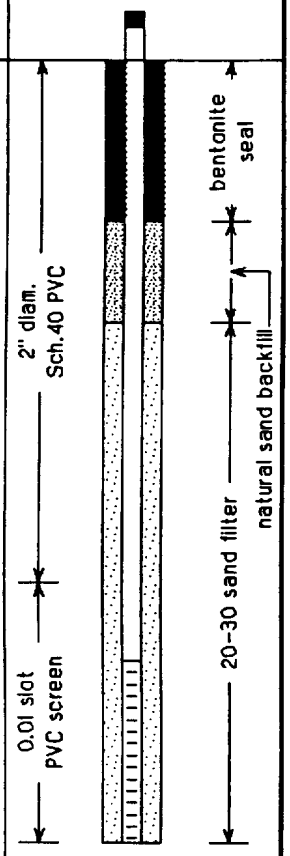
Monitoring Well 15GR37

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *18.00 feet msl*
Started at *1330 on 3-12-96*	TOC Elevation: *18.52 feet msl*
Completed at *1415 on 3-12-96*	Depth to Groundwater: *14.42 BTOC feet* Measured: *05-07-96*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *4.10 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *15 feet*
: *J. Lunceford*	Well Screen: *10 to 15 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					.2			Tan to brown line to medium Qrained quartz sand.	
5					.3		SP	Tan flne to medium grained quartz sand from 8 to 10 ft bls.	
10					.8			Same tan fine to medium gralned quartz sand becoming light gray at 12 ft bls. No odors.	
15									
20								Notes: USCS (visual only) No samples collected during well Installation. Lithology described from soil cuttings return/disturbed sample.	
25									

WELL DIAGRAM



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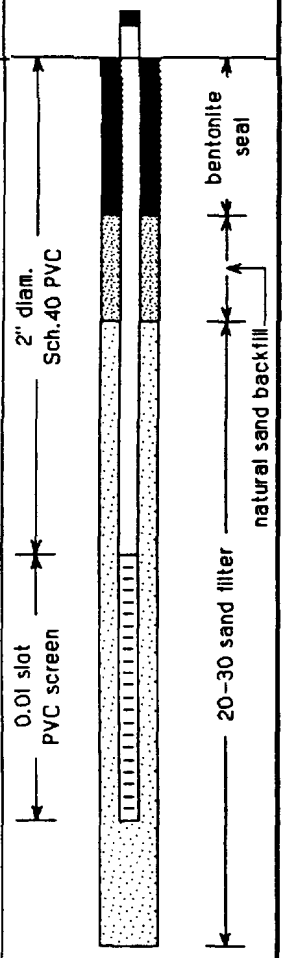
Monitoring Well 15GR38

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *15.48 feet msl*
Started at *1030 on 3-13-96*	TOC Elevation: *17.63 feet msl*
Completed at *1115 on 3-13-96*	Depth to Groundwater: *12.36 BTOC feet* Measured: *05-07-96*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *5.27 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *17 feet*
Geologist: *J. Lunceford*	Well Screen: *9.5 to 14.5 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (-msl)
							SM	Surface Conditions: Gray silty sandy soil with a level land surface. Gray silty fine to medium grained sand.	4.7
								Tan fine to medium grained quartz sand.	
					.5			Tan to light tan line to medium grained quartz sand to 17 ft bls.	
5									
							SP		
10									
15									1.5
20								Notes: USCS (visual only) No samples collected during well installation. Lithology described from soil cuttings return/disturbed sample.	
25									

WELL DIAGRAM



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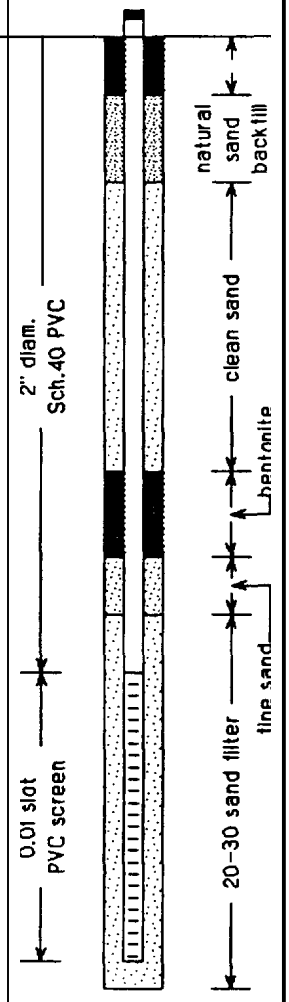
Monitoring Well 15GR39

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.48 feet msl*
Started at *1030 on 3-14-98*	TOC Elevation: *6.74 feet msl*
Completed at *on 3-14-98*	Depth to Groundwater: *12.58 BTOC feet* Measured: *U5-07-96*
Drilling Method: *4 1/4" Hollow Stem Auger*	Groundwater Elevation: *3.18 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *33 feet*
Geologist: *J. Lunceford*	Well Screen: *22 to 32 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft msl)
					0		SM	Surface Conditions: Generally level land surface (area of previous brush storage). Medium to dark gray silty quartz sand fill.	3
					0			Tan line to medium grained quartz sand.	
5								Same tan fine to medium grained quartz sand to 10 ft bls.	
10			ST-1	90	0				
15							SP		
20									
25			SS-1	0					
			SS-2	0					
30			SS-3	<10	0				
									-18.5
35							CL	Notes: USCS (visual only) ST = Shelby Tube Sample SS = Split-spoon Sample Split-spoon samples collected during well installation for lithologic description. Shelby tube samples collected for physical parameter analysis.	
									-24.5
40			SS-4	10			SC		-28.5
			ST-2	90	0			Samples Collected: 015S003912 (Shelby tube) 015S003943 (Shelby tube)	
45									

WELL DIAGRAM



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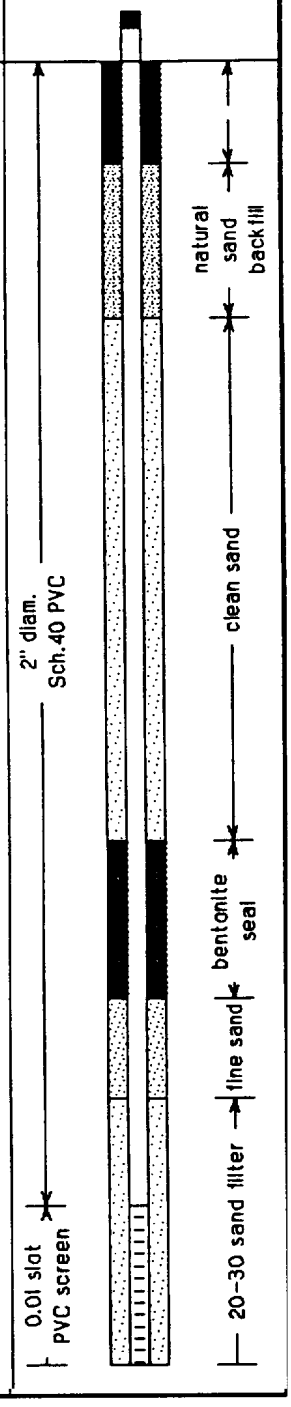
Monitoring Well 15GR39

Project: Site 6	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 14.48 feet msl
stated at 1030 on 3-14-96	TOC Elevation: 15.74 feet msl
Completed at on 3-14-96	Depth to Groundwater: 12.58 BTOC feet Measured: 05-07-96
Drilling Method: 4 1/4" Hollow Stem Auger	Groundwater Elevation: 3.8 feet msl
Drilling Company: G. Z. A. Drilling	Total Depth: 33 feet
Geologist: J. Lunceford	Well Screen: 22 to 32 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM	Surface Conditions: Generally level land surface (area 01 previous brush storage). Medium to dark gray silty quartz sand	13
								Tan fine to medium grained quartz sand.	
					0			Same tan fine to medium grained quartz sand to 10 ft bls.	
5									
10			ST-1	80	0				
							SP		
15									
20									
25			SS-1	0					

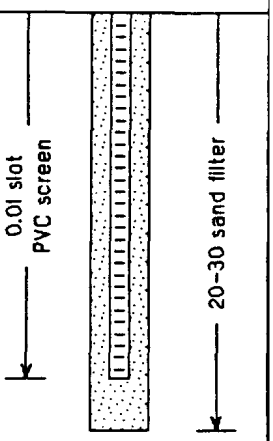
WELL DIAGRAM



EnSafe/Allen & Hoshall	Monitoring Well 15GR39
Project: Site 15	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 14.48 feet msl
Started at 1030 on 3-14-96	TOC Elevation: 15.74 feet msl
Completed at on 3-14-96	Depth to Groundwater: 12.56 BTOC feet Measured: 05-07-96
Drilling Method: 4 1/4" Hollow Stem Auger	Groundwater Elevation: 3.18 feet msl
Drilling Company: G. Z. A. Drilling	Total Depth: 33 feet
Geologist: J. Lunceford	

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
			SS-2	0			SP		
30			SS-3	<10	0				
									-18.5
35							CL	Notes: USCS (visual only) ST = Shelby Tube Sample SS = Split-spoon Sample Split-spoon samples collected during wen installation for lithologic description. Shelby tube samples collected for physical parameter analysis. Samples Collected: 015S003812 (Shelby tube) 0158003843 (Shelby tube)	
									-245
40			SS-4	10			SC		
									-285
			ST-2	90	0				
45									
50									

WELL DIAGRAM



EnSafe/Allen & Hoshall

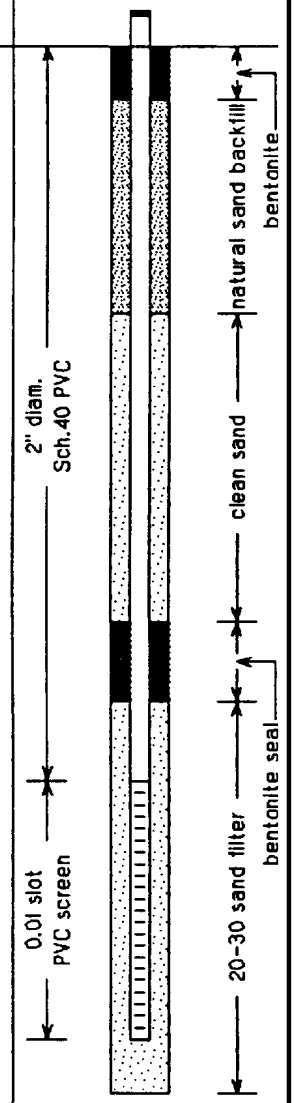
Monitoring Well 15GR40

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.71 feet msl*
Started at *1130 on 3-18-96*	TOC Elevation: *17.09 feet msl*
Completed at *on 3-18-96*	Depth to Groundwater. *12.69 BTOC feet* Measured: 07-96
Drilling Method: *Mud Rotary*	Groundwater Elevation: *4.40 feet msl*
Drilling Company: Gi l *Drilling*	Total Depth: *40 feet*
: *J. Lunceford*	Well Screen: *28 to 38 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SALE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0			Surface Condltions: Level scrub grass covered sandy land surface several feet north, downgradient of concrete wash pad. Fine to medium grained quartz sand.	
5									
10									
15									
20			SS-1				SP	Light tan line to medium grained quartz sand to 18.5 ft bls then sharply becoming dark gray organic stained fine to medium gralned quartz sand to 18.7 ft bls then brown sand to 20 ft bls. No odor.	
25									
30			SS-2		0			Dark gray to dark brown tanic organic stained fine to medium grained quartz sand. No odor with coarse grained sand and shell and rock fragment Interval at 28.5 ft bls (3 Inches thick).	
35			SS-3					Brown to tan line to coarse grained quartz sand with moderate amounts 01 shell/rock fragments. No odor.	
								Same tan sand as above to **38.5 ft** bls.	
40			SS-4				SC	Becoming gray clayey fine to medium grained sand to 40 ft bls.	-24.8 -25.3
45									
50									

Notes:
USCS (visual only)
Samples collected during well installation for lithologic description only.

WELL DIAGRAM



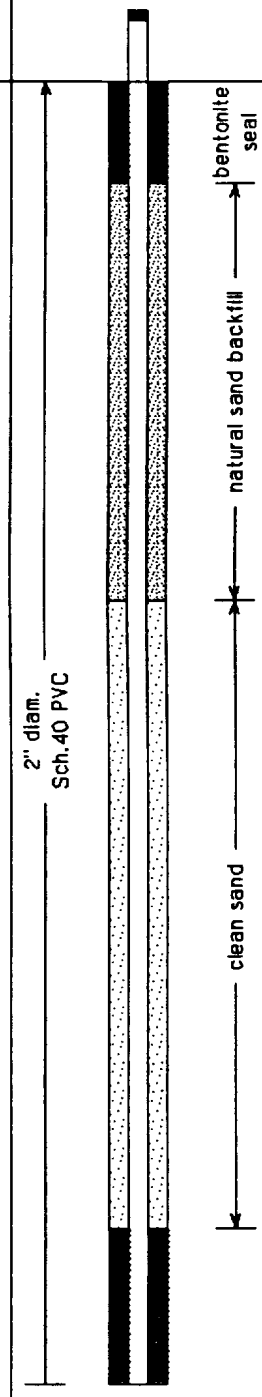
EnSafe/Allen & Hoshall

Monitoring Well 15GR40

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *K71 feet msl*
Stated at *1130 on 3-18-96*	TOC Elevation: *17.09* feet *msl*
Completed at *on* 3-19-98	Depth to Groundwater: *12.69 BTOC feet* Measured: *05-07-96*
Drilling Method: *Mud Rotary*	Groundwater Elevation: *4.40 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *40 feet*
Geologist: *J. Lunceford*	Well Screen: *28 to 38 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0			**Surface Conditions:** Level scrub grass covered sandy land surface several feet north, downgradient of concrete wash pad. Fine to medium grained quartz sand.	
5									
10							SP		
15									
			SS-1					Light tan fine to medium grained quartz sand to 18.5 ft bls then sharply becoming dark gray organic stained fine to medium grained quartz sand to 19.7 ft bls then brown sand to 20 ft bls. No odor.	
20									
25									

WEU DIAGRAM



EnSafe/Allen & Hoshall

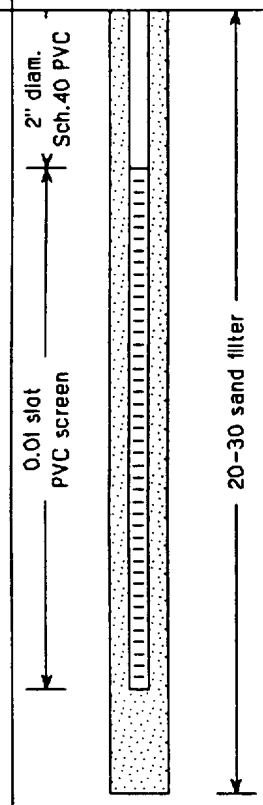
Monitoring Well 15GR40

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *14.71 feet msl*
Started at *1130 on 3-18-96*	TOC Elevation: *17.09 feet msl*
Completed at *on 3-18-96*	Depth to Groundwater: *12.69 BTOC feet* Measured: *05-07-96*
Drilling Method: *Mud Rotary*	Groundwater Elevation: *4.40 feet msl*
Drilling Company: *G. Z. A. Drilling*	Total Depth: *40 feet*
Geologist: *J. Lunceford*	Well Screen: *28 to 38 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
30			Ss-2		0		SP	Oark gray to dark brown tanic organic stained fine to medium grained quartz sand. No odor with coarse grained sand and shell and rock lragment interval at 28.5 ft bis (3 inches thick).	
35			Ss-3					Brown to tan line to coarse grained quartz sand with moderate amounts of shell/rock fragments. No odor.	
								Same tan sand as above to 38.5 ft bls.	
40			Ss-4				SC	Becoming gray clayey fine to medium grained sand to 40 ft bls.	-248 -253
45									
50									

Notes:
USCS (visual only)
Samples collected during well installation for lithologic description only.

WELL DIAGRAM



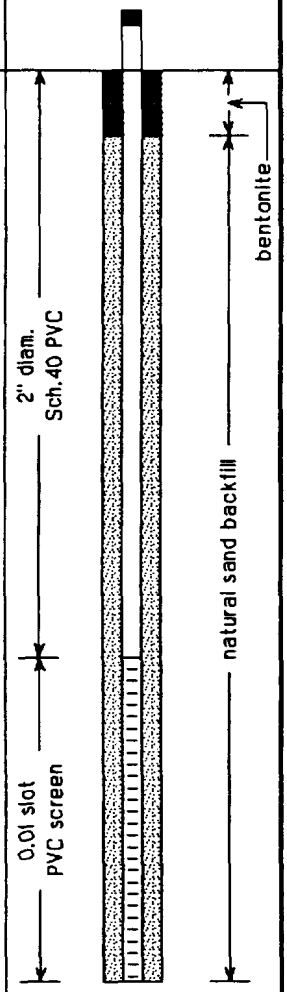
EnSafe/Allen & Hoshall

Monitoring Well 15GR65

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *feet msl*
stated *at 1530 on 5-6-98*	TOC Elevation: *feet msl*
Completed at *1700 on 5-15-98*	Depth to Groundwater. *13.7 BTOC feet* Measured: *5/15/96*
Drilling Method: *SS Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *14 feet*
Geologist: *J. Lunceford*	Well Screen: *9 to 14 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SP	Light tan iine to medium grained quartz sand to I ft bls. Tan to yellow quartz sand from I to 10 ft bis. Brown to gray fine to medium grained quartz sand. Color change near water table.	
5									
10									
15								Notes: USCS (visual only) No sampler collected during well installation. Lithology described from soil cuttings return/disturbed sample.	
20									

WELL DIAGRAM



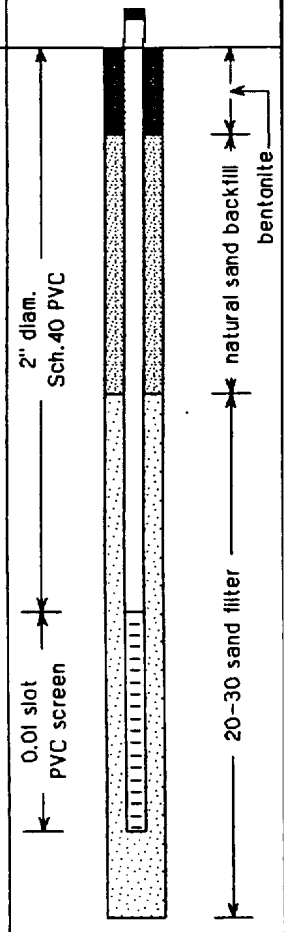
EnSafe/Allen & Hoshall

Monitoring Well 15GR65B

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *feet msl*
Started at *1130 on 7-10-96*	TOC Elevation: *17.60 feet msl*
Completed at *1220 on 7-10-96*	Depth to Groundwater: *15.75 BTOC feet* Measured: *7-26-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *1.85 feet msl*
Drilling Company: *G & E*	Total Depth: *20 feet*
Geologist: *J. Lunceford*	Well Screen: *13 to 18 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SP	**Surface Conditions: Level land surface.** **Tan fine to medium grained quartz sand.**	
5									
10									
15									
20								Notes: USCS **(visual only)** **This hollow stem augered temporary well replaces hand augered temporary well 15GR65. Lithology described from soil cuttings return/disturbed sample.**	
25									
30									

WELL DIAGRAM



EnSafe/Allen & Hoshall

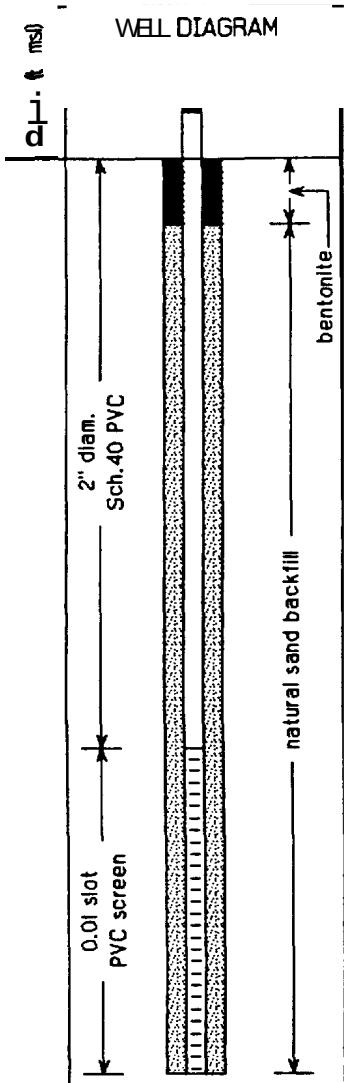
Monitoring Well 15GR66

Project: *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *feet msl*
Started at *1040 on 5-18-96*	TOC Elevation: *feet msl*
Completed at *1200 on 5-18-96*	Depth to Groundwater: *13.8 BTOC feet* Measured: *5/18/96*
Drilling Method: *SS Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *14 feet*
Geologist: *J. Lunceford*	Well Screen: *9 to 14 BLS feet*

Depth in Feet	Lithologic Sample	Analytical Sample	Sample No.	% Recovery	PID (ppm)	Graphic Log	Soil Class	Geologic Description
							SM	Gray brown silty line to medium grained quartz sand to 25 ft bls.
							SP	Tan to yellow fine to medium grained quartz sand from 25 to 7.5 ft bls.
5								
								Tan to light tan fine to medium grained quartz sand. Moist at 10 ft bls.
10								
15								
20								

Notes:
USCS (visual only)
No samples collected during well installation; samples collected earlier/later with stainless-steel hand auger.
Lithology described from soil cuttings return/disturbed sample.

WELL DIAGRAM



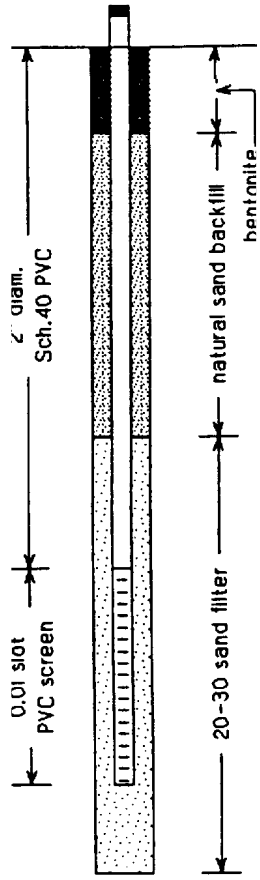
EnSafe/Allen & Hoshall

Monitoring Well 15GR66B

Project: Site 15	Location: NAS Pensacola
Project No: 0071-00030	Sufaw Elevation: feet msl
Started at 1500 on 7-10-96	TOC Elevation: 17.98 feet msl
Completed at 1600 on 7-10-96	Depth to Groundwater: 14.59 BTOC feet Measured: 7-26-96
Drilling Method: Hollow Stem Auger	Groundwater Elevation: 339 feet msl
Drilling Company: G &E	Total Depth: 19 feet
Geologist: J. Lunceford	Well screen: 12 to 17 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Gently routhward sloping land surface wlth grass cover. Gray brown silty line to medium grained quartz sand.	
5								Tan to brown line to medium grained quartz sand.	
10							SP		
15									
20								Notes: USCS (visual only) This hollow stern augered temporary Well replaces hand augered temporary well 15GR66. Lithology described from soil cuttings return/disturbed sample.	
25									
30									

WELL DIAGRAM



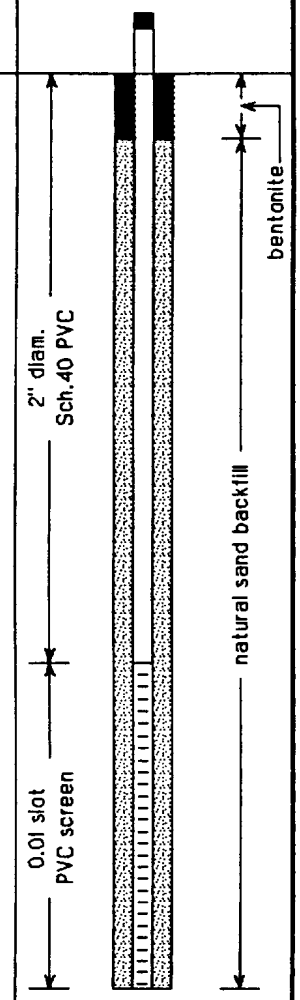
EnSafe/Allen & Hoshall

Monitoring Well 15GR67

Project *Site 15*	Location: *NAS Pensacola*
Project No.: *0071-00030*	Surface Elevation: *feet msl*
Started at *1530 on 5-16-96*	TOC Elevation: *feet msl*
Completed at *1630 on 5-16-96*	Depth to Groundwater: *13.8 BTOC feet* Measured: *5/16/96*
Drilling Method: *SS Hand Auger*	Groundwater Elevation: *feet msl*
Drilling Company: *NA*	Total Depth: *14 feet*
Geologist: *J. Lunceford*	Well Screen: *9 to 14 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Gray brown silty fine to medium grained quartz sand to 2.5 ft bls.	
5							SP	Tan to yellow fine to medium grained quartz sand from 2.5 to 7.5 ft bls.	
10								Tan to light tan fine to medium grained quartz sand. Moist at 10 ft bls.	
15								Notes: USCS (visual only) No samples collected during well installation. Lithology described from soil cuttings return/disturbed sample.	
20									

WELL DIAGRAM



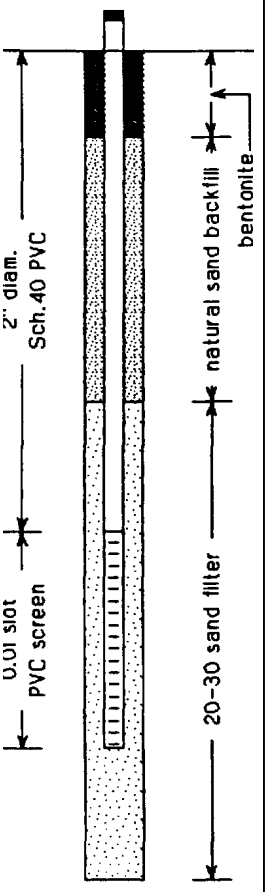
EnSafe/Allen & Hoshall

Monitoring Well 15GR67B

Project: *Site 15*	Location: *NAS Pensacola*
Project No: *0071-00030*	Surface Elevation: *feet msl*
Stated at *1330 on 7-10-98*	TOC Elevation: *17.03 feet msl*
Completed at *1420 on 7-10-98*	Depth to Groundwater: *13.72 BTOC feet* Measured: *7-26-96*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *3.31 feet msl*
Drilling Company: *G & E*	Total Depth: *19 feet*
Geologist: *J. Luncefor*	Well Screen: *11 to 16 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM	Surface Conditions: Slightly sloping land surface off golf course. Tan brown slightly silty fine to medium grained quartz sand.	
5							SP	Tan fine to medium grained quartz sand.	
10									
15									
20								Notes: USCS (visual only) This hollow stem augered temporary well replaces hand augered temporary well 15GR67. Lithology described from soil cuttings return/disturbed sample.	
25									
30									

WELL DIAGRAM



EnSafe/Allen & Hoshall

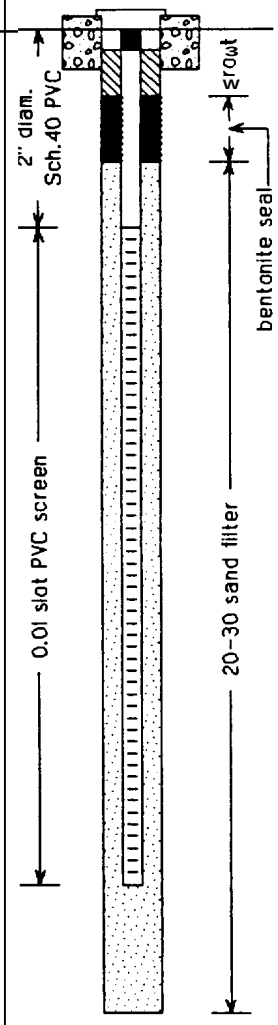
Monitoring Well 15GS68

Project: *Site 15*	Location: *NAS Pensacola*
Project No: *0071-00030*	Surface Elevation: *5.90* feet *msl*
Started at *0740 on 9-04-98*	TOC Elevation: *5.55 feet msl*
Completed at *0830 on 9-04-98*	Depth to Groundwater: *5.37 BTOC feet* Measured: *02-07-97*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *0.18 feef msl*
Drilling Company: *G&E Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *3.0 to 13.0 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
							SM	Surface Conditions: Level. grass covered land surface at edge of golf course fairway.	5.2
					0			Brown to reddish brown, silty clayey sand fill 0 to .7 foot bls.	
								Light tan quartz sand, find to medium grained. .7 through 4 feet bls.	
5								Same tan sand but saturated and grading into bufl white fine to med. grained quart sand to 8 ft. bls.. continues to end of boring at 15 feet bls.	
							SP		
10									
								BOH 15 ft. bls.	
15					0				-9.1
20									

NOTES:
No samples collected. USCS (VISUAL ONLY)
Lithology described from soil cuttings return/disturbed sample.

WELL DIAGRAM



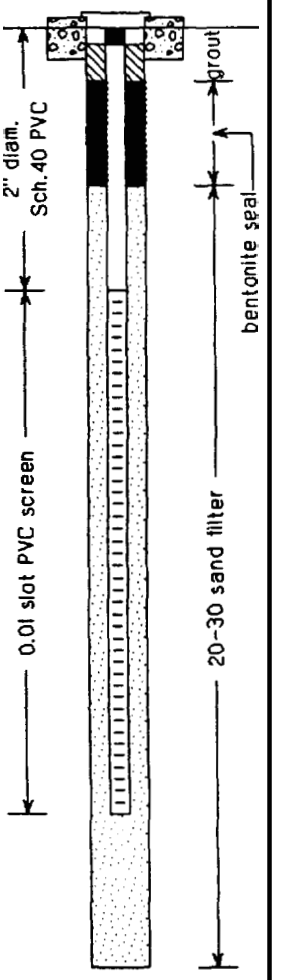
EnSafe/Allen & Hoshall

Monitoring Well 15GS70

Project: site 65	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 9.3 feet msl
Stated at 1415 on 9-03-96	TOC Elevation: 8.93 feet msl
Completed at 1515 on 9-03-96	Depth to Groundwater: 8.61 BTOC feet Measured: 02-07-97
Drilling Method: Hollow Stem Auger	Groundwater Elevation: 0.32 feet msl
Drilling Company: G&E Drilling	Total Depth: 18 feet
Geologist: J. Lunceford	Well Screen: 5.0 to 15.0 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0			Surface Conditions: Slightly eastward sloping sandy land surface with sparse scrub vegetation.	
								Tan, fine to medium grained quart sand 0 to 18 feet bls.	
5									
								Same tan quart sand becoming saturated at 8 to 10 feet bls.	
							SP		
10					0				
15									
								BOH 18 ft. bls.	
					0				-8.7
20								NOTES: No samples collected. USCS (VISUAL ONLY) Lithology described from soil cuttings return/disturbed sample.	
25									

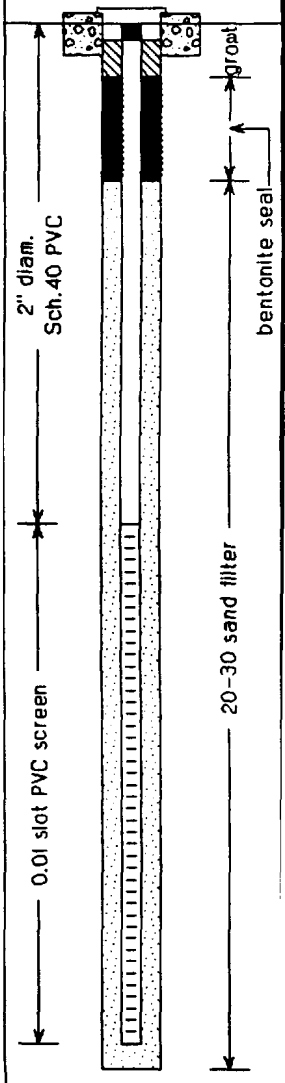
WEU DIAGRAM



EnSafe/Allen & Hoshall	Monitoring Well 15GS69
Project Site 6	Location: NAS Pensacola
Project No.: 0071-00030	Surface Elevation: 15.0 feet msl
Started at 0905 on 9-04-96	TOC Elevation: 14.72 feet msl
Completed at 1000 on 9-04-96	Depth to Groundwater. 14.43 BTOC feet Measured: 02-07-97
Drilling [illegible]	[illegible]
Drilling Company: GSE Drilling	Total Depth: 20 feet
Geologist: J. Lunceford	Well Screen: 9.5 to 19.5 BLS feet

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV.
					0			Surface Conditions: Level, grass covered land suriace at edge of golf course lalrway.	
								Brown, flne to medium grained quart sand 0 to 8 feet bls.	
5									
								Tan to light tan sand, find to medium grained, 8 through 20 feet bls.	
10					0		SP	Same tan sand becoming saturated at 10 to 12 feet bls.	
15									
								BOH 20 ft bls.	
20					0				5
								NOTES: No samples collected. USCS (VISUAL ONLY) Lithology described from soil cuttings return/disturbed sample.	
25									

WELL DIAGRAM



EnSafe/Allen & Hoshall

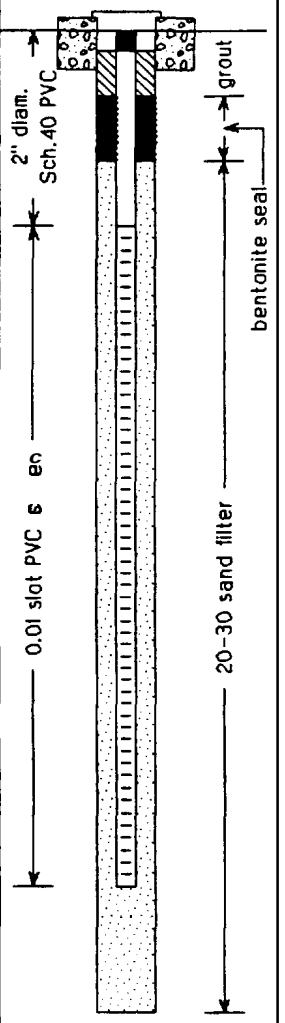
Monitoring Well 15GS71

Project: *Site 15*	Location: *NAS Pensacola*
Project No: *0071-00030*	Surface Elevation: *5.90 feet msl*
Started at *1300 on 9-03-96*	TOC Elevation: *5.58 feet msl*
Completed at *1400 on 9-03-96*	Depth to Groundwater: *5.07 BTOC feet* Measured: *02-07-97*
Drilling Method: *Hollow Stem Auger*	Groundwater Elevation: *0.49 feet msl*
Drilling Company: *G&E Drilling*	Total Depth: *15 feet*
Geologist: *J. Lunceford*	Well Screen: *3.0 to 13.0 BLS feet*

DEPTH IN FEET	LITHOLOGIC SAMPLE	ANALYTICAL SAMPLE	SAMPLE NO.	% RECOVERY	PID (ppm)	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	ELEV. (ft-msl)
					0		SM	Surface Conditions: Level, sandy land surface. approx. 20 ft, from edge of pond.	5.5
								Medium gray to brown, silty quart sand 0 to 10 foot bls. Tan to brown, find to medium grained quart sand 10 to 10 ft bls.	
5					0			Same tan sand becoming saturated at 5 ft bis.	
							SP		
10								Tan saturated quart sand to 15 ft. bls.	
								BOH 15 . bls.	
15					0				-9.1
20									

NOTES:
No samples collected. USCS (VISUAL ONLY)
Lithology described from soil cuttings return/disturbed sample.

WELL DIAGRAM



Appendix D

Preliminary Remediation Goals for Soil and Groundwater

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Inorganics (mg/kg)						
7429-90-5	Aluminum (Al) N	7,800	NA	75,000	NA	1,661
7440-36-0	Antimony (Sb) N	3.1	NA	26	NA	2.912
7440-38-2	Arsenic (As) C	0.43	15	0.7	NA	1.56
7440-39-3	Barium (Ba) N	550	32	5,200	NA	4.63
7440-41-7	Beryllium (Be) C	0.15	180	0.2	NA	0.41
7440-42-8	Boron N	700	NA	7,000	NA	MA
7440-43-9	Cadmium (Cd) N	3.9	6	37	NA	1
7440-70-2	Calcium (Ca)	NA	NA	NA	NA	912.37
7440-47-3	Chrmiun (Cr) N	7,800	NA	66,000	NA	6.13
18540-29-9	Chrmiun (Hexavalent) N	39	19	290	NA	MA
7440-48-4	Cobalt (Co) N	470	NA	4,700	NA	1.87
7440-50-8	Copper (Cu) N	310	NA	NA	NA	5.74
57-12-5	Cyanide (CN) N	160	NA	1,600	NA	0.52
7439-89-6	Iron (Fe) N	2,300	NA	NA	NA	2,745
7439-92-1	Lead (Pb) C	400	NA	500	NA	7.32
7439-95-4	Magnesium (Mg)	NA	NA	NA	NA	133.33
7439-96-5	Manganese (Mn) N	180	NA	370	NA	21.36
7439-97-6	Mercury (Hg) N	2.3	3	23	NA	0.1
7439-98-7	Molybdenum (Mo) N	39	NA	390	NA	NA
7440-02-0	Nickel (Ni) N	160	21	1,500	NA	6.38

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Per—ter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Inorganics (mg/kg)						
7440-09-7	Potassium (K) N	NA	NA	NA	NA	460.67
7782-49-2	Selenium (Se) N	39	3	390	NA	0.62
7440-22-4	Silver (Ag) N	39	NA	390	NA	2.07
7440-23-5	Sodium (Na) N	NA	NA	NA	NA	107.85
7440-24-6	Strontium N	4,700	NA	47,000	NA	WA
7440-28-0	Thallium (Tl) N	0.63	0.4	NA	NA	0.82
7440-31-5	Tin (Sn) N	4,700	NA	44,000	NA	NA
7440-62-2	Vanadium (V) N	55	NA	490	NA	5.83
7440-66-6	Zinc (Zn) N	2,300	42,000	23,000	NA	16.87

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for leaching	NASP Reference Concentratim
Pesticides (µg/kg)						
93-76-5	2,4,5-T N	78,000	NA	NA	NA	NA
93-72-1	2,4,5-TP (Silvex) N	63,000	NA	NA	NA	NA
94-75-7	2,4-D N	78,000	1,700	NA	NA	NA
94-82-6	2,4-DB N	63,000	NA	NA	NA	NA
72-54-8	4,4'-DDD C	2,700	700	4,500	200	NA
72-55-9	4,4'-DDE C	1,900	500	3,000	200	NA
50-29-3	4,4'-DDT C	1,900	1,000	3,100	500	NA
309-00-2	Aldrin C	38	5	60	50	NA
12674-11-2	Aroclor-1016	320	NA	NA	NA	NA
11104-28-2	Aroclor-1221 C	320	NA	900	44,000	NA
11141-16-5	Aroclor-1232 C	320	NA	900	44,000	NA
53469-21-9	Aroclor-1242 C	320	NA	900	44,000	NA
12672-29-6	Aroclor-1248 C	320	NA	900	44,000	NA
11097-69-1	Aroclor-1254 N	320	NA	900	44,000	NA
11096-82-5	Aroclor-1260 C	320	NA	900	44,000	NA
57-74-9	Chlordane C	490	2,000	800	2,100	NA
510-15-6	Chlorobenzilate	2,400	NA	NA	NA	NA
2303-16-4	Diallate C	10,000	NA	NA	NA	NA
60-57-1	Dieldrin C	40	1	70	20	NA
60-51-5	Dimethoate N	1,600	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Pesticides (µg/kg)						
88-85-7	Dinoseb [N]	7,800	NA	43,000	400	NA
298-04-4	Disulfoton [N]	310	NA	2,800	10	NA
959-98-8	Endosulfan I [N]	47,000	3,000	390,000	700	NA
33213-65-9	Endosulfan II [N]	47,000	3,000	390,000	700	NA
1031-07-8	Endosulfan sulfate [N]	47,000	3,000	390,000	700	NA
72-20-8	Endrin [N]	2,300	400	23,000	400	NA
7421-93-4	Endrin aldehyde [N]	2,300	400	23,000	50	NA
53494-70-5	Endrin ketone [N]	2,300	400	23,000	400	NA
52-85-7	Famphur	NA	NA	NA	NA	NA
76-44-8	Heptachlor [C]	140	60	200	60	NA
1024-57-3	Heptachlor epoxide [C]	70	30	100	30	NA
465-73-6	Isodrin [P]	NA	NA	NA	NA	NA
143-50-0	Kepone [C]	35	NA	NA	NA	NA
72-43-5	Methoxychlor [N]	39,000	62,000	380,000	62,000	NA
298-00-0	Methyl parathion [N]	2,000	41	19,000	100	NA
126-68-1	O,O,O-Triethylphosphorothioate	NA	NA	NA	NA	NA
56-38-2	Parathion [N]	47,000	3,900	450,000	3,900	NA
298-02-2	Phorate [N]	1,600	NA	*14,000*	50	NA
3689-24-5	Sulfotep [N]	*3,900*	NA	NA	NA	NA
297-97-2	Thionazin	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for leaching	NASP Reference Concentration
Pesticides (µg/kg)						
8001-35-2	Toxaphene [C]	580	*40*	900	*40*	NA
319-84-6	alpha-BHC [C]	100	0.4	200	2	NA
5103-71-9	alpha-Chlordane [C]	490	2,000	800	2,100	NA
319-85-7	beta-BHC [C]	350	2	600	5	NA
319-86-8	delta-BHC [C]	NA	MA	23,000	7	NA
58-89-9	gamma-BHC (Lindane) [C]	*490*	6	800	6	NA
5103-74-2	gam-Chlordane [C]	*490*	2,000	800	2,100	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
634-66-2	1,2,3,4-Tetrachlorobenzene N	2,300	690	NA	NA	NA
634-90-2	1,2,3,5-Tetrachlorobenzene N	2,300	690	NA	NA	NA
87-61-6	1,2,3-Trichlorobenzene N	78,000	2,000	NA	NA	NA
95-94-3	1,2,4,5-Tetrachlorobenzene N	2,300	690	NA	NA	NA
120-82-1	1,2,4-Trichlorobenzene N	78,000	2,000	590,000	2,300	NA
95-50-1	1,2-Dichlorobenzene N	700,000	6,000	820,000	5,800	NA
122-66-7	1,2-Diphenylhydrazine C	800	NA	NA	NA	NA
108-70-3	1,3,5-Trichlorobenzene N	78,000	2,000	590,000	2,300	NA
99-35-4	1,3,5-Trinitrobenzene N	390	NA	NA	NA	NA
541-73-1	1,3-Dichlorobenzene N	700,000	NA	1,700,000	*400*	NA
99-65-0	1.3-Dinitrobenzene N	780	NA	NA	NA	NA
106-46-7	1,4-Dichlorobenzene C	27,000	1,000	7,500	900	NA
130-15-4	1,4-Naphthoquinone	NA	NA	NA	NA	NA
90-13-1	1-ChloronaphthaLene N	630,000	140,000	560,000	57,000	NA
90-12-0	1-Methyl naphthalene N	NA	NA	930,000	NA	NA
134-32-7	1-Naphthylamine	NA	NA	NA	NA	NA
108-60-1	2,2'-oxybis(1-Chloropropane)	NA	NA	NA	NA	NA
58-90-2	2,3,4,6-Tetrachlorophenol N	230,000	NA	NA	NA	NA
95-95-4	2,4,5-Trichlorophenol N	780,000	120,000	7,100,000	100	NA
88-06-2	2,4,6-Trichlorophenol C	58,000	60	87,000	80	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
120-83-2	2,4-Dichlorophenol N	23,000	500	220,000	20	NA
105-67-9	2,4-Dimethylphenol N	160,000	3,000	1,200,000	1,800	NA
51-28-5	2,4-Dinitrophenol N	16,000	100	NA	NA	NA
121-14-2	2,4-Dinitrotoluene N	16,000	200	130,000	0.6	NA
87-65-0	2,6-Dichlorophenol N	23,000	500	220,000	20	NA
606-20-2	2,6-Dinitrotoluene N	7,800	100	71,000	0.6	NA
91-58-7	2-Chloronaphthalene N	630,000	140,000	560,000	57,000	NA
95-57-8	2-Chlorophenol N	39,000	2,000	280,000	300	NA
99-55-8	2-Methyl-5-nitroaniline C	19,000	NA	NA	NA	NA
95-53-4	2-Methylaniline C	2,700	NA	NA	NA	NA
636-21-5	2-Methylaniline hydrochloride C	3,500	NA	NA	NA	NA
91-57-6	2-Methylnaphthalene N	NA	NA	960,000	NA	NA
95-48-7	2-Methylphenol (o-Cresol) N	390,000	6,000	2,600,000	1,100	NA
91-59-8	2-Naphthylamine C	4.9	NA	NA	NA	NA
88-74-4	2-Nitroaniline N	470	NA	4,000	20	NA
88-75-5	2-Nitrophenol N	480	NA	NA	NA	NA
109-06-8	2-Picoline	NA	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine C	1,400	10	NA	NA	NA
119-90-4	3,3'-Dimethoxybenzidine C	46,000	NA	NA	NA	NA
119-93-7	3,3-Dimethylbenzidine C	69	0.39	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentretion
Semivolatiles (µg/kg)						
56-49-5	3-Methylcholanthrene	NA	NA	NA	NA	NA
108-39-4	3-Methylphenol (m-Cresol) N	390,000	NA	3,400,000	4,200	NA
99-09-2	3-Nitroaniline N	23,000	NA	NA	NA	NA
101-14-4	4,4'-Methylene bis(2-chloroaniline) C	4,900	NA	NA	NA	NA
534-52-1	4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA
92-67-1	4-Aminobiphenyl	NA	NA	NA	NA	NA
101-55-3	4-Bromophenyl-phenylether N	450,000	NA	NA	NA	NA
59-50-7	4-Chloro-3-methylphml	NA	NA	140,000,000	42,000	NA
106-47-8	4-Chloroaniline N	31,000	300	240,000	80	NA
7005-72-3	4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA
106-44-5	4-Methylphenol (p-Cresol) N	39,000	NA	340,000	400	NA
100-01-6	4-Nitroaniline N	23,000	NA	230,000	NA	NA
100-02-7	4-Nitrophenol N	480,000	NA	NA	NA	NA
56-57-5	4-Nitroquinoline 1-oxide	NA	NA	NA	NA	NA
57-97-6	7,12-Dimethylbenz(a)anthracene C	NA	NA	NA	NA	NA
83-32-9	Acenaphthene N	470,000	200,000	2,800,000	2,000	NA
208-96-8	Acenaphthylene N	470,000	200,000	670,000	11,000	NA
53-96-3	Acetamidofluorene	NA	NA	NA	NA	NA
98-86-2	Acetophenone N	780,000	NA	NA	NA	NA
62-53-3	Aniline C	110,000	31	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
120-12-7	Anthracene [N]	2,300,000	4,300,000	20,000,000	890,000	NA
140-57-8	Aramite [C]	26,000	NA	NA	NA	NA
103-33-3	Azobenzene [C]	5,800	NA	NA	NA	NA
98-87-3	Benzal chloride	NA	NA	NA	NA	NA
92-87-5	Benzidine [C]	2.8	0.0011	NA	NA	NA
56-55-3	Benzo(a)anthracene [C]	880	700	1,400	29,000	NA
50-32-8	Benzo(a)pyrene [C]	88	4,000	100	3,700	NA
205-99-2	Benzo(b)fluoranthene [C]	880	4,000	1,400	71,000	NA
191-24-2	Benzo(g,h,i)perylene [N]	230,000	1,400,000	14,000	320,000	NA
207-08-9	Benzo(k)fluoranthene [C]	8,800	4,000	14,000	44,000	NA
65-85-0	Benzoic acid [N]	31,000,000	280,000	130,000,000	56,000	NA
98-07-7	Benzotrichloride [C]	49	0.073	NA	NA	NA
100-51-6	Benzyl alcohol [N]	2,300,000	NA	NA	NA	NA
39638-32-9	Bis(2-Chloroisopropyl)Ether [C]	9,100	NA	NA	NA	NA
85-68-7	Butylbenzylphthalate [N]	1,600,000	68,000	15,000,000	960,000	NA
86-74-8	Carbazole [C]	32,000	500	42,000	400	NA
218-01-9	Chrysene [C]	88,000	1,000	140,000	31,000	NA
6055-19-2	Cyclophosphamide	NA	NA	NA	NA	NA
84-74-2	Di-n-butylphthalate [N]	780,000	120,000	7,300,000	23,000	NA
117-84-0	Di-n-octyl phthalate [N]	160,000	1,000,000,000	1,500,000	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
53-70-3	Dibenz(a,h)anthracene C	88	11,000	100	7,200	NA
224-42-0	Dibenzo(a,j)acridine	NA	NA	NA	NA	NA
132-64-9	Dibenzofuran N	31,000	120,000	240,000	NA	NA
84-66-2	Diethylphthalate N	6,300,000	110,000	56,000,000	20,000	NA
131-11-3	Dimethyl phthalate N	78,000,000	1,200,000	630,000,000	200,000	NA
122-39-4	Diphenylamine N	200,000	NA	NA	NA	NA
97-63-2	Ethyl methacrylate N	700,000	NA	NA	NA	NA
62-50-0	Ethyl methanesulfonate	NA	NA	NA	NA	NA
206-44-0	Fluoranthene N	310,000	980,000	2,900,000	280,000	NA
86-73-7	Fluorene N	310,000	160,000	2,400,000	45,000	NA
118-74-1	Hexachlorobenzene C	400	800	600	800	NA
87-68-3	Hexachlorobutadiene C	8,200	100	3,100	2,100	NA
77-47-4	Hexachlorocyclopentadiene N	55,000	10,000	NA	NA	NA
67-72-1	Hexachloroethane C	46,000	200	27,000	400	NA
70-30-4	Hexachlorophene N	2,300	NA	NA	NA	NA
1888-71-7	Hexachloropropene	NA	NA	NA	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene C	880	35,000	1,400	17,000	NA
78-59-1	Isophorone C	670,000	200	NA	NA	NA
120-58-1	Isosafrole	NA	NA	NA	NA	NA
91-80-5	Methapyrilene	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

US #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
80-62-6	Methyl methacrylate [N]	630,000	NA	NA	NA	NA
66-27-3	Methyl methanesulfonate	NA	NA	NA	NA	NA
10595-95-6	N-Nitroso-N-methylethylamine [C]	29	NA	NA	NA	NA
621-64-7	N-Nitroso-di-n-propylamine [C]	91	0.02	20	9	NA
924-16-3	N-Nitrosodi-n-butylamine [C]	120	NA	NA	NA	NA
55-18-5	N-Nitrosodiethylamine [C]	4.3	NA	NA	NA	NA
62-75-9	N-Nitrosodimethylamine [C]	13	NA	3	20	NA
86-30-6	N-Nitrosodiphenylamine [C]	130,000	200	73,000	60	NA
59-89-2	N-Nitrosomorpholine	NA	NA	NA	NA	NA
100-75-4	N-Nitrosopiperidine	NA	NA	NA	NA	NA
930-55-2	N-Nitroropyrrolidine [C]	300	NA	NA	NA	NA
91-20-3	Naphthalene [N]	310,000	30,000	1,300,000	100	NA
98-95-3	Nitrobenzene [N]	3,900	90	22,000	40	NA
123-63-7	Paraldehyde	NA	NA	NA	NA	NA
608-93-5	Pentachlorobenzene [N]	6,300	48,000	NA	NA	NA
76-01-7	Pentachloroethane	NA	NA	NA	NA	NA
82-68-8	Pentachloronitrobenzene [C]	2,500	NA	NA	NA	NA
87-86-5	Pentachlorophenol [C]	5,300	200	5,400	10	NA
62-44-2	Phenacetin	NA	NA	NA	NA	NA
85-01-8	Phenanthrene [N]	230,000	1,400,000	1,700,000	2,800	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

U S #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Semivolatiles (µg/kg)						
108-95-2	Phenol [N]	4,700,000	49,000	34,000,000	20	NA
23950-58-5	Pronamide [N]	590,000	NA	NA	NA	NA
129-00-0	Pyrene [N]	230,000	1,400,000	2,200,000	290,000	NA
110-86-1	Pyridine [N]	7,800	NA	500	20	NA
94-59-7	Safrole	NA	NA	NA	NA	NA
122-09-8	alpha, alpha-Dimethylphenethylamine	NA	NA	NA	NA	NA
111-91-1	bis(2-Chloroethoxy)methane	NA	NA	170,000	30	NA
111-44-4	bis(2-Chloroethyl)ether [C]	580	0.3	500	5	NA
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP) [C]	46,000	11,000	48,000	11,000	NA
60-11-7	p-Dimethylaminoazobenzene	NA	NA	NA	NA	NA
106-50-3	p-Phenylenediamine [N]	1,500,000	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leeching	NASP Reference Concentration
Volatiles (µg/kg)						
106-93-4	1, 2-Dibromoethane C	7.5	0.18	10	0.06	NA
630-20-6	1,1,1,2-Tetrachloroethane C	25,000	NA	5,900	3	NA
811-97-2	1,1,1,2-Tetraf Luoroethane	NA	NA	NA	NA	NA
71-55-6	1,1,1-Trichloroethane N	270,000	900	610,000	900	NA
354-58-5	1,1,1-trichlora-2,2,2-trifloromethane	NA	NA	NA	NA	NA
79-34-5	1,1,2,2-Tetrachloroethane C	3,200	1	900	0.7	NA
79-00-5	1,1,2-Trichloroethane C	11,000	10	2 ,000	20	NA
75-34-3	1,1-Dichloroethane N	780,000	11,000	310,000	2,300	NA
75-35-4	1,1-Dichloroethene C	1,100	30	100	30	NA
96-18-4	1,2,3-Trichloropropane C	91	0.006	NA	NA	NA
96-19-5	1,2,3-Tr ichloropropene N	39,000	NA	NA	NA	NA
615-54-3	1,2,4-Tribromobenzene N	39,000	NA	NA	NA	NA
120-82-1	1,2,4-Tr ich1orobenzene N	78,000	2,000	590,000	2,300	NA
96-12-8	1,2-Dibromo-3-Chloropropane C	460	0.61	NA	NA	NA
107-06-2	1,2-DichLoroethane C	7,000	10	700	8	NA
540-59-0	1,2-Dichloroethene (total) N	70,000	NA	NA	NA	NA
78-87-5	1,2-DichLoropropane C	9,400	20	800	20	NA
106-99-0	1,3-Butadiene	NA	0.072	NA	NA	NA
542-75-6	1,3-Dichloropropene C	3,700	1	300	3	NA
106-37-6	1,4-Dibromobenzene N	78,000	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
764-41-0	1,4-Dichloro-2-butene	NA	NA	NA	NA	NA
123-91-1	1,4-Dioxane [C]	58,000	NA	NA	NA	NA
75-68-3	1-Chloro-1,1-difluoroethane	NA	NA	NA	NA	NA
109-69-3	1-Chlorobutane [N]	3,100,000	NA	NA	NA	NA
78-93-3	2-Butanone (MEK) [N]	4,700,000	NA	2,200,000	8,700	NA
126-99-8	2-Chloro-1,3-butadiene	160,000	NA	NA	NA	NA
110-75-8	2-Chloroethyl vinyl ether [N]	200,000	NA	100,000	2	NA
591-78-6	2-Hexanone	NA	NA	NA	NA	NA
101-68-8	4,4'-Methylenediphenyl isocyanate	NA	NA	NA	NA	NA
108-10-1	4-Methyl-2-pentanone (MIBK) [N]	630,000	NA	520,000	1,100	NA
67-64-1	Acetone [N]	780,000	8,000	260,000	1,400	NA
75-05-8	Acetonitrile [N]	47,000	NA	NA	NA	NA
107-02-8	Acrolein [N]	160,000	NA	400	300	NA
107-13-1	Acrylonitrile [C]	1,200	NA	100	20	NA
107-05-1	Allyl chloride [N]	390,000	NA	NA	NA	NA
100-52-7	Benzaldehyde [N]	780,000	NA	NA	NA	NA
71-43-2	Benzene [C]	22,000	20	1,400	3	NA
95-63-6	Benzene, 1,2,4-trimethyl [N]	390,000	NA	6,200	200	NA
108-67-8	Benzene, 1,3,5-trimethyl- [N]	390,000	NA	3,700	100	NA
100-44-7	Benzyl chloride [C]	3,800	0.36	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	REP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
542-88-1	Bis(chloromethyl)ether C	2.9	0.0001	NA	NA	NA
75-27-4	Bromodichloromethane C	10,000	300	700	2	NA
593-60-2	Bromoethene	NA	NA	NA	NA	NA
75-25-2	Bromoform C	81,000	500	65,000	20	NA
74-83-9	Bromomethane N	11,000	100	NA	NA	NA
75-15-0	Carbon disulfide N	780,000	14,000	5,200	2,500	NA
56-23-5	Carbon tetrachloride C	4,900	30	600	20	NA
108-90-7	Chlorobenzene N	160,000	600	44,000	600	NA
75-45-6	Chlorodifluoromethane	NA	NA	NA	NA	NA
75-00-3	Chloroethane N	3,100,000	33,000	NA	NA	NA
67-66-3	Chloroform C	100,000	300	600	20	NA
74-87-3	Chloromethane C	49,000	6.6	200	10	NA
1476-11-5	Cis-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA
123-73-9	Crotonaldehyde, (E) C	340	NA	NA	NA	NA
108-94-1	Cyclohexanone N	39,000,000	NA	NA	NA	NA
1163-19-5	Decabromodiphenyl ether N	78,000	NA	NA	NA	NA
124-48-1	Dibromochloromethane C	NA	NA	1,200	4	NA
75-71-8	Dichlorodifluoromethane N	1,600,000	7,500	NA	NA	NA
77-73-6	Dicyclopentadiene N	230,000	NA	NA	NA	NA
107-12-0	Ethyl cyanide	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
60-29-7	Ethyl ether [N]	1,600,000	NA	NA	NA	NA
100-41-4	Ethylbenzene [N]	780,000	5,000	1,400,000	200	NA
87-82-1	Hexabromobenzene [R]	16,000	NA	NA	NA	NA
78-83-1	Isobutanol	2,300,000	NA	MA	MA	NA
126-98-7	Methacrylonitrile	780	NA	NA	NA	NA
74-88-4	Methyl iodide	NA	NA	NA	NA	MA
1634-04-4	Methyl tert-butyl ether [N]	39,000	NA	3,800,000	100	NA
74-95-3	Methylene bromide [N]	78,000	NA	NA	NA	NA
75-09-2	Methylene chloride [C]	85,000	10	16,000	10	NA
100-42-5	Styrene [N]	1,600,000	2,000	4,100,000	2,000	NA
127-18-4	Tetrachloroethene [C]	12,000	40	12,000	30	NA
109-99-9	Tetrahydrofuran	NA	NA	NA	NA	NA
108-88-3	Toluene [N]	1,600,000	5,000	520,000	200	NA
79-01-6	Trichloroethene [C]	58,000	20	6,500	10	NA
75-69-4	Trichlorofluoromethane [N]	2,300,000	13,000	6,600	100,000	NA
598-77-6	Trichloropropane, 1,1,2- [N]	39,000	140	MA	NA	NA
76-13-1	Trichlorotrifluoroethane (Freon 113) [N]	100,000,000	3,100,000	NA	NA	NA
108-05-4	Vinyl acetate [N]	7,800,000	84,000	180,000	500	NA
75-01-4	Vinyl chloride [C]	340	10	5	5	NA
1330-20-7	Xylene (Total) [N]	16,000,000	74,000	13,000,000	100	NA

Preliminary Remediation Goals (PRGs) for Soil Contaminants

CAS #	Parameter	USEPA - RBCs	USEPA - SSLs	FDEP - CGs	FDEP CGs for Leaching	NASP Reference Concentration
Volatiles (µg/kg)						
98-83-9	alpha-Methylstyrene N	550,000	7,500	NA	NA	NA
156-59-2	cis-1,2-Dichloroethene N	78,000	200	26,000	200	NA
10061-01-5	cis-1,3-Dichloropropene C	3,700	1	300	3	NA
99-08-1	m-Nitrotoluene N	78,000	420	NA	NA	NA
108-38-3	m-Xylene	16,000,000	240,000	NA	NA	NA
104-51-8	n-Butylbenzene N	78,000	270	NA	NA	NA
110-54-3	n-Hexane N	470,000	13,000	76,000	1,000	NA
88-R-3	o-Chloronitrobenzene C	26,000	NA	NA	NA	NA
95-49-8	o-Chlorotoluene N	160,000	5,600	NA	NA	NA
88-72-2	o-Nitrotoluene N	78,000	420	NA	NA	NA
95-47-6	o-xylene N	16,000,000	150,000	NA	NA	NA
5216-25-1	p,a,a,a-Tetrachlorotoluene C	32	NA	NA	NA	NA
100-00-5	p-Chloronitrobenzene C	35,000	NA	NA	NA	NA
99-99-0	p-Nitrotoluene N	78,000	420	NA	NA	NA
106-42-3	p-Xylene	NA	220,000	NA	NA	NA
135-98-8	sec-Butylbenzene N	78,000	270	NA	NA	NA
156-60-5	trans-1,2-Dichloroethene N	160,000	300	62,000	300	NA
10061-02-6	trans-1,3-Dichloropropene C	3,700	1	300	3	NA
110-57-6	trans-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Inorganics (µg/l)								
7429-90-5	Aluminum (Al) N	NA	NA	50	200	NA	3,700	3,882.8
7440-36-0	Antimony (Sb) N	6	6	NA	NA	NA	1.5	30.2
7440-38-2	Arsenic (As) N	50	50	NA	NA	NA	0.045	2.8
7440-39-3	Bariun (Ba) N	2,000	2,000	NA	NA	NA	260	13.2
7440-41-7	Beryl1iun (Be) C	4	4	NA	NA	NA	0.016	1.1
7440-43-9	Cadmium (Cd) N	5	5	NA	NA	NA	1.8	3.4
7440-70-2	Calcium (Ca)	NA	NA	NA	NA	NA	NA	17,560
7440-47-3	Chromium (Cr) N	100	100	NA	NA	NA	18	35
18540-29-9	Chromium (Hexavalent) N	NA	NA	NA	NA	NA	18	NA
7440-48-4	Cobalt (Co) N	NA	NA	NA	NA	NA	220	4.1
7440-50-8	Copper (Cu) N	1,300	NA	1,000	1,000	NA	150	16.2
57-12-5	Cyanide (CN) N	200	200	NA	NA	NA	73	NA
7439-89-6	Iron (Fe) N	NA	NA	300	300	NA	1,100	1,707.8
7439-92-1	Lead (Pb)	15	15	NA	NA	NA	15	16
7439-95-4	Magnesium (Mg)	NA	NA	NA	NA	NA	NA	2,872.6
7439-96-5	Manganese (Mn) N	NA	NA	50	50	NA	84	22
7439-97-6	Mercury (Hg) N	2	2	NA	NA	NA	11	0.2
7440-02-0	Nickel (Ni) N	100	100	NA	NA	NA	73	39.9
7440-09-7	Potassium (K)	NA	NA	NA	NA	NA	NA	12,167.6
7782-49-2	Seleniun (Se) N	50	50	NA	NA	NA	18	3.9

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDUS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Inorganics (µg/l)								
7440-22-4	Silver (Ag) [N]	NA	NA	100	100	NA	18	4
7440-23-5	Sodium (Na)	NA	160,000	NA	NA	NA	NA	18,345
7440-28-0	Thallium (Tl)	2	2	NA	NA	NA	0.29	3.6
7440-31-5	Tin (Sn) [N]	NA	NA	NA	NA	NA	2,200	NA
7440-62-2	Vanadium (V) [N]	NA	NA	NA	NA	49	26	9.6
7440-66-6	Zinc (Zn) [N]	NA	NA	5,000	5,000	NA	1,100	153.2

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
pesticides (µg/l)								
93-72-1	2,4,5-TP (Silvex) N	50	50	NA	NA	NA	29	NA
93-76-5	2,4,5-Trichlorophenoxyacetic ac N	NA	NA	NA	NA	NA	37	NA
94-75-7	2,4-Dichlorophenoxyacetic Acid N	NA	NA	NA	NA	NA	6.1	NA
72-54-8	4,4'-DDD C	NA	NA	NA	NA	0.1	0.28	NA
72-55-9	4,4'-DDE C	NA	NA	NA	NA	0.1	0.2	NA
50-29-3	4,4'-DDT C	NA	NA	NA	NA	0.1	0.2	NA
94-82-6	4-(2,4-Dichlorophenoxy)butyric N	NA	NA	NA	NA	NA	29	NA
309-00-2	Aldrin C	NA	NA	NA	NA	0.05	*0.004*	NA
12674-11-2	Aroclor-1016 C	0.5	0.5	NA	NA	NA	0.03	NA
11104-28-2	Aroclor-1221 C	0.5	0.5	NA	NA	NA	0.03	NA
11141-16-5	Aroclor-1232 C	0.5	0.5	NA	NA	NA	*0.03*	NA
53469-21-9	Aroclor-1242 C	0.5	0.5	NA	NA	NA	*0.03*	NA
12672-29-6	Aroclor-1248 C	0.5	0.5	NA	NA	NA	0.03	NA
11097-69-1	Aroclor-1254 C	0.5	0.5	NA	NA	NA	0.03	NA
11096-82-5	Aroclor-1260 C	0.5	0.5	NA	NA	NA	0.03	NA
57-74-9	Chlordane C	2	2	NA	NA	NA	0.052	NA
510-15-6	Chlorobenzilate C	NA	NA	NA	NA	0.13	0.25	NA
2303-16-4	Diallate C	NA	NA	NA	NA	0.57	0.17	NA
60-57-1	Dieldrin C	NA	NA	NA	NA	0.1	0.0042	NA
60-51-5	Dimethoate N	NA	NA	NA	NA	5	0.73	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Pesticides (µg/l)								
88-85-7	Dinoseb N	7	7	NA	NA	NA	3.7	NA
298-04-4	Disulfoton N	NA	NA	NA	NA	0.5	0.15	NA
959-98-8	Endosulfan I	NA	NA	NA	NA	0.35	22	NA
33213-65-9	Endosulfan II N	NA	NA	NA	NA	0.35	22	NA
1031-07-8	Endosulfan sulfate N	NA	NA	NA	NA	0.3	22	NA
72-20-8	Endrin N	2	2	NA	NA	NA	1.1	NA
7421-93-4	Endrin aldehyde N	NA	NA	NA	NA	0.1	1.1	NA
53494-70-5	Endrin ketone N	NA	NA	NA	NA	NA	1.1	NA
52-85-7	Famphur	NA	NA	NA	NA	NA	NA	NA
76-44-8	Heptachlor C	0.4	0.4	NA	NA	NA	0.0023	NA
1024-57-3	Heptachlor epoxide C	0.2	0.2	NA	NA	NA	0.0012	NA
465-73-6	Isodrin P	NA	NA	NA	NA	NA	NA	NA
143-50-0	Kepone C	NA	NA	NA	NA	NA	0.0037	NA
72-43-5	Methoxychlor N	40	40	NA	NA	NA	18	NA
298-00-0	Methyl parathion N	NA	NA	NA	NA	10	0.91	NA
126-68-1	O,O,O-Triethylphosphorothioate	NA	NA	NA	NA	NA	NA	NA
56-38-2	Parathion N	NA	NA	NA	NA	42	22	NA
298-02-2	Phorate N	NA	NA	NA	NA	1.4	0.73	NA
3689-24-5	Sulfotep N	NA	NA	NA	NA	3.5	1.8	NA
297-97-2	Thionazin	NA	NA	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Pesticides (µg/l)								
8001-35-2	Toxaphene [C]	3	3	NA	NA	NA	0.061	NA
319-84-6	alpha-BHC [C]	NA	NA	NA	NA	0.05	0.011	NA
5103-71-9	alpha-Chlordane [C]	2	2	NA	NA	NA	0.052	NA
319-85-7	beta-BHC [C]	NA	NA	NA	NA	0.1	0.037	NA
319-86-8	delta-BHC [C]	NA	NA	NA	NA	0.05	0.011	NA
58-89-9	gamma-BHC (Lindane) [C]	0.2	0.2	NA	NA	NA	0.052	NA
5103-74-2	gamma-Chlordane [C]	2	2	NA	NA	NA	0.052	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
634-66-2	1,2,3,4-Tetrachlorobenzene	NA	NA	NA	NA	NA	0.18	NA
634-90-2	1,2,3,5-Tetrachlorobenzene	NA	NA	NA	NA	NA	0.18	NA
87-61-6	1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	19	NA
95-94-3	1,2,4,5-Tetrachlorobenzene N	NA	NA	NA	NA	4	0.18	NA
120-82-1	1,2,4-TrichLorobentene	70	70	NA	NA	NA	19	NA
95-50-1	1,2-Dichlorobenzene N	600	600	NA	NA	NA	27	NA
108-70-3	1,3,5-Trichlorobenzene	NA	NA	NA	NA	NA	19	NA
99-35-4	**1,3,5-Trinitrobenzene N**	NA	NA	NA	NA	60	0.18	NA
541-73-1	1,3-Dichlorobenzene N	600	NA	NA	NA	10	54	NA
99-65-0	1,3-Dinitrobenzene N	NA	NA	NA	NA	50	0.37	NA
106-46-7	1,4-Dichlorobenzene C	75	75	NA	NA	NA	0.44	NA
130-15-4	1,4-Naphthoquinone	NA	NA	NA	NA	NA	NA	NA
90-13-1	1-Chloronapthalene	NA	NA	NA	NA	NA	290	NA
90-12-0	1-Methylnaphthalene N	NA	NA	NA	NA	NA	NA	NA
134-32-7	1-Naphthylamine		NA	NA	NA	NA	0.0005	NA
108-60-1	**2,2'-oxybis(1-Chloropropane)**	NA	NA	NA	NA	NA	NA	NA
58-90-2	2,3,4,6-Tetrachlorophenol N	NA	NA	NA	NA	210	110	NA
95-95-4	2,4,5-Trichlorophenol N	NA	NA	NA	NA	4	370	NA
88-06-2	2,4,6-Trichlorophenol C	NA	NA	NA	NA	10	6.1	NA
120-83-2	2,4-Dichlorophenol N	NA	NA	NA	NA	4	11	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Cmentration
Semivolatiles (µg/l)								
105-67-9	2,4-Dimethylphenol N	NA	NA	NA	NA	400	73	NA
51-28-5	2,4-Dinitrophenol N	NA	NA	NA	NA	30	7.3	NA
121-14-2	2,4-Dinitrotoluene N	NA	NA	NA	NA	0.2	7.3	NA
87-65-0	2,6-Dichlorophenol N	NA	NA	NA	NA	4	11	NA
606-20-2	2,6-Dinitrotoluene N	NA	NA	NA	NA	0.2	3.7	NA
91-58-7	2-Chloronaphthalene N	NA	NA	NA	NA	560	290	NA
95-57-8	2-Chlorophenol N	NA	NA	NA	NA	35	18	NA
99-55-8	2-Methyl-5-nitroaniline C	NA	NA	NA	NA	NA	2	NA
636-21-5	2-Methylaniline hydrochloride C	NA	NA	NA	NA	NA	0.37	NA
91-57-6	2-Methy lnaphthalene N	NA	NA	NA	NA	NA	150	NA
95-48-7	2-Methylphenol (o-Cresol) N	NA	NA	NA	NA	350	180	NA
91-59-8	2-Naphthylamine C	NA	NA	NA	NA	NA	0.0005	NA
88-74-4	2-Mitroaniline N	NA	NA	NA	NA	7.5	0.22	NA
88-75-5	2-Nitrophenol N	NA	NA	NA	NA	20	230	NA
109-06-8	2-Picoline	NA	NA	NA	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine C	NA	NA	NA	NA	7.5	0.15	NA
119-90-4	3,3'-Dimethoxybenzidine C	NA	NA	NA	NA	250	4.8	NA
119-93-7	3,3-Dimethylbenzidine C	NA	NA	NA	NA	250	0.0073	NA
56-49-5	3-Methylcholanthrene	NA	NA	NA	NA	NA	NA	NA
108-39-4	3-Methylphenol (m-Crerol)	NA	NA	NA	NA	350	180	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Par — ter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
99-09-2	3-Nitroaniline N	NA	NA	NA	NA	NA	11	NA
534-52-1	**4,6-Dinitro-2-methylphenol**	NA	NA	NA	NA	NA	NA	NA
92-67-1	4-Aminobiphenyl	NA	NA	NA	NA	NA	NA	NA
101-55-3	4-Bromophenyl-phenylether N	NA	NA	NA	NA	NA	210	NA
59-50-7	4-Chloro-3-methylphenol	NA	NA	NA	NA	3,000	NA	NA
106-47-8	4-Chloroani Line N	**NA**	**NA**	**NA**	**NA**	**28**	**15**	**NA**
7005-72-3	4-Chlorophenylphenylether	NA	NA	NA	NA	10	NA	NA
106-44-5	4-Methylphenol (p-Cresol) N	NA	**NA**	NA	NA	35	18	NA
100-01-6	4-Nitroaniline N	NA	NA	NA	NA	NA	11	NA
100-02-7	4-Nitrophenol N	NA	NA	NA	NA	15	**230**	**NA**
56-57-5	4-Nitroquinoline 1-oxide	NA	NA	NA	NA	NA	NA	NA
57-97-6	**7,12-Dimethybenz(a)anthracene** C	NA	NA	NA	NA	NA	0.092	NA
83-32-9	Acenaphthene N	NA	NA	NA	NA	20	220	NA
208-96-8	Acenaphthy lene N	NA	NA	NA	NA	10	150	NA
53-96-3	Acetamidof luorene	NA	NA	NA	NA	NA	NA	NA
98-86-2	Acetophenone N	NA	NA	NA	NA	700	0.0042	NA
62-53-3	Aniline C	NA	NA	NA	NA	6	1	NA
120-12-7	Anthracene N	NA	NA	NA	NA	2,100	1,100	NA
140-57-8	Aramite C	NA	NA	NA	NA	NA	2.7	NA
103-33-3	Azobenzene	NA	NA	NA	NA	4	0.61	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
98-87-3	Benzal chloride	NA	NA	NA	NA	NA	NA	NA
101-14-4	Benzenamine, 4,4'-methylenebis[C	NA	NA	NA	NA	50	0.52	NA
92-87-5	Benzidine C	NA	NA	NA	NA	250	0.0002	NA
56-55-3	Benzo(a)anthracene	NA	NA	NA	NA	4	0.092	NA
50-32-8	Benzo(a)pyrene	2	0.2	NA	NA	NA	0.0092	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	NA	NA	4	0.092	MA
191-24-2	Benzo(g,h,i)perylene N	NA	NA	NA	NA	10	150	NA
207-08-9	Benzo(k)fluoranthene	NA	NA	NA	NA	4	0.92	NA
65-85-0	Benzoic acid N	NA	NA	NA	NA	28,000	15,000	NA
98-07-7	Benzotrichloride C	NA	NA	NA	NA	NA	0.0052	NA
100-51-6	Benzyl alcohol N	NA	NA	NA	NA	2,100	1,100	NA
39638-32-9	Bis(2-Chloroisopropyl)Ether C	NA	NA	NA	NA	7.5	0.26	NA
85-68-7	Butylbenzylphthalate N	NA	NA	NA	NA	1,400	730	NA
86-74-8	Carbazole	NA	NA	NA	NA	7.5	3.4	MA
218-01-9	Chrysene	NA	NA	NA	NA	5	9.2	NA
6055-19-2	Cyclophosphamide	NA	NA	NA	NA	NA	NA	NA
84-74-2	Di-n-butylphthalate N	NA	NA	NA	NA	700	370	NA
117-84-0	Oi-n-octyl phthalate N	NA	NA	NA	NA	140	73	NA
53-70-3	Dibenz(a,h)anthracene	NA	NA	NA	NA	7.5	0.0092	NA
224-42-0	Dibenzo(a,j)acridine	NA	NA	NA	NA	NA	NA	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
132-64-9	Dibenzofuran [N]	NA	NA	NA	NA	NA	15	NA
84-66-2	Diethylphthalate [N]	NA	NA	NA	NA	5,600	2,900	NA
131-11-3	Dimethyl phthalate [N]	NA	NA	NA	NA	70,000	37,000	NA
122-39-4	Diphenylamine [T]	NA	NA	NA	NA	175	91	NA
97-63-2	Ethyl methacrylate [N]	NA	NA	NA	NA	630	330	NA
62-50-0	Ethyl methanesulfonate	NA	NA	NA	NA	NA	NA	NA
206-44-0	Fluoranthene [N]	NA	NA	NA	NA	280	150	NA
86-73-7	Fluorene [N]	NA	NA	NA	NA	280	150	NA
118-74-1	Hexachlorobenzene [C]	1	1	NA	NA	NA	0.0066	NA
87-68-3	Hexachlorobutadiene [C]	NA	NA	NA	NA	15	0.14	NA
77-47-4	Hexachlorocyclopentadiene [N]	50	50	NA	NA	NA	0.15	NA
67-72-1	Hexachloroethane [C]	NA	NA	NA	NA	10	0.75	NA
70-30-4	Hexachlorophene [N]	NA	NA	NA	NA	6	1.1	NA
1888-71-7	Hexachloropropene	NA	NA	NA	NA	NA	NA	NA
122-66-7	Hydrazine, 1,2-diphenyl [C]	NA	NA	NA	NA	10	0.084	NA
193-39-5	Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	7.5	0.092	NA
78-59-1	Isophorone [C]	NA	NA	NA	NA	40	71	NA
120-58-1	Isosafrole	NA	NA	NA	NA	NA	NA	NA
91-80-5	Methapyrilene	NA	NA	NA	NA	NA	NA	NA
80-62-6	Methyl methacrylate [N]	NA	NA	NA	NA	25	290	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Par — ter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
66-27-3	Methyl methanesulfonate	NA	NA	NA	NA	NA	NA	NA
924-16-3	N-Nitroso-di-n-butylamine C	NA	NA	NA	NA	4	0.012	NA
621-64-7	N-Nitroso-di-n-propylamine C	NA	NA	NA	NA	4	0.0096	NA
55-18-5	N-Nitrosodiethylamine C	NA	NA	NA	NA	4	0.0004	NA
62-75-9	I-Nitrosodimethylamine C	NA	NA	NA	NA	7.5	0.0013	NA
86-30-6	N-Nitrosodiphenylamine C	NA	NA	NA	NA	7	14	NA
10595-95-6	N-Nitrosomethylethylamine C	NA	NA	NA	NA	7.5	0.0031	NA
59-89-2	N-Nitrosomorpholine	NA	NA	NA	NA	NA	NA	NA
100-75-4	N-Nitrosopiperidine	NA	NA	NA	NA	NA	NA	NA
930-55-2	N-Nitrosopyrrolidine C	NA	NA	NA	NA	4	0.032	NA
91-20-3	Naphthalene N	NA	NA	NA	NA	6.8	150	NA
98-95-3	Nitrobenzene N	NA	NA	NA	NA	9.5	0.34	NA
123-63-7	Paraldehyde	NA	NA	NA	NA	NA	NA	NA
608-93-5	Pentachlorobenzene N	NA	NA	NA	NA	5.6	0.49	NA
76-01-7	Pentachloroethane	NA	NA	NA	NA	NA	NA	NA
82-68-8	Pentachloronitrobenzene C	NA	NA	NA	NA	15	0.041	NA
87-86-5	Pentachlorophenol C	1	1	NA	HA	NA	0.56	NA
62-44-2	Phenacetin	NA	NA	NA	NA	NA	NA	NA
85-01-8	Phenanthrene N	NA	NA	NA	NA	10	150	NA
108-95-2	Phenol N	NA	NA	NA	NA	10	2,200	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Semivolatiles (µg/l)								
23950-58-5	Pronamide N	NA	NA	NA	NA	525	270	NA
129-00-0	Pyrene N	NA	NA	NA	NA	210	110	NA
110-86-1	Pyridine N	NA	NA	NA	NA	7	3.7	NA
94-59-7	Safrole	NA	NA	NA	NA	NA	NA	NA
122-09-8	alpha, alpha-Dimethylphenethyla	NA	NA	NA	NA	NA	NA	NA
111-91-1	bis(2-Chloroethoxy)methane	NA	NA	NA	NA	10	NA	NA
111-44-4	bis(2-Chloroethyl)ether C	NA	NA	NA	NA	1.5	0.0092	NA
117-81-7	bis(2-Ethylhexyl)phthalate (BEH C	NA	NA	NA	NA	NA	4.8	NA
95-53-4	o-Toluidine C	NA	NA	NA	NA	50	0.28	NA
60-11-7	p-Dimethylaminoazobenzene	NA	NA	NA	NA	NA	NA	NA
106-50-3	p-Phenylenediamine N	NA	NA	NA	NA	1,330	690	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Par —ter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
106-93-4	1, 2-Dibromoethane C	0.02	0.02	NA	NA	NA	0.0007	NA
630-20-6	1,1,1,2-Tetrachloroethane C	NA	NA	NA	NA	1	0.41	NA
811-97-2	1,1,1,2-Tetrafluoroethane	NA	NA	NA	NA	NA	NA	NA
71-55-6	1,1 ,1-Trichloroethane N	200	200	NA	NA	NA	79	NA
354-58-5	1,1,1-trichlora-2,2,2-triflorom	NA	NA	NA	NA	NA	NA	NA
79-34-5	1,1,2,2-Tetrachloroethane C	NA	NA	NA	NA	NA	0.052	NA
76-13-1	1,1,2-Trichloro-1,2,2- trifluor N	NA	NA	NA	NA	NA	5,900	NA
79-00-5	1,1,2-Trichloroethane C	5	5	NA	NA	NA	0.19	NA
598-77-6	1,1,2-Trichloropropane N	NA	NA	NA	NA	NA	3	NA
75-34-3	1,1-Dichloroethane N	NA	NA	NA	NA	700	01	NA
75-35-4	1,1-Dichloroethene C	7	7	NA	NA	NA	0.044	NA
75-37-6	1,1-Difluoroethane	NA	NA	NA	NA	NA	NA	NA
96-18-4	1,2,3-Trichloropropane C	NA	NA	NA	NA	42	0.0015	YA
96-19-5	1,2,3-Trichloropropene N	NA	NA	NA	NA	NA	3	NA
615-54-3	1,2,4-Tribromobenzene N	NA	NA	NA	NA	NA	3	NA
120-82-1	1,2,4-Trichlorobenzene N	70	70	NA	NA	NA	19	NA
96-12-8	1,2-Dibromo-3-Chloropropane C	0.2	0.2	NA	NA	NA	0.048	NA
107-06-2	1,2-Dichloroethane C	5	3	NA	NA	NA	0.12	NA
540-59-0	1,2-Dichloroethene (total) N	70	70	NA	NA	NA	5.5	NA
78-87-5	1,2-Dichloropropane C	5	5	NA	NA	NA	0.16	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
106-99-0	1,3-Butadiene	NA	NA	NA	NA	NA	0.011	NA
542-75-6	1,3-Dichloropropene C	NA	NA	NA	NA	1	0.077	NA
106-37-6	1,4-Dibromobenzene N	NA	NA	NA	NA	NA	6.1	NA
764-41-0	1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	0.0011	NA
123-91-1	1,4-Dioxane C	NA	NA	NA	NA	5	6.1	NA
75-68-3	1-Chloro-1,1-difluoroethane	NA	NA	NA	NA	NA	8,700	NA
109-69-3	1-Chlorobutane N	NA	NA	NA	NA	NA	240	NA
78-93-3	2-Butanone (MEK) N	NA	NA	NA	NA	4,200	190	NA
126-99-8	2-Chloro-1,3-butadiene N	NA	NA	NA	NA	NA	14	NA
110-75-8	2-Chloroethyl vinyl ether N	NA	NA	NA	NA	1	15	NA
75-29-6	2-Chloropropane	NA	NA	NA	NA	NA	NA	NA
591-78-6	2-Hexanone	NA	NA	NA	NA	NA	NA	NA
101-68-8	4,4'	NA	NA	NA	NA	NA	0.0035	NA
108-10-1	4-Methyl-2-Pentanone (MIBK) N	NA	NA	NA	NA	350	290	NA
67-64-1	Acetone N	NA	NA	NA	NA	700	370	NA
75-05-8	Acetonitrile N	NA	NA	NA	NA	500	22	NA
107-02-8	Acrolein N	NA	NA	NA	NA	110	73	NA
107-13-1	Acrylonitrile C	NA	NA	NA	NA	8	0.12	NA
107-05-1	Allyl chloride N	NA	NA	NA	NA	NA	180	NA
100-52-7	Benzaldehyde N	NA	NA	NA	NA	700	61	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
71-43-2	Benzene [C]	5	1	NA	NA	1	0.36	NA
95-63-6	Benzene, 1,2,4-trimethyl [N]	NA	NA	NA	NA	10	30	NA
108-67-8	Benzene, 1,3,5-trimethyl- [N]	NA	NA	NA	NA	10	30	NA
100-44-7	Benzyl chloride [C]	NA	NA	NA	NA	0.5	0.062	NA
542-88-1	Bis(chloromethyl)ether [C]	NA	NA	NA	NA	10	0.0001	NA
75-27-4	Bromodichloromethane [C]	100	NA	NA	NA	0.6	0.17	NA
593-60-2	Bromoethene	NA	NA	NA	NA	NA	0.096	NA
75-25-2	Bromoform [C]	100	NA	NA	NA	4	2.4	NA
74-83-9	Bromomethane [N]	NA	NA	NA	NA	10	0.87	NA
75-15-0	Carbon disulfide [N]	NA	NA	NA	NA	700	100	NA
56-23-5	Carbon tetrachloride [C]	5	3	NA	NA	3	0.16	NA
108-90-7	Chlorobenzene [N]	NA	NA	NA	NA	NA	3.9	NA
75-45-6	Chlorodifluoromethane	NA	NA	NA	NA	NA	8,700	NA
75-00-3	Chloroethane [N]	NA	NA	NA	NA	140	860	NA
67-66-3	Chloroform [C]	100	NA	NA	NA	6	0.15	NA
74-87-3	Chloromethane [C]	NA	NA	NA	NA	2.7	1.4	NA
1476-11-5	Cis-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	0.0011	NA
4170-30-3	Crotonaldehyde	NA	NA	NA	NA	NA	NA	NA
108-94-1	Cyclohexanone [N]	NA	NA	NA	NA	35,000	3,000	NA
1163-19-5	Decabromodiphenyl ether [N]	NA	NA	NA	NA	NA	6.1	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
124-48-1	Dibromochloromethane C	NA	NA	NA	NA	1	0.13	NA
75-71-8	Dichlorodifluoromethane N	NA	NA	NA	NA	1,400	39	NA
77-73-6	Dicyclopentadiene N	NA	NA	NA	NA	NA	0.042	NA
60-29-7	Diethyl ether N	NA	NA	NA	NA	750	120	NA
107-12-0	Ethyl cyanide	NA	NA	NA	NA	NA	NA	NA
100-41-4	Ethylbenzene N	700	700	NA	30	NA	130	NA
87-82-1	Hexabromobenzene N	NA	NA	NA	NA	NA	1.2	NA
78-83-1	Isobutyl alcohol N	NA	NA	NA	NA	2,100	180	NA
126-98-7	Methacrylonitrile	NA	NA	NA	NA	50	0.37	NA
74-88-4	Methyl iodide	NA	NA	NA	NA	NA	NA	NA
98-83-9	Methyl styrene (alpha)	NA	NA	NA	NA	NA	43	NA
25013-15-4	Methyl styrene (mixture)	NA	NA	NA	NA	NA	NA	NA
1634-04-4	Methyl tert-butyl ether N	NA	NA	NA	NA	50	18	NA
74-95-3	Methylene bromide N	NA	NA	NA	NA	NA	6.1	NA
75-09-2	Methylene chloride C	5	5	NA	NA	NA	4.1	NA
100-42-5	Styrene N	100	100	NA	NA	NA	160	NA
127-18-4	Tetrachloroethene C	5	3	NA	NA	NA	1.1	NA
109-99-9	Tetrahydrofuran	NA	NA	NA	NA	NA	NA	NA
108-88-3	Toluene N	1,000	1,000	NA	40	NA	75	NA
79-01-6	Trichloroethene C	5	3	NA	NA	NA	1.6	NA

Preliminary Remediation Goals (PRGs) for Groundwater Contaminants

CAS #	Parameter	EPA MCLs	FPDWS	EPA SMCL	FSDWS	FGGC	RBC TAP	NASP Reference Concentration
Volatiles (µg/l)								
75-69-4	Trichlorofluoromethane N	NA	NA	NA	NA	2,100	130	NA
108-05-4	Vinyl acetate N	NA	NA	NA	NA	250	3,700	NA
75-01-4	Vinyl chloride C	2	1	NA	NA	NA	0.019	NA
1330-20-7	Xylene (Total) N	10,000	10,000	NA	20	NA	1,200	NA
156-59-2	cis-1,2-Dichloroethene N	70	70	NA	NA	NA	6.1	NA
10061-01-5	cis-1,3-Dichloropropene C	NA	NA	NA	NA	1	0.077	NA
99-08-1	m-Nitrotoluene N	NA	NA	NA	NA	NA	6.1	NA
108-38-3	m-Xylene	10,000	10,000	NA	20	NA	140	NA
110-54-3	n-Hexane N	NA	NA	NA	NA	10	35	NA
95-49-8	o-Chlorotoluene N	NA	NA	NA	NA	140	12	NA
88-72-2	o-Nitrotoluene N	NA	NA	NA	NA	NA	6.1	NA
95-47-6	o-Xylene N	10,000	10,000	NA	20	NA	140	NA
5216-25-1	p,a,a,a-Tetrachlorotoluene C	NA	NA	NA	NA	NA	0.0005	NA
99-99-0	p-Nitrotoluene N	NA	NA	NA	NA	NA	6.1	NA
106-42-3	p-Xylene	10,000	10,000	NA	20	NA	52	NA
135-98-8	sec-Butylbenzene N	NA	NA	NA	NA	NA	6.1	NA
104-51-8	tert-Butylbenzene N	NA	NA	NA	NA	NA	6.1	NA
156-60-5	trans-1,2-Dichloroethene N	100	100	NA	NA	NA	12	NA
10061-02-6	trans-1,3-Dichloropropene C	NA	NA	NA	NA	1	0.077	NA
110-57-6	trans-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	0.0011	NA

Appendix E

Summary Analytical Results, Soil and Groundwater Samples Exceeding PRGs

Exceeds Preliminary Remediation Goals (PRGs)
for Soil Contaminants
PENSACOLA, SITE 15

	Sample ID	Date	Result	VQual	PRC	Reason	NASP Reference Concentration
Inorganics (mg/kg)							
7440-38-2 Arsenic (As) C							
	015-S-0001-01	09/01/95	3.4		0.43	USEPA-RBC	1.56
	015-S-0002-01	09/05/95	8.1		0.43	USEPA-RBC	1.56
	015-S-0003-01	09/05/95	1.1		0.43	USEPA-RBC	1.56
	015-S-0004-01	09/06/95	41.6		0.43	USEPA-RBC	1.56
	015-S-0005-01	09/07/95	8.2	J	0.43	USEPA-RBC	1.56
	015-S-0006-01	09/07/95	2.3	J	0.43	USEPA-RBC	1.56
	015-S-0007-01	08/31/95	56.5	J	0.43	USEPA-RBC	1.56
	015-S-0009-01	09/01/95	3.2		0.43	USEPA-RBC	1.56
	015-S-0010-01	09/01/95	5.		0.43	USEPA-RBC	1.56
	015-S-0011-01	09/05/95	1.1		0.43	USEPA-RBC	1.56
	015-S-0012-01	09/05/95	25.5		0.43	USEPA-RBC	1.56
	015-S-0013-01	09/05/95	15.1		0.43	USEPA-RBC	1.56
	015-S-0013-10	09/05/95	16.2		15.	USEPA-SSL	1.56
	015-S-0014-01	09/07/95	66.3	J	0.43	USEPA-RBC	1.56
	015-S-0015-01	09/07/95	34.6	J	0.43	USEPA-RBC	1.56
	015-S-0016-01	08/30/95	8.9	J	0.43	USEPA-RBC	1.56
	015-S-0017-01	08/30/95	2.4	J	0.43	USEPA-RBC	1.56
	015-S-0018-01	08/30/95	0.99	J	0.43	USEPA-RBC	1.56
	015-S-0020-01	08/31/95	16.	J	0.43	USEPA-RBC	1.56
	015-S-0021-01	08/31/95	13.1	J	0.43	USEPA-RBC	1.56
	015-S-0024-01	08/31/95	1.5		0.43	USEPA-RBC	1.56
	015-S-0025-01	08/31/95	3.		0.43	USEPA-RBC	1.56
	015-S-0027-01	09/06/95	22.4		0.43	USEPA-RBC	1.56
	015-S-0031-01	09/05/95	0.94		0.43	USEPA-RBC	1.56
7439-89-6 Iron (Fe) N							
	015-S-0012-01	09/05/95	2,460.		2,300.	USEPA-RBC	2,745.
	015-S-0014-01	09/07/95	3,100.	J	2,300.	USEPA-RBC	2,745.
	015-S-0015-01	09/07/95	2,830.	J	2,300.	USEPA-RBC	2,745.
	015-S-0017-01	08/30/95	4,470.		2,300.	USEPA-RBC	2,745.
	015-S-0018-01	08/30/95	4,680.		2,300.	USEPA-RBC	2,745.
	015-S-0025-01	08/31/95	2,320.		2,300.	USEPA-RBC	2,745.
	015-S-0027-01	09/06/95	3,760.		2,300.	USEPA-RBC	2,745.
	015-S-0029-01	09/05/95	2,690.		2,300.	USEPA-RBC	2,745.
	015-S-0030-01	09/05/95	2,870.		2,300.	USEPA-RBC	2,745.
	015-S-0031-01	09/05/95	2,730.		2,300.	USEPA-RBC	2,745.

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 15

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/kg)								
309-00-2	Aldrin C							
		015-S-0016-01	08/30/95	50.	J	38.	USEPA-RBC	NA
60-57-1	Dieldrin C							
		015-S-0004-01	09/06/95	360.	D	40.	USEPA-RBC	NA
		015-S-0004-05	09/06/95	180.	D	1.	USEPA-SSL	NA
		015-S-0004-10	09/06/95	1.5	J	1.	USEPA-SSL	NA
		015-S-0005-10	09/07/95	1.3	J	1.	USEPA-SSL	NA
		015-S-0011-09	09/05/95	1.	J	1.	USEPA-SSL	NA
		015-S-0013-01	09/05/95	47.		40.	USEPA-RBC	NA
		015-S-0014-01	09/07/95	3,000.	D	40.	USEPA-RBC	NA
		015-S-0014-05	09/07/95	3.7	J	1.	USEPA-SSL	NA
		015-S-0014-10	09/07/95	2.	J	1.	USEPA-SSL	NA
		015-S-0015-01	09/07/95	210.	J	40.	USEPA-RBC	NA
		015-S-0015-05	09/07/95	5.7	J	1.	USEPA-SSL	NA
		015-S-0015-10	09/07/95	8.5	J	1.	USEPA-SSL	NA
		015-S-0016-01	08/30/95	88.		40.	USEPA-RBC	NA
		015-S-0016-05	08/30/95	1.4	J	1.	USEPA-SSL	NA
		015-S-0020-05	08/31/95	7.5		1.	USEPA-SSL	NA
		015-S-0020-08	08/31/95	2.	J	1.	USEPA-SSL	NA
		015-S-0026-08	08/31/95	1.7	J	1.	USEPA-SSL	NA
		015-S-0027-01	09/06/95	55.	J	40.	USEPA-RBC	NA
		015-S-0027-05	09/06/95	1.2	J	1.	USEPA-SSL	NA
		015-S-0031-01	09/05/95	51.	J	40.	USEPA-RBC	NA
		015-S-0031-10	09/05/95	2.5	J	1.	USEPA-SSL	NA
1024-57-3	Heptachlor epoxide C							
		015-S-0013-01	09/05/95	180.	D	70.	USEPA-RBC	NA
5103-71-9	alpha-Chlordane C							
		015-S-0016-01	08/30/95	3,100.	D	490.	USEPA-RBC	NA
5103-74-2	gam-Chlordane C							
		015-S-0013-01	09/05/95	580.	D	490.	USEPA-RBC	NA
		015-S-0016-01	08/30/95	2,000.	D	490.	USEPA-RBC	NA

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 15

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/kg)								
56-55-3	Benzo(a)anthracene [C]	015-S-0021-01	08/31/95	1,700.		880.	USEPA-RBC	NA
50-32-8	Benzo(a)pyrene [C]	015-S-0021-01	08/31/95	1,100.		88.	USEPA-RBC	NA
205-99-2	Benzo(b)fluoranthene [C]	015-S-0021-01	08/31/95	2,600.		880.	USEPA-RBC	NA

Errata

Appendix E
Final Remedial Investigation Report
Site15
NAS Pensacola

Instructions: Please replace page **4** of Appendix E with this revised page.

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 15

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/kg)								
75-35-4	1,1-DichLoroethene C							
		015-S-0027-01	09/06/95	53.		10.	FDEP-CG	NA
		015-S-0027-05	09/06/95	53.		30.	USEPA-SSL	NA
71-43-2	Benzene C							
		015-S-0027-05	09/06/95	52.		3.	FDEP-CGL	NA
79-01-6	Trichloroethene C							
		015-S-0027-05	09/06/95	50.		20.	USEPA-SSL	NA

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 15, PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (mg/kg)							
7440-38-2 Arsenic (As) C							
	015-S-0032-01	03/21/96	2.3	J	0.43	USEPA-RBC	1.56
	015-5-0041-01	03/14/96	8.5		0.43	USEPA-RBC	1.56
	015-S-0042-01	03/14/96	6.5		0.43	USEPA-RBC	1.56
	015-S-0043-01	03/14/96	2.4		0.43	USEPA-RBC	1.56
	015-S-0044-01	03/15/96	1.8		0.43	USEPA-RBC	1.56
	015-S-0045-01	03/19/96	4.		0.43	USEPA-RBC	1.56
	015-S-0046-01	03/19/96	2.4		0.43	USEPA-RBC	1.56
	015-S-0047-01	03/20/96	3.6		0.43	USEPA-RBC	1.56
	015-S-0048-01	03/20/96	1.5		0.43	USEPA-RBC	1.56
	015-S-0049-01	03/15/96	0.66		0.43	USEPA-RBC	1.56
	015-S-0050-01	03/20/96	1.9		0.43	USEPA-RBC	1.56
	015-S-0051-01	03/20/96	2.7		0.43	USEPA-RBC	1.56
	015-S-0052-01	03/20/96	5.1		0.43	USEPA-RBC	1.56
	015-S-0053-01	03/13/96	16.		0.43	USEPA-RBC	1.56
	015-S-0054-01	03/13/96	3.1		0.43	USEPA-RBC	1.56
	015-S-0055-01	03/13/96	11.1		0.43	USEPA-RBC	1.56
	015-S-0056-01	03/21/96	0.43	J	0.43	USEPA-RBC	1.56
	015-S-0057-01	03/21/96	1.9	J	0.43	USEPA-RBC	1.56
	015-S-0058-01	03/20/96	7.5	J	0.43	USEPA-RBC	1.56
	015-S-0059-01	03/15/96	2.9		0.43	USEPA-RBC	1.56
	015-S-0060-01	03/15/96	3.7		0.43	USEPA-RBC	1.56
	015-S-0061-01	03/21/96	18.9	J	0.43	USEPA-RBC	1.56
	015-S-0062-01	03/21/96	3.1	J	0.43	USEPA-RBC	1.56
	015-S-0063-01	03/21/96	5.	J	0.43	USEPA-RBC	1.56
	015-S-0064-01	03/19/96	5.6		0.43	USEPA-RBC	1.56
7439-96-5 Manganese (Mn) N							
	015-S-0046-01	03/19/96	215.		180.	USEPA-RBC	21.36
	015-S-0061-01	03/21/96	180.		180.	USEPA-RBC	21.36

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 15, PHASE II

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/kg)								
11097-69-1	arm lor-1254 N							
		015-S-0041-01	03/14/96	1,100.	D	320.	USEPA-RBC	NA
11096-82-5	Aroclor-1260 C							
		015-S-0041-01	03/14/96	860.	D	320.	USEPA-RBC	NA
		015-S-0042-01	03/14/96	320.	DJ	320.	USEPA-RBC	NA
60-57-1	Dieldrin C							
		015-S-0041-01	03/14/96	220.	DJ	40.	USEPA-RBC	NA
		015-S-0041-12	03/14/96	11.		1.	USEPA-SSL	NA
		015-S-0042-01	03/14/96	45.	D	40.	USEPA-RBC	NA
		015-S-0044-10	03/15/96	1.3	J	1.	USEPA-SSL	NA
		015-S-0050-01	03/20/96	95.	D	40.	USEPA-RBC	NA
		015-S-0057-01	03/21/96	140.	J	40.	USEPA-RBC	NA
		015-S-0057-10	03/21/96	1.5	J	1.	USEPA-SSL	NA
		015-S-0060-01	03/15/96	48.	D	40.	USEPA-RBC	NA
		015-S-0061-01	03/21/96	120.		40.	USEPA-RBC	NA
		015-S-0061-10	03/21/96	2.6	J	1.	USEPA-SSL	NA

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 15, PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	MASP Reference Concentration
Semivolatiles (µg/kg)							
50-32-8 Benzo(a)pyrene C							
	015-S-0047-01	03/20/96	100.		88.	USEPA-RBC	NA
	015-S-0064-01	03/ 19/96	120.		*88.*	USEPA-RBC	NA

Exceeds Preliminary Remediation Goals (PRGs) for Soil Contaminants
PENSACOLA, SITE 15, PHASE II

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/kg)								
79-34-5	1,1,2,2-Tetrachloroethane	C 015-S-0063-10	03/21/96	5.3	J	0.7	FDEP-CGL	NA

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)								
7429-90-5	Aluminum (Al) N							
		015-G-GM59-01	09/14/95	488.		50.	EPA SMCL	3,882.8
		015-G-GM60-01	09/13/95	203.		50.	EPA WCL	3,882.8
		015-G-GR01-01	09/14/95	133.	J	50.	EPA SMCL	3,882.8
		015-G-GR02-01	09/13/95	1,620.		50.	EPA SHCL	3,882.8
		015-G-GR03-01	09/13/95	2,230.		50.	EPA SMCL	3,882.8
		015-G-GR04-01	09/13/95	179.	J	50.	EPA SMCL	3,882.8
		015-G-GR06-01	09/14/95	208.		50.	EPA SMCL	3,882.8
		015-G-GROT-01	09/16/95	1,270.		50.	EPA SMCL	3,882.8
		015-G-GR08-01	09/13/95	719.		50.	EPA WCL	3,882.8
		015-G-MW01-01	09/14/95	780.		50.	EPA SMCL	3,882.8
		015-G-MW02-01	09/14/95	293.		50.	EPA SHCL	3,882.8
7440-38-2	Arsenic (As) N							
		015-G-GR03-01	09/13/95	783.		50.	FPDUS	2.8
		015-G-GR04-01	09/13/95	56.5		50.	FPDUS	2.8
		015-G-GR07-01	09/14/95	89.6		50.	FPDUS	2.8
7439-89-6	Iron (Fe) N							
		015-G-GM59-01	09/14/95	321.		300.	FSDUS	1,707.8
		015-G-GR02-01	09/13/95	1,070.		300.	FSDUS	1,707.0
		015-G-GR03-01	09/13/95	1,480.		300.	FSDWS	1,707.8
		015-G-GROT-01	09/14/95	744.		300.	FSDUS	1,707.8
		015-G-MW01-01	09/14/95	568.		300.	FSDUS	1,707.8
7439-96-5	Manganese (Mn) N							
		015-G-GR08-01	09/13/95	50.9		50.	FSDUS	22.

Exceeds Preliminary Remediation Goals (PRGs)
for Groundwater Contaminants
PENSACOLA, SITE 15

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/l)							
No Exceedames Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants PENSACOLA, SITE 15

	Sample ID	Date	Result	VQual	PRC	Reason	NASP Reference Concentration
Volatiles (µg/l)							
No Exceedancer Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE II

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)								
7429-90-5	**Aluminum (Al)** N							
		015-G-GROT-02	04/16/96	351.		50.	EPA SHCL	3,882.8
		015-G-GR32-01	04/16/96	734.		50.	EPA SHCL	3,882.8
		015-G-GR33-01	04/16/96	405.		50.	EPA SMCL	3,882.8
		015-G-GR34-01	04/16/96	377.		50.	EPA SHCL	3,882.8
		015-G-GR35-01	04/16/96	446.		50.	EPA SHCL	3,882.8
		015-G-GR36-01	04/16/96	1,580.		50.	EPA SMCL	3,882.8
		015-G-GR37-01	04/16/96	914.		50.	EPA SHCL	3,882.8
		015-G-GR38-01	04/16/96	298.		50.	EPA SHCL	3,882.8
7440-38-2	**Arsenic (As)** N							
		015-G-GROT-02	04/16/96	522.		50.	FPDWS	2.8
		015-G-GR33-01	04/16/96	56.9		50.	FPDUS	2.8
		015-G-GR36-01	04/16/96	96.1		50.	FPDUS	2.8
7439-89-6	**Iron (Fe)** N							
		015-G-GROT-02	04/16/96	638.		300.	FSDUS	1,707.8
		015-G-GR32-01	04/16/96	406.		300.	FSDWS	1,707.8
		015-G-GR36-01	04/16/96	634.		300.	FSDUS	1,707.8
		015-G-GR37-01	04/16/96	573.		300.	FSDUS	1,707.8

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE II

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/l)							
No Exceedames Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants PENSACOLA, SITE 15, PHASE II

	Sample ID	Date	Result	VQual	PRC	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants PENSACOLA, SITE 15, PHASE II

	Sample ID	Date	Result	VQual	PRG	R——	NASP Reference Concentratim
Volatiles (µg/l)							

No Exceedances Found

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIB

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)							
7440-38-2 Arsenic (As) N							
	015-G-GR03-02	05/17/96	373.		50.	FPDWS	2.8B
	015-G-GROT-03	05/17/96	104.		50.	FPDWS	

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIB

	Sample ID	Date	Result	VQual	PRG	Reason	WASP Reference Concentration
Pesticides (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIB

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							

No Exceedances Found

PRB_PENGI
04/11/97

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIB

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE III

		Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)								
7429-90-5	Aluminum (Al) N							
		015-G-GR03-03	07/26/96	982.		50.	EPA SMCL	3,882.8
		015-G-GROT-04	07/26/96	575.		50.	EPA SMCL	3,882.8
		015-G-GR32-03	07/26/96	1,630.		50.	EPA SMCL	3,882.8
		015-G-GR65-03	07/26/96	411.		50.	EPA SMCL	3,882.8
		015-G-GR66-03	07/26/96	476.		50.	EPA SMCL	3,882.8
		015-G-GR67-03	07/26/96	253.		50.	EPA SMCL	3,882.8
7440-36-0	Antimony (Sb) N							
		015-G-GR03-03	07/26/96	15.8		6.	FPDWS	30.2
7440-38-2	Arsenic (As) N							
		015-G-GR03-03	07/26/96	415.		50.	FPDUS	2.8
		015-G-GR65-03	07/26/96	231.		50.	FPDUS	2.8
		015-G-GR66-03	07/26/96	106.		50.	FPDUS	2.8
7440-47-3	Chromium (Cr) N							
		015-G-GROT-04	07/26/96	1,060.		100.	FPDUS	35.
7439-89-6	Iron (Fe) N							
		015-G-GR03-03	07/26/96	531.		300.	FSDWS	1,707.8
		015-G-GR07-04	07/26/96	1,820.		300.	FSDUS	1,707.8
		015-G-GR32-03	07/26/96	1,020.		300.	FSDUS	1,707.8

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE III

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/l)							
No Exceedanccs Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE III

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							

No Exceedances Found

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE III

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIB

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)							
7440-38-2 Arsenic (As) N							
	015-G-GR65-04	08/22/96	184.		50.	FPDUS	2.8
	015-G-GR66-04	08/22/96	155.		50.	FPDUS	2.8

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIB

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIB

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIB

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)							
No Exceedamcr Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIC

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Inorganics (µg/l)							
7429-90-5 Aluminum (Al) N							
	015-G-GS68-01	09/11/96	703.		50.	EPA SMCL	3,882.8
	015-G-GS69-01	09/11/96	3,900.		50.	EPA SMCL	3,882.8
	015-G-GS70-01	09/11/96	867.		50.	EPA SMCL	3,882.8
	015-G-GS71-01	09/11/96	1,110.		50.	EPA SMCL	3,882.8
7439-89-6 Iron (Fe) N							
	015-G-GS68-01	09/11/96	399.		300.	FSDUS	1,707.8
	015-G-GS69-01	09/11/96	2,130.		300.	FSDWS	1,707.8
	015-G-GS70-01	09/11/96	497.		300.	FSDWS	1,707.8
	015-G-GS71-01	09/11/96	382.		300.	FSDWS	1,707.8

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIC

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Pesticides (µg/l)							
60-57-1 Dieldrin C	015-G-GS68-01	09/11/96	0.11		0.1	FCGC	NA

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIC

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Semivolatiles (µg/l)							
No Exceedances Found							

Exceeds Preliminary Remediation Goals (PRGs) for Groundwater Contaminants
PENSACOLA, SITE 15, PHASE IIIC

	Sample ID	Date	Result	VQual	PRG	Reason	NASP Reference Concentration
Volatiles (µg/l)							

No Exceedances Found

Appendix F

Complete Analytical Results, Soil and Groundwater Samples

DATA QUALIFIER DEFINITIONS

The following definitions provide a brief explanation of the data qualifiers used in the validation process.

U The compound was analyzed for, but was not detected above the reported sample quantitation limit.

J The compound was positively detected, however, the reported concentration is considered to approximate the concentration within the sample.

UJ The compound was not detected above the reported sample quantitation limit. However, the reported quantitation limit is an approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the compound in the sample.

R The sample results are rejected due to serious deficiencies in the laboratory's ability to analyze the sample and meet QC criteria. The presence or absence of the compound cannot be verified.

DATALCP3
05/14/97

PENSACOLA, SITE 15
Phase I Groundwater
Inorganics

Time: 08:14

METAL													
	SAMPLE ID ------->	015-G-GM59-01		015-G-GM60-01		015-G-GR01-01		015-G-GR02-01		015-H-GR02-01		015-G-GR03-01	
	ORIGINAL ID ----->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	LAB SAMPLE ID --->	S555126*1		S555087A*1		S555126*2		S555087A*2		S555087A*3		S555087A*4	
	ID FROM REPORT -->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	SAMPLE DATE ----->	09/14/95		09/13/95		09/14/95		09/13/95		09/13/95		09/13/95	
	DATE EXTRACTED -->	09/19/95		09/19/95		09/19/95		09/19/95		09/19/95		09/19/95	
	DATE ANALYZED --->	10/03/95		09/30/95		09/30/95		10/03/95		09/30/95		10/02/95	
	MATRIX ---------->	Water		Uater		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL
7440-38-2	Arsenic (As)	7.8	J	1.2	UJ	1.2	UJ	32.9		29.9		783.	
7439-97-6	Mercury (Hg)	0.06	J	0.14	J	0.06	J	0.06	J	0.06	U	0.66	J
7439-92-1	Lead (Pb)	1.1	J	1.5	J	1.4	J	1.4	J	0.88	J	0.89	J
7782-49-2	Selenium (Se)	1.	UJ	1.	UJ	1.	UJ	1.	UJ	1.	UJ	1.	UJ
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7429-90-5	Aluminum (Al)	488.		203.		133.	J	1620.		1670.		2230.	
7440-36-0	Antimony (Sb)	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	4.4	J
7440-39-3	Barium (Ba)	9.8	J	10.3	J	6.6	J	4.5	U	4.2	J	5.1	U
7440-41-7	Beryllium (Be)	0.14	UJ	0.31	J	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ
7440-43-9	Cadmium (Cd)	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
7440-70-2	Calcium (Ca)	14500.		12200.		19900.		40900.		41600.		23200.	
7440-47-3	Chromium (Cr)	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U
7440-48-4	Cobalt (Co)	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
7440-50-8	Copper (Cu)	7.	U	5.9	U	5.1	U	11.2	U	10.8	U	10.6	U
7439-89-6	Iron (Fe)	321.		89.2	J	84.	J	1070.		1070.		1480.	
7439-95-4	Magnesium (Mg)	5090.		4680.	J	4150.	J	1420.	J	1440.	J	1500.	J
7439-96-5	Manganese (Mn)	10.3	J	3.3	U	7.8	U	8.2	J	9.2	J	12.8	J
7440-02-0	Nickel (Ni)	3.	U	3.	U	3.3	J	4.9	U	3.	U	3.	U
7440-09-7	Potassium (K)	4950.	J	4800.	J	8640.		4530.	J	4590.	J	4830.	J
7440-22-4	Silver (Ag)	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
7440-23-5	Sodium (Na)	5500.		5770.		4840.	J	5910.		6010.		5350.	
7440-62-2	Vanadium (V)	2.1	U	2.1	U	2.1	U	6.6	J	7.	J	8.1	J
7440-66-6	Zinc (Zn)	14.5	U	13.9	U	5.7	U	19.8	U	12.9	U	22.9	U
7440-28-0	Thallium (Tl)	1.1	J	1.5	J	0.95	U	0.95	U	0.95	U	0.95	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Groundwater
Inorganics

METAL															
	SAMPLE ID ------->	015-G-GR04-01		015-G-GR06-01		015-G-GR07-01		015-G-GR08-01		015-G-GR28-01		015-G-MW01-01	
	ORIGINAL ID ----->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	LAB SAMPLE ID --->	S555087A*5		S555126*3		S555126*4		S555087A*6		S555126*5		S555126*6	
	ID FROM REPORT -->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	SAMPLE DATE ----->	09/13/95		09/14/95		09/14/95		09/13/95		09/14/95		09/14/95	
	DATE EXTRACTED -->	09/19/95		09/19/95		09/19/95		09/19/95		09/19/95		09/19/95	
	DATE ANALYZED --->	10/03/95		09/30/95		10/03/95		09/30/95		10/03/95		10/04/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL
7440-38-2	Arsenic (As)	56.5		1.2	U	89.6		7.4	J	1.2	U	25.4	
7439-97-6	Mercury (Hg)	0.17	J	0.06	U	0.07	J	0.06	U	0.06	J	0.09	J
7439-92-1	Lead (Pb)	0.75	U	0.75	U	0.75	U	2.3	J	1.8	J	1.2	J
7782-49-2	Selenium (Se)	1.5	J	1.4	J	2.3	J	1.	UJ	1.	UJ	1.5	J
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7429-90-5	Aluminum (Al)	179.	J	208.		1270.		719.		112.	U	780.	
7440-36-0	Antimony (Sb)	2.9	J	2.5	J	2.3	U	2.3	U	2.3	U	2.3	U
7440-39-3	Barium (Ba)	6.1	J	10.	J	8.	J	13.9	J	19.2	J	14.2	J
7440-41-7	Beryllium (Be)	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ
7440-43-9	Cadmium (Cd)	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
7440-70-2	Calcium (Ca)	17300.		25400.		21700.		20300.		70400.		14500.	
7440-47-3	Chromium (Cr)	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U
7440-48-4	Cobalt (Co)	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
7440-50-8	Copper (Cu)	8.	U	7.2	U	5.3	U	8.7	U	5.3	U	3.	U
7439-89-6	Iron (Fe)	54.3	J	89.7	J	744.		156.		66.6	J	568.	
7439-95-4	Magnesium (Mg)	5470.		4210.	J	3380.	J	2470.	J	2190.	J	5020.	
7439-96-5	Manganese (Mn)	9.7	J	7.8	J	9.5	J	50.9		7.9	J	10.4	J
7440-02-0	Nickel (Ni)	3.	U	4.2	U	4.	U	3.1	U	3.	U	3.	U
7440-09-7	Potassium (K)	6060.		4640.	J	3810.	J	3400.	J	6480.		5570.	
7440-22-4	Silver (Ag)	1.7	J	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
7440-23-5	Sodium (Na)	11300.		5840.		4380.	J	7270.		12900.		7740.	
7440-62-2	Vanadium (V)	2.5	J	2.1	U	2.1	U	2.1	U	2.1	U	4.	J
7440-66-6	Zinc (Zn)	21.8	U	11.1	U	13.8	U	205.		13.3	U	19.8	U
7440-28-0	Thallium (Tl)	0.95	U	0.95	U	0.95	U	0.95	U	0.95	U	0.95	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Groundwater
Inorganics

METAL			
	SAMPLE ID ------->	015-G-MW02-01	
	ORIGINAL ID ----->	015GMW0201	
	LAB SAMPLE ID --->	S555126*7	
	ID FROM REPORT -->	015GMW0201	
	SAMPLE DATE ----->	09/14/95	
	DATE EXTRACTED -->	09/19/95	
	DATE ANALYZED --->	10/03/95	
	MATRIX ---------->	Water	
	UNITS ---------->	UG/L	

CAS #	Parameter	ENP11	VAL
7440-38-2	Arsenic (As)	1.2	U
7439-97-6	Mercury (Hg)	0.06	J
7439-92-1	Lead (Pb)	0.75	U
7782-49-2	Selenium (Se)	2.1	J
57-12-5	Cyanide (CN)	10.	U
7429-90-5	Aluminum (Al)	293.	
7440-36-0	Antimony (Sb)	2.3	U
7440-39-3	Barium (Ba)	13.1	J
7440-41-7	Beryllium (Be)	0.14	UJ
7440-43-9	Cadmium (Cd)	3.	U
7440-70-2	Calcium (Ca)	19100.	
7440-47-3	Chromium (Cr)	4.2	U
7440-48-4	Cobalt (Co)	1.2	U
7440-50-8	Copper (Cu)	2.3	U
7439-89-6	Iron (Fe)	117.	
7439-95-4	Magnesium (Mg)	4320.	J
7439-96-5	Manganese (Mn)	6.8	J
7440-02-0	Nickel (Ni)	3.	U
7440-09-7	Potassium (K)	4310.	J
1440-22-4	Silver (Ag)	1.5	U
7440-23-5	Sodium (Na)	6090.	
7440-62-2	Vanadium (V)	3.2	J
7440-66-6	Zinc (Zn)	13.9	U
7440-28-0	Thallium (Tl)	0.95	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Groundwater
Pesticides

PEST													
	SAMPLE ID ------->	015-G-GM59-01		015-G-GM60-01		015-G-GR01-01		015-G-GR02-01		015-H-GR02-01		015-G-GR03-01	
	ORIGINAL ID ----->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	LAB SAMPLE ID --->	S555126*1		S555087A*1		S555126*2		S555087A*2		S555087A*3		S555087A*4	
	ID FROM REPORT -->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	SAMPLE DATE ----->	09/ 14/95		09/13/95		09/ 14/95		09/13/95		09/13/95		09/ 13/95	
	DATE EXTRACTED -->	09/18/95		09/15/95		09/ 16/95		09/ 15/95		09/15/95		09/15/95	
	DATE ANALYZED --->	09/25/95		09/29/95		09/25/95		09/29/95		09/29/95		09/29/95	
	MATRIX ---------->	Water		Water		Water		Uater		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAI	ENP11	VAL	ENP11	VAL
72-54-8	4,4'-DDD	0.02	U	0.02	U	0.02	U	0.02	UR	0.02	U	0.02	U
72-55-9	4,4'-DDE	0.02	U	0.02	U	0.02	U	0.02	UR	0.02	U	0.02	U
50-29-3	4,4'-DDT	0.02	U	0.02	U	0.02	U	0.02	UR	0.02	U	0.02	U
309-00-2	Aldrin	0.01	U	0.01	U	0.01	U	0.01	UR	0.01	U	0.01	U
12674-11-2	Aroclor-1016	0.2	U	0.2	U	0.2	U	0.2	UR	0.2	U	0.2	U
11104-28-2	Aroclor-1221	0.4	U	0.4	U	0.4	U	04	UR	0.4	U	0.4	U
11141-16-5	Aroclor-1232	0.2	U	0.2	U	0.2	U	0.2	UR	0.2	U	0.2	U
53469-21-9	Aroclor-1242	0.2	U	0.2	U	0.2	U	0.2	UR	0.2	U	0.2	U
12672-29-6	Aroclor-1248	0.2	U	0.2	U	0.2	U	0.2	UR	0.2	U	0.2	U
11097-69-1	Aroclor-1254	0.2	U	0.2	U	0.2	U	0.2	UR	0.2	U	0.2	U
11096-82-5	Aroclor-1260	0.2	U	0.2	U	0.2	U	0.2	UR	0.2	U	0.2	U
60-57-1	Dieldrin	0.02	U	0.02	U	0.02	U	0.0067	J	0.0094	J	0.0098	J
959-98-8	Endosulfan I	0.01	U	0.01	U	0.01	U	0.01	UR	0.01	U	0.01	U
33213-65-9	Endosulfan II	0.02	U	0.02	U	0.02	U	0.02	UR	0.02	U	0.02	U
1031-07-8	Endosulfan sulfate	0.02	U	0.02	U	0.02	U	0.02	UR	0.02	U	0.02	U
72-20-8	Endrin	0.02	U	0.02	U	0.02	U	0.02	UR	0.02	U	0.02	U
7421-93-4	Endrin aldehyde	0.02	U	0.02	U	0.02	U	0.02	UR			0.02	U
53494-70-5	Endrin ketone	0.02	U	0.02	U	0.02	U	0.02	UR	0.02	U	0.02	U
76-44-8	Heptachlor	0.01	U	0.01	U	0.01	U	0.01	UR	0.01	U	0.01	U
1024-57-3	Heptachlor epoxide	0.01	U	0.01	U	0.01	U	0.0019	J	0.0027	J	0.01	U
72-43-5	Methoxychlor	0.1	U	0.1	U	0.1	U	0.1	UR	0.1	U	0.1	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	UR	1.	U	1.	U
319-84-6	alpha-BHC	0.01	UJ	0.01	UJ	0.01	UJ	0.01	UR	0.01	UJ	0.01	UJ
5103-71-9	alpha-Chlordane	0.01	U	0.01	U	0.01	U	0.01	UR	0.01	U	0.01	U
319-85-7	beta-BHC	0.01	U	0.01	U	0.01	U	0.01	UR	0.01	U	0.01	U
319-86-8	delta-BHC	0.01	U	0.01	U	0.01	U	0.01	UR	0.01	U	0.0064	J
58-89-9	gamma-BHC (Lindane)	0.01	U	0.01	U	0.01	U	0.01	UR	0.01	U	0.01	U
5103-74-2	gamma-Chlordane	0.01	U	0.1	U	0.01	U	0.01	UR	0.01	U	0.01	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Groundwater
Pesticides

PEST																	
	SAMPLE ID ------->	015-G-GR04-01		015-G-GR06-01		015-G-GR07-01		015-G-GR08-01		015-G-GR28-01		015-G-MW01-01	
	ORIGINAL ID ----->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	LAB SAMPLE ID --->	S555087A*5		S555126*3		S555126*4		S555087A*6		S555126*5		5555126*6	
	ID FROM REPORT -->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	SAMPLE DATE ----->	09/ 13/95		09/14/95		09/14/95		09/13/95		09/14/95		09/14/95	
	DATE EXTRACTED -->	09/15/95		09/18/95		09/18/95		09/15/95		09/18/95		09/18/95	
	DATE ANALYZED --->	09/29/95		09/25/95		09/25/95		09/29/95		09/25/95		09/25/95	
	MATRIX ---------->	Uater		Uater		Water		Uater		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL	ENP11	VAL
72-54-8	4,4'-DDD	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
72-55-9	4,4'-DDE	0.0022	J	0.02	U	0.02	U	0.062	J	0.02	U	0.02	U
50-29-3	4,4'-DDT	0.0048	J	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
309-00-2	Aldrin	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
12674-11-2	Aroclor-1016	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
11104-28-2	Aroclor-1221	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
11141-16-5	Aroclor-1232	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
53469-21-9	Aroclor-1242	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
12672-29-6	Aroclor-1248	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
11097-69-1	Aroclor-1254	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
11096-82-5	Aroclor-1260	0.2	U	0.32		0.2	U	0.2	U	0.2	U	0.2	U
60-57-1	Dieldrin	0.014	J	0.02	U	0.0023	J	0.033		0.025		0.02	U
959-98-8	Endosulfan I	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
33213-65-9	Endosulfan II	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
1031-07-8	Endosulfan sulfate	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
72-20-8	Endrin	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
7421-93-4	Endrin aldehyde	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
53494-70-5	Endrin ketone	0.02	U	0.02	U	0.02	U	0.02	U	6.62	U	0.02	U
76-44-8	Heptachlor	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1024-57-3	Heptachlor epoxide	0.0015	J	0.01	U	0.01	U	0.005	d	0.01	U	0.01	U
72-43-5	Methoxychlor	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
319-84-6	alpha-BHC	0.01	UJ	0.01	UJ	0.01	UJ	0.01	UJ	0.01	UJ	0.01	UJ
5103-71-9	alpha-Chlordane	0.019		0.01	U	0.01	U	0.011		0.01	U	0.01	U
319-85-7	beta-BHC	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
319-86-8	delta-BHC	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
58-89-9	gamma-BHC (Lindane)	0.01	U	0.01	U	0.014	J	0.01	U	0.01	U	0.01	U
5103-74-2	gamma-Chlordane	0.022		0.01	U	0.01	U	0.0079	J	0.01	U	0.01	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Groundwater
Pesticides

PEST

SAMPLE ID ------->	015-G-MW02-01
ORIGINAL ID ----->	015GMW0201
LAB SAMPLE ID --->	S555126*7
ID FROM REPORT -->	015GMW0201
SAMPLE DATE ----->	09/14/95
DATE EXTRACTED -->	09/18/95
DATE ANALYZED --->	09/25/95
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	ENP11	VAL
72-54-8	4,4'-DDD	0.02	U
72-55-9	4,4'-DDE	0.02	U
50-29-3	4,4'-DDT	0.02	U
309-00-2	Aldrin	0.01	U
12674-11-2	Aroclor-1016	0.2	U
11104-28-2	Aroclor-1221	0.4	U
11141-16-5	Aroclor-1232	0.2	U
53469-21-9	Aroclor-1242	0.2	U
12672-29-6	Aroclor-1248	0.2	U
11097-69-1	Aroclor-1254	0.2	U
11096-82-5	Aroclor-1260	0.2	U
60-57-1	Dieldrin	0.02	U
959-98-8	Endosulfan I	0.01	U
33213-65-9	Endosulfan II	0.02	U
1031-07-8	Endosulfan sulfate	0.02	U
72-20-8	Endrin	0.02	U
7421-93-4	Endrin aldehyde	0.02	U
53494-70-5	Endrin ketone	0.02	U
76-44-8	Heptachlor	0.01	U
1024-57-3	Heptachlor epoxide	0.01	U
72-43-5	Methoxychlor	0.1	U
8001-35-2	Toxaphene	1.	U
319-84-6	alpha-BHC	0.01	UJ
5103-71-9	alpha-Chlordane	0.01	U
319-85-7	beta-BHC	0.01	U
319-86-8	delta-BHC	0.01	U
58-89-9	gamma-BHC (Lindane)	0.01	U
5103-74-2	gamma-Chlordane	0.01	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Groundwater
Low VOC

LOW VOA																	
	SAMPLE ID ------->	015-G-GM59-01		015-G-GM60-01		015-G-GR01-01		015-G-GR02-01		015-H-GR02-01		015-G-GR03-01	
	ORIGINAL ID ----->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	LAB SAMPLE ID --->	S555126*1		S555087A*1		S555126*2		S555087A*2		S555087A*3		S555087A*4	
	ID FROM REPORT -->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	SAMPLE DATE ----->	09/14/95		09/13/95		09/14/95		09/13/95		09/13/95		09/13/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/21/95		09/20/95		09/20/95		09/20/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11		ENP11		ENP11		ENP11		ENP11		ENP11	
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-34-3	1,1-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-35-4	1,1-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
107-06-2	1,2-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
78-93-3	2-Butanone (MEK)	5.	U	5.	U	5.	UR	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	5.	U	5.	U	5.	UR	5.	U	5.	U	5.	U
71-43-2	Benzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-27-4	Bromodichloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-25-2	Bromoform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
74-83-9	Bromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-15-0	Carbon disulfide	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-23-5	Carbon tetrachloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-90-7	Chlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-00-3	Chloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
67-66-3	Chloroform	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
74-87-3	Chloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
124-48-1	Dibromochloromethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
100-41-4	Ethylbenrene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-09-2	Methylene chloride	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
100-42-5	Styrene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
127-18-4	Tetrachloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
108-88-3	Toluene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-01-6	Trichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-01-4	Vinyl chloride	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
1330-20-7	Xylene (Total)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low VOC

LOW VOA							
	SAMPLE ID ------->	015-G-GM59-01	015-G-GM60-01	015-G-GR01-01	015-G-GR02-01	015-H-GR02-01	015-G-GR03-01
	ORIGINAL ID ----->	015GGM5901	015GGM6001	015GGR0101	015GGR0201	015HGR0201	015GGR0301
	LAB SAMPLE ID --->	S555126*1	S555087A*1	S555126*2	S555087A*2	S555087A*3	S555087A*4
	ID FROM REPORT -->	015GGM5901	015GGM6001	015GGR0101	015GGR0201	015HGR0201	015GGR0301
	SAMPLE DATE ----->	09/14/95	09/13/95	09/14/95	09/13/95	09/13/95	09/13/95
	DATE ANALYZED --->	09/20/95	09/20/95	09/21/95	09/20/95	09/20/95	09/20/95
	MATRIX ---------->	Uater	Uater	Uater	Uater	Water	Water
	UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
CAS #	Parameter	ENP11	ENP11	ENP11	ENP11	ENP11	ENP11
74-97-5	Chlorobromomethane	1. U	1. U	1. U	1. U	1. U	1. U
156-59-2	cis-1,2-Dichloroethene	1. U	1. U	1. U	1. U	1. U	1. U
156-60-5	trans-1,2-Dichloroethene	1. U	1. U	1. U	1. U	1. U	1. U

PENSACOLA, SITE 15
Phase I Groundwater
Low VOC

LOW VOA																			
	SAMPLE ID ------->	015-G-GR04-01		015-G-GR06-01		015-G-GR07-01		015-G-GR08-01		015-G-GR28-01		015-G-MW01-01	
	ORIGINAL ID ----->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	LAB SAMPLE ID --->	S555087A*5		S555126*3		S555126*4		S555087A*6		S555126*5		5545126*6	
	ID FROM REPORT -->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	SAMPLE DATE ----->	09/13/95		09/14/95		09/14/95		09f 93/95		09/ 14/95		09/ 14/95	
	DATE ANALYZED --->	09/20/95		09/21/95		09/21/95		09/20/95		09/21/95		09/21/95	
	MATRIX ---------->	Water		Water		Uater		Water		Water		Uater	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11		ENPI1		ENP11		ENPI1		ENP11		ENPI1	
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1	U	1.	U	1.	U	1.	U
75-34-3	1,1-Dichloroethane	1.	U	1.	U	1.	U	1	U	1.	U	1.	U
75-35-4	1,1-Dichloroethene	1.	U	1.	U	1	U	1.	U	1	U	1.	U
107-06-2	1,2-Dichloroethane	1.	U	1	U	1	U	1	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U	1.	U	1	U	1.	U
78-93-3	2-Butanone (MEK)	5.	U	5.	UR	5.	UR	5.	U	5.	UR	5.	UR
591-78-6	2-Hexanone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	5.	U	5.	UR	5.	UR	5.	U	5.	UR	5.	UR
71-43-2	Benzene	1.	U	1.	U	1.	U	1.	U	1	U	1	U
75-27-4	Bromodichloromethane	1.	U	1.	U	1	U	1.	U	1	U	1.	U
75-25-2	Bromoform	1.	U	1.	U	1.	U	1.	U			1.	U
74-83-9	Bromomethane	1.	U	1.	U	1	U	1.	U	1	U	1.	U
75-15-0	Carbon disulfide	1	U	1.	U	1.	U	1.	U	1.	U	[illegible]	U
56-23-5	Carbon tetrachloride	1	U	1.	U	1.	U	1	U	1	U	1.	U
108-90-7	Chlorobenzene	1.	U	1.	U	1.	U	1	U	1	U	1	U
75-00-3	Chloroethane	1	U	1.	U	1	U	1	U	1	U	1.	U
67-66-3	Chloroform	0.8	J	1	U	1	U	1	U	1.	U	1.	U
74-87-3	Chloromethane	1.	U	1.	U	1	U	1.	U	1	U	1.	U
124-48-1	Dibromochloromethane	0.8	J	1	U	1	U	1	U	1	U	1	U
100-41-4	Ethylbenzene	1	U	1.	U	1.	U	1.	U	1.	U	1.	U
75-09-2	Methylene chloride	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
100-42-5	Styrene	1	U	1.	U	1.	U	1.	U	1.	U	1.	U
127-18-4	Tetrachloroethene	1	U	1.	U	1.	U	1.	U	1	U	1	U
108-88-3	Toluene	1.	U	1.	U	1	U	1.	U	1	U	1.	U
79-01-6	Trichloroethene	1	U	1.	U	1.	U	1.	U	1.	U	1	U
75-01-4	Vinyl chloride	1	U	1.	U	1.	U	1.	U	1.	U	1.	U
1330-20-7	Xylene (Total)	1.	U	1.	U	1.	U	1	U	1.	U	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U	1.	U	1	U	1	U	1	U	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low VOC

LOW VOA																	
	SAMPLE ID ------->	015-G-GR04-01		015-G-GR06-01		015-G-GR07-01		015-G-GR08-01		015-G-GR28-01		015-G-MW01-01	
	ORIGINAL ID ----->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	LAB SAMPLE ID --->	S555087A*5		S555126*3		S555126*4		S555087A*6		S555126*5		S555126*6	
	ID FROM REPORT -->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	SAMPLE DATE ----->	09/13/95		09/14/95		09/14/95		09/13/95		09/14/95		09/14/95	
	DATE ANALYZED --->	09/20/95		09/21/95		09/21/95		09/20/95		09/21/95		09/21/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11		ENP11		ENP11		ENP11		ENP11		ENP11	
74-97-5	Chlorobromomethane	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low VOC

LOW VOA

SAMPLE ID ------->	015-G-MW02-01
ORIGINAL ID ----->	015GMW0201
LAB SAMPLE ID --->	S555126*7
ID FROM REPORT -->	015GMW0201
SAMPLE DATE ----->	09/14/95
DATE ANALYZED --->	09/21/95
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	ENP11	
71-55-6	1,1,1-Trichloroethane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
75-34-3	1,1-Dichloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
78-93-3	2-Butanone (MEK)	5.	UR
591-78-6	2-Hexanone	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U
67-64-1	Acetone	5.	UR
71-43-2	Benzene	1.	U
75-27-4	Bromodichloromethane	1.	U
75-25-2	Bromoform	1.	U
74-83-9	Bromomethane	1.	U
75-15-0	Carbon disulfide	1.	U
56-23-5	Carbon tetrachloride	1.	U
108-90-7	Chlorobenzene	1.	U
75-00-3	Chloroethane	1.	U
67-66-3	Chloroform	1.	U
74-87-3	Chloromethane	1.	U
124-48-1	Dibromochloromethane	1.	U
100-41-4	Ethylbenzene	1.	U
75-09-2	Methylene chloride	2.	U
100-42-5	styrene	1.	U
127-18-4	Tetrechloroethene	1.	U
108-88-3	Toluene	1.	U
79-01-6	TrichLoroethene	1.	U
75-01-4	Vinyl chloride	1.	U
1330-20-7	Xylene (Total)	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenrenc	1.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low VOC

LOW VOA

SAMPLE ID ------->	015-G-MW02-01
ORIGINAL ID ----->	015GMW0201
LAB SAMPLE ID --->	S555126*7
ID FROM REPORT -->	015GMW0201
SAMPLE DATE ----->	09/14/95
DATE ANALYZED --->	09/21/95
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	ENP11	
74-97-5	Chlorobromomethane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low SVOC

LOW SVOA																			
	SAMPLE ID -------->	015-G-GM59-01		015-G-GM60-01		015-G-GR01-01		015-G-GR02-01		015-H-GR02-01		015-G-GR03-01	
	ORIGINAL ID ----->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	LAB SAMPLE ID --->	S555126*1		S555087A*1		S555126*2		S555087A*2		S555087A*3		S555087A*4	
	ID FROM REPORT -->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	SAMPLE DATE ----->	09/ 14/95		09/ 13/95		09/14/95		09/13/95		09/ 13/95		09/13/95	
	DATE EXTRACTED -->	09/18/95		09/15/95		09/18/95		09/15/95		09/15/95		09/15/95	
	DATE ANALYZED --->	09/25/95		09/22/95		09/25/95		10/05/95		09/22/95		09/22/95	
	MATRIX ---------->	Uater		Uater		Water		Water		Uater		Uater	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11		ENP11		ENP11		ENP11		ENP11		ENP11	
120-82-1	1,2,4-Trichlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
95-95-4	2,4,5-Trichlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
88-06-2	2,4,6-Trichlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
120-83-2	2,4-Dichlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
105-67-9	2,4-Dimethylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
51-28-5	2,4-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
121-14-2	2,4-Dinitrotoluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
606-20-2	2,6-Dinitrotoluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-58-7	2-Chloronaphthalene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
95-57-8	2-Chlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-57-6	2-Methylnaphthalene	5.	U	5.	U	5 .	u	5.	U	5.	U	5.	U
95-48-7	2-Methylphenol (o-Cresol)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
88-74-4	2-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
88-75-5	2-Nitrophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-94-1	3,3'-Dichlorobenzidine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
999900-32-2	3-Methylphenol/4-Methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
99-09-2	3-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
101-55-3	4-Bromophenyl-phenylether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
59-50-7	4-Chloro-3-methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
106-47-8	4-Chloroaniline	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
7005-72-3	4-Chlorophenylphenylether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-01-6	4-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
100-02-7	4-Nitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
83-32-9	Acenaphthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
208-96-8	Acenaphthylene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
120-12-7	Anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-55-3	Benzo(a)anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
50-32-8	Benzo(a)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
205-99-2	Benzo(b)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
191-24-2	Benzo(g,h,i)perylene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
207-08-9	Benzo(k)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
85-68-7	Butylbenzylphthalate	5.	U	5.	UJ	5.	U	5.	U	5.	UJ	5.	UJ
218-01-9	Chrysene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
84-74-2	Di-n-butylphthalate	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low SVOC

LOW SVOA																							
	SAMPLE ID ------->	015-G-GM59-01		015-G-GM60-01		015-G-GR01-01		015-G-GR02-01		015-H-GR02-01		015-G-GR03-01	
	ORIGINAL ID ----->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	LAB SAMPLE ID --->	S555126*1		S555087A*1		S555126*2		S555087A*2		S555087A*3		S555087A*4	
	ID FROM REPORT -->	015GGM5901		015GGM6001		015GGR0101		015GGR0201		015HGR0201		015GGR0301	
	SAMPLE DATE ----->	09/ 14/95		09/13/95		09/14/95		09/13/95		09/13/95		09/ 13/95	
	DATE EXTRACTED -->	09/ 18/95		09/15/95		09/18/95		09/15/95		09/15/95		09/15/95	
	DATE ANALYZED --->	09/25/95		09/22/95		09/25/95		10/05/95		09/22/95		09/22/95	
	MATRIX ---------->	Water		Uater		Water		Uater		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11		ENP11		ENP11		ENP11		ENP11		ENP11	
117-84-0	Di-n-octyl phthalate	5.	U	5.	UJ	5.	U	5.	U	5.	UJ	5.	UJ
53-70-3	Dibenz(a,h)anthracene	5.	U	5"	U	5.	U	5.	U	5.	U	5.	U
132-64-9	Dibenzofuran	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
84-66-2	Diethytphthalate	5.	U	5.	U	5.	U	0.7	J	5.	U	5.	U
131-11-3	Dimethyl phthalate	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
206-44-0	Fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
86-73-7	Fluorene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
118-74-1	Hexachlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
87-68-3	Hexachlorobutadiene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
77-47-4	Hexachlorocyclopentadiene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-72-1	Hexachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-59-1	Isophorone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
621-64-7	N-Nitroso-di-n-propylamine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
122-39-4	Diphenylamine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-20-3	Naphthalene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
98-95-3	Nitrobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
87-06-5	Pentachlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
85-01-8	Phenanthrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-95-2	Phenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
129-00-0	Pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
111-91-1	bis(2-Chloroethoxy)methane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
111-44-4	bis(2-Chloroethyl)ether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	U	5.	UJ	5.	U	5.	U	5.	UJ	5.	UJ

PENSACOLA, SITE 15
Phase I Groundwater
Low SVOC

LOW SVOA																			
	SAMPLE ID ------->	015-G-GR04-01		015-G-GR06-01		015-G-GROT-01		015-G-GR08-01		015-G-GR28-01		015-G-MW01-01	
	ORIGINAL ID ----->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	LAB SAMPLE ID --->	S555087A*5		S555126*3		S555126*4		S555087A*6		S555126*5		S555126*6	
	ID FROM REPORT -->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	SAMPLE DATE ----->	09/13/95		09/14/95		09/14/95		09/13/95		09/14/95		09/14/95	
	DATE EXTRACTED -->	09/15/95		09/18/95		09/18/95		09/15/95		09/18/95		09f18/95	
	DATE ANALYZED --->	09/22/95		09/25/95		09/25/55		09/22/95		09/25/95		09/25/95	
	MATRIX ---------->	Uater		Uater		Uater		Uater		Uater		Uater	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11		ENP11		ENP11		ENP11		ENP11		ENP11	
120-82-1	1,2,4-Trichlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	5.	U	5"	U	5.	U	5.	U	5.	U	5.	U
95-95-4	2,4,5-Trichlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
88-06-2	2,4,6-Trichlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
120-83-2	2,4-Dichlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
105-67-9	2,4-Dimethylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
51-28-5	2,4-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
121-14-2	2,4-Dinitrotoluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
606-20-2	2,6-Dinitrotoluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-58-7	2-Chloronaphthelene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
95-57-8	2-Chlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-57-6	2-Methylnaphthalene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
95-48-7	2-Methylphenol (0-Cresol)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
88-74-4	2-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
88-75-5	2-Nitrophenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-94-1	3,3'-Dichlorobenzidine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
99-09-2	3-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
101-55-3	4-Bromophenyl-phenylether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
59-50-7	4-Chloro-3-methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
106-47-8	4-Chtoroaniline	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
7005-72-3	4-Chlorophenylphenylether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-01-6	4-Nitroanitine	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
100-02-7	4-Nitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
83-32-9	Acenaphthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
208-96-8	Acenaphthylene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
120-12-7	Anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-55-3	Benzo(a)anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
50-32-8	Benzo(a)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
205-99-2	Benzo(b)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
191-24-2	Benzo(g,h,i)perylene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
207-08-9	Benzo(k)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
85-68-7	Butylbenzylphthalate	5.	UJ	5.	U	5.	U	5.	UJ	5.	U	5.	U
218-01-9	Chrysene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
84-74-2	Di-n-butylphthalate	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low SVOC

LOW SVOA													
	SAMPLE ID ------->	015-G-GR04-01		015-G-GR06-01		015-G-GR07-01		015-G-GR08-01		015-G-GR28-01		015-G-MW01-01	
	ORIGINAL ID ----->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	LAB SAMPLE ID --->	S555087A*5		S555126*3		S555126*4		S555087A*6		S555126*5		E555126*6	
	ID FROM REPORT -->	015GGR0401		015GGR0601		015GGR0701		015GGR0801		015GGR2801		015GMW0101	
	SAMPLE DATE ----->	09/13/95		09/14/95		09/14/95		09/13/95		09/14/95		09/14/95	
	DATE EXTRACTED -->	09/15/95		09/18/95		09/18/95		09/15/95		09/18/95		09/18/95	
	DATE ANALYZED --->	09/22/95		09/25/95		09/25/95		09/52/95		09/25/95		09/25/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	ENP11		ENP11		ENP11		ENP11		ENP11		ENP11	
117-84-0	Di-n-octyl phthalate	5.	UJ	5.	U	5.	U	5.	UJ	5.	U	5.	U
53-70-3	Dibenz(a,h)anthracene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
132-64-9	Dibenzofuran	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
84-66-2	Diethylphthalate	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
131-11-3	Dimethyl phthalate	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
206-44-0	Fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
86-73-7	Fluorene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
118-74-1	Hexachlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
87-68-3	Hexachlorobutadiene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
77-47-4	Hexachlorocyclopentadiene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-72-1	Hexachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-59-1	Isophorone	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
621-64-7	N-Nitroso-di-n-propylamine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
122-39-4	Diphenylamine	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
91-20-3	Naphthalene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
98-95-3	Nitrobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
87-86-5	Pentachlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
85-01-8	Phenanthrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-95-2	Phenol	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
129-00-0	Pyrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
111-91-1	bis(2-Chloroethoxy)methane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
111-44-4	bis(2-Chloroethyl)ether	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	UJ	5.	U	5.	U	5.	UJ	5.	U	5.	U

PENSACOLA, SITE 15
Phase I Groundwater
Low SVOC

LOW SVOA								
		SAMPLE ID ------->	015-G-MW02-01					
		ORIGINAL ID ----->	015GMW0201					
		LAB SAMPLE ID --->	S555126*7					
		ID FROM REPORT -->	015GMW0201					
		SAMPLE DATE ----->	09/14/95					
		DATE EXTRACTED -->	09/ 18/95					
		DATE ANALYZED --->	09/25/95					
		MATRIX ---------->	Water					
		UNITS ---------->	UG/L					
			ENP11					
			5.	U				
			5.	U				
			20.	U				
			5.	U				
			5.	U				
			5.	U				
			20.	U				
			5.	U				
			5.	U				
			5.	U				
			5.	U				
			5.	U				
		Cresol)	5.	U				
			20.	U				
			5.	U				
			5.	U				
99999		phenol	5.	U				
			20.	U				
		initrophenol	20.	U				
		-phenylether	5.	U				
			5.	U				
			5.	U				
		phenylether	5.	U				
			20.	U				
100-02-7	4-Nitrophenol		20.	U				
83-32-9	Acenaphthene		5.	U				
208-96-8	Acenaphthylene		5.	U				
120-12-7	Anthracene		5.	U				
56-55-3	Benzo(a)anthracene		5.	U				
50-32-8	Benzo(a)pyrene		5.	U				
205-99-2	Benzo(b)fluoranthene		5.	U				
191-24-2	Benzo(g,h,i)perylene		5.	U				
207-08-9	Benzo(k)fluoranthene		5.	U				
85-68-7	Butylbenzylphthalate		5.	U				
218-01-9	Chrycene		5.	U				
84-74-2	Di-n-butylphthalate		5.	U				

PENSACOLA, SITE 15
Phase I Groundwater
Low SVOC

LOW SVOA			
	SAMPLE ID ------->	015-G-MW02-01	
	ORIGINAL ID ----->	015GMW0201	
	LAB SAMPLE ID --->	S555126*7	
	ID FROM REPORT -->	015GMW0201	
	SAMPLE DATE ----->	09/ 14/95	
	DATE EXTRACTED -->	09/18/95	
	DATE ANALYZED --->	09/25/95	
	MATRIX ---------->	Uater	
	UNITS ---------->	UG/L	
CAS #	Parameter	ENP11	
117-84-0	Di-n-octyl phthalate	5.	U
53-70-3	Dibenz(a,h)anthracene	5.	U
132-64-9	Dibenzofuran	5.	U
84-66-2	Diethylphthalate	5.	U
131-11-3	Dimethyl phthalate	5.	U
206-44-0	Fluoranthene	5.	U
86-73-7	Fluorene	5.	U
118-74-1	Hexachlorobenzene	5.	U
87-68-3	Hexachlorobutadiene	5.	U
77-47-4	Hexachlorocyclopentdiene	5.	U
67-72-1	Hexachloroethane	5.	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.	U
78-59-1	Isophorone	5.	U
621-64-7	N-Nitroso-di-n-propylamine	5.	U
122-39-4	Diphenylamine	5.	U
91-20-3	Naphthalene	5.	U
98-95-3	Nitrobenzene	5.	U
87-86-5	Pentachlorophenol	20.	U
85-01-8	Phenanthrene	5.	U
108-95-2	Phenol	5.	U
129-00-0	Pyrene	5.	U
111-91-1	bis(2-Chloroethoxy)methane	5.	U
111-44-4	bis(2-Chloroethyl)ether	5.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	U

PENSACOLA, SITE 15
Phase II Groundwater
Inorganics

METAL																							
	SAMPLE ID ------->	015-G-GR07-02			015-G-GR32-01			015-G-GR33-01			015-G-GR34-01			015-G-GR35-01			015-H-GR35-01		
	ORIGINAL ID ----->	015GGR0702			015GGR3201			015GGR3301			015GGR3401			015GGR3501			015HGR3501		
	LAB SAMPLE ID --->	S682145*1			S682145*6			S682145*7			S682145*8			S682145*2			S682145*5		
	ID FROM REPORT -->	015GGR0702			015GGR3201			015GGR3301			015GGR3401			015GGR3501			015HGR3501		
	SAMPLE DATE ----->	04/16/96			04/16/96			04/16/96			04/16/96			04/16/96			04/ 16/96		
	DATE EXTRACTED -->	04/18/96			04/18/96			04/18/96			04/18/96			04/18/96			04/18/96		
	DATE ANALYZED --->	04/19/96			04/19/96			04/19/96			04f19/96			04/19/96			04/19/96		
	MATRIX ---------->	Water			Water			Water			Uater			Water			Uater		
	UNITS ---------->	UG/L			UG/L			UG/L			UG/L			UG/L			UG/L		
CAS #	Parameter	PJL07			PJL07			PJL07			PJL07			PJL07			PJL07		
7429-90-5	Aluminum (Al)	351.			734.			405.			377.			446.			411.		
7439-89-6	Iron (Fe)	638.			406.			199.			258.			244.			216.		
7440-38-2	Arsenic (As)	522.			8.1	J		56.9			2.	U		2.	U		2.	U	
7439-96-5	Manganese (Mn)	5.3	J		2.4	U		1.7	U		2.8	U		5.7	J		5.5	J	

PENSACOLA, SITE 15
Phase II Groundwater
Inorganics

METAL	SAMPLE ID ------->	015-G-GR36-01	015-G-GR37-01	015-G-GR38-01	015-G-GR39-01	315-G-GR40-01
	ORIGINAL ID ----->	015GGR3601	015GGR3701	015GGR3801	015GGR3901	015GGR4001
	LAB SAMPLE ID --->	S682145*3	S682145*9	S682145*10	S682145*11	S682145*4
	ID FROM REPORT -->	015GGR3601	015GGR3701	015GGR3801	015GGR3901	015GGR4001
	SAMPLE DATE ----->	04/16/96	04/16/96	04/16/96	04/16/96	04/16/96
	DATE EXTRACTED -->	04/18/96	04/18/96	34/18/96	04/18/96	04/18/96
	DATE ANALYZED --->	04/19/96	04/19/96	34/19/96	04/19/96	04/19/96
	MATRIX ---------->	Water	dater	dater	Uater	Water
	UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L
CAS #	Parameter	PJL07	PJL07	PJL07	PJL07	PJL07
7429-90-5	Aluminum (Al)	1580.	914.	298.	82.9 U	51.7 U
7439-89-6	Iron (Fe)	634.	573.	138.	86.4	112.
7440-38-2	Arsenic (As)	96.1	3.1 J	2. U	2. U	2. U
7439-96-5	Manganese (Mn)	6.9 J	4.9 J	1.8 U	5.1 d	37.4

PENSACOLA, SITE 15
Phase II Groundwater
Pesticides/8080

PEST-8080													
	SAMPLE ID ------->	015-G-GROT-02		015-G-GR32-01		015-G-GR33-01		015-G-GR34-01		015-G-GR35-01		015-H-GR35-01	
	ORIGINAL ID ----->	015GGR0702		015GGR3201		015GGR3301		015GGR3401		015GGR3501		015HGR3501	
	LAB SAMPLE ID --->	S682145*1		S682145*6		S682145*7		S682145*8		S682145*2		S682145*5	
	ID FROM REPORT -->	015GGR0702		015GGR3201		015GGR3301		015GGR3401		015GGR3501		015HGR3501	
	SAMPLE DATE ----->	04/16/96		04/16/96		04/16/96		04/16/96		04/16/96		04/16/96	
	DATE EXTRACTED -->	04/18/96		04/18/96		04/18/96		04/18/96		04/18/96		04/18/96	
	DATE ANALYZED --->	04/20/96		04/20/96		04/20/96		04f20/96		04/20/96		04/20/96	
	MATRIX ---------->	Water		Water		Water		Uater		Uater		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.0036	J	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.013	J	0.1	U	0.0099	J	0.1	U	0.1	U	0.1	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
60-57-1	Dieldrin	0.039	J	0.1	U	0.016	J	0.1	U	0.1	U	0.1	U
959-98-8	Endosulfan I	0.0055	J	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.018	J	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7421-93-4	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
53494-70-5	Endrin ketone	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.056		0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
8001-35-2	Toxaphene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-71-9	alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Groundwater
Pesticides/8080

PEST-8080	SAMPLE ID ------->	015-G-GR36-01		015-G-GR37-01		015-G-GR38-01		015-G-GR39-01		015-G-GR40-01	
	ORIGINAL ID ----->	015GGR3601		015GGR3701		015GGR3801		015GGR3901		015GGR4001	
	LAB SAMPLE ID --->	S682145*3		S682145*9		S682145*10		S682145*1		S682145*4	
	ID FROM REPORT -->	015GGR3601		015GGR3701		015GGR3801		015GGR3901		015GGR4001	
	SAMPLE DATE ----->	04/16/96		04/16/96		04/16/96		04/16/96		04/16/96	
	DATE EXTRACTED -->	04/18/96		04/18/96		04/18/96		04/18/96		04/18/96	
	DATE ANALYZED --->	04/20/96		04/20/96		04/20/96		04/20/96		04/20/96	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.084	J	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	2.	U	2.	U	2.	U	2.	U	2.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7421-93-4	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
53494-70-5	Endrin ketone	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.19		0.05	U	0.05	U	0.05	U	0.009	J
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
8001-35-2	Toxaphene	5.	U	5.	U	5.	U	5.	U	5.	U
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-71-9	alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Groundwater
VOC/8240

SVOA-8270											
	SAMPLE ID ------->	015-G-GR07-02		015-G-GR35-01		015-H-GR35-01		015-G-GR36-01		015-G-GR40-01	
	ORIGINAL ID ----->	015GGR0702		015GGR3501		015HGR3501		015GGR3601		015GGR4001	
	LAB SAMPLE ID --->	S682145*1		S682145*2		S682145*5		S682145*3		S682145*4	
	ID FROM REPORT -->	015GGR0702		015GGR3501		015HGR3501		015GGR3601		015GGR4001	
	SAMPLE DATE ----->	04/16/96		04/16/96		04/16/96		04/16/96		04/16/96	
	DATE EXTRACTED -->	04/18/96		04/18/96		04/18/96		04/18/96		04/18/96	
	DATE ANALYZED --->	04/19/96		04/19/96		04/19/96		04/19/96		04/19/96	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U
121-14-2	2,4-Dinitrotoluene	1.	U	1.	U	1.	U	1.	U	1.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U	20.	U	20.	U	20.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	20.	U	20.	U	20.	U	20.	U	20.	U
7005-72-3	4-Chlorophenylphenylether	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U
100-02-7	4-Nitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Groundwater
VOC/8240

SVOA-8270											
	SAMPLE ID -------:	015-G-GR07-02		015-G-GR35-01		015-H-GR35-01		015-G-GR36-01		015-G-GR40-01	
	ORIGINAL ID -----:	015GGR0702		015GGR3501		015HGR3501		015GGR3601		015GGR4001	
	LAB SAMPLE ID ---:	S682145*1		S682145*2		S682145*5		S682145*3		S682145*4	
	ID FROM REPORT --:	015GGR0702		015GGR3501		015HGR3501		015GGR3601		015GGR4001	
	SAMPLE DATE -----:	04/16/96		04/16/96		04/16/96		04/16/96		04/16/96	
	DATE EXTRACTED --:	04/18/96		04/18/96		04/18/96		04/18/96		04/18/96	
	DATE ANALYZED ---:	04/19/96		04/19/96		04/19/96		04/19/96		04/19/96	
	MATRIX ----------:	Water		Water		Water		Water		Water	
	UNITS ----------:	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
117-84-0	Di-n-octyl phthalate	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
131-11-3	Dimethyl phthalate	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U
621-I%-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U
86-30-6	N-Nitrosdiphenylamine	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	50.	U	50.	U	50.	U	50.	U	50.	U
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U	10.	U
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U
111-91-1	Bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U
111-44-4	Bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	Bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Groundwater
SVOC/8270

SVOA-8270											
	SAMPLE ID ------->	015-G-GR35-01		015-H-GR35-01		015-G-GR36-01		015-G-GR40-01			
	ORIGINAL ID ----->	015GGR3501		015HGR3501		015GGR3601		015GGR4001			
	LAB SAMPLE ID --->	S682145*2		5682145*5		S682145*3		5682145*4			
	ID FROM REPORT -->	015GGR3501		015HGR3501		015GGR3601		015GGR4001			
	SAMPLE DATE ----->	04/16/96		04/16/96		04/16/96		04/16/96			
	DATE EXTRACTED -->	04/18/96		04/18/96		04/18/96		04/18/96			
	DATE ANALYZED --->	04/19/96		04/19/96		04/19/96		04/19/96			
	MATRIX ---------->	Uater		Uater		Uater		Uater			
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L			
CAS #	Parameter	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL		
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U		
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U		
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U		
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U		
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U	10.	U		
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U	10.	U	10.	U		
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	U		
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	U		
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	U		
51-28-5	2,4-Dinitrophenol	50.	U	50.	U	50.	U	50.	U		
121-14-2	2,4-Dinitrotoluene	1.	U	1.	U	1.	U	1.	U		
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U		
91-58-7	2-Chloronaphthelene	10.	U	10.	U	10.	U	10.	U		
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	U		
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U		
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	U		
88-74-4	2-Nitroaniline	50.	U	50.	U	50.	U	50.	U		
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	U		
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U	20.	U	20.	U		
999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U	10.	U	10.	U		
99-09-2	3-Nitroaniline	50.	U	50.	U	50.	U	50.	U		
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U	50.	U	50.	U		
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U	10.	U		
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	U		
106-47-8	4-Chloroani 1ine	20.	U	20.	U	20.	U	20.	U		
7005-72-3	4-Chlorophenylphenylether	10.	U	10.	U	10.	U	10.	U		
100-01-6	4-Nitroaniline	50.	U	50.	U	50.	U	50.	U		
100-02-7	4-Nitrophenol	50.	U	50.	U	50.	U	50.	U		
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U		
208-96-8	Acenaphthytene	10.	U	10.	U	10.	U	10.	U		
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U		
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U		
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U		
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U		
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U		
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U		

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Groundwater
SVOC/8270

SVOA-8270											
	SAMPLE ID ------->	015-G-GR35-01		015-H-GR35-01		015-G-GR36-01		015-G-GR40-01			
	ORIGINAL ID ----->	015GGR3501		015HGR3501		015GGR3601		015GGR4001			
	LAB SAMPLE ID --->	S682145*2		S682145*5		S682145*3		S682145*4			
	ID FROM REPORT -->	015GGR3501		015HGR3501		015GGR3601		015GGR4001			
	SAMPLE DATE ----->	04/16/96		04/16/96		04/16/96		04/16/96			
	DATE EXTRACTED -->	04/18/96		04/18/96		04/18/96		04/18/96			
	DATE ANALYZED --->	04/19/96		04/19/96		04/19/96		04/19/96			
	MATRIX ---------->	Water		Water		Water		Uater			
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L			
CAS #	Parameter	PJL07	VAL	PJL07	VAL	PJL07	VAL	PJL07	VAL		
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U		
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U		
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U		
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U		
117-84-0	Di-n-octyl phthalate	10.	U	10.	U	10.	U	10.	U		
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U	10.	U		
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U		
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U		
131-11-3	Dimethyl phthalate	10.	U	10.	U	10.	U	10.	U		
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U		
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U		
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U		
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U		
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U	10.	U		
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U		
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U		
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U		
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U		
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	10.	U		
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U		
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U		
87-86-5	Pentachlorophenol	50.	U	50.	U	50.	U	50.	U		
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U		
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	U		
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U		
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U		
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U		
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	10.	U		

*** Validation Complete ***

PENSACOLA, SITE 15
Phase IIB Groundwater
Inorganics

SW846-META	SAMPLE ID ------->	015-G-GR03-02		015-G-GR07-03		015-H-GR07-03		015-G-GR65-01				015-G-GR67-01	
	ORIGINAL ID ----->	015GGR0302		015GGR0703		015HGR0703		015GGR6501				015GGR6701	
	LAB SAMPLE ID --->	S682869*1		S682869*2		S682869*6		S682869*3				S682869*5	
	ID FROM REPORT -->	015GGR0302		015GGR0703		015HGR0703		015GGR6501				015GGR6701	
	SAMPLE DATE ----->	05/17/96		05/17/96		05/17/96		05/17/96				05/17/96	
	DATE EXTRACTED -->	05/20/96		05/20/96		05/21/96		05/20/96		05/20/96		05/20/96	
	DATE ANALYZED --->	05/20/96		05/20/96		05/22/96		05/20/96		05/20/96		05/20/96	
	MATRIX ---------->	Water		Water		Water		Uater		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS A	arameter	PJL09	VAL	PJL09	VAL	PJL09	VAL	PJL09	VAL	PJL09	VAL	PJL09	VAL
7440-38-2	rsenic (As)	373.		104.		110.		12.2		7.6	J	3.7	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase III Groundwater
Inorganics

METAL													
	SAMPLE ID ------->	015-G-GR03-03		015-H-GR03-03		015-G-GR07-04		015-G-GR32-03		015-G-GR39-03		015-G-GR40-03	
	ORIGINAL ID ----->	015GGR0303		015HGR0303		015GGR0704		015GGR3203		015GGR3903		015GGR4003	
	LAB SAMPLE ID --->	S684372*1		S684372*2		S684372*7		S684372*9		S684372*4		S684372*3	
	ID FROM REPORT -->	015GGR0303		015HGR0303		015GGR0704		015GGR3203		015GGR3903		015GGR4003	
	SAMPLE DATE ----->	07/26/96		07/26/96		07/26/96		07/26/96		07/26/96		07/26/96	
	DATE EXTRACTED -->	08/06/96		08/06/96		08/06/96		08/06/96		08/06/96		08/06/96	
	DATE ANALYZED --->	08/07/96		08/07/96		08/07/96		08/07/96		08/07/96		08/07/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL11	VAL	PJL11	VAL	PJL11	VAL	PJL11	VAL	PJL11	VAL	PJL11	VAL
7429-90-5	Aluminum (Al)	982.		835.		575.		1630.		139.	U	35.8	U
7440-36-0	Antimony (Sb)	15.8		16.		3.	U	4.3	J	3.	U	3.	J
7440-38-2	Arsenic (As)	415.		408.		13.4		9.4	J	1.5	J	3.3	J
7440-39-3	Barium (Ba)	4.3	J	4.9	J	10.9		2.3	J	13.1		22.4	
7440-41-7	Beryllium (Be)	0.19	UJ	0.19	UJ	0.19	UJ	0.19	UJ	0.19	UJ	0.19	UJ
7440-43-9	Cadmium (Cd)	2.6	U	2.6	U	t.6	U	2.6	U	2.6	U	2.6	U
7440-70-2	Calcium (Ca)	21400.		21800.		16000.		52000.		13400.		15300.	
7440-47-3	Chromium (Cr)	4.3	J	5.4	J	1060.		4.1	U	4.1	U	4.1	U
7440-48-4	Cobalt (Co)	1.9	U	1.9	U	1.9	U	1.9	U	1.9	U	2.6	J
7440-50-8	Copper (Cu)	5.5	U	4.7	U	17.8	U	3.4	U	3.	U	4.9	U
7439-89-6	Iron (Fe)	531.		489.		1820.		1020.		83.5	U	214.	
7439-92-1	Lead (Pb)	1.4	J	2.	J	0.6	UJ	1.7	J	0.6	U	0.71	J
7439-95-4	Magnesium (Mg)	2510.		2560.		4780.		2560.		5050.		4900.	
7439-w-5	Manganese (Mn)	3.3	J	3.7	J	2.	J	6.8	J	4.8	J	31.	
7439-97-6	Mercury (Hg)	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U
7440-02-0	Nickel (Ni)	4.2	U	4.2	U	5.8	J	4.2	U	4.2	U	4.2	U
7440-09-7	Potassium (K)	7980.		8150.		6860.		6420.		5400.		4890.	
7782-49-2	Selenium (Se)	2.5	J	1.6	J	1.6	U	3.4	J	1.6	U	3.6	U
7440-22-4	Silver (Ag)	1.1	U	1.1	UJ	1.1	UJ	1.1	UJ	1.1	UJ	1.1	UJ
7440-23-5	Sodium (Na)	15100.		15400.		6880.		4340.		6910.		9490.	
7440-28-0	Thallium (Tl)	0.86	U	0.86	U	0.86	U	0.86	U	0.86	U	0.86	U
7440-62-2	Vanadium (V)	2.3	U	2.3	U	2.3	U	2.5	J	2.3	U	7.	J
7440-66-6	Zinc (Zn)	7.7	J	3.	J	1.8	U	3.1	J	1.8	U	3.3	J
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase III Groundwater
Inorganics

METAL												
	SAMPLE ID ------->	015-G-GR65-03		015-G-GR66-03		015-G-GR67-03						
	ORIGINAL ID ----->	015GGR6503		015GGR6603		015GGR6703						
	LAB SAMPLE ID --->	S684372*8		S684372*5		S684372*6						
	ID FROM REPORT -->	015GGR6503		015GGR6603		015GGR6703						
	SAMPLE DATE ----->	07/26/96		07/26/96		07/26/96						
	DATE EXTRACTED -->	08/06/96		08/06/96		08/06/96						
	DATE ANALYZED --->	08/07/96		08/07/96		08/07/96						
	MATRIX ---------->	Water		Water		Water						
	UNITS ---------->	UG/L		UG/L		UG/L						
CAS #	Parameter	PJL11	VAL	PJL11	VAL	PJL11	VAL					
7429-90-5	Aluminum (Al)	411.		476.		253.						
7440-36-0	Antimony (Sb)	3.	U	3.	U	3.	U					
7440-38-2	Arsenic (As)	231.		106.		9.2	J					
7440-39-3	Barium (Ba)	1.9	J	3.4	J	1.9	J					
7440-41-7	Beryllium (Be)	0.19	UJ	0.19	UJ	0.19	UJ					
7440-43-9	Cadmium (Cd)	2.6	U	2.6	U	2.6	U					
7440-70-2	Calcium (Ca)	36800.		15600.		22200.						
7440-47-3	Chromium (Cr)	4.1	U	4.1	U	4.1	U					
7440-48-4	Cobalt (Co)	1.9	U	1.9	U	1.9	U					
7440-50-8	Copper (Cu)	3.6	U	10.4	U	8.1	U					
7439-89-6	Iron (Fe)	235.		273.		202.						
7439-92-1	Lead (Pb)	0.6	U	0.6	U	1.8	J					
7439-95-4	Magnesium (Mg)	2380.		1640.		1750.						
7439-96-5	Manganese (Mn)	1.3	J	1.5	J	2.4	J					
7439-97-6	Mercury (Hg)	0.03	U	0.03	U	0.03	U					
7440-02-0	Nickel (Ni)	4.2	U	4.2	U	4.2	U					
7440-09-7	Potassium (K)	4810.		2800.		3480.						
7782-49-2	Selenium (Se)	1.6	UJ	1.6	U	1.6	U					
7440-22-4	Silver (Ag)	1.1	UJ	1.1	UJ	1.1	UJ					
7440-23-5	Sodium (Na)	2230.		6110.		10000.						
7440-28-0	Thallium (Tl)	0.86	U	0.86	U	0.86	U					
7440-62-2	Vanadium (V)	2.3	U	5.6	J	2.3	U					
7440-66-6	Zinc (Zn)	3.5	J	5.	J	3.9	J					
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U					

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE IIIB Groundwater
AS

AS											
	SAMPLE ID ------->	015-G-GR07-05		015-G-GR65-04		015-H-GR65-04		015-G-GR66-04		015-G-GR67-04	
	ORIGINAL ID ----->	015GGR0705		015GGR6504		015HGR6504		015GGR6604		015GGR6704	
	LAB SAMPLE ID --->	S684977*1		S684977*2		S684977*5		S684977*3		S684977*4	
	ID FROM REPORT -->	015GGR0705		015GGR6504		015HGR6504		015GGR6604		015GGR6704	
	SAMPLE DATE ----->	08/22/96		08/22/96		08/22/96		08/22/96		08/22/96	
	DATE EXTRACTED -->	08/23/96		08/23/96		08/23/96		08/23/96		08/23/96	
	DATE ANALYZED --->	08/26/96		08/26/96		08/26/96		08/26/96		08/26/96	
	MATRIX ---------->	Uater		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	arameter	PJL13	VAL	PJL13	VAL	PJL13	VAL	PJL13	VAL	PJL13	VAL
7440-38-2	rsenic (As)	21.1		184.		192.		155.		17.1	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE IIIC Groundwater
Inorganics

METAL											
	SAMPLE ID ------->	015-G-GS68-01		015-G-GS69-01		015-H-GS69-01		015-G-GS70-01		015-G-GS71-01	
	ORIGINAL ID ----->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	LAB SAMPLE ID --->	S685395*3		S685395*4		S685395*7		S685395*5		S685395*6	
	ID FROM REPORT -->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	SAMPLE DATE ----->	09/11/96		09/11/96		09/11/96		09/11/96		09/11/96	
	DATE EXTRACTED -->	09/13/96		09/13/96		09/13/96		09/13/96		09/13/96	
	DATE ANALYZED --->	09/16/96		09/16/96		09/16/96		09f16/96		09/16/96	
	MATRIX ---------->	Uater		Uater		Uater		Uater		Uater	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL
7429-90-5	Aluminum (Al)	703.		3900.		888.		867.		1110.	
7440-36-0	Antimony (Sb)	11.9	U	11.9	U	11.9	U	11.9	U	11.9	U
7440-38-2	Arsenic (As)	1.1	J	4.3	J	1.	U	1.3	J	1.	U
7440-39-3	Barium (Ba)	18.	J	13.2	J	11.1	J	14.3	J	32.5	J
7440-41-7	Beryllium (Be)	0.19	U	0.19	U	0.19	U	0.19	U	0.19	U
7440-43-9	Cadmium (Cd)	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U
7440-70-2	Calcium (Ca)	33800.		20800.		17800.		21500.		12400.	
7440-47-3	Chromium (Cr)	4.1	U	4.1	U	4.1	U	4.1	U	4.1	U
7440-48-4	Cobalt (Co)	1.9	U	1.9	U	1.9	U	1.9	U	1.9	U
7440-50-8	Copper (Cu)	5.1	U	4.8	U	2.6	U	4.1	U	3.8	U
7439-89-6	Iron (Fe)	399.		2130.		441.		497.		382.	
7439-92-1	Lead (Pb)	1.6	J	4.9		1.2	J	0.8	J	1.	J
7439-95-4	Magnesium (Mg)	6600.		4420.	J	4660.	J	3860.	J	3700.	J
7439-96-5	Manganese (Mn)	20.		25.8		3.7	J	3.1	J	4.9	J
7439-97-6	Mercury (Hg)	0.03	UJ	0.03	UJ	0.03	UJ	0.03	UJ	0.03	UJ
7440-02-0	Nickel (Ni)	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U
7440-09-7	Potassium (K)	11700.		6260.		6070.		6970.		6030.	
7782-49-2	Selenium (Se)	1.6	U	2.9	J	1.6	U	1.6	U	1.6	U
7440-22-4	Silver (Ag)	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
7440-23-5	Sodium (Na)	9040.		8040.		8930.		8710.		10100.	
7440-28-0	Thallium (Tl)	0.86	U	0.86	U	0.86	U	0.86	U	0.86	U
7440-62-2	Vanadium (V)	2.3	U	4.5	J	2.3	U	2.3	U	2.3	U
7440-66-6	Zinc (Zn)	4.1	J	5.2	J	1.9	J	11.1	J	5.3	J
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE IIIC Groundwater
Pesticides

LOWPEST

SAMPLE ID ------->	015-G-GS68-01	015-G-GS69-01	015-H-GS69-01	015-G-GS70-01	015-G-GS71-01	
ORIGINAL ID ----->	015GGS6801	015GGS6901	015HGS6901	015GGS7001	015GGS7101	
LAB SAMPLE ID --->	S685395*3	S685395*4	S685395*7	S685395*5	S685395*6	
ID FROM REPORT -->	015GGS6801	015GGS6901	015HGS6901	015GGS7001	015GGS7101	
SAMPLE DAYE ----->	09/11/96	09/11/96	39/11/96	09/11/96	09/11/96	
DATE EXTRACTED -->	09/13/96	09/13/96	39/13/96	09/13/96	09/13/96	
DATE ANALYZED --->	09/18/96	09/18/96	09/18/96	09/18/96	09/18/96	
MATRIX ---------->	Uater	Water	dater	Water	Uater	
UNITS ---------->	UG/L	UG/L	JG/L	UG/L	UG/L	

CAS #	Parameter	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL	
319-84-6	alpha-BHC	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
319-85-7	beta-BHC	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
319-86-8	delta-BHC	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
58-89-9	gamma-BHC (Lindane)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
76-44-8	Heptachlor	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
309-00-2	Aldrin	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
1024-57-3	Heptachlor epoxide	0.0021	U	0.01	U	0.01	U	0.01	U	0.01	U	
959-98-8	Endosulfan I	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
60-57-1	Dieldrin	0.11		0.02	U	0.02	U	0.02	U	0.02	U	
72-55-9	4,4'-DDE	0.0012	J	0.0015	J	0.0018	J	0.02	U	0.02	U	
72-20-8	Endrin	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
33213-65-9	Endosulfan II	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
72-54-8	4,4'-DDD	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
1031-07-8	Endosulfan sulfate	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
50-29-3	4,4'-DDT	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
72-43-5	Methoxychlor	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	
53494-70-5	Endrin ketone	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
7421-93-4	Endrin aldehyde	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
5103-71-9	alpha-Chlordane	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
5103-74-2	gamma-Chlordane	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	U	1.	U	
12674-11-2	Aroclor-1016	0.2	U	0.2	U	0.2	U	02	U	0.2	U	
11104-28-2	Aroclor-1221	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	
11141-16-5	Aroclor-1232	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	
53469-21-9	Aroclor-1242	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	
12672-29-6	Aroclor-1248	0.2	U	02	U	0.2	U	0.2	U	0.2	U	
11097-69-1	Aroclor-1254	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	
11096-82-5	Aroclor-1260	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	

+ Validation Complete ***

PENSACOLA, SITE 15
PHASE IIIC Groundwater
VOC

LOWVOA											
	SAMPLE ID ------->	015-G-GS68-01		015-G-GS69-01		015-H-GS69-01		015-G-GS70-01		015-G-GS71-01	
	ORIGINAL ID ----->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	LAB SAMPLE ID --->	S685395*3		S685395*4		S685395*7		S685395*5		S685395*6	
	ID FROM REPORT -->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	SAMPLE DATE ----->	09/ 11/96		09/11/96		09/1 1/96		09/11/96		09/11/96	
	DATE ANALYZED --->	09/ 14/96		09/14/96		09/ 14/96		09/14/96		09/14/96	
	MATRIX ---------->	Water		Water		Water		Uattr		water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL
74-87-3	Chloromethane	1.	U	1.	U	1.	U	1.	U	1.	U
74-83-9	Bromomethane	1.	U	1.	U	1.	U	1	U	1.	U
75-01-4	Vinyl chloride	1.	U	1.	U	1.	U	1	U	1.	U
75-00-3	Chloroethane	1.	U	1	U	1.	U	1	U	1.	U
75-09-2	Methylene chloride	2.	U	2.	U	2.	U	2.	U	2.	U
67-64-1	Acetone	5.	U	5.	U	5.	U	5.	U	5.	U
75-15-0	Carbon disulfide	1.	U	1.	U	1.	U	1.	U	1.	U
75-35-4	1,1-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
75-34-3	1,1-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
67-66-3	Chloroform	1.	U	1	U	1.	U	1.	U	1.	U
107-06-2	1,2-Dichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
78-93-3	2-Butanone (MEK)	5.	U	5.	U	5.	U	5.	U	5.	U
74-97-5	Chlorobromomethane	1.	U	1.	U	1.	U	1.	U	1.	U
71-55-6	1,1,1-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
56-23-5	Carbon tetrachloride	1.	U	1	U	1.	U	1.	U	1.	U
75-27-4	Bromodichloromethane	1.	U	1	U	1.	U	1.	U	1.	U
78-87-5	1,2-Dichloropropane	1.	U	1.	U	1.	U	1.	U	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U	1	U	1.	U	1.	U	1.	U
79-01-6	Trichloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
124-48-1	Dibromochloromethane	1.	U	1.	U	1.	U	1.	U	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
71-43-2	Benzene	1.	U	1.	U	1.	U	1.	U	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U	1.	U	1.	U	1.	U	1.	U
75-25-2	Bromoform	1.	U	1.	U	1.	U	1.	U	1.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	1.	U	1.	U	1.	U	1.	U	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U	1.	U	1.	U	1.	U	1.	U
106-93-4	1,2-Dibromoethane	1.	U	1.	U	1.	U	1.	U	1.	U
108-88-3	Toluene	1.	U	1.	U	1.	U	1.	U	1.	U
108-90-7	Chlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U
100-41-4	Ethylbenzene	1.	U	1.	U	1.	U	1.	U	1.	U
100-42-5	Styrene	1.	U	1.	U	1.	U	1.	U	1.	U
1330-20-7	Xylene (Total)	1.	U	1.	U	1.	U	1.	U		
541-73-1	1,3-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE IIIC Groundwater
VOC

LOWVOA

	SAMPLE ID ------->	015-G-GS68-01		015-G-GS69-01		015-H-GS69-01		015-G-GS70-01		015-G-GS71-01	
	ORIGINAL ID ----->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	LAB SAMPLE ID --->	S685395*3		S685395*4		S685395*7		S685395*5		S685395*6	
	ID FROM REPORT -->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	SAMPLE DATE ----->	09/ 11/96		09/11/96		09/11/96		09/11/96		09/11/96	
	DATE ANALYZED --->	09/14/96		09/14/96		09/14/96		09/14/96		09/14/96	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	arameter	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL
106-46-7	,4-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U
95-50-1	,2-Dichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U
96-12-8	,2-Oibromo-3-Chloropropane	1.	U	1.	U	1.	U	1.	U	1.	U
120-82-1	,2,4-Trichlorobenzene	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE IIIC Groundwater
SVOC

LOWSVOA											
	SAMPLE ID ------->	015-G-GS68-01		015-G-GS69-01		015-H-GS69-01		015-G-GS70-01		015-G-GS71-01	
	ORIGINAL ID ----->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	LAB SAMPLE ID --->	S685395*3		S685395*4		S685395*7		S685395*5		S685395*6	
	ID FROM REPORT -->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	SAMPLE DATE ----->	09/11/96		09/11/96		09/11/96		09/11/96		09/11/96	
	DATE EXTRACTED -->	09/13/96		09/13/96		09/13/96		09/13/96		09/13/96	
	DATE ANALYZED --->	09/23/96		09/23/96		09/24/96		09/23/96		09/23/96	
	MATRIX ---------->	Uater		Uater		Uater		Uater		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL
108-95-2	Phenol	5.	U	5.	U	5.	U	5.	U	5.	U
111-44-4	bis(2-Chloroethyl)ether	5.	U	5.	U	5.	U	5.	U	5.	U
95-57-8	2-Chlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U
95-48-7	2-Mtthylphenol (o-Cresol)	5.	U	5.	U	5.	U	5.	U	5.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5.	U	5.	U	5.	U	5.	U	5.	U
99999900-32-2	3-Methylphenol/4-Methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U
621-64-7	N-Nitroso-di-n-propylamine	5.	U	5.	U	5.	U	5.	U	5.	U
67-72-1	HexachLoroethane	5.	U	5.	U	5.	U	5.	U	5.	U
98-95-3	Nitrobenzene	5.	U	5.	U	5.	U	5.	U	5.	U
78-59-1	Isophorone	5.	U	5.	U	5.	U	5.	U	5.	U
88-75-5	2-Nitrophenol	5.	U	5.	U	5.	U	5.	U	5.	U
105-67-9	2,4-Dimethylphenol	5.	U	5.	U	5.	U	5.	U	5.	U
120-83-2	2,4-Dichlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U
91-20-3	Naphthalene	5.	U	5.	U	5.	U	5.	U	5.	U
106-47-8	4-Chloroaniline	5.	U	5.	U	5.	U	5.	U	5.	U
87-68-3	Hexachlorobutadiene	5.	U	5.	U	5.	U	5.	U	5.	U
111-91-1	bis(2-Chloroethoxy)methane	5.	U	5.	U	5.	U	5.	U	5.	U
59-50-7	4-Chloro-3-methylphenol	5.	U	5.	U	5.	U	5.	U	5.	U
91-57-6	2-Methylnaphthalene	5.	U	5.	U	5.	U	5.	U	5.	U
77-47-4	Hexachlorocyclopentadiene	5.	U	5.	U	5.	U	5.	U	5.	U
88-06-2	2,4,6-Trichlorophenol	5.	U	5.	U	5.	U	5.	U	5.	U
95-95-4	2,4,5-Trichlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U
91-58-7	2-Chloronaphthalene	5.	U	5.	U	5.	U	5.	U	5.	U
88-74-4	2-Nitromiline	20.	U	20.	U	20.	U	20.	U	20.	U
131-11-3	Dimethyl phthalate	5.	U	5.	U	5.	U	5.	U	5.	U
208-96-8	Acenaphthylene	5.	U	5.	U	5.	U	5.	U	5.	U
606-20-2	2,6-Dinitrotoluene	5.	U	5.	U	5.	U	5.	U	5.	U
99-09-2	3-Nitroanilint	20.	U	20.	U	20.	U	20.	U	20.	U
83-32-9	Acenaphthene	5.	U	5.	U	5.	U	5.	U	5.	U
51-28-5	2,4-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U
100-02-7	4-Nitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U
132-64-9	Dibenzofuran	5.	U	5.	U	5.	U	5.	U	5.	U
121-14-2	2,4-Dinitrotoluene	5.	U	5.	U	5.	U	5.	U	5.	U
84-66-2	Diethylphthalate	5.	U	5.	U	5.	U	5.	U	5.	U
7005-72-3	4-Chlorophenylphenylether	5.	U	5.	U	5.	U	5.	U	5.	U
86-73-7	Fluorene	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE IIIC Groundwater
SVOC

LOWSVOA

	SAMPLE ID ------->	015-G-GS68-01		015-G-GS69-01		015-H-GS69-01		015-G-GS70-01		015-G-GS71-01	
	ORIGINAL ID ----->	015GGS6801		015GGS6901		015HGS6901		015GGS7001		015GGS7101	
	LAB SAMPLE ID --->	S685395*3		S685395*4		S685395*7		S685395*5		S685395*6	
	ID FROM REPORT -->	015GGS6801		015GGS6901		615HGS6901		015GGS7001		015GGS7101	
	SAMPLE DATE ----->	09/11/96		09/11/96		09/11/96		09/11/96		09/11/96	
	DATE EXTRACTED -->	09/13/96		09/13/96		09/13/96		09/13/96		09/13/96	
	DATE ANALYZED --->	09/23/96		09/23/96		09/24/96		09/23/96		09/23/96	
	MATRIX ---------->	Water		Uater		Uater		Uater		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL	PJL14	VAL
100-01-6	4-Nitroaniline	20.	U	20.	U	20.	U	20.	U	20.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	20.	U	20.	U	20.	U	20.	U	20.	U
86-30-6	N-Nitrosodiphenylamine	5.	U	5.	U	5.	U	5.	U	5.	U
101-55-3	4-Bromophenyl-phenylether	5.	U	5.	U	5.	U	5,	U	5.	U
118-74-1	Hexachlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U
87-86-5	Pentachlorophenol	20.	U	20.	U	20.	U	20.	U	20.	U
85-01-8	Phenanthrene	5.	U	5.	U	5.	U	5.	U	5.	U
120-12-7	Anthracene	5.	U	5.	U	5.	U	5.	U	5.	U
84-74-2	Di-n-butylphthalate	5.	U	5.	U	5.	U	5.	U	5.	U
206-44-0	Fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U
129-00-0	Pyrene	5.	U	5.	U	5.	U	5.	U	5.	U
85-68-7	Butylbenzylphthalate	5.	U	5.	U	5.	U	5.	U	5.	U
91-94-1	3,3'-Dichlorobenzidine	5.	U	5.	U	5.	U	5.	U	5.	U
56-55-3	Benzo(a)anthracene	5.	U	5.	U	5.	U	5.	U	5.	U
218-01-9	Chrysene	5.	U	5.	U	5.	U	5.	U	5.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	U	5.	U	5.	U	5.	U	5.	U
117-84-0	Di-n-octyl phthalate	5.	U	5.	U	5.	U	0.6	J	5.	U
205-99-2	Benzo(b)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U
207-08-9	Benzo(k)fluoranthene	5.	U	5.	U	5.	U	5.	U	5.	U
50-32-8	Benzo(a)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.	U	5.	U	5.	U	5.	U	5.	U
53-70-3	Dibenz(a,h)anthracene	5.	U	5.	U	5.	U	5.	U	5.	U
191-24-2	Benzo(g,h,i)perylene	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL													
	SAMPLE ID ------->	015-S-0001-01		015-S-0001-05		015-S-0001-10		015-S-0002-01		015-S-0002-05		015-S-0002-09	
	ORIGINAL ID ----->	015S000101		015S000105		015S000110		015S000201		0158000205		015S000209	
	LAB SAMPLE ID --->	S554878*1		S554878*2		S554878*3		S554929*1		S554929*2		S554929*3	
	ID FROM REPORT -->	015S000101		015S000105		015S000110		015S000201		015S000205		015S000209	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->							09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09f25/95		09/22/95		09/22/95	
	MATRIX ---------->	Soil		soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
7440-38-2	Arsenic (As)	3.4		0.3	J	0.43	J	8.1		0.83		0.39	J
7439-97-6	Mercury (Hg)	0.008	UJ	0.009	UJ	0.009	UJ	0.02	J	0.01	U	0.01	U
7439-92-1	Lead (Pb)	5.6		0.97	J	0.38	J	11.9	J	1.	J	0.7	J
7782-49-2	Selenium (Se)	0.29	U	0.29	U	0.29	U	0.19	U	0.18	U	0.18	U
57-12-5	Cyanide (CN)	0.26	UJ	0.26	UJ	0.26	UJ	0.28	U	0.27	U	0.27	U
7429-90-5	Aluminum (Al)	1350.		1190.		379.		1440.		1070.		422.	
7440-36-0	Antimony (Sb)	2.	U	1.9	U	2.	U	1.	U	0.99	U	1.	U
7440-39-3	Barium (Ba)	1.8	J	1.4	J	0.54	J	9.6	J	1.2	J	0.5	J
7440-41-7	Beryllium (Be)	0.063	U	0.062	U	0.063	U	0.03	U	0.03	U	0.03	U
7440-43-9	Cadmium (Cd)	0.67	U	0.67	U	0.67	U	0.35	U	0.34	U	0.34	U
7440-70-2	Calcium (Ca)	383.	J	31.	J	15.2	U	2140.	J	98.7	J	75.1	J
7440-47-3	Chromium (Cr)	2.	J	1.1	J	0.75	U	8.3		1.1		0.55	J
7440-48-4	Cobalt (Co)	0.33	U	0.33	U	0.33	U	0.23	J	0.24	J	0.17	U
7440-50-8	Copper (Cu)	1.2	U	1.2	U	1.2	U	5.2	U	0.6	U	0.61	U
7439-89-6	Iron (Fe)	913.		976.		335.		1560.		1040.		343.	
7439-95-4	Magnesium (Mg)	157.	J	38.2	J	12.1	J	147.	J	45.7	J	11.3	J
7439-96-5	Manganese (Mn)	12.		10.3		3.9		62.5		6.2		7.3	
7440-02-0	Nickel (Ni)	0.8	U	0.79	U	0.8	U	0.77	J	0.57	J	0.41	U
7440-09-7	Potassium (K)	23.7	J	22.3	J	12.2	U	63.	J	42.5	J	13.2	J
7440-22-4	Silver (Ag)	0.47	U	0.46	U	0.47	U	0.25	U	0.23	U	0.24	U
7440-23-5	Sodium (Na)	12.5	U	8.6	U	7.7	U	20.1	J	3.9	J	1.3	J
7440-62-2	Vanadium (V)	2.6	J	2.1	J	0.54	U	2.8	J	1.7	J	0.43	J
7440-66-6	Zinc (Zn)	3.	J	1.1	J	0.36	U	31.9		1.8	J	2.4	
7440-28-0	Thallium (Tl)	0.1	U	0.12	J	0.11	U	0.06	U	0.05	U	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL													
		SAMPLE ID ------->	015-S-0003-01		015-S-0003-05		015-S-0003-09		015-S-0004-01		015-C-0004-01		015-S-0004-05
		ORIGINAL ID ----->	015S000301		0155000305		015S000309		015S000401		015C000401		015S000405
		LAB SAMPLE ID --->	S554929*4		S554929*5		S554929*6		S554929*7		S554929*8		S554929*9
		ID FROM REPORT -->	0155000301		015S000305		015S000309		015S000401		015C000401		015S000405
		SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/06/95		09/06/95		09/06/95
		DATE EXTRACTED -->	09/11/95		09/11/95		09/11/95		09/11/95		09/11/95		09/11/95
		DATE ANALYZED --->	09/22/95		09/22/95		09/22/95		09/25/95		09/29/95		09/22/95
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil
		UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG
CAS #	Parameter		ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
7440-38-2	Arsenic (As)		1.1		0.12	U	0.16	J	41.6		40.3		0.72	
7439-97-6	Mercury (Hg)		0.01	U	0.01	U	0.01	U	0.03	J	0.03	J	0.01	U
7439-92-1	Lead (Pb)		11.8	J	0.81	J	2.8	J	22.4	J	21.4	J	2.1	J
7782-49-2	Selenium (Se)		0.18	U	0.18	U	0.18	U	0.18	U	0.18	UJ	0.17	UJ
57-12-5	Cyanide (CN)		0.27	U	0.26	U	0.26	U	0.27	U	0.3		0.26	U
7429-90-5	Aluminum (Al)		688.		1030.		484.		2870.		2580.		1030.	
7440-36-0	Antimony (Sb)		0.99	U	0.98	U	0.96	U	2.7	J	2.6	J	0.95	U
7440-39-3	Barium (Ba)		2.7	J	1.	J	0.6	J	7.1	J	7.	J	1.9	J
7440-41-7	Beryllium (Be)		0.03	U	0.03	U	0.03	U	0.04	J	0.03	J	0.03	U
7440-43-9	Cadmium (Cd)		0.34	U	0.34	U	0.33	U	0.35	U	0.35	U	0.33	U
7440-70-2	Calcium (Ca)		2130.	J	97.9	J	358.	J	2030.		1980.		58.7	J
7440-47-3	Chromium (Cr)		2.3		0.75	J	0.73	J	17.4		20.3		1.2	
7440-48-4	Cobalt (Co)		0.17	U	0.17	U	0.17	U	0.24	J	0.37	J	0.16	U
7440-50-8	Copper (Cu)		1.7	U	0.59	U	0.59	U	6.1	U	6.8	U	0.58	U
7439-89-6	Iron (Fe)		733.		909.		367.		2100.		1960.		862.	
7439-95-4	Magnesium (Mg)		402.	J	34.5	J	25.7	J	280.	J	142.	J	39.9	J
7439-96-5	Manganese (Mn)		18.9		4.1		2.8		43.1		57.2		5.5	
7440-02-0	Nickel (Ni)		0.41	U	0.4	U	0.4	U	0.7	J	0.51	J	0.51	J
7440-09-7	Potassium (K)		27.5	J	30.	J	10.8	J	77.2	J	65.	J	21.8	J
7440-22-4	Silver (Ag)		0.24	U	0.23	U	0.23	U	0.24	U	0.24	U	0.23	U
7440-23-5	Sodium (Na)		7.7	J	2.3	J	2.4	J	17.4	J	17.3	J	3.6	J
7440-62-2	Vanadium (V)		1.4	J	1.4	J	0.52	J	5.4	J	4.4	J	1.6	J
7440-66-6	Zinc (Zn)		10.5		0.88	J	1.6	J	14.3		16.9		1.3	J
7440-28-0	Thallium (Tl)		0.05	U	0.06	J	0.09	J	0.05	U	0.05	U	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL													
	SAMPLE ID ------->	015-S-0004-10		015-S-0005-01		015-S-0005-05		015-S-0005-10		015-S-0006-01		015-C-0006-01	
	ORIGINAL ID ----->	015S000410		015S000501		015S000505		015S000510		015S000601		015C000601	
	LAB SAMPLE ID --->	S554929*10		S554970*1		S554970*2		S554970*3		S554970*4		S554970*5	
	ID FROM REPORT -->	015S000410		015S000501		015S000505		015S000510		015S000601		015C000601	
	SAMPLE DATE ----->	09/06/95		09/07/95		09/07/95		09/07/95		09/07/95		09/07/95	
	DATE EXTRACTED -->	09/11/95		09/12/95		09/12/95		09/12/95		09/12/95		09/12/95	
	DATE ANALYZED --->	09/22/95		10/02/95		09/29/95		99/29/95		09/29/95		09/29/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP05	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
7440-38-2	Arsenic (As)	4.1		8.2	J	0.51	J	0.87	J	2.3	J	2.	J
7439-97-6	Mercury (Hg)	0.01	U	0.01	U	0.01	U	0.01	U	0.02	U	0.01	U
7439-92-1	Lead (Pb)	0.81	J	48.7	J	2.9	J	1.9	J	9.	J	7.9	J
7782-49-2	Selenium (Se)	0.18	UJ	0.11	UJ	0.11	UJ	0.53	UJ	0.13	UJ	0.13	UJ
57-12-5	Cyanide (CN)	0.26	U	0.26	U	0.26	U	0.26	U	1.		8.9	
7429-90-5	Aluminum (Al)	508.		1030.		689.		1600.		1830.		1160.	
7440-36-0	Antimony (Sb)	1.1	J	0.97	U	0.95	U	0.96	U	1.2	U	1.1	U
7440-39-3	Barium (Ba)	0.88	J	5.	J	1.4	J	2.6	J	6.2	J	5.5	J
7440-41-7	Beryllium (Be)	0.03	U	0.04	J	0.03	U	0.03	U	*0.04*	U	*0.04*	U
7440-43-9	Cadmium (Cd)	0.33	U	0.33	UJ	0.33	UJ	0.33	UJ	0.4	UJ	0.41	J
7440-70-2	Calcium (Ca)	7.3	J	365.	J	37.8	U	69.7	J	7950.		12700.	J
7440-47-3	Chromium (Cr)	0.69	J	2.7	J	0.68	J	2.6	J	7.4	J	7.5	J
7440-48-4	Cobalt (Co)	0.17	U	0.17	J	0.16	U	0.21	J	0.85	J	0.32	J
7440-50-8	Copper (Cu)	0.59	U	23	J	0.57	U	0.93	J	5.7		5.5	
7439-89-6	Iron (Fe)	447.		1300.	J	481.	J	1190.	J	2050.	J	1510.	J
7439-95-4	Magnesium (Mg)	12.5	J	21.4	J	15.4	J	30.	J	382.	J	552.	J
7439-96-5	Manganese (Mn)	5.8		15.3	J	3.1	J	7.8	J	70.2	J	67.9	J
7440-02-0	Nickel (Ni)	0.4	U	0.39	U	0.55	J	0.7	J	6.8		11.2	
7440-09-7	Potassium (K)	7.4	J	98.6	J	18.7	J	30.4	J	61.6	J	53.	J
7440-22-4	Silver (Ag)	0.23	U	0.23	U	0.23	U	0.23	U	0.27	U	0.27	U
7440-23-5	Sodium (Na)	1.9	J	17.1	U	3.6	U	6.5	U	48.9	J	56.5	J
7440-62-2	Vanadium (V)	0.67	J	3.5	J	0.82	J	21	J	3.6	J	*2.4*	J
7440-66-6	Zinc (Zn)	*0.4*	J	2.4	U	1.9	U	1.9	U	18.8		17.8	
7440-28-0	Thallium (Tl)	0.05	U	0.1	U	0.1	U	0.1	U	0.12	U	0.12	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL													
	SAMPLE ID ------->	015-S-0006-05		015-S-0006-09		015-S-0007-01		015-S-0007-05		015-S-0009-01		015-S-0009-05	
	ORIGINAL ID ----->	015S000605		015S000609		015S000701		015S000705		015S000901		0155000905	
	LAB SAMPLE ID --->	S554970*6		S554970*7		S554843*1		S554843*2		S554878*4		S554878*5	
	ID FROM REPORT -->	0152300060 5		015S000609		015S000701		015S000705		015S000901		015S000905	
	SAMPLE DATE ----->	09/07/95		09/07/95		08/31/95		08/31/95		09/01/95		09/01/95	
	DATE EXTRACTED -->	09/12/95		09/12/95									
	DATE ANALYZED --->	09/29/95		09/29/95		09/20/95		09/19/95		09/20/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL
7440-38-2	Arsenic (As)	1.1	J	0.32	J	56.5	J	3.1	J	3.2		0.32	J
7439-97-6	Mercury (Hg)	0.01	U	0.01	U	0.03	J	0.01	J	0.008	J	0.007	UJ
7439-92-1	Lead (Pb)	1.1	J	0.54	J	29.8		0.67	U	11.6		22.4	
7782-49-2	Selenium (Se)	0.11	UJ	0.11	UJ	0.3	UJ	0.29	UJ	0.3	U	0.29	U
57-12-5	Cyanide (CN)	0.27	U	0.27	U	0.27	U	0.26	U	0.27	UJ	0.26	UJ
7429-90-5	Aluminum (Al)	1260.		447.		2090.		1340.		1210.		1200.	
7440-36-0	Antimony (Sb)	1.	U	1.	U	2.	U	1.9	U	2.	U	2.	U
7440-39-3	Barium (Ba)	1.5	J	0.68	J	9.6	J	2.1	J	1.5	J	1.3	J
7440-41-7	Beryllium (Be)	0.03	U	0.03	U	0.064	U	0.062	U	0.063	U	0.062	U
7440-43-9	Cadmium (Cd)	0.34	UJ	0.34	UJ	0.68	U	0.66	U	0.68	U	0.67	U
7440-70-2	Calcium (Ca)	271.	J	193.	J	23900.		409.	J	148.	J	64.1	J
7440-47-3	Chromium (Cr)	1.2	J	1.	J	6.8		1.5	U	2.3		1.4	J
7440-48-4	Cobalt (Co)	0.22	J	0.17	U	0.48	J	0.33	U	0.33	U	0.33	U
7440-50-8	Copper (Cu)	0.69	J	0.61	U	9.5		1.2	U	1.2	U	1.2	U
7439-89-6	Iron (Fe)	1170.	J	419.	J	2180.		1110.		706.		1120.	
7439-95-4	Magnesium (Mg)	41.5	J	13.8	J	1440.		51.8	J	28.	J	41.5	J
7439-96-5	Manganese (Mn)	9.1	J	4.3	J	172.		6.2		14.9		3.3	
7440-02-0	Nickel (Ni)	0.43	J	0.42	J	0.81	U	0.79	U	0.81	U	0.8	U
7440-09-7	Potassium (K)	41.3	J	12.8	J	65.3	J	45.7	J	19.	J	33.3	J
7440-22-4	Silver (Ag)	0.24	U	0.24	U	0.47	U	0.46	U	0.47	U	0.46	U
7440-23-5	Sodium (Na)	5.6	U	2.5	U	163.	J	11.8	J	11.3	U	7.8	U
7440-62-2	Vanadium (V)	2.1	J	0.73	J	4.7	J	2.3	J	2.1	J	2.	J
7440-66-6	Zinc (Zn)	1.7	U	1.4	U	56.5		2.	J	3.1	J	1.1	J
7440-28-0	Thallium (Tl)	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL																	
	SAMPLE ID ------->	015-S-0009-10		015-S-0010-01		015-C-0010-01		015-S-OOI O-OS		015-S-0010-10		015-S-0011-01	
	ORIGINAL ID ----->	015S000910		015S001001		015C001001		015S001005		015S001010		015S001101	
	LAB SAMPLE ID --->	S554878A*1		S554878*6		S554878*7		S554878A*2		S554878A*3		S554929*11	
	ID FROM REPORT -->	015S000910		015S001001		015C001001		0155001005		015S001010		015S001101	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/01/95		09/01/95		09/05/95	
	DATE EXTRACTED -->	09/ II/95						09/11/95		09/11/95		09/11 /95	
	DATE ANALYZED --->	09/22/95		09/20/95		09/20/95		09/22/95		09/22/95		09/22/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP05	VAL	ENPW	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
7440-38-2	Arsenic (As)	0.12	U	5.		3.3		0.16	J	0.14	J	1.1	
7439-97-6	Mercury (Hg)	0.01	U	0.02	J	0.02	J	0.01	J	0.01	U	0.01	J
7439-92-1	Lead (Pb)	0.37	J	7.1		5.7		0.77	J	0.4	J	3.9	J
7782-49-2	Selenium (Se)	0.18	U	0.31	U	0.31	U	0.18	U	0.18	U	0.18	UJ
57-12-5	Cyenide (CN)	0.3		0.28	UJ	0.28	UJ	5.1		0.26	U	0.27	U
7429-90-5	Aluminum (Al)	365.		1740.		1470.		1170.		459.		1300.	
7440-36-0	Antimony (Sb)	0.96	U	2.1	U	2.	U	0.98	U	0.97	U	0.99	U
7440-39-3	Barium (Ea)	0.29	J	2.5	J	2.2	J	1.2	J	0.43	U	2.6	J
7440-41-7	Beryllium (Be)	0.03	U	0.066	U	0.065	U	0.03	U	0.03	U	0.03	U
7440-43-9	Cadmium (Cd)	0.33	U	0.7	U	0.7	U	0.33	U	0.33	U	0.34	U
7440-70-2	Calcium (Ca)	11.4	J	216.	J	201.	J	47.9	J	20.1	J	6940.	
7440-47-3	Chromium (Cr)	0.64	J	3.8		3.5		0.89	J	0.75	J	1.7	
7440-48-4	Cobalt (Co)	0.16	U	0.35	U	0.35	U	0.16	U	0.16	U	0.17	U
7440-50-8	Copper (Cu)	1.5	U	1.3	J	1.2	U	1.	U	0.94	U	1.6	U
7439-89-6	Iron (Fe)	319.		1060.		1020.		1170.		384.		1290.	
7439-95-4	Magnesium (Mg)	11.1	J	43.4	J	37.3	J	42.9	J	13.7	J	135.	3
7439-96-5	Mangenese (Mn)	2.4		25.		22.8		6.2		4.7		16.1	
7440-02-0	Nickel (Ni)	0.39	U	0.84	U	0.84	U	0.5	J	0.4	U	0.5	J
7440-09-7	Potassium (K)	8.7	J	38.8	J	31.	J	31.8	J	8.8	J	41.3	J
7440-22-4	Sitver (Ag)	0.23	U	0.49	U	0.49	U	0.23	U	0.23	U	0.24	U
7440-23-5	Sodium (Na)	1.4	J	12.5	U	13.3	U	4.3	J	3.	J	55.2	J
7440-62-2	Vanadium (V)	0.59	J	3.	J	2.6	J	2.	J	0.67	J	2.1	J
7440-66-6	Zinc (Zn)	0.5	J	3.2	J	3.3	J	0.98	J	0.53	J	19.8	
7440-28-0	Thallium (Tl)	0.05	U	0.11	U	0.11	U	0.05	U	0.05	U	0.05	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL																	
	SAMPLE ID ------->	015-C-0011-01		015-S-0011-05		015-S-0011-09		015-S-0012-01		015-S-0012-05		015-S-0012-10	
	ORIGINAL ID ----->	015C001101		015S001105		015S001109		015S001201		015S001205		015S001210	
	LAB SAMPLE ID --->	S554929*12		S554929*13		S554929*14		S554929*15		S554929*16		S554929*17	
	ID FROM REPORT -->	015C001101		015S001105		015S001109		0155001201		015S001205		015S001210	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/ 11/95		09/11/95		09/11/95		09/11/95		09/11/95		09/12/95	
	DATE ANALYZED --->	09/22/95		09/22/95		09/22/95		09f25/95		09/22/95		09/27/95	
	MATRIX ---------->	Soil		soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KO	
CAS #	Parameter	ENP05	VAL	ENPOS	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP06	VAL
7440-38-2	Arsenic (As)	1.2		0.12	U	0.12	U	25.5		0.35		2.5	
7439-97-6	Mercury (Hg)	0.01	J	0.01	U	0.01	U	0.05	U	0.01	U	0.01	U
7439-92-1	Lead (Pb)	310.	J	0.78	J	0.58	J	14.3	J	1.2	J	0.34	
7782-49-2	Selenium (Se)	0.18	U	0.18	UJ	0.18	U	0.18	UJ	0.18	UJ	0.11	UJ
57-12-5	Cyanide (CN)	0.27	U	0.26	U	0.26	U	0.27	U	0.27	U	0.26	U
7429-90-5	Aluminum (Al)	1490.		1120.		499.		3040.		1210.		484.	
7440-36-0	Antimony (Sb)	1.	U	0.98	U	0.97	U	1.	U	0.99	U	0.98	U
7440-39-3	Barium (Ba)	2.6	J	1.	J	0.36	U	6.7	J	1.2	J	1.3	3
7440-41-7	Beryllium (Be)	0.03	U	0.03	U	0.03	U	0.03	U	0.03	U	0.04	J
7440-43-9	Cadmium (Cd)	0.34	U	0.34	U	0.33	U	0.34	U	0.34	U	0.33	U
7440-70-2	Calcium (Ca)	789.		48.1	J	42.1	J	595.		27.7	J	14.8	J
7440-47-3	Chromium (Cr)	1.9		0.97	J	0.79	J	5.2		0.68	J	0.73	J
7440-48-4	Cobalt (Co)	0.17	U	0.17	U	0.16	U	0.28	J	0.17	U	0.17	U
7440-50-8	Copper (Cu)	1.9	U	0.59	U	0.59	U	2.5	U	0.6	U	1.1	J
7439-89-6	Iron (Fe)	1540.		1130.		490.		2460.		792.		469.	
7439-95-4	Magnesium (Mg)	104.	J	47.7	J	12.9	J	32.2	J	31.	J	47.6	J
7439-96-5	Manganese (Mn)	14.6		5.7		4.9		130.		3.5		5.5	J
7440-02-0	Nickel (Ni)	0.68	J	0.4	U	0.4	U	0.73	J	0.4	U	0.4	U
7440-09-7	Potassium (K)	45.8	J	31.3	J	14.2	J	31.2	J	15.8	J	65.8	J
7440-22-4	Silver (Ag)	0.24	U	0.23	U	0.23	U	0.24	U	0.23	U	0.23	U
7440-23-5	Sodium (Na)	11.2	J	4.5	J	2.9	J	8.4	J	1.9	J	1.4	J
7440-62-2	Vanadium (V)	2.5	J	1.7	J	0.69	J	6.4		1.1	J	0.6	J
7440-66-6	Zinc (Zn)	15.		1.1	J	1.5	J	13.1		0.63	J	1.4	J
7440-28-0	Thallium (Tl)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL																	
	SAMPLE ID ------->	015-S-0013-01		015-S-0013-05		015-S-0013-10		015-S-0014-01		015-S-0014-05		015-S-0014-10	
	ORIGINAL ID ----->	015S001301		0158001305		015S001310		015S001401		015S001405		015S001410	
	LAB SAMPLE ID --->	S554929*18		S554929*19		S554929*20		S554970*8		S554970*9		S554970*10	
	ID FROM REPORT -->	015S001301		015S001305		015S001310		015S001401		015S001405		015S001410	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/07/95		09/07/95		09/07/95	
	DATE EXTRACTED -->	09/ 12/95		09/12/95		09/ 12/95		09/12/95		09/12/95		09/12/95	
	DATE ANALYZED --->	09/27/95		09/26/95		09/27/95		10/02/95		09/29/95		09/29/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
7440-38-2	Arsenic (As)	15.1		1.4		16.2		66.3	J	0.65	J	0.4	J
7439-97-6	Mercury (Hg)	0.14		0.01	J	0.01	U	0.02	J	0.01	U	0.01	U
7439-92-1	Lead (Pb)	109.		4.3		1.8		28.5	J	0.8	J	0.99	J
7782-49-2	Selenium (Se)	0.11	UJ	0.11	UJ	0.11	U	0.11	UJ	0.11	UJ	0.54	UJ
57-12-5	Cyanide (CN)	0.26	U	0.26	U	0.26	U	0.27	U	0.26	U	0.26	U
7429-90-5	Aluminum (Al)	1430.		1740.		501.		2590.		1010.		1640.	
7440-36-0	Antimony (Sb)	0.96	U	0.95	U	0.96	U	1.	U	0.97	U	0.98	U
7440-39-3	Barium (Ba)	7.2	J	2.5	J	0.59	J	6.9	J	2.2	J	1.6	J
7440-41-7	Beryllium (Be)	0.03	U	0.03	U	0.03	U	0.04	J	0.03	U	0.05	U
7440-43-9	Cadmium (Cd)	0.33	U	0.32	U	0.33	U	0.34	UJ	0.33	UJ	0.33	UJ
7440-70-2	Calcium (Ca)	213.	J	21.4	J	15.3	J	1490.		27.7	U	110.	J
7440-47-3	Chromium (Cr)	5.2		1.6		0.76	J	12.2	J	1.	J	2.8	J
7440-48-4	Cobalt (Co)	0.16	U	0.22	J	0.16	U	0.3	J	0.16	U	0.17	J
7440-50-8	Copper (Cu)	4.3		1.	J	0.6	J	6.6		0.58	U	0.96	J
7439-89-6	Iron (Fe)	1120.		1460.		488.		3100.	J	1070.	J	1320.	J
7439-95-4	Magnesium (Mg)	28.1	J	70.8	J	10.6	J	168.	J	36.2	J	31.1	J
7439-96-5	Manganese (Mn)	17.9	J	5.5	J	2.9	J	48.	J	3.6	J	10.4	J
7440-02-0	Nickel (Ni)	0.39	U	0.	J	0.39	U	0.43	J	0.4	J	0.64	J
7440-09-7	Potassium (K)	22.4	J	28.3	J	6.	U	48.9	J	14.1	J	32.8	J
7440-22-4	Silver (Ag)	0.23	U	0.23	U	0.23	U	0.24	U	0.23	U	0.23	U
7440-23-5	Sodium (Na)	3.	J	2.9	J	1.4	J	8.9	U	1.8	U	2.9	U
7440-62-2	Vanadium (V)	2.8	J	2.8	J	0.79	J	7.5		1.8	J	2.2	J
7440-66-6	Zinc (Zn)	10.1		2.6		0.72	J	12.1		1.2	U	1.7	U
7440-28-0	Thallium (Tl)	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL															
	SAMPLE ID ------->	015-S-0015-01		015-S-0015-05		015-S-0015-10		015-S-0016-01		015-S-0016-05		015-S-0016-10	
	ORIGINAL ID ----->	015S001501		015S001505		015S001510		015S001601		015S001605		015S001610	
	LAB SAMPLE ID --->	S554970*11		S554970*12		S554970*13		S554843*3		S554843*4		S554843*5	
	ID FROM REPORT -->	015S001501		015S001505		015S001510		015S001601		015S001605		015S001610	
	SAMPLE DATE ----->	09/07/95		09/07/95		09/07/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/12/95		09/12/95		09/12/95							
	DATE ANALYZED --->	10/02/95		10/02/95		10/02/95		09/19/95		09/19/95		09/19/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
7440-38-2	Arsenic (As)	34.6	J	5.	J	6.5	J	8.9	J	0.47	J	0.22	U
7439-97-6	Mercury (Hg)	0.11		0.03	J	0.06	J	1.9		0.13		0.02	J
7439-92-1	Lead (Pb)	12.2	J	2.1	J	1.5	J	26.2		1.5		0.18	U
7782-49-2	Selenium (Se)	0.11	UJ	0.11	UJ	0.11	UJ	0.29	UJ	0.29	UJ	0.29	UJ
57-12-5	Cyanide (CN)	0.27	U	0.26	U	0.26	U	0.26	U	0.26	U	0.26	U
7429-90-5	Aluminum (Al)	2410.		1150.		562.		2210.		1460.		541.	
7440-36-0	Antimony (Sb)	1.	U	0.96	U	0.97		1.9	U	1.9	U	1.9	U
7440-39-3	Barium (Ba)	4.	J	1.7	J	1.2	J	6.7	J	1.8	J	0.64	J
7440-41-7	Beryllium (Be)	0.03	U	0.03	U	0.03	U	0.062	U	0.062	U	0.061	U
7440-43-9	Cadmium (Cd)	0.34	UJ	0.33	UJ	0.33	UJ	0.66	U	0.66	U	0.65	U
7440-70-2	Calcium (Ca)	923.		83.3	J	71.9	J	1850.		225.	J	46.9	J
7440-47-3	Chromium (Cr)	7.3	J	1.8	J	1.7	J	6.2		1.2	U	0.99	U
7440-48-4	Cobalt (Co)	0.32	J	0.16	U	0.16	U	0.33	U	0.33	U	0.32	U
7440-50-8	Copper (Cu)	4.8		0.64	J	0.58	U	4.1	J	1.2	U	1.2	U
7439-89-6	Iron (Fe)	2830.	J	1090.	J	571.	J	2190.		1170.		434.	
7439-95-4	Magnesium (Mg)	77.7	J	37.	J	16.7	J	73.3	J	47.5	J	15.8	J
7439-96-5	Manganese (Mn)	81.6	J	6.7	J	5.6	J	99.		7.7		3.5	
7640-02-0	Nickel (Ni)	0.78	J	0.39	U	0.39	U	0.79	U	0.79	U	0.78	U
7440-09-7	Potassium (K)	38.7	J	18.3	J	9.8	J	54.	J	28.1	J	11.9	U
7440-22-4	Silver (Ag)	0.24	U	0.23	U	0.23	U	0.46	U	0.46	U	0.45	U
7440-23-5	Sodium (Na)	6.8	U	2.	U	3.4	U	22.9	J	8.6	J	4.6	J
7440-62-2	Vanadium (V)	6.2		2.	J	0.89	J	5.8	J	2.3	J	1.	U
7440-66-6	Zinc (Zn)	26.		3.9	U	3.	U	21.		5.3		1.6	U
7440-28-0	Thallium (Tl)	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL															
		SAMPLE ID ------->	015-S-0017-01		015-S-0017-05		015-S-0017-10		015-S-0018-01		015-S-0018-05		015-S-0018-10		
		ORIGINAL ID ----->	015S001701		0155001705		015S001710		015S001801		015S001805		015S001810		
		LAB SAMPLE ID --->	S554843*6		S554843*7		S554843*8		S554843*9		S554843*10		S554843*11		
		ID FROM REPORT -->	015S001701		015S001705		015S001710		015S001801		015S001805		015S001810		
		SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		
		DATE ANALYZED --->	09/19/95		09/19/95		09/19/95		09/19/95		09/19/95		09/19/95		
		MATRIX ---------->	Soil		Soil		Soil		Sail		Soil		Soil		
		UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		
CAS #	Parameter		ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	
7440-38-2	Arsenic (As)		2.4	J	0.21	U	0.22	U	0.99	J	0.5	J	0.22	U	
7439-97-6	Mercury (Hg)		0.19		0.02	J	0.009	J	0.02	J	0.01	J	0.01	J	
7439-92-1	Lead (Pb)		39.7		1.4	J	0.32	U	19.6		3.8		0.75	U	
7782-49-2	Selenium (Se)		0.3	UJ	0.28	UJ	0.29	UJ	0.29	UJ	0.29	UJ	0.29	UJ	
57-12-5	Cyanide (CN)		0.27	U	0.26	U	0.26	U	0.26	U	0.26	U	0.26	U	
7429-90-5	Aluminum (Al)		3300.		995.		1040.		2490.		1350.		312.		
7440-36-0	Antimony (Sb)		2.	U	1.9	U	1.9	U	2.	U	1.9	U	1.9	U	
7440-39-3	Barium (Ba)		16.9	J	1.5	J	1.6	J	4.3	J	1.8	J	0.36	U	
7440-41-7	Beryllium (Be)		0.063	U	0.061	U	0.061	U	0.063	U	0.061	U	0.061	U	
7440-43-9	Cadmium (Cd)		0.68	U	0.65	U	0.65	U	0.67	U	0.66	U	0.65	U	
7440-70-2	Calcium (Ca)		10600.		957.	J	234.	J	160.	J	1%.	J	17.4	U	
7440-47-3	Chromium (Cr)		7.2		1.2	U	0.86	U	6.2		0.74	U	0.73	U	
7440-48-4	Cobalt (Co)		0.37	J	0.32	U	0.32	U	0.33	U	0.32	U	0.32	U	
7440-50-8	Copper (Cu)		3.5	J	1.1	U	1.2	U	1.9	J	1.2	U	1.2	U	
7439-89-6	Iron (Fe)		4470.		897.		1010.		4680.		1180.		268.		
7439-95-4	Magnesium (Mg)		756.	J	45.3	J	45.4	J	33.7	J	37.4	J	6.1	U	
7439-96-5	Manganese (Mn)		56.8		6.3		5.		36.5		6.4		3.2		
7440-02-0	Nickel (Ni)		0.81	U	0.78	U	0.78	U	0.8	U	0.78	U	0.78	U	
7440-09-7	Potassium (K)		85.4	J	20.	J	19.5	J	28.	J	17.2	J	11.9	U	
7440-22-4	Silver (Ag)		0.47	U	0.45	U	0.45	U	0.47	U	0.46	U	0.45	U	
7440-23-5	Sodium (Na)		85.2	J	16.	J	10.8	J	47.2	J	14.8	J	6.	J	
7440-62-2	Vanadium (V)		12.7		1.7	U	1.9	U	14.		2.3	J	0.59	U	
7440-66-6	Zinc (Zn)		32.3		2.6	J	1.9	J	19.1		6.8		1.8	J	
7440-28-0	Thallium (Tl)		0.12	J	0.1	U	0.1	U	0.11	J	0.15	J	0.1	U	

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL															
	SAMPLE ID ------->	015-S-0020-01		015-C-0020-01		015S002005		015-S-0020-08		015-S-0021-01		015-S-0021-05	
	ORIGINAL ID ----->	015S002001		015C002001				015S002008		015S002101		015S002105	
	LAB SAMPLE ID --->	S554843*12		S554843A*13		S554843*13		S554843*14		S554843*15		S554843*16	
	ID FROM REPORT -->	015S002001		015C002001		015S002005		015S002008		0153002101		015S002105	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE ANALYZED --->	09/20/95		09/21/95		09/19/95		09/19/95		09/21/95		09/26/95	
	MATRIX ---------->	soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP03	VAL	ENP04	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
7440-38-2	Arsenic (As)	16.	J	14.3		3.	J	1.1	J	13.1	J	0.65	J
7439-97-6	Mercury (Hg)	0.03	J	0.02	J	0.01	J	0.007	U	0.04	J	0.009	J
7439-92-1	Lead (Pb)	13.4		12.6		0.81		0.75	U	22.2		1.3	
7782-49-2	Selenium (Se)	0.29	UJ	0.29	UJ	0.29	UJ	0.29	UJ	0.3	UJ	0.29	UJ
57-12-5	Cyanide (CN)	0.26	U	0.26	UJ	0.26	U	0.26	U	0.27	U	0.26	U
7429-90-5	Aluminum (Al)	1380.		1230.		1140.		1300.		2100.		1080.	
7440-36-0	Antimony (Sb)	1.9	U	1.9	U	1.9	U	2.	U	2.	U	1.9	U
7440-39-3	Barium (Ba)	5.4	J	5.6	J	1.9	J	1.9	J	11.	J	1.7	J
7440-41-7	Beryllium (Be)	0.062	U	0.061	U	0.062	U	0.062	U	0.065	U	0.062	U
7440-43-9	Cadmium (Cd)	0.66	U	0.66	U	0.66	U	0.67	U	0.69	U	0.66	U
7440-70-2	Calcium (Ca)	20700.		24300.	J	408.	J	244.	J	22900.		234.	J
7440-47-3	Chromium (Cr)	4.1		3.3		1.3	U	1.1	U	8.5		0.74	U
7440-48-4	Cobalt (Co)	0.33	U	0.33	U	0.33	U	0.33	U	0.34	U	0.33	U
7440-50-8	Copper (Cu)	2.6	J	2.1	J	1.2	U	1.2	U	8.7		1.2	U
7439-89-6	Iron (Fe)	1580.		1260.		956.		850.		2060.		907.	
7439-95-4	Magnesium (Mg)	429.	J	452.	J	45.9	J	39.8	J	311.	J	39.6	J
7439-96-5	Manganese (Mn)	79.9		79.8		5.6		6.9		169.		4.6	
7440-02-0	Nickel (Ni)	0.79	U	0.78	U	0.79	U	0.8	U	0.83	U	0.79	U
7440-09-7	Potassium (K)	36.4	J	39.9	J	28.3	J	24.2	J	55.9	J	23.5	J
7440-22-4	Silver (Ag)	0.46	U	0.46	U	0.46	U	0.46	U	0.48	U	0.46	U
7440-23-5	Sodium (Na)	153.	J	160.	J	8.8	J	8.1	J	167.	J	7.	J
7440-62-2	Vanadium (V)	3.2	J	2.7	J	1.6	U	1.9	J	4.3	J	1.7	U
7440-66-6	Zinc (Zn)	11.		10.6		1.3	U	1.2	U	45.6		1.4	U
7440-28-0	Thallium (Tl)	0.1	U	0.1	J	0.13	J	0.1	U	0.14	J	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL													
	SAMPLE ID -------:	015-S-0021-08		015-S-0022-01		015-S-0022-05		015-S-0022-08		015-S-0023-01		015-S-0023-OS	
	ORIGINAL ID -----:	015S002108		015S002201		015S002205		015S002208		015S002301		0151002305	
	LAB SAMPLE ID ---:	S554843*17		S554843*18		S554843*19		S554843A*1		S554843A*2		S554843A*3	
	ID FROM REPORT --:	015S002108		015S002201		015S002205		0155002208		015S002301		0155002305	
	SAMPLE DATE -----:	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE ANALYZED ---:	09/20/95		09/20/95		09/19/95		09/21/95		09/20/95		09/20/95	
	MATRIX ----------:	soil		soil		Soil		Soil		Soil		Soil	
	UNITS ----------:	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
7440-38-2	Arsenic (As)	0.68	J	0.29	J	0.79	J	2.6		0.22	U	8.5	
7439-97-6	Mercury (Hg)	0.008	U	0.03	J	0.02	J	0.008	UJ	0.009	UJ	0.008	UJ
7439-92-1	Lead (Pb)	0.14	U	0.52	U	1.4		0.72	J	1.9	J	2.2	
7782-49-2	Selenium (Se)	0.29	UJ	0.29	UJ	0.29	UJ	0.29	U	0.29	U	0.22	UJ
57-12-5	Cyanide (CN)	0.26	U	0.26	U	0.26	U	0.26	UJ	0.26	UJ	0.26	UJ
7429-90-5	Aluminum (Al)	1130.		724.		1600.		1390.		1140.		1630.	
7440-36-0	Antimony (Sb)	1.9	U	1.9	U	1.9	U	2.	U	1.9	U	2.	U
7440-39-3	Barium (Ba)	1.5	J	1.5	J	1.9	J	1.6	J	2.1	J	2.9	J
7440-41-7	Beryllium (Be)	0.062	U	0.062	U	0.062	U	0.064	J	0.061	U	0.062	U
7440-43-9	Cadmium (Cd)	0.66	U	0.66	U	0.67	U	0.67	U	0.65	U	0.67	U
7440-70-2	Calcium (Ca)	3360.		62.2	J	151.	J	97.9	J	74.5	J	1500.	J
7440-47-3	Chromium (Cr)	0.74	U	1.1	U	1.4	U	1.2	J	1.8	J	2.1	J
7440-48-4	Cobalt (Co)	0.33	U	0.33	U	0.33	U	0.33	U	0.32	U	0.33	U
7440-50-8	Copper (Cu)	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	3.6	J
7439-89-6	Iron (Fe)	882.		666.		1420.		1130.		1070.		1450.	
7439-95-4	Magnesium (Mg)	40.5	J	22.4	J	48.8	J	39.3	J	29.5	J	67.2	J
7439-96-5	Manganese (Mn)	11.3		7.		7.5		9.2		14.4		40.2	
7440-02-0	Nickel (Ni)	0.79	U	0.78	U	0.79	U	0.0	U	0.78	U	0.6	U
7440-09-7	Potassium (K)	21.7	J	24.5	J	26.5	J	26.	J	25.4	J	34.5	J
7440-22-4	Silver (Ag)	0.46	U	0.46	U	0.46	U	0.46	U	0.45	U	0.46	U
7440-23-5	Sodium (Na)	31.2	J	4.6	J	5.3	J	7.2	U	7.2	U	18.4	U
7440-62-2	Vanadium (V)	1.4	U	1.5	U	2.6	J	2.1	J	2.4	J	2.9	J
7440-66-6	Zinc (Zn)	1.6	U	1.2	U	1.7	J	1.6	J	2.	J	9.6	
7440-28-0	Thallium (Tl)	0.1	U	0.23	J	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL																	
	SAMPLE ID ------->	(315-S-0024-01		015-s-0024-05		015-S-0024-09		015-S-0025-01		015-S-0025-05		015-S-0025-08	
	ORIGINAL ID ----->	015S002401		(3158002405		015S002409		015S002501		(1155002505		015S002508	
	LAB SAMPLE ID --->	S554843A*4		S554843A*5		S554843A*6		S554843A*7		S554843A*8		S554843A*9	
	ID FROM REPORT -->	(315S002401		015S002405		015S002409		015S002501		015S002505		015S002508	
	SAMPLE DATE ----->	(38/31/95		(18/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/21/95		09/20/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
7440-38-2	Arsenic (As)	1.5		0.36	J	0.22	U	3.		0.22	U	0.26	U
7439-97-6	Mercury (Hg)	0.009	J	0.008	UJ	0.008	UJ	0.01	UJ	0.008	UJ	0.01	UJ
7439-92-1	Lead (Pb)	26.4		0.91	J	0.23	J	18.5		1.	J	0.9	J
7782-49-2	Selenium (Se)	0.29	UJ	0.29	UJ	0.29	U	0.3	UJ	0.29	UJ	0.35	UJ
57-12-5	Cyanide (CN)	0.26	UJ	0.26	UJ	0.26	UJ	0.27	UJ	0.26	UJ	0.31	UJ
7429-90-5	Aluminum (Al)	1460.		1370.		179.		2770.		1460.		879.	
7440-36-0	Antimony (Sb)	2.	U	2.	U	2.	U	2.	U	2.	U	2.3	U
7440-39-3	Barium (Ba)	13.6	J	1.9	J	0.33	J	8.5	J	1.8	J	1.4	J
7440-41-7	Beryllium (Be)	0.062	U	0.063	U	0.063	U	0.073	J	0.062	U	0.074	U
7440-43-9	Cadmium (Cd)	0.67	U	0.67	U	0.67	U	0.68	U	0.67	U	0.79	U
7440-70-2	Calcium (Ca)	238.	J	115.	J	21.1	J	490.	J	122.	J	80.7	J
7440-47-3	Chromium (Cr)	2.	J	1.	J	0.74	U	4.5		1.4	J	0.88	U
7440-48-4	Cobalt (Co)	0.33	U	0.33	U	0.33	U	0.4	J	0.33	U	0.39	U
7440-50-8	Copper (Cu)	1.9	J	1.2	U	1.2	U	4.3	J	1.2	U	1.4	U
7439-89-6	Iron (Fe)	1230.		1260.		162.		2320.		1220.		778.	
7439-95-4	Magnesium (Mg)	40.	J	53.3	J	7.5	J	60.4	J	42.1	J	33.	J
7439-96-5	Manganese (Mn)	67.1		5.9		1.8	J	121.		4.3		8.4	
7440-02-0	Nickel (Ni)	0.8	U	0.8	U	0.8	U	0.81	U	0.8	U	0.94	U
7440-09-7	Potassium (K)	26.	J	33.4	J	12.2	U	71.9	J	40.5	J	15.	J
7440-22-4	Silver (Ag)	0.46	U	*0.46*	U	*0.46*	U	0.47	U	0.46	U	0.55	U
7440-23-5	Sodium (Na)	5.3	UJ	10.1	U	4.9	U	14.3	U	6.8	U	7.1	U
7440-62-2	Vanadium (V)	2.9	J	2.5	J	0.43	U	5.8	J	2.1	J	0.83	U
7440-66-6	Zinc (Zn)	13.		4.4		0.41	U	33.4		1.1	U	1.2	J
7440-28-0	Thallium (Tl)	0.1	U	0.1	U	0.1	U	0.11	U	0.13	J	0.15	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL													
	SAMPLE ID ------->	015-S-0026-01		015-S-0026-05		015-S-0026-08		015-S-0027-01		015-S-0027-05		015-S-0027-10	
	ORIGINAL ID ----->	015S002601		015S002605		015S002608		015S002701		015S002705		015S002710	
	LAB SAMPLE ID --->	S554843A*10		S554843A*11		S554843A*12		S554929*21		S554929*22		S554929*23	
	ID FROM REPORT -->	015S002601		015S002605		015S002608		015S002701		015S002705		015S002710	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		09/06/95		09/06/95		09/06/95	
	DATE EXTRACTED -->							09/12/95		09/12/94		09/12/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/27/95		09/27/95		09/27/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
7440-38-2	Arsenic (As)	0.22	U	0.22	U	2.1		22.4		0.92		0.81	
7439-97-6	Mercury (Hg)	0.008	UJ	0.008	UJ	0.01	J	0.04	J	0.05	J	0.01	U
7439-92-1	Lead (Pb)	1.7	J	1.1	J	6.8		14.7		1.5		0.45	
7782-49-2	Selenium (Se)	0.29	U	0.29	U	0.3	U	0.11	UJ	0.11	UJ	0.11	U
57-12-5	Cyanide (CN)	0.26	UJ	0.26	UJ	0.27	UJ	0.26	U	0.54		0.26	U
7429-90-5	Aluminum (Al)	1740.		892.		1440.		3850.		1520.		220.	
7440-36-0	Antimony (Sb)	1.9	U	2.	U	2.	U	0.97	U	0.95	U	0.96	U
7440-39-3	Barium (Ba)	2.9	J	1.6	J	4.	J	10.9	J	2.7	J	0.48	J
7440-41-7	Beryllium (Be)	0.062	U	0.063	U	0.064	U	0.12		0.03	U	0.03	U
7440-43-9	Cadmium (Cd)	0.66	U	0.67	U	0.69	U	0.33	U	0.33	U	0.33	U
7440-70-2	Calcium (Ca)	50.6	J	59.7	J	265.	J	2590.		257.	J	36.6	J
7440-47-3	Chromium (Cr)	1.3	J	1.3	J	2.8		10.2		1.8		0.65	J
7440-48-4	Cobalt (Co)	0.33	U	0.33	U	0.34	U	0.54	J	0.16	U	0.16	U
7440-50-8	Copper (Cu)	1.2	U	1.2	U	1.2	U	5.4		0.84	J	0.58	U
7439-89-6	Iron (Fe)	1590.		808.		1420.		3760.		1170.		206.	
7439-95-4	Magnesium (Mg)	31.8	J	22.3	J	40.6	J	243.	J	154.	J	11.2	J
7439-96-5	Manganese (Mn)	21.8		7.7		48.2		58.2	J	6.2		2.1	J
7440-02-0	Nickel (Ni)	0.79	U	0.6	U	0.82	U	0.95	J	0.77	J	0.39	U
7440-09-7	Potassium (K)	24.5	J	16.4	J	25.6	J	113.	J	23.6	J	6.	U
7440-22-4	Silver (Ag)	0.46	U	0.47	U	0.48	U	0.23	U	0.23	U	0.23	U
7440-23-5	Sodium (Na)	8.1	U	7.5	U	10.4	U	18.2	J	5.7	J	1.9	J
7440-62-2	Vanadium (V)	3.6	J	1.7	U	3.2	J	8.3		2.2	J	0.45	J
7440-66-6	Zinc (Zn)	1.6	J	0.99	U	5.6		18.8		3.8		0.78	J
7440-28-0	Thallium (Tl)	0.21	J	0.11	U	0.11	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL													
	SAMPLE ID ------->	015-S-0029-01		015-S-0029-05		015-S-0029-10		015-S-0030-01		015-S-0030-05		015-S-0030-10	
	ORIGINAL ID ----->	015S002901		015S002905		015S002910		015S003001		015S003005		015S003010	
	LAB SAMPLE ID --->	S554929*24		S554929*25		S554929*26		S554929*27		S554929*28		S554929*29	
	ID FROM REPORT -->	015S002901		015S002905		015S002910		015S003001		015S003005		015S003010	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09f05/95	
	DATE EXTRACTED -->	09/12/95		09/12/95		09/12/95		09/12/95		09/12/95		09/12/95	
	DATE ANALYZED --->	09/26/95		09/26/95		09/26/95		09/26/95		09/26/95		09/26/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
7440-38-2	Arsenic (As)	0.29	J	0.12	U	0.12	U	0.41	J	0.41	J	0.26	J
7439-97-6	Mercury (Hg)	0.02	J	0.01	U	0.01	U	0.02	J	0.01	U	0.01	U
7439-92-1	Lead (Pb)	10.		0.73		0.23	J	13.1		0.88		0.22	J
7782-49-2	Selenium (Se)	0.11	UJ	0.11	UJ	0.11	UJ	0.11	UJ	0.11	UJ	0.11	UJ
57-12-5	Cyanide (CN)	0.26	U	0.26	U	0.26	U	0.27	U	0.26	U	0.26	U
7429-90-5	Aluminum (Al)	1690.		1010.		404.		4940.		1720.		695.	
7440-36-0	Antimony (Sb)	0.96	U	0.95	U	0.95	U	0.99	U	0.95	U	0.95	U
7440-39-3	Barium (Ba)	4.4	J	1.2	J	0.48	J	8.1	J	1.7	J	0.51	J
7440-41-7	Beryllium (Be)	0.03	J	0.03	U	0.03	U	0.04	J	0.03	U	0.03	U
7440-43-9	Cadmium (Cd)	0.33	U	0.32	U	0.32	U	0.34	U	0.33	U	0.33	U
7440-70-2	Calcium (Ca)	396.	J	51.	J	18.4	J	558.		25.2	J	7.8	U
7440-47-3	Chromium (Cr)	3.7		0.81	J	0.68	J	6.3		1.5		1.2	
7440-48-4	Cobalt (Co)	4.6	J	0.16	U	0.16	U	0.59	J	0.16	U	0.16	U
7440-50-8	Copper (Cu)	1.4	J	0.57	U	0.57	U	3.		0.58	U	0.58	U
7439-89-6	Iron (Fe)	2690.		959.		286.		2870.		1470.		488.	
7439-95-4	Magnesium (Mg)	45.6	J	41.5	J	12.3	J	62.9	J	57.5	J	14.5	J
7439-96-5	Manganese (Mn)	30.5	J	3.5	J	1.8	J	107.	J	5.4	J	2.7	J
7440-02-0	Nickel (Ni)	0.39	U	6.39	U	0.39	U	0.78	J	0.58	J	0.39	U
7440-09-7	Potassium (K)	69.1	J	26.5	J	9.	J	103.	J	26.6	J	6.7	J
7440-22-4	Silver (Ag)	0.23	U	0.23	U	0.22	U	0.24	U	0.23	U	0.23	U
7440-23-5	Sodium (Na)	9.5	J	5.6	J	3.9	J	12.1	J	2.8	J	2.9	J
7440-62-2	Vanadium (V)	7.5		1.6	J	0.6	J	8.1		2.7	J	0.71	J
7440-66-6	Zinc (Zn)	4.9		1.2	J	1.3	J	8.5		1.6	J	0.86	J
7440-28-0	Thallium (Tl)	0.1	U	0.13	J	0.1	U	0.1	U	0.1	U	0.1	U

** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Inorganics

METAL											
	SAMPLE ID ------->	015-S-0031-01		015-S-0031-05		015-S-0031-10					
	ORIGINAL ID ----->	015S003101		015S003105		0155003110					
	LAB SAMPLE ID --->	S554929*30		S554929*31		S554929*32					
	ID FROM REPORT -->	015S003101		015S003105		015S003110					
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95					
	DATE EXTRACTED -->	09/12/95		09/12/95		09/12/95					
	DATE ANALYZED --->	09/26/95		09/26/95		09/26/95					
	MATRIX ---------->	Soil		Soil		Soil					
	UNITS ---------->	MG/KG		MG/KG		MG/KG					
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL				
7440-38-2	Arsenic (As)	0.94		0.47	J	0.4	J				
7439-97-6	Mercury (Hg)	0.01	U	0.01	U	0.01	U				
7439-92-1	Lead (Pb)	5.6		0.84		0.76					
7782-49-2	Selenium (Se)	0.11	UJ	0.11	UJ	0.11	UJ				
57-12-5	Cyanide (CN)	0.27	U	0.26	U	0.26	U				
7429-90-5	Aluminum (Al)	3840.		1360.		988.					
7440-36-0	Antimony (Sb)	0.98	U	0.95	U	0.95	U				
7440-39-3	Barium (Ba)	4.8	J	1.8	J	1.	J				
7440-41-7	Beryllium (Be)	0.04	J	0.03	U	0.03	U				
7440-43-9	Cadmium (Cd)	0.34	U	0.33	U	0.32	U				
7440-70-2	Calcium (Ca)	633.		47.9	J	77.8	J				
7440-47-3	Chromium (Cr)	3.4		14		1.1					
7440-48-4	Cobalt (Co)	0.92	J	0.26	J	0.55	J				
7440-50-8	Copper (Cu)	2.3	J	0.57	U	0.57	U				
7439-89-6	Iron (Fe)	2730.		1130.		819.					
7439-95-4	Magnesium (Mg)	51.5	J	47.	J	22.4	J				
7439-96-5	Manganese (Mn)	126.	J	5.3	J	11.1	J				
7440-02-0	Nickel (Ni)	0.79	J	0.4	J	0.41	J				
7440-09-7	Potassium (K)	272.	J	24.1	J	21.7	J				
7440-22-4	Silver (Ag)	0.23	U	0.23	U	0.23	U				
7440-23-5	Sodium (Na)	21.4	J	3.9	J	4.6	J				
7440-62-2	Vanadium (V)	6.9		2.	J	1.3	J				
7440-66-6	Zinc (Zn)	21.7		1.2	J	1.7	J				
7440-28-0	Thallium (Tl)	0.1	U	0.1	U	0.1	U				

*** Validation Complete ***

DATALCP3
05/07/97

PENSACOLA, SITE 15
Phase I Soil
Pesticides

Time: 15:55

PEST															
	SAMPLE ID ------->	015-S-0001-01		015-S-0001-05		015-S-0001-10		015-S-0002-01		015-S-0002-05		015-S-0002-09	
	ORIGINAL ID ----->	015S000101		015S000105		015S000110		015S000201		0159000205		0158000209	
	LAB SAMPLE ID --->	S554878*1		S554878*2		S554878*3		S554929*1		S554929*2		S554929*3	
	ID FROM REPORT -->	015S000101		015S000105		015S000110		015S000201		0153000205		015S000209	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/21/95		09/21/95		09/21/95		09/27/95		09/27/95		09/27/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
72-54-8	4,4'-DDD	3.5	UJ	3.5	UJ	3.5	UJ	4.1	J	3.5	UJ	3.6	U
72-55-9	4,4'-DDE	1.9	J	3.5	UJ	3.5	UJ	35.	J	3.5	UJ	1.4	J
50-29-3	4,4'-DDT	1.8	J	2.	J	3.5	UJ	7.6	J	0.72	J	1.1	J
309-00-2	Aldrin	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	U
12674-11-2	Aroclor-1016	35.	UJ	35.	UJ	35.	UJ	37.	UJ	35.	UJ	36.	U
11104-28-2	Aroclor-1221	71.	UJ	70.	UJ	71.	UJ	74.	UJ	71.	UJ	73.	U
11141-16-5	Aroclor-1232	35.	UJ	35.	UJ	35.	UJ	37.	UJ	35.	UJ	36.	U
53469-21-9	Aroclor-1242	35.	UJ	35.	UJ	35.	UJ	37.	UJ	35.	UJ	36.	U
12672-29-6	Aroclor-1248	35.	UJ	35.	UJ	35.	UJ	37.	UJ	35.	UJ	36.	U
11097-69-1	Aroclor-1254	35.	UJ	35.	UJ	35.	UJ	37.	UJ	35.	UJ	36.	U
11096-82-5	Aroclor-1260	35.	UJ	36.	UJ	35.	UJ	37.	UJ	35.	UJ	36.	U
60-57-1	Dieldrin	3.4	J	3.5	UJ	3.5	UJ	9.9	J	3.5	UJ	0.79	J
959-98-8	Endosulfan I	0.73	J	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	U
33213-65-9	Endosulfan II	3.5	UJ	3.5	UJ	3.5	UJ	3.7	UJ	3.5	UJ	3.6	U
1031-07-8	Endosulfan sulfate	3.5	UJ	3.5	UJ	3.5	UJ	3.7	UJ	3.5	UJ	3.6	U
72-20-8	Endrin	3.5	UJ	3.3	UJ	3.5	UJ	3.7	UJ	3.5	UJ	3.5	U
7421-93-4	Endrin aldehyde	3.5	UJ	1.2	J	3.5	UJ	3.7	UJ	3.5	UJ	3.6	U
53494-70-5	Endrin ketone	3.5	UJ	3.5	UJ	3.5	UJ	3.7	UJ	3.5	UJ	3.6	U
76-44-8	Heptachlor	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	U
1024-57-3	Heptachlor epoxide	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	U
72-43-5	Methoxychlor	18.	UJ	18.	UJ	18.	UJ	19.	UJ	18.	UJ	18.	U
8001-35-2	Toxaphene	180.	UJ	180.	UJ	180.	UJ	190.	UJ	180.	UJ	180.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	UJ	1.8	UJ	1.8	UJ	8.6	J	1.8	UJ	1.8	U
319-85-7	beta-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	U
319-86-8	delta-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	U
5103-74-2	gamma-Chlordane	1.8	UJ	1.8	UJ	1.8	UJ	13.	J	1.8	UJ	0.61	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0003-01		015-S-0003-05		015-S-0003-09		015-S-0004-01		015-C-0004-01		015-S-0004-05	
	ORIGINAL ID ----->	015S000301		015S000305		015S000309		015S000401		015C000401		0159000405	
	LAB SAMPLE ID --->	S554929*4		S554929*5		S554929*6		S554929*7		S554929*8		S554929*9	
	ID FROM REPORT -->	015S000301		015S000305		015S000309		015S000401		015C000401		0153000405	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/06/95		09/06/95		09/06/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/27/95		09/27/95		09/27/95		09/27/95		09/27/95		09/27/95	
	MATRIX ---------->	soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
72-54-8	4,4'-DDD	3.5	U	3.5	UJ	3.5	U	30.		29.	J	3.4	U
72-55-9	4,4'-DDE	14.		3.5	UJ	0.38	J	88.	D	100.	D	12.	
50-29-3	4,4'-DDT	33.		0.71	J	1.1	J	120.	0	94.	DJ	12.	
309-00-2	Aldrin	1.8	U	1.8	UJ	1.8	U	1.9	U	1.8	UJ	1.8	U
12674-11-2	Aroclor-1016	35.	U	35.	UJ	35.	U	36.	U	36.	UJ	34.	U
11104-28-2	Aroclor-1221	72.	U	71.	UJ	70.	U	74.	U	73.	UJ	69.	U
11141-16-5	Aroclor-1232	35.	U	35.	UJ	35.	U	36.	U	36.	UJ	34.	U
53469-21-9	Aroclor-1242	35.	U	35.	UJ	35.	U	36.	U	36.	UJ	34.	U
12672-29-6	Aroclor-1248	35.	U	35.	UJ	35.	U	36.	U	36.	UJ	34.	U
11097-69-1	Aroclor-1254	35.	U	35.	UJ	35.	U	36.	U	36.	UJ	34.	U
11096-82-5	Aroclor-1260	35.	U	35.	UJ	35.	U	52.		14.	J	34.	U
60-57-1	Dieldrin	6.2		3.5	UJ	3.5	U	360.	D	480.	D	180.	D
959-98-8	Endosulfan I	1.8	U	1.8	UJ	1.8	U	1.9	U	1.8	UJ	1.8	U
33213-65-9	Endosulfan II	3.5	U	3.5	UJ	3.5	U	3.6	U	3.6	UJ	3.4	U
1031-07-8	Endosulfan sulfate	3.5	U	3.5	UJ	3.5	U	3.6	U	3.6	UJ	3.4	U
72-20-8	Endrin	3.5	U	3.5	U	3.5	U	6.3	J	36	UJ	3.4	U
7421-93-4	Endrin aldehyde	3.5	U	3.5	UJ	3.5	U	2.6	J	3.6	UJ	3.4	U
53494-70-5	Endrin ketone	3.5	U	3.5	UJ	3.5	U	2.	J	3.5	J	3.4	U
76-44-8	Heptachlor	1.8	U	1.8	UJ	1.8	U	1.1	J	1.8	UJ	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U	1.8	UJ	1.8	U	8.8		7.9	J	1.8	U
72-43-5	Methoxychlor	18.	U	18.	UJ	18.	U	19.	U	18.	UJ	18.	U
8001-35-2	Toxaphene	180.	U	180.	UJ	180.	U	190.	U	180.	U	180.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.9	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	2.8		1.8	UJ	1.8	U	22.		18.	J	1.2	J
319-85-7	beta-BHC	1.8	U	1.8	UJ	1.8	U	1.9	U	1.8	UJ	1.8	U
319-86-8	delta-BHC	1.8	U	1.8	UJ	1.8	U	0.44	J	1.8	UJ	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	UJ	1.8	U	26.	J	15.	J	1.1	J
5103-74-2	gamma-Chlordane	3.2	J	1.8	UJ	1.8	U	37.	DJ	26.	J	1.6	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST															
	SAMPLE ID ------->	015-S-0004-10		015-S-0005-01		015-S-0005-05		015-S-0005-10		015-S-0006-01		015-C-0006-01	
	ORIGINAL ID ----->	015S000410		015S000501		015S000505		015S000510		015S000601		015C000601	
	LAB SAMPLE ID --->	S554929*10		S554970*1		S554970*2		S554970*3		S554970*4		S554970*5	
	ID FROM REPORT -->	015S000410		015S000501		015S000505		015S000510		015S000601		015C000601	
	SAMPLE DATE ----->	09/06/95		09/07/95		09/07/95		09/07/95		09/07/95		09/07/95	
	DATE EXTRACTED -->	09/08/95		09/11/95		09/11/95		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/28/95		09/29/95		09/29/95		09/29/95		09/29/95		09/29/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
72-54-8	4,4'-DDD	3.5	U	3.4	U	3.4	UJ	3.4	UJ	4.1	U	3.	J
72-55-9	4,4'-DDE	3.5	U	6.1		0.3	J	0.44	J	4.1	U	4.	U
50-29-3	4,4'-DDT	3.5	U	18.		1.1	J	2.1	J	2.2	J	2.5	J
309-00-2	Aldrin	1.8	U	18	U	1.7	UJ	1.8	U	2.1	U	2.1	U
12674-11-2	Aroclor-1016	35.	U	34.	U	34.	UJ	34.	U	41.	U	40.	U
11104-28-2	Aroclor-1221	70.	U	70.	U	69.	UJ	69.	U	84.	U	82.	U
11141-16-5	Aroclor-1232	35.	U	34.	U	34.	UJ	34.	U	41.	U	40.	U
53469-21-9	Aroclor-1242	35.	U	34.	U	34.	UJ	34.	U	41.	U	40.	U
12672-29-6	Aroclor-1248	35.	U	34.	U	34.	UJ	34.	U	41.	U	40.	U
11097-69-1	Aroclor-1254	35.	U	34.	U	34.	UJ	34.	U	41.	U	40.	U
11096-82-5	Aroclor-1260	35.	U	34.	U	34.	UJ	34.	U	41.	U	40.	U
60-57-1	Dieldrin	1.5	J	14.		0.51	J	1.3	J	3.6	J	3.9	J
959-98-8	Endosulfan I	1.8	U	1.8	U	1.7	UJ	1.8	U	2.1	U	2.1	U
33213-65-9	Endosulfan II	3.5	U	3.4	U	3.4	UJ	3.4	U	4.1	U	4.	U
1031-07-8	Endosulfan sulfate	3.5	U	3.4	U	3.4	UJ	3.4	U	4.1	U	4.	U
72-20-8	Endrin	3.5	U	3.4	U	3.4	UJ	3.4	U	4.1	U	4.	U
7421-93-4	Endrin aldehyde	3.5	U	3.4	U	3.4	UJ	3.4	U	4.1	U	4.	U
53494-70-5	Endrin ketone	3.5	U	3.4	U	3.4	UJ	3.4	U	0.2	J	4.	U
76-44-8	Heptachlor	1.8	U	1.8	U	1.7	UJ	1.8	U	2.1	U	21	U
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	1.7	UJ	1.8	U	21	U	21	U
72-43-5	Methoxychlor	18.	U	18.	U	17.	UJ	18.	U	21.	U	21.	U
8001-35-2	Toxaphene	180.	U	180.	U	170.	UJ	180.	U	210.	U	210.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.7	UJ	1.8	UJ	2.1	UJ	21	UJ
5103-71-9	alpha-Chlordane	1.8	U	26	J	1.7	UJ	1.8	U	3.8		4.6	
319-85-7	beta-BHC	1.8	U	1.8	U	1.7	UJ	1.8	U	2.1	U	2.1	U
319-86-8	delta-BHC	1.8	U	18	U	1.7	UJ	1.8	U	2.1	U	21	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.7	UJ	1.8	U	2.1	U	0.52	J
5103-74-2	gamma-Chlordane	1.8	U	2.1		1.7	UJ	1.8	U	3.9		3.8	

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0006-05		015-S-0006-09		015-S-0007-01		015-S-0007-05		015-S-0009-01		015-S-0009-05	
	ORIGINAL ID ----->	015S000605		015S000609		015S000701		0158000705		015S000901		0199000905	
	LAB SAMPLE ID --->	S554970*6		S554970*7		S554843*1		S554843*2		S554878*4		S554878*5	
	ID FROM REPORT -->	0153000605		0155000609		015S000701		015S000705		015S000901		015S000905	
	SAMPLE DATE ----->	09/07/95		09/07/95		08/31/95		08/31/95		09/01/95		09/01/95	
	DATE EXTRACTED -->	09/11/95		09/11/95		09/05/95		09/05/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/29/95		09/29/95		09/23/95		09/23/95		09/21/95		09/21/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KO	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL
72-54-8	4,4'-DDD	3.5	UJ	3.6	UJ	7.5	J	3.5	UJ	3.5	UJ	3.5	UJ
72-55-9	4,4'-DDE	3.5	UJ	3.6	UJ	73.	J	3.5	UJ	3.1	J	3.5	UJ
50-29-3	4,4'-DDT	3.5	UJ	3.6	UJ	18.	J	3.5	UJ	1.8	J	3.5	UJ
309-00-2	Aldrin	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
12674-11-2	Aroclor-1016	35.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	UJ	35.	UJ
11104-28-2	Aroclor-1221	72.	UJ	73.	UJ	72.	UJ	70.	UJ	71.	UJ	71.	UJ
11141-16-5	Aroclor-1232	35.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	UJ	35.	UJ
53469-21-9	Aroclor-1242	35.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	UJ	35.	UJ
12672-29-6	Aroclor-1248	35.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	UJ	35.	UJ
11097-69-1	Aroclor-1254	35.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	UJ	3s.	UJ
11096-82-5	Aroclor-1260	35.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	UJ	35.	UJ
60-57-1	Dieldrin	3.5	UJ	3.6	UJ	13.	J	3.5	UJ	0.52	J	3.5	UJ
959-98-8	Endosulfan I	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	0.8	J	1.8	UJ
33213-65-9	Endosulfan II	3.5	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	UJ	3.5	UJ
1031-07-8	Endosulfan sulfate	3.5	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	UJ	3.5	UJ
72-20-8	Endrin	3.5	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	UJ	3.5	UJ
7421-93-4	Endrin aldehyde	3.5	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	UJ	3.5	UJ
53494-70-5	Endrin ketone	3.5	UJ	3.6	UJ	0.6	J	3.5	UJ	3.5	UJ	3.5	UJ
76-44-8	Heptachlor	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
1024-57-3	Heptachlor epoxide	1.8	UJ	1.8	UJ	2.3	J	1.8	UJ	1.8	UJ	1.8	UJ
72-43-5	Methoxychlor	18.	UJ	18.	UJ	18.	UJ	18.	UJ	18.	UJ	18.	UJ
8001-35-2	Toxaphene	180.	UJ	180.	UJ	180.	UJ	180.	UJ	180.	UJ	180.	UJ
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	UJ	1.8	UJ	18.	J	1.8	UJ	1.8	UJ	1.8	UJ
319-85-7	beta-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
319-86-8	delta-BHC	1.8	UJ	1.8	UJ	3.3	J	1.8	UJ	1.8	UJ	1.8	UJ
58-89-9	gamma-BHC (Lindane)	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-74-2	gamma-Chlordane	1.8	UJ	1.8	UJ	16.	J	1.8	UJ	1.8	UJ	1.8	UJ

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0009-10		015-S-0010-01		015-C-0010-01		015-S-0010-05		015-S-0010-10		015-S-0011-01	
	ORIGINAL ID ----->	015S000910		015S001001		015C001001		015S001005		015S001010		015S001101	
	LAB SAMPLE ID --->	S554878A*1		S554878*6		S554878*7		S554878A*2		S554878A*3		S554929*11	
	ID FROM REPORT -->	015S000910		015S001001		015C001001		015S001005		015S001010		015S001101	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		39/01/95		09/01/95		09/05/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/06/95		09/06/95		09/08/95	
	DATE ANALYZED --->	09/21/95		09/21/95		09/21/95		09/21/95		09/21/95		09/28/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
72-54-8	4,4'-DDD	3.4	UJ	3.7	UJ	3.6	UJ	3.5	UJ	3.5	UJ	1.7	J
72-55-9	4,4'-DDE	3.4	UJ	4.9	J	4.9	J	3.5	UJ	3.5	UJ	8.6	
50-29-3	4,4'-DDT	3.4	UJ	3.7	J	2.1	J	0.94	J	3.5	UJ	5.8	J
309-00-2	Aldrin	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.8	U
12674-11-2	Aroclor-1016	34.	UJ	37.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	U
11104-28-2	Aroclor-1221	70.	UJ	74.	UJ	74.	UJ	70.	UJ	70.	UJ	72.	U
11141-16-5	Aroclor-1232	34.	UJ	37.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	U
53469-21-9	Aroclor-1242	34.	UJ	37.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	U
12672-29-6	Aroclor-1248	34.	UJ	37.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	U
11097-69-1	Aroclor-1254	34.	UJ	37.	UJ	36.	UJ	35.	UJ	35.	UJ	35.	U
11096-82-5	Aroclor-1260	34.	UJ	37.	UJ	36.	UJ	35.	UJ	35.	UJ	20.	J
60-57-1	Dieldrin	3.4	UJ	15	J	2.1	J	3.5	UJ	3.5	UJ	9.2	
959-98-8	Endosulfan I	1.8	UJ	1.3	J	1.4	J	1.8	UJ	1.8	UJ	1.8	U
33213-65-9	Endosulfan II	3.4	UJ	3.7	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	U
1031-07-8	Endosulfan sulfate	3.4	UJ	3.7	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	U
72-20-8	Endrin	3.4	UJ	25	J	3.6	UJ	3.5	UJ	3.5	UJ	3.5	U
7421-93-4	Endrin aldehyde	3.4	UJ	3.7	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	U
53494-70-5	Endrin ketone	3.4	UJ	3.7	UJ	3.6	UJ	3.5	UJ	3.5	UJ	3.5	U
76-44-8	Heptachlor	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.8	U
1024-57-3	Heptachlor epoxide	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.8	U
72-43-5	Methoxychlor	18.	UJ	19.	UJ	19.	UJ	18.	UJ	18.	UJ	18.	U
8001-35-2	Toxaphene	180.	UJ	190.	UJ	190.	UJ	180.	UJ	180.	UJ	180.	U
319-84-6	alpha-BHC	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.4	J
319-85-7	beta-BHC	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.8	U
319-86-8	delta-BHC	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.8	U
5103-74-2	gamma-Chlordane	1.8	UJ	1.9	UJ	1.9	UJ	1.8	UJ	1.8	UJ	1.6	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST															
	SAMPLE ID ------->	015-C-0011-01		015-S-0011-05		015-S-0011-09		015-S-0012-01		015-S-0012-05		015-S-0012-10	
	ORIGINAL ID ----->	015C001101		015S001105		015S001109		015S001201		015S001205		015S001210	
	LAB SAMPLE ID --->	S554929*12		S554929*13		S554929*14		S554929*15		S554929*16		S554929*17	
	ID FROM REPORT -->	015C001101		015S001105		015S001109		015S001201		015S001205		015S001210	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/28/95		09/28/95		09/28/95		09/28/95		09/28/95		09/28/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP06	VAL
72-54-8	4,4'-DDD	1.4	J	3.5	U	3.5	U	1.9	J	3.5	UJ	3.5	UJ
72-55-9	4,4'-DDE	7.9	J	3.5	U	0.76	J	35.	J	3.5	UJ	3.5	UJ
50-29-3	4,4'-DDT	4.8		3.5	U	0.77	J	9.	J	3.5	UJ	3.5	UJ
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
12674-11-2	Aroclor-1016	36.	U	35.	U	35.	U	35.	UJ	35.	UJ	35.	UJ
11104-28-2	Aroclor-1221	73.	U	71.	U	70.	U	72.	UJ	71.	UJ	70.	UJ
11141-16-5	Aroclor-1232	36.	U	35.	U	35.	U	35.	UJ	35.	UJ	35.	UJ
53469-21-9	Aroclor-1242	36.	U	35.	U	35.	U	35.	UJ	35.	UJ	35.	UJ
12672-29-6	Aroclor-1248	36.	U	35.	U	35.	U	35.	UJ	35.	UJ	35.	UJ
11097-69-1	Aroclor-1254	36.	U	35.	U	35.	U	35.	UJ	35.	UJ	35.	UJ
11096-82-5	Aroclor-1260	36.	U	35.	U	35.	U	35.	UJ	35.	UJ	35.	UJ
60-57-1	Dieldrin	10.		3.5	U	1.	J	2.1	J	3.5	UJ	3.5	UJ
959-98-8	Endosulfan I	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
33213-65-9	Endosulfan II	3.6	U	3.5	U	3.5	U	3.5	UJ	35	UJ	3.5	UJ
1031-07-8	Endosulfan sulfate	3.6	U	3.5	U	3.5	U	3.5	UJ	3.5	UJ	3.5	UJ
72-20-8	Endrin	3.6	U	3.5	U	3.5	U	3.5	UJ	3.5	UJ	3.5	UJ
7421-93-4	Endrin aldehyde	3.6	U	3.5	U	3.5	U	3.5	UJ	3.5	UJ	3.5	UJ
53494-70-5	Endrin ketone	3.6	U	3.5	U	3.5	U	3.5	UJ	3.5	UJ	3.5	UJ
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
72-43-5	Methoxychlor	18.	U	18.	U	18.	U	18.	UJ	18.	UJ	18.	UJ
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	UJ	180.	UJ	180.	UJ
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	J	1.8	U	1.8	U	0.58	J	1.8	UJ	1.8	UJ
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	3.9	J	1.8	UJ	1.8	UJ
319-86-8	delta-BHC	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
5103-74-2	gamma-Chlordane	1.9	J	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0013-01		015-S-0013-05		015-S-0013-10		015-S-0014-01		015-S-0014-05		015-S-0014-10	
	ORIGINAL ID ----->	015S001301		0155001305		015S001310		0155001401		015S001405		015S001410	
	LAB SAMPLE ID --->	S554929*18		S554929*19		S554929*20		S554970*8		S554970*9		S554970*10	
	ID FROM REPORT -->	015S001301		015S001305		015S001310		015S001401		015S001405		015S001410	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/07/95		09/07/95		09/07/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/28/95		09/28/95		09/28/95		09/29/95		09/29/95		09/29/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
72-54-8	4,4'-DDD	40.	J	3.4	UJ	3.4	U	15.	J	3.4	UJ	3.5	U
72-55-9	4,4'-DDE	220.	D	2.7	J	2.	J	74.		3.4	UJ	3.5	U
50-29-3	4,4'-DDT	630.	D	10.	J	11.		47.		3.4	UJ	3.5	U
309-00-2	Aldrin	1.8	U	1.7	UJ	1.8	U	2.4	J	1.8	UJ	1.8	U
12674-11-2	Aroclor-1016	34.	U	34.	UJ	34.	U	36.	U	34.	UJ	35.	U
11104-28-2	Aroclor-1221	69.	U	68.	UJ	70.	U	73.	U	70.	UJ	70.	U
11141-16-5	Aroclor-1232	34.	U	34.	UJ	34.	U	36.	U	34.	UJ	35.	U
53469-21-9	Aroclor-1242	34.	U	34.	UJ	34.	U	36.	U	34.	UJ	35.	U
12672-29-6	Aroclor-1248	34.	U	34.	UJ	34.	U	36.	U	34.	UJ	35.	U
11097-69-1	Aroclor-1254	34.	U	34.	UJ	34.	U	36.	U	34.	UJ	35.	U
11096-82-5	Aroclor-1260	34.	U	34.	UJ	34.	U	36.	U	34.	UJ	35.	U
60-57-1	Dieldrin	47.		0.88	J	0.89	J	3000.	D	3.7	J	2.	J
959-98-8	Endosulfan I	1.8	U	1.7	UJ	1.8	U	1.8	U	1.8	UJ	1.8	U
33213-65-9	Endosulfan II	3.4	U	3.4	UJ	3.4	U	3.6	U	3.4	UJ	3.5	U
1031-07-8	Endosulfan sulfate	3.4	U	3.4	UJ	3.4	U	3.6	U	3.4	UJ	3.5	U
72-20-8	Endrin	3.4	U	3.4	UJ	3.4	U	16.	J	3.4	UJ	3.5	U
7421-93-4	Endrin aldehyde	3.4	U	3.4	UJ	3.4	U	3.6	U	3.4	UJ	3.5	U
53494-70-5	Endrin ketone	3.4	U	3.4	UJ	3.4	U	19.	J	3.4	UJ	3.5	U
76-44-8	Heptachlor	59.	DJ	1.4	J	0.89	J	0.88	J	1.8	UJ	1.8	U
1024-57-3	Heptachlor epoxide	180.	D	5.1	J	3.		8.	J	1.8	UJ	1.8	U
72-43-5	Methoxychlor	18.	U	17.	UJ	18.	U	18.	U	18.	UJ	18.	U
8001-35-2	Toxaphene	180.	U	170.	UJ	180.	U	180.	U	180.	UJ	180.	U
319-84-6	alpha-BHC	1.8	UJ	1.7	UJ	1.8	UJ	1.8	U	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	440.	D	12.	J	5.8		38.		1.8	UJ	1.8	U
319-85-7	beta-BHC	1.8	U	1.7	UJ	1.8	U	1.8	U	1.8	UJ	1.8	U
319-86-8	delta-BHC	1.8	U	1.7	UJ	1.8	U	1.8	U	1.8	UJ	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.7	UJ	1.8	U	2.6	J	1.8	UJ	1.8	U
5103-74-2	gamma-Chlordane	580.	D	15.	J	7.9		52.		1.8	UJ	1.8	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0015-01		015-S-0015-05		015-S-0015-10		015-S-0016-01		015-S-0016-05		015-S-0016-10	
	ORIGINAL ID ----->	015S001501		015S001505		015S001510		015S001601		015S001605		015S001610	
	LAB SAMPLE ID --->	S554970*11		S554970*12		S554970*13		S554843*3		S554843*4		S554843*5	
	ID FROM REPORT -->	0155001501		015S001505		015S001510		015S001601		015S001605		015S001610	
	SAMPLE DATE ----->	09/07/95		09/07/95		09/07/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/11/95		09/11/95		09/11/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/29/95		09/29/95		09/29/95		10/08/95		09/23/95		09/23/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
72-54-8	4,4'-DDD	9.5	J	3.4	UJ	3.4	UJ	160.	J	1.8	J	3.4	UJ
72-55-9	4,4'-DDE	42.		2.	J	2.6	J	48.	J	0.66	J	3.4	UJ
50-29-3	4,4'-DDT	48.		2.3	J	2.3	J	300.		4.4	J	2.5	J
309-00-2	Aldrin	1.8	U	1.8	UJ	1.8	UJ	50.	J	1.5	J	1.7	UJ
12674-11-2	Aroclor-1016	35.	U	34.	UJ	34.	UJ	340.	U	34.	U	34.	UJ
11104-28-2	Aroclor-1221	72.	U	70.	UJ	70.	UJ	700.	U	70.	U	69.	UJ
11141-16-5	Aroclor-1232	35.	U	34.	UJ	34.	UJ	340.	U	34.	U	34.	UJ
53469-21-9	Aroclor-1242	35.	U	34.	UJ	34.	UJ	340.	U	34.	U	34.	UJ
12672-29-6	Aroclor-1248	35.	U	34.	UJ	34.	UJ	340.	U	34.	U	34.	UJ
11097-69-1	Aroclor-1254	35.	U	34.	UJ	34.	UJ	340.	U	34.	U	34.	UJ
11096-82-5	Aroclor-1260	35.	U	34.	UJ	34.	UJ	340.	U	34.	U	34.	UJ
60-57-1	Dieldrin	210.	J	5.7	J	8.5	J	88.		1.4	J	3.4	UJ
959-98-8	Endosulfan I	1.8	U	1.8	UJ	1.8	UJ	1000.	J	1.8	U	1.7	UJ
33213-65-9	Endosulfan II	3.5	U	3.4	UJ	3.4	UJ	34.	U	3.4	U	3.4	UJ
1031-07-8	Endosulfan sulfate	3.5	U	3.4	UJ	3.4	UJ	34.	U	3.4	U	3.4	UJ
72-20-8	Endrin	14.	J	3.4	UJ	3.4	UJ	34.	U	3.4	U	3.4	UJ
7421-93-4	Endrin aldehyde	3.5	U	3.4	UJ	3.4	UJ	34.	U	3.4	U	3.4	UJ
53494-70-5	Endrin ketone	1.	J	3.4	UJ	3.4	UJ	34.	U	3.4	U	3.4	UJ
76-44-8	Heptachlor	0.82	J	1.8	UJ	1.8	UJ	18.	U	3.4	J	1.7	UJ
1024-57-3	Heptachlor epoxide	4.1		1.8	UJ	0.5	J	18.	U	1.8	U	1.7	UJ
72-43-5	Methoxychlor	18.	U	18.	UJ	18.	U	180.	U	18.	U	17.	UJ
8001-35-2	toxaphene	180.	U	180.	UJ	180.	UJ	1800.	U	180.	U	170.	UJ
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	18.	U	1.8	U	1.7	UJ
5103-71-9	alpha-Chlordane	16.		2.	J	3.3	J	3100.	D	59.	D	15.	J
319-85-7	beta-BHC	1.8	U	1.8	UJ	1.8	UJ	18.	U	1.8	U	1.7	UJ
319-86-8	delta-BHC	1.8	U	1.8	UJ	1.8	UJ	18.	U	1.8	U		
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	UJ	1.8	UJ	18.	U	1.8	U	1.7	UJ
5103-74-2	gamma-Chlordane	16.		1.8	J	2.8	J	2000.	D	64.	D	15.	J

*** validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0017-01		015-S-0017-05		015-S-0017-10		015-S-0018-01		015-S-0018-05		015-S-0018-10	
	ORIGINAL ID ----->	015S001701		015S001705		015S001710		015S001801		015S001805		0155001610	
	LAB SAMPLE ID --->	S554843*6		S554843*7		S554843*8		S554843*9		S554843*10		S554843*11	
	ID FROM REPORT -->	015S001701		015S001705		015S001710		015S001801		015S001805		0155001810	
	SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/24/95		09/24/95		09/24/95		09/24/95		09/24/95		09/25/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
72-54-8	4,4'-DDD	3.5	U	3.4	U	3.4	U	3.5	U	3.4	UJ	3.4	U
72-55-9	4,4'-DDE	17.		0.65	J	0.6	J	19.		0.47	J	3.4	U
50-29-3	4,4'-DDT	110.	D	3.2	J	3.8		46.		10.	J	4.2	
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.8	U	1.7	UJ	1.7	U
12674-11-2	Aroclor-1016	35.	U	34.	U	34.	U	35.	U	34.	UJ	34.	U
11104-28-2	Aroclor-1221	71.	U	69.	U	69.	U	70.	U	69.	UJ	69.	U
11141-16-5	Aroclor-1232	35.	U	34.	U	34.	U	35.	U	34.	UJ	34.	U
53469-21-9	Aroclor-1242	35.	U	34.	U	34.	U	35.	U	34.	UJ	34.	U
12672-29-6	Aroclor-1248	35.	U	34.	U	34.	U	35.	U	34.	UJ	34.	U
11097-69-1	Aroclor-1254	35.	U	34.	U	34.	U	35.	U	34.	UJ	34.	U
11096-82-5	Aroclor-1260	35.	U	34.	U	34.	U	35.	U	34.	UJ	34.	U
60-57-1	Dieldrin	29.		3.4	U	3.4	U	18.		0.46	J	3.4	U
959-98-8	Endosulfan I	1.8	U	1.8	U	1.8	U	1.8	U	1.7	UJ	1.7	U
33213-65-9	Endosulfan II	3.5	U	3.4	U	3.4	U	3.5	U	3.4	UJ	3.4	U
1031-07-8	Endosulfan sulfate	3.5	U	3.4	U	3.4	U	3.5	U	3.4	UJ	3.4	U
72-20-8	Endrin	3.5	U	3.4	U	1.1	J	2.4	J	3.4	UJ	0.62	J
7421-93-4	Endrin aldehyde	3.5	U	3.4	U	3.4	U	1.6	J	3.4	UJ	3.4	U
53494-70-5	Endrin ketone	3.5	U	3.4	U	3.4	U	3.5	U	3.4	UJ	3.4	U
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.8	U	1.7	UJ	1.7	U
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	1.8	U	1.8	U	1.7	UJ	1.7	U
72-43-5	Methoxychlor	18.	U	18.	U	18.	U	18.	U	17.	UJ	17.	U
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	U	170.	UJ	170.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.7	UJ	1.7	UJ
5103-71-9	alpha-Chlordane	9.	D	1.8	U	1.8	U	1.8		1.7	UJ	1.7	U
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.7	UJ	1.7	U
319-86-8	delta-BHC	1.8	U	1.8	U	1.8	U	1.6	U	1.7	UJ	1.7	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	U	1.7	UJ	1.7	U
5103-74-2	gamma-Chlordane	44.	DJ	1.8	U	1.8	U	1.8		1.7	UJ	1.7	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0020-01		015-C-0020-01		015-S-0020-05		015-S-0020-08		015-S-0021-01		015-S-0021-05	
	ORIGINAL ID ----->	015S002001		015C002001		0158002005		0155002008		015S002101		015S002105	
	LAB SAMPLE ID --->	S554843*12		S554843A*13		S554843*13		S554843*14		S554843*15		S554843*16	
	ID FROM REPORT -->	015S002001		015C002001		015S002005		015S002008		015S002101		0155002105	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/05/95		69/05/95		09/05/95	
	DATE ANALYZED --->	09/25/95		09/22/95		09/25/95		09/25/95		09/25/95		09/25/95	
	MATRIX ---------->	Soil		Soil		Soil		soil		soi1		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP04	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
72-54-8	4,4'-DDD	14.	J	17.		3.4	U	3.5	UJ	1.8	J	3.5	U
72-55-9	4,4'-DDE	110.		170.	DJ	2.2	J	1.7	J	36.	D	3.5	U
50-29-3	4,4'-DDT	21.		27.		1.9	J	1.3	J	7.8	J	0.78	J
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	U
12674-11-2	Aroclor-1016	34.	U	34.	U	34.	U	35.	UJ	36.	UJ	35.	U
11104-28-2	Aroclor-1221	70.	U	70.	U	70.	U	70.	UJ	73.	UJ	70.	U
11141-16-5	Aroclor-1232	34.	U	34.	U	34.	U	35.	UJ	36.	UJ	35.	U
53469-21-9	Aroclor-1242	34.	U	34.	U	34.	U	35.	UJ	36.	UJ	35.	U
12672-29-6	Aroclor-1248	34.	U	34.	U	34.	U	35.	UJ	36.	UJ	35.	U
11097-69-1	Aroclor-1254	34.	U	34.	U	34.	U	35.	UJ	36.	UJ	35.	U
11096-82-5	Aroclor-1260	34.	U	34.	U	34.	U	35.	UJ	36.	UJ	35.	U
60-57-1	Dieldrin	18.		29.		7.5		2.	J	7.2	J	3.5	U
959-98-8	Endosulfan I	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	0.82	J
33213-65-9	Endosulfan II	3.4	U	3.4	U	3.4	U	3.5	UJ	3.6	UJ	3.5	U
1031-07-8	Endosulfan sulfate	3.4	U	3.4	U	3.4	U	3.5	UJ	3.6	UJ	3.5	U
72-20-8	Endrin	3.4	U	3.4	U	1.4	J	3.5	UJ	3.6	UJ	4.1	J
7421-93-4	Endrin aldehyde	3.4	U	3.4	U	3.4	U	3.5	UJ	3.6	UJ	3.5	U
53494-70-5	Endrin ketone	3.4	U	3.4	U	3.4	U	3.5	UJ	3.6	UJ	3.5	U
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	J	1.8	U
72-43-5	Methoxychlor	18.	U	18.	U	18.	U	18.	UJ	18.	UJ	18.	U
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	UJ	180.	UJ	180.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	U
5103-71-9	alpha-Chlordane	59.	DJ	45.	D	2.6		1.2	J	6.4	DJ	1.8	UJ
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.8		1.8	UJ	1.8	U
319-86-8	delta-BHC	1.9	J	1.8	U	1.8	U	1.8		2.9	J	0.92	J
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8		1.8	UJ	1.8	U
5103-74-2	gamma-Chlordane	110.	D	62.	D	4.8		2.1		9.2	DJ	0.76	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST															
	SAMPLE ID -------:	015-S-0021-08		015-S-0022-01		015-S-0022-05		015-S-0022-08		015-S-0023-01		015-S-0023-05	
	ORIGINAL ID -----:	015S002108		015S002201		015S002205		0158002208		015S002301		0155002305	
	LAB SAMPLE ID ---:	S554843*17		S554843*18		S554843*19		S554843A*1		S554843A*2		S554843A*3	
	ID FROM REPORT --:	015S002108		015S002201		0158002205		0155002208		015S002301		015S002305	
	SAMPLE DATE -----:	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE EXTRACTED --:	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED ---:	09/25/95		09/25/95		09/25/95		09/21/95		09/21/95		09/21/95	
	MATRIX ----------:	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ----------:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
72-54-8	4,4'-DDD	3.4	UJ	3.4	U	3.5	UJ	3.5	U	3.4	U	3.5	U
72-55-9	4,4'-DDE	3.4	UJ	3.4	U	3.5	UJ	3.5	U	0.4	J	2.5	J
50-29-3	4,4'-DDT	3.4	UJ	3.4	U	3.5	UJ	3.5	U	3.4	U	0.99	J
309-00-2	Aldrin	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	1.8	U
12674-11-2	Aroclor-1016	34.	UJ	34.	U	35.	UJ	35.	U	34.	U	35.	U
11104-28-2	Aroclor-1221	70.	UJ	70.	U	70.	UJ	70.	U	69.	U	70.	U
11141-16-5	Aroclor-1232	34.	UJ	34.	U	35.	UJ	35.	U	34.	U	35.	U
53469-21-9	Aroclor-1242	34.	UJ	34.	U	35.	UJ	35.	U	34.	U	35.	U
12672-29-6	Aroclor-1248	34.	UJ	34.	U	35.	UJ	35.	U	34.	U	35.	U
11097-69-1	Aroclor-1254	34.	UJ	34.	U	35.	UJ	35.	U	34.	U	35.	U
11096-82-5	Aroclor-1260	34.	UJ	34.	U	35.	UJ	35.	U	34.	U	35.	U
60.57-1	Dieldrin	3.4	UJ	3.4	U	3.5	UJ	35	U	0.59	J	0.53	J
959-98-8	Endosulfan I	1.8	UJ	1.8	U	1.8	UJ	1.8	U	0.66	J	0.88	J
33213-65-9	Endosulfan II	3.4	UJ	3.4	U	3.5	UJ	3.5	U	3.4	U	3.5	U
10		3.4	UJ	3.4	U	3.5	UJ	3.5	U	3.4	U	3.5	U
		3.4	UJ	3.9	J	1.	J	35	U	3.4	U	0.35	J
7421-93-4	Endrin aldehyde	3.4	UJ	3.4	U	3.5	UJ	3.5	U	3.4	U	3.5	U
53494-70-5	Endrin ketone	3.4	UJ	3.4	U	3.5	UJ	35	U	3.4	U	3.5	U
76-44-8	Heptachlor	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	1.8	U
72-43-5	Methoxychlor	18.	UJ	18.	U	18.	UJ	18.	U	18.	U	18.	U
8001-35-2	Toxaphene	180.	UJ	180.	U	180.	UJ	180.	U	180.	U	180.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	1.8	U
319-85-7	beta-BHC	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	1.8	U
319-86-8	delta-BHC	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	1.8	U
5103-74-2	gamma-Chlordane	1.8	UJ	1.8	U	1.8	UJ	1.8	U	1.8	U	0.48	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0024-01		015-S-0024-05		015-S-0024-09		015-S-0025-01		015-S-0025-05		015-S-0025-08	
	ORIGINAL ID ----->	015S002401		015S002405		015S002409		015S002501		015S002505		015S002508	
	LAB SAMPLE ID --->	S554843A*4		S554843A*5		S554843A*6		S554843A*7		S554843A*8		S554843A*9	
	ID FROM REPORT -->	0153002401		015S002405		015S002409		0158002501		015S002505		015S002508	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31f95		08/31/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/21/95		09/21/95		09/21/95		09/21/95		09/21/95		09/21/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
72-54-8	4,4'-DDD	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	4.1	U
72-55-9	4,4'-DDE	4.		3.5	U	3.5	U	5.4		3.5	U	4.1	U
50-29-3	4,4'-DDT	3.3	J	3.5	U	3.5	U	2.9	J	3.5	U	4.1	U
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U
12674-11-2	Aroclor-1016	35.	U	35.	U	35.	U	35.	U	35.	U	41.	U
11104-28-2	Aroclor-1221	70.	U	70.	U	70.	U	72.	U	70.	U	84.	U
11141-16-5	Aroclor-1232	35.	U	35.	U	35.	U	35.	U	35.	U	41.	U
53469-21-9	Aroclor-1242	35.	U	35.	U	35.	U	35.	U	35.	U	41.	U
12672-29-6	Aroclor-1248	35.	U	35.	U	35.	U	35.	U	35.	U	41.	U
11097-69-1	Aroclor-1254	35.	U	35.	U	35.	U	35.	U	35.	U	41.	U
11096-82-5	Aroclor-1260	35.	U	35.	U	35.	U	35.	U	35.	U	41.	U
60-57-1	Dieldrin	0.59	J	3.5	U	3.5	U	3.5	U	3.5	U	4.1	U
959-98-8	Endosulfan I	1.2	J	1.8	U	1.8	U	0.87	J	1.8	U	2.1	U
33213-65-9	Endosulfan II	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	4.1	U
1031-07-8	Endosulfan sulfate	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	4.1	U
72-20-8	Endrin	0.56	J	3.5	U	3.5	U	3.5	U	3.5	U	4.1	U
7421-93-4	Endrin aldehyde	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	4.1	U
53494-70-5	Endrin ketone	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	4.1	U
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U
72-43-5	Methoxychlor	18.	U	18.	U	18.	U	18.	U	18.	U	21.	U
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	U	180.	U	210.	U
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	2.1	UJ
5103-71-9	alpha-Chlordane	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U
319-86-8	delta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U
5103-74-2	gamma-Chlordane	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	2.1	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST															
	SAMPLE ID ------->	015-S-0026-01		015-S-0026-05		015-S-0026-08		015-S-0027-01		015-S-0027-05		015-S-0027-10	
	ORIGINAL ID ----->	015S002601		015S002605		015S002608		015S002701		0158002705		0155002710	
	LAB SAMPLE ID --->	S554843A*10		S554843A*11		S554843A*12		S554929*21		S554929*22		S554929*23	
	ID FROM REPORT -->	015S002601		015S002605		015S002608		0155002701		015S002705		015S002710	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		09/06/95		09/06/95		09/06/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/21/95		09/22/95		09/22/95		09/23/95		09/23/95		09/23/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
72-54-8	4,4'-DDD	3.4	U	3.5	U	3.6	U	3.4	UJ	3.4	UJ	3.4	UJ
72-55-9	4,4'-DDE	3.4	U	3.5	U	2.4	J	73.	PJ	1.	J	0.58	J
50-29-3	4,4'-DDT	3.4	U	3.5	U	1.2	J	70.	DJ	1.6	J	1.6	J
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
12674-11-2	Aroclor-1016	34.	U	35.	U	36.	U	34.	UJ	34.	UJ	34.	UJ
11104-28-2	Aroclor-1221	70.	U	71.	U	A.	U	70.	UJ	69.	UJ	69.	UJ
11141-16-5	Aroclor-1232	34.	U	35.	U	36.	U	34.	UJ	34.	UJ	34.	UJ
53469-21-9	Aroclor-1242	34.	U	35.	U	36.	U	34.	UJ	34.	UJ	34.	UJ
12672-29-6	Aroclor-1248	34.	U	35.	U	36.	U	34.	UJ	34.	UJ	34.	UJ
11097-69-1	Aroclor-1254	34.	U	35.	U	36.	U	34.	UJ	34.	UJ	34.	UJ
11096-82-5	Aroclor-1260	34.	U	35.	U	36.	U	34.	UJ	34.	UJ	34.	UJ
60-57-1	Dieldrin	3.4	U	0.51	J	1.7	J	55.	J	1.2	J	0.87	J
959-98-8	Endosulfan I	1.8	U	1.8	U	0.74	J	1.4	J	1.8	UJ	1.8	UJ
33213-65-9	Endosulfan II	3.4	U	3.5	U	3.6	U	3.4	UJ	3.4	UJ	3.4	UJ
1031-07-8	Endosulfan sulfate	3.4	U	3.5	U	3.6	U	3.4	UJ	3.4	UJ	3.4	UJ
72-20-8	Endrin	3.4	U	0.75	J	0.59	J	3.4	UJ	3.4	UJ	1.1	J
7421-93-4	Endrin aldehyde	3.4	U	3.5	U	3.6	U	3.4	UJ	3.4	UJ	3.4	UJ
53494-70-5	Endrin ketone	3.4	U	3.5	U	3.6	U	3.4	UJ	3.4	UJ	3.4	UJ
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.3	J	1.8	UJ	1.8	UJ
1024-57-3	Heptachlor epoxide	1.8	U	1.8	U	1.8	U	9.9	J	1.8	UJ	1.8	UJ
72-43-5	Methoxychlor	18.	U	18.	U	18.	U	18.	UJ	18.	UJ	18.	UJ
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	UJ	180.	UJ	180.	UJ
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	U	1.8	U	0.64	J	7.6	J	1.8	UJ	1.8	UJ
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.8	UJ	1.8	UJ	1.8	UJ
319-86-8	delta-BHC	1.8	U	1.8	U	0.67	J	1.8	UJ	1.8	UJ	1.8	UJ
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	UJ	1.2	J	1.8	UJ
5103-74-2	gamma-Chlordane	1.8	U	1.8	U	0.72	J	20.	J	1.8	UJ	0.68	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST													
	SAMPLE ID ------->	015-S-0029-01		015-S-0029-05		015-S-0029-10		015-S-0030-01		015-S-0030-05		015-S-0030-10	
	ORIGINAL ID ----->	015S002901		015S002905		015S002910		015S003001		015S003005		015S003010	
	LAB SAMPLE ID --->	S554929*24		S554929*25		S554929*26		S554929*27		S554929*28		S554929*29	
	ID FROM REPORT -->	015S002901		015S002905		015S002910		015S003001		015S003005		015S003010	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/23/95		09/23/95		09/23/95		09/23/95		09/23/95		09/23/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
72-54-8	4,4'-DDD	3.4	U	3.4	UJ	3.4	U	3.5	UJ	3.4	UJ	3.4	UJ
72-55-9	4,4'-DDE	24.		3.4	UJ	3.4	U	29.	J	3.4	UJ	3.4	UJ
50-29-3	4,4'-DDT	16.		0.69	J	3.4	U	25.	J	3.4	UJ	3.4	UJ
309-00-2	Aldrin	1.8	U	1.7	UJ	1.7	U	1.8	UJ	1.8	UJ	1.8	UJ
12674-11-2	Aroclor-1016	34.	U	34.	UJ	34.	U	35.	UJ	34.	UJ	34.	UJ
11104-28-2	Aroclor-1221	70.	U	68.	UJ	68.	U	72.	UJ	69.	UJ	69.	UJ
11141-16-5	Aroclor-1232	34.	U	34.	UJ	34.	U	35.	UJ	34.	UJ	34.	UJ
53469-21-9	Aroclor-1242	34.	U	34.	UJ	34.	U	35.	UJ	34.	UJ	34.	UJ
12672-29-6	Aroclor-1248	34.	U	34.	UJ	34.	U	35.	UJ	34.	UJ	34.	UJ
11097-69-1	Aroclor-1254	34.	U	34.	UJ	34.	U	35.	UJ	34.	UJ	34.	UJ
11096-82-5	Aroclor-1260	34.	U	34.	UJ	34.	U	35.	UJ	34.	UJ	34.	UJ
60-57-1	Dieldrin	2.9	J	3.4	UJ	3.4	U	29.	J	3.4	UJ	3.4	UJ
959-98-8	Endosulfan I	0.48	J	1.7	UJ	1.7	U	1.8	UJ	1.8	UJ	1.8	UJ
33213-65-9	Endosulfan II	3.4	U	3.4	UJ	3.4	U	3.5	UJ	3.4	UJ	3.4	UJ
1031-07-8	Endosulfan sulfate	3.4	U	3.4	UJ	3.4	U	3.5	UJ	3.4	UJ	3.4	UJ
72-20-8	Endrin	0.34	J	1.4	J	0.63	J	0.99	J	0.48	J	0.44	J
7421-93-4	Endrin aldehyde	3.4	U	3.4	UJ	3.4	U	3.5	UJ	3.4	UJ	3.4	UJ
53494-70-5	Endrin ketone	3.4	U	3.4	UJ	3.4	U	0.17	J	3.4	UJ	3.4	UJ
76-44-8	Heptachlor	1.8	U	1.7	UJ	1.7	U	1.8	UJ	1.8	UJ	1.8	UJ
1024-57-3	Heptachlor epoxide	1.8	U	1.7	UJ	1.7	U	1.8	UJ	1.8	UJ	1.8	UJ
72-43-5	Methoxychlor	18.	U	17.	UJ	17.	U	18.	UJ	18.	UJ	18.	UJ
8001-35-2	Toxaphene	180.	U	170.	UJ	170.	U	180.	UJ	180.	UJ	180.	UJ
319-84-6	alpha-BHC	1.8	UJ	1.7	UJ	1.7	UJ	1.8	UJ	1.8	UJ	1.8	UJ
5103-71-9	alpha-Chlordane	1.8	U	1.7	UJ	1.7	U	2.6	J	1.8	UJ	1.8	UJ
319-85-7	beta-BHC	1.8	U	1.7	UJ	1.7	U	1.8	UJ	1.8	UJ	1.8	UJ
319-86-8	delta-BHC	1.8	U	1.7	UJ	1.7	U	1.8	UJ	1.8	UJ	1.8	UJ
58-89-9	gamma-BHC (Lindane)	1.8	U	1.7	UJ	1.7	U	1.8	UJ	1.8	UJ	1.8	UJ
5103-74-2	gamma-Chlordane	0.54	J	1.7	UJ	1.7	U	2.1	J	1.8	UJ	1.8	UJ

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
Pesticides

PEST											
	SAMPLE ID ------->	015-S-0031-01		015-S-0031-05		015-S-0031-10					
	ORIGINAL ID ----->	015S003101		015S003105		015S003110					
	LAB SAMPLE ID --->	S554929*30		S554929*31		S554929*32					
	ID FROM REPORT -->	015S003101		015S003105		015S003110					
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95					
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95					
	DATE ANALYZED --->	09/23/95		09/23/95		09/23/95					
	MATRIX ---------->	Soil		Soil		Soil					
	UNITS ---------->	UG/KG		UG/KG		UG/KG					
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL				
72-54-8	4,4'-DDD	3.5	UJ	3.4	UJ	3.4	U				
72-55-9	4,4'-DDE	15.	J	3.4	UJ	0.8	J				
50-29-3	4,4'-DDT	10.	J	0.76	J	1.4	J				
309-00-2	Aldrin	1.8	UJ	1.8	UJ	1.7	U				
12674-11-2	Aroclor-1016	35.	UJ	34.	UJ	34.	U				
11104-28-2	Aroclor-1221	71.	UJ	69.	UJ	68.	U				
11141-16-5	Aroclor-1232	35.	UJ	34.	UJ	34.	U				
53469-21-9	Aroclor-1242	35.	UJ	34.	UJ	34.	U				
12672-29-6	Aroclor-1248	35.	UJ	34.	UJ	34.	U				
11097-69-1	Aroclor-1254	35.	UJ	34.	UJ	34.	U				
11096-82-5	Aroclor-1260	35.	UJ	34.	UJ	34.	U				
60-57-1	Dieldrin	51.	J	0.48	J	2.5	J				
959-98-8	Endosulfan I	0.46	J	1.8	UJ	1.7	U				
33213-65-9	Endosulfan II	3.5	UJ	3.4	UJ	3.4	U				
1031-07-8	Endosulfan sulfate	3.5	UJ	3.4	UJ	3.4	U				
72-20-8	Endrin	3.5	UJ	3.4	UJ	1.5	J				
7421-93-4	Endrin aldehyde	3.5	UJ	3.4	UJ	3.4	U				
53494-70-5	Endrin ketone	0.038	J	3.4	UJ	3.4	U				
76-44-8	Heptachlor	1.8	UJ	1.8	UJ	1.7	U				
1024-57-3	Heptachlor epoxide	1.8	UJ	1.8	UJ	1.7	U				
72-43-5	Methoxychlor	18.	UJ	18.	UJ	17.	U				
8001-35-2	Toxaphene	180.	UJ	180.	UJ	170.	U				
319-84-6	alpha-BHC	1.8	UJ	1.8	UJ	1.7	UJ				
5103-71-9	alpha-Chlordane	1.4	J	1.8	UJ	1.7	U				
319-85-7	beta-BHC	1.8	UJ	1.8	UJ	1.7	U				
319-86-8	delta-BHC	1.8	UJ	1.8	UJ	1.7	U				
58-89-9	gamma-BHC (Lindane)	1.8	UJ	1.8	UJ	1.7	U				
5103-74-2	gamma-Chlordane	1.2	J	1.8	UJ	1.7	U				

*** Validation Complete ***

DATALCP3
05/08/97

PENSACOLA, *SITE* 15
Phase I Soil
VOC

VOA															
	SAMPLE ID ------->	015-S-0001-01		015-S-0001-05		015-S-0001-10		015-S-0002-01		015-S-0002-05		015-S-0002-09	
	ORIGINAL ID ----->	015S000101		015S000105		015S000110		015S000201		015S000205		015S000209	
	LAB SAMPLE ID --->	S554878*1		S554878*2		S554878*3		S554929*1		S554929*2		S554929*3	
	ID FROM REPORT -->	015S000101		015S000105		015S000110		015S000201		015S000205		015S000209	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/13/95		09/13/95		09/13/95		09/13/95		09/13/95		09/13/95	
	MATRIX ---------->	Soil		soil		Soil		Soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
71-55-6	1,1,1-Trichloroethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
79-00-5	1,1,2-Trichloroethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-34-3	1,1-Dichloroethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-35-4	1,1-Dichloroethene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
107-06-2	1,2-Dichloroethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
78-87-5	1,2-Dichloropropane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
78-93-3	2-Butanone (MEK)	11.	U	0.5	J	11.	U	11.	U	11.	U	11.	U
591-78-6	2-Hexanone	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
67-64-1	Acetone	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
71-43-2	Benzene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-27-4	Bromodichloromethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-25-2	Bromoform	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
74-83-9	Bromomethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-15-0	Carbon disulfide	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
56-23-5	Carbon tetrachloride	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
108-90-7	Chlorobenzene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-00-3	Chloroethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
67-66-3	Chloroform	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
74-87-3	Chloromethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
540-59-0	1,2-Dichloroethene (total)	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
124-48-1	Dibromochloromethane	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
100-41-4	Ethylbenzene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-09-2	Methylene chloride	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
100-42-5	Styrene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
127-18-4	Tetrachloroethene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
108-88-3	Toluene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
79-01-6	Trichloroethene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	11.	U	10.	U	0.6	J	0.4	J	11.	U	11.	U
10061-01-5	cis-1,3-Dichloropropene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U
10061-02-6	trans-1,3-Dichloropropene	11.	U	10.	U	11.	U	11.	U	11.	U	11.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-S-0003-01		015-S-0003-05		015-S-0003-09		015-3-0004-01		015-C-0004-01		015-S-0004-05	
	ORIGINAL ID ----->	015S000301		015S000305		015S000309		015S000401		015C000401		0155000405	
	LAB SAMPLE ID --->	S554929*4		S554929*5		S554929*6		S554929*7		S554929*8		S554929*9	
	ID FROM REPORT -->	015S000301		015S000305		015S000309		015S000401		015C000401		015S000405	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/13/95		09/13/95		09/13/95		09/93/95		09/13/94		09/13/95	
	MATRIX ---------->	soil		soil		Soil		Soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENPOS	VAL	ENPOS	VAL	ENPOS	VAL	ENPOS	VAL	ENPOS	VAL	ENPOS	VAL
71-55-6	1,1,1-Trichloroethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
79-00-5	1,1,2-Trichloroethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
75-34-3	1,1-Dichloroethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
75-35-4	1,1-Dichloroethene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
107-06-2	1,2-Dichloroethane	11.	U	11,	U	10.	U	11.	U	11.	U	10.	U
78-87-5	1,2-Dichloropropane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
78-93-3	2-Butanone (MEK)	11.	U	11.	U	10.	U	11,	U	11.	U	10.	U
591-78-6	2-Hexanone	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
67-64-1	Acetone	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
71-43-2	Benzene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
75-27-4	Bromodichloromethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
75-25-2	Bromoform	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
74-83-9	Bromomethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
75-15-0	Carbon disulfide	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
56-23-5	Carbon tetrachloride	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
108-90-7	Chlorobenrene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
75-00-3	Chloroethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
67-66-3	Chloroform	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
74-87-3	Chloromethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
124-48-1	Dibromochloromethane	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
100-41-4	Ethylbenzene	11.	U	11.	U	10,	U	11.	U	11.	U	10.	U
75-09-2	Methylene chloride	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
100-42-5	Styrene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
127-18-4	Tetrachloroethene	11.	U	11.	U	10.	U	0.9	J	1.	J	10.	U
108-88-3	Toluene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
79-01-6	Trichloroethene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
75-01-4	Vinyl chloride	6.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	11.	U	11.	U	10.	U	1.	J	0.8	J	10.	U
10061-01-5	cis-1,3-Dichloropropene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	11.	U	11.	U	10.	U	11.	U	11.	U	10.	U

*** Validation Complete ***

VOA	SAMPLE ID ------->	015-S-0004-10		015-S-0005-01		015-S-0005-05		015-S-0005-10		015-S-0006-01		015-C-0006-01	
	ORIGINAL ID ----->	015S000410		015S000501		015S000505		3155000510		015S000601		6554900601	
	LAB SAMPLE ID --->	S554929*10		S554970*1		S554970*2		S554970*3		S554970*4			
	ID FROM REPORT -->	015S000410		015S000501		015S000505		015S000510		015S000601		015C000601	
	SAMPLE DATE ----->	09/06/95		09/07/95		09/07/95		09/07/95		09/07/95		09/07/95	
	DATE ANALYZED --->	09/13/95		09/13/95		09/13/95		09/13/95		09/13/95		09/14/95	
	MATRIX ---------->	soil		soil		Soil		Soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	12.	U	1.	J
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	12.	U	2.	J
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
67-64-1	Acetone	10.	U	10.	U	37.	U	35.	U	12.	U	12.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	12.	U	3.	J
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	12.	U	2.	J
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	12.	U	08	J
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	12.	U	2.	J
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	12.	U	2.	J
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
127-18-4	TetrachLoroethene	10.	U	10.	U	10.	U	10.	U	12.	U	2.	J
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	12.	U	4.	J
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U	12.	U	3.	J
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	12.	U	8.	J
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	12.	U	12.	U

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-S-0006-05		015-S-0006-09		015-S-0007-01		015-S-0007-05		015-S-0009-01		015-S-0009-05	
	ORIGINAL ID ----->	015S000605		015S000609		015S000701		015S000705		015S000901		015S000905	
	LAB SAMPLE ID --->	S554970*6		S554970*7		S554843*1		S554843*2		S554878*4		S554878*5	
	ID FROM REPORT -->	0153000605		015S000609		015S000701		015S000705		015S000901		015S000905	
	SAMPLE DATE ----->	09/07/95		09/07/95		08/31/95		08/31/95		09/01/95		09/01/94	
	DATE ANALYZED --->	09/14/95		09/14/95		09/09/95		09/09/95		09/13/95		09/13/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL
71-55-6	1,1,1-Trichloroethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
79-00-5	1,1,2-Trichloroethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-34-3	1,1-Dichloroethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-35-4	1,1-Dichloroethene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
107-06-2	1,2-Dichloroethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
78-87-5	1,2-Dichloropropane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
78-93-3	2-Butanone (MEK)	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
591-78-6	2-Hexam	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
67-64-1	ketone	11.	U	11.	U	40.	U	22.	U	11.	U	10.	U
71-43-2	Benzene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-27-4	Bromodichloromethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-25-2	Bromoform	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
74-83-9	Bromomethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-15-0	Carbon disulfide	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
56-23-5	Carbon tetrachloride	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
108-90-7	Chlorobenzene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-00-3	Chloroethane	11.	U	11.	U	11.	UR	10.	UR	11.	U	10.	U
67-66-3	Chloroform	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
74-87-3	Chloromethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
124-48-1	Dibromochloromethane	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
100-41-4	Ethylbenzene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-09-2	Methylene chloride	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
100-42-5	Styrene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
127-18-4	Tetrachloroethene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
108-88-3	Toluene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
79-01-6	Trichloroethene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	11.	U	11.	U	0.6	J	10.	U	11.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	11.	U	11.	U	11.	U	10.	U	11.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

		015-S-0009-10		015-S-0010-01		015-C-0010-01		015-S-0010-05		015-S-0010-10		015-S-0011-01	
		015S000910		015S001001		315C001001		015S001005		015S001010		015S001101	
		S554878A*1		S554878*6		S554878*7		S554878A*2		S554878A*3		S554929*11	
		015S000910		015S001001		315C001001		0155001005		015S001010		015S001101	
		09/01/95		09/01/95		39/01/95		09/01/95		09/01/95		09/05/95	
		09/13/95		09/14/95		09/15/95		09/13/95		09/13/95		09/13/95	
		soil		Soil		Soil		Soil		Soil		Soi 1	
	UNITS ----------	UG/KG		UG/KG		JG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENPOS	VAL	ENP05	VAL
71-55-6	1,1,1-Trichloroethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
79-00-5	1,1,2-Trichloroethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-34-3	1,1-Dichloroethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-35-4	1,1-Dichloroethene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
107-06-2	1,2-Dichloroethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
78-87-5	1,2-Dichloropropane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
78-93-3	2-Butanone (MEK)	10.	U	0.5	J	11.	U	10.	U	10.	U	11.	U
591-78-6	2-Hexanone	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
67-64-1	Acetone	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
71-43-2	Benzene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-27-4	Bromodichloromethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-25-2	Bromoform	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
74-83-9	Bromomethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-15-0	Carbon disulfide	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
56-23-5	Carbon tetrachloride	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
108-90-7	Chlorobenzene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-00-3	Chloroethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
67-66-3	Chloroform	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
74-87-3	Chloromethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
124-48-1	Dibrmchloromethane	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
100-41-4	Ethylbenzene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-09-2	Methylene chloride	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
100-42-5	Styrene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
127-18-4	Tetrachloroethene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
108-88-3	Toluene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
79-01-6	Trichloroethene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	11.	U	11.	U	10.	U	10.	U	11.	U

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA															
	SAMPLE ID ------->	015-C-0011-01		015-S-0011-05		015-5-0011-09		015-S-0012-01		015SS-0012-05		015-S-0012-10	
	ORIGINAL ID ----->	015C001101		015S001105		015S001109		015S001201				015S001210	
	LAB SAMPLE ID --->	S554929*12		S554929*13		S554929*14		S554929*15		S554929*16		S554929*17	
	ID FROM REPORT -->	015C001101		015S001105		015S001109		015S001201		015S001205		015S001210	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/99	
	DATE ANALYZED --->	09/13/95		09/13/95		09/14/95		09/14/95		09/13/95		09/13/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENPOS	VAL	ENPM	VAL	ENPOS	VAL	ENP05	VAL	ENPOS	VAL	ENP06	VAL
71-55-6	1,1,1-Trichloroethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
79-00-5	1,1,2-Trichloroethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-34-3	1,1-Dichloroethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-35-4	1,1-Dichloroethene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
107-06-2	1,2-Dichloroethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
78-87-5	1,2-Dichloropropane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
78-93-3	2-Butanone (MEK)	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
591-78-6	2-Hexanone	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
67-64-1	Acetone	11.	U	14.	U	10.	U	11.	UJ	11.	U	10.	U
71-43-2	Benzene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-27-4	Bromodichloromethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-25-2	Bromoform	11.	U	11.	U	10.	U	It.	UJ	11.	U	10.	U
74-83-9	Bromomethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-15-0	Carbon disulfide	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
56-23-5	Carbon tctrechloride	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
108-90-7	Chlorobenzene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-00-3	Chloroethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
67-66-3	Chloroform	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
74-87-3	Chloromethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
124-48-1	Dibromochloromethane	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
100-41-4	Ethylbenzene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-09-2	Methylene chloride	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
100-42-5	Styrene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
127-18-4	TetrachLoroethene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
108-88-3	Toluene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
79-01-6	Trichloroethene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
75-01-4	Vinyl chloride	6.	U	4.	U	4.	U	4.	UJ	4.	U	4.	U
1330-20-7	Xylene (Total)	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	11.	U	11.	U	10.	U	11.	UJ	11.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	11.	U	If.	U	10.	U	11.	UJ	11.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-5-0013-01		015-S-0013-05		015-S-0013-10		015-S-0014-01		015-S-0014-05		015-S-0014-10	
	ORIGINAL ID ----->	015S001301		015S001305		015S001310		0155001401		015S001405		015S001410	
	LAB SAMPLE ID --->	S554929*18		S554929*19		S554929*20		S554970*8		S554970*9		S554970*10	
	ID FROM REPORT -->	015S001301		015S001305		015S001310		015S001401		015S001405		015S001410	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/07/95		09/07/95		09/07/95	
	DATE ANALYZED --->	09/15/95		09/15/95		09/15/95		09/14/95		09/14/95		09/14/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
71-55-6	1,1,1-TrichLoroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	11.	U	10.	U	16.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
74-87-3	Chloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	11*	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	11.	U	1.	J	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
127-18-4	Tetrachtoroethene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-01-4	vinyl chloride	4.	U	4.	U	4.	U	4	U	4.	U	4.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-S-0015-01		015-S-0015-05		015-S-0015-10		015-S-0016-01		015-S-0016-05		015-S-0016-10	
	ORIGINAL ID ----->	015S001501		015S001505		015S001510		015S001601		015S001605		015S001610	
	LAB SAMPLE ID --->	S554970*11		S554970*12		S554970*13		S554843*3		S554843*4		S554843*5	
	ID FROM REPORT -->	015S001501		015S001505		015S001510		015S001601		0155001605		015S001610	
	SAMPLE DATE ----->	09/07/95		09/07/95		09/07/95		08/30/95		08/30/95		08/30/95	
	DATE ANALYZED --->	09/14/95		09/14/95		09/15/95		09/09/95		09/09/95		09/09/95	
	MATRIX ---------->	soil		Soil		soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
71-55-6	1,1,1-Trichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	11.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	11.	U	10.	U	10.	U	10.	U			10.	U
78-93-3	2-Butanone (MEK)	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	11.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	11.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	11.	U	10.	U	10.	U	71.	U	47.	U	10.	U
71-43-2	Benzene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	11.	U	10.	U	10.	U	10.	UR	10.	UR	10.	UR
67-66-3	Chloroform	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-87-3	Chloromethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	11.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	11.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	11.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	11.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	11.	UJ	10.	U	10.	U	2.	J	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-S-0017-01		015-S-0017-05		015-S-0017-10		015-S-0018-01		015-S-0018-05		015-S-0018-10	
	ORIGINAL ID ----->	015S001701		015S001705		015S001710		015S001801		015S001805		0195001810	
	LAB SAMPLE ID --->	S554843*6		S554843*7		S554843*8		S554843*9		S554843*10		S554843*11	
	ID FROM REPORT -->	015S001701		015S001705		015S001710		015S001801		015S001805		015S001810	
	SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95	
	DATE ANALYZED --->	09/09/95		09/09/95		09/09/95		09/09/95		09/11/94		09/11/95	
	MATRIX ---------->	Soil		soil		Soil		Soil		soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
71-55-6	1,1,1-Trichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1.2-Oichloroethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	ketone	37.	U	40.	U	32.	U	20.	U	10.	U	10.	U
71-43-2	Benzene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	11.	UR	10.	UR	10.	UR	10.	UR	10.	UR	10.	UR
67-66-3	Chloroform	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-87-3	Chloromethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Yethylene chloride	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	3.	J	10.	U	10.	U	0.7	J	3.	J	3.	J
10061-01-5	cis-1,3-Dichloropropene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	11.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-S-0020-01		015-C-0020-01		015-S-0020-05		015-S-0020-08		015-S-0021-01		015-S-0021-05	
	ORIGINAL ID ----->	015S002001		015C002001		015S002005		015S002008		015S002101		015S002105	
	LAB SAMPLE ID --->	S554843*12		S554843A*13		S554843*13		S554843*14		S554843*15		S554843*16	
	ID FROM REPORT -->	015S002001		015C002001		015S002005		015S002008		015S002101		015S002105	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE ANALYZED --->	09/11/95		09/13/95		09/11/95		09/11/95		09/12/95		09/11/95	
	MATRIX ---------->	Soil		soil		Soil		Soil		soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP04	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
71-55-6	1,1,1-Trichloroethane	1.	J	10.	U	10.	U	10.	U	11.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
67-64-1	Acetone	15.	U	10.	U	13.	U	16.	U	27.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
75-00-3	Chloroethane	10.	UR	10.	U	10.	UR	10.	UR	11.	U	10.	UR
67-66-3	Chtoroform	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	11.	U	4.	J
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
108-88-3	Totuene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
75-01-4	vinyl chloride	4.	U	4.	U	4.	U	4.	U	[illegible]	U	4.	U
1330-20-7	Xylene (Total)	19.		10.	U	3.	J	10.	U	3.	J	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	11.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA															
	SAMPLE ID ------->	015-S-0021-08		015-S-0022-01		015-S-0022-05		015-S-0022-08		015-S-0023-01		015-S-0023-05	
	ORIGINAL ID ----->	015S002108		0158002201		015S002205		0156002208		0158002301		0159002305	
	LAB SAMPLE ID --->	S554843*17		S554843*18		S554843*19		S554843A*1		S554843A*2		S554843A*3	
	ID FROM REPORT -->	015S002108		0155002201		015S002205		015S002208		0153002301		015S002305	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE ANALYZED --->	09/11/95		09/12/95		09/12/95		09/12/95		09/12/55		09/12/95	
	MATRIX ---------->	soil		soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
71-55-6	1,1,1-Trichloroethane	0.7	J	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-&Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	19.	U	36.	U	72.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	UR	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	3.	J	10.	U	10.	U	10.	U	0.6	J	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-S-0024-01		015-S-0024-05		015-S-0024-09		015-S-0025-01		015-S-0025-05		015-S-0025-08	
	ORIGINAL ID ----->	0158002401		015S002405		0158002409		015S002501		015S002505		0158002508	
	LAB SAMPLE ID --->	S554843A*4		S554843A*5		S554843A*6		S554843A*7		S554843A*8		S554843A*9	
	ID FROM REPORT -->	015S002401		015S002405		015S002409		0155002501		015S002505		015S002508	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE ANALYZED --->	09/13/95		09/13/95		09/13/95		09/13/95		09/13/95		09/13/95	
	MATRIX ---------->	soil		soil		Soil		Soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENPW	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
79-00-5	1,1,2-Trichloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
108-10-1	4-Methyl-2-Pentenone (MIBK)	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	11.	U	12.	U	12.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-00-3	Chloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
67-66-3	Chtoroform	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
74-87-3	Chloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
124-48-1	Dibromochloromethene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
127-18-4	letrachloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
75-01-4	vinyl chtoridc	4.	U	4.	U	4.	U	4.	U	4.	U	5.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	11.	U	10.	U	12.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA																	
		SAMPLE ID -------:	015-S-0026-01		015-S-0026-05		015-S-0026-08		015-S-0027-01		015-S-0027-05		015-S-0027-10				
		ORIGINAL ID -----:	015S002601		015S002605		015S002608		0155002701		015S002705		015S002710				
		LAB SAMPLE ID ---:	S554843A*10		S554843A*11		S554843A*12		S554929*21		S554929*22		S554929*23				
		ID FROM REPORT --:	0158002601		015S002605		015S002608		015S002701		015S002705		015S002710				
		SAMPLE DATE -----:	08/31/95		08/31/95		08/31/95		09/06/95		09/06/95		09/06/95				
		DATE ANALYZED ---:	09/13/95		09/13/95		09/13/95		09/14/95		09/14/95		09/14/95				
		MATRIX ----------:	Soil		Soil		Soil		Soil		Soil		Soil				
		UNITS ----------:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG				
CAS #	Parameter		ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL			
71-55-6	1,1,1-Trichloroethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
79-34-5	1,1,2,2-Tetrachloroethane		70.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
79-00-5	1,1,2-Trichloroethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
75-34-3	1,1-Dichloroethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
75-35-4	1,1-Dichloroethene		10.	U	11.	U	11.	U	53.		53.		10.	U			
107-06-2	1,2-Dichloroethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
78-87-5	1,2-Dichloropropane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
78-93-3	2-Butanone (MEK)		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
591-78-6	2-Hexanone		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
108-10-1	4-Methyl-2-Pentanone (MIBK)		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
67-64-1	Acetone		10.	U	160.	U	11.	U	10.	U	10.	U	10.	U			
71-43-2	Benzene		10.	U	11.	U	11.	U	53.		52.		10.	U			
75-27-4	Bromodichloromethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
75-25-2	Bromoform		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
74-83-9	Bromomethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
75-15-0	Carbon disulfide		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
56-23-5	Carbon tetrachloride		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
108-90-7	Chlorobenzene		10.	U	11.	U	11.	U	54.		54.		10.	U			
75-00-3	Chloroethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
67-66-3	Chloroform		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
74-87-3	Chloromethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
540-59-0	1,2-Dichloroethene (total)		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
124-48-1	Dibromochloromethane		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
100-41-4	Ethylbenzene		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
75-09-2	Methylene chloride		10.	U	11.	U	11.	U	10.	U	10.	U	2.	J			
100-42-5	Styrene		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
127-18-4	Tetrachloroethene		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
108-88-3	Toluene		10.	U	11.	U	11.	U	56.		56.		10.	U			
79-01-6	Trichloroethene		10.	U	11.	U	11.	U	51.		50.		10.	U			
75-01-4	Vinyl chloride		4.	U	4.	U	4.	U	4.	U	4.	U	4.	U			
1330-20-7	Xylene (Total)		10.	U	11.	U	11.	U	0.1	J	10.	U	0.7	J			
10061-01-5	cis-1,3-Dichloropropene		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			
10061-02-6	trans-1,3-Dichloropropene		10.	U	11.	U	11.	U	10.	U	10.	U	10.	U			

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA													
	SAMPLE ID ------->	015-S-0029-01		015-S-0029-05		015-S-0029-10		015-S-0030-01		015-S-0030-05		015-S-0030-10	
	ORIGINAL ID ----->	015S002901		015S002905		015S002910		015S003001		015S003005		015S003010	
	LAB SAMPLE ID --->	S554929*24		S554929*25		S554929*26		S554929*27		S554929*28		S554929*29	
	ID FROM REPORT -->	015S002901		015S002905		015S002910		015S003001		0153003005		015S003010	
	SAMPLE DATE ----->	09/05/95		09/05/95		39/05/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/14/95		09/14/95		39/14/95		09/14/95		09/14/95		09/14/95	
	MATRIX ---------->	Soil		soil		Soi 1		Soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		JG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
71-55-6	1,1,1-Trichloroethane	2.	J	10.	U	1.	J	11.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
74-87-3	Chloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	3.	J	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
75-01-4	Vinyl chloride	4.	U	4.	U	4.	U	4.	U	4.	U	4.	U
1330-20-7	Xylene (Total)	0.7	J	0.7	J	0.6	J	11.	U	1.	J	0.8	J
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	11.	U	10.	U	10.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
VOC

VOA											
	SAMPLE ID ------->	015-S-0031-01		015-S-0031-05		015-S-0031-10					
	ORIGINAL ID ----->	015S003101		015S003105		015S003110					
	LAB SAMPLE ID --->	S554929*30		S554929*31		S554929*32					
	ID FROM REPORT -->	015S003101		015S003105		015S003110					
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95					
	DATE ANALYZED --->	09/15/95		09/15/95		09/15/95					
	MATRIX ---------->	Soil		soil		soil					
	UNITS ---------->	UG/KG		UG/KG		UG/KG					
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL				
71-55-6	1,1,1-Trichloroethane	11.	U	10.	U	10.	U				
79-34-5	1,1,2,2-Tetrachloroethane	11.	U	10.	U	10.	U				
79-00-5	1,1,2-Trichloroethane	11.	U	10.	U	10.	U				
75-34-3	1,1-Dichloroethane	11.	U	10.	U	10.	U				
75-35-4	1,1-Dichloroethene	11.	U	10.	U	10.	U				
107-06-2	1,2-Dichloroethane	11.	U	10.	U	10.	U				
78-87-5	1,2-Dichloropropane	11.	U	10.	U	10.	U				
78-93-3	2-Hutanone (MEK)	11.	U	10.	U	10.	U				
591-78-6	2-Hexanone	11.	U	10.	U	10.	U				
108-10-1	4-Hcthy l-2-Pentanone (MIBK)	11.	U	10.	U	10.	U				
67-64-1	Acetone	11.	U	10.	U	10.	U				
71-43-2	Benzene	11.	U	10.	U	10.	U				
75-27-4	Bromodichloromethane	11.	U	10.	U	10.	U				
75-25-2	Bromoform	11.	U	10.	U	10.	U				
74-83-9	Bromomethane	11.	U	10.	U	10.	U				
75-15-0	Carbon disulfide	11.	U	10.	U	10.	U				
56-23-5	Carbon tetrachloride	11.	U	10.	U	10.	U				
108-90-7	Chlorobenzene	11.	U	10.	U	10.	U				
75-00-3	Chloroethane	11.	U	10.	U	10.	U				
67-66-3	Chloroform	11.	U	to.	U	10.	U				
74-87-3	Chloromethane	11.	U	10.	U	10.	U				
540-59-0	1,2-Dichloroethene (total)	11.	U	10.	U	10.	U				
124-48-1	Dibromochloromethane	11.	U	10.	U	10.	U				
100-41-4	Ethylbenzene	11.	U	10.	U	10.	U				
75-09-2	Methylene chloride	11.	U	10.	U	10.	U				
100-42-5	Styrene	11.	U	10.	U	10.	U				
127-18-4	Tetrachloroethene	11.	U	10.	U	10.	U				
108-88-3	Toluene	11.	U	10.	U	10.	U				
79-01-6	Trichloroethene	11.	U	10.	U	10.	U				
75-01-4	Vinyl thtoride	4.	U	4.	U	4.	U				
1330-20-7	Xylene (Total)	11.	U	10.	U	10.	U				
10061-01-5	cis-1,3-Dichloropropene	11.	U	10.	U	10.	U				
10061-02-6	trans-1,3-Dichloropropene	11.	U	10.	U	10.	U				

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0001-01		015-S-0001-05		015-S-0001-10		015-S-0002-01		315-S-0002-05		015-S-0002-09	
	ORIGINAL ID ----->	015S000101		015S000105		015S000110		015S000201		315S000205		015S000209	
	LAB SAMPLE ID --->	S554878*1		S554878*2		S554878*3		S554929*1		S554929*2		S554929*3	
	ID FROM REPORT -->	015S000101		015S000105		015S000110		315S000201		5155000205		015S000209	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/07/95		09/07/95		09/07/95		09/08/95		39/08/95		09/08/95	
	DATE ANALYZED --->	09/19/95		09/19/95		09/19/95		09/20/95		09/19/95		09/19/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Eoil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		JG/KG		JG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
120-82-1	1,2,4-Trichlorobenrene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
95-50-1	1,2-Dtchlorobentene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
541-73-1	1,3-Dichlorobenzene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
106-46-7	1,4-Dichlorobenzene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
95-95-4	2,4,5-Trichlorophenol	850.	U	840.	U	850.	U	890.	U	850.	U	870.	U
88-06-2	2,4,6-Trichlorophenol	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
120-83-2	2,4-Dichlorophenol	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
105-67-9	2,4-Dimethylpheno l	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
51-28-5	2,4-Dinitrophenol	850.	UR	840.	UR	850.	UR	890.	U	850.	U	870.	U
121-14-2	2,4-Dinitrotoluene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
606-20-2	2,6-Dinitrotoluene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
91-58-7	2-Chloronaphthalene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
95-57-8	2-Chlorophenol	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
91-57-6	2-Methy 1naphthalene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
95-48-7	2-Methylphenol (o-Cresol)	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
88-74-4	2-Nitroaniline	850.	U	840.	U	850.	U	890.	UR	850.	U	870.	U
88-75-5	2-Nitrophenol	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
91-94-1	3,3'-Dichlorobentidine	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
999900-32-2	3-Methylphenol/4-Methylphenol	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
99-09-2	3-Nitroaniline	850.	U	840.	U	850.	U	890.	UR	850.	U	870.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	850.	UJ	840.	UJ	850.	UJ	890.	U	850.	U	870.	U
101-55-3	4-Bromophenyl-phenylether	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
59-50-7	4-Chtoro-3-methylphenot	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
106-47-8	4-Chloroani 1ine	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
7005-72-3	4-Chtorophenylphenylether	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
100-01-6	4-Nitroaniline	850.	U	840.	U	850.	U	890.	U	850.	U	870.	U
100-02-7	4-Nitrophcnol	850.	U	840.	U	850.	U	890.	U	850.	U	870.	U
83-32-9	Acenaphthene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
208-96-8	Acenaphthylene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
120-12-7	Anthracene	350.	U	350.	U	350.	U	10.	J	350.	U	360.	U
56-55-3	Benzo(a)anthracene	350.	U	350.	U	350.	U	92.	J	350.	U	360.	U
50-32-8	Benzo(a)pyrene	150.	U	150.	U	150.	U	77.	J	150.	U	150.	U
205-99-2	Benzo(b)fluoranthtne	350.	U	350.	U	350.	U	110.	J	350.	U	360.	U
191-24-2	Benzo(g,h,i)perylene	350.	U	350.	U	350.	U	68.	J	350.	U	360.	U
207-08-9	Benzo(k)fluoranthene	350.	U	350.	U	350.	U	48.	J	350.	U	360.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0001-01		015-S-0001-05		015-S-0001-10		015-S-0002-01		015-S-0002-05		015-S-0002-09	
	ORIGINAL ID ----->	015S000101		015S000105		015S000110		015S000201		015S000205		015S000209	
	LAB SAMPLE ID --->	S554878*1		S554878*2		S554878*3		S554929*1		S554929*2		S554929*3	
	ID FROM REPORT -->	015S000101		015S000105		015S000110		015S000201		015S000205		0155000209	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/07/95		09/07/95		09/07/95		09/08/95		09/08/94		09/08/95	
	DATE ANALYZED --->	09/19/95		09/19/95		09/19/95		09/20/95		09/19/95		09/19/95	
	MATRIX ---------->	Soil		Soil		Soil		soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
85-68-7	Butylbenzylphthalate	350.	UJ	350.	UJ	350.	UJ	370.	UR	350.	U	360.	U
86-74-8	Carbazole	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
218-01-9	Chrysene	350.	U	350.	U	350.	U	120.	J	350.	U	360.	U
84-74-2	Di-n-butylphthalate	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
117-84-0	Di-n-octyl phthalate	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
53-70-3	Dibenz(a,h)anthracene	150.	U	150.	U	150.	U	160.	UR	150.	U	150.	U
132-64-9	Dibenzofuran	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
84-66-2	Diethylphthalate	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
131-11-3	Dimethyl phthalate	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
206-44-0	Fluoranthene	350.	U	350.	U	350.	U	130.	J	350.	U	360.	U
86-73-7	FLuorene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
118-74-1	Hexachlorobenzene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
87-68-3	Hexachlorobutadiene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
67-72-1	HexachLoroethane	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	350.	U	350.	U	57.	J	350.	U	360.	U
78-59-1	Isophorone	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
621-64-7	N-Nitroso-di-n-propylamine	64.	U	63.	U	64.	U	67.	UR	64.	U	65.	U
122-39-4	Diphenylamine	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
91-20-3	Naphthalene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
98-95-3	Nitrobenzene	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
87-86-5	Pentachlorophenol	850.	U	840.	U	850.	U	890.	U	850.	U	870.	U
85-01-8	Phenanthrene	350.	U	350.	U	350.	U	56.	J	350.	U	360.	U
108-95-2	Phenol	350.	U	350.	U	350.	U	370.	U	350.	U	360.	U
129-00-0	Pyrene	350.	U	350.	U	350.	U	140.	J	350.	U	360.	U
111-91-1	Bis(2-Chloroethoxy)methane	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
111-44-4	Bis(2-Chloroethyl)ether	350.	U	350.	U	350.	U	370.	UR	350.	U	360.	U
117-81-7	Bis(2-Ethylhexyl)phthalate (BEHP)	350.	UJ	350.	UJ	350.	UJ	370.	U	350.	U	360.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0003-01		015-S-0003-05		015-S-0003-09		015-S-0004-01		015-C-0004-01		015-S-0004-05	
	ORIGINAL ID ----->	015S000301		015S000305		0158000309		015S000401		015C000401		0155000405	
	LAB SAMPLE ID --->	S554929*4		S554929*5		S554929*6		S554929*7		S554929*8		S554929*9	
	ID FROM REPORT -->	015S000301		0158000305		015S000309		015S000401		015C000401		015S000405	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/06/95		09/06/95		09/06/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/19/95		09/19/95		09/19/95		09/19/95		09/20/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
120-82-1	1,2,4-Trichlorobenzene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
95-50-1	1,2-Dichlorobenzene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
541-73-1	1,3-Dichlorobenzene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
106-46-7	1,4-Dichlorobenzene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
95-95-4	2,4,5-Trichlorophenol	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
88-06-2	2,4,6-Trichlorophenol	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
120-83-2	2,4-Dichlorophenol	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
105-67-9	2,4-Dimethylphenol	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
51-28-5	2,4-Dinitrophenol	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
121-14-2	2,4-Dinitrotoluene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
606-20-2	2,6-Dinitrotoluene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
91-58-7	2-Chloronaphthalene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
95-57-8	2-Chlorophenol	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
91-57-6	2-Methylnaphthalene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
95-48-7	2-Methylphenol (o-Cresol)	340.	U	350.	U	350.	U	360.	U	360.	U	340.	U
88-74-4	2-Nitroaniline	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
88-75-5	2-Nitrophenol	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
91-94-1	3,3'-Dichlorobenzidine	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	340.	U	350.	U	350.	U	360.	U	360.	U	340.	U
99-09-2	3-Nitroaniline	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
101-55-3	4-Bromophenyl-phenylether	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
59-50-7	4-Chloro-3-methylphenol	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
106-47-8	4-Chloroaniline	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
7005-72-3	4-Chlorophenylphenylether	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
100-01-6	4-Nitroaniline	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
100-02-7	4-Nitrophenol	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
83-32-9	Acenaphthene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
208-96-8	Acenaphthylene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
120-12-7	Anthracene	350.	U	350.	U	350.	U	360.	U	18.	J	340.	U
56-55-3	Benzo(a)anthracene	28.	J	350.	U	350.	U	13.	J	110.	J	340.	U
50-32-8	Benzo(a)pyrene	43.	J	150.	U	150.	U	16.	J	69.	J	140.	U
205-99-2	Benzo(b)fluoranthene	69.	J	350.	U	350.	U	25.	J	110.	J	340.	U
191-24-2	Benzo(g,h,i)perylene	46.	J	350.	U	350.	U	16.	J	55.	J	340.	U
207-08-9	Benzo(k)fluoranthene	27.	J	350.	U	350.	U	360.	U	41.	J	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0003-01		015-S-0003-05		015-S-0003-09		015-S-0004-01		015-C-0004-01		015-S-0004-05	
	ORIGINAL ID ----->	015S000301		015S000305		015S000309		015S000401		015C000401		015S000405	
	LAB SAMPLE ID --->	S554929*4		S554929*5		S554929*6		S554929*7		S554929*8		S554929*9	
	ID FROM REPORT -->	015S000301		015S000305		315S000309		1155000401		015C000401		015S000405	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		39/06/95		09/06/95		09/06/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		39/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/19/95		09/19/95		09/19/95		39/19/95		09/20/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
85-68-7	Butylbenzylphthalate	14.	J	350.	U	350.	U	360.	U	360.	U	340.	U
86-74-8	Carbazole	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
218-01-9	Chrysene	48.	J	350.	U	350.	U	16.	J	120.	J	340.	U
84-74-2	Di-n-butylphthalate	350.	U	350.	U	15.	J	28.	J	38.	J	340.	U
117-84-0	Di-n-octyl phthalate	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
53-70-3	Dibenz(a,h)anthracene	8.	J	150.	U	150.	U	150.	U	150.	U	140.	U
132-64-9	Dibenzofuran	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
84-66-2	Diethylphthalate	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
131-11-3	Dimethyl phthalate	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
206-44-0	Fluoranthene	47.	J	350.	U	350.	U	16.	J	170.	J	340.	U
86-73-7	Fluorene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
118-74-1	Hexachlorobenzene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
87-68-3	Hexachlorobutadiene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
67-72-1	Hexachloroethane	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	45.	J	350.	U	350.	U	16.	J	52.	J	340.	U
78-59-1	Isophorone	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine	64.	U	64.	U	63.	U	66.	U	65.	U	62.	U
122-39-4	Diphenylamine	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
91-20-3	Naphthalene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
98-95-3	Nitrobenzene	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
87-86-5	Pentachlorophenol	860.	U	850.	U	840.	U	880.	U	870.	U	820.	U
85-01-8	Phenanthrene	12.	J	350.	U	350.	U	360.	U	59.	J	340.	U
108-95-2	Phenol	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
129-00-0	Pyrene	46.	J	350.	U	350.	U	14.	J	170.	J	340.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	U	350.	U	350.	U	360.	U	360.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA															
	SAMPLE ID -------:	015-S-0004-10		015-S-0005-01		015-S-0005-05		015-S-0005-10		015-S-0006-01		015-C-0006-01	
	ORIGINAL ID -----:	015S000410		015S000501		015S000505		0155000510		015S000601		015C000601	
	LAB SAMPLE ID ---:	S554929*10		S554970*1		S554970*2		S554970*3		S554970*4		S554970*5	
	ID FROM REPORT --:	015S000410		015S000501		015S000505		015S000510		0153000601		015C000601	
	SAMPLE DATE -----:	09/06/95		09/07/95		09/07/95		09/07/95		09/07/95		09/07/95	
	DATE EXTRACTED --:	09/08/95		09/11/95		09/11/9$		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED ---:	09/19/95		09/20/95		09/20/95		09/20/95		09/20/95		09/20/95	
	MATRIX ----------:	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ----------:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAC	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
120-82-1	1,2,4-Trichlorobenzene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
95-50-1	1,2-Dichlorobenzene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
541-73-1	1,3-Dichlorobenzene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
106-46-7	1,4-Dichlorobenzene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
95-95-4	2,4,5-Trichlorophenol	840.	U	830.	U	820.	U	820.	U	1000.	U	980.	U
88-06-2	2,4,6-Trichlorophenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
120-83-2	2,4-Dichlorophenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
105-67-9	2,4-Dimethylphenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
51-28-5	2,4-Dinitrophenol	840.	U	830.	U	820.	U	820.	U	1000.	U	980.	U
121-14-2	2,4-Dinitrotoluene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
606-20-2	2,6-Dinitrotoluene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
91-58-7	2-Chloronaphthalene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
95-57-8	2-Chlorophenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
91-57-6	2-Methylnaphthalene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
95-48-7	2-Methylphenol (o-Cresol)	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
88-74-4	2-Nitroaniline	840.	U	830.	U	820.	U	820.	U	1000.	U	980.	U
88-75-5	2-Nitrophenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
91-94-1	3,3'-Dichlorobenzidine	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
99-09-2	3-Nitroaniline	840.	U	830.	U	820.	U	820.	U	1000.	U	980.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	840.	U	830.	U	820.	U	E.	J	1000.	U	980.	U
101-55-3	4-Bromophenyl-phenylether	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
59-50-7	4-Chloro-3-methylphenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
106-47-8	4-Chloroaniline	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
7005-72-3	4-Chlorophenylphenylether	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
100-01-6	4-Nitroaniline	840.	U	830.	U	820.	U	820.	U	1000.	U	980.	U
100-02-7	4-Nitrophenol	840.	U	830.	U	820.	U	820.	U	1000.	U	980.	U
83-32-9	Acenaphthene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
208-96-8	Acenaphthylene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
120-12-7	Anthracene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
56-55-3	Benzo(a)anthracene	350.	U	340.	U	340.	U	340.	U	63.	J	50.	J
50-32-8	Benzo(a)pyrene	150.	U	140.	U	140.	U	140.	U	29.	J	68.	J
205-99-2	Benzo(b)fluoranthene	350.	U	340.	U	340.	U	340.	U	120.	J	94.	J
191-24-2	Benzo(g,h,i)perylene	350.	U	340.	U	340.	U	340.	U	83.	J	65.	J
207-08-9	Benzo(k)fluoranthene	350.	U	340.	U	340.	U	340.	U	43.	J	32.	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0004-10		015-S-0005-01		015-S-0005-05		015-S-0005-10		015-S-0006-01		015-C-0006-01	
	ORIGINAL ID ----->	015S000410		0155000501		0158000505		015S000510		015S000601		015C000601	
	LAB SAMPLE ID --->	S554929*10		S554970*1		S554970*2		S554970*3		S554970*4		S554970*5	
	ID FROM REPORT -->	015S000410		015S000501		015S000505		015S000510		015S000601		015C000601	
	SAMPLE DATE ----->	09/06/95		09/07/95		09/07/95		09/07/95		09/07/95		09/07/95	
	DATE EXTRACTED -->	09/08/95		09/11/95		09/11/95		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/19/95		09/20/95		09/20/95		09/20/95		09/20/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
85-68-7	Butylbenzylphthalate	350.	U	15.	J	18.	J	340.	UJ	410.	UJ	53.	J
86-74-8	Carbazole	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
218-01-9	Chrysene	350.	U	340.	U	340.	U	340.	U	84.	J	68.	J
84-74-2	Di-n-butylphthalate	14.	J	54.	J	340.	U	9.	J	410.	U	400.	U
117-84-0	Di-n-octyl phthalate	350.	U	340.	UJ	340.	UJ	340.	UJ	410.	UJ	400.	UJ
53-70-3	Dibenz(a,h)anthracene	150.	U	140.	U	140.	U	140.	U	15.	J	13.	J
132-64-9	Dibenzofuran	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
84-66-2	Diethylphthalate	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
131-11-3	Dimethyl phthalate	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
206-44-0	Fluoranthene	350.	U	340.	U	340.	U	340.	U	81.	J	66.	J
86-73-7	Fluorene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
118-74-1	Hexachlorobenzene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
87-68-3	Hexachlorobutadiene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
67-72-1	Hexachloroethane	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	340.	U	340.	U	340.	U	73.	J	58.	J
78-59-1	Isophorone	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
621-64-7	N-Nitroso-di-n-propylamine	63.	U	62.	U	62.	U	62.	U	75.	U	73.	U
122-39-4	Diphenylamine	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
91-20-3	Naphthalene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
98-95-3	Nitrobenzene	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
87-86-5	Pentachlorophenol	840.	U	830.	U	820.	U	820.	U	1000.	U	980.	U
85-01-8	Phenanthrene	350.	U	340.	U	340.	U	340.	U	25.	J	22.	J
108-95-2	Phenol	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
129-00-0	Pyrene	350.	U	340.	U	340.	U	340.	U	70.	J	63.	J
111-91-1	bis(2-Chloroethoxy)methane	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
111-44-4	bis(2-Chloroethyl)ether	350.	U	340.	U	340.	U	340.	U	410.	U	400.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	U	340.	UJ	340.	UJ	340.	UJ	420.	UJ	400.	UJ

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
		SAMPLE ID ------->	015-S-0006-05		015-S-0006-09		015-S-0007-01		015-S-0007-05		015-S-0009-01		015-S-0009-05
		ORIGINAL ID ----->	0158000605		0155000609		015S000701		015S000705		015S000901		015S000905
		LAB SAMPLE ID --->	S554970*6		S554970*7		S554843*1		S554843*2		S554878*4		S554878*5
		ID FROM REPORT -->	015S000605		015S000609		015S000701		015S000705		015S000901		015S000905
		SAMPLE DATE ----->	09/07/95		09/07/95		08/31/95		08/31/95		09/01/95		09/01/95
		DATE EXTRACTED -->	09/11/95		09/11/95		09/06/95		09/06/95		09/07/95		09/07/95
		DATE ANALYZED --->	09/20/95		09/20/95		09/17/95		09/12/95		09/19/95		09/20/95
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG
CAS #	Parameter		ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			860.	U	870.	U	860.	U	840.	U	850.	U	840.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			860.	U	870.	U	860.	U	840.	U	850.	UR	840.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
			350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
	onaphthalene		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
	ophenol		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
	lnaphthalene		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
	lphenol (o-Cresol)		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
	line		860.	U	870.	U	860.	U	840.	U	850.	U	840.	U
88-75-5	2-Nitrophenol		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
999900-32-2	3-Methylphenol/4-Methylphenol		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
99-09-2	3-Nitroaniline		860.	U	870.	U	860.	U	840.	U	850.	U	840.	U
534-52-1	2-Methyl-4,6-Dinitrophenol		860.	U	870.	U	860.	U	840.	U	850.	UJ	840.	U
101-55-3	4-Bromophenyl-phenylether		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
59-50-7	4-Chloro-3-methylphenol		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
106-47-8	4-Chloroaniline		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
7005-72-3	4-Chlorophenylphenylether		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
100-01-6	4-Nitroaniline		860.	U	870.	U	860.	U	840.	U	850.	U	840.	U
100-02-7	4-Nitrophenol		860.	U	870.	U	860.	U	840.	U	850.	U	840.	U
83-32-9	Acenaphthene		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
208-96-8	Acenaphthylene		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
120-12-7	Anthracene		350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
56-55-3	Benzo(a)anthracene		6.	J	360.	U	22.	J	350.	U	350.	U	350.	U
50-32-8	Benzo(a)pyrene		150.	U	150.	U	24.	J	150.	U	150.	U	150.	U
205-99-2	Benzo(b)fluoranthene		350.	U	360.	U	47.	J	350.	U	350.	U	350.	U
191-24-2	Benzo(g,h,i)perylene		350.	U	360.	U	23.	J	350.	U	350.	U	350.	U
207-08-9	Benzo(k)fluoranthene		350.	U	360.	U	15.	J	350.	U	350.	U	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I *Soil*
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0006-05		015-S-0006-09		015-S-0007-01		015-S-0007-05		015-S-0009-01		015-S-0009-05	
	ORIGINAL ID ----->	015S000605		015S000609		015S000701		015S000705		015S000901		015S000905	
	LAB SAMPLE ID --->	S554970*6		S554970*7		S554843*1		S554843*2		S554878*4		S554878*5	
	ID FROM REPORT -->	0155000605		015S000609		015S000701		015S000705		015S000901		015S000905	
	SAMPLE DATE ----->	09/07/95		09/07/95		08/31/95		08/31/95		09/01/95		09/01/95	
	DATE EXTRACTED -->	09/11/95		09/11/95		09/06/95		09/06/95		09/07/95		09/07/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/17/95		09/12/95		09/19/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL
85-68-7	Butylbenzylphthalate	24.	J	28.	J	350.	U	350.	UJ	350.	UJ	350.	U
86-74-8	Carbazole	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
218-01-9	Chrysene	350.	U	360.	U	33.	J	350.	U	350.	U	350.	U
84-74-2	Di-n-butylphthalate	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
117-84-0	Di-n-octyl phthalate	350.	UJ	360.	UJ	350.	U	350.	UJ	350.	U	350.	U
53-70-3	Dibenz(a,h)anthracene	150.	U	150.	U	150.	U	150.	U	150.	U	150.	U
132-64-9	Oibenzofuran	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
84-66-2	Diethylphthalate	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
131-11-3	Dimethyl phthalate	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
206-44-0	Fluoranthene	7.	J	6.	J	42.	J	350.	U	350.	U	350.	U
86-73-7	Fluorene	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
118-74-1	Hexachlorobenzene	350.	U	360.	U	350.	U	350.	U	350.	U	350	U
87-68-3	Hexachlorobutadiene	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
67-72-1	Hexachloroethane	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	6.	J	360.	U	19.	a	350.	U	350.	U	350.	U
78-59-1	Isophorone	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
621-64-7	N-Nitroso-di-n-propylamine	64.	U	65.	U	64.	U	63.	U	64.	U	63.	U
122-39-4	Diphenylamine	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
91-20-3	Naphthalene	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
98-95-3	Nitrobenzene	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
87-86-5	Pentachlorophenol	860.	U	870.	U	860.	U	840.	U	850.	U	840.	U
85-01-8	Phenanthrene	350.	U	360.	U	16.	J	350.	U	350.	U	350.	U
108-95-2	Phenol	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
129-00-0	Pyrene	6.	J	7.	J	36.	J	350.	U	350.	U	350.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
111-44-4	bis(2-Chloroethyl)ether	350.	U	360.	U	350.	U	350.	U	350.	U	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	UJ	360.	UJ	41.	J	350.	U	350.	UJ	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0009-10		015-S-0010-01		015-C-0010-01		015-S-0010-05		015-S-0010-10		015-S-0011-01	
	ORIGINAL ID ----->	015S000910		015S001001		015C001001		015S001005		015S001010		0155001101	
	LAB SAMPLE ID --->	S554878A*1		S554878*6		S554878*7		S554878A*2		S554878A*3		S554929*11	
	ID FROM REPORT -->	015S000910		0155001001		015C001001		015S001005		015S001010		0155001101	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/01/95		09/01/95		09/05/95	
	DATE EXTRACTED -->	09/07/95		09/07/95		09/07/95		09/07/95		09/07/95		09/08/95	
	DATE ANALYZED --->	09/19/95		09/20/95		09/19/95		09/19/95		09/19/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
120-82-1	1,2,4-Trichlorobenzene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
95-50-1	1,2-Dichlorobenrene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
541-73-1	1,3-Dichlorobenzene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
106.46- 7	1,4-Dichlorobenzene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
95-95-4	2,4,5-Trichlorophenol	830.	U	890.	U	880.	U	840.	U	840.	U	860.	U
88-06-2	2,4,6-Trichlorophenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
120-83-2	2,4-Dichlorophenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
105-67-9	2,4-Dimethylphenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
51-28-5	2,4-Dinitrophenot	830.	UR	890.	U	880.	UR	840.	UR	840.	UR	860.	U
121-14-2	2,4-Dinitrotoluene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
606-20-2	2,6-Dinitrotoluene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
91-58-7	2-Chloronaphthalene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
95-57-8	2-Chlorophenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
91-57-6	2-Methylnaphthalene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
95-48-7	2-Methylphenol (a-Cresol)	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
88-74-4	2-Nitroaniline	830.	U	890.	U	880.	U	840.	U	840.	U	860.	U
88-75-5	2-Nitrophenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
999900-32-2	3-Methylphenol/4-Methylphenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
99-09-2	3-Nitroaniline	830.	U	890.	U	880.	U	840.	U	840.	U	860.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	830.	UJ	890.	U	880.	UJ	840.	UJ	840.	UJ	860.	U
101-55-3	4-Bromophenyl-phenylether	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
59-50-7	4-Chloro-3-methylphenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
106-47-8	4-Chloroaniline	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
7005-72-3	4-chlorophenylphenylether	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
100-01-6	4-Nitroaniline	830.	U	890.	U	880.	U	840.	U	840.	U	860.	U
100-02-7	4-Nitrophenol	830.	U	890.	U	880.	U	840.	U	840.	U	860.	U
83-32-9	Acenaphthene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
208-96-8	Acenephthylene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
120-12-7	Anthracene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
56-55-3	Benzo(a)anthracene	340.	U	36.	J	43.	J	350.	U	350.	U	24.	J
50-32-8	Benzo(a)pyrene	140.	U	32.	J	54.	J	150.	U	150.	U	22.	J
205-99-2	Benzo(b)fLuoranthene	340.	U	46.	J	86.	J	350.	U	350.	U	35.	J
191-24-2	Benzo(g,h,i)perylene	340.	U	27.	J	38.	J	350.	U	350.	U	22.	J
207-08-9	Benzo(k)fluoranthene	340.	U	370.	U	28.	J	350.	U	350.	U	15.	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0009-10		015-S-0010-01		015-C-0010-01		015-S-0010-05		015-S-0010-10		015-S-0011-01	
	ORIGINAL ID ----->	015S000910		015S001001		015C001001		015S001005		015S001010		015S001101	
	LAB SAMPLE ID --->	S554878A*1		S554878*6		S554878*7		S554878A*2		S554878A*3		S554929*11	
	ID FROM REPORT -->	015S000910		015S001001		015C001001		015S001005		015S001010		0155001101	
	SAMPLE DATE ----->	09/01/95		09/01/95		09/01/95		09/01/95		09/01/95		09/05/95	
	DATE EXTRACTED -->	09/07/95		09/07/95		09/07/95		09/07/95		09/07/95		09/08/95	
	DATE ANALYZED --->	09/19/95		09/20/95		09/19/95		09/19/95		09/19/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP04	VAL	ENP04	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL
85-68-7	Butylbenzylphthalate	340.	UJ	370.	U	360.	UJ	350.	UJ	350.	UJ	350.	U
86-74-8	carbazole	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
218-01-9	Chrysene	340.	U	40.	J	51.	J	350.	U	350.	U	33.	J
84-74-2	Di-n-butylphthalate	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
117-84-0	Di-n-octyl phthalate	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
53-70-3	Dibenz(a,h)anthracene	140.	U	160.	U	150.	U	150.	U	150.	U	150.	U
132-64-9	Dibenzofuran	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
84-66-2	Diethylphthalate	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
131-11-3	Dimethyl phthalate	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
206-44-0	Fluoranthene	340.	U	45.	J	34.	J	350.	U	350.	U	29.	J
86-73-7	Fluorene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
118-74-1	Hexachlorobenzene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
87-68-3	Hexachlorobutadiene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
77-47-4	Hexachlorocyclopentadiene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
67-72-1	Hexachloroethane	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U	24.	J	360.	U	350.	U	350.	U	17.	J
78-59-1	Isophorone	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
621-64-7	N-Nitroso-di-n-propylamine	62.	U	66.	U	66.	U	63.	U	63.	U	64.	U
122-39-4	Diphenylamine	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
91-20-3	Naphthalene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
98-95-3	Nitrobenzene	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
87-86-5	Pentachlorophenol	830.	U	890.	U	880.	U	840.	U	840.	U	860.	U
85-01-8	Phenanthrene	340.	U	16.	J	360.	U	350.	U	350.	U	10.	J
108-95-2	Phenol	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
129-00-0	Pyrene	340.	U	48.	J	39.	J	350.	U	350.	U	35.	J
111-91-1	bis(2-Chloroethoxy)methane	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
111-44-4	bis(2-Chloroethyl)ether	340.	U	370.	U	360.	U	350.	U	350.	U	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	340.	UJ	370.	U	360.	UJ	350.	UJ	350.	UJ	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-C-0011-01		015-S-0011-05		015-S-0011-09		015-S-0012-01		015-S-0012-05		015-S-0012-10	
	ORIGINAL ID ----->	015C001101		015S001105		015S001109		015S001201		015S001205		015S001210	
	LAB SAMPLE ID --->	S554929*12		S554929*13		S554929*14		S554929*15		S554929*16		S554929*17	
	ID FROM REPORT -->	015C001101		015S001105		015S001109		5155001201		015S001205		0155001210	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		39/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		39/08/95		09/08/95		09/19/95	
	DATE ANALYZED --->	09/26/95		09/19/95		09/20/95		39/19/95		09/ 19/95			
	MATRIX ---------->	soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		JG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP06	VAL
120-82-1	1,2,4-Trichlorobenzene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
95-50-1	1,2-Dichlorobentene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
541-73-1	1,3-Dichlorobenzene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
106-46-7	1,4-Dichlorobenzene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
95-95-4	2,4 ,5-Trichlorophenol	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
88-06-2	2,4,6-Trichlorophenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
120-83-2	2,4-Dichlorophenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
105-67-9	2,4-Dimethylphenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
51-28-5	2,4-Dinitrophenol	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
121-14-2	2,4-Dinitrotoluene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
606-20-2	2,6-Dinitrotoluene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
91-58-7	2-Chloronaphthelene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
95-57-8	2-Chtorophenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
91-57-6	2-Methylnaphthalene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
95-48-7	2-Methylphenol (o-Cresol)	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
88-74-4	2-Nitroaniline	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
88-75-5	2-Nitrophenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
999900-32-2	3-Methylphenol/4-Methylphenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
99-09-2	3-Nitroaniline	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
101-55-3	4-Bromophenyl-phenylether	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
59-50-7	4-Chloro-3-methylphenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
106-47-8	4-Chloroaniline	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
7005-72-3	4-Chlorophenylphenylether	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
100-01-6	4-Nitroaniline	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
100-02-7	4-Mitrophenol	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
83-32-9	Acenephthene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
208-96-8	Acenaphthylene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
120-12-7	Anthracene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
56-55-3	Benzo(a)anthracene	20.	J	350.	U	350.	U	350.	U	350.	U	350.	U
50-32-8	Benzo(a)pyrene	150.	U	150.	U	150.	U	150.	U	150.	U	150.	U
205-99-2	Benzo(b)fluoranthene	36.	J	350.	U	350.	U	350.	U	350.	U	350.	U
191-24-2	Benzo(g,h,i)perylene	18.	J	350.	U	350.	U	350.	U	350.	U	350.	U
207-08-9	Benzo(k)fluoranthene	11.	J	350.	U	350.	U	350.	U	350.	U	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA															
	SAMPLE ID ------->	015-C-0011-01		015-S-0011-05		015-S-0011-09		015-S-0012-01		015-S-0012-05		015-S-0012-10	
	ORIGINAL ID ----->	015C001101		015S001105		1155001109		015S001201		015S001205		015S001210	
	LAB SAMPLE ID --->	S554929*12		S554929*13		S554929*14		S554929*15		S554929*16		S554929*17	
	ID FROM REPORT -->	015C001101		015S001105		015S001109		015S001201		015S001205		015S001210	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/08/95		09/08/95		09/08/95	
	DATE ANALYZED --->	09/26/95		09/19/95		09/20/95		09/19/95		09/19/95		09/19/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP05	VAL	ENP06	VAL
85-68-7	Butylbenzylphthalate	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
86-74-8	Carbazole	360.	U	350.	U	354.	U	350.	U	350.	U	350.	U
218-01-9	Chrysene	24.	J	350.	U	350.	U	350.	U	350.	U	350.	U
84-74-2	Di-n-butylphthalate	16.	J	350.	U	350.	U	47.	J	350.	U	350.	U
117-84-0	Di-n-octyl phthalate	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
53-70-3	Dibenz(a,h)anthracene	150.	U	150.	U	150.	U	150.	U	150.	U	150.	U
132-64-9	Dibenzofuran	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
84-66-2	Diethylphthalate	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
131-11-3	Dimethyl phthalate	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
206-44-0	Fluoranthene	26.	J	350.	U	350.	U	13.	J	354.	U	350.	U
86-73-7	Fluorene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
118-74-1	Hexachlorobenzene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
87-68-3	Hexachlorobutadiene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
77-47-4	Hexachlorocyclopentadiene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
67-72-1	Hexachloroethane	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	14.	J	350.	U	350.	U	350.	U	350.	U	350.	U
78-59-1	Isophorone	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
621-64-7	N-Nitroso-di-n-propylamine	65.	U	64.	U	63.	U	64.	U	64.	U	63.	U
122-39-4	Diphenylamine	360.	U	350.	U	350.	U	350.	U	350.	U	340.	U
91-20-3	Naphthalene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
98-95-3	Nitrobenzene	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
87-86-5	Pentachlorophenol	870.	U	850.	U	840.	U	860.	U	850.	U	840.	U
85-01-8	Phenanthrene	9.	J	350.	U	350.	U	350.	U	350.	U	350.	U
108-95-2	Phenol	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
129-00-0	Pyrene	28.	J	350.	U	350.	U	15.	J	350.	U	7.	J
111-91-1	bis(2-Chloroethoxy)methane	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
111-44-4	bis(2-Chloroethyl)ether	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	360.	U	350.	U	350.	U	350.	U	350.	U	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0013-01		015-S-0013-05		015-S-0013-10		015-S-0014-01		015-S-0014-05		015-S-0014-10	
	ORIGINAL ID ----->	015S001301		015S001305		015S001310		015S001401		015S001405		015S001410	
	LAB SAMPLE ID --->	S554929*18		S554929*19		S554929*20		S554970*8		S554970*9		S554970*10	
	ID FROM REPORT -->	015S001301		015S001305		015S001310		015S001401		0155001405		015S001410	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		39/07/95		09/07/95		09/07/95	
	DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/19/95		09/19/95		09/19/95		09/20/95		09/20/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
120-82-1	1,2,4-Trichlorobenzene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
95-50-1	1,2-Dichlorobenzene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
541-73-1	1,3-Dichlorobenzene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
106-46-7	1,4-Dichlorobenzene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
95-95-4	2,4,5-Trichlorophenol	820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
88-06-2	2,4,6-Trichlorophenol	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
120-83-2	2,4-Dichlorophenol	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
105-67-9	2,4-Dimethylphenol	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
51-28-5	2,4-Dinitrophenol	820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
121-14-2	2,4-Dinitrotoluene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
606-20-2	2,6-Dinitrotoluene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
91-58-7	2-Chloronaphthalene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
95-57-8	2-Chlorophenol	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
91-57-6	2-Methylnaphthalene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
95-48-7	2-Methylphenol (o-Cresol)	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
88-74-4	2-Nitroaniline	820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
88-75-5	2-Nitrophenol	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
999900-32-2	3-Methylphenol/4-Methylphenol	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
99-09-2	3-Nitroaniline	820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
101-55-3	4-Bromophenyl-phenylether	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
59-50-7	4-Chloro-3-methylphenol	340,	U	340.	U	340.	U	360.	U	340.	U	350.	U
106-47-8	4-Chloroaniline	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
7005-72-3	4-Chlorophenylphenylether	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
100-01-6	4-Nitroaniline	820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
100-02-7	4-Nitrophenol	820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
83-32-9	Acenaphthene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
208-96-8	Acenaphthylene	340.	U	340.	U	340.	U	360.	U	0.4	J	350.	U
120-12-7	Anthracene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
56-55-3	Benzo(a)anthracene	340.	U	340.	U	340.	U	10.	J	340.	U	350.	U
50-32-8	Benzo(a)pyrene	140.	U	140.	U	140.	U	11.	J	140.	U	150.	U
205-99-2	Benzo(b)fluoranthene	340,	U	340.	U	340.	U	18.	J	340.	U	350.	U
191-24-2	Benzo(g,h,i)perylene	340.	U	340.	U	340.	U	12.	J	340.	U	350.	U
207-08-9	Benzo(k)fluoranthene	340.	U	340.	U	340.	U	360.	U	340.	U	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA															
		SAMPLE ID ------->	015-S-0013-01		015-S-0013-05		015-S-0013-10		015-S-0014-01		015-S-0014-05		015-S-0014-10	
		ORIGINAL ID ----->	015S001301		015S001305		0155001310		015S001401		015S001405		015S001410	
		LAB SAMPLE ID --->	S554929*18		S554929*19		S554929*20		S554970*8		S554970*9		S554970*10	
		ID FROM REPORT -->	015S001301		015S001305		015S001310		015S001401		0155001405		015S001410	
		SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/07/95		09/07/95		09/07/95	
		DATE EXTRACTED -->	09/08/95		09/08/95		09/08/95		09/11/95		09/11/94		09/11/95	
		DATE ANALYZED --->	09/19/95		09/19/95		09/19/95		09/20/95		09/20/95		09/20/95	
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter		ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP07	VAL	ENP07	VAL	ENP07	VAL
85-68-7	Butylbenzylphthalate		340.	U	340.	U	340.	U	35.	J	25.	J	22.	J
86-74-8	Carbazole		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
218-01-9	Chrysene		340.	U	340.	U	340.	U	12.	J	340.	U	350.	U
84-74-2	Di-n-butylphthalate		340.	U	340.	U	340.	U	17.	J	340.	U	350.	U
117-84-0	Di-n-octyl phthalate		340.	U	340.	U	340.	U	360.	UJ	340.	UJ	350.	UJ
53-70-3	Dibenz(a,h)anthracene		140.	U	140.	U	140.	U	150.	U	140.	U	150.	U
132-64-9	Dibenzofuran		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
84-66-2	Diethylphthalate		340.	U	340.	U	340.	U	360.	U	340.	U	13.	J
131-11-3	Dimethyl phthalate		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
206-44-0	Fluoranthene		340.	U	340.	U	340.	U	15.	J	340.	U	350.	U
86-73-7	fluorene		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
118-74-1	Hexachlorobenzene		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
87-68-3	Hexachlorobutadiene		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
77-47-4	Hexachlorocyclopentadiene		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
67-72-1	Hexachloroethane		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene		340.	U	340.	U	340.	U	11.	J	340.	U	350.	U
78-59-1	Isophorone		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
621-64-7	N-Nitroso-di-n-propylamine		62.	U	61.	U	62.	U	65.	U	62.	U	63.	U
122-39-4	Diphenylamine		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
91-20-3	Naphthalene		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
98-95-3	Nitrobenzene		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
87-86-5	Pentachlorophenol		820.	U	820.	U	830.	U	870.	U	830.	U	840.	U
85-01-8	Phenanthrene		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
108-95-2	Phenol		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
129-00-0	Pyrene		340.	U	340.	U	340.	U	15.	J	340.	U	2.	J
111-91-1	bis(2-Chloroethoxy)methane		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
111-44-4	bis(2-Chloroethyl)ether		340.	U	340.	U	340.	U	360.	U	340.	U	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)		340.	U	340.	U	340.	U	360.	UJ	340.	UJ	700.	UJ

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

	SAMPLE ID ------->	015-S-0015-01		015-S-0015-05		015-S-0015-10		015-S-0016-01 RE		015-S-0016-05		315-S-0016-10	
	ORIGINAL ID ----->	015S001501		0155001505		015S001510		015S001601		015S001605		015S001610	
	LAB SAMPLE ID --->	S554970*11		S554970*12		S554970*13		S554843*25		S554843*4		S554843*5	
	ID FROM REPORT -->	015S001501		015S001505		015S001510		015S001601		015S001605		D15S001610	
	SAMPLE DATE ----->	09/07/95		09/07/95		09/07/95		08/30/95		08/30/95		D8/30/95	
	DATE EXTRACTED -->	09/ 11/95		09/11/95		09/11/95		09/06/95		09/06/94		09/06/05	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/15/95		09/12/95		09/ 12/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soi 1		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP07	VAL	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
120-82-1	1,2,4-Trichlorobenzene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
95-50-1	1,2-Dichlorobenzene	350.	U	340.	U	340.	U	340.	U	340.	U	360.	U
541-73-1	1,3-Dichlorobenzene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
106-46-7	1,4-Dichlorobenzene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
95-95-4	2,4,5-Trichlorophenol	860.	U	830.	U	830.	U	830.	U	830.	U	820	U
88-06-2	2,4,6-Trichlorophenol	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
120-83-2	2,4-Dichlorophenol	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
105-67-9	2,4-Dimethylphenol	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
51-28-5	2,4-Dinitrophenol	860.	U	830.	U	830.	U	830.	U	830.	U	820.	U
121-14-2	2,4-Dinitrotoluene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
606.2 0-2	2,6-Dinitrotoluene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
91-58-7	2-Chloronaphthalene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
95-57-8	2-Chlorophenol	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
91-57-6	2-Methylnaphthalene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
95-48-7	2-Methylphenol (o-Cresol)	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
88-74-4	2-Nitroaniline	860.	U	830.	U	830.	U	830.	U	830.	U	820.	U
88-75-5	2-Nitrophenol	350.	U	340.	U	340.	U	340.	U	340.	U	360	U
91-94-1	3,3'-Dichlorobenzidine	350.	U	340.	U	340.	U	340.	UJ	340.	U	340.	U
999900-32-2	3-Methylphenol/4-Methylphenol	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
99-09-2	3-Nitroaniline	860.	U	830.	U	830.	U	830.	U	830.	U	820.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	860.	U	830.	U	830.	U	830.	U	830.	U	820.	U
101-55-3	4-Bromophenyl-phenylether	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
59-50-7	4-Chloro-3-methylphenol	350.	U	340.	U	340.	U	340.	U	340.	U	346.	U
106-47-8	4-Chloroaniline	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
7005-72-3	4-Chlorophenylphenylether	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
100-01-6	4-Nitroaniline	860.	U	830.	U	830.	U	830.	U	830.	U	820.	U
100-02-7	4-Nitrophenol	860.	U	830.	U	830.	U	830.	U	830.	U	020.	U
83-32-9	Acenaphthene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
208-96-8	Acenaphthylene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
120-12-7	Anthracene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
56-55-3	Benzo(a)anthracene	350.	U	340.	U	340.	U	33.	J	340.	U	340.	U
50-32-8	Benzo(a)pyrene	8.	J	140.	U	140.	U	140.	UJ	140.	U	140.	U
205-99-2	Benzo(b)fluoranthene	22.	J	340.	U	340.	U	53.	J	340.	U	340.	U
191-24-2	Benzo(g,h,i)perylene	11.	J	340.	U	340.	U	340.	UJ	340.	U	340.	U
207-08-9	Benzo(k)fluarenthene	350.	U	340.	U	340.	U	24.	J	340.	U	340.	U

*** Validation Complete ***

SVOA													
	SAMPLE ID ------->	015-S-0015-01		015-S-0015-05		015-S-0015-10		015-S-0016-01 RE		015-S-0016-05		015-S-0016-10	
	ORIGINAL ID ----->	015S001501		015S001505		015S001510		015S001601		015S001605		015S001610	
	LAB SAMPLE ID --->	S554970*11		S554970*12		S554970*13		S554843*25		S554843*4		S554843*5	
	ID FROM REPORT -->	015S001501		015S001505		015S001510		015S001601		015S001605		015S001610	
	SAMPLE DATE ----->	09/07/95		09/07/95		09/07/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/11/95		09/11/95		09/11/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/15/95		09/12/95		09/12/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP07	VAC	ENP07	VAL	ENP07	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
85-68-7	Butylbenzylphthalate	34.	J	28.	J	340.	UJ	340.	UJ	340.	UJ	340.	UJ
86-74-8	Carbazole	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
218-01-9	Chrysene	17.	J	340.	U	340.	U	45.	J	340.	U	340.	U
84-74-2	Di-n-butylphthalate	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
117-84-0	Di-n-octyl phthalate	350.	UJ	340.	UJ	340.	UJ	340.	UJ	340.	UJ	340.	UJ
53-70-3	Dibenz(a,h)anthracene	150.	U	140.	U	140.	U	140.	UJ	140.	U	140.	U
132-64-9	Dibenzofuran	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
84-66-2	Diethylphthalate	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
131-11-3	Dimethyl phthalate	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
206-44-0	Fluoranthene	20.	J	340.	U	340.	U	75.	J	340.	U	340.	U
86-73-7	Fluorene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
118-74-1	Hexachlorobenzene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
87-68-3	Hexachlorobutadiene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
67-72-1	Hexachloroethane	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	8.	J	340.	U	340.	U	340.	UJ	340.	U	340.	U
78-59-1	Isophorone	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine	64.	U	62.	U	62.	U	62.	U	62.	U	62.	U
122-39-4	Diphenylamine	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
91-20-3	Naphthalene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
98-95-3	Nitrobenzene	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
87-86-5	Pentachlorophenol	860.	U	830.	U	830.	U	830.	U	030.	U	820.	U
85-01-8	Phenanthrene	7.	J	340.	U	340.	U	25.	J	340.	U	340.	U
108-95-2	Phenol	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
129-00-0	Pyrene	20.	J	340.	U	340.	U	89.	J	340.	U	340.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether	350.	U	340.	U	340.	U	340.	U	340.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	UJ	340.	UJ	340.	UJ	95.	J	340.	U	340.	U

*** Validation Complete ***

DATALCP3
05/08/97

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA															
	SAMPLE ID ------->	015-S-0017-01 RE		015-S-0017-05		015-S-0017-10		015-S-0018-01		015-S-0018-05			
	ORIGINAL ID ----->	015S001701		015S001705		015S001710		015S001801		0158001805		0155001810	
	LAB SAMPLE ID --->	S554843*26		S554843*7		S554843*8		S554843*9		S554843*10		S554843*11	
	ID FROM REPORT -->	015S001701		015S001705		015S001710		015S001801		015S001805		0155001810	
	SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/15/95		09/15/95		09/16/95		09/12/95		09/16/95		09/16/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
120-82-1	1,2,4-Trichlorobenzene	350.	U	340.	U	340,	U	350.	U	340.	U	340.	U
95-50-1	1,2-Dichlorobenzene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
541-73-1	1,3-Dichlorobenzene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
106-46-7	1,4-Dichlorobenzene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	350.	U	340.	U	340.	U	350.	U	340.	U		
95-95-4	2,4,5-Trichlorophenol	850.	U	820.	U	820.	U	840.	U	820.	U		
88-06-2	2,4,6-Trichlorophenol	350.	U	340.	U	340.	U	350.	U	340.	U		
120-83-2	2,4-Dichlorophenol	350.	U	340.	U	340.	U	350.	U	340.	U		
105-67-9	2,4-Dimethylphenol	350.	U	340.	U	340.	U	350.	U	340.	U		
51-28-5	2,4-Dinitrophenol	850.	U	820.	U	820.	U	840.	U	820.	U		
121-14-2	2,4-Dinitrotoluene	350.	U	340.	U	340.	U	350.	U	340.	U		
606-20-2	2,6-Dinitrotoluene	350.	U	340.	U	340.	U	350.	U	340.	U		
91-58-7	2-Chloronaphthalene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	
95-57-8	2-Chlorophenol	350.	U	340.	U	340.	U	350.	U	340.	U	340.	
91-57-6	2-Methylnaphthalene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	
95-48-7	2-Methylphenol (a-Cresol)	350.	U	340.	U	340.	U	350.	U	340.	U	340.	
88-74-4	2-Nitroaniline	850.	U	820.	U	820.	U	840.	U	820.	U	820.	
88-75-5	2-Nitrophenol	350.	U	340.	U	340.	U	350.	U	340.	U	340.	
91-94-1	3,3'-Dichlorobenzidine	350.	UJ	340.	U	340.	U	350.	U	340.	U		
999900-32-2	3-Methylphenol/4-Methylphenol	350.	U	340.	U	340.	U	350.	U	340.	U		
99-09-2	3-Nitroaniline	850.	U	820.	U	820.	U	840.	U	820.	U		
534-52-1	2-Methyl-4,6-Dinitrophenol	850.	U	820.	U	820.	U	840.	U	820.	U		
101-55-3	4-Bromophenyl-phenylether	350.	U	340.	U	340.	U	350.	U	340.	U		
59-50-7	4-Chloro-3-methylphenol	350.	U	340.	U	340.	U	350.	U	340.	U		
106-47-8	4-Chloroaniline	350.	U	340.	U	340.	U	350.	U	340.	U		
7005-72-3	4-Chlorophenylphenylether	350.	U	340.	U	340.	U	350.	U	340.	U		
100-01-6	4-Nitroaniline	850.	U	820.	U	820.	U	840.	U	820.	U		
100-02-7	4-Nitrophenol	850.	U	820.	U	820.	U	840.	U	820.	U		
83-32-9	Acenaphthene	350.	U	340.	U	340.	U	350.	U	340.	U		
208-96-8	Acenaphthylene	350.	U	340.	U	340.	U	350.	U	340.	U		
120-12-7	Anthracene	350.	U	340.	U	340.	U	350.	U	340.	U		
56-55-3	Benzo(a)anthracene	350.	UJ	340.	U	340.	U	350.	U	340.	U		
50-32-8	Benzo(a)pyrene	150.	UJ	140.	U	140.	U	150.	U	140.	U		
205-99-2	Benzo(b)fluorenthene	350.	UJ	340.	U	340.	U	350.	U	340.	U		
191-24-2	Benzo(g,h,i)perylene	350.	UJ	340.	U	340.	U	350.	U	340.	U		
207-08-9	Benzo(k)fluoranthene	350.	UJ	340.	U	340.	U	350.	U	340.	U		

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0017-01 RE		015-S-0017-05		015-S-0017-10		015-S-0018-01		015-S-0018-05		015-S-0018-10	
	ORIGINAL ID ----->	015S001701		015S001705		015S001710		015S001801		015S001805		015S001810	
	LAB SAMPLE ID --->	S554843*26		S554843*7		S554843*8		S554843*9		S554843*10		S554843*11	
	ID FROM REPORT -->	015S001701		015S001705		015S001710		015S001801		015S001805		015S001810	
	SAMPLE DATE ----->	08/30/95		08/30/95		08/30/95		08/30/95		08/30/95		08/30/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/15/95		09/15/95		09/16/95		09/12/95		09/16/95		09/16/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
85-68-7	Butylbenzylphthalate	350.	UJ	340.	U	340.	U	350.	UJ	340.	U	340.	U
86-74-8	Carbazole	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
218-01-9	Chrysene	350.	UJ	340.	UJ	340.	U	350.	U	340.	U	340.	U
84-74-2	Di-n-butylphthalate	350.	U	340.	U	340.	U	45.	J	340.	U	340.	U
117-84-0	Di-n-octyl phthalate	350.	UJ	340.	U	340.	U	350.	UJ	340.	U	340.	U
53-70-3	Dibenz(a,h)anthracene	150.	UJ	140.	U	140.	U	150.	U	140.	U	140.	U
132-64-9	Dibenzpfuran	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
84-M-2	Diethylphthalate	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
131-11-3	Dimethyl phthalate	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
206-44-0	Fluoranthene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
86-73-7	Fluorene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
118-74-1	Hexachlorobenrene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
87-68-3	Hexachlorobutadiene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
67-72-1	Hexachloroethane	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	UJ	340.	U	340.	U	350.	U	340.	U	340.	U
78-59-1	Isophorone	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine	64.	U	62.	U	62.	U	63.	U	62.	U	62.	U
122-39-4	Diphenylamine	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
91-20-3	Naphthalene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
98-95-3	Nitrobenzene	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
87-86-5	Pentachlorophenol	850.	U	820.	U	820.	U	840.	U	820.	U	820.	U
85-01-8	Phenanthrene	350.	U	14.	J	12.	J	350.	U	340.	U	340.	U
108-95-2	Phenol	350.	U	340.	U	340.	U	350.	U	346.	U	340.	U
129-00-0	Pyrene	350.	UJ	340.	U	340.	U	350.	U	340.	U	340.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether	350.	U	340.	U	340.	U	350.	U	340.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	UJ	340.	U	340.	U	350.	U	340.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0020-01		015-C-0020-01		015-S-0020-05		015-S-0020-08		015-S-0021-01		015-S-0021-05	
	ORIGINAL ID ----->	015S002001		015C002001		0158002005		0158002008		015S002101		0158002105	
	LAB SAMPLE ID --->	S554843*12		S554843A*13		S554843*13		S554843*14		S554843*15		S554843*16	
	ID FROM REPORT -->	015S002001		015C002001		015S002005		0158002008		015S002101		015S002105	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE EXTRACTED -->	09/06/95		09/05/95		09/06/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/16/95		09/18/95		09/12/95		09/12/95		09/16/95		09/16/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP04	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
120-82-1	1,2,4-Trichlorobenzene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
95-50-1	1,2-Dichlorobenzene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
541-73-1	1,3-Dichlorobenzene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
106-46-7	1,4-Dichlorobenzene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
95-95-4	2,4,5-Trichlorophenol	830.	U	830.	U	830.	U	840.	U	870.	U	840.	U
88-06-2	2,4,6-Trichlorophenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
120-83-2	2,4-Dichlorophenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
105-67-9	2,4-Dimethylphenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
51-28-5	2,4-Dinitrophenol	830.	U	830.	UR	830.	U	840.	U	870.	U	840.	U
121-14-2	2,4-Dinitrotoluene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
606-20-2	2,6-Dinitrotoluene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
91-58-7	2-Chloronaphthalene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
95-57-8	2-Chlorophenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
91-57-6	2-Methylnaphthalene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
95-48-7	2-Methylphenol (o-Cresol)	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
88-74-4	2-Nitroaniline	830.	U	830.	U	830.	U	840.	U	870.	U	840.	U
88-75-5	2-Nitrophenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
99999900-32-2	3-Methylphenol/4-Methylphenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
99-09-2	3-Nitroaniline	830.	U	830.	U	830.	U	840.	U	870.	U	840.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	830.	U	830.	UJ	830.	U	840.	U	870.	U	840.	U
101-55-3	4-Bromophenyl-phenylether	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
59-50-7	4-Chloro-3-methylphenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
106-47-8	4-Chloroaniline	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
7005-72-3	4-Chlorophenylphenylether	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
100-01-6	4-Nitroaniline	830.	U	830.	U	830.	U	840.	U	870.	U	840.	U
100-02-7	4-Nitrophenol	830.	U	830.	U	830.	U	840.	U	870.	U	840.	U
83-32-9	Acenaphthene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
208-96-8	Acenaphthylene	340.	U	340.	U	340.	U	350.	U	100.	J	350.	U
120-12-7	Anthracene	340.	U	340.	U	340.	U	350.	U	230.	J	350.	U
56-55-3	Benzo(a)anthracene	340.	U	340.	U	340.	U	350.	U	1700.		350.	U
50-32-8	Benzo(a)pyrene	140.	U	140.	U	140.	U	150.	U	1100.		150.	U
205-99-2	Benzo(b)fluoranthene	340.	U	340.	U	340.	U	350.	U	2600.		350.	U
191-24-2	Benzo(g,h,i)perylene	340.	U	340.	U	340.	U	350.	U	600.		350.	U
207-08-9	Benzo(k)fluoranthene	340.	U	340.	U	340.	U	350.	U	830.		350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0020-01		015-C-0020-01		015-S-0020-05		015-S-0020-08		015-S-0021-01		015-S-0021-05	
	ORIGINAL ID ----->	015S002001		015C002001		015S002005		015S002008		015S002101		0155002105	
	LAB SAMPLE ID --->	S554843*12		S554843A*13		S554843*13		S554843*14		S554843*15		S554843*16	
	ID FROM REPORT -->	015S002001		015C002001		015S002005		015S002008		015S002101		0155002105	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/94	
	DATE EXTRACTED -->	09/06/95		09/05/95		09/06/95		09/06/95		09/06/95		09/06/95	
	DATE ANALYZED --->	09/16/95		09/18/95		09/12/95		09/12/95		09/16/95		09/16/95	
	MATRIX ---------->	Soil		soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP04	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP03	VAL
85-68-7	Butylbenzylphthalate	340.	U	340.	UJ	340.	UJ	350.	UJ	360.	U	350.	U
86-74-8	Carbazole	340.	U	340.	U	340.	U	350.	U	110.	J	350.	U
218-01-9	Chrysene	340.	U	340.	U	340.	U	350.	U	2200.		350.	U
84-74-2	Di-n-butylphthalate	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
117-84-0	Di-n-octyl phthalate	340.	U	340.	U	340.	UJ	350.	UJ	360.	U	350.	U
53-70-3	Dibenz(a,h)anthracene	140.	U	140.	U	140.	U	150.	U	150.	U	150.	U
132-64-9	Dibenzofuran	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
84-66-2	Diethylphthalate	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
131-11-3	Dimethyl phthalate	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
206-44-0	Fluoranthene	10.	J	340.	U	340.	U	350.	U	1900.		350.	U
86-73-7	Fluorene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
118-74-1	Hexachlorobenzene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
87-68-3	Hexachlorobutadiene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
77-47-4	Hexachlorocyclopentadiene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
67-72-1	Hexachloroethane	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U	340.	U	340.	U	350.	U	740.		350.	U
78-59-1	Isophorone	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
621-64-7	N-Nitroso-di-n-propylamine	62.	U	62.	U	62.	U	63.	U	65.	U	63.	U
122-39-4	Diphenylamine	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
91-20-3	Naphthalene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
98-95-3	Nitrobenzene	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
87-86-5	Pentachlorophenol	830.	U	830.	U	830.	U	840.	U	870.	U	840.	U
85-01-8	Phenanthrene	340.	U	340.	U	340.	U	350.	U	290.	J	350.	U
108-95-2	Phenol	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
129-00-0	Pyrene	12.	J	340.	U	340.	U	350.	U	2200.		350.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
111-44-4	bis(2-Chloroethyl)ether	340.	U	340.	U	340.	U	350.	U	360.	U	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	340.	U	340.	UJ	340.	U	350.	U	360.	U	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA															
		SAMPLE ID ------->	015-S-0021-08		015-S-0022-01		015-S-0022-05		015-S-0022-08		015-S-0023-01		015-S-0023-05	
		ORIGINAL ID ----->	015S002108		015S002201		015S002205		015S002208		0158002301		015S002305	
		LAB SAMPLE ID --->	S554843*17		S554843*18		S554843*19		S554843A*1		S554843A*2		S554843A*3	
		ID FROM REPORT -->	015S002108		0159002201		0158002205		0155002208		015S002301		015S002305	
		SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
		DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/05/95		09/05/95		09/05/95	
		DATE ANALYZED --->	09/ 12/95		09/17/95		09/17/95		09/17/95		09/17/95		09/17/95	
		MATRIX ---------->	Soi1		Soil		Soil		soil		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter		ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
120-82-1	1,2,4-Trichlorobenzene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
95-50-1	1,2-Dichlorobenzene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
541-73-1	1,3-Dichlorobenzene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
106-46-7	1,4-Dichlorobenzene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
95-95-4	2,4,5-Trichlorophenol		830.	U	830.	U	840.	U	840.	U	820.	U	840.	U
88-06-2	2,4,6-Trichlorophenol		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
120-83-2	2,4-Dichlorophenol		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
105-67-9	2,4-Dimethylpheno1		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
51-28-5	2,4-Dinitrophenol		830.	U	830.	U	840.	U	840.	U	820.	U	840.	U
121-14-2	2,4-Dinitrotoluene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
606-20-2	2,6-Dinitrotoluene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
91-58-7	2-Chloronaphthalene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
95-57-8	2-Chlorophenol		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
91-57-6	2-Methylnaphthalene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
95-48-7	2-Methylphenol (o-Cresol)		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
88-74-4	2-Nitroaniline		830.	U	830.	U	840.	U	840.	U	820.	U	840.	U
88-75-5	2-Nitrophenol		340.	U	340.	U	350,	U	350.	U	340.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
9WOO-32-2	3-Methylphenol/4-Methylphenol		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
99-09-2	3-Nitroaniline		830.	U	830.	U	840.	U	840.	U	820.	U	840.	U
534-52-1	2-Methyl-4,6-Dinitrophenol		830.	U	830.	U	840.	U	5.	J	820.	U	840.	U
101-55-3	4-Bromophenyl-phenylether		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
59-50-7	4-Chloro-3-methylphenol		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
106-47-8	4-Chloroaniline		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
7005-72-3	4-Chlorophenylphenylether		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
100-01-6	4-Nitroani Line		830.	U	830.	U	840.	U	840.	U	820.	U	840.	U
100-02-7	4-Nitrophenol		830.	U	830.	U	840.	U	840.	U	820.	U	840.	U
83-32-9	Acenaphthene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
208-96-8	Acenaphthylene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
120-12-7	Anthracene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
56-55-3	Benzo(a)anthracene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
50-32-8	Benzo(a)pyrene		140.	U	140.	U	150.	U	150.	U	140.	U	150.	U
205-99-2	Benzo(b)fluoranthene		340.	U	340.	U	350.	U	350.	U	340.	U	54.	J
191-24-2	Benzo(g,h,i)perylene		340.	U	340.	U	350.	U	350.	U	340.	U	19.	J
207-08-9	Benzo(k)fluoranthene		340.	U	340.	U	350.	U	350.	U	340.	U	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0021-08		015-S-0022-01		015-S-0022-05		015-S-0022-08		015-S-0023-01		015-S-0023-05	
	ORIGINAL ID ----->	015S002108		0155002201		S554843*17		015S002205		015S002208		015S002301	
	LAB SAMPLE ID --->	S554843*17		S554843*18		S554843*19		S554843A*1		S554843A*2		S554843A*3	
	ID FROM REPORT -->	015S002108		015S002201		015S002205		0155002208		015S002301		015S002305	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE EXTRACTED -->	09/06/95		09/06/95		09/06/95		09/05/95		09/95/95		09/05/94	
	DATE ANALYZED --->	09/12/95		09/17/95		09/17/95		09/17/95		09/17/95		09/17/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP03	VAL	ENP03	VAL	ENP03	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
85-68-7	Butylbenzylphthalate	340.	UJ	340.	U	350.	U	350.	U	340.	U	350.	U
86-74-8	Carbazole	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
218-01-9	Chrysene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
84-74-2	Di-n-butylphthalate	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
117-84-0	Di-n-octyl phthalate	340.	UJ	340.	U	350.	U	350.	U	340.	U	5.	J
53-70-3	Dibenz(a,h)anthracene	140.	U	140.	U	150.	U	150.	U	140.	U	150.	U
132-64-9	Dibenzofuran	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
84-66-2	Diethylphthalate	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
131-11-3	Dimethyl phthalate	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
206-44-0	Fluoranthene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
86-73-7	Fluorene	340.	U	340.	U	350.	U	0.6	J	340.	U	350.	U
118-74-1	Hexachlorobenzene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
87-68-3	Hexachlorobutadiene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
77-47-4	Hexachlorocyclopentadiene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
67-72-1	Hexachloroethane	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U	340.	U	350.	U	350.	U	340.	U	20.	J
78-59-1	Isophorone	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
621-64-7	N-Nitroso-di-n-propylamine	62.	U	62.	U	63.	U	63.	U	62.	U	63.	U
122-39-4	Diphenylamine	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
91-20-3	Naphthalene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
98-95-3	Nitrobenzene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
87-86-5	PcntachLorophenol	830.	U	830.	U	840.	U	840.	U	820.	U	840.	U
85-01-8	Phenanthrene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
108-95-2	Phenol	340.	U	340.	U	350.	U	350.	U	340.	U	380.	U
129-00-0	Pyrene	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
111-44-4	bis(2-Chloroethyl)ether	340.	U	340.	U	350.	U	350.	U	340.	U	350.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	340.	U	340.	U	16.	J	350.	U	46.	J	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0024-01		015-S-0024-05		015-S-0024-09		015-S-0025-01		015-S-0025-05		01s-S-0025-08	
	ORIGINAL ID ----->	015S002401		015S002405		0159002409		015S002501		015S002505		015S002508	
	LAB SAMPLE ID --->	S554843A*4		S554843A*5		S554843A*6		S554843A*7		S554843A*8		S554843A*9	
	ID FROM REPORT -->	0158002401		015S002405		015S002409		015S002501		015S002505		015S002508	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09f05/95	
	DATE ANALYZED --->	09/17/95		09/17/95		09/17/95		09/17/95		09/17/95		09/17/95	
	MATRIX ---------->	Soil		soil		Soil		soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL
120-82-1	1,2,4-Trichlorobenzene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
95-50-1	1,2-DichLorobenrene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
541-73-1	1,3-Dichlorobenzene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
106-46-7	1,4-Dichlorobenzene	350.	U	350.	U	350.	U	350.	U	350,	U	410.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
95-95-4	2,4,5-Trichlorophenol	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
88-06-2	2,4,6-Trichlorophenol	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
120-83-2	2,4-Dichlorophenol	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
105-67-9	2,4-Dimethylphenol	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
51-28-5	2,4-Dinitrophenol	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
121-14-2	2,4-Dinitrotoluene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
606-20-2	2,6-Dinitrotoluene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
91-58-7	2-Chloronaphthalene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
95-57-8	2-Chlorophenol	350.	U	350.	U	350.	U	350	U	350.	U	410.	U
91-57-6	2-Methylnaphthalene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
95-48-7	2-Methylphenol (a-Cresol)	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
88-74-4	2-Nitroaniline	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
88-75-5	2-Nitrophenol	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
91-94-1	3,3'-Dichlorobenzidine	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
999900-32-2	3-Methylphenol/4-Methylphenol	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
99-09-2	3-Nitroaniline	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
101-55-3	4-Bromophenyl-phenylether	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
59-50-7	4-Chloro-3-methylphenol	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
106-47-8	4-Chloroaniline	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
7005-72-3	4-Chlorophenylphenylether	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
100-01-6	4-Nitroaniline	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
100-02-7	4-Nitrophenol	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
83-32-9	Acenaphthene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
208-96-8	Acenaphthylene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
120-12-7	Anthracene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
56-55-3	Benzo(a)anthracene	350.	U	350.	U	350.	U	16.	J	350.	U	410.	U
50-32-8	Benzo(a)pyrene	150.	U	150.	U	150.	U	19.	J	150.	U	170.	U
205-99-2	Benzo(b)fluoranthene	350.	U	350.	U	350.	U	120.	J	350.	U	410.	U
191-24-2	Benzo(g,h,i)perylene	350.	U	350.	U	350.	U	32.	J	350.	U	410.	U
207-08-9	Benzo(k)fluoranthene	350.	U	350.	U	350.	U	54.	J	350.	U	410.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0024-01		015-S-0024-05		015-S-0024-09		015-S-0025-01		015-S-0025-05		015-S-0025-08	
	ORIGINAL ID ----->	015S002401		015S002405		015S002409		015S002501		015S002505		015S002508	
	LAB SAMPLE ID --->	S554843A*4		S554843A*5		S554843A*6		S554843A*7		S554843A*8		S554843A*9	
	ID FROM REPORT -->	015S002401		015S002405		0158002409		015S002501		015S002505		015S002508	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		08/31/95		08/31/95		08/31/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE ANALYZED --->	09/17/95		09/17/95		09/17/95		09/17/95		09/17/95		09/17/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENPM	VAL	ENP04	VAL
85-68-7	Butylbenzylphthalate	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
86-74-8	Carbazole	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
218-01-9	Chrysene	350.	U	350.	U	350.	U	17.	J	350.	U	410.	U
84-74-2	Di-n-butylphthalate	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
117-84-0	Di-n-octyl phthalate	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
53-70-3	Dibenz(a,h)anthracene	150.	U	150.	U	150.	U	150.	U	150.	U	170.	U
132-64-9	Dibenzofuran	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
84-66-2	Diethylphthalate	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
131-11-3	Dimethyl phthalate	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
206-44-0	Fluoranthene	350.	U	350.	U	350.	U	25.	J	350.	U	410.	U
86-73-7	Fluorene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
118-74-1	Hexachlorobenzene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
87-68-3	Hexachlorobutadiene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
67-72-1	Hexachloroethane	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	350.	U	350.	U	43.	J	350.	U	410.	U
78-59-1	Isophorone	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
621-64-7	W-Nitroso-di-n-propylamine	63.	U	63.	U	63.	U	64.	U	63.	U	75.	U
122-39-4	Diphenylamine	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
91-20-3	Naphthalene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
98-95-3	Nitrobenzene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
87-86-5	Pcntachlorophenol	840.	U	840.	U	840.	U	860.	U	840.	U	1000.	U
85-01-8	Phenanthrene	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
108-95-2	Phenol	350.	U	350.	U	350.	U	590.	U	350.	U	410.	U
129-00-0	Pyrene	12.	J	350.	U	350.	U	25.	J	350.	U	410.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
111-44-4	bis(2-Chloroethyl)ether	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	U	350.	U	350.	U	350.	U	350.	U	410.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0026-01		015-S-0026-05		015-S-0026-08		015-S-0027-01		015-S-0027-05		015-S-0027-10	
	ORIGINAL ID ----->	0153002601		0155002605		0158002608		0155002701		0155002705		0155002710	
	LAB FILE ID --->	S554843A*10		S554843A*11		S554843A*12		S554929*21		S554929*22		S554929*23	
	ID FROM REPORT -->	015S002601		0158002605		0158002608		0155002701		015S002705		015S002710	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		09/06/95		09/06/95		09/06/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/17/95		09/17/95		09/18/95		09/19/95		09/19/95		09/19/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Paremeter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
120-82-1	1,2,4-Trichlorobenzene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
95-50-1	1,2-Dichlorobenzene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
541-73-1	1,3-Dichlorobenzene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
106-46-7	1,4-Dichlorobenzene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
95-95-4	2,4,5-Trichlorophenol	830.	U	850.	U	870.	U	830.	U	820.	U	820.	U
88-06-2	2,4,6-Trichlorophenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
120-83-2	2,4-Dichlorophenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
105-67-9	2,4-Dimethylphenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
51-28-5	2,4-Dinitrophenot	830.	U	850.	U	870.	U	830.	U	820.	U	820.	U
121-14-2	2,4-Dinitrotoluene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
606-20-2	2,6-Dinitrotoluene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
91-58-7	2-Chloronaphthalene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
95-57-8	2-Chlorophenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
91-57-6	2-Methylnaphthalene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
95-48-7	2-Methylphenol (0-Cresol)	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
88-74-4	2-Nitroaniline	830.	U	850.	U	870.	U	830.	U	820.	U	820.	U
88-75-5	2-Nitrophenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
91-94-1	3,3'-Dichlorobenzidine	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
99-09-2	3-Nitroaniline	830.	U	850.	U	870.	U	830.	U	820.	U	820.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	830.	U	8.	J	870.	U	830.	U	820.	U	820.	U
101-55-3	4-Bromophenyl-phenylether	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
59-50-7	4-Chloro-3-methylphenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
106-47-8	4-Chloroaniline	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
7005-72-3	4-Chlorophenylphenylether	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
100-01-6	4-Nitroaniline	830.	U	850.	U	870.	U	830.	U	820.	U	820.	U
100-02-7	4-Nitrophenol	830.	U	850.	U	870.	U	830.	U	820.	U	820.	U
83-32-9	Acenaphthene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
208-W-8	Acenaphthylene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
120-12-7	Anthracene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
56-55-3	Benzo(a)anthracene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
50-32-8	Benzo(a)pyrene	140.	U	150.	U	150.	U	34.	J	140.	U	140.	U
205-99-2	Benzo(b)fluoranthene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
191-24-2	Benzo(g,h,i)perylene	340.	U	350.	U	360.	U	75.	J	340.	U	340.	U
207-08-9	Benzo(k)fluorenthene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0026-01		015-S-0026-05		015-S-0026-08		015-S-0027-01		015-S-0027-05		015-S-0027-10	
	ORIGINAL ID ----->	015S002601		015S002605		015S002608		015S002701		0159002705		0155002710	
	LAB SAMPLE ID --->	S554843A*10		S554843A*11		S554843A*12		S554929*21		S554929*22		S554929*23	
	ID FROM REPORT -->	0158002601		0158002605		015S002608		015S002701		015S002705		015S002710	
	SAMPLE DATE ----->	08/31/95		08/31/95		08/31/95		09/06/95		09/06/95		09/06/95	
	DATE EXTRACTED -->	09/05/95		09/05/95		09/05/95		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/17/95		09/17/95		09/18/95		09/19/95		09/19/95		09/19/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KO	
CAS #	Parameter	ENP04	VAL	ENP04	VAL	ENP04	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
85-68-7	Butylbenzylphthalate	340.	U	350.	U	360.	UJ	340.	U	340.	U	340.	U
86-74-8	Carbazole	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
218-01-9	Chrysene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
84-74-2	Di-n-butylphthalate	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
117-84-0	Di-n-octy1 phthalate	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
53-70-3	Dibenz(a, h)anthracene	140.	U	150.	U	150.	U	140.	U	140.	U	140.	U
132-64-9	Dibenzofuran	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
84-66-2	Diethylphthalate	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
131-11-3	Dimethyl phthalate	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
206-44-0	Fluoranthene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
86-73-7	Fluorene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
118-74-1	Hexachlorobenzene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
87-68-3	Hexachlorobutadiene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
67-72-1	Hexachloroethane	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
78-59-1	Isophorone	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine	62.	U	64.	U	65.	U	62.	U	62.	U	62.	U
122-39-4	Diphenylamine	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
91-20-3	Naphthalene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
98-95-3	Nitrobenzene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
87-86-5	Pentachlorophenol	830.	U	850.	U	870.	U	830.	U	820.	U	620.	U
85-01-8	Phenanthrene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
108-95-2	Phenol	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
129-00-0	Pyrene	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether	340.	U	350.	U	360.	U	340.	U	340.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	340.	U	350.	U	360.	UJ	340.	U	360.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA															
		SAMPLE ID ------->	015-S-0029-01		015-S-0029-05		015-S-0029-10		015-S-0030-01		015-S-0030-05		015-S-0030-10	
		ORIGINAL ID ----->	015S002901		015S002905		015S002910		015S003001		0155003005		015S003010	
		LAB SAMPLE ID --->	S554929*24		S554929*25		S554929*26		S554929*27		S554929*28		S554929*29	
		ID FROM REPORT -->	015S002901		015S002905		015S002910		015S003001		015S003005		015S003010	
		SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
		DATE EXTRACTED -->	09/ 11/95		09/11/95		09/ 11/95		09/11/95		09/ 11/95		09/11/95	
		DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/20/95		09/21/95		09/20/95	
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UGKG		UG/KG		UG/KG	
CAS #	Parameter		ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
120-82-1	1,2,4-Trichlorobenzene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
95-50-1	1,2-Dichlorobenzene		340.	U	346.	U	340.	U	350.	U	340.	U	340.	U
541-73-1	1,3-Dichlorobenzene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
106-46-7	1,4-Dichlorobenzene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
39638-32-9	Bis(2-Chloroisopropyl)Ether		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
95-95-4	2,4,5-Trichlorophenol		830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
88-06-2	2,4,6-Trichlorophenol		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
120-83-2	2,4-Dichlorophenol		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
105-67-9	2,4-Dimethylphenol		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
51-28-5	2,4-Dinitrophenol		830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
121-14-2	2,4-Dinitrotoluene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
606-20-2	2,6-Dinitrotoluene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
91-58-7	2-Chloronaphthalene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
95-57-8	2-Chtorophenol		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
91-57-6	2-Methylnaphthalene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
95-48-7	2-Methylphenol (o-Cresol)		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
88-74-4	2-Nitroaniline		830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
88-75-5	2-Nitrophenol		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
91-94-1	3,3'-Dichlorobenzidine		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
999900-32-2	3-Methylphenol/4-Methylphenol		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
99-09-2	3-Nitroaniline		830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
534-52-1	2-Methyl-4,6-Dinitrophenol		830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
101-55-3	4-Bromophenyl-phenylether		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
59-50-7	4-Chloro-3-methylphenol		340.	U	340.	U	340,	U	350.	U	340.	U	340.	U
106-47-8	4-Chloroaniline		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
7005-72-3	4-Chlorophenylphenylether		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
100-01-6	4-Nitroaniline		830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
100-02-7	4-Nitrophcnot		830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
83-32-9	Acenaphthene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
208-96-8	Acenaphthylene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
120-12-7	Anthracene		340.	U	340.	U	340,	U	350.	U	340.	U	340.	U
56-55-3	Benzo(a)anthracene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
50-32-8	Benzo(a)pyrene		140.	U	140.	U	140.	U	150.	U	140.	U	140.	U
205-99-2	Benzo(b)fluoranthene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
191-24-2	Benzo(g,h,i)perylene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
207-08-9	Benzo(k)fluoranthene		340.	U	340.	U	340.	U	350.	U	340.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA													
	SAMPLE ID ------->	015-S-0029-01		015-S-0029-05		015-S-0029-10		015-S-0030-01		015-S-0030-05		015-S-0030-10	
	ORIGINAL ID ----->	015S002901		0158002905		015S002910		015S003001		0159003005		0158003010	
	LAB SAMPLE ID --->	S554929*24		S554929*25		S554929*26		S554929*27		S554929*28		S554929*29	
	ID FROM REPORT -->	015S002901		015S002905		015S002910		0195003001		015S003005		015S003010	
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95		09/05/95		09/05/95		09/05/95	
	DATE EXTRACTED -->	09/11/95		09/11/95		09/11/95		09/11/95		09/11/95		09/11/95	
	DATE ANALYZED --->	09/20/95		09/20/95		09/20/95		09/20/95		09/21/95		09/20/95	
	MATRIX ---------->	Soil		Soil		Soil		soil		soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL	ENP06	VAL
85-68-7	Butylbenzylphthalate	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
86-74-8	Carbazole	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
218-01-9	Chrysene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
84-74-2	Di-n-butylphthalate	340.	U	340.	U	15.	J	17.	J	340.	U	340.	U
117-84-0	Di-n-octyl phthalate	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
53-70-3	Dibenz(a,h)anthracene	140.	U	140.	U	140.	U	150.	U	140.	U	140.	U
132-64-9	Dibenzofuran	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
84-66-2	Diethylphthalate	47.	J	18.	J	12.	J	350.	U	340.	U	340.	U
131-11-3	Dimethyl phthalate	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
206-44-0	Fluoranthene	8.	J	340.	U	340.	U	10.	J	340.	U	340.	U
86-73-7	Fluorene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
118-74-1	Hexachlorobenzene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
87-68-3	Hexachlorobutadiene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
77-47-4	Hexachlorocyclopentadiene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
67-72-1	Hexachloroethane	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
78-59-1	Isophorone	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine	62.	U	61.	U	61.	U	64.	U	62.	U	62.	U
122-39-4	Diphenylamine	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
91-20-3	Naphthalene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
98-95-3	Nitrobenzene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
87-86-5	Pentachlorophenol	830.	U	820.	U	820.	U	860.	U	820.	U	820.	U
85-01-8	Phenanthrene	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
108-95-2	Phenol	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
129-00-0	Pyrene	9.	J	340.	U	340.	U	11.	J	340.	U	340.	U
111-91-1	bis(2-Chloroethoxy)methane	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	340.	U	340.	U	340.	U	350.	U	340.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA											
		SAMPLE ID ------->	015-S-0031-01		015-8-0031-05		015-S-0031-10				
		ORIGINAL ID ----->	015S003101		015S003105		015S003110				
		LAB SAMPLE ID --->	S554929*30		S554929*31		S554929*32				
		ID FROM REPORT -->	015S003101		0158003105		0158003110				
		SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95				
		DATE EXTRACTED -->	09/11/95		09/11/95		09/11/95				
		DATE ANALYZED --->	09/20/95		09/21/95		09/21/95				
		MATRIX ---------->	Soil		Soil		Soil				
		UNITS ---------->	UG/KG		UG/KG		UG/KG				
CAS #	Parameter		ENP06	VAL	ENP06	VAL	ENP06	VAL			
120-82-1	1,2,4-Trichlorobenzene		350.	U	340.	U	340.	U			
95-50-1	1,2-Dichlorobenzene		350.	U	340.	U	340.	U			
541-73-1	1,3-Dichlorobenzene		350.	U	340.	U	340.	U			
106-46-7	1,4-Dichlorobenzene		350.	U	340.	U	340.	U			
39638-32-9	Bis(2-Chloroisopropyl)Ether		350.	U	340.	U	340.	U			
95-95-4	2,4,5-Trichlorophenol		850.	U	820.	U	820.	U			
88-06-2	2,4,6-Trichlorophenol		350.	U	340.	U	340.	U			
120-83-2	2,4-Dichlorophenol		350.	U	340.	U	340.	U			
105-67-9	2,4-Dimethylphenol		350.	U	340.	U	340.	U			
51-28-5	2,4-Dinitrophenol		850.	U	820.	U	820.	U			
121-14-2	2,4-Dinitrotoluene		350.	U	340.	U	340.	U			
606-20-2	2,6-Dinitrotoluene		350.	U	340.	U	340.	U			
91-58-7	2-Chloronaphthalene		350.	U	340.	U	340.	U			
95-57-8	2-Chlorophenol		350.	U	340.	U	340.	U			
91-57-6	2-Methylnaphthalene		350.	U	340.	U	340.	U			
95-48-7	2-Methylphenol (o-Cresol)		350.	U	340.	U	340.	U			
88-74-4	2-Nitroaniline		850.	U	820.	U	820.	U			
88-75-5	2-Nitrophenol		350.	U	340.	U	340.	U			
91-94-1	3,3'-Dichlorobenzidine		350.	U	340.	U	340.	U			
999900-32-2	3-Methylphenol/4-Methylphenol		350.	U	340.	U	340.	U			
99-09-2	3-Nitroaniline		850.	U	820.	U	820.	U			
534-52-1	2-Methyl-4,6-Dinitrophenol		850.	U	820.	U	820.	U			
101-55-3	4-Bromophenyl-phenylether		350.	U	340.	U	340.	U			
59-50-7	4-Chloro-3-methylphenol		350.	U	340.	U	340.	U			
106-47-8	4-Chloroaniline		350.	U	340.	U	340.	U			
7005-72-3	4-Chlorophenylphenylether		350.	U	340.	U	340.	U			
100-01-6	4-Nitroaniline		850.	U	820.	U	820.	U			
100-02-7	4-Nitrophenol		850.	U	820.	U	820.	U			
83-32-9	Acenaphthene		350.	U	340.	U	340.	U			
208-96-8	Acenaphthylene		350.	U	340.	U	340.	U			
120-12-7	Anthracene		350.	U	340.	U	340.	U			
56-55-3	Benzo(a)anthracene		350.	U	340.	U	340.	U			
50-32-8	Benzo(a)pyrene		150.	U	140.	U	140.	U			
205-99-2	Benzo(b)fluoranthene		350.	U	340.	U	340.	U			
191-24-2	Benzo(g,h,i)perylene		350.	U	340.	U	340.	U			
207-08-9	Benzo(k)fluoranthene		350.	U	340.	U	340.	U			

*** Validation Complete ***

PENSACOLA, SITE 15
Phase I Soil
SVOC

SVOA											
	SAMPLE ID ------->	015-S-0031-01		015-S-0031-05		015-S-0031-10					
	ORIGINAL ID ----->	015S003101		015S003105		015S003110					
	LAB SAMPLE ID --->	S554929*30		S554929*31		S554929*32					
	ID FROM REPORT -->	015S003101		015S003105		015S003110					
	SAMPLE DATE ----->	09/05/95		09/05/95		09/05/95					
	DATE EXTRACTED -->	09/11/95		09/11/95		09/11/95					
	DATE ANALYZED --->	09/20/95		09/21/95		09/21/95					
	MATRIX ---------->	Soil		soil		Soil					
	UNITS ---------->	UG/KG		UG/KG		UG/KG					
CAS #	Parameter	ENP06	VAL	ENP06	VAL	ENP06	VAL				
85-68-7	Butylbenzylphthalate	350.	U	340.	U	340.	U				
86-74-8	Carbazole	350.	U	340.	U	340.	U				
218-01-9	Chrysene	350.	U	340.	U	340.	U				
84-74-2	Di-n-butylphthalate	32.	J	340.	U	340.	U				
117-84-0	Di-n-octyl phthalate	350.	U	340.	U	340.	U				
53-70-3	Dibenz(a,h)anthracene	150.	U	140.	U	140.	U				
132-64-9	Dibenzofuran	350.	U	340.	U	340.	U				
84-66-2	Diethytphthalate	350.	U	340.	U	340.	U				
131-11-3	Dimethyl phthalate	350.	U	340.	U	340.	U				
206-44-0	Fluoranthene	6.	J	340.	U	340.	U				
86-73-7	Fluorene	350.	U	340.	U	340.	U				
118-74-1	Hexachlorobenzene	350.	U	340.	U	340.	U				
87-68-3	Hexachlorobutadiene	350.	U	340.	U	340.	U				
77-47-4	Hexachlorocyclopentadiene	350.	U	340.	U	340.	U				
67-72-1	Hexachloroethane	350.	U	340.	U	340.	U				
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	340.	U	340.	U				
78-59-1	Isophorone	350.	U	340.	U	340.	U				
621-64-7	N-Nitroso-di-n-propylamine	64.	U	62.	U	61.	U				
122-39-4	Diphenylamine	350.	U	340.	U	340.	U				
91-20-3	Naphthalene	350.	U	340.	U	340.	U				
98-95-3	Nitrobenzene	350.	U	340.	U	340.	U				
87-86-5	Pentachlorophenol	850.	U	820.	U	820.	U				
85-01-8	Phenanthrene	350.	U	340.	U	340.	U				
108-95-2	Phenol	350.	U	340.	U	340.	U				
129-00-0	Pyrene	350.	U	340.	U	340.	U				
111-91-1	bis(2-Chloroethoxy)methane	350.	U	340.	U	340.	U				
111-44-4	bis(2-Chloroethyl)ether	350.	U	340.	U	340.	U				
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	U	340.	U	340.	U				

*** Validation Complete ***

DATALCP3
05/08/97

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010	SAMPLE ID ------->	015-S-0032-01		015-S-0032-10		015-S-0041-01		015-S-0041-12		015-S-0042-01		015-S-0042-12	
	ORIGINAL ID ----->	015S003201		015S003210		015S004101		015S004112		015S004201		015S004212	
	LAB SAMPLE ID --->	S681632*8		S681632*9		S681557*2		S681557*3		S681557*4		S681557*5	
	ID FROM REPORT -->	015S003201		015S003210		015S004101		015S004112		015S004201		015S004212	
	SAMPLE DATE ----->	03/21/96		03/21/96		03/14/96		03/14/96		03/14/96		03/14/96	
	DATE EXTRACTED -->	03/22/96		03/22/96		03/20/96		03/20/96		03/20/96		03/20/96	
	DATE ANALYZED --->	03/25/96		03/25/96		03/21/96		03/21/96		03/21/96		03/21/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	arameter	PJL04	VAL	PJL04	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL
7440-38-2	rsenic (As)	2.3	J	0.18	UJ	8.5		0.18	U	6.5		0.19	U
7439-96-5	anganese (Mn)	45.2		2.1		124.		1.9		91.4		3.5	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE I1 Soil
Inorganics

METAL-6010	SAMPLE ID ------->	015-S-0043-01	015-C-0043-01	015-S-0043-12	015-S-0044-01	015-S-0044-10	015-S-0045-01
	ORIGINAL ID ----->	015S004301	015C004301	015S004312	015S004401	015S004410	315S004501
	LAB SAMPLE ID --->	S681557*6	S681557*1	S681557*7	S681557*8	S681557*9	S681570*5
	ID FROM REPORT -->	015S004301	015C004301	015S004312	015S004401	015S004410	015S004501
	SAMPLE DATE ----->	03/14/96	03/14/96	03/14/96	03/15/96	03/15/96	03/19/96
	DATE EXTRACTED -->	03/20/96	03/20/96	03/20/96	03/20/96	03/20/96	03/21/96
	DATE ANALYZED --->	03/21/96	03/21/96	03/21/96	03/21/96	03/21/96	03/22/96
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
CAS #	Parameter	PJL01 VAL	PJL01 VAL	PJL01 VAL	PJL01 VAL	PJL01 VAL	PJL03 VAL
7440-38-2	rsenic (As)	2.4	2.5	0.18 U	1.8	0.33 J	4.
7439-96-5	anganese (Mn)	101.	85.6	7.7	67.7	8.5	36.9

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010

SAMPLE ID ------->	015-S-0045-10	015-S-0046-01	015-S-0046-09	015-S-0047-01	015-S-0047-10	015-S-0048-01
ORIGINAL ID ----->	015S004510	015S004601	015S004609	015S004701	015S004710	015S004801
LAB SAMPLE ID --->	S681570*6	S681570*7	S681570*8	S681602*1	S681602*2	S681602*3
ID FROM REPORT -->	015S004510	015S004601	015S004609	015S004701	015S004710	015S004801
SAMPLE DATE ----->	03/19/96	03/19/96	03/19/96	03/20/96	03/20/96	03/20/96
DATE EXTRACTED -->	03/21/96	03/21/96	03/21/96	03/21/96	03/21/96	03/21/96
DATE ANALYZED --->	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG

CAS #	Parameter	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL
7440-38-2	Arsenic (As)	0.18	U	2.4		0.6		3.6		0.4		1.5	
7439-96-5	Manganese (Mn)	3.7		215.		11.3		108.		3.7		61.7	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010							
SAMPLE ID ------->	015-S-0048-10	015-S-0049-01	015-S-0049-10	015-S-0050-01	015-S-0050-10	015-S-0051-01
ORIGINAL ID ----->	015S004810	015S004901	015S004910	015S005001	015S005010	015S005101
LAB SAMPLE ID --->	S681602*4	S681557*10	S681557*11	S681602*5	S681602*6	S681602*7
ID FROM REPORT -->	015S004810	015S004901	015S004910	015S005001	015S005010	015S005101
SAMPLE DATE ----->	03/20/96	03/15/96	03/15/96	03/20/96	03/20/96	03/20/96
DATE EXTRACTED -->	03/21/96	03/20/96	03/20/96	03/21/96	03/21/96	03/21/96
DATE ANALYZED --->	03/22/96	03/21/96	03/21/96	03/22/96	03/22/96	03/22/96
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG

CAS #	Parameter	PJL03	VAL	PJL01	VAL	PJL01	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL
7440-38-2	Arsenic (As)	0.18	U	0.66		3.27	J	1.9		0.18	U	2.7	
7439-96-5	Manganese (Mn)	1.2		30.6		3.		57.3		0.94	J	43.8	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010	SAMPLE ID ------->	015-S-0051-10		015-S-0052-01		015-S-0052-10		015-S-0053-01		015-S-0054-01		015-S-0055-01	
	ORIGINAL ID ----->	015S005110		015S005201		015S005210		015S005301		0158005401		015S005501	
	LAB SAMPLE ID --->	S681602*8		S681602*9		S681602*10		S681557*12		S681557*13		S681557*14	
	ID FROM REPORT -->	015S005110		015S005201		015S005210		015S005301		015S005401		015S005501	
	SAMPLE DATE ----->	03/20/96		03/20/96		03/20/96		33/13/96		03/13/96		03/13/96	
	DATE EXTRACTED -->	03/21/96		03/21/96		03/21/96		03/20/96		03/20/96		03/20/96	
	DATE ANALYZED --->	03/22/96		03/22/96		03/22/96		03/21/96		03/21/96		03/21/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL
7440-38-2	rsenic (As)	0.49		5.1		0.24	J	16.		3.1		11.1	
7439-96-5	anganese (Mn)	11.1		30.9		5.5		92.2		9.8		45.3	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010													
	SAMPLE ID ------->	015-S-0056-01		015-S-0056-10		015-S-0057-01		015-S-0057-10		015-S-0058-01		015-S-0058-10	
	ORIGINAL ID ----->	015S005601		0155005610		015S005701		0156005710		015S005801		015S005810	
	LAB SAMPLE ID --->	S681632*10		S681632*11		S681632*12		S681632*13		S681602A*1		S681602A*2	
	ID FROM REPORT -->	015S005601		0158005610		015S005701		015S005710		015S005801		015S005810	
	SAMPLE DATE ----->	03/21/96		03/21/96		03/21/96		03/21/96		03/20/96		03/20/96	
	DATE EXTRACTED -->	03/22/96		03/22/96		03/22/96		03/22/96		03/22/96		03/22/96	
	DATE ANALYZED --->	03/25/96		03/25/96		03/25/96		03/25/96		03/25/96		03/25/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	arameter	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL
7440-38-2	rsenic (As)	0.43	J	0.18	UJ	1.9	J	0.18	UJ	7.5	J	0.18	UJ
7439-96-5	anganese (Mn)	24.7		5.		91.		7.		42.4		2.6	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010													
	SAMPLE ID ------->	015-S-0059-01		015-S-0059-10		015-S-0060-01		015-S-0060-09		015-S-0061-01		015-C-0061-01	
	ORIGINAL ID ----->	015S005901		015S005910		015S006001		015S006009		015S006101		015C006101	
	LAB SAMPLE ID --->	S681557*15		S681557*16		S681557*17		S681557*18		S681632*2		S681632*1	
	ID FROM REPORT -->	015S005901		015S005910		015S006001		015S006009		015S006101		015C006101	
	SAMPLE DATE ----->	03/15/96		03/15/96		03/15/96		03/15/96		03/21/96		03f 21/96	
	DATE EXTRACTED -->	03/20/96		03/20/96		03/20/96		03/20/96		03/22/96		03/21/96	
	DATE ANALYZED --->	03/21/96		03/21/96		03/21/96		03/21/96		03/25/96		03/25/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL04	VAL	PJL04	VAL
7440-38-2	Arsenic (As)	2.9		0.19	J	3.7		0.18	U	18.9	J	20.6	J
7439-96-5	Manganese (Mn)	149.		3.3		a8.5		6.6		180.		112.	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010	SAMPLE ID ------->	015-S-0061-10		015-S-0062-01		015-S-0062-10		015-S-0063-01		015-S-0063-10		01s-s-0064-01	
	ORIGINAL ID ----->	015S006110		015S006201		015S006210		015S006301		015S006310		015S006401	
	LAB SAMPLE ID --->	S681632*3		S681632*4		S681632*5		S681632*6		S681632*7		S681570*9	
	ID FROM REPORT -->	015S006110		015S006201		015S006210		015S006301		015S006310		015S006401	
	SAMPLE DATE ----->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96		03/19/96	
	DATE EXTRACTED -->	03/22/96		03/22/96		03/22/96		03/22/96		03/22/96		03/21/96	
	DATE ANALYZED --->	03/25/96		03/25/96		03/25/96		03/25/96		03/25/96		03/22/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
CAS #	Parameter	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL03	VAL
7440-38-2	Arsenic (As)	1.9	J	3.1	J	0.18	UJ	5.	J	0.59	J	5.6	
7439-96-5	Manganese (Mn)	3.5		106.		1.9		113.		7.9		86.6	

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
Inorganics

METAL-6010

	SAMPLE ID ------->	015-C-0064-01	015-S-0064-09				
	ORIGINAL ID ----->	015C006401	015S006409				
	LAB SAMPLE ID --->	S681570*4	S681570*10				
	ID FROM REPORT -->	015C006401	015S006409				
	SAMPLE DATE ----->	03/19/96	03/19/96				
	DATE EXTRACTED -->	03/21/96	03/21/96				
	DATE ANALYZED --->	03/22/96	03/22/96				
	MATRIX ---------->	Soil	Soil				
	UNITS ---------->	MG/KG	MG/KG				
CAS #	Parameter	PJL03 VAL	PJL03 VAL				
7440-38-2	Arsenic (As)	4.5	0.71				
7439-96-5	Manganese (Mn)	71.8	6.4				

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080															
	SAMPLE ID ------->	015-S-0032-01		015-S-0032-10		015-S-0041-01		015-S-0041-12		015-S-0042-01		015-S-0042-12	
	ORIGINAL ID ----->	015S003201		015S003210		015S004101		0156004112		015S004201		015S004212	
	LAB SAMPLE ID --->	S681632*8		S681632*9		S681557*2		S681557*3		S681557*4		S681557*5	
	ID FROM REPORT -->	015S003201		015S003210		015S004101		0195004112		015S004201		015S004212	
	SAMPLE DATE ----->	03/21/96		03/21/96		03/ 14/96		03/14/96		03/14/96		03/14/96	
	DATE EXTRACTED -->	03/22/96		03/22/96		03/19/96		03/19/96		03/19/96		03/19/96	
	DATE ANALYZED --->	03/29/96		03/ 26/96		03/21/96		03/21 /96		03/21/96		03/21/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL04	VAL	PJL04	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL
72-54-8	4,4'-DDD	9.9	J	3.4	U	23.	J	3.5	U	3.5	U	3.5	U
72-55-9	4,4'-DDE	130.		0.38	J	190.	D	2.3	J	110.	D	2.3	J
50-29-3	4,4'-DDT	43.		3.4	U	120.	D	1.2	J	51.		1.4	J
309-00-2	Aldrin	9.1	U	1.8	U	1.9	U	1.8	U	1.8	U	1.8	U
12674-11-2	Aroclor-1016	180.	U	34.	U	37.	U	35.	U	35.	U	35.	U
11104-28-2	Aroclor-1221	360.	U	70.	U	74.	U	71.	U	72.	U	71.	U
11141-16-5	Aroclor-1232	180.	U	34.	U	37.	U	35.	U	35.	U	35.	U
53469-21-9	Aroclor-1242	180.	U	34.	U	37.	U	35.	U	35.	U	35.	U
12672-29-6	Aroclor-1248	180.	U	34.	U	37.	U	35.	U	35.	U	35.	U
11097-69-1	Aroclor-1254	180.	U	34.	U	1100.	D	35.	U	35.	U	35.	U
11096-82-5	Aroclor-1260	180.	U	34.	U	860.	D	35.	U	320.	DJ	35.	U
60-57-1	Dieldrin	18.	U	3.4	U	220.	DJ	11.		45.	D	0.79	J
959-98-8	Endosulfan I	9.1	U	1.8	U	150.	D	1.4	J	28.		0.46	J
33213-65-9	Endosulfan II	18.	U	3.4	U	3.7	U	3.5	U	3.5	U	3.5	U
1031-07-8	Endosulfan sulfate	18.	U	3.4	U	3.7	U	3.5	U	3.5	U	3.5	U
72-20-8	Endrin	18.	U	3.4	U	3.7	U	0.51	J	3.5	U	3.5	U
7421-93-4	Endrin aldehyde	18.	U	3.4	U	3.7	U	3.5	U	3.5	U	3.5	U
53494-70-5	Endrin ketone	18.	U	3.4	U	3.7	U	3.5	U	3.5	U	3.5	U
76-44-8	Heptachlor	9.1	U	1.8	U	1.9	U	1.8	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	9.1	U	1.8	U	12.	J	1.8	U	6.	J	1.8	U
72-43-5	Methoxychlor	91.	U	18.	U	19.	U	18.	U	18.	U	18.	U
8001-35-2	Toxaphene	910.	U	180.	U	190.	U	180.	U	180.	U	180.	U
319-84-6	alpha-BHC	9.1	U	1.8	U	1.9	U	1.8	U	1.8	U	1.8	U
5103-71-9	alpha-Chlordane	9.1	U	1.8	U	150.	D	1.7	J	29.		1.8	U
319-85-7	beta-BHC	9.1	U	1.8	U	1.9	U	1.8	U	1.8	U	1.8	U
319-86-8	delta-BHC	9.1	U	1.8	U	0.7	J	1.8	U	1.8	U	1.8	U
58-89-9	gamma-BHC (Lindane)	9.1	U	1.8	U	0.37	J	1.8	U	1.8	U	1.8	U
5103-74-2	gamma-Chlordane	9.1	U	1.8	U	180.	D	0.66	J	8.1	J	1.8	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080													
	SAMPLE ID ------->	015-S-0043-01		015-C-0043-01		015-S-0043-12		015-S-0044-01		015-S-0044-10		015-S-0045-01	
	ORIGINAL ID ----->	015S004301		015C004301		015S004312		015S004401		015S004410		015S004501	
	LAB SAMPLE ID --->	S681557*6		S681557*1		S681557*7		S681557*8		S681557*9		S681570*5	
	ID FROM REPORT -->	0155004301		015C004301		015S004312		015S004401		015S004410		015S004501	
	SAMPLE DATE ----->	03/14/96		03/14/96		03/14/96		03/15/96		03/15/96		03/19/96	
	DATE EXTRACTED -->	03/19/96		03/20/96		03/19/96		03/19/96		03/19/96		03/21/96	
	DATE ANALYZED --->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96		03/23/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL03	VAL
72-54-8	4,4'-DDD	1.2	J	1.3	J	3.5	U	7.7	J	3.6	U	11.	J
72-55-9	4,4'-DDE	16.		16.		0.93	J	130.	D	6.3		320.	D
50-29-3	4,4'-DDT	6.8		6.8		3.5	U	45.		16.		30.	
309-00-2	Aldrin	1.9	U	1.9	U	1.8	U	2.	U	1.8	U	1.8	U
12674-11-2	Aroclor-1016	38.	U	36.	U	35.	U	39.	U	36.	U	35.	U
11104-28-2	Aroclor-1221	76.	U	74.	U	70.	U	80.	U	73.	U	72.	U
11141-16-5	Aroclor-1232	38.	U	36.	U	35.	U	39.	U	36.	U	35.	U
53469-21-9	Aroclor-1242	38.	U	36.	U	35.	U	39.	U	36.	U	35.	U
12672-29-6	Aroclor-1248	38.	U	36.	U	35.	U	39.	U	36.	U	35.	U
11097-69-1	Aroclor-1254	38.	U	36.	U	35.	U	39.	U	36.	U	35.	U
11096-82-5	Aroclor-1260	38.	U	36.	U	35.	U	39.	U	36.	U	35.	U
60-57-1	Dieldrin	4.8		5.1		3.5	U	15.		1.3	J	9.4	
959-98-8	Endosulfan I	0.78	J	0.88	J	1.8	U	4.3		0.5	J	26.	J
33213-65-9	Endosulfan II	3.8	U	3.6	U	3.5	U	3.9	U	3.6	U	3.5	U
1031-07-8	Endosulfan sulfate	3.8	U	1.3	J	3.5	U	7.7	J	3.6	U	5.2	J
72-20-8	Endrin	3.8	U	0.78	J	3.5	U	0.69	J	0.46	J	3.5	U
7421-93-4	Endrin aldehyde	3.8	U	3.6	U	3.5	U	3.9	U	3.6	U	3.5	U
53494-70-5	Endrin ketone	3.8	U	3.6	U	3.5	U	3.9	U	3.6	U	3.5	U
76-44-8	Heptachlor	1.9	U	1.9	U	1.8	U	2.	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	1.6	J	0.58	J	1.8	U	11.	J	0.57	J	2.9	J
72-43-5	Methoxychlor	19.	U	19.	U	18.	U	7.1	J	18.	U	18.	U
8001-35-2	Toxaphene	190.	U	190.	U	180.	U	200.	U	180.	U	180.	U
319-84-6	alpha-BHC	1.9	U	1.9	U	1.8	U	2.	U	1.8	U	1.8	U
5103-71-9	alpha-Chlordane	0.79	J	0.9	J	1.8	U	4.5		0.51	J	27.	J
319-85-7	beta-BHC	1.9	U	1.9	U	1.8	U	2.	U	1.8	U	1.8	U
319-86-8	delta-BHC	1.9	U	1.9	U	1.8	U	2.	U	1.8	U	1.8	U
58-89-9	gamma-BHC (Lindane)	1.9	U	1.9	U	1.8	U	0.35	J	1.8	U	1.8	U
5103-74-2	gamma-Chlordane	0.65	J	0.78	J	1.8	U	3.6	J	1.8	U	22.	J

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080															
	SAMPLE ID ------->	015-S-0045-10		015-S-0046-01		015-S-0046-09		015-S-0047-01		015-S-0047-10		015-S-0048-01	
	ORIGINAL ID ----->	015S004510		015SO04601		0158004609		0155004701		015S004710		015S004801	
	LAB SAMPLE ID --->	S681570*6		S681570*7		S681570*8		S681602*1		S681602*2		S681602*3	
	ID FROM REPORT -->	015S004510		015S004601		015S004609		0155'004701		015S004710		015S004801	
	SAMPLE DATE ----->	03/ 19/96		03/ 19/96		03/ 19/96		03/20/96		03/20/96		03/20/96	
	DATE EXTRACTED -->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96		03f 21/96	
	DATE ANALYZED --->	03/23/96		03/23/96		03/23/96		03/23/96		03/23/96		03/23/96	
	MATRIX ---------->	Soil		Soil		Soil		Soi 1		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL
72-54-8	4,4'-DDD	3.5	U	3.6	U	3.5	U	3.7	U	3.4	U	3.5	U
72-55-9	4,4'-DDE	7.4		100.	D	6.7	J	180.	D	4.1		90.	D
50-29-3	4,4'-DDT	0.85	J	35.		2.1	J	71.		1.5	J	33.	
309-00-2	Aldrin	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.8	U
12674-11-2	Aroclor-1016	35.	U	36.	U	35.	U	37.	U	34.	U	35.	U
11104-28-2	Aroclor-1221	70.	U	74.	U	71.	U	74.	U	70.	U	71.	U
11141-16-5	Aroclor-1232	35.	U	36.	U	35.	U	37.	U	34.	U	35.	U
53469-21-9	Aroclor-1242	35.	U	36.	U	35.	U	37.	U	34.	U	35.	U
12672-29-6	Aroclor-1248	35.	U	36.	U	35.	U	37.	U	34.	U	35.	U
11097-69-1	Aroclor-1254	35.	U	36.	U	35.	U	37.	U	34.	U	35.	U
11096-82-5	Aroclor-1260	35.	U	36.	U	35.	U	37.	U	34.	U	35.	U
60-57-1	Dieldrin	3.5	U	1.2	J	0.39	J	2.8	J	3.4	U	4.4	
959-98-8	Endosulfan I	0.54	J	0.79	J	0.5	J	2.9	J	1.8	U	0.71	J
33213-65-9	Endosulfan II	3.5	U	3.6	U	3.5	U	3.7	U	3.4	U	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U	1.9	J	3.5	U	4.5	J	3.4	U	3.5	U
72-20-8	Endrin	3.5	U	3.6	U	3.5	U	3.7	U	3.4	U	3.5	U
7421-93-4	Endrin aldehyde	3.5	U	3.6	U	3.5	U	3.7	U	3.4	U	3.5	U
53494-70-5	Endrin ketone	3.5	U	0.78	J	3.5	U	2.9	J	3.4	U	3.5	J
76-44-8	Heptachlor	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U	1.9	U	0.81	J	1.9	U	0.96	J	1.8	U
72-43-5	Methoxychlor	18.	U	4.7	J	18.	U	19.	U	18.	U	8.2	J
8001-35-2	Toxaphene	180.	U	190.	U	180.	U	190.	U	180.	U	180.	U
319-84-6	alpha-BHC	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.8	U
5103-71-9	alpha-Chlordane	0.55	J	0.84	J	0.5	J	2.9	J	1.8	U	0.72	J
319-85-7	beta-BHC	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.8	U
319-86-8	delta-BHC	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.8	U
5103-74-2	gamma-Chlordane	1.8	U	0.7	J	1.8	U	1.9	U	1.8	U	1.8	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080															
	SAMPLE ID ------->	015-S-0048-10		015-S-0049-01		015-S-0049-10		015-S-0050-01		015-S-0050-10		015-S-0051-01	
	ORIGINAL ID ----->	015S004810		015S004901		015S004910		015S005001		015S005010		0158002101	
	LAB SAMPLE ID --->	S681602*4		S681557*10		S681557*11		S681602*5		S681602*6		S681602*7	
	ID FROM REPORT -->	0158004810		015S004901		015S004910		0155005001		015S005010		015S005101	
	SAMPLE DATE ----->	03/20/96		03/15/96		03/15/96		03/20/96		03/20/96		03/20/96	
	DATE EXTRACTED -->	03/21/96		03/19/96		03/19/96		03/21/96		03/21/96		03/24/96	
	DATE ANALYZED --->	03/23/96		03/21/96		03/21/96		03/24/96		03/24/96			
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL03	VAL	PJL01	VAL	PJL01	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL
72-54-8	4,4'-DDD	3.4	U	3.7	J	3.5	U	4.7	J	3.4	U	3.6	
72-55-9	4,4'-DDE	0.92	J	88.	D	2.1	J	100.	D	0.96	J	43.	
50-29-3	4,4'-DDT	3.4	U	40.		0.97	J	40.		3.4	U	12.	
309-00-2	Aldrin	1.8	U	1.8	U	1.8	U	1.9	U	1.8	U	1.8	U
12674-11-2	Aroclor-1016	34.	U	35.	U	35.	U	36.	U	34.	U	36.	U
11104-28-2	Aroclor-1221	69.	U	72.	U	71.	U	74.	U	70.	U	73.	U
11141-16-5	Aroclor-1232	34.	U	35.	U	35.	U	36.	U	34.	U	36.	U
53469-21-9	Aroclor-1242	34.	U	35.	U	35.	U	36.	U	34.	U	36.	U
12672-29-6	Aroclor-1248	34.	U	35.	U	35.	U	36.	U	34.	U	36.	U
11097-69-1	Aroclor-1254	34.	U	35.	U	35.	U	36.	U	34.	U	36.	U
11096-82-5	Aroclor-1260	34.	U	35.	U	35.	U	36.	U	34.	U	36.	U
60-57-1	Dieldrin	3.4	U	2.4	J	3.5	U	95.	D	0.79	J	1.3	J
959-98-8	Endosulfan I	1.8	U	0.53	J	1.8	U	8.4	J	1.8	U	0.91	J
33213-65-9	Endosulfan II	3.4	U	3.5	U	3.5	U	3.6	U	3.4	U	3.6	U
1031-07-8	Endosulfan sulfate	0.82	J	3.	J	3.5	U	3.5	J	3.4	U	2.	J
72-20-8	Endrin	3.4	U	1.2	J	3.5	U	5.4	U	3.4	U	3.6	U
7421-93-4	Endrin aldehyde	3.4	U	3.5	U	3.5	U	2.9	J	3.4	U	3.6	U
53494-70-5	Endrin ketone	3.4	U	3.5	U	3.5	U	3.6	U	3.4	U	3.6	U
76-44-8	Heptachlor	1.8	U	1.8	U	1.8	U	1.9	U	1.8	U	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U	0.31	J	1.8	U	1.3	J	1.8	U	1.8	U
72-43-5	Methoxychlor	18.	U	6.3	J	18.	U	5.4	J	18.	U	18.	U
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	190.	U	180.	U	180.	U
319-84-6	alpha-BHC	1.8	U	1.8	U	1.8	U	1.9	U	1.8	U	1.8	U
5103-71-9	alpha-Chlordane	1.8	U	0.54	J	1.0	U	8.5	J	1.8	U	0.92	J
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.9	U	1.8	U	1.8	U
319-86-8	delta-BHC	1.8	U	1.8	U	1.8	U	1.9	U	1.8	U	1.8	U
58-89-9	gam-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.9	U	1.8	U	0.44	J
5103-74-2	gamma-Chlordane	1.8	U	1.2	J	1.8	U	3.9		1.8	U	2.4	

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080															
	SAMPLE ID ------->	015-S-0051-10		015-S-0052-01		015-S-0052-10		015-S-0053-01		015-S-0054-01		015-S-0055-01	
	ORIGINAL ID ----->	015S005110		015S005201		015S005210		015S005301		015S005401		0155005501	
	LAB SAMPLE ID --->	S681602*8		S681602*9		S681602*10		S681557*12		S681557*13		S681557*14	
	ID FROM REPORT -->	015S005110		015S005201		015S005210		015S005301		015S005401		015S005501	
	SAMPLE DATE ----->	03/20/96		03/20/96		03/20/96		03/13/96		03/13/96		03/ 13/96	
	DATE EXTRACTED -->	03/21/96		03/21/96		03/21/96		03/19/96		03/19/96		03/19/96	
	DATE ANALYZED --->	03/24/96		03/24/96		03/24/96		03/21/96		03/21/96		Off21/96	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL
		3.5	U	5.1	J	3.4	U	3.6	U	3.8	U	1.2	J
		0.92	J	180.	D	1.9	J	24.		2.4	J	37.	
		3.5	U	20.		3.4	U	4.6		0.93	J	3.6	J
		1.8	U	1.8	U	1.8	U	1.8	U	2.	U	1.9	U
		35.	U	35.	U	34.	U	36.	U	38.	U	37.	U
		70.	U	70.	U	70.	U	73.	U	78.	U	75.	U
		35.	U	35.	U	34.	U	36.	U	38.	U	37.	U
		35.	U	35.	U	34.	U	36.	U	38.	U	37.	U
		35.	U	35.	U	34.	U	36.	U	38.	U	37.	U
		35.	U	35.	U	34.	U	36.	U	38.	U	37.	U
		35.	U	35.	U	34.	U	36.	U	38.	U	37.	U
		3.5	U	10.		3.4	U	3.6	U	0.41	J	2.1	J
		1.8	U	1.4	J	1.8	U	1.8	U	2.	U	0.66	J
		3.5	U	3.5	U	3.4	U	3.6	U	3.8	U	3.7	U
1031-07-8	Endosulfan sulfate	3.5	U	3.4	J	3.4	U	3.6	U	3.8	U	1.1	J
72-20-8	Endrin	3.5	U	3.5	U	3.4	U	3.6	U	0.48	J	0.86	J
		3.5	U	3.5	U	3.4	U	3.6	U	3.8	U	3.7	U
		3.5	U	3.5	U	3.4	U	3.6	U	3.8	U	3.7	U
		1.8	U	1.8	U	1.8	U	1.8	U	2.	U	1.9	U
		1.8	U	1.8	U	1.8	U	1.8	U	2.	U	1.9	U
		18.	U	4.4	J	18.	U	18.	U	20.	U	19.	U
8001-35-2	Toxaphene	180.	U	180.	U	180.	U	180.	U	200.	U	190.	U
319-84-6	alpha-BHC	1.8	U	1.8	U	1.8	U	1.8	U	2.	U	1.9	U
5103-71-9	alpha-Chlordane	1.8	U	1.4	J	1.8	U	1.8	U	2.	U	0.67	J
319-85-7	beta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	2.	U	1.9	U
319-86-8	detta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	2.	U	1.9	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	U	2.	U	1.9	U
5103-74-2	gamma-Chlordane	1.8	U	1.6	J	1.8	U	1.8	U	2.	U	1.9	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080													
	SAMPLE ID -------:	015-S-0056-01		015-S-0056-10		015-S-0057-01		015-5-0057-10		015-S-0058-01		015-S-0058-10	
	ORIGINAL ID -----:	015S005601		015S005610		0158005701		015S005710		015S005801		015S005810	
	LAB SAMPLE ID ---:	S681632*10		S681632*11		S681632*12		S681632*13		S681602A*1		S681602A*2	
	ID FROM REPORT --:	0158005601		0158005610		015S005701		015S005710		015S005801		015S005810	
	SAMPLE DATE -----:	03/21/96		03/21/96		03/21/96		03/21/96		03/20/96		03/20/96	
	DATE EXTRACTED --:	03/22/96		03/22/96		03/22/96		03/22/96		03/22/96		03/22/96	
	DATE ANALYZED ---:	03/27/96		03/27/96		03/29/96		03/27/96		03/29/96		03/26/96	
	MATRIX ----------:	soil		soil		Soil		Soil		soil		Soil	
	UNITS ----------:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJLO4	VAL
72-54-8	4,4'-DDD	1.9	J	3.5	U	69.	J	3.5	U	35.		3.4	U
72-55-9	4,4'-DDE	18.	J	3.5	U	220.	J	1.8	J	490.		0.93	J
50-29-3	4,4'-DDT	12.		3.5	U	150.		1.4	J	87.		3.4	U
309-00-2	Aldrin	1.8	U	1.8	U	19.	U	1.8	U	18.	U	1.8	U
12674-11-2	Aroclor-1016	35.	U	35.	U	370.	U	35.	U	350.	U	34.	U
11104-28-2	Aroclor-1221	72.	U	70.	U	740.	U	70.	U	700.	U	69.	U
11141-16-5	Aroclor-1232	35.	U	35.	U	370.	U	35.	U	350.	U	34.	U
53469-21-9	Aroclor-1242	35.	U	35.	U	370.	U	35.	U	350.	U	34.	U
12672-29-6	Aroclor-1248	35.	U	35.	U	370.	U	35.	U	350.	U	34.	U
11097-69-1	Aroclor-1254	35.	U	35.	U	370.	U	35.	U	350.	U	34.	U
11096-82-5	Aroclor-1260	35.	U	35.	U	370.	U	35.	U	350.	U	34.	U
60-57-1	Dieldrin	3.9	J	3.5	U	140.	J	1.5	t	8.4	J	3.4	U
959-98-8	Endosulfan I	1.8	J	1.8	U	6.3	J	1.8	U	16.	J	1.8	U
33213-65-9	Endosulfan II	3.5	U	3.5	U	37.	U	3.5	U	35.	U	3.4	U
1031-07-8	Endosulfan sulfate	3.5	U	0.98	J	37.	U	3.5	U	35.	U	3.4	U
72-20-8	Endrin	3.5	U	3.5	U	37.	U	3.5	U	35.	U	3.4	U
7421-93-4	Endrin aldehyde	3.5	U	3.5	U	37.	U	3.5	U	35.	U	3.4	U
53494-70-5	Endrin ketone	3.5	U	3.5	U	37.	U	3.5	U	35.	U	3.4	U
76-44-8	Heptachlor	1.8	U	1.8	U	19.	U	1.8	U	18.	U	1.8	U
1024-57-3	Heptachlor epoxide	0.72	J	1.8	U	19.	U	1.8	U	5.	J	1.8	U
72-43-5	Methoxychlor	18.	U	18.	U	190.	U	18.	U	180.	U	18.	U
8001-35-2	Toxaphene	180.	U	180.	U	1900.	U	180.	U	1800.	U	180.	U
319-84-6	alpha-BHC	1.8	U	1.8	U	19.	U	1.8	U	18.	U	1.8	U
5103-71-9	alpha-Chlordane	1.5	J	1.8	U	5.8	J	1.8	U	15.	J	1.8	U
319-85-7	beta-BHC	1.8	U	1.8	U	19.	U	1.8	U	18.	U	1.8	U
319-86-8	delta-BHC	1.8	U	1.8	U	19.	U	1.8	U	18.	U	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U	1.8	U	19.	U	1.8	U	18.	U	1.8	U
5103-74-2	gamma-Chlordane	1.5	J	1.8	U	19.	U	1.8	U	22.	J	1.8	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080													
		SAMPLE ID ------->	015-S-0059-01		015-S-0059-10		015-S-0060-01		015-S-0060-09		015-S-0061-01		015-C-0061-01
		ORIGINAL ID ----->	015S005901		015S005910		015S006001		0156006009		315S006101		015C006101
		LAB SAMPLE ID --->	S681557*15		S681557*16		S681557*17		S681557*18		S681632*2		S681632*1
		ID FROM REPORT -->	0158005901		015S005910		015S006001		015S006009		015S006101		015C006101
		SAMPLE DATE ----->	03/ 15/96		03/15/96		03/15/96		03/15/96		03/21/96		03/21/96
		DATE EXTRACTED -->	03/ 19/96		03/19/96		03/19/96		03/19/96		03/22/96		03/22/96
		DATE ANALYZED --->	03/21/96		03/21/96		03/21/96		03/21/96		03/27/96		03/29/96
		MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG
CAS #	Parameter		PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL01	VAL	PJL04	VAL	PJL04	VAL
72-54-8	4,4'-DDD		1.9	J	3.4	U	66.	DJ	3.4	U	43.	J	33.	J
72-55-9	4,4'-DDE		24.		3.4	U	620.	D	6.2		130.	J	120.	J
50-29-3	4,4'-DDT		7.8		3.4	U	100.	D	1.	J	140.		96.	
309-00-2	Aldrin		1.8	U	1.8	U	1.8	U	1.8	U	9.6	U	19.	U
12674-11-2	Aroclor-1016		35.	U	34.	U	34.	U	34.	U	180.	U	370.	U
11104-28-2	Aroclor-1221		71.	U	70.	U	69.	U	69.	U	380.	U	750.	U
11141-16-5	Aroclor-1232		35.	U	34.	U	34.	U	34.	U	180.	U	370.	U
53469-21-9	Aroclor-1242		35.	U	34.	U	34.	U	34.	U	180.	U	370.	U
12672-29-6	Aroclor-1248		35.	U	34.	U	34.	U	34.	U	180.	U	370.	U
11097-69-1	Aroclor-1254		35.	U	34.	U	34.	U	34.	U	180.	U	370.	U
11096-82-5	Aroclor-1260		35.	U	34.	U	34.	U	34.	U	180.	U	370.	U
60-57-1	Dieldrin		6.7		3.4	U	48.	D	0.55	J	120.		110.	J
959-98-8	Endosulfan I		2.1		1.8	U	38.	D	0.48	J	140.		110.	
33213-65-9	Endosulfan II		3.5	U	3.4	U	3.4	U	3.4	U	18.	U	37.	U
1031-07-8	Endosulfan sulfate		3.5	U	3.4	U	5.7	J	3.4	U	18.	U	37.	U
72-20-8	Endrin		0.78	J	0.34	J	2.4	J	4.2	J	18.	U	37.	U
7421-93-4	Endrin aldehyde		3.5	U	3.4	U	3.4	U	3.4	U	18.	U	37.	U
53494-70-5	Endrin ketone		3.5	U	3.4	U	1.2	J	5.4	U	18.	U	37.	U
76-44-8	Heptachlor		1.8	U	1.8	U	1.8	U	1.8	U	9.6	U	19.	U
1024-57-3	Heptachlor epoxide		1.8	U	1.8	U	3.		1.8	U	25.		20.	J
72-43-5	Methoxychlor		18.	U	18.	U	10.	J	18.	U	96.	U	190.	U
8001-35-2	Toxaphene		180.	U	180.	U	180.	U	180.	U	960.	U	1900.	U
319-84-6	alpha-BHC		1.8	U	1.8	U	1.8	U	1.8	U	9.6	U	19.	U
5103-71-9	alpha-Chlordane		2.1	J	1.8	U	38.	D	0.48	J	100.	D	100.	
319-85-7	beta-BHC		1.8	U	1.8	U	1.8	U	1.8	U	9.6	U	19.	U
319-86-8	delta-BHC		1.8	U	1.8	U	1.8	U	1.8	U	9.6	U	19.	U
58-89-9	gamma-BHC (Lindane)		1.8	U	1.8	U	1.8	U	1.8	U	9.6	U	19.	U
5103-74-2	gamma-Chlordane		2.5	J	1.8	U	33.	DJ	0.46	J	110.	D	100.	

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080															
	SAMPLE ID ------->	015-S-0061-10		015-S-0062-01		015-S-0062-10		015-S-0063-01		015-S-0063-10		015-S-0064-01	
	ORIGINAL ID ----->	015S006110		015S006201		015S006210		015S006301		0158006310		015S006401	
	LAB SAMPLE ID --->	S681632*3		S681632*4		S681632*5		S681632*6		S681632*7		S681570*9	
	ID FROM REPORT -->	015S006110		015S006201		015S006210		0155006301		015S006310		015S006401	
	SAMPLE DATE ----->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96		03/19/96	
	DATE EXTRACTED -->	03/22/96		03/22/96		03/22/96		03/22/96		03/22/96		03/21/96	
	DATE ANALYZED --->	03/27/96		03/26/96		03/27/96		03/26/96		03/29/96		03/23/96	
	MATRIX ---------->	Soil		Soil		Soil		soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL03	VAL
72-54-8	4,4'-DDD	3.4	U	10.	J	3.4	U	13.	J	3.5	U	3.7	U
72-55-9	4,4'-DDE	1.8	J	130.	DJ	0.87	J	120.	D	8.4	J	34.	J
50-29-3	4,4'-DDT	3.1	J	60.		3.4	U	72.		6.4		10.	
309-00-2	Aldrin	1.8	U	3.8	U	1.8	U	1.8	U	1.8	U	1.9	U
12674-11-2	Aroclor-1016	34.	U	73.	U	34.	U	36.	U	35.	U	37.	U
11104-28-2	Aroclor-1221	70.	U	150.	U	70.	U	73.	U	70.	U	74.	U
11141-16-5	Aroclor-1232	34.	U	73.	U	34.	U	36.	U	35.	U	37.	U
53469-21-9	Aroclor-1242	34.	U	73.	U	34.	U	36.	U	35.	U	37.	U
12672-29-6	Aroclor-1248	34.	U	73.	U	34.	U	36.	U	35.	U	37.	U
11097-69-1	Aroclor-1254	34.	U	73.	U	34.	U	36.	U	35.	U	37.	U
11096-82-5	Aroclor-1260	34.	U	73.	U	34.	U	36.	U	35.	U	37.	U
60-57-1	Dieldrin	2.6	J	30.	J	3.4	U	8.8	J	0.91	J	3.4	J
959-98-8	Endosulfan I	1.8		20.		1.8	U	22.		1.6	J	2.6	J
33213-65-9	Endosulfan II	3.4	U	7.3	U	3.4	U	3.6	U	3.5	U	3.7	U
1031-07-8	Endosulfan sulfate	3.4	U	7.3	U	3.4	U	8.2	U	3.5	U	1.4	J
72-20-8	Endrin	3.4	U	7.3	U	3.4	U	3.6	U	3.5	U	3.7	U
7421-93-4	Endrin aldehyde	3.4	U	7.3	U	3.4	U	3.6	U	3.5	U	3.7	U
53494-70-5	Endrin ketone	3.4	U	1.7	J	3.4	U	3.2	J	3.5	U	3.7	U
76-44-8	Heptachlor	1.8	U	3.8	U	1.8	U	1.8	U	1.8	U	1.9	U
1024-57-3	Heptachlor epoxide	1.8	U	10.		1.8	U	2.5	d	1.8	U	2.3	J
72-43-5	Methoxychlor	18.	U	38.	U	18.	U	18.	U	18.	U	19.	U
8001-35-2	Toxaphene	180.	U	380.	U	180.	U	180.	U	180.	U	190.	U
319-84-6	alpha-BHC	1.8	U	3.8	U	1.8	U	1.8	U	1.8	U	1.9	U
5103-71-9	alpha-Chlordane	1.4	J	17.		1.8	U	25.	D	1.5	J	2.7	J
319-85-7	beta-BHC	1.8	U	3.8	U	1.8	U	1.8	U	1.8	U	1.9	U
319-86-8	delta-BHC	1.8	U	3.8	U	1.8	U	1.8	U	1.8	U	0.95	J
58-89-9	gamma-BHC (Lindane)	1.8	U	3.8	U	1.8	U	1.8	U	1.8	U	1.8	J
5103-74-2	gamma-Chlordane	1.7	J	21.		1.8	U	11.	J	1.	J	1.9	U

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
Pesticides/8080

PEST-8080									
	SAMPLE ID ------->	015-C-0064-01		015-S-0064-09					
	ORIGINAL ID ----->	015C006401		015S006409					
	LAB SAMPLE ID --->	S681570*4		S681570*10					
	ID FROM REPORT -->	015C006401		0158006409					
	SAMPLE DATE ----->	03/19/96		03/19/96					
	DATE EXTRACTED -->	03/21/96		03/21/96					
	DATE ANALYZED --->	03/22/96		03/23/96					
	MATRIX ---------->	soil		Soil					
	UNITS ---------->	UG/KG		UG/KG					
CAS #	Parameter	PJL03	VAL	PJL03	VAL				
72-54-8	4,4'-DDD	2.8	J	3.5	U				
72-55-9	4,4'-DDE	42.	J	3.1	J				
50-29-3	4,4'-DDT	12.		1.1	J				
309-00-2	Aldrin	2.	U	1.8	U				
12674-11-2	Aroclor-1016	40.	U	35.	U				
11104-28-2	Aroclor-1221	81.	U	70.	U				
11141-16-5	Aroclor-1232	40.	U	35.	U				
53469-21-9	Aroclor-1242	40.	U	35.	U				
12672-29-6	Aroclor-1248	40.	U	35.	U				
11097-69-1	Aroclor-1254	40.	U	35.	U				
11096-82-5	Aroclor-1260	40.	U	35.	U				
60-57-1	Dieldrin	4.3		3.5	U				
959-98-8	Endosulfan I	3.1	J	1.8	U				
33213-65-9	Endosulfan II	4.	U	3.5	U				
1031-07-8	Endosulfan sulfate	2.2	J	3.5	U				
72-20-8	Endrin	4.	U	3.5	U				
7421-93-4	Endrin aldehyde	4.	U	3.5	U				
53494-70-5	Endrin ketone	1.	J	3.5	U				
76-44-8	Heptachlor	2.	U	1.8	U				
1024-57-3	Heptachlor epoxide	2.	U	1.8	U				
72-43-5	Methoxychlor	20.	U	18.	U				
8001-35-2	Toxaphene	200.	U	180.	U				
319-84-6	alpha-BHC	2.	U	1.8	U				
5103-71-9	alpha-Chlordane	3.1	J	1.8	U				
319-85-7	beta-BHC	2.	U	1.8	U				
319-86-8	delta-BHC	1.3	J	1.8	U				
58-89-9	gamma-BHC (Lindane)	1.9	J	1.8	U				
5103-74-2	gamma-Chlordane	5.3	J	1.8	U				

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
VOCS

VOA-8240															
	SAMPLE ID ------->	015-S-0061-01		015-C-0061-01		015-S-0061-10		015-S-0062-01		015-S-0062-10		015-S-0063-01	
	ORIGINAL ID ----->	015S006101		015C006101		0158006110		015S006201		015S006210		015S006301	
	LAB SAMPLE ID --->	S681632*2		S681632*1		S681632*3		S681632*4		S681632*5		S681632*6	
	ID FROM REPORT -->	015S006101		015C006101		015S006110		015S006201		015S006210		015S006301	
	SAMPLE DATE ----->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96		03/21/96	
	DATE ANALYZED --->	03/28/96		03/28/96		03/30/96		03/28/96		03/28/96		03/28/96	
	MATRIX ---------->	Soil		soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL	PJL04	VAL
71-55-6	1,1,1-Trichloroethane	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
79-34-5	1,1,2,2-Tetrachloroethane	5.6	UJ	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
79-00-5	1,1,2-Trichloroethane	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
75-34-3	1,1-Dichloroethane	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
75-35-4	1,1-Dichloroethene	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
107-06-2	1,2-Dichloroethane	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
78-87-5	1,2-Dichloropropane	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
78-93-3	2-Butanone (MEK)	28.	U	28.	U	26.	U	28.	U	26.	U	27.	UJ
591-78-6	2-Hexanone	28.	UJ	28.	U	26.	U	28.	U	26.	U	27.	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	28.	UJ	28.	U	26.	U	28.	U	26.	U	27.	UJ
67-64-1	Acetone	28.	U	28.	U	26.	U	28.	U	28.	U	27.	UJ
71-43-2	Benzene	3.4	U	3.4	U	3.1	U	3.3	U	3.1	U	3.3	UJ
75-27-4	Bromodichloromethane	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
75-25-2	Bromoform	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
74-83-9	Bromomethane	11.	U	11.	U	10.	U	11.	U	10.	U	11.	UJ
75-15-0	Carbon disulfide	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
56-23-5	Carbon tetrachloride	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
108-90-7	Chlorobenzene	5.6	UJ	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
75-00-3	Chloroethane	11.	U	11.	U	10.	U	11.	U	10.	U	11.	UJ
67-66-3	Chloroform	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
74-87-3	Chloromethane	11.	U	11.	U	10.	U	11.	U	10.	U	11.	UJ
540-59-0	1,2-Dichloroethene (total)	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
124-48-1	Dibromochloromethane	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
100-41-4	Ethylbenzene	5.6	UJ	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
75-09-2	Methylene chloride	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
100-42-5	Styrene	5.6	UJ	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
127-18-4	Tetrachloroethene	5.6	UJ	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
108-88-3	Toluene	1.8	J	2.7	J	5.2	U	5.6	U	5.2	U	2.9	J
79-01-6	Trichloroethene	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
75-01-4	Vinyl chloride	11.	U	11.	U	10.	U	11.	U	10.	U	11.	UJ
1330-20-7	Xylene (Total)	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
10061-01-5	cis-1,3-Dichloropropene	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ
10061-02-6	trans-1,3-Dichloropropene	5.6	U	5.6	U	5.2	U	5.6	U	5.2	U	5.4	UJ

*** Validation Complete ***

PENSACOLA, SITE 15
Phase II Soil
VOCS

VOA-8240

SAMPLE ID ------->	015-S-0063-10
ORIGINAL ID ----->	015S006310
LAB SAMPLE ID --->	S681632*7
ID FROM REPORT -->	015S006310
SAMPLE DATE ----->	03/21/96
DATE ANALYZED --->	03/28/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	PJL04	VAL
71-55-6	1,1,1-Trichloroethane	5.3	U
79-34-5	1,1,2,2-Tetrachloroethane	5.3	J
79-00-5	1,1,2-Trichloroethane	5.3	U
75-34-3	1,1-Dichloroethane	5.3	U
75-35-4	1,1-Dichloroethene	5.3	U
107-06-2	1,2-Dichloroethane	5.3	U
78-87-5	1,2-Dichloropropane	5.3	U
78-93-3	2-Butanone (MEK)	26.	U
591-78-6	2-Hexanone	26.	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	26.	UJ
67-64-1	Acetone	26.	U
71-43-2	Benzene	3.2	U
75-27-4	Bromodichloromethane	5.3	U
75-25-2	Bromoform	5.3	U
74-83-9	Bromomethane	10.	U
75-15-0	Carbon disulfide	5.3	U
56-23-5	Carbon tetrachloride	5.3	U
108-90-7	Chlorobenzene	5.3	UJ
75-00-3	Chloroethane	10.	U
67-66-3	Chloroform	5.3	U
74-87-3	Chloromethane	10.	U
540-59-0	1,2-Dichloroethene (total)	5.3	U
124-48-1	Dibromochloromethane	5.3	U
100-41-4	Ethylbenzene	5.3	UJ
75-09-2	Methylene chloride	5.3	U
100-42-5	Styrene	5.3	UJ
127-18-4	Tetrachloroethene	5.3	UJ
108-88-3	Toluene	5.3	UJ
79-01-6	Trichloroethene	5.3	U
75-01-4	Vinyl chloride	10.	U
1330-20-7	Xylene (Total)	5.3	UJ
10061-01-5	cis-1,3-Dichloropropene	5.3	U
10061-02-6	trans-1,3-Dichloropropene	5.3	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
SVOC/8270

SVOA-8270													
		SAMPLE ID ------->	015-S-0045-01		015-S-0045-10		015-S-0046-01		015-S-0046-09		015-S-0047-01		015-S-0047-10
		ORIGINAL ID ----->	015S004501		015S004510		015S004601		015S004609		015S004701		015S00471a
		LAB SAMPLE ID --->	S681570*5		S681570*6		S681570*7		S681570*8		S681602*1		S681602*2
		ID FROM REPORT -->	015S004501		015S004510		015S004601		015S004609		015S004701		015S004710
		SAMPLE DATE ----->	03/19/96		03/19/96		03/19/96		03/19/96		03/20/96		03/20/96
		DATE EXTRACTED -->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96		03/21/96
		DATE ANALYZED --->	03/23/96		03/23/96		03/23/96		03/23/96		03/25/96		03/25/96
		MATRIX ---------->	soi 1		Soil		Soil		Soil		Soil		Soil
		UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG
CAS #	Parameter		PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL
120-82-1	1,2,4-Trichlorobenzene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
95-50-1	1,2-Dichlorobenzene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
541-73-1	1,3-Dichlorobenzene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
106-46-7	1,4-Dichlorobenzene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
108-60-1	2,2'-oxybis(1-Chloropropane)		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
95-95-4	2,4,5-Trichlorophenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
88-06-2	2,4,6-Trichlorophenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
120-83-2	2,4-Dichlorophenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
105-67-9	2,4-Dimethylphenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
51-28-5	2,4-Dinitrophenol		1800.	U	1800.	U	1900.	U	1800.	U	1900.	U	1800.	U
121-14-2	2,4-Dinitrotoluene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
606-20-2	2,6-Dinitrotoluene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
91-58-7	2-Chloronaphthalene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
95-57-8	2-Chlorophenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
91-57-6	2-Methylnaphthalene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
95-48-7	2-Methylphenol (o-Cresol)		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
88-74-4	2-Nitroaniline		1800.	U	1800.	U	1900.	U	1800.	U	1900.	U	1800.	U
88-75-5	2-Nitrophenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
91-94-1	3,3'-Dichlorobenzidine		710.	U	690.	U	720.	U	700.	U	730.	U	690.	U
999900-32-2	3-Methylphenol/4-Methylphenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
99-09-2	3-Nitroaniline		1800.	U	1800.	U	1900.	U	1800.	U	1900.	U	1800.	U
534-52-1	2-Methyl-4,6-Dinitrophenol		1800.	U	1800.	U	1900.	U	1800.	U	1900.	U	1800.	U
101-55-3	4-Bromophenyl-phenylether		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
59-50-7	4-Chloro-3-methylphenol		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
106-47-8	4-Chloroaniline		710.	U	690.	U	720.	U	700.	U	730.	U	690.	U
7005-72-3	4-Chlorophenylphenylether		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
100-01-6	4-Nitroaniline		1800.	U	1800.	U	1900.	U	1800.	U	1900.	U	1800.	U
100-02-7	4-Nitrophenol		1800.	U	1800.	U	1900.	U	1800.	U	1900.	U	1800.	U
83-32-9	Acenaphthene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
208-96-8	Acenaphthylene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
120-12-7	Anthracene		350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
56-55-3	Benzo(a)anthracene		350.	U	350.	U	360.	U	350.	U	68.	J	340.	U
50-32-8	Benzo(a)pyrene		95.	U	93.	U	97.	U	94.	U	100.		92.	U
205-99-2	Benzo(b)fluoranthene		350.	U	350.	U	360.	U	350.	U	140.	J	340.	U
191-24-2	Benzo(g,h,i)perylene		350.	U	350.	U	360.	U	350.	U	82.	J	340.	U
207-08-9	Benzo(k)fluoranthene		350.	U	350.	U	360.	U	350.	U	54.	J	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
SVOC/8270

SVOA-8270													
	SAMPLE ID ------->	015-S-0045-01		015-S-0045-10		015-S-0046-01		015-S-0046-09		015-S-0047-01		015-S-0047-10	
	ORIGINAL ID ----->	015S004501		015S004510		015S004601		015S004609		015S004701		015S004710	
	LAB SAMPLE ID --->	S681570*5		S681570*6		S681570*7		S681570*8		S681602*1		S681602*2	
	ID FROM REPORT -->	015S004501		015S004510		0155004601		015S004609		015S004701		015S004710	
	SAMPLE DATE ----->	03/19/96		03/19/96		03/19/96		03/19/96		03/20/96		03/20/96	
	DATE EXTRACTED -->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96		03/21/96	
	DATE ANALYZED --->	03/23/96		03/23/96		03/23/96		03/23/96		03/25/96		03/25/96	
	MATRIX ---------->	Soil		soil		Soil		Soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL
85-68-7	Butylbenzylphthalate	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
86-74-8	Carbazole	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
218-01-9	Chrysene	350.	U	350.	U	360.	U	350.	U	92.	J	340.	U
84-74-2	Di-n-butylphthalate	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
117-84-0	Di-n-octyl phthalate	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
53-70-3	Dibenz(a,h)anthracene	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
132-64-9	Dibenzofuran	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
84-66-2	Diethylphthalate	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
131-11-3	Dimethyl phthalate	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
206-44-0	Fluoranthene	350.	U	350.	U	29.	J	350.	U	126.	J	340.	U
86-73-7	Fluorene	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
118-74-1	Hexachlorobenzene	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
87-68-3	Hexachlorobutadiene	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
77-47-4	Hexachlorocyclopentadiene	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
67-72-1	Hexachloroethane	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
193-39-5	Indeno(1,2,3-cd)pyrene	350.	U	350.	U	360.	U	350.	U	83.	J	340.	U
78-59-1	Isophorone	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
621-64-7	N-Nitroso-di-n-propylamine	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
86-30-6	N-Nitrosodiphenylamine	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
91-20-3	Naphthalene	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
98-95-3	Nitrobenzene	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
87-86-5	Pentachlorophenol	1800.	U	1800.	U	1900.	U	1800.	U	1900.	U	1800.	U
85-01-8	Phenanthrene	350.	U	350.	U	360.	U	350.	U	34.	J	340.	U
108-95-2	Phenol	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
129-00-0	Pyrene	350.	U	350.	U	31.	J	350.	U	100.	J	340.	U
111-91-1	bis(2-Chloroethoxy)methane	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
111-44-4	bis(2-Chloroethyl)ether	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	U	350.	U	360.	U	350.	U	370.	U	340.	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
SVOC/8270

SVOA-8270											
	SAMPLE ID ------->	015-S-0048-01		015-5-0048-10		015-S-0064-01		015-C-0064-01		015-S-0064-09	
	ORIGINAL ID ----->	015S004801		0155004810		0155006401		015C006401		015S006409	
	LAB SAMPLE ID --->	S681602*3		S681602*4		S681570*9		S681570*4		S681570*10	
	ID FROM REPORT -->	015S004801		0155004810		0155006401		015C006401		015S006409	
	SAMPLE DATE ----->	03/20/96		03/20/96		03/19/96		03/19/96		03/19/96	
	DATE EXTRACTED -->	03/21/96		03/21/96		03/21/96		03/21/96		03/21/96	
	DATE ANALYZED --->	03/25/96		03/25/96		03/23/96		03/23/96		03/23/96	
	MATRIX ---------->	soil		Soil		Soil		soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL
120-82-1	1,2,4-Trichlorobenzene	350.	U	340.	U	370.	U	400.	U	350.	U
95-50-1	1,2-Dichlorobenzene	350.	U	340.	U	370.	U	400.	U	350.	U
541-73-1	1,3-Dichlorobenzene	350.	U	340.	U	370.	U	400.	U	350.	U
106-46-7	1,4-Dichlorobenzene	350.	U	340.	U	370.	U	400.	U	350.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350.	U	340.	U	370.	U	400.	U	350.	U
95-95-4	2,4,5-Trichlorophenol	350.	U	340.	U	370.	U	400.	U	350.	U
88-06-2	2,4,6-Trichlorophenol	350.	U	340.	U	370.	U	400.	U	350.	U
120-83-2	2,4-Dichlorophenol	350.	U	340.	U	370.	U	400.	U	350.	U
105-67-9	2,4-Dimethylphenol	350.	U	340.	U	370.	U	400.	U	350.	U
51-28-5	2,4-Dinitrophenol	1800.	U	1800.	U	1900.	U	2000.	U	1800.	U
121-14-2	2,4-Dinitrotoluene	350.	U	340.	U	370.	U	400.	U	350.	U
606-20-2	2,6-Dinitrotoluene	350.	U	340.	U	370.	U	400.	U	350.	U
91-58-7	2-Chloronaphthalene	350.	U	340.	U	370.	U	400.	U	350.	U
95-57-8	2-Chlorophenol	350.	U	340.	U	370.	U	400.	U	350.	U
91-57-6	2-Methylnaphthalene	350.	U	340.	U	370.	U	400.	U	350.	U
95-48-7	2-Methylphenol (o-Cresol)	350.	U	340.	U	370.	U	400.	U	350.	U
88-74-4	2-Nitroaniline	1800.	U	1800.	U	1900.	U	2000.	U	1800.	U
88-75-5	2-Nitrophenol	350.	U	340.	U	370.	U	400.	U	350.	U
91-94-1	3,3'-Dichlorobenzidine	700.	U	680.	U	730.	U	800.	U	690.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	350.	U	340.	U	370.	U	400.	U	350.	U
99-09-2	3-Nitroaniline	1800.	U	1800.	U	1900.	U	2000.	U	1800.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	1800.	U	1800.	U	1900.	U	2000.	U	1800.	U
101-55-3	4-Bromophenyl-phenylether	350.	U	340.	U	370.	U	400.	U	350.	U
59-50-7	4-Chloro-3-methylphenol	350.	U	340.	U	370.	U	400.	U	350.	U
106-47-8	4-Chloroaniline	700.	U	680.	U	730.	U	800.	U	690.	U
7005-72-3	4-Chlorophenylphenylether	350.	U	340.	U	370.	U	400.	U	350.	U
100-01-6	4-Nitroaniline	1800.	U	1800.	U	1900.	U	2000.	U	1800.	U
100-02-7	4-Nitrophenol	1800.	U	1800.	U	1900.	U	2000.	U	1800.	U
83-32-9	Acenaphthene	350.	U	340.	U	370.	U	400.	U	350.	U
208-96-8	Acenaphthylene	350.	U	340.	U	370.	U	400.	U	350.	U
120-12-7	Anthracene	350.	U	340.	U	370.	U	400.	U	350.	U
56-55-3	Benzo(a)anthracene	54.	J	340.	U	72.	J	86.	J	350.	U
50-32-8	Benzo(a)pyrene	74.	J	91.	U	120.		150.		93.	U
205-99-2	Benzo(b)fluoranthene	110.	J	340.	U	180.	J	210.	J	350.	U
191-24-2	Benzo(g,h,i)perylene	50.	J	340.	U	130.	J	150.	J	350.	U
207-08-9	Benzo(k)fluoranthene	45.	J	340.	U	72.	J	79.	J	350.	U

*** Validation Complete ***

PENSACOLA, SITE 15
PHASE II Soil
SVOC/8270

SVOA-8270												
	SAMPLE ID ------->	015-S-0048-01		015-S-0048-10		015-S-0064-01		015-C-0064-01		015-S-0064-09		
	ORIGINAL ID ----->	015S004801		015S004810		0158006401		015C006401		015S006409		
	LAB SAMPLE ID --->	S681602*3		S681602*4		S681570*9		S681570*4		S681570*10		
	ID FROM REPORT -->	0158004801		015S004810		0158006401		015C006401		015S006409		
	SAMPLE DATE ----->	03/20/96		03/20/96		03/19/96		03/19/96		03/19/96		
	DATE EXTRACTED -->	03/21/96		03/21/96		03/21/96		03/23/96		03/23/96		
	DATE ANALYZED --->	03/25/96		03/25/96		03/23/96						
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		
CAS #	Parameter	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	PJL03	VAL	
85-68-7	Butylbenzylphthalate	350.	U	340.	U	370.	U	400.	U	350.	U	
86-74-8	Carbazole	350.	U	340.	U	370.	U	400.	U	350.	U	
218-01-9	Chrysene	69.	J	340.	U	110.	J	120.	J	350.	U	
84-74-2	Di-n-butylphthalate	350.	U	340.	U	370.	U	400.	U	350.	U	
117-84-0	Di-n-octyl phthalate	350.	U	340.	U	370.	U	400.	U	350.	U	
53-70-3	Dibenz(a,h)anthracene	350.	U	340.	U	370.	U	400.	U	350.	U	
132-64-9	Dibenzofuran	350.	U	340.	U	370.	U	400.	U	350.	U	
84-66-2	Diethylphthalate	350.	U	340.	U	370.	U	400.	U	350.	U	
131-11-3	Dimethyl phthalate	350.	U	340.	U	370.	U	400.	U	350.	U	
206-44-0	Fluoranthene	88.	J	340.	U	89.	J	100.	J	350.	U	
86-73-7	Fluorene	350.	U	340.	U	370.	U	400.	U	350.	U	
118-74-1	Hexachlorobenzene	350.	U	340.	U	370.	U	400.	U	350.	U	
87-68-3	Hexachlorobutadiene	350.	U	340	U	370.	U	400.	U	350.	U	
77-47-4	Hexachlorocyclopentadiene	350.	U	340	U	370.	U	400.	U	350.	U	
67-72-1	Hexachloroethane	350.	U	340	U	370.	U	400.	U	350.	U	
193-39-5	Indeno(1,2,3-cd)pyrene	52.	J	340	U	120.	J	130.	J	350.	U	
78-59-1	Isophorone	350.	U	340	U	370.	U	400.	U	350.	U	
621-64-7	N-Nitroso-di-n-propylamine	350.	U	340.	U	370.	U	400.	U	350.	U	
86-30-6	N-Nitrosodiphenylamine	350.	U	340.	U	370.	U	400.	U	350.	U	
91-20-3	Naphthalene	350.	U	340.	U	370.	U	400.	U	350.	U	
98-95-3	Nitrobenzene	350.	U	340.	U	370.	U	400.	U	350.	U	
87-86-5	Pentachlorophenol	1800.	U	1800.	U	1900.	U	2000.	U	1800.	U	
85-01-8	Phenanthrene	40.	J	340.	U	32.	J	40.	J	350.	U	
108-95-2	Phenol	350.	U	340.	U	370.	U	400.	U	350.	U	
129-00-0	Pyrene	76.	J	340.	U	120.	J	140.	J	350.	U	
111-91-1	bis(2-Chloroethoxy)methane	350.	U	340.	U	370.	U	400.	U	350.	U	
111-44-4	bis(2-Chloroethyl)ether	350.	U	340.	U	370.	U	400.	U	350.	U	
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	350.	U	340.	U	370.	U	400.	U	350.	U	

*** Validation Complete ***

Addendum

Appendix F
Final Remedial Investigation Report
Site15
NAS Pensacola

Instructions: Please add **this** new page as an addendum to Appendix **F**

Laboratory Report

Dieldrin

Navy Public Works Center
Environmental Laboratory
Bldg 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Requester: NAS Environmental
Address: Bldg. 624, Code 00412
NAS Pensacola, FL 32508
Phone #: 452-3900
Contact: Ron Joyner

Report Number: 9711011
Sample Date: 17 Oct 97
Received Date: 17 Oct 97
Sample Site: NAS Pensacola, FL
Job Order #: 160 5014

Sample ID#	Lab	1- 74713			2-			3-			4-		
Sample Name	Requester	15GS68											
Collector Name		R. Joyner											
Date/Time Collected (Military)	Comp start												
	Comp stop												
	Grab	17 Oct 97 @ 1100											
Sample Type	Comp/Grab	Grab											
Sample Matrix		Groundwater											
Extraction Technician		J. Jernigan											
Date of Extraction		20 Oct 97											
Analyst		J. Moore											
Date of Analysis		7 Nov 97											
Dilution		Dilution X 1			Dilution X 1			Dilution X 1			Dilution X 1		
PARAMETER	METHOD #	ID# 1- 74713	units	M.D.L.	ID# 2-	units	M.D.L.	ID# 3-	units	M.D.L.	ID# 4-	units	M.D.L.
Pesticides	508												
Dieldrin		BDL	ug/L	0.021		ug/L	0.021		ug/L	0.021		ug/L	0.021

SURROGATE RECOVERIES	Acceptance Limits				
Compound					
2,4,5,6-Tetrachloro-m-xylene	60-140	101			
Decachlorobiphenyl	60-140	62			

Comments: ug/l=micrograms per liter. BDL=Below Detection Limit. M.D.L.=Method Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 20-Nov-97 / 13:49

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL
# of pages ▶ 1

To JEFF LUNGFORD
From RON JOYNER
Dept./Agency
Phone #
Fax #
Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

DEC-01-1997 05:53 %

Appendix *G*

Reference Concentrations and Background Samples Analytical Report

Summary Analytical Results for Shallow and Intermediate
Background Groundwater Samples
June 1994
(All results in µg/l)

Parameter	FPDWS	Sample Number					
		01GS67	01GI68	01GS69	01GI70	Mean Concentration	RC (2xMC)
Aluminum	200*	*4240.0*	146.5 U	*3270.0*	109.0 U	*1941.4*	*3882.8*
Antimony	6	15.1 U	15.1 U	15.1 U	15.1U	*15.1*	*30.2*
Arsenic	50	1.4 U	1.4 U	1.4 U	1.4 U	1.4	2.8
Barium	2000	5.5 U	6.75 U	9.45 U,	4.75 U	6.6	13.2
Berylium	4	.55 U	.55 U	.55 U	.55 U	.55	1.1
Cadmium	5	1.7 U	1.7 U	1.7 U	1.7 U	1.7	3.4
Calcium	—	17800.0	5670.0	6300.0	5350.0	8780.0	17500.0
Chromium	100	4.85 U	2.6 U	59.9	2.6 U	17.5	35.0
Cobalt	—	2.05 U	2.05 U	2.05 U	2.05 U	2.05	4.1
Copper	1000*	5.4 U	5.4 U	16.2	5.4 U	8.1	16.2
Iron	300'	677.0	942.0	1770.0	26.65	*853.9*	1707.8
Lead	15	.8 U	.8 U	.8 U	.8 U	.8	1.6
Magnesium	—	795.0 U	665.0 U	1255.0 U	3030.0	1436.3	2872.6
Manganese	50'	6.7	8.9	26.7	1.55 U	11.0	22.0
Mercury	2	.1 U	.1 U	.1 U	.1 U	.1	.2
Nickel	100	19.95 U	19.95 U	19.95 U	19.95 U	19.95	39.9
Potassium	—	13300.0	1275.0 U	6560.0	3200.0	6083.8	12167.6
Selenium	50	1.95 U	1.95 U	1.95 U	1.95 U	1.95	3.9
Silver	100	2.0 U	2.0 U	2.0 U	2.0 U	2.0	4.0
Sodium	160,000	10700.0	8350.0	7830.0	9810.0	9172.5	18345.0

Summary Analytical Results for Shallow and Intermediate Background Groundwater Samples
June 1994
(All results in µg/l)

Parameter	FPDWS	Sample Number					
		01GS67	01GI68	01GS69	01GI70	Mean Concentration	RC (2xMC)
Thallium	2	1.8 U	1.8 U	1.8 U	1.8	1.8	***3.6***
Vanadium	49**	7.9	3.75 U	3.75 U	3.75 U	4.8	9.6
Zinc	5000*	8.75 U	3.9 U	290	3.75 U	76.60	153.20

Notes:

µg/l	=	Micrograms per liter.
U	=	Parameter not detected, value reported equals one-half detection limit.
RC	=	Reference concentration, calculated as two times the mean concentrations (MC).
FPDWS	=	Florida and/or USEPA Primary Drinking Water Standard (lower of the two) MCL.
*	=	Florida Secondary Drinking Water Standard (FSDWS).
**	=	Florida Groundwater Guidance Concentration.
Bold Italics	=	The reported value exceeds the FPDWS/USEPA or FSDWS MCL.

Parameter	Minimum Detected Concentration	Maximum Detected Concentration	Mean Concentration (MC)	Reference Concentration (2 X MC)
Metals (mg/kg)				
Aluminum	95.20	12400.00	1916.68	3833.36
Arsenic	1.70	2.40	0.78	1.56
Barium	1.20	10.10	2.32	4.63
Beryllium	0.20U	0.21 U	0.21	0.41
Cadmium	0.50U	0.50U	0.50	1.00
Calcium	35.70	6740.00	456.18	912.37
Chromium (total)	2.40	11.80	3.07	6.13
Cobalt	0.90U	0.95U	0.93	1.87
Copper	5.10	5.10	2.87	5.74
Cyenide	0.25U	0.26U	0.26	0.52
Iron	205.00	9180.00	1372.5	2745.00
Lead	0.44	28.00	3.66	7.32
Magnesium	365.00	365.00	66.67	133.33
Manganese	1.70	63.70	10.68	21.36
Mercury	0.05U	0.05U	0.05	0.10
Nickel	3.10U	3.25U	3.19	6.38
Potassium	225	233	230.34	460.67
Selenium	0.30	0.31	0.31	0.62
Silver*	1.00	1.05	1.04	2.07
Sodium	97.20	108.00	53.93	107.85
Vanadium	1.60	20.60	2.91	5.83
Zinc	3.30	29.00	8.43	16.87

Notes:

mg/kg = Milligrams per kilogram

U = Parameter not detected, value reported equals one-half the detection limit.

RC = Reference concentration, calculated as two times the mean concentration (MC).

NAS PENSACOLA, BACKGROUND
GROUNDWATER SAMPLES
1994 DATA

	SAMPLE ID ------->	D01-G-GI68-00		001-G-GI70-00		001-G-GS67-00		D01-G-GS69-00			
	ORIGINAL ID ----->	D1GI68		018170		D1GS67		D1GS69			
	LAB SAMPLE ID --->	622850		622852		622849		522851			
	SAMPLE DATE ----->	D7f01/94		07/01/94		07/01/94		37/01/94			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L			
Method	Parameter	93820	VAL	93820	VAL	93820	VAL	93820	VAL		
METAL	Cyanide	NR		NR		NR		NR			
METAL	Aluminum	293.	U	218.	U	4249.		3270.			
METAL	Antimony	30.2	U	30.2	U	30.2	U	30.2	U		
METAL	Arsenic	2.8	U	2.8	U	2.8	U	2.8	U		
METAL	Barium	13.5	U	9.5	U	11.	U	18.9	U		
METAL	Beryllium	1.1	U	1.1	U	1.1	U	1.1	U		
METAL	Cadmium	3.4	U	3.4	U	3.4	U	3.4	U		
METAL	Calcium	5670.		5350.		17800.		6300.			
METAL	Chromium	5.2	U	5.2	U	9.7	U	59.9			
METAL	Cobalt	4.1	U	4.1	U	4.1	U	4.1	U		
METAL	Copper	10.8	U	10.8	U	10.8	U	16.2			
METAL	Iron	942.		53.3	U	677.		1770.			
METAL	Lead	1.6	UJ	1.6	UJ	1.6	UJ	1.6	UJ		
METAL	Magnesium	1330.	U	3030.		1590.	U	2510.	U		
METAL	Manganese	8.9		3.1	U	6.7		26.7			
UETAL	Mercury	0.2	U	0.2	U	0.2	U	0.2	U		
METAL	Nickel	39.9	U	39.9	U	39.9	U	39.9	U		
METAL	Potarsium	2550.	U	3200.		13300.		6560.			
METAL	Selcnium	3.9	U	3.9	U	3.9	U	3.9	UJ		
METAL	Silver	4.	U	4.	U	4.	U	4.	U		
METAL	Sodium	8350.		9810.		10700.		7830.			
METAL	Thallfun	3.6	UJ	3.6	UJ	3.6	UJ	3.6	UJ		
METAL	Vanadium	7.5	U	7.5	U	7.9		7.5	U		
METAL	Zinc	7.8	U	7.5	U	17.5	U	290.			

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

SAMPLE ID ------->	001-S-0067-17					
ORIGINAL ID ----->	0186717					
LAB SAMPLE ID --->	01S6717					
SAMPLE DATE ----->						
DATE ANALYZED --->	06/17/93					
MATRIX ---------->	Soil					
UNITS ---------->	mg/L					
Method Parameter	NOSDG VAL					
HEXACHROME 10-32-0	0.026					

*** Validation Complete *++

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-01		001-S-0067-03		001-S-0067-05		001-S-0067-07		001-S-0067-09		001-S-0067-11	
	ORIGINAL ID ----->	01S6701		01S6703		11S6705		01S6707		01S6709		01S6711	
	LAB.SAMPLE ID --->	553146		553153		553155		553156		553157		553158	
	SAMPLE DATE ----->												
	MATRIX ---------->	Soil		soil		soil		soil		soil		soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
Method	Parameter	731446	VAL	731446	VAL	731446	VAL	731446	VAL	731446	VAL	731446	VAL
YETAL	Silver	2.	U	2.	U	2.	U	2.1	U	2.1	U	2.1	U
METAL	Aluminum	12400.		1800.		9050.		1320.		932.		574.	
METAL	Arsenic	2.4	J	0.61	UJ	1.7	J	0.62	UJ	0.62	UJ	0.62	UJ
UETAL	Barium	5.8		1.6		10.1		1.8		1.8		1.2	
UETAL	Beryllium	0.4	U	0.41	U	0.4	U	0.42	U	0.42	U	0.41	U
METAL	Calcium	421.		227.		6740,		113.		78.7		67.	
METAL	Cadmium	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
UETAL	Cyanide	0.51	U	0.51	U	0.5	U	0.52	U	0.52	U	0.52	U
YETAL	Cobalt	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U	1.9	U
UETAL	Chromium	11.8		2.	U	8.		2.1	U	2.1	U	2.1	U
YETAL	Copper	5.1		5.1	U	5.1		5.2	U	5.2	U	5.2	U
METAL	Iron	9180.		1450.		4790.		1140.		866.		525.	
YETAL	Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
YETAL	Potassium	452.	U	458.	U	450.	U	466.	U	466.	U	464.	U
YETAL	Magnesium	96.3	U	97.4	U	365.		99.2	U	99.2	U	98.8	U
METAL	Manganese	63.7		3.7		63.6		3.8		4.4		5.7	
YETAL	Sodium	116.	U	87.5	U	112.	U	111.	U	135.	U	98.	U
METAL	Nickel	6.3	U	6.3	U	6.2	U	6.5	U	6.5	U	6.4	U
YETAL	Lead	20.1		1.3		28.		1.2		0.53		0.41	U
METAL	Antimony	9.3	U	9.4	U	9.3	U	9.6	U	9.6	U	9.5	U
YETAL	Selenium	0.61	U	0.61	U	0.6	U	0.62	U	0.62	U	0.62	U
METAL	Thallium	0.81	U	0.82	U	0.81	U	0.83	U	0.83	U	0.83	U
YETAL	Vanedium	20.6		2.6		12.5		2.		1.6		1.5	U
YETAL	Zinc	10.9		3.	U	29.		2.8	U	3.3		7.2	

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-13		001-S-0067-17		001-S-0067-19		001-S-0067-21		001-S-0067-23		001-S-0069-01	
	ORIGINAL ID ----->	01S6713		01S6717		01S6719		01S6721		01S6723		01S6901	
	LAB SAMPLE ID --->	553160		553720		553194		553169		553173		552866	
	SAMPLE DATE ----->												
	MATRIX ---------->	Soil		soil		soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
Method	Parameter	731446	VAL	314135	VAL	314135	VAL	731446	VAL	731446	VAL	731446	VAL
METAL	Silver	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.	U
METAL	Aluminum	502.		473.		179.		156.		95.2		1240.	
METAL	Arsenic	0.62	UJ	0.7	UJ	0.62	UJ	0.62	UJ	0.62	UJ	0.61	UJ
METAL	Barium	1.	U	1.	U	1	U	1.	U	1.	U	5.9	
METAL	Beryllium	0.42	U	0.41	U	0.42	U	0.41	U	0.41	U	0.41	U
METAL	Calcium	50.6		47.7		32.5	U	35.7		36.5		162.	
METAL	Cadmium	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
METAL	Cyanide	0.52	U	0.51	U	0.52	U	0.51	U	0.52	U	0.51	U
METAL	Cobalt	1.9	U	1.9	U	1.9	U	1.9	U	1.9	U	1.8	U
METAL	Chromium	21	U	2.1	U	3.7		2.1	U	2.1	U	2.	U
METAL	copper	5.2	U	5.1	U	5.2	U	5.1	U	5.2	U	5.1	U
METAL	Iron	482.		483.		449.		237.		225.		911.	
METAL	Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
METAL	Potassium	464.	U	460.	U	466.	U	460.	U	463.	U	453.	U
METAL	Magnesium	98.9	U	97.9	U	99.2	U	97.9	U	98.7	U	96.6	U
METAL	Manganese	5.7		5.6		4.1		1.7		1.7		3.7	
METAL	Sodium	93.9	U	88.8	U	73.8	U	108.	U	101.	U	101.	U
METAL	Nickel	6.4	U	6.4	U	6.5	U	6.6	U	6.4	U	6.3	U
METAL	Lead	0.44		1.1		0.6		0.41	U	0.41	U	6.7	
METAL	Antimony	9.6	U	9.5	R	9.6	R	9.5	U	9.5	U	9.3	U
METAL	Selenium	0.62	U	0.62	U	0.62	U	0.62	U	0.62	U	0.61	U
METAL	Thallium	0.83	U	0.82	U	0.83	U	0.82	U	0.83	U	0.81	U
METAL	Vanadium	1.5	U	1.4	U	1.5	U	1.4	U	1.5	U	2.5	
METAL	Zinc	7.3		6.		29.		19.9		17.2		8.2	

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0069-03		001-S-0069-05		001-S-0069-07		D01-S-0069-09		001-S-0069-11		001-S-0069-13	
	ORIGINAL ID ----->	01S6903		01S6905		01S6907		01S6909		01S6911		01S6913	
	LAB.SAMPLE ID --->	552867		552868		552869		552870		552871		552872	
	SAMPLE DATE ----->												
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
Method	Parameter	731446	VAL	731446	VAL	731446	VAL	731446	VAL	731446	VAL	731446	VAL
METAL	Silver	2.	U	2.1	U	2.1	U	2.	U	2.1	U	2.1	U
METAL	Aluminum	1430.		1550.		991.		820.		293.		695.	
METAL	Arsenic	0.61	UJ	0.62	UJ	0.62	UJ	0.61	UJ	0.62	UJ	0.62	UJ
METAL	Bariun	3.		2.4		1.7		1.6				1.8	
METAL	Beryllium	0.41	U	0.42	U	0.41	U	0.41	U	0.41	U	0.42	U
METAL	Calcium	71.4		50.8		32.3	U	31.9	U	32.3	U	45.4	
METAL	Cadmium	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
METAL	Cyanide	0.51	U	0.52	U	0.52	U	0.51	U	0.52	U	0.52	U
METAL	Cobalt	1.8	U	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U
METAL	Chromium	3.5		2.4		3.3		3.5		5.4		4.6	
METAL	Copper	5.1	U	5.2	U	5.2	U	5.1	U	5.2	U	5.2	U
METAL	Iron	1010.		963.		697.		595.		205.		497.	
METAL	Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
METAL	Potassiun	456.	U	465.	U	463.	U	457.	U	463.	U	466.	U
METAL	Magnesium	97.1	U	99.	U	98.7	U	97.2	U	98.7	U	99.2	U
METAL	Hanganese	3.7		3.7		4.6		3.7		3.4		5.7	
METAL	Sodium	99.6	U	109.	U	103.	U	118.	U	97.2		91.3	U
METAL	Nickel	6.3	U	6.4	U	6.4	U	6.3	U	6.4	U	6.5	U
METAL	Leed	2.9		0.79		0.56		0.49		0.4	U	0.59	
METAL	Antimony	9.4	U	9.6	U	9.5	U	9.4	U	9.5	U	9.6	U
METAL	Selenium	0.61	U	0.62	U	0.62	U	0.61	U	0.62	U	0.62	U
METAL	Thallium	0.82	U	0.83	U	0.83	U	0.82	U	0.03	U	0.83	U
METAL	Vanadiun	1.7		1.6		1.5	U	1.4	U	1.5	U	1.5	U
METAL	zinc	4.6		3.6	U	2	U	2.4	U	1.6	U	3.	U

*** Validation Complete ***

DATALCP3
10/13/96

	SAMPLE ID ------->	001-S-0067-01		001-S-0067-03		001-S-0067-05		001-S-0067-07		001-S-0067-09		001-S-0067-11	
	ORIGINAL ID ----->	01S6701		01S6703		01S6705		01S6707		01S6709		01S6711	
	LAB.SAMPLE ID --->	553077		553078		553079		553080		553081		553106	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/11/93		06/11/93		06/11/93		06/11/93		06/11/93		06/11/93	
	DATE ANALYZED --->	06/16/93		06/16/93		06/16/93		06/16/93		06/16/93		06/16/93	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL
PEST	Heptachlor epoxide	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	Endosulfan sulfate	3.3	U	3.4	U	3.3	U	3.4	U	3.4	U	3.4	U
PEST	Aroclor-1260	33.	U	34.	U	33.	U	34.	U	34.	U	34.	U
PEST	Aroclor-1254	33.	U	34.	U	33.	U	34.	U	34.	U	34.	U
PEST	Aroclor-1221	67.	U	68.	U	68.	U	69.	U	68.	U	70.	U
PEST	Aroclor-1232	33.	U	34.	U	33.	U	34.	U	34.	U	34.	U
PEST	Aroclor-1248	33.	U	34.	U	33.	U	34.	U	34.	U	34.	U
PEST	Aroclor-1016	33.	U	34.	U	33.	U	34.	U	34.	U	34.	U
PEST	Aldrin	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	alpha-BHC	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	beta-BHC	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	delta-BHC	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	Endosulfan 11	3.3	U	3.4	U	3.3	U	3.6	U	3.4	U	3.4	U
PEST	4,4'-DDT	0.55	J	3.4	U	3.3	U	3.4	U	3.4	U	3.4	U
PEST	alpha-Chlordane	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	gamma-Chlordane	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	Aroclor-1242	33.	U	34.	U	33.	U	34.	U	34.	U	34.	U
PEST	Endrin ketone	3.3	U	3.4	U	3.3	U	3.6	U	3.6	U	5.4	U
PEST	gamma-BHC (Lindane)	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	Dieldrin	0.45	J	3.4	U	3.3	U	3.6	U	3.4	U	3.4	U
PEST	Endrin	3.3	U	3.4	U	3.3	U	3.4	U	3.4	U	3.4	U
PEST	Hethoxychlor	17.	U	17.	U	17.	U	18.	U	17.	U	18.	U
PEST	4,4'-DDD	3.3	U	3.4	U	3.3	U	3.6	U	3.4	U	3.4	U
PEST	4,4'-DDE	0.14	J	3.4	U	3.3	U	3.4	U	3.4	U	3.4	U
PEST	Endrin aldehyde	1.4	J	3.4	U	0.62	J	3.4	U	3.4	U	3.4	U
PEST	Heptachlor	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U
PEST	Toxaphene	170.	U	170.	U	170.	U	180.	U	170.	U	180.	U
PEST	Endosulfan I	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.8	U

+++ Validation Complete ***

NAS PENSACOLA, BACKGROUND SOIL SAMPLES 1993 DATA

	SAMPLE ID -------:	001-S-0067-13		001-S-0067-17		001-S-0067-19		001-S-0067-21		001-S-0067-23		001-S-0069-01	
	ORIGINAL ID -----:	01S6713		01S6717		01S6719		01S6721		01S6723		31S6901	
	LAB SAMPLE ID ---:	553120		553121		553193		553124		553130		552859	
	SAMPLE DATE -----:												
	DATE EXTRACTED --:	06/11/93		06/11/93		06/11/93		06/11/93		06/11/93		06/04/93	
	DATE ANALYZED ---:	06/16/93		06/16/93		06/18/93		06/16/93		06/18/93		06/19/93	
	MATRIX ----------:	Soil		Soil		soil		Eoil		soil		Soil	
	UNITS ----------:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	120	VAL	32	VAL	120	VAL	32	VAL
PEST	Heptachlor epoxide	1.8	U	1.8	U	1.8	U	1.8	U	0.029	J	0.13	J
PEST	Endosulfan sulfate	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	3.3	U
PEST	Aroclor-1260	34.	U	34.	U	34.	U	34.	U	34.	U	33.	U
PEST	Aroclor-1254	34.	U	34.	U	34.	U	34.	U	34.	U	33.	U
PEST	Aroclor-1221	69.	U	69.	U	69.	U	69.	U	69.	U	67.	U
PEST	Aroclor-1232	34.	U	34.	U	34.	U	34.	U	34.	U	33.	U
PEST	Aroclor-1248	34.	U	34.	U	34.	U	34.	U	34.	U	33.	U
PEST	Aroclor-1016	34.	U	34.	U	34.	U	34.	U	34.	U	33.	U
PEST	Aldrin	1.8	U	1.8	U	1.8	U	1.8	U	0.38	J	1.7	U
PEST	alpha-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.7	U
PEST	beta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.7	U
PEST	delta-BHC	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.7	U
PEST	Endosulfan II	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	3.3	U
PEST	4,4'-DDT	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	2.2	J
PEST	alpha-Chlordane	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.7	U
PEST	gamma-Chlordane	1.8	U	1.8	U	1.6	U	1.8	U	0.059	J	0.14	J
PEST	Aroclor-1242	34.	U	34.	U	34.	U	34.	U	34.	U	33.	U
PEST	Endrin ketone	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	3.3	U
PEST	gam-BHC (Lindane)	1.8	U	1.8	U	1.8	U	1.8	U	0.43	J	1.7	U
PEST	Dieldrin	3.4	U	3.4	U	3.4	U	3.4	U	1.	J	0.53	J
PEST	Endrin	3.4	U	3.4	U	3.4	U	3.4	U	1.1	J	3.3	U
PEST	Methoxychlor	18.	U	18.	U	18.	U	18.	U	18.	U	17.	U
PEST	4'4' -DDD	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	3.3	U
PEST	4,4'-DDE	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	2.6	J
PEST	Endrin aldehyde	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	3.3	U
PEST	Heptachlor	1.8	U	1.8	U	1.8	U	1.8	U	0.55	J	1.7	U
PEST	Toxaphene	180.	U	180.	U	180.	U	180.	U	180.	U	170.	U
PEST	Endosulfan I	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.7	U

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID	001-S-0069-03		001-S-0069-05		101-S-0069-07		001-S-0069-09		001-S-0069-11		001-S-0069-13	
	ORIGINAL ID	01S6903		01S6905		01S6907		01S6909		01S6911		01S6913	
	LAB SAMPLE ID	552860		552861		552862		552863		552864		552865	
	SAMPLE DATE												
	DATE EXTRACTED	06/04/93		06/04/93		06/04/93		06/04/93		06/04/93		06/04/93	
	DATE ANALYZED	06/11/93		06/19/93		06/19/93		06/19/93		06/19/93		06/19/93	
	MATRIX	soil		Soil		Soil		Soil		soil		Soil	
	UNITS	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL
PEST	Heptechlor epoxide	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	Endosulfan sulfate	3.3	U	3.4	U	3.4	U	3.3	U	3.4	U	3.4	U
PEST	Aroclor-1260	33.	U	34.	U	34.	U	33.	U	34.	U	34.	U
PEST	Aroclor-1254	33.	U	34.	U	34.	U	33.	U	34.	U	34.	U
PEST	Aroclor-1221	68.	U	68.	U	69.	U	67.	U	70.	U	68.	U
PEST	Aroclor-1232	33.	U	34.	U	34.	U	33.	U	34.	U	34.	U
PEST	Aroclor-1248	33.	U	34.	U	34.	U	33.	U	34.	U	34.	U
PEST	Aroclor-1016	33.	U	34.	U	34.	U	33.	U	34.	U	34.	U
PEST	Aldrin	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	alpha-BHC	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	beta-BHC	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	delta-BHC	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	Endosulfan II	3.3	U	0.23	J	3.4	U	3.3	U	3.4	U	3.4	U
PEST	4,4'-DDT	0.61	J	3.4	U	3.4	U	3.3	U	3.6	U	3.4	U
PEST	alpha-Chlordane	1.7	U	1.7	U	1.7	U	0.3	J	1.8	U	1.7	U
PEST	gamma-Chlordane	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	Aroclor-1242	33.	U	34.	U	34.	U	33.	U	34.	U	34.	U
PEST	Endrin ketone	3.3	U	3.4	U	3.4	U	3.3	U	3.4	U	3.4	U
PEST	gamma-BHC (Lindane)	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	Dieldrin	3.3	U	0.39	J	3.4	U	3.3	U	3.4	U	3.4	U
PEST	Endrin	3.3	U	0.28	J	3.4	U	3.3	U	3.4	U	3.4	U
PEST	NethoxychLor	17.	U	17.	U	17.	U	17.	U	18.	U	17.	U
PEST	4,4'-DDD	3.3	U	0.28	U	3.4	U	3.3	U	0.26	J	0.2	U
PEST	4,4'-DDE	0.7	J	3.4	U	3.4	U	3.3	U	3.4	U	3.4	U
PEST	Endrin aldehyde	3.3	U	3.4	U	3.4	U	3.3	U	3.4	U	3.4	U
PEST	Heptachlor	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U
PEST	Toxaphene	170.	U	170.	U	170.	U	170.	U	180.	U	170.	U
PEST	Endosulfan I	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-01 .		001-S-0067-03		001-S-0067-05		001-S-0067-07		D01-S-0067-09		)01-S-0067-11	
	ORIGINAL ID ----->	01S6701		01S6703		D1S6705		01S6707		01S6709		)1S6711	
	LAB.SAMPLE ID --->	553077		553078		553079		553080		553081		553 106	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/14/93		06/14/93		06/14/93		06/14/93		D6/14/93		)6/ 14/93	
	DATE ANALYZED --->	06/17/93		06/17/93		D6/17/93		06/17/93		D6/18/93		)6/ 18/93	
	MATRIX ---------->	soil		Soi1		Soi1		soil		Soi1		5oi 1	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		JG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL
SVOA	4-Nitroaniline	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
SVOA	4-Nitrophenol	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
SVOA	4-Bromophenyl-phenylether	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2,4-Dimethylphenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	4-Hethylphenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
EVOA	1,4-Dichlorobenzene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	4-Chloroaniline	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Phenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
EVOA	bis(2-Chloroethyl)ether	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	bis(2-Chloroethoxy)methane	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	bis(2-Ethylhexyl)phthalate (BEHP)	330.	U	340.	U	87.	U	340.	U	340.	U	340.	U
SVOA	Di-n-octylphthalate	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
PVOA	Hexechlorobenzene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Anthracene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	1,2,4-Trichlorobenzene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2,4-Dichloropheno1	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	2,4-Dinitrotoluene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Pyrene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Dimethylphthelate	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Dibenzofuran	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	Benzo(g,h,i)perylene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Indeno(1,2,3-cd)pyrene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	Benzo(b)fluoranthene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Fluoranthene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	Benzo(k)fluoranthene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Acenaphthylene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Chrysene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	Bis(2-chloroisopropyl)ether	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	Benzo(a)pyrene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2,4-Dinitropheno1	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
iVOA	4,6-Dinitro-2-methylphenol	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
SVOA	Dibenzo(a,h)anthracene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	1,3-Dichlorobenzene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Benzo(a)anthracene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	4-Chloro-3-methylphenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2,6-Dinitrotoluene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
iVOA	N-Nitroso-di-n-propylamine	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-01		001-S-0067-03		301-S-0067-05		001-S-0067-07		101-S-0067-09		001-S-0067-11	
	ORIGINAL ID ----->	01S6701		01S6703		01S6705		01S6707		01S6709		01S6711	
	LAB SAMPLE ID --->	553077		553078		553079		553080		553081		553106	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/14/03		06/14/93		06/14/93		06/14/93		16/14/93		06/14/93,	
	DATE ANALYZED --->	06/17/93		06/17/93		06/17/03		06/17f93		06/18/93		06/18/93	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Eoil		Soil	
	UNITS ---------->	UG/KG		JG/KG		JG/KG		UG/KG		JG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	32	VAL	52	VAL	32	VAL
SVOA	Hexechloroethane	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	4-Chlorophenyl-phenylether	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Hexechlorocyclopentadiene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Isophorone	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Acenephthene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Diethylphthalate	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Di-n-butylphthalate	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Phenanthrene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Butylbenzylphthalate	330.	U	340.	U	51.	U	340.	U	340.	U	340.	U
SVOA	N-Nitrosodiphenylamine	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	fluorene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Carbazole	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Hexechlorobutadiene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Pentechlorophenol	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
SVOA	2,4,6-Trichlorophenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2-Nitroaniline	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
SVOA	2-Nitrophenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	Naphthalene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2-Methylnaphthalene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2-Chloronaphthalene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	3,3'-Dichlorobenridine	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2-Methylphenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	1,2-Dichlorobenzene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2-Chlorophenol	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	2,4,5-Trichlorophenol	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
SVOA	Nitrobenzene	330.	U	340.	U	330.	U	340.	U	340.	U	340.	U
SVOA	3-Nitroaniline	810.	U	820.	U	810.	U	830.	U	830.	U	830.	U
SVOA	1,1-Dichloroethane												

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-13		001-S-0067-17		001-S-0067-19		001-S-0067-21		001- S-0067-23		001-S-0069-01	
	ORIGINAL ID ----->	01S6713		01S6717		01S6719		01S6721		01S6723		01S6901	
	LAB SAMPLE ID --->	553120		553121		553193		553124		553130		552859	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/14/93		06/14/93		06/11/93		06/14/93		06/11/93		06/04/93	
	DATE ANALYZED --->	06/18/93		06/18/93		06/16/93		06/18/93		06/16/93		06/09/93	
	MATRIX ---------->	soil		Soil		Soil		Soil		soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	120	VAL	32	VAL	120	VAL	32	VAL
SVOA	4-Nitroaniline	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVOA	4-Nitrophenol	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVOA	4-Bromophenyl-phenylether	340.	U	340.	U	340.	U	340.	U	340,	U	330.	U
SVOA	2,4-Dimethylpheno1	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	4-methyl phenol	340.	U	340.	U	340.	U	340.	U	340,	U	330.	U
SVOA	1,4-Dichlorobenrene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	4-Chloroaniline	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Phenol	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	bis(2-Chloroethyl)ether	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	bis(2-Chloroethoxy)methane	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	bis(2-Ethylhexyl)phthalate (BEHP)	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	0i-n-octy1phtha1ate	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Hexachlorobentene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Anthracene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	1,2,4-Trichlorobenzene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2,4-Dichlorophenol	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2,4-Dinitrotoluene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Pyrene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	0imethylphtha1ate	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVM	Dibenzofuran	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Benzo(g,h,i)perylene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Indeno(1,2,3-cd)pyrene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Benzo(b)fluoranthene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVM	Fluoranthene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Benzo(k)fluoranthene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVM	Acenrphthylcne	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Chrysene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Bis(2-chloroisopropyl)ether	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Benzo(a)pyrene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2,4-Dinitrophenol	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVOA	4,6-Dinitro-2-methy1phenol	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVOA	0ibenzo(a,h)anthracene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	1,3-Dichlorobenrene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Benzo(a)anthracene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	4-Chloro-3-methyl phenol	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2,6-Dinitrotoluene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	N-Nitroso-di-n-propylamine	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-13		001-S-0067-17		001-S-0067-19		001-S-0067-21		001-S-0067-23		001-S-0069-01	
	ORIGINAL ID ----->	01S6713		01S6717		01S6719		01S6721		01S6723		3196901	
	LAB.SAMPLE ID --->	553120		553121		553193		553124		553130		552859	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/14/93		06/14/93		06/11/93		06/14/93		06/11/93		06/04/93	
	DATE ANALYZED --->	06/18/93		06/18/93		06/16/93		06/18/93		06/16/93		06/09/93	
	MATRIX ---------->	Soil		soil		Soil		soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	52	VAL	32	VAL	120	VAL	32	VAL	120	VAL	32	VAL
SVOA	Hexachloroethane	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	4-Chlorophenyl-phenylether	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Hexachlorocyclopentadiene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVM	Isophorone	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Acenaphthene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Diethylphthalate	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Di-n-butylphthalate	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Phenanthrene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Butylbenzylphthalate	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	N-Nitrosodiphenylmine	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Fluorene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Carbazole	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Hexachlorobutadiene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Pentachlorophenol	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVOA	2,4,6-Trichlorophenol	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2-Nitroaniline	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVOA	2-Nitrophenol	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	Naphthalene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2-Methylnaphthalene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2-Chloronaphthalene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	3,3'-Dichlorobenzidine	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2-Methylphenol	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	1,2-Dichlorobenzene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2-Chlorophenol	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	2,4,5-Trichlorophenol	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVM	Nitrobenzene	340.	U	340.	U	340.	U	340.	U	340.	U	330.	U
SVOA	3-Nitroaniline	830.	U	820.	U	830.	U	820.	U	820.	U	800.	U
SVOA	1,1-Dichloroethane												

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0069-03		001-S-0069-05		001-S-0069-07		001-S-0069-09		001-S-0069-11		001-S-0069-13	
	ORIGINAL ID ----->	01S6903		0156905		01S6907		01S6909		01S6911		01S6913	
	LAB SAMPLE ID --->	552860		552861		552862		552863		552864		552865	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/04/93		06/04/93		06/04/93		06/04/93		06/04/93		06/04/93.	
	DATE ANALYZED --->	06/09/93		06/09/93		06/09/93		06/09/93		06/09/93		06/09/93	
	MATRIX ---------->	Soil		Soil		Soil		soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL
SVOA	4-Nitroaniline	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	4-Nitrophenol	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	4-Bromophenyl-phenylether	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVM	2,4-Dimethylphenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	4-Methylphenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	1,4-Dichlorobenzene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	4-Chloroaniline	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Phenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	bis(2-Chloroethyl)ether	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	bis(2-Chloroethoxy)methane	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	bis(2-Ethylhexyl)phthalate (BEHP)	46.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Di-n-octylphthalate	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Hexachlorobenzene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Anthracene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	1,2,4-Trichlorobenzene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2,4-Dichlorophenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2,4-Dinitrotoluene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Pyrene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Dimethylphthalate	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Dibenzofuran	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Benzo(g,h,i)perylene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Indeno(1,2,3-cd)pyrene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Benzo(b)fluoranthene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Flwranthene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Benzo(k)fluoranthene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Acenaphthylene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Chrysene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Bis(2-chloroisopropyl)ether	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Benzo(a)pyrene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2,4-Dinitrophenol	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	4,6-Dinitro-2-methylphenol	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	Dibenzo(a,h)anthracene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	1,3-Dichlorobenrme	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Benzo(a)anthracene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	4-Chloro-3-methylphenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2,6-Dinitrotoluene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	N-Nitroso-di-n-propylamine	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U

*** Validation Complete ***

DATALCP3
10/13/94

	SAMPLE ID ------->	001-S-0069-03		001-S-0069-05		001-S-0069-07		001-S-0069-09		001-S-0069-11		001-S-0069-13	
	ORIGINAL ID ----->	01S6903		01S6905		01S6907		01S6909		01S6911		01S6913	
	LAB.SAMPLE ID --->	552860		552861		552862		552863		552864		552865	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/04/93		06/04/93		06/04/93		06/04/93		06/04/93		06/04/93	
	DATE ANALYZED --->	06/09/93		06/09/93		06/09/93		06/09/93		06/09/93		06/09/93	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL
SVOA	Hexachloroethane	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	4-Chlorophenyl-phenylether	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Hexachlorocyclopentadiene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Isophorone	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Acenaphthene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Diethylphthalate	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Oi-n-butylphthalate	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Phenanthrene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Butylbenzylphthalate	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	N-Nitrosodiphehylamine	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Fluorene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Carbazole	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Hexachlorobutadiene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Pentachlorophenol	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	2,4,6-Trichlorophenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2-Nitroaniline	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	2-Nitrophenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	Naphthalene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2-Methylnaphthalene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2-Chloronaphthalene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	3,3'-Dichlorobenzidine	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2-methyl phenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	1,2-Dichlorobenrene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2-Chlorophenol	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	2,4,5-Trichlorophenol	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	Nitrobenzene	330.	U	340.	U	340.	U	330.	U	340.	U	340.	U
SVOA	3-Nitroaniline	810.	U	820.	U	820.	U	810.	U	820.	U	820.	U
SVOA	1,1-Dichloroethane												

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-01 ,		001-S-0067-03		001-S-0067-05		001-S-0067-07		001-S-0067-09		001-S-0067-11	
	ORIGINAL ID ----->	01S6701		01S6703		01S6705		01S6707		0156709		01S6711	
	LAB. SAMPLE ID --->	553077		553078		553079		553080		553081		553106	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/03/93		06/03/93		06/03/93		56/03/93		06/03/93		06/03/93,	
	DATE ANALYZED --->	06/07/93		06/07/93		06/07/93		16/07/93		06/07/93		06/07/93	
	MATRIX ---------->	Soil		Soil		Soi 1		ioil		soi 1		soi 1	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		JG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	52	VAL	32	VAL	32	VAL
VOA	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	trans-1,3-Dich1oropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,2-D ichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	D ibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Tetrachloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Xylene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,2-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Acctone	10.	U	7.	U	11.	U	17.	U	15.	U	13.	U
VOA	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	ChLoroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Methylene chloride	8.	U	8.	U	6.	U	6.	U	10.	U	9.	U
VOA	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1-Dichloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
YOA	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Trich1oroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
YOA	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	001-S-0067-13		001-S-0067-17		001-S-0067-19		001-S-0067-21		001-S-0067-23		001-S-0069-01	
	ORIGINAL ID ----->	01S6713		01S6717		0186719		01$6721		01S6723		01S6901	
	LAB SAMPLE ID --->	553120		553121		553193		553124		553130		552859	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	06/03/93		06/03/93				06/03/93				06/03/93	
	DATE ANALYZED --->	06/07/93		06/09/93		06/04/93		06/07/93		06/04/93		06/03/93	
	MATRIX ---------->	Soil		Soi 1		Soi l		Soil		soi 1		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	120	VAL	32	VAL	120	VAL	32	VAL
IOA	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	Dibromchloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	Tetrachloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	Xylene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	1,2-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
IOA	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	2-Hexenone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Acetone	21.	U	27.	U	45.	U	22.	U	25.	U	10.	U
/OA	Chloroform	10.	U	10.	U	10.	U	IO.	U	10.	U	10.	U
/OA	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Chlorocthane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Methylene chloride	10.	U	26.	U	16.	U	16.	U	22.	U	11.	U
/OA	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Brmform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	1,1-Dichloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
OA	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
/OA	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
OA	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
DA	Trichloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
OA	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS PENSACOLA, BACKGROUND
SOIL SAMPLES
1993 DATA

	SAMPLE ID ------->	101-S-0069-03 .		001-S-0069-05		001-S-0069-07		001-S-0069-09		101-S-0069-11		001-S-0069-13	
	ORIGINAL ID ----->	01S6903		01S6905		01S6907		01S6909		01S6911		01S6913	
	LAB.SAMPLE ID --->	552860		552861		552862		552863		552864		552865	
	SAMPLE DATE ----->												
	DATE EXTRACTED -->	16/03/93		06/03/93		06/03/93		06/03/93		16/03/93		06/03/93.	
	DATE ANALYZED --->	16/03/93		06/03/93		06/03/93		06/03/93		16/03/93		06/03/93	
	MATRIX ---------->	Soil		Soil		Soil		soil		Soil		soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Method	Parameter	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL	32	VAL
VOA	Ethylbenrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Tetrachloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Xylene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,2-Dichloroethenc	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Carbon tetrachLoride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Acetone	86.	U	38.	U	28.	U	24.	U	42.	U	35.	U
VOA	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Methylene chloride	12.	U	29.	U	20.	U	16.	U	17.	U	28.	U
VOA	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Bromodichloromethanc	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1-Dichloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1,2-TrichLoroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	Trichloroethylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
VOA	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

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Appendix H

Wildlife Toxicity Data

Appendix H
Wildlife Toxicity Data
Baseline Risk Assessment
Site 15
NAS Pensacola, Florida

Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
SVOCs							
Anthracene	Mouse	Oral	NR	Mortality	17000		RTECS, 1993
Benzo(a)pyrene	Rat	Oral (chronic)	Pregnancy	Sterlility in offspring		40	USEPA, 1984
	Rat	Oral (chronic)	3.5 months	Reproductive		50	USEPA, 1984
	Rodents	Single oral dose	NR	Mortality	50		Eisler, 1987
Bis(2-ethylhexyl)phthalate	Rat	Oral	NR	Mortality	30600		RTECS, 1993
	Rat	Oral	NR	Reproductive effects		7140	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		35	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		6000	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		17200	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		10000	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		9766	RTECS, 1993
	Mouse	Oral	NR	Mortality	30000		RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		78880	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		4200	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		50	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		1000	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		2040	RTECS, 1993
	Rabbit	Oral	NR	Mortality	34000		RTECS, 1993
	Guinea pig	Oral	NR	Mortality	26000		RTECS, 1993

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Guinea pig	Oral	NR	Reproductive effects		20000	RTECS, 1993
	Mammal	Oral	NR	Reproductive effects		20000	RTECS, 1993
	Mammal	Oral	NR	Reproductive effects		509000	RTECS, 1993
	Mouse	Single oral dose		Mortality	800		RTECS, 1993 and NIOSH, 1985
	Mouse	Oral (subchronic)	13 weeks	Renal effects		125	RTECS, 1993
Butylbenzylphthalate	Rat	Oral	NR	Mortality	2330		RTECS, 1994
	Rat	Oral	NR	Reproductive effects		21000	RTECS, 1994
	Rat	Oral	NR	Reproductive effects		16400	RTECS, 1994
	Rat	Oral	NR	Reproductive effects		16400	RTECS, 1994
	Rat	Oral	NR	Reproductive effects		4900	RTECS, 1994
	Mouse	Oral	NR	Mortality	4170		RTECS, 1994
	Guniea Pig	Oral	NR	Mortality	13750		RTECS, 1994
1,4-Dichlorobenzene	Rat	Oral	NR	Mortality	500		RTECS, 1994
	Rat	Oral	NR	Reproductive effects		7500	RTECS, 1994
	Rat	Oral	NR	Reproductive effects		10000	RTECS, 1994
	Mouse	Oral	NR	Mortality	2950		RTECS, 1994
	Rabbit	Oral	NR	Mortality	2830		RTECS, 1994
Di-n-butylphthalate	Rat	Oral (subchronic)	48 days	Reproductive		125	ATSDR, 1989
	Rat	Oral	1 year	Mortality		600	IRIS, 1991
Fluoranthene	Rat	Oral	NR	Mortality	2000		RTECS, 1994

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
Phenanthrene	Mouse	Oral	NR	Mortality	700		RTECS, 1994
Pyrene	Rat	Single oral dose	NR	Mortality	2700		RTECS, 1993 and NIOSH, 1985
	Mouse	Single oral dose	NR	Mortality	800		RTECS, 1993 and NIOSH, 1985
Pesticides/F							
Aroclor 1248	Rat	Oral	NR	Mortality	11000		RTECS, 1993
	Rabbit	Oral	NR	Reproductive effects		165	RTECS, 1993
	Monkey	Oral	NR	Reproductive effects		32	RTECS, 1993
	Monkey	Oral	NR	Reproductive effects		55	RTECS, 1993
	Monkey	Oral	NR	Reproductive effects		17	RTECS, 1993
	Monkey	Oral	NR	Reproductive effects		35	RTECS, 1993
	Monkey	Oral	NR	Reproductive effects		24	RTECS, 1993
	Monkey	Oral	NR	Reproductive effects		83	RTECS, 1993
	Chicken	Oral	8-9 weeks	Egg hatchability		4.88	USEPA, 1993
	Chicken	Oral	NR	Egg production and hatchability		9.8	USEPA, 1993
	Chicken	Maternal diet	NR	Chick growth		0.98	USEPA, 1993
	Chicken	Oral	8 weeks	Egg production and hatchability		4.9	USEPA, 1993
Aroclor 1254	Mouse	Oral	NR	Reproductive		1.53	USEPA, 1993
	Chicken	Oral (chronic)	NR	Embryonic mortality		0.9[a]	USEPA. 1993

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Rock dove	Oral (chronic)	NR	Parental incubation behavior		0.9[a]	Peakall and Peakall, 1973
	American kestrel	Oral (chronic)	69 days	Reduced sperm concentration		9	Eisler, 1986
	Mink	Oral dose of contaminated meat	160 days	Reproductive		0.096	USEPA, 1993
Aroclor 1260	Rat	Oral	NR	Mortality	1315		RTECS, 1993
	Rat	Single oral dose	NR	Mortality	500		Eisler, 1986
	Rat	Single oral dose	NR	Mortality	1300		Eisler, 1986
	Rat	Oral	NR	Reproductive effects		1674	RTECS, 1993
	Rat	Oral (chronic)	2 generations	Reduced littler size		7.6	USEPA, 1985
	Rat	Oral (subchronic)	9 weeks	Fetal mortality; maternal toxicity		6.4	ATSDR, 1987
	Mouse	Oral	NR	Reproductive effects		74	RTECS, 1993
	Mink	Single oral dose		Mortality	4000		Eisler, 1986
	Mink	Single oral dose		Mortality	3000		Eisler, 1986
	Mink	Single oral dose		Mortality	750		Eisler, 1986
	Mink	Oral (subchronic)	4 months	Impaired reproduction		0.0075[b]	Newell et al., 1987
	Chicken	Oral (chronic)	NR	Embryonic mortality		0.9[a]	USEPA, 1976
~~Chlordane~~	Rat	Oral	NR	Mortality	283		RTECS, 1993
	Rat	Single oral dose		Mortality	430		Allen et al., 1979
	Rat	Single oral dose		Mortality	335		Allen et al., 1979

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Rabbit	Single oral dose		Mortality	300		Allen et al., 1979
	Rabbit	Single oral dose		Mortality	100		Allen et al., 1979
	Dog	Single oral dose		Mortality	200		Allen et al., 1979
	Goat	Single oral dose		Mortality	180		Allen et al., 1979
	Japanese quail	Oral (acute)	5 days	Mortality	35*		Hill et al., 1975
	Bobwhite	Oral (acute)	5 days	Mortality	29*		Hill et al., 1975
	Mallard	Oral (acute)	5 days	Mortality	62*		Hill et al., 1975
	Pheasant	Single oral dose		Mortality	24		USFWS, 1984
4,4'-DDE	Rat	Oral	NR	Mortality	800		RTECS, 1993
	Mouse	Oral	NR	Mortality	700		RTECS, 1993
	Hamster	Oral	NR	Mortality	>5000		RTECS, 1993
	Mallard	Oral	NR	Eggshell thinning		2.91	USEPA, 1993
	Mallard	Oral	2 years	Reproductive: embryo mortality, cracked eggs		0.58	USEPA, 1993
	Kestrel	Oral	NR	Eggshell thinning		0.39	USEPA, 1993
4,4'-DDT	Rat	Oral	NR	Mortality	87		RTECS, 1993
	Rat	Single oral dose		Mortality	100		USEPA, 1985
	Rat	Oral	NR	Reproductive		112	RTECS, 1993
	Rat	Oral	NR	Reproductive		100	RTECS, 1993
	Rat	Oral	NR	Reproductive		430	RTECS, 1993
	Rat	Oral	NR	Reproductive		1890	RTECS, 1993

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Rat	Oral	NR	Reproductive		250	RTECS, 1993
	Rat	Oral	NR	Reproductive		50	RTECS, 1993
	Rat	Oral (chronic)	3 generations	Reproductive		0.2	IRIS, 1991
	Rat	Oral	2 years	Reproductive		2.5	USEPA, 1993
	Mouse	Oral	NR	Mortality	135		RTECS, 1993
	Mouse	Single oral dose		Mortality	200		USEPA, 1985
	Mouse	Oral	NR	Reproductive		504	RTECS, 1993
	Mouse	Oral	NR	Reproductive		81	RTECS, 1993
	Mouse	Oral	NR	Reproductive		124	RTECS, 1993
	Mouse	Oral	NR	Reproductive		148	RTECS, 1993
	Rabbit	Oral	NR	Mortality	250		RTECS, 1993
	Rabbit	Oral	NR	Reproductive		150	RTECS, 1993
	Guinea pig	Oral	NR	Mortality	150		RTECS, 1993
	Hamster	Oral	NR	Mortality	>5000		RTECS, 1993
	Dog	Oral	NR	Mortality	150		RTECS, 1993
	Dog	Single oral dose		Mortality	60		USEPA, 1985
	Dog	Oral	NR	Reproductive		3540	RTECS, 1993
	Monkey	Oral	NR	Mortality	200		RTECS, 1993
	Chicken	Oral (subchronic)	10 weeks	Decreased reproductive success; toxic symptoms		91.4[a]	USEPA, 1985

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Rock dove	Single oral dose		Mortality	4000		USFWS, 1984
	Black duck	Oral (chronic)	2 years	Reduced eggshell thickness		0.14'	Longcore and Stendell, 1977
	Mallard	Single oral dose		Mortality	2240		USFWS, 1984
	Mallard	Oral (subchronic)	96 days	Reduced eggshell thickness		2.8	Longcore and Stendell, 1977
	Mallard	Oral	NR	Eggshell thinning		1.16	USEPA, 1993
	Mallard	Oral	NR	Eggshell thinning		2.91	USEPA, 1993
	Mallard	Oral	2 years	Reproductive		1.45	USEPA, 1993
	California quail	Single oral dose		Mortality	595		USFWS, 1984
	Japanese quail	Single oral dose		Mortality	841		USFWS, 1984
	Pheasant	Single oral dose		Mortality	1334		USFWS, 1984
	Sandhill crane	Single oral dose		Mortality	1200		USFWS, 1984
	Kestrel	Oral (chronic)	7 w k - l y r	Reduced eggshell thickness		0.56'	USEPA, 1985
	Kestrel	Oral (chronic)	1 year	Reduced eggshell thickness		0.16'	Wiemeyer, et al., 1986
	Barn owl	Oral (chronic)	2 years	Reduced eggshell thickness		0.14'	Longcore and Stendell, 1977
Dieldrin	Mouse	Single oral dose	NR	Mortality	38		Allen et al., 1979
	Mouse	Oral (chronic)	80 weeks	Body tremors		0.33	ATSDR, 1992
	Rat	Single oral dose	NR	Mortality	46		Allen et al., 1979
	Guinea pig	Single oral dose	NR	Mortality	25		Allen et al., 1979

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Rabbit	Single oral dose	NR	Mortality	45		Allen et al., 1979
	House sparrow	Single oral dose	NR	Mortality	48		USFWS, 1984
	Chicken	Single oral dose	NR	Mortality	20		Allen et al., 1979
	Rock dove	Single oral dose	NR	Mortality	27		USFWS, 1984
	Gray partridge	Single oral dose	NR	Mortality	9		USFWS, 1984
	Chukar	Single oral dose	NR	Mortality	25		USFWS, 1984
	Japanese quail	Oral (acute)	5 days	Mortality	6[a]		Hill et al., 1975
	Japanese quail	Single oral dose	NR	Mortality	70		USFWS, 1984
	California quail	Single oral dose	NR	Mortality	9		USFWS, 1984
	Bobwhite	Oral (acute)	5 days	Mortality	3[a]		Hill et al., 1975
	Pheasant	Single oral dose	NR	Mortality	79		USFWS, 1984
	Mallard	Oral (acute	5 days	Mortality	12[a]		Hill et al., 1975
	Mallard	Oral (acute)	5 days	Mortality	11[a]		Hill et al., 1975
	Mallard	Single oral dose	NR	Mortality	381		USFWS, 1984
	Whistling duck	Single oral dose	NR	Mortality	100		USFWS, 1984
	Canada goose	Single oral dose	NR	Mortality	141		USFWS, 1984
	Goat	Single oral dose	NR	Mortality	100		Allen et al., 1979
	Sheep	Single oral dose	NR	Mortality	50		Allen et al., 1979
	Cattle	Single oral dose	NR	Mortality	60		Allen et al., 1979
	Mule deer	Single oral dose	NR	Mortality	75		Allen et al., 1979
	Cat	Single oral dose	NR	Mortality	300		Allen et al., 1979

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Dog	Single oral dose	NR	Mortality	65		Allen et al., 1979
Endosulfan	Mouse	Oral (chronic)	78 weeks	Mortality		0.9	ATSDR, 1991
	Mouse	Oral (chronic)	78 weeks	Ovarian cyst development		0.26	ATSDR, 1991
	Rat	Single oral dose	NR	Mortality	24		ATSDR, 1991
	Rat	Oral (chronic)	2 years	Reduced testes weight		10	USEPA, 1980
	Mallard	Single oral dose	NR	Mortality	33		USFWS, 1984
	Mallard	Single oral dose	NR	Mortality	31.2		USFWS, 1984
	Pheasant	Single oral dose	NR	Mortality	80		USFWS, 1984
Endrin	Mouse	Oral (chronic)	80 weeks	Mortality		0.53	ATSDR, 1990
	Dog	Oral (chronic)	19 months	Decreased weight gain		0.1	USEPA, 1985
2,3,7,8-TCDD	Northern Bobwhite	Single oral dose	NR	Mortality	.015		Hudson et al., 1984
	Ringed Turtle Dove	Single oral dose	NR	Mortality	.810		Hudson et al., 1984
	Mallards	Single oral dose	NR	Mortality	.108		Hudson et al., 1984
	Chicken	Single oral dose	NR	Mortality	.037		Kociba & Schwetz, 1982
	Guinea pig	Oral	NR	Mortality	.002		Kociba & Schwetz, 1982
	Mouse	Oral	NR	Mortality	.284		Kociba & Schwetz, 1982
	Guinea Pig	Single oral dose	NR	Mortality	.0006		Harless et al., 1982
	Rat	Single oral dose	NR	Mortality	.022		Kociba & Schwetz, 1982

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Monkey	Single oral dose	NR	Mortality	.070		Olson et al., 1980
	Dog	Single oral dose	NR	Mortality	.1		Kociba & Schwetz, 1982
	Mouse	Single oral dose	NR	Mortality	.114		Kociba & Schwetz, 1982
	Rabbit	Single oral dose	NR	Mortality	.115		Olson et al., 1980
	Hamster	Single oral dose	NR	Mortality	1.157		Kociba & Schwetz, 1982
	Rat	Oral (chronic)	NR	Reproductive effects		1.0E-05	McNulty, 1977
	Monkey	Oral (chronic)	NR	Reproductive effects		1.7E-06	Ramel, 1978
	Chicken	Oral (chronic)	21 days	Chick liver disease		.001	NRCC 1981
Aluminum	Mouse	Oral	2-3 genrtns	Reduced bodyweight gain of newborns		425	NIOSH, 1985
	Rat	Oral	15 days	Reduced growth		100	Bernuzzi, et al., 1989
Arsenic	Rat	Oral	NR	Reproductive effects		0.61	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		0.58	RTECS, 1993
	Rat	Oral	NR	Mortality	763		RTECS, 1993
	Mouse	Oral	NR	Mortality	145		RTECS, 1993
Beryllium	Rat	Single oral dose	NR	Mortality	10		USEPA, 1985
Cadmium	Rat	Oral	NR	Reproductive effects		155	RTECS, 1993
	Rat	Oral	NR	Reprocutive effects		220	RTECS, 1993

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Rat	Oral	NR	Reproductive effects		21.5	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		23	RTECS, 1993
	Rat	Single oral dose		Mortality	250		Eisler, 1985
	Rat	Oral	NR	Mortality	225		RTECS, 1993
	Mouse	Oral	NR	Mortality	890		RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		448	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		1700	RTECS, 1993
	Guinea pig	Single oral dose		Mortality	150		Eisler, 1985
	Mallard	Oral (subchronic)	90 days	Egg production suppressed		10	Eisler, 1985
Chromium (Potassium dichromate)	Japanese quail	Oral (acute)	5 days	Mortality	126		Hill and Camardese. 1986
Copper	Rat	Single oral dose		Reproductive effects		152	NIOSH, 1985 and RTECS, 1993
	Mallard	Oral (subchronic)	29 days	NOAEL for survivorship		10.5[b]	Demayo et al., 1982
Iron	Rat	Single oral dose	NR	Mortality	319		Sax, 1984
	Mouse	Single oral dose	NR	Mortality	979		Sax, 1984
	Guinea pig	Single oral dose	NR	Mortality	1200		Sax, 1984
Lead	Rat	Oral	NR	Reproductive effects		790	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		1140	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		520	RTECS, 1993
	Rat	Oral	NR	Reproductive effects		1100	RTECS, 1993

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Calf	Single oral dose	NR	Mortality	220		Eisler, 1988
	Mouse	Oral	NR	Reproductive effects		1120	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		6300	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		300	RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		4800	RTECS, 1993
	Domestic animal	Oral	NR	Reproductive effects		662	RTECS, 1993
	Mammal	Oral	NR	Reproductive effects		2118	RTECS, 1993
	Kestrel	Diet	NR	Decreased egg laying fertility; decreased egg shell thickness		250[b]	Eisler, 1988
	Nestlings	Oral	NR	Reduced growth and brain weight; abnormal development		125	Eisler, 1988
	Japanese quail	Diet	5 days	Mortality	24752		Hill and Camardese, 1986
Manganese	Mouse	Oral (subchronic)	90 days	Delayed growth of testes		140	ATSDR, 1990
	Mouse	Oral (chronic)	103 weeks	Mortality		4050	ATSDR, 1990
	Rat	Single oral dose	NR	Mortality	410		ATSDR, 1990
	Rat	Oral (acute)	20 days	Mortality	225		ATSDR, 1990
	Rat	Oral (subchronic)	20 days	Decreased littler weight during gestation		3100[b]	ATSDR, 1990
	Rat	Oral (chronic)	103 weeks	Mortality		930	ATSDR, 1990
	Guinea pig	Single oral dose	NR	Mortality	400		USEPA, 1984

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
Mercury	Monkey	Oral (chronic)	18 months	Weakness, rigidity		25	ATSDR, 1990
	Mouse	Single oral dose		Mortality	22		NIOSH, 1985
	Rat	Oral (chronic)	NR	Reduced fertility		0.5	Eisler, 1987
	Rat	Single oral dose		Mortality	18		NIOSH, 1985
	Pig	Oral (subchronic)	Pregnancy	High incidence of stillbirths		0.5	Eisler, 1987
	Mule deer	Single oral dose		Mortality	17.9		Eisler, 1987
	River otter	Single oral dose		Mortality	2		Eisler, 1987
	Mink	Single oral dose		Mortality	1		Eisler, 1987
	Dog	Oral (subchronic)	Pregnancy	High incidence of stillbirths		0.1	Eisler, 1987
	House sparrow	Single oral dose		Mortality	12.6		Eisler, 1987
	Rock dove	Single oral dose		Mortality	22.8		Eisler, 1987
	Chicken	Single oral dose		Mortality	20		Fimreite, 1979
	Bantam chicken	Single oral dose		Mortality	190		Fimreite, 1979
	Prairie chicken	Single oral dose		Mortality	11.5		Eisler, 1987
	Chukar	Single oral dose		Mortality	26.9		Eisler, 1987
	Corturnix	Single oral dose		Mortality	11		Eisler, 1987
	Mallard	Oral	NR	Reproduction, behavior		0.064	USEPA, 1993
	Black duck	Oral (subchronic)	28 weeks	Reproduction inhibited		0.22[a]	Eisler, 1987
	Fulvous whistling duck	Single oral dose		Mortality	37.8		Eisler, 1987

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Chemical	Test Species	Test Type	Duration	Effect	Oral LD_{50} (mg/kg/BW)	LOAEL (mg/kgBW/day)	Reference
	Northern bobwhite	Single oral dose		Mortality	23.8		Eisler, 1987
	Bobwhite quail	Oral (acute)	5 days	Mortality	523		Hill et al., 1975
	Japanese quail	Single oral dose		Mortality	14.4		Eisler, 1987
	Gray partridge	Single oral dose		Mortality	17.6		Eisler, 1987
	Gray pheasant	Oral (subchronic)	30 days	Reduced reproductive ability		0.64	Eisler, 1987
	Ring-necked pheasant	Single oral dose		Mortality	11.5		Eisler, 1987
Nickel	Rat	Oral	NR	Reproductive effects		158	RTECS, 1994
	Rat	Single oral dose	NR	Mortality	67		ATSDR, 1987
Selenium	Rat	Oral	NR	Mortality	6700		RTECS, 1993
	Mouse	Oral	NR	Reproductive effects		134	RTECS, 1993
	Mallard	Oral (subchronic)	3 months	Reduced hatchability		1.75	Eisler, 1985
Vanadium	Japanese quail	Oral (acute)	5 days	Mortality	96		Hill and Camardese. 1986
Zinc	Rat	Single oral dose		Mortality	2510		RTECS, 1993
	Rat	Oral (subchronic)	NR	Kidney toxicity		160	Llobet, et al., 1988

Notes:
LD50 – Dose resulting in 50% mortality in test population.
BW – Body weight.
LOAEL – Lowest Observed Adverse Effect Level.
NR – Not reported.
a – Converted to dose per kilogram body weight by multiplying by ingestion and dividing by body weight.
b – Estimated by applying a LOAEL-NOAEL ratio of 5 (Newell et al., 1987).
1 – Table adapted from BRA-OU-1, NAS Cecil Field, Jacksonville, Florida.

Addendum

Appendix I
Revised Florida Soil Cleanup Goals

Instructions: Please add this new Appendix to Volume 11.

Florida Department of
Environmental Protection

Waste Program Administrators

FROM: John M. Ruddell, Director
Division of Waste Management

DATE: January 19, 1996

SUBJECT: Applicability of Soil Cleanup Goals for Florida

Background:

At the beginning of 1995 the Bureau of Waste Cleanup distributed to you and your dtaff a list of soil cleanup goals to be used when making cleanup decisions. These cleanup goals were derived following, in general, EPA's methodology since that agency was developing their own generic Site Screening Levels (SSLs), at the same time. Subsequently, EPA's approach underwent widespread review both within and outside the agency. As a result, Florida's goals were redefined throughout 1995 to parallel EPA's SSLs.

My September 29, 1995 memorandum listed the Florida Soil Cleanup Goals developed by Dr. Stephen M. Roberts (UF toxicologist under contract to FDEP). These goals ark not identical to the EPA's SSLs. Inasmuch as one can "fine tune" generic goals, ours are tailored to Florida's typical soil characteristics, hydrogeology; meteorological data, average source size and state groundwater standards. The Florida Soil Cleanup Goals were also modified from EPA's SSLs to include toxicity considerations that were not available in IRIS; the Federal toxicity database.

Purpose:

The first several pages of the September 29, 1995 document explain the appropriate rind intended use of the document. However, there hqve been some questions about it; therefore, I would like to elaborate on the applicability of these *goals*:

The Soil Cleanup Goals are intended to be used only as "goals" for cleanup decisions in corrective actions and should not be used by the agency as rule, standards or to deny or approve permits. The FDEP has found that most business/site owners do not normally have the money or the expertise *to* establish Site-specific Rehabilitation Levels (SRLs) as allowed by our cleanup Consent Order conditions. The soil cleanup goals are intended to be used for site screening purposes, for source

removal evaluations, and as guidance during evaluation of remediation alternatives and design considerations for development of the Remedial Action Plan (RAP) for a site. The soil cleanup goals can and should be used for cleanup decisions if the default assumptions fit the site-specific situation. For your information, although the default parameters used to derive these goals are conservative, they are not necessarily representative of the worst case scenario.. In addition, ecological receptors were not taken into consideration when these cleanup goals were developed. A site-specific evaluation should' be conducted during the Contamination Assessment phase to determine if protection of ecological receptors is needed at a particular site and, if that is the case, whether the soil goals based on human health are also protective of those ecological receptors.

Please note that the risk assessment phase occurs after the Contamination Assessment Report has been approved. The responsible party can develop site-specific soil cleanup goals utilizing site-specific parameters such as total organic carbon, soil porosity, soil moisture content and dry' bulk density *in* combination with exposure assumptions acceptable to the Department.

The evaluation process should take into consideration the following criteria:

1) the site-specific background levels,
2) the Method Detection Limits (MDLs),
3) the soil cleanup goals, and
4) the site contaminant levels.

The site contaminant levels (criterion 4). *for* each Chemical 'of Concern (COC) should be compared to the highest value of the first three criteria. If the site contaminant "'levels are below the highest value, then no remediation is required for that contaminant. If the site contaminant levels:are higher than the highest value, then remediation alternatives' should be evaluated taking into consideration the specific nature of the site and the responsible party's ability to effectively manage the risk of a particular site contaminant level. FDEP may consider site-specific risk management alternatives that may further'modify 'the guidance levels fbr the,contaminant. 'These health-based soil goals are evaluated based on the nature and intended use.,of the site (e.g., residential,or industrial) and;usually only apply to the upper two feet of soil. If the contaminated soil can be' permanently covered with more than two feet of clean soil or

otherwise have the exposure pathways restricted, the site may not need further remediation if the contaminated soil is *not* a source of groundwater contamination.

The second use of the soil cleanup goals is to provide a guidance level for the potential leachability of various soil contaminants. The leachability level (last column on the right) is intended to give you, site owners and consultants an indication of the soil contaminant levels that may cause groundwater contamination in excess of Florida's water quality standards and minimum criteria. The goals are applicable if a recent discharge has occurred (within the last year) or if indeed there are monitoring data showing violation of groundwater standards and minimum criteria. The leachability levels apply throughout the soil profile, when applicable.

The soil values may be used for other purposes (other media) if indeed the particular application fits the situation (e.g., sediments that upon dredging will be used as soil). Again, an analysis of the specific situation must be performed (i.e., ascertain land use, exposure duration, leachability concerns, background considerations, etc.).

From time to time, we will update the soil cleanup goals; as of today, the following changes have occurred:

Arsenic;

	Residential	Industrial	Leachability *
Old:	0.7 mg/Kg	3.1 mg/Kg	pass TCLP (mg/L)
New:	0.8 mg/Kg	3.7 mg/Kg	same as before

* In certain cases, soil may pass TCLP but still leach to groundwater and cause groundwater violations. In these cases, further evaluation will be needed to determine appropriate leachability-based goals.

Please contact Ligia Mora-Applegate at Suncom 278-3935 if further assistance is needed.

cc: Doug Jones
Bill Hinkley
Jim Crane
Satish Kastury

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May 5, 1997

Ligia Mora-Applegate

- dichloroerhene, cis-1,2-
- dichloroethene, trans-1,2-
- tetrachloroethene (PCE)
- trichloroethene (TCE)
- vinyl chloride

In general, the Soil Cleanup Target Levels are revisions to the Soil Cleanup Goals for Florida, released September 29, 1995. These values are being revised to incorporate on the May 1996 USEPA final Soil Screening Guidance: Technical Background Document (EPA/540/R-95/128), the availability of additional sources for the selection of

	Soil Cleanup Target Levels			
Chemical	CAS#	Residential (mg/kg)	Industrial (mg/kg)	Leachability (mg/kg)
dichloroethene, 1,1-	75-35-4	0.01	0.02	0.06
dichloroethene, cis-1,2-	156-59-2	24	160	0.4
dichloroethene, trans-1,2-	156-60-5	35	240	0.6
tetrachloroethene (PCE)	127-18-4	10	20	0.05
roethene (TCE)	79-01-6	4.8	6.8	0.03
chloride	75-01-4	0.04	0.05	0.007

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... of the SCTL values for these chemicals have changed from those previously avail ble. The basis for these changes are explained as follows:

1 Leachability based SCTLs: These values differ from the original leachability-based s il goals as a result of two basic modifications First, the dilution attenuation factor v as increased from 10 to 20. Second, the source for the selection of chemical-specific values for Koc and Henry's Law Constant (HLC) changed, For 1,1-dichloroethene, c s-1,2-dichloroethene, and trans-1,2-dichloroethene, the changes in Koc and HLC v ere minor, rhus, doubling the DAF resulted in an increased leachability-based SCTL. For PCE, TCE and vinyl chloride, changes in either the Koc or the HLC, in combination with the increased DAF resulted in increases in the leachability-based SCTLs for these chemicals.

2. Residential and Industrial SCTLs: These values changed as a result of modifications in the equation used for calculating volatilization and the source for the selection of chemical-specific values. As a result, based on the volatilization potential of these compounds, which is calculated from chemical-specific information, many of the SCTLs were reduced. However, the values for cis-1,2-dichloroethene and vinyl chloride increased.

Should you have any additional questions regarding these changes or the SCTLs provided above, please do not hesitate to contact us.

Sincerely,

Lisa Tonner Navarro

Lisa E. Tonner-Navarro, Ph.D.

Stephen M. Roberts

Stephen M. Roberts, Ph.D.

Addendum

Appendix J
USEPA and FDEP Comments and associated Responses
on the Draft Remedial Investigation Report
for
Site 15 NAS Pensacola

Instructions: Please add this new Appendix to Volume 11.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DRAFT REMEDIAL INVESTIGATION REPORT
SITE 15, NAS PENSACOLA

(Comments from John Mitchell, dated July 14, 1997)

COMMENT:

1. In Figure 2-1 (Site Location Map), the site is improperly located. It should be east of the golf course pond.

RESPONSE:

This figure has been corrected.

COMMENT:

2. In Table 9-1 (Exposure Pathways Summary), I do not agree with eliminating from evaluation the Air Inhalation Pathway for chemicals entrained in fugitive dust for Current Site Users/Maintenance. This area is heavily traveled by trucks, tractors, and mowers which would increase fugitive dust occurring at the site. Also for the current site worker, what is meant by the "qualified" no for assessment of soil ingestion and dermal contact? This should be clarified in the footnotes.

RESPONSE:

Use of the term "qualified" for the current site worker refers to the fact that the risk was calculated for a future worker, and that the same assumptions can be applied to the current site worker. This information has been added to Table 9-1.

Air screening performed during the 1991 Contamination Assessment/Remedial Activities Investigation indicated the site is not a significant source of air particulates (E&E, 1991). Only one parameter exceeded the soil-to-air RBC: a single surface soil dieldrin concentration. Dieldrin was identified as a COPC and was assessed as described in the HHRA. As explained in the RI, particulate emissions generally account for less risk than the ingestion and dermal contact exposure pathways.

For example, the residential dieldrin RBC based on soil ingestion is 0.04 mg/kg; the soil-to-air RBC is 2.0 mg/kg. Based on the 500 % difference between the ingestion-based RBC and the soil-to-air based RBC, the Navy believes the ingestion and dermal contact pathways that were used are appropriate indicators of risk for this site. The remedial goal option for dieldrin shown in Table 9-31, which includes ingestion and dermal contact pathway, was 0.033 mg/kg. Adding a fugitive dust exposure model to the HHRA would be of little value.

COMMENT:

3. For the Baseline Risk Assessment (BRA), both the Reasonable Maximum Exposure (RME) and Central Tendency (CT) were calculated. Although this follows USEPA risk assessment guidance, FDEP only accepts RME; not CT.

RESPONSE:

This comment is noted.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DRAFT REMEDIAL INVESTIGATION REPORT
SITE 15, NAS PENSACOLA

(Comments from David P. Grabka, E.S.I., dated June 17, 1997)

COMMENT:

1. Based on inferred contours on Figures 6-3 and 6-5 and levels above the preliminary remediation goals (PRGs) further assessment is necessary to determine the lateral extent of arsenic and dieldrin contamination in surface soil. Soil borings and analyticals for the following locations are suggested:

   (a) six soil borings in the holding tank contents disposal area; 50' northwest and 50' southwest of 15S53; 50' northeast, 50' southeast and 50' southwest of 15S55 and 50' south of 15S10. Soil samples should be analyzed for arsenic.

   (b) three soil borings west of building 2640; 30' west and 30' south of 15S41 and 30' south of 15S42 for arsenic, pesticides and PCBs;

   (c) three soil borings west of building 2692, 30' north, 30' south and 30' west of 15S57 for pesticides;

   (d) three soil borings between buildings 2640, 2692 and 747; 30' east of 15S61; 40' northeast and 30' east of 15S05 for arsenic and pesticides;

   (e) two soil borings northeast of building 747; 50' east and 50' southeast of 15S58 for arsenic;

   (f) four soil borings around building 3586; 30' northwest of 15S64; 30' west of 15S07, 30' southwest of 15S20 and 30' east of 15S21 for arsenic;

   (g) one soil boring north of building 3447; 30' north of 15S50 for pesticides.

RESPONSE:

Phase II delineation soil sampling locations were selected along the site's boundary and agreed upon by the Partnering team to determine potential contaminant concentrations along the site's fringe. Additional sampling away from- the identified "hot spot"/source areas before the

development of remedial goals may result in an inefficient expenditure of resources if remedial goal concentrations do not extend beyond currently delineated areas. The general areas of contamination within the original/immediate site study area have been sufficiently delineated for the purposes of the RI. The areas noted by the reviewer will not be neglected, but will be addressed by the FS. If further delineation is required to be consistent with FS remedial goals, this will be accomplished during either RD or RA.

COMMENT:

2. Further assessment of arsenic contamination in groundwater is necessary. Monitoring wells should be installed 50' west of 15GR65, 80' downgradient of 15GR65, 40' east of 15GR66 and 80' downgradient of 15GR66 and 30' upgradient of 15GR07. Monitoring wells should be constructed so that the screen intercepts the water table.

RESPONSE:

Refer to the response to Comment 1.

COMMENT:

3. Monitoring well 15GS68 should be resampled and analyzed for pesticides to verify the elevated level of Dieldrin found during the Phase III-C sampling event. Although the concentration of Dieldrin detected in this well (.11 μg/l) only slightly exceeds the preliminary remedial goal of .10 μg/l (Florida Groundwater Guidance Concentration), the concentration detected greatly exceeds the Surface Water Quality Standard of .0019 μg/l. Monitoring well 15GS68 is located immediately adjacent to Bayou Grande and groundwater in this vicinity can be expected to discharge into Bayou Grande. Surface water and sediment quality in this area will be evaluated as part of separate remedial investigations for Sites 40 and 41.

RESPONSE:

Well 15GS68 was resampled in October 1997 to confirm the absence or presence of dieldrin. Dieldrin was not detected above method detection limits in the confirmatory sample. This information has been added to report Section 6.2.2, and the associated analytical data have been included in this revised RI submittal as an insert page/addendum for Appendix F.

COMMENT:

4. If elevated levels of Dieldrin are confirmed in 15GS68, soil sampling immediately upgradient should be conducted to determine its source.

RESPONSE:

As discussed in the response to Comment No. 3, dieldrin was not detected during the resampling of 15GR68; therefore, upgradient soil sampling does not appear warranted.

COMMENT:

5. Preliminary Remediation Goals (PRGs) for Soil Contaminants listed in Appendix D should have current FDEP Soil Cleanup Guidance Concentrations for arsenic, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, tetrachloroethene (PCE), trichloroethene (TCE) and vinyl chloride.

RESPONSE:

Appendix I, containing the recent revisions to the Florida Soil Cleanup Goals, has been added to the RI. Report figures and text have been revised where applicable to reflect these new cleanup goals.

U.S. ENVIRONMENTAL PROTECTION AGENCY
DRAFT REMEDIAL INVESTIGATION REPORT
SITE 15, NAS PENSACOLA

(Comments from Gena Townsend, dated September 11, 1997)

COMMENT:

1. Section **6.0, *Page* 6-1,** Paragraph 2 indicates the Florida and/or EPA's RBCs, guidance concentrations and promulgated standards have been defined as PRGs for this investigation. For the groundwater, the PRGs are EPA's MCLs/SMCLs and Florida drinking water standards. However, it should be noted that Region 4 requires RBCs as criteria for COPC screening. Since MCL/SMCL and the Florida drinking water standards are not regarded as risk-based values, these values should not be used for the COPC screening. This section should be revised to follow the Region 4 guidance.

RESPONSE:

The PRG screening discussed in Section 6, Nature and Extent, was used to guide the contaminant assessment process, and was not intended to define COPCs (which was performed in the BRA). The PRGs were agreed upon early in the investigation to function as a threshold limit value for identifying contaminants of potential significance that require delineation sampling.

COMMENT:

2. Figure 6-2 shows inorganics detected in Phase I and II soil samples exceeding PRGs. However, additional samples should be taken to properly delineate the areal and vertical extent of contamination of the site. The figure shows analytical results from surface soil samples (0-1 ft) only.

   This comment applies to Figures 6-3 through 6-8.

RESPONSE:

Please refer to the response to FDEP comment No. 1 (from David Grabka).

COMMENT:

3. Section 6.0, Page 63, Paragraph 1, Sentence 2 states that background soils samples were collected while installing background wells. However, the text does not reference the location of the background sampling analytical results in the document. The text should reference the location of the analytical results.

RESPONSE:

The analytical results for background samples are included in Appendix G. This is discussed in the document on pages 6-2 and 6-3.

COMMENT:

4. Figure 6.2 shows inorganics detected in soil samples exceeding PRGs. However, according to the Region 4 guidance, inorganic screening should be conducted by comparing the 2x mean background results. For example, the figure shows arsenic has its PRG as 0.43 ppm and its 2x mean background as 1.56 ppm (see Appendix G). Some points in this figure will be removed because they will not be exceedances where the arsenic 2x mean background value is used for the screening. The figure should be revised to follow the Region 4 guidance.

   This comment also applies to the same issues in other tables in Section 6.

RESPONSE:

Section 6 figures have been revised to show only the inorganics exceeding both the PRG and RC, where appropriate.

SPECIFIC COMMENTS

COMMENT.:

1. **Section 2.1, Page 2-1, Paragraph 2, Sentence 4**
   The text states that three concrete wash-down pads are present at Site 15. However, Figure 2-2 only shows two concrete pads. The discrepancy should be resolved accordingly.

RESPONSE

This discrepancy has been resolved. Figures illustrating site features have been revised to show the third pad's location, adjacent to Building 3447.

COMMENT:

2. **Section 3.**
   This section addresses the environmental setting. However, this document does not have a map showing the surface water flow and topography of the site. Maps showing the aforementioned characteristics should be included in the document.

RESPONSE:

The site's topography has been further described in an addition to Section 3.3.3. There are no surface water features onsite, other than the adjacent bayou and tidal inlet surface water bodies. The only significant topographic feature near the site is further discussed in the addition to Section 3.3.3 and is shown on Figure 5-2.

COMMENT:

3. **Figure 6-3. Page 6-6**
   Figure 6-3 shows arsenic concentrations detected in Phase I and II surface soil samples exceeding PRGs. However, isoconcentration lines on the figure do not include all sampling results in exceedance of the PRG. The lines are centered only around areas with the highest concentrations. The figure should explain why only those areas with the highest concentrations were taken into account when constructing the isoconcentration lines and not the entire site.

RESPONSE:

Given the widespread distribution of arsenic exceedances in soil, a contour interval value of 15 ppm was subjectively selected for this figure to identify areas of relatively higher arsenic surface soil concentrations. This rationale has been added to Section 6.1.1.

COMMENT:

4. Section 6.3.2, Page 6-2, Paragraph 3
   The text indicates that three areas of groundwater PRG exceedances are identified. However, later in Section 9 (Risk Assessment), the areas for groundwater exposure are identified as Area 1 and Area 2. It is unclear how the three areas in this section are related to the Areas 1 and 2 in later sections. The text should clarify the groundwater areas.

RESPONSE:

Section 9.1.3.3 has been revised to include a discussion of the relationship between groundwater exceedance areas in Section 6, and Areas 1 and 2 referred to in Section 9.

COMMENT:

5. Appendix C
   Well construction diagrams and soil boring logs are presented in Appendix C. However, the groundwater levels are not shown graphically in the logs. These levels should be shown on all monitoring logs.

RESPONSE:

Groundwater elevation data are presented in tabular (Table 5-1) and graphical form (Figures 5-1 and 5-2) in Section 5 of the report.

COMMENT:

6. Section 4.0, Page 4-2, Paragraph 2, Sentence 2 discusses the use of PRGs to screen the analytical results. However, the text does not state which PRG is used. If the only PRG used for soils is the human health oral ingestion PRG, then this PRG is not appropriate because the ecological receptors are not covered and the soil leaching to groundwater pathway is not considered. In addition, PRGs should be used to screen for COPCs after all analytical data has been collected. The screening process should be re-evaluated to determine if potential COPCs have been missed.

RESPONSE:

This portion of Section 4 summarizes the investigation, which included the use of PRGs as minimum threshold limit values for guiding the assessment/delineation sampling. Section 6 presents the PRGs and how they were used to evaluate data in the Nature and Extent discussion. The PRGs used in Section 6 are referenced in bulleted text on pages 6-1 and 6-2. Screening for PRGs at the nature and extent phase of the investigation is intended only to provide a point of reference. The actual COPC/ECOPC screening processes are performed in Section 9 for the human health and ecological risk assessments, respectively. The HHRA screening was performed according to guidance using the site-specific PRGs for surface soil. The risk to groundwater is recognized by the use of leachability-based PRGs as noted in the text for chemical contamination assessment. The pathway for human consumption of groundwater is incomplete, as there are no current users of this groundwater, nor is it reasonable to assume there will be.

COMMENT:

7. Section 4.0, Page 6-2, Paragraph 1, Sentence 1 lists MCLs as one of the PRGs being used for screening. However, MCLs are specifically excluded for use as a screening criteria by the Region 4 Risk Assessment Guidance (EPA, 1995). This screening criteria should be removed from the report.

RESPONSE:

The reviewer is apparently commenting on Section 6.0, page 6-2. Please see the response to USEPA's general comment No. 1.

COMMENT:

8. Section 6.0, Page 6-1, Paragraph 2 presents the PRGs used for evaluation of the analytical results. However, ecological concerns are not addressed. If PRGs are used, then this paragraph should be moved to Section 4.0. In addition, this section should be written to include all contaminants, since the nature and extent of contamination section is intended to discuss all contamination.

RESPONSE:

As discussed in the response to comment No. 6, ecological concerns are addressed separately in Section 9. Specifically, Section 9.2 contains the Ecological Risk Assessment. Regarding the rest of the comment, PRGs represent the minimum contamination assessment threshold limit values for contamination assessment agreed to by the partnering team prior to beginning the site investigation. Detections below these are not addressed.

COMMENT:

9. Section 7.4, Page 7-15, Paragraph 2 discusses the overall quality of the data collected for this RI and concludes that it is satisfactory. However, because of the amount of blank contamination, calibration problems, the number of samples re-analyzed, and surrogate recovery problems, the degree of confidence in the accuracy of the data is low. Accuracy should be discussed in this paragraph and in the uncertainty section.

RESPONSE:

The Contract Laboratory Program (CLP) and Environmental Protection Agency analytical methods include specifications for acceptable identification and minimum and maximum quality control (QC) limits. Data are validated independently from the laboratory to assess usability using The ***National Functional Guidelines for Organic and Inorganic Data Review.*** Qualifiers are placed on the data to provide information about the analysis to a data user, not to indicate low confidence in the analysis. Data that do not meet validation guidelines' performance criteria are qualified as estimated "J" to indicate bias. Also, analytes detected in blanks are evaluated using protocols outlined in the validation guidelines. When data are qualified during validation, it does not mean the accuracy of the data is low.

Accuracy is expressed as the degree of agreement or closeness of an individual measurement or an average of a number of measurements to a true or known value. Surrogate spike recoveries and matrix spike/matrix spike duplicate recoveries assess accuracy during sample analyses. When spike recoveries are above or below the QC criteria, it may indicate that the matrix is preventing the target analyte from being extracted from the sample. For surrogate recoveries outside method

criteria, the laboratory reanalyzes the sample to confirm or deny the matrix interference. According to CLP protocols, if the surrogate results are similar to the original result upon reanalysis, matrix interference is confirmed. The qualifiers and validation report provide information about the analysis. Sections 7.1.4 (which has been revised for clarification) and 7.1.6 further discuss accuracy with regard to MS/MSD and surrogate spike recoveries, respectively.

One semivolatile organic compound (2,4-dichlorophenol) and three volatile organic compounds (acetone, 2-butanone, and chloroethane) were flagged due to poor response factors in Section 7.1.2. All four of these compounds are described in Organic Functional Guidelines as target compounds which exhibit poor response. Because the compounds are recognized by the CLP as being poor responders, this does not reduce the confidence of the data and the poor compound response is not necessarily indicative of calibration problems. According to the CLP method, the laboratory does not have to take corrective action if any poor responder is outside QC limits. However, the Organic Functional Guidelines states that all compounds outside QC limits should be flagged during data validation regardless of whether the compound is a poor responder.

Although blank contamination should not be present in samples, it is often observed in data produced in a environmental production laboratory setting. Contaminated blanks are indicators that the reported results may be biased high and that the target analyte result is the product of sampling, shipping and/or laboratory analysis. The procedures outlined in Functional Guidelines aid in assessing whether the contamination is site related or not. The guidelines are designed to address blank contamination and potential false positives that may be reported. Contaminants found in blanks do not reduce the accuracy or confidence of the data unless the data are reported without assessing the blank contamination.

COMMENT:

10. Section 9.2.1.3, Page 9-139, Paragraph 2, Sentence 3 states that any inorganic parameter detected at a frequency greater than 5% is identified as an Ecological Chemical of Potential Concern (ECPC). However, EPA guidance states that frequency of detection should be evaluated to insure that a potential "hot spot" is not eliminated from consideration (EPA, 1995). The text should be revised to discuss the presence/absence of potential "hot spots", in addition to frequency of detection.

RESPONSE:

The text also states "... and which exceeded or does not occur in the reference values for NAS Pensacola, is identified as an ECPC." This method addresses potential "hot spots" at the site.

COMMENT:

11. Section 9.2.1.3, Page 9-139, Paragraph, Sentence 3 states that values are considered to be ECPCs if they exceed or do not occur in the reference values for NAS Pensacola. However, the reference for these values is not cited in the text. The text should cite the reference accordingly.

RESPONSE:

Section 9.2.1.3, second paragraph, has been revised to include a reference to Section 6 of the RI where the reference concentrations are discussed.

COMMENT:

12. Section 9.2.3, Page 9-149, Paragraph 1 lists the two assessment endpoint species for this site. However, no assessment endpoint has been included in the text. The text should be modified to state the assessment endpoint(s) for this site.

RESPONSE:

The selected assessment endpoint species represent the assessment endpoints that are being considered at the site: "reproductiveimpacts to terrestrial mammal and bird communities." This statement has been added to the text in Section 9.2.3, the second paragraph.

COMMENT:

13. Section 9.2.3, Page 9-149, Paragraph 1, Sentence 1 list the two assessment endpoint species for this site. However, the only rationale for their selection is their presence at the site. The EPA Process Document addresses the four criteria that should be used to select the assessment endpoints and iterates the need to insure that knowledge of the fate and transport of the contaminant, specific mechanisms of toxicity of the contaminant, and presence of sensitive receptors at or near the site is important in the selection of appropriate assessment endpoints (EPA, 1994). Therefore, the text should be revised to include a discussion of the criteria stated in the EPA Process Document in order to insure that the appropriate assessment endpoint species is selected.

RESPONSE

Consistent with the guidance document used (USEPA, 1997), representative wildlife species were selected as endpoints based on their exposure potential at the site (they occur onsite), their feeding regimes (both herbivorous and omnivorous species), and the potential reproductive effects from suspected or known contaminants onsite. No sensitive receptors occur onsite. Knowledge of the site and understanding of the terrestrial community were used to objectively determine which endpoint species would be used in the risk assessment. This information has been added to Section 9.2.3 for clarification.

COMMENT:

14. Table 9-55 states that the BAF utilized in the wildlife contaminant exposure model was obtained from Table 9-4. However, Table 9-4 (pages 9-50 and 9-51) does not contain BAF values. The table should be modified to identify the correct location of the BAF infomation.

RESPONSE:

Table 9-55 has been revised to reference Table 9-56 as the source of the BAF information.

COMMENT:

15. Section 9.2.4, Page 9-150, Paragraph 1, Sentence 9 states that if a similar species could not be used for comparison, then one was not made. However, the text should be modified to state that any uncertainty, which may be present due to the lack of information, is discussed in the uncertainty section.

RESPONSE:

Section 9.2.4 has been revised to incorporate this information. The uncertainty section, Section 9.2.8, has also been revised to account for quantifiable inter-species comparisons.

COMMENT:

16. Section 9.2.5, Page 9-158, Paragraph 1, Sentences 3 and 5 state that samples having concentrations above the significant risk level (SRL) are presented in Table 9-59. However, Table 9-59 is not included in the text or the Table of Contents. This discrepancy should be resolved.

RESPONSE:

The reference to Table 9-59 was originally omitted, but has been added to the Table of Contents. Table 9-59 is found in Section 9.2.5, immediately following Table 9-58d.

COMMENT:

17. Section 9.2.8, Pages 9-174 and 9-175 contain the uncertainty section of the ERA. However, the bulleted statements should be expanded to include a discussion dealing with the potential underestimation/overestimation of risk due to the presence of uncertainty.

RESPONSE:

The uncertainty section, Section 9.2.8, has been revised to address potential under- and overestimations of risk.

COMMENT:

18. Section 9.2.8, Pages 9-175, Bullet 4 states that on occasion BAFs were assumed due to the lack of information. However, the text does not explain how the "assumed BAFS" were determined. The explanation should be added accordingly.

RESPONSE:

Assumptions for BAFs were based primarily on chemical associations or octanol-water partitioning coefficients. This information has been listed as notes to Table 9-56. Additionally, Section 9.2.8 has been revised and Table 9-60 has been added to further discuss uncertainties inherent to ecological risk assessments.

COMMENT:

19. Section 9.2.9, Page 9-176, Paragraph 1, Sentence 3 states that the risk from pesticide compounds could not be quantified due to the lack of data for toxicity reference values. However, Section 9.2.1.3 (page 9-146, paragraph 2) states that most environmental effect studies of organochlorine pesticides have been directed at mammals and birds. In addition, Opresko, et al. 1996* contains values for organochlorine pesticides as well as the original document where these values were obtained. This ERA should use the appropriate values presented in Opresko, et al., which is a secondary document, then refer back to the primary document to insure that correct values are used for the selected assessment endpoints. Other appropriate references should be used where appropriate. The failure

to address the potential risk from pesticides at this site, especially considering that this site was a pesticide handling facility, poses a serious problem for this ERA. (*Opresko, D.M. B.E. Sample, and G.W. Suter, II. 1996. Toxicological Benchmarks for Wildlife: 1996 Revision, ES/ER/TM-86/R3, Oak Ridge National Laboratory, Oak Ridge, TN).

RESPONSE:

A review of Sample et al. (1996) has been performed to address the absence of pesticide (and other ECPCs) effects data from other literature. These values have been incorporated into the ERA and conclusions have been modified as appropriate.

SPECIFIC COMMENTS

COMMENT:

1. Section 7.1.2, Page 7-3. Paragraph 3, Sentence 2
This sentence implies that continuing calibration problems are the norm for environmental data. However, such problems are not the norm for the environmental data. This sentence should be re-worded to state that the observed QC deficiencies for the particular compounds axe common, but do not represent "common laboratory practices".

RESPONSE:

Section 7.1.2 has been revised to state "Theseobserved QC deficiencies are common and occur at a rate consistent with correctly calibrated instruments."

COMMENT:

2. Section 7.1.3, Page 7-4. Paragraph 1. Sentence 5
This sentence states that the action levels were based on the highest concentration of any laboratory artifact found in associated method blanks or QC samples. However, it is not clear if the word "associated"means individual analytical batches of samples. The maximum concentration of the laboratory artifact for the entire data set should not be used as action levels.

This comment also applies to inorganic blanks.

RESPONSE:

Section 7.1.3 has been revised to clarify the use of method blanks in the validation process.

COMMENT:

3. Section 7.2.3, Page 7-10, P-

This sentence states that contamination of blanks by inorganic compounds is to be expected. However, this statement indicates low quality data. Very little Contamination of blanks by inorganic compounds is expected.

RESPONSE:

This statement has been revised in the text to remove the phrase "as to be expected." However, inorganic blank contamination is a common occurrence in typical environmental analysis due to the use of modem ultra sensitive instrumentation capable of detecting trace analyte concentrations, and the challenge associated with obtaining fully deionized water for blank preparation.

COMMENT:

4. Section 9.1.2.4, Page 9-7, Paragraph 2, Sentences 6 and 7

These two sentences describe the method for determining the surrogate value for non-detect samples. However, the process of using one-half of the lowest reported "J"value if it was lower than the detection limit is not a standard practice of EPA. The surrogate non-detect values should be re-calculated using the standard practice of one-half the detection limit.

RESPONSE:

The Pensacola project routinely uses one-half the lowest reported value, as opposed to the detection limit, in an effort to realistically refine the resolution of the data. This approach was agreed to during past discussions with USEPA and FDEP Risk Assessment reviewers.

COMMENT:

5. Section 9.1.2.7, Table 9-1

The text states that air exposure to fugitive dusts is not evaluated because it will be several orders of magnitude below the oral exposure. However, the calculation is not presented to support this statement. Either the calculation should be provided, or the fugitive dust pathway should be included in the evaluation.

This comment applies to all receptors.

RESPONSE:

A comparison of site concentrations against soil-to-air screening values (USEPA, 1996) indicated that this pathway was not significant. The calculation need not be provided because it is standardized, and the PEF is provided in the referenced material from the USEPA. For brevity, a reference to the PEF value was provided, which should suffice. Please refer to comment No. 2 from FDEP (John Mitchell) for additional information on this topic.

COMMENT:

6. Section 9.1.2.7. Table 9-1
The table shows that ingestion and dermal pathways of exposure for current land use are not evaluated because future land use receptors are protective of current receptors. However, these two pathways should be included because the use of a potential receptor with a higher risk does not realistically evaluate the current risk.

RESPONSE:

Future industrial risk does not exceed 1E-04, and future industrial hazard does not exceed unity for the soil pathways. Future industrial scenarios contain more conservative assumptions than do current industrial scenarios, and generally indicate higher risk. Therefore, risk and hazard posed to current site workers at Site 15 would be expected to be minimal, and under this process, certainly less than those of future workers. Because groundwater is not currently used at Site 15, the exposure pathway is incomplete. Hence, potential risk and hazard to current site workers at Site 15 are unlikely.

COMMENT:

7. Section 9.1.2.7. Pages 9-71 to 9-23
The text presents the equations used in calculating the CDI for each pathway. However, there are no values listed for the FI (fraction ingested) or the FC (fraction contacted) parameters. It is normally assumed that these values are 1.0. If other values are used, there should be a justification for these values. This omission should be corrected.

RESPONSE:

The FI/FC values were assumed to be 1.0. FI/FC values were not computed because UCLs were used to provide upper-bound EPCs.

COMMENT:

8. Section 9.1.28, Page 9-24
This section presents an abbreviated toxicity assessment for the COPCs. However, there is no table summarizing the toxicity values. This table should be added.

RESPONSE:

Table 9-3b has been added to Section 9.1.2.8 to present this information.

COMMENT:

9. Section 9.1 2.10, Page 9-39, Paragraph 3
This paragraph discusses data quality. However, the text does not address the data deficiencies noted in Section 7.0. This portion should be expanded to include such a discussion.

RESPONSE:

In order to prevent redundancy, data defenciencies were not discussed in the HHRA. The reader is referred to Section 7, the Data Validation Section, for these discussions.

COMMENT:

10. Section 9.1.3.2, Page 9-48, Paragraph 2
This paragraph states that many of the initial COPCs were eliminated through the tiered sampling approach described in Section 6.3. In addition, some of the COPCs were eliminated because of frequency of detection. Chromium's detection frequency is 2/8 which is 25%, or the number over screening is 1/8 which is 12.5 A. This level is much higher than 5% which was used as frequency detection criteria. Therefore, these COPCs should be included in the risk assessment.

RESPONSE:

Chromium and heptachlor epoxide were eliminated because they were not detected in later sampling rounds.

COMMENT:

11. Section 9.1.3 — e — 9-80 Paragraph 1 Sentence 6
This sentence introduces the CT estimates for the groundwater pathway. However, no CT risk estimates are presented for the soil pathways and no discussion of the parameters used in the CT calculations are presented. This discrepancy should be resolved.

RESPONSE:

CT risk estimates for the soil pathways are presented in Tables 9-27 and 9-28. Table 9-2b has been added the the HHRA to present the CT calculation parameters. These parameters are discussed in Section 9.1.2.10.

COMMENT:

12. Table 9-53a, Page 9-14Q
Column 5 of the table contains concentrations from NASP reference concentrations. However, at the bottom of this table there is no reference for where these values can be found. The table should be modified accordingly.

RESPONSE

Table 9-53a has been revised to include this reference.

COMMENT:

13. Figure 9-18, Page 9-148
The figure is the contaminant pathway model for this site and includes several dark circles. However, the figure does not include the meaning of these Circles in the note at the bottom of the figure. The figure should be modified accordingly.

RESPONSE

Figure 9-18 has been revised to include this information.