NAVAL AIR STATION (NAS) ALAMEDA RESTORATION ADVISORY BOARD MEETING SUMMARY

Building 1, Suite #140, Community Conference Room
Alameda Point
Alameda, California

Tuesday, 02 March 1999

ATTENDEES:
See the attached list.

MEETING SUMMARY

I. Approval of Minutes

Jo-Lynne Lee, Community Co-chair, began the meeting at 7:05 p.m. The following guests introduced themselves: Sofia Serda, toxicologist, Environmental Protection Agency (EPA) Region IX; Kathleen Ellis, Gutierrez-Palmenberg, Inc. (GPI), who announced the inaugural issue of the Alameda Point newsletter, *Milestones*; Ken Hansen, Community Co-chair of the Alameda Annex RAB; Tom Huetteman, Navy Section Chief, EPA; Claire Best and Dan Murphy of the Department of Toxic Substances Control (DTSC); and Patrick Lynch, community member.

Ms. Lee called for changes to the minutes. Malcolm Mooney stated that on page 14, second paragraph, "shallow quality" should be changed to "shallow depth." He moved to approve the minutes with the proposed change; it was seconded by Michael John Torrey and all were in favor.

II. Co-chair Announcements

Ms. Lee circulated a card for Lisa Fasano, EFA West's East Bay Public Affairs Officer, to congratulate her on the recent birth of her daughter. She announced the following excused absences: Kurt Peterson; Lynn Stirewalt, who is excused for the next two months; and Dan Zerga. Effective next month, subsequent meetings will be held at 6:30 p.m. to allow the BCT time to address questions after each meeting. Ms. Lee also announced that Michael Polenz has accepted a job out of the Bay Area and thus will no longer be able to attend RAB meetings. As a result of Mary Rose Cassa's presentation on the BRAC Cleanup Plan (BCP) in the previous meeting, Ms. Lee stated that she has read the entire BCP and found it worthwhile and informative; she encouraged other RAB members to do the same.

Last year, the RAB spent approximately $8,000 of the TAPP grant. There is a lifetime cap of $100,000 for one particular RAB, with a yearly $25,000 limit on spending from January to

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December. Ms. Lee stated that the RAB did not lose the money that was not utilized during the prior year; the residual would just be spent during another year. This year, there are many remedial investigation (RI) reports to be issued, with the expectation that the entire $25,000 will be utilized for technical assistance with Operable Unit 2 (OU-2) and OU-4.

Ms. Lee received three copies of the Fleet Industrial Supply Center (FISC), Alameda Facility/Alameda Annex and Alameda Point draft basewide Focused Feasibility Studies (FFS) for the Former Subtidal Area and Marsh Crust and Groundwater. She offered the copies to RAB members, and stated that any remaining copies will be placed in the library.

Steve Edde, Navy Co-chair, announced the responses to the following action items: Ken Kloc inquired if the recent accident on Parcel 37 would result in an update of the Stormwater Pollution Prevention Plan. Mr. Edde replied that the standard protocol did not require an update. He also distributed a map of the groundwater plume that involves benzene primarily in Zone 16, Parcels 181 and 179; he was unable to include it in the mid-month mailing.

Mr. Edde mentioned that the first issue of *Milestones* was included in the mailing and also as an insert in the February 19 issue of *Alameda Journal*. Mr. Edde announced that Roger Caswell, a member of the Naval Transition Office (NTO), was promoted to BRAC Environmental Coordinator (BEC) at the Oakland Army Base. Mr. Caswell has attended several RAB meetings and was part of the environmental staff.

Mr. Edde announced that Mayor Jerry Brown of Oakland, along with the City of Alameda, endorsed Operation Urban Warrior, a four-day event that will start on Monday, March 15. A World War II (WWII) vintage aircraft carrier will be anchored near Angel Island from which hovercrafts will head to Alameda Point, transporting about 700 Marines and Navy Seals. The hovercrafts will go under the Bay Bridge, into Seaplane Lagoon, and up ramp number 3. The troops will be escorted by the Alameda Police Department through the tube, after which the Oakland Police Department will escort them to Oak Knoll Hospital. Each individual will be using a personal computer to test communications equipment in an urban setting. The operation will be followed by a military demonstration. Mr. Edde welcomed any spectators to the four-day event, which will begin at 8:00 a.m., Monday, March 15.

Elizabeth Johnson, Alameda Reuse and Development Authority (ARRA), inquired if there will be any access restrictions that will affect the work commute. Mr. Edde stated that as the troops would arrive around 9:00 a.m., the event would not significantly impede commuters. Tom Palsak inquired if it was a Marine operation, and Mr. Edde replied that the Marines are conducting the event. Mr. Edde, Ms. Cassa, and Lynn Suer had a conference call with the Lieutenant Colonel in charge of the operation regarding the hovercraft's wave action and the potential sediment disturbance. They were assured that the hovercraft will only affect the top one inch of water.

Mr. Edde announced a change in the agenda: the review of BRAC Cleanup Team (BCT) Activities will be eliminated and Mr. Huetteman will give a presentation on the EPA's decision to begin the

process to add Alameda Naval Air Station (NAS) to the National Priorities List (NPL).

III. Presentation by Tom Huetteman, EPA

Mr. Huetteman distributed copies of the letter written by Felicia Marcus, EPA Regional Administrator, Region IX, to Governor Gray Davis; he also distributed copies of his slide presentation. He explained that he and his staff bear the responsibility for cleanup oversight at twenty different bases, most of which are in California and involve the Navy and Marine Corps. By writing Governor Davis, the EPA has taken the first formal step in the process of adding Alameda NAS to the NPL. The NPL is the EPA's list of federal Superfund sites. The NPL grants the EPA specific regulatory authority and has a provision for the Federal Facilities Agreement (FFA), which is signed by the state, the EPA and the Department of Defense (DoD).

Mr. Huetteman stated that the impetus for adding the base to the NPL was the EPA's concerns regarding the overall progress of cleanup, and the need for resolution to certain disagreements. He referred attendees to the handout reflecting the cleanup status at the Navy BRAC bases. There are only three closing Navy facilities in California that are on the NPL. Regarding El Toro, he said that there is still one OU that is in the RI stage, but overall the three NPL sites are closer to completion of the cleanup process than are the three non-NPL sites.

He stated that the Federal Facilities Agreement brings accountability by establishing an enforceable schedule and delineating the penalties involved when the requirements are not met. Also, the resolution of disagreements fall on the EPA administrator as the ultimate decision maker.

Mr. DeHaan mentioned that being a Superfund site was perceived to be a kiss of death. Mr. Mooney commented that if progress is slow and there is an alternative that may be more efficacious, then that alternative should be tried. Mr. Huetteman acknowledged the stigma associated with being an NPL site; however, in regard to closing bases, the EPA has not experienced cases where this has been a real concern. In fact, he observed that very active reuse is occurring at many closing federal facilities on the NPL.

All of the closed or closing Air Force bases (AFBs) are NPL sites. Doug deHaan asked the reason for this, and Mr. Huetteman said that, in most cases, closing AFBs have contaminated drinking water supplies, making the bases a high EPA priority.

Mr. Huetteman explained that having begun the process to add Alameda NAS to the NPL does not necessarily result in that outcome. The EPA is required to elicit the State's position, but it does not need State approval. Generally, there is reluctance to move forward if there is major State opposition, unless there is strong local support for the EPA to proceed. The EPA is also interested in input from the RAB and the City. So far, the EPA's interchange with the State and the Navy have generally been positive, or at the very least, there have been no substantial negative reactions. Mr. Huetteman suggested that the RAB write a letter to the State and EPA Region IX with their input.

A formal proposition to list Alameda NAS in the NPL will be followed by a 60-day public comment period. Barring any substantial opposition, the final listing will be made around July and will result in a Federal Facilities Agreement. Mr. Huetteman believes that NPL status can be a positive catalyst toward improved progress.

James Leach inquired if NPL listing will improve funding. Mr. Huetteman stated that an NPL site has stronger legal drivers which "can add a priority for funding." Mr. Huetteman added that having NPL status does increase public attention, which is important in terms of facilitating cleanup. Being on the NPL is beneficial to the Alameda NAS because it is a large, complicated base; however, NPL status is not really appropriate for small bases such as the Annex.

Tony Dover inquired what would expedite the cleanup process if the base were added to the NPL. Mr. Huetteman emphasized that no blame is placed on any specific entity, but NPL status would result in adherence to the schedule, which has not happened to date. With NPL sites, there is increased accountability, and dispute resolution is facilitated by an ultimate decision maker. In addition, a rarely used provision for penalties also creates the impetus for compliance. For example, there is a provision for a statutory daily penalty of a large amount, such as $25,000. Mr. Huetteman stated that he did not know of any case in which such a penalty had been levied. An example of potential noncompliance by the Navy is its withholding of funds from a project for reasons not acceptable within the context of the agreement; the Navy can be penalized $2,000 per day.

Mr. deHaan asked to what extent the RAB would be involved if the base becomes an NPL site. Mr. Huetteman stated that RAB involvement would not change in any way; there are active RABs at NPL bases.

Mr. Huetteman mentioned that prior to the TAPP, the TAG grant was used for funding. He pointed out that the TAG is another resource for funding.

Mary Sutter asked about the City's response. Ms. Johnson replied that there is no response as yet. Michael Torrey inquired about Governor Davis' response. Mr. Huetteman explained that Governor Davis has not yet responded. The EPA is waiting thirty days for his response, and the RAB will receive a copy of that response.

Ken Hansen asked if the "ultimate decision maker" is an available resource to the Annex, even though that site is not on the NPL. Mr. Huetteman replied that the EPA representative, James Ricks, attends the Annex RAB meetings. He added that the EPA can participate in dispute resolution as a facilitator, but not as an authority, unless deference to the EPA is previously agreed upon by the parties involved.

Mr. Dover stated that each of the bases listed in the handout are unique; the handout only provides anecdotal evidence. As such, it is not compelling evidence that cleanup on NPL sites is faster or more efficacious. He pointed out that Hunters Point, which has been problematic for over twenty years, is not a good example of a quick resolution. He stated that change will happen only if it is

system wide and occurs at every level.

Mr. Huetteman conceded that it is anecdotal evidence and the NPL is not a panacea. He does believe that the EPA's regulatory involvement does account for a difference, and he agreed that change must reach all levels of the project.

Mr. deHaan asked if Mare Island is under consideration for NPL listing. Mr. Huetteman stated that the EPA is also considering adding sites that are not large federal facilities, such as Mare Island. He confirmed that Mare Island is not further ahead than Alameda NAS in the completion of cleanup.

He stated that if Alameda NAS becomes an NPL site, there is no intent to widely publicize that status. Steve Krival asked if the base will receive more funding and manpower from the EPA as an NPL site. Mr. Huetteman replied that increased attention will probably not originate from the local EPA office but that, in general, it has been easier to pull in other resources, such as staff from their various Offices of Research and Development. He pointed out that being a BRAC closing base also has this advantage; therefore, there may not be any substantial change for Alameda NAS in terms of additional resources.

Mr. Polenz inquired why Alameda NAS was picked out of the several bases under consideration for NPL listing. Mr. Huetteman replied that the base was chosen due to its size and the complicated issues involved, as well as the issue of timing. Mr. Palsak inquired if the value of the land was relevant to the decision, and Mr. Huetteman replied that it did not have any impact on their decision.

Robert Berges inquired whether funds are withheld if contractors do not adhere to the schedule. Mr. Huetteman explained that once the Navy receives funds from Congress, they must be utilized for the stated purposes.

Mr. Torrey asked about the EPA's course of action if the Governor does not respond. Mr. Huetteman stated that the EPA can just proceed forward, but they would probably send a follow-up letter that advises the governor to send a representative to meet with the EPA to discuss any opposition to the EPA's intent to move forward.

Mr. Leach commented that the NPL helped the Air Force bases in expediting the cleanup process. He believes that being an NPL site lends a very disciplined and progressive methodology to the process.

Heather Boston, Lynn Stirewalt's proxy, asked about the risks involved to residents. Ms. Lee stated that, in order to expedite the agenda, inquiries outside of the NPL issue can be discussed at the end of the meeting.

Ken Kloc made a motion for the RAB to send to the EPA, Governor Davis, and the city manager a letter in support of the former Alameda NAS becoming an NPL site. All but one were in favor, and the motion carried..

IV. Zone 16 and Site 25 Update

Ms. Cassa mentioned the existing concerns regarding organic substances in the soil at Parcel 182, which became Installation Restoration (IR) Site 25, Estuary Park. Recently, there have also been concerns regarding groundwater contamination. As part of the Environmental Baseline Survey (EBS), the Navy gathered data on individual parcels. They also conducted tiered-risk screening and utilized the dual-track method.

Because Parcel 182 was a former railyard, contamination in the immediate vicinity was expected. The park area is bordered by the FISC Annex, which was known to have contamination due to industrial activities. The impact of landscaping, such as the past application of pesticides, was also considered.

Phase 1 entailed records research, whereas Phase 2A entailed field sampling. Phase 2B entailed subsurface sampling, and the results are provided on the handout. Ms. Cassa pointed out that on Figure 182-1, there is 3800 ppb of the carcinogenic benzopyrene, 7.5 feet deep on the West end. In the near surface, there is 27,000 ppb of the same organic compound, among various other concentrations.

The work was done in support of leasing to the City. The BCT determined that the apparent risk posed by these concentrations would be mitigated by controls on digging in the park area, and the fact that there would not be residential exposure. It was judged to be a conservative estimate of risk, and park usage was allowed to continue.

Upon further evaluation of the data in 1997 and 1998, the EPA and DTSC determined that additional sampling was necessary. As a result, near-surface samples were collected, which did not reveal a particular source for the contamination. The Navy moved ahead with the RI and tightened digging restrictions. Community members observed continued digging and soccer activity. In October, a fence was installed to prohibit access to the park.

Additional surface and subsurface samples were collected. Ms. Cassa stated that barracks were formerly in this area, and it was hypothesized that burning activities (causing the production of barbecue ash) may have caused the polycyclic aromatic hydrocarbon (PAH) contamination. People using the park area to change or dispose of motor oil may have also contributed to the problem. Ms. Cassa acknowledged that neither scenario provided a strong explanation for the contamination that was found much deeper below the surface.

Samples were taken at 4, 7, and 10 feet. The concentrations were found to be scattered, with no particular source or distribution pattern. It was concluded that the contamination was related to the type of fill used, which probably originated from nearby industrial areas.

Mr. Mooney asked the depth of groundwater at Parcel 182. Patricia McFadden, EFA West, stated that it was between 7 to 9 feet, with samples having been taken at depths of 1, 4, 7, and 10 feet at

ten locations. Groundwater samples were also taken at the South end to determine if the plume had extended there, and the results were negative.

Ms. Suer stated that the barbecue ash and motor oil hypotheses were rejected as potential sources of contamination. She presented two current hypotheses: 1) the elevated concentrations of PAHs are associated with the 1900-1915 fill event; and 2) wastes from historical coal-gasification plants are a source of PAHs in the fill.

Ms. Suer estimated that during the creation of Alameda Point, there were about one dozen fill events, which were grouped into three broad areas based upon their inorganic chemistry. Two fill events created the housing area: from 1900-1915, and from 1930-1939, which also filled the majority of the center portion of the base. The boundary of the two fill events crosses the Coast Guard housing and comes down to the Marina Village housing on the West side; the implication is that the contamination is contained within the fill areas.

At the turn of the century, two coal-gasification plants were previously located in Jack London Square. Ms. Suer explained that after gas was extracted from the coal, there was a tar/sludge waste residual. Typically, such waste was buried; however, the site precluded such digging, as the estuary would cause the hole to fill up with water. Ms. Suer stated that the DTSC has been unable to locate the wastes from the two plants, hence the second hypothesis. She emphasized that to date, there is no substantiation for this hypothesis.

Mr. Torrey asked how far the school and daycare center are from the fill. Ms. Suer replied that the two buildings are across the street from the fill. She added that the boundary line on the map may not precisely reflect the fill line. According to the EBS, the concentrations of semi-volatiles at the child development center at Parcel 180 are lower than at Parcel 182.

Ms. Suer stated that there was concern about the exposure to the daycare and to the school, in areas where there is no pavement to act as a barrier to exposure. Mr. Torrey asked if there was a sandbox, and she replied that she did not know.

Patrick Walters inquired about the possibility of drinking water contamination. Ms. Suer replied that there was no such possibility since semi-volatiles adhere to soil and are not likely to reach groundwater, as does benzene.

Patrick Lynch stated that, on the contrary, there is significant semi-volatile contamination at this site and in the housing area. He added that semi-volatile organics are in the groundwater.

Mr. Edde stated that the Navy developed a sampling plan for Parcel 181, which is the North Housing located just South of Parcel 182. He said that of the 282 housing units in North Housing only 42 are currently occupied. He hand-delivered a letter dated 18 February to the 42 residents regarding the utility survey on 22 February and the sampling on 23-26 February. He also attached a copy of the letter on the front doors of potentially soon-to-be occupied housing units. He talked personally to

about 30 adults who were home at the time. Analysis will be completed by the end of March. Mr. Edde reported that there have been no follow-up inquiries from the residents to date.

Ms. Sutter referred to a residential PRG of 66 micrograms; and she asked for information about the short-term PRG. Ms. Serda explained that toxicity in a short time period is not as critical as long-term exposure. Mr. deHaan voiced his concern about the fill that has been deposited into the FISC. Ms. Serda stated that more data from the Annex is necessary to determine the extent of the fill. Mr. Hansen asked if the Navy has been made aware of this concern, and she replied that she has spoken with James Ricks (EPA's Annex BCT member).

Ms. Cassa stated that she has not seen any numbers from the Annex that "ring any bells"; the only numbers she has seen to date are in the 200 ppb range. Mr. Hansen stated that he does not recall reviewing any data. Ms. Cassa replied that the data was gathered by the NAS, adding that it was incumbent on the NAS and the Annex to communicate with each other.

Ardella Dailey asked for clarification on the meaning of "short-term." Mr. Edde stated that his letter was intended to inform residents of the sampling events, and that, based on available data, there is no short-term risk to the residents. Ms. McFadden explained that there are two types of risks: chronic risk, which is considered long-term; and acute risk, which poses an immediate risk. There is no specific term for a time frame in between long-term and acute. In addition to the risks related to time frame, Ms. Serda also mentioned the concern about preventing potential exposures such as those from a yard or a playground.

Mr. Lynch commented that there is a poor understanding of the history of this parcel, which the Navy did not acquire until 1970. There were no barracks at the site; rather, it was an Estuary housing project constructed for shipyard workers and owned by a private individual. The PAH contamination was discovered due to the density of the sampling. He stated that the proposed targeted sampling is not likely to discover the problem. At Estuary Park, the lead samples collected during the second phase of the EBS were accidentally collected from property owned by Union Pacific railroad, not from Navy property.

Mr. Palsak explained that drinking water is not related to groundwater. Mr. Hansen agreed with this point; however, he gave an example of a short-term risk at the FISC where roots of fruit trees may absorb groundwater contamination and then pass it on to the fruits.

Mr. Walters asked if the compounds migrate through the soil. Ms. Cassa replied that they are immobile, tending to adhere to parts of the soil. He then inquired how it could be cleaned up, if at all. Ms. Cassa replied that a decision has yet to be made regarding what options for remedial actions to take.

In regard to Estuary Park, Mr. deHaan commented that the problems there are being grossly understated. Mr. Edde replied that the sampling was done on a residential basis. Mr. deHaan pointed out that his concern is specifically related to sampling being conducted with residents in place, when

the area was cordoned off due to a problematic sample. Mr. Kloc added that if the soil is contaminated, short-term risk is possible if some residents have children who, during their development, enter a phase of eating soil, known as PICA. He stated that such soil ingestion is more prevalent than previously recognized. Therefore, chemicals that are normally considered to be a long-term risk can become a short-term hazard, if a child ingests massive doses of contaminants during a short period of time.

Ms. Dailey expressed her concern about the situation's relationship to the school. She inquired if testing will be done at the school. Ms. Lee suggested that this inquiry be addressed by the Site 25 focus group.

In the interest of time, Ms. Lee eliminated the Project Teams' Round Table from the agenda.

V. OU-3 RI Overview

Ms. McFadden stated that the draft Remedial Investigation (RI) has been issued, and comments are due on March 15th.

Site 1

1943-1956 Landfill
Site 1 is located in the northwest corner of Alameda Point and received wastes generated at NAS Alameda between 1943 and 1956.

Major Issues

- Pistol Range/Ordnance
  - Pistol range in use between 1940s and 1993.
  - Elevated lead levels in the soil from bullets.
  - Area just north of the pistol range is a disposal area for 20 millimeter projectiles.
  - Additional surface and subsurface surveys planned in next six months.

- Radiological
  - Many anomalies (readings above background) were found across Site 1. No anomalies will be removed under the *current* removal action.
  - Readings that indicate likely radiological sources may be removed as part of the final remedy. (i.e., dials, brushes)
  - Radiological surveys have been extended to potentially impacted areas and are continuing.
  - Issues discussed with regulators on 1/26/98. Additional meetings with regulators scheduled for 9 and 10 March 1999 to determine action levels.

- Groundwater risk to ecological receptors in San Francisco Bay needs to be addressed.
- Presumptive remedy for landfills is a landfill cap.

Presumptive Remedy
Presumptive remedy for most landfills is a landfill cap; it does not eliminate the need to address groundwater in the Feasibility Study (FS).

EPA developed criteria used to determine applicability of the presumptive remedy at a military landfill:

- Characteristics of wastes disposed of in the landfill
- Presence of military wastes in the landfill (i.e. unexploded ordnance (UXO) and radiological)
- Size of the landfill (approximately >2 acres)

The presumptive remedy consists of the following components:

- Landfill cap
- Leachate collection and treatment
- Landfill gas collection and treatment
- Institutional controls to supplement engineering controls

REFERENCES

EPA, 1993, *Presumptive Remedy for CERCLA Municipal Landfill Sites*, September 1993.
EPA, 1996, *Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills,* December 1996.

Feasibility Study
The FS for presumptive remedy sites provides a landfill cap as the presumptive remedy for addressing soil contamination and various alternatives for addressing groundwater contamination.

The FS for Site 1 (OU-3) will study the design criteria for the landfill cap, evaluate groundwater treatment alternatives, and address the UXO and radiological issues.

Landfill cap design requirements

- Need to address surface drainage and erosion
- Need to ensure adequate design for any remaining UXO and radiological issues

- Need to assess appropriate institutional controls to supplement engineering controls
- Need to consider how reuse (golf course) impacts the design

Groundwater cleanup requirements

- Need to target chemicals which exceed ecological risk
- Need to assess treatment alternatives, engineering controls, and institutional controls
- Need to evaluate each potential remedy against the nine criteria in EPA's FS Guidance

Ms. Cassa commented that it was misleading not to include the criteria that rule out the presumptive remedy, such as shallow groundwater. Ms. McFadden stated that there is waste that is above groundwater. The RI report addresses these issues, and discussions between the Navy and the regulators regarding these issues are pending. Ms. Dailey expressed her interest in the criteria that rule out presumptive remedy. Ms. Cassa replied that she would e-mail the information to her.

Ms. Johnson gave a recap on the Alameda Point Golf Links project. The FS took into consideration environmental restraints such as the need for nonresidential, low-level development. Another consideration was the possible reuse of dredge spoils from the Port's 50-foot dredging project, which is the clean Merritt sand layer. The FS was completed last summer, and it was determined that such reuse was suitable for a golf course. The dredge material will be layered on top of the asphalt and then covered with a landscaping layer. Unfortunately, the Port's dredging project has been delayed for at least one year. The ARRA will commission the Request for Proposal (RFP) for golf course developers.

Mr. Krival stated that he requested all reports relevant to this area, and the four major documents that he received do not reflect characterization on any of the sites. Ms. McFadden stated that their presentation concerns only Site 1, the only OU-3 site. Mr. Krival asked where the capping would take place. Ms. McFadden explained that the actual boundary of the cap would be determined in the FS. He stated that he received no information on Site 1. Ms. McFadden explained the difference between OU-3 and his interests. Per Ms. Lee, Mary Masters of TOSC is reviewing the ecological risk assessment.

Anna-Marie Cook announced that as the OU-3 RI is currently under review, and it would be premature to consider the remedy prior to completion of the RI.

Mr. Leach stated that a thorough FS on a previous project found that it was easier and less expensive to utilize the available concrete air strip by spreading it out less than a foot thick. Mr. Dover inquired if during the coming meeting with the regulators, a suggestion will be made to dig up the landfill to determine its contents. Ms. McFadden replied that the topics on the agenda will be radiological issues that are separate from Site 1.

Ms. Lee announced that OU-3 comments are due by 15 March. She encouraged interested RAB members to join that focus group and to give their input by the deadline.

At this point, Ms. Lee called for any focus group reports that cannot wait until the next meeting.

VI. OU-1 Project Team Report

OU-1 RI

Mr. Kloc stated that a third round of comments in the form of a letter was submitted, indicating that they do not agree that Site 16 should become a No Further Action site. There are dichlorobenzene compounds in the groundwater that is 197 times the EPA Region 9 preliminary remedial action goal for drinking water. Secondly, if Sites 7 and 8 are transferred into the underground storage tank (UST) program, the focus group would like to review them. He added that this may no longer be relevant, since the regulatory agencies do not agree that the sites should be transferred.

The focus group also created an issue paper which reflects four problems identified with the OU-1 RI that have not been addressed to date. The comments letter and the issue paper will be included in the mid-month mailing.

Radiological

E-mail correspondence from George Kikugawa, EFA West, will be included in the mid-month RAB mailing.

VII. Community and RAB Comment Period

Ms. Lee called for any comments or suggestions from the RAB. Mr. Lynch expressed his surprise that the golf course diagram did not show the two 100-thousand gallon concrete tanks that have been backfilled with contaminated soil from the UST removal. He also mentioned that although the UXO emergency removal action document listed the Navy's four institutional controls, he and others have been allowed unlimited access to that site. Mr. Lynch stated that the Navy's level of negligence in allowing individuals to have access to a site that exposes them to imminent danger to life and health is like "attempted murder." He suggested an investigation regarding the legality of the explosives disposal at that site; and explaining why that activity, along with sampling for explosives residues, were not explained in the RI.

Ms. Cassa brought handouts for her Zone 16 groundwater presentation, and these were distributed to interested RAB members.

Ms. Lee concluded the meeting at 9:08 p.m.

The next Restoration Advisory Board Meeting will be held at 6:30 p.m. on Tuesday, 06 April in Building 1, 1st floor, Suite #140, Community Conference Room, Alameda Point.

ATTACHMENT A

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING AGENDA

March 02, 1999

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

MARCH 2, 1999 7:00 PM

ALAMEDA POINT – BUILDING 1 – SUITE 140

COMMUNITY CONFERENCE ROOM

(FROM PARKING LOT ON W MIDWAY AVE, ENTER THROUGH MIDDLE WING)

TIME	SUBJECT	PRESENTER
7:00 - 7:05	Approval of Minutes	Jo Lynne Lee
7:05 - 7:15	Co-Chair Announcements	Co-Chairs
7:15 - 7:45	Zone 16 & Site 25 Update	BCT
7:45 - 8:10	OU-3 RI Overview	Patricia McFadden Elizabeth Johnson
8:10 - 8:40	Project Teams, Round the Table	Team Leaders
8:40 - 8:50	BCT Activities	Steve Edde
8:50 - 9:00	Community & RAB Comment Period	Community & RAB

ATTACHMENT B

SIGN-IN SHEETS

ALAMEDA POINT
RESTORATION ADVISORY BOARD
Monthly Attendance Roster for 1999

Date: 3-2-99

Please initial by your name

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
COMMUNITY MEMBERS												
Robert E. Berges	P	P	REB									
Horst Breuer	A	A										
Saul Bloom/Ken Kloc	P	P	KK									
Ardella Dailey	P	P	AD									
Douglas deHaan	P	P										
Tony Dover	P	P	TD									
Karin King	A	A										
Stephen Krival	A	A	P									
James D. Leach	P	A*	X									
Ken Hansla		RAB ALTSC	X									

* denotes excused absence

Revised 02/16/99

Name	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Jo-Lynne Lee	P	P										
Malcolm Mooney	P	P										
Walter D. McMath	P	P										
Bert Morgan	P	A										
Ken O' Donoghue	P	A										
Tom Palsak	P	P										
Kurt Peterson	P	P										
Michael Polenz	P	P	M.P.									
John Spafford	A	P										
Lyn Stirewalt	A	P	LB									
Mary Sutter	P	P	MS									
Michael Torrey	P	P	MST									
Dr. Patrick Walters	A	P										
~~Robert L. Whited~~	P	A										
Daniel P. Zerga	P	P										

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
REGULATORY & OTHER AGENCIES												
Ravi Arulanantham												
Claire Best												
Mary Rose Cassa			MRC									
Anna-Marie Cook			AMC									
David Cooper												
Jim Haas												
Elizabeth G. Johnson			EGJ									
Michael Martin												
Steve Schwarzback												
Lynn Suer			LS									
Laurie Sullivan												
Sandre R. Swanson												
Joyce Whiten												
Dave Wilson												
Daphnia Seda			X									
Tom Huetteman			X									
DANIEL MURPHY			✓									

sp? Patric Lynch

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
U.S. NAVY												
Steve Edde	X	X	X									
Lisa Fasano												
George Kikugawa												
Patricia McFadden			X									
CDR Scott Smith												
Dennis Wong												
Warren Yip												
TETRA TECH												
Marie Rainwater												
GPI												
Maria Villafuerte	X	X	X									
Barry Robbins	X	X	X									

Kathleen Ellis

PUBLIC/GUESTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Name		**Address**							**Phone**			
Claire Best		DTSC							916/324-2809			
PATRICK LYNCH												

ATTACHMENT C

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD
MEETING HANDOUT MATERIALS

E-mail updates on the Radiological Removal Action from
George Kikugawa, EFA West, to Tony Dover
Navy Letter to North Housing Residents, re additional soil sampling, 02/18/99
Soil Sampling History for Parcels in Zone 16
Zone 16 - Parcels 182 and 181 PAH Contamination in Soil Summary and map
Zone 16 Groundwater Contamination Summary
Parcel 181 Site Map with Sampling Locations
US EPA's Summary of Placement of NAS Alameda on the Superfund NPL
US EPA Letter to Gov. Gray Davis recommending placement of NAS Alameda on the NPL, 02/26/99
Site 1 Feasibility Study Site Overview

Dover, Tony

From: gkikugawa@efawest.navfac.navy.mil
Sent: Tuesday, March 02, 1999 9:05 AM
To: tdover@fugro.com
Cc: cook.anna-marie@epamail.epa.gov; deinnocentiisv@raso.navy.mil; mcassa@dtsc.ca.gov; pamcfadden@efawest.navfac.navy.mil; sledde@efawest.navfac.navy.mil
Subject: RADIOLOGICAL REMOVAL ACTION UPDATE FOR MARCH

Hi Tony,
Here is the March Radiological Removal Action Update

Sites 1 and 2 Landfill. Backpack surveys are complete. Some small areas of landfill Site 1 still need to be resurveyed to cover missed areas. Additional surveys of landfill Site 1 areas adjacent to the runways and east is planned.

Bldg. 5. Decontamination of original areas has been completed. Final survey of this area is partially complete.

In the new Radium paint area (Room 234 and others) the initial survey, decontamination of original surfaces, piping and additional areas has been completed. However, new contamination was found on surfaces and pipes in 5 rooms adjacent to Room 234 including 1 room on the first floor. Floor covering removal and new surveys will be required in these areas before decontamination can take place. The Navy is working to have the spaces surveyed and cleaned.

The contractor is investigating the building 5 manhole connected to the abandoned line. Samples from the bottom of this manhole does not show any radiological contamination. The Contractor will continue with investigation of a second manhole in this line.

Bldg. 400. All surfaces have been decontaminated and exposed piping removed and replaced. Concrete cutting for removal of the underslab industrial waste line and the radium filter line should begin soon. Final surveys inside the building are scheduled to begin in March.

Storm Drain System. An additional 20 feet of pipe has been installed in the 6F to 5F manhole line. A total of 100 feet of new pipe is now installed in this line. Contamination of soil at the bottom and sides of the pipe trench will require modified shoring to prevent soil from sliding under the trench plates.

To date, 3 bins of contaminated material have been shipped to Envirocare in Utah.

george

Dover, Tony

From: gkikugawa@efawest.navfac.navy.mil
Sent: Tuesday, March 02, 1999 1:59 PM
To: TDover@fugro.com
Cc: pamcfadden@efawest.navfac.navy.mil
Subject: re: FW: RADIOLOGICAL REMOVAL ACTION UPDATE FOR MARCH

Tony,
In answer to Mary's question, there are landfill "hot spots" which have been referred to as anomalies. What causes these anomalies is unknown, until they are removed, but they may be dials, radium paint debris or radium mixed with soil. The surface survey readings we have taken do not indicate the strength or depth of the source, which can significantly affect measured levels. The survey of both Landfills Sites 1 and 2 show anomalies, the number depending on what measurement level is selected. In general there are more radiation hits in Landfill 1 and surveys there are being extended east and south. The level of anomalies that need to be removed will be discussed with regulators on March 9th and 10th. I hope this sheds some light on what we have in the landfills.
george

Original Text
From: "Dover, Tony" <TDover@fugro.com>, on 3/2/99 9:50 AM:
George, can you help with these questions? Thanks, TOny

> -----Original Message-----
> From:Mary Sutter [SMTP:msutter@home.com]
> Sent: Tuesday, March 02, 1999 9:16 AM
> To: Dover, Tony
> Subject: Re: RADIOLOGICAL REMOVAL ACTION UPDATE FOR MARCH
>
> Thanks Tony,
>
> Do you know what the results are of the Site 1 survey? I heard from
> Patricia
> that there was a level of dispersed readings, but no hot spots that they
> felt were related to something like a radium dial. Is this what you hear
> from George? What about Site 2? I haven't heard anything about the
results
> of that.
>
> Mary
> -----Original Message-----
> From: Dover, Tony <TDover@fugro.com>
> To: 'msutter@home.com' <msutter@home.com>
> Date: Tuesday, March 02, 1999 9:12 AM
> Subject: FW: RADIOLOGICAL REMOVAL ACTION UPDATE FOR MARCH
>
>
> >Mary, this is George's report. Regards, TOny
> >
> >> -----Original Message-----
> >> From: gkikugawa@efawest.navfac.navy.mil
> >> [SMTP:gkikugawa@efawest.navfac.navy.mil]
> >> Sent: Tuesday, March 02, 1999 9:05 AM
> >> To: tdover@fugro.com
> >> Cc: cook.anna-marie@epamail.epa.gov; deinnocentiisv@raso.navy.mil;
> >> mcassa@dtsc.ca.gov; pamcfadden@efawest.navfac.navy.mil;

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

Ser 616CA/119
18 Feb 1999

Dear North Housing Resident,

We are providing you with this information as a follow up to the information sheet that was distributed to residents about Estuary Park. As you are probably aware we installed a fence around Estuary Park north of Mosley Street. This fence was put in place to prohibit public access to the park as a result of concern about exposure to certain chemicals present in the soil in the park. The Navy discovered these chemicals during our base cleanup project to prepare Navy property for transfer to the city of Alameda. Several additional soil samples were taken in the park and the results have come back from the laboratory. The results show that polycyclic aromatic hydrocarbons or PAH's are found at random locations in the soil throughout the park. PAH's are chemicals, created from incomplete combustion such as coal or wood fires, petroleum refining and vehicle exhaust, and are found extensively in the environment.

The scattered nature of these chemicals indicates that the most likely source was from the soil, used as fill material over the former marshlands that existed in this area. The soil was placed before and during the early days of construction of the former Naval Air Station, Alameda that occurred in the late 1930's. It is likely that this fill came from the Oakland Inner Harbor and San Francisco Bay and contained these chemicals from industrial activities occurring in the area during the late 1800's and early 1900's. The sampling results indicate that the chemicals may extend beyond the boundary of the park.

There is no significant short term risk from exposure nor is there an immediate threat from breathing the air where these chemicals are present. The risk associated with these chemicals is based on exposure primarily to the skin or through ingestion over long periods of time (30 years).

As a result, the Navy along with the regulators (US EPA and California EPA) feel that the next step would be to take more samples outside of the park to determine the extent of these chemicals in the soil. We will be collecting additional soil samples in the North Housing area next week. There will be workers marking the underground utility lines on Monday, February 22 and the sampling will start on Tuesday the 23rd. The sampling should be completed by the end of the week. There is no need to take any special precautions during the sampling. We will continue to keep you informed. We will provide the information from this sampling as soon as it is available. We are expecting to have evaluated the data by the end of March.

For further information or questions you may contact me at (510) 749-5952.

Steve Edde
Navy BRAC Environmental Coordinator
950 W. Mall Square, Suite 200
Alameda, CA 94501

Soil Sampling History for Parcels in Zone 16

Parcel	Analytes Sampled	Sample Depth	Comments on SVOC Sampling
170	VOCs, PCBs/pesticides	surface soil and soil gas 0.5 - 3.5 ft	No SVOC samples taken.
171	VOCs, PCBs/pesticides	surface soil and soil gas 0.5 - 3 ft	No SVOC samples taken.
178	VOCs, PCBs/pesticides	surface soil and soil gas (2 VOC, 3 PCB/pesticide) 0.5 - 3 ft	Top 6-in of soil removed and replaced with 2-ft of clean fill in 1990 - 92. No SVOC samples taken.
179	VOCs, SVOCs, metals, PCBs/pesticides, TPH	soil gas and surface soil 0 - 3 ft	Detection limits at 300 - 400 µg/kg for SVOCs. All samples below detection limit.
180	VOCs, SVOCs, metals, PCBs/pesticides, TPH	soil gas and surface soil 0 - 2 ft	Detection limits at 300 - 400 µg/kg for SVOCs. All samples below detection limit.
181	VOCs, metals, PCBs/pesticides, TPH	surface soil and soil gas 0 - 2.5ft	No SVOC samples taken.
182	VOCs, SVOCs, metals, pesticides/PCBs	surface soil and soil gas 0 - 3 ft	SVOC concentrations high enough that additional samples were taken in February '98 and October '98. Sampling from both events showed sporadic high concentrations of SVOCs at all depths.
183	VOCs only	1 soil gas sample at 3 ft	No SVOC samples taken.
184	no sampling		Very small parcel within 178, covered with 2 ft of imported clean fill.

Naval Air Station Alameda Restoration Advisory Board

March 1999 Meeting

Zone 16 - Parcels 182 and 181 PAH Contamination in Soil

Chronology

July 1994 - "Shell" Work Plan

November 1994 - Surface soil samples collected (Phase 2A)
- Railroad Tracks along North Boundary
- Eastern Boundary Target Area
- Landscaped Areas

March 1995 - Parcel Evaluation Plan

May 1995 - Soil gas samples collected (Phase 2A)
- Filled Wetlands

October 1995 - Surface and subsurface soil samples collected (Phase 2B)
- Eastern Boundary - Subsurface soil; groundwater
- Railroad Tracks - Surface and subsurface soil; groundwater

Risk: 2.5 E-03 (Navy); 1.2 E-02 (CA)
HI: 1.3 (Navy); 1.4 (CA)

Late 1995 - Parcel leased. Restrictions against disturbing the soil "with the exception of improvements specific to the parcel's reuse as a soccer field. These improvements include leveling and seeding the playing field; installing a sprinkler system, bleachers, and stadium lights, relocating the existing fence to permit access from main street . . ." Risks and hazards were judged to be conservative (e.g., highest concentration [from 7 ft bgs] used in calculation; residential scenario) and were judged to be controlled by lease restrictions. Parcel identified for FURTHER EVALUATION.

Late 1997 / early 1998 - Review of Environmental Baseline Survey / Tiered Screening Analysis / Data Summary Reports
- Community raises concern about high concentrations of PAHs in soil
- DTSC and U.S. EPA confirm the need for further evaluation immediately

February 1998 - Additional sampling to evaluate nature and extent of contamination

March 1998 - DTSC and U.S. EPA recommend fencing
- BCT agrees to fast-track remedial investigation
- "Recreational" scenario applied for risk assessment
- Navy implements tighter restrictions on digging

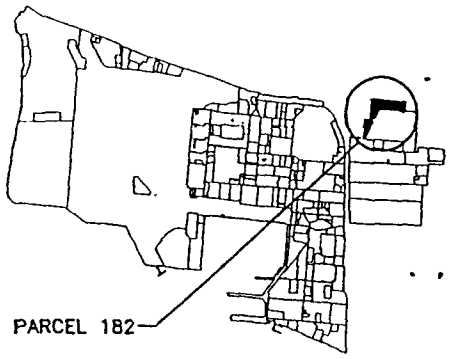
Spring/Summer 1998 - Community continues to express concern

October 1998 - Navy fences park and implements further sampling

February 1999 - Results of sample analysis delivered to DTSC and U.S. EPA
- Results do not support original conceptual model that a particular source exists for the contamination
- DTSC and U.S. EPA request additional sampling in **Parcel 181**
- BCT agrees on Parcel 181 sampling strategy
- Navy implements Parcel 181 sampling (February 22, 1999)

DRAWING NUMBER 762325-B95

DRAWN BY BJ 7-24-95 CHECKED BY APPROVED BY



KEY PLAN

GENERAL LEGEND

- PARCEL OUTLINE
- 2 ◇ SUBSURFACE SOIL SAMPLE & NO.
- 6 ○ SURFACE SOIL SAMPLE & NO.
- (1) TARGET AREA & NO.

FUEL LINE LEGEND

- FUEL LINES ABANDONED
- FUEL LINES IN USE

SANITARY SEWER LINE LEGEND

- (10) ■ SANITARY SEWER MANHOLE NO.
- GREASE TRAP
- ——SW—— SANITARY SEWER LINE

MATERIALS:

C.I. – CAST IRON

NOTES:

1. ALL SANITARY SEWERS ARE VITRIFIED CLAY PIPE UNLESS NOTED OTHERWISE.

INDUSTRIAL WASTE LINE LEGEND

- ● INDUSTRIAL WASTE MANHOLE & NO.
- ——IW—— INDUSTRIAL WASTE LINE

STORM DRAIN LEGEND

- ■ 12A-1 STORM DRAIN MANHOLE & NO.
- ■ CATCH BASIN
- ——SS—— STORM SEWER LINE

MATERIALS:

RC – REINFORCED CONCRETE

soil gas/VOC ◇182-0007M

○182-0005

1900 ug/kg ○182-0004

(1)

soil gas/VOC ◇182-0008M

○182-0003 ND

PARCEL 182

182-0001 ND

soil gas/VOC ◇182-0009M

182-0002 ND

NP ○182-0006

183

PARCEL 181

EBS Phase 2A Benzo(a) pyrene mg/kg

DRAFT

NOTE: PARCEL BOUNDARIES ARE APPROXIMATE.

SCALE

0 150 300 FEET

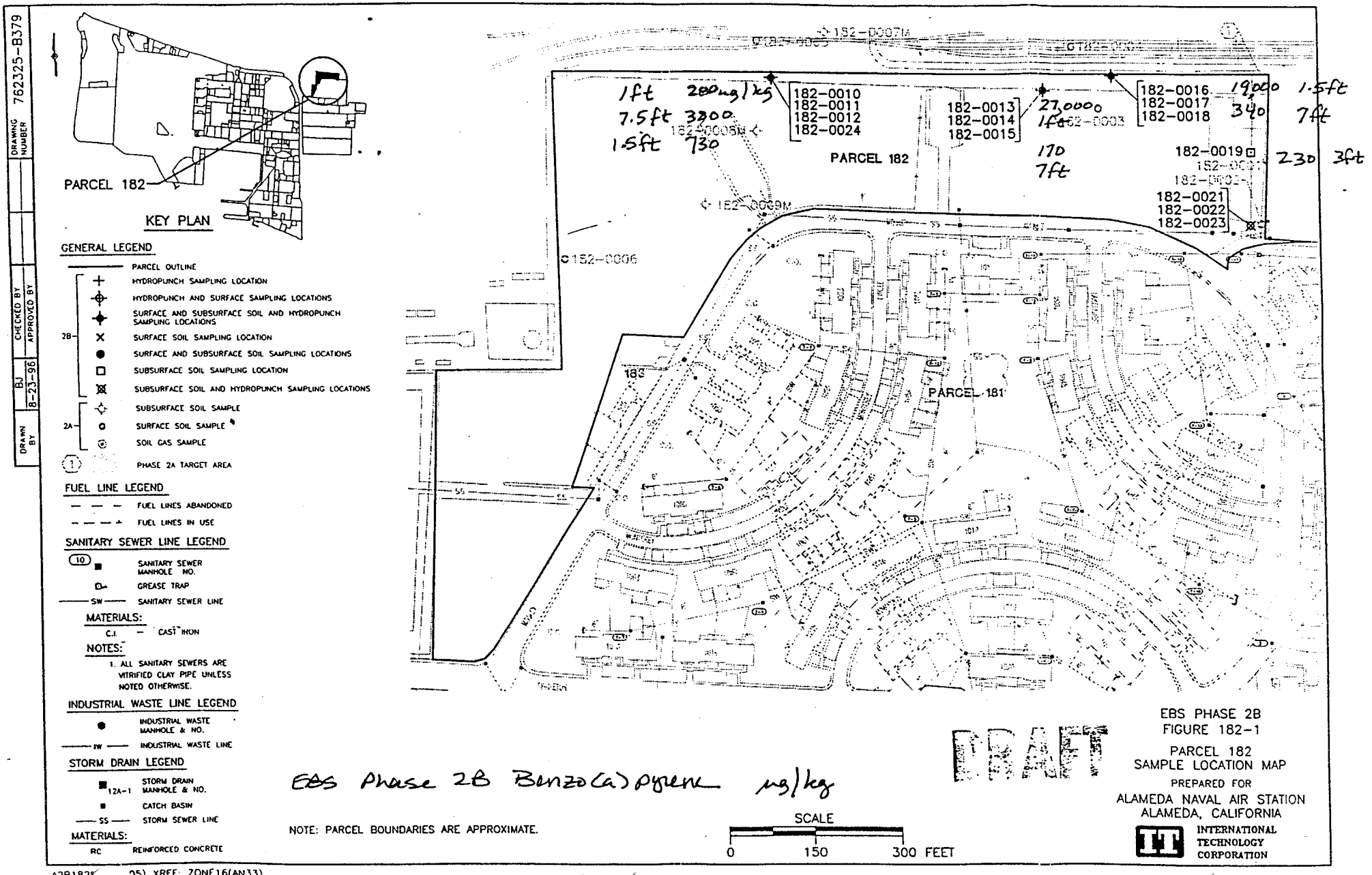
FIGURE 182-1

PARCEL 182
SAMPLE LOCATION MAP

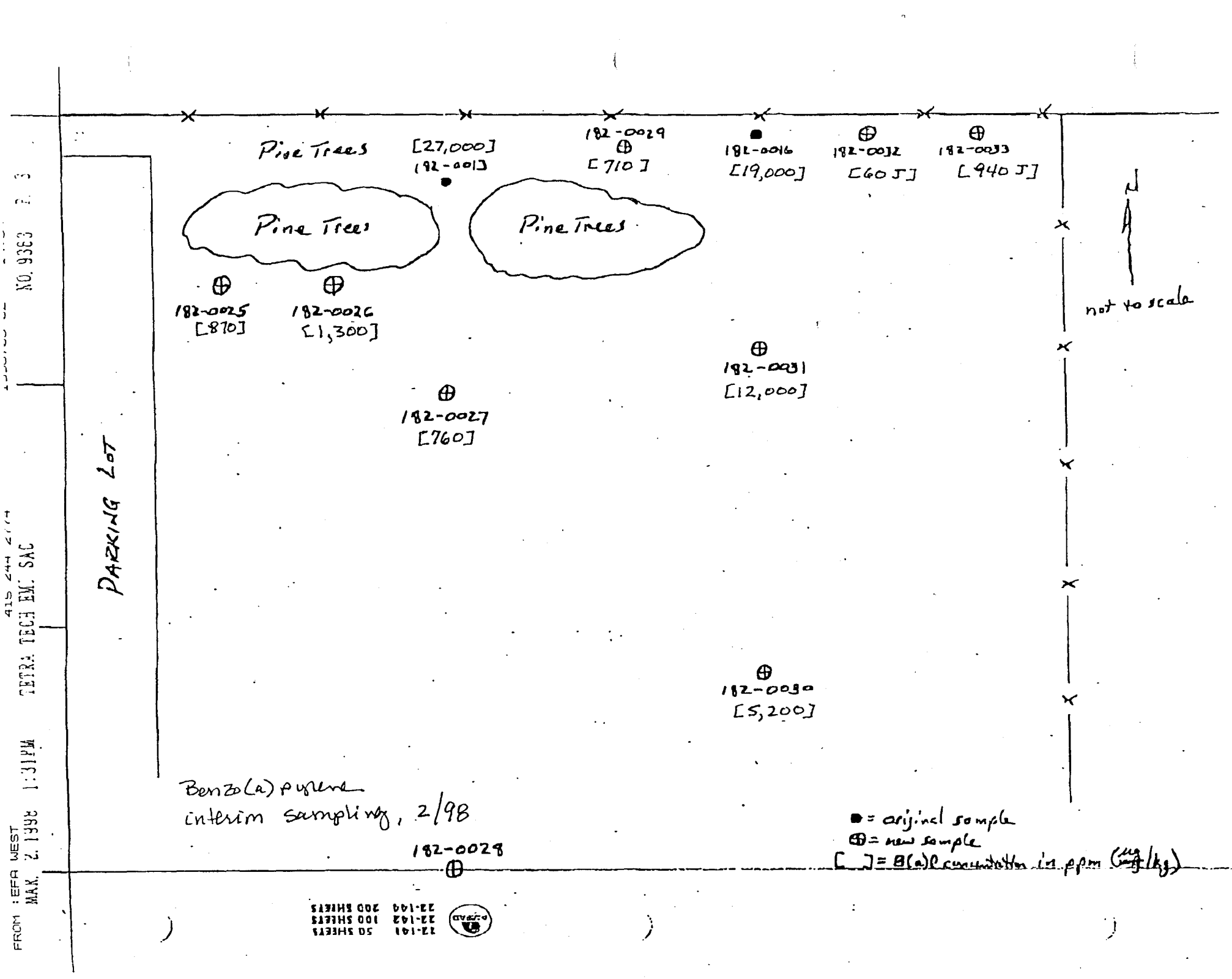
PREPARED FOR
ALAMEDA NAVAL AIR STATION
ALAMEDA, CALIFORNIA

IT INTERNATIONAL TECHNOLOGY CORPORATION

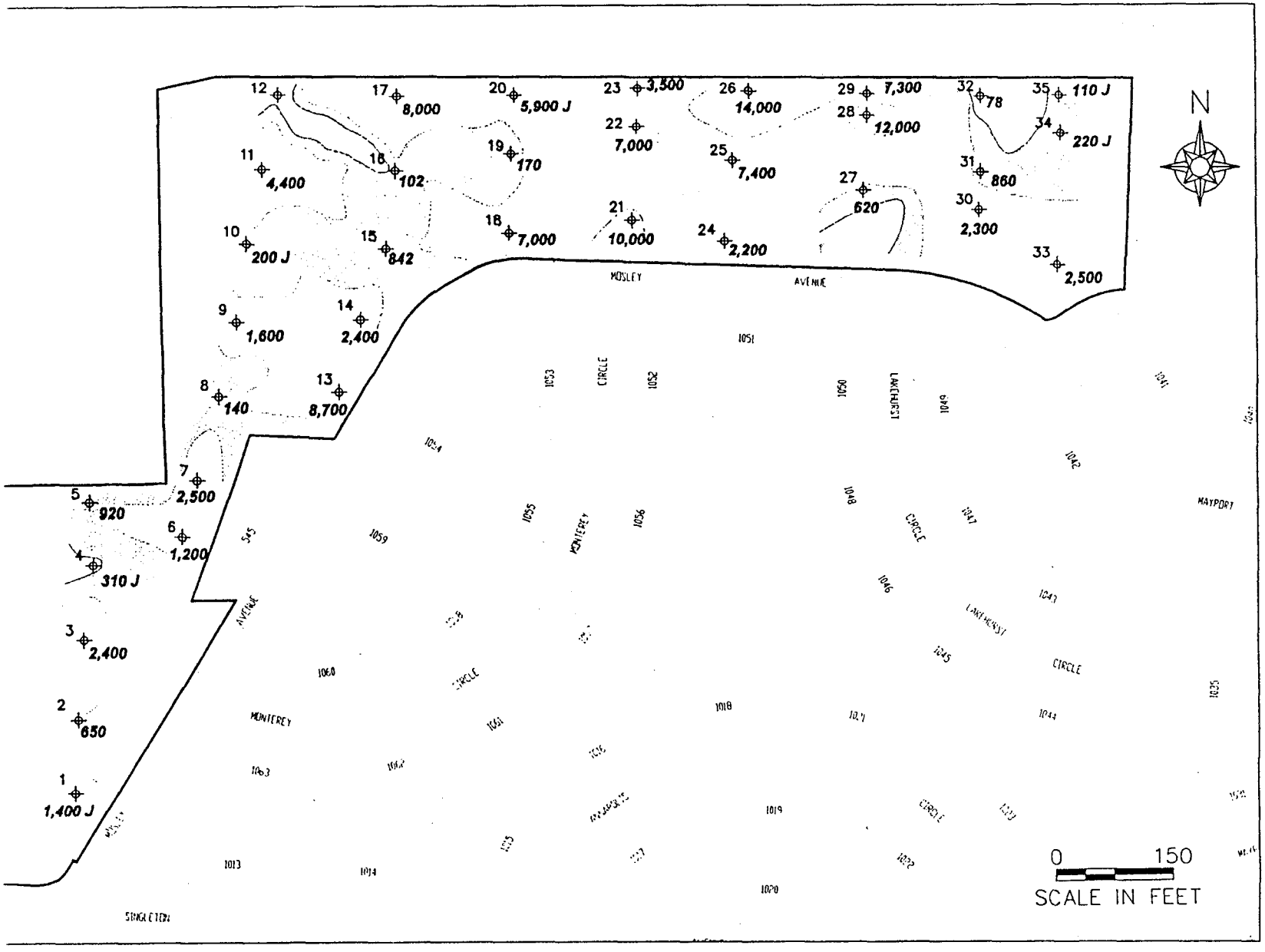
AN182PSM(AN35) XREF: ZONE16(AN33)



A2B182 05) XREF: ZONE16(AN33)

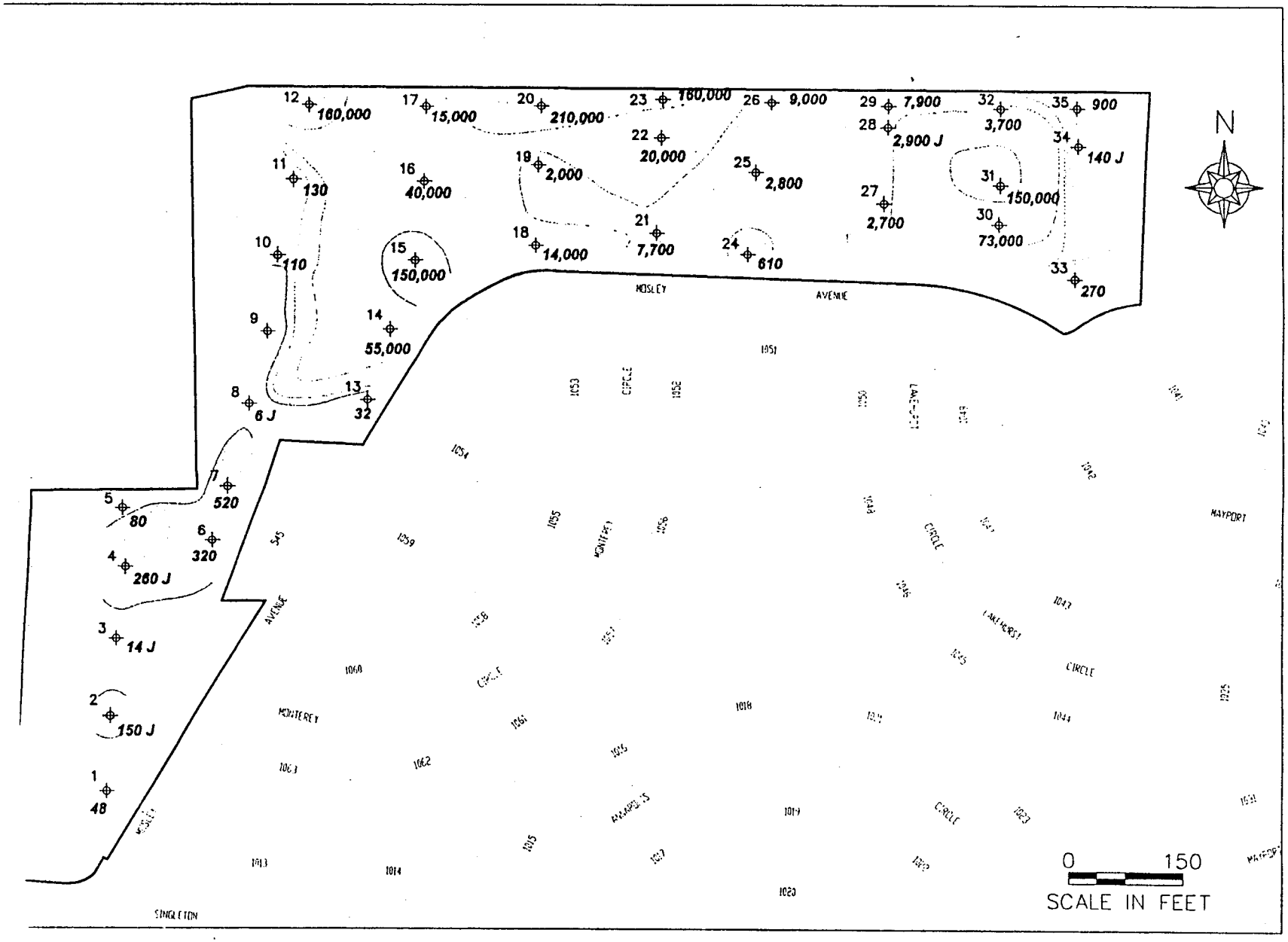


Alameda Point
Site 25

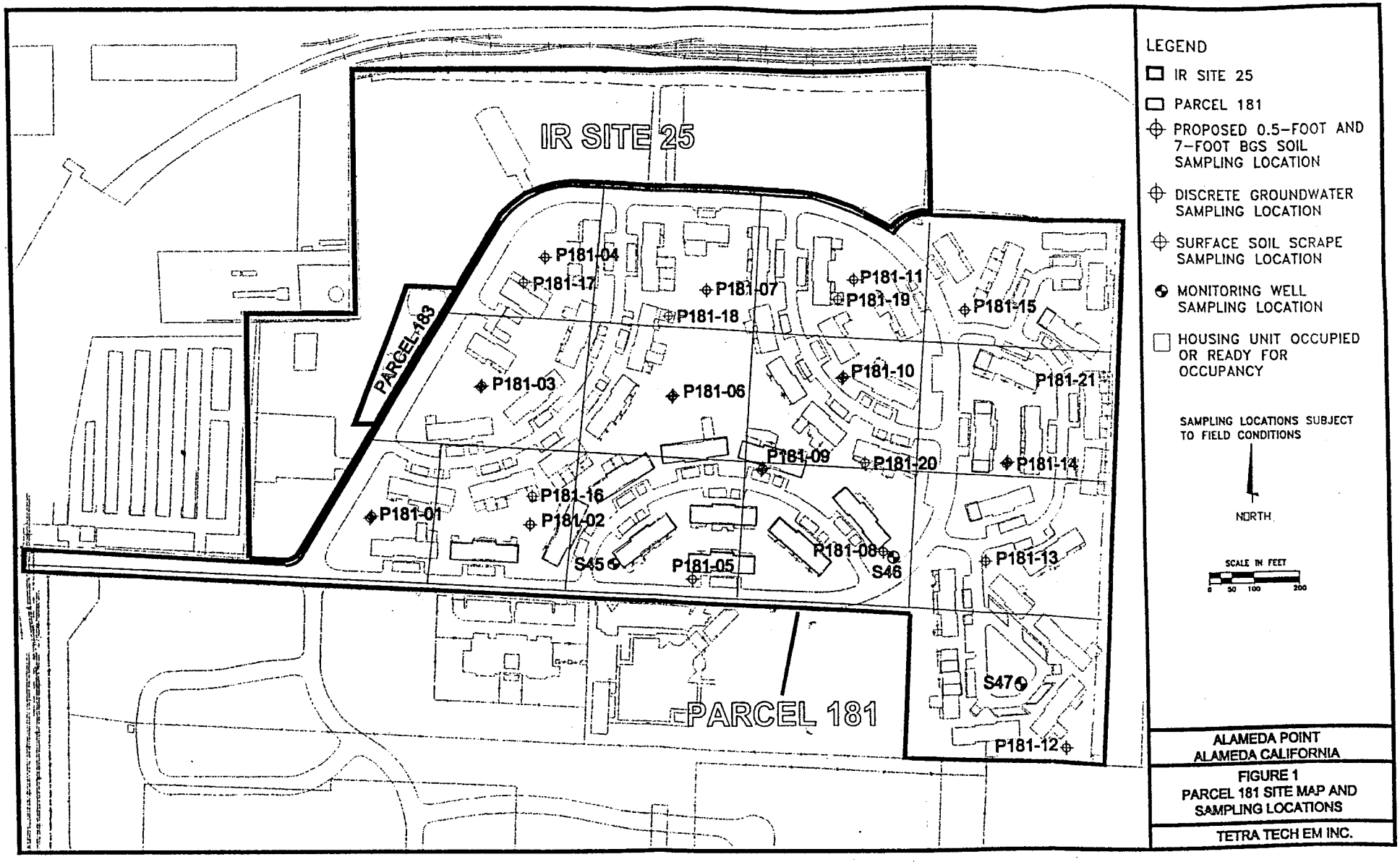


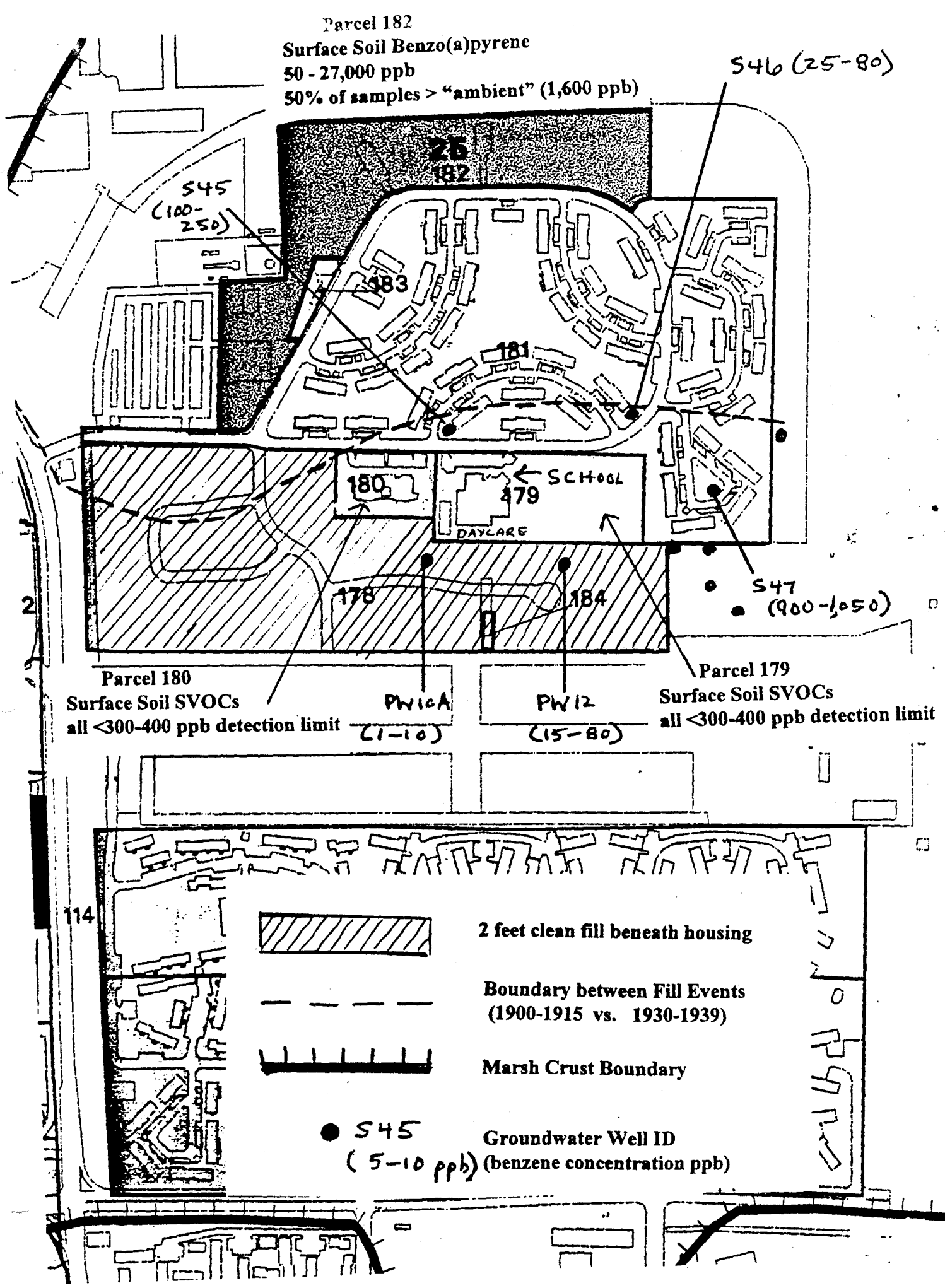
zo(a)pyrene (ug/kg) Residential PRG = g/kg Depth Interval: 0.5 to 2 feet bgs

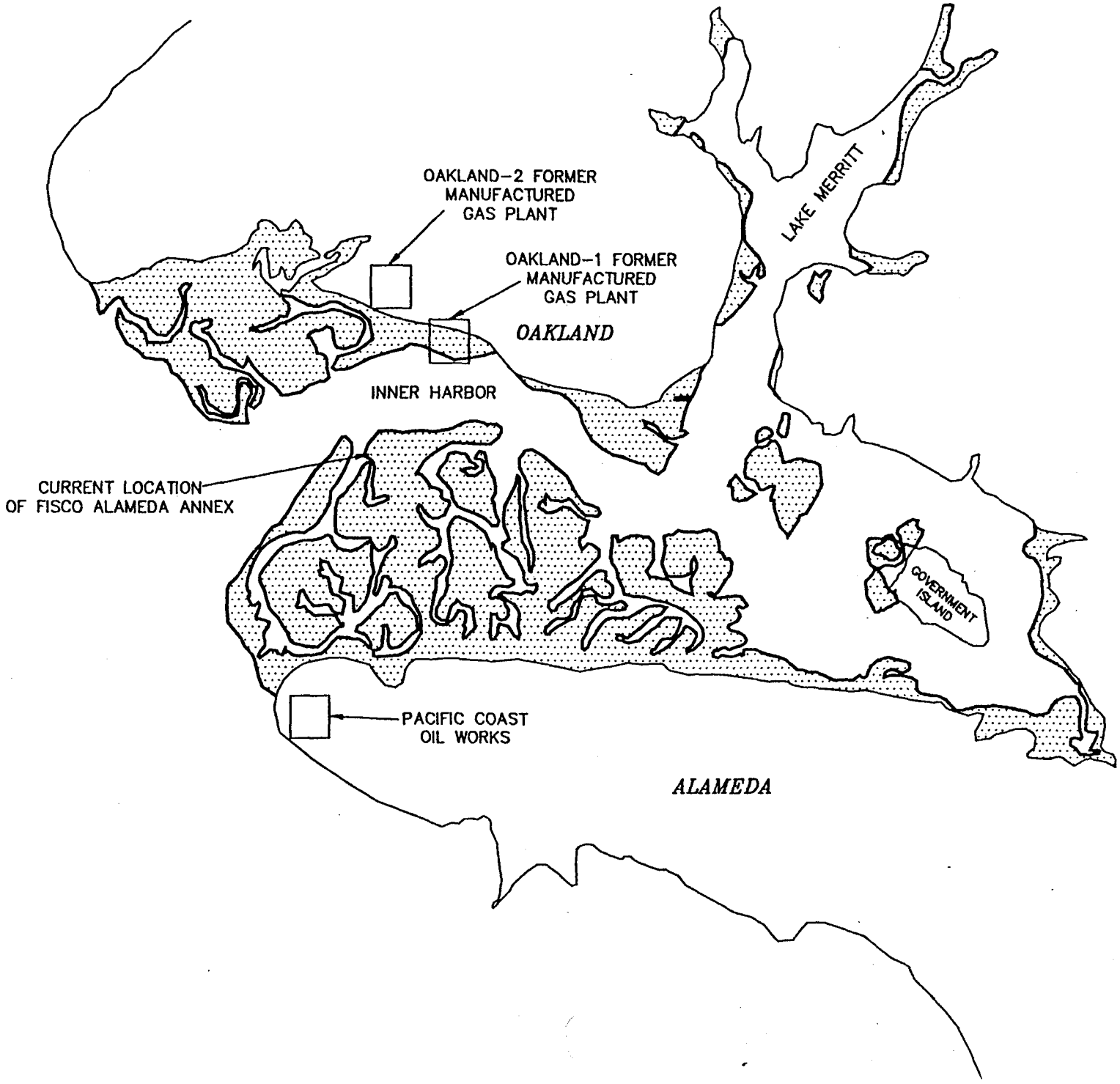
Alameda Poin
Site 25



Benzo(a)pyrene (ug/kg) Residential PRG = 56ug/kg Depth Interval: 7 feet bgs


IR SITE 25
PARCEL 183
PARCEL 181
P181-01
P181-02
P181-03
P181-04
P181-05
P181-06
P181-07
P181-08
P181-09
P181-10
P181-11
P181-12
P181-13
P181-14
P181-15
P181-16
P181-17
P181-18
P181-19
P181-20
P181-21
S45
S46
S47
LEGEND
IR SITE 25
PARCEL 181
PROPOSED 0.5-FOOT AND 7-FOOT BGS SOIL SAMPLING LOCATION
DISCRETE GROUNDWATER SAMPLING LOCATION
SURFACE SOIL SCRAPE SAMPLING LOCATION
MONITORING WELL SAMPLING LOCATION
HOUSING UNIT OCCUPIED OR READY FOR OCCUPANCY
SAMPLING LOCATIONS SUBJECT TO FIELD CONDITIONS
NORTH
SCALE IN FEET
0 50 100 200
ALAMEDA POINT
ALAMEDA CALIFORNIA
FIGURE 1
PARCEL 181 SITE MAP AND SAMPLING LOCATIONS
TETRA TECH EM INC.

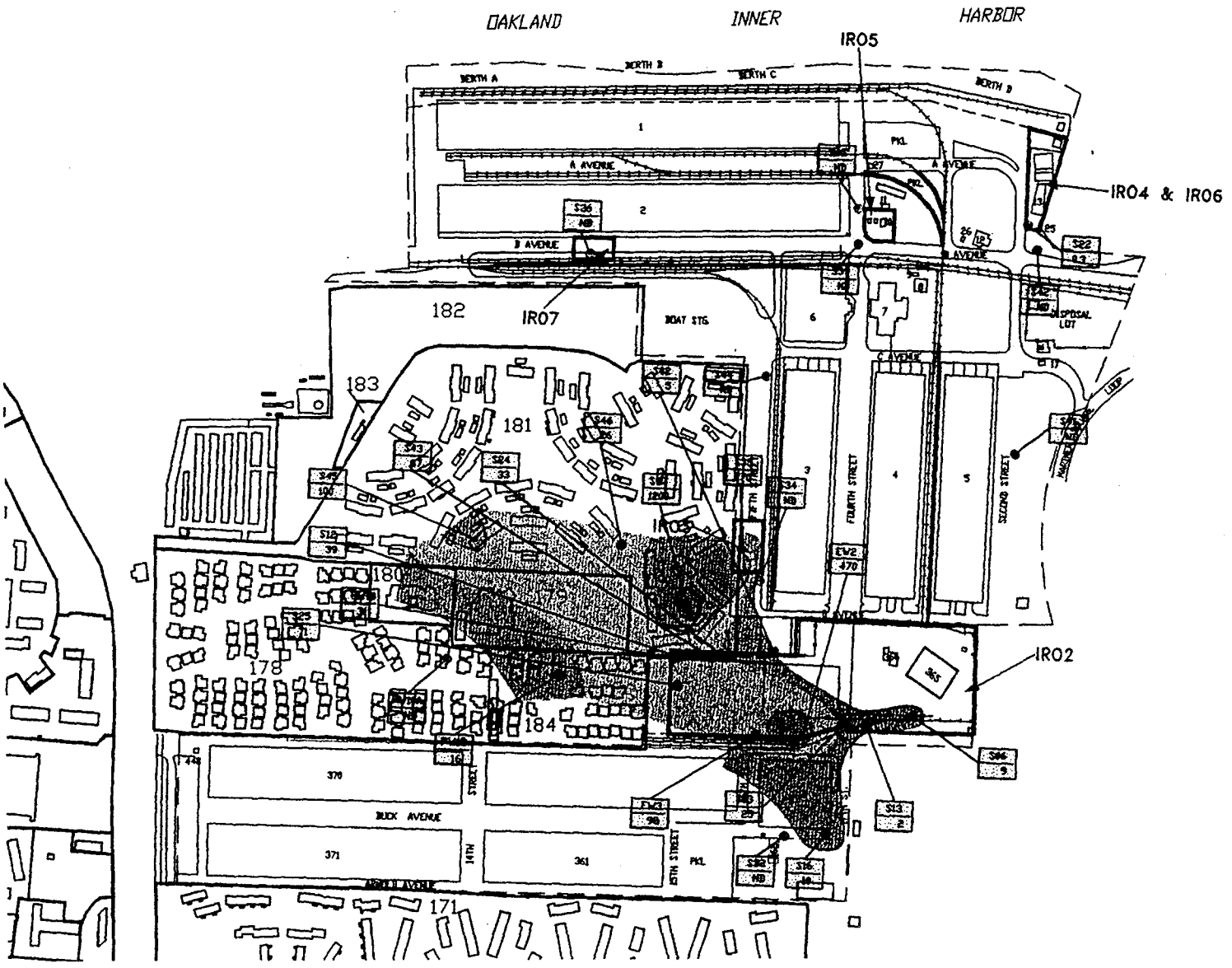

Parcel 182
Surface Soil Benzo(a)pyrene
50 - 27,000 ppb
50% of samples > "ambient" (1,600 ppb)
546 (25-80)
25
182
545
(100-250)
183
181
180
SCHOOL
179
DAYCARE
178
184
547
(900-1,050)
Parcel 180
Surface Soil SVOCs
all <300-400 ppb detection limit
PW16A
(1-10)
PW12
(15-80)
Parcel 179
Surface Soil SVOCs
all <300-400 ppb detection limit
2
114
2 feet clean fill beneath housing
Boundary between Fill Events
(1900-1915 vs. 1930-1939)
Marsh Crust Boundary
545
(5-10 ppb)
Groundwater Well ID
(benzene concentration ppb)


OAKLAND–2 FORMER
MANUFACTURED
GAS PLANT
OAKLAND–1 FORMER
MANUFACTURED
GAS PLANT
OAKLAND
LAKE MERRITT
INNER HARBOR
CURRENT LOCATION
OF FISCO ALAMEDA ANNEX
GOVERNMENT
ISLAND
PACIFIC COAST
OIL WORKS
ALAMEDA

HYPOTHESES

Elevated concentrations of PAHs (polynuclear aromatic hydrocarbons) are associated with the 1900-1915 fill event.

Wastes from historical coal gasification plants are a source of PAHs in fill.



LEGEND

- S21 / 2 — MONITORING WELL NUMBER / BENZENE CONCENTRATION (in µg/L)
- MONITORING WELL LOCATION
- GROUNDWATER (5–20 µg/L) ESTIMATED EXTENT OF BENZENE IMPACTED
- GROUNDWATER (20–100 µg/L) ESTIMATED EXTENT OF BENZENE IMPACTED
- GROUNDWATER (100–700 µg/L) ESTIMATED EXTENT OF BENZENE IMPACTED
- GROUNDWATER (>700 µg/L) ESTIMATED EXTENT OF BENZENE IMPACTED

NOTES:
ND NOT DETECTED

178 PARCEL

SCALE IN FEET
0 100 200 400

FLEET AND INDUSTRIAL SUPPLY CENTER, OAKLAND
ALAMEDA FACILITY/ALAMEDA ANNEX SITE

FIGURE 5-9

DETECTED BENZENE CONCENTRATIONS
NINTH MONITORING EVENT
(OCTOBER 1996)

TETRA TECH EM INC.

FINAL

Zone 16 - Groundwater Contamination

Chronology

1987: Preliminary study of FISC Annex warehouse/scrapyard area identifies significant occurrence of trace metals in northern portion of warehouse area; elevated concentrations of organic compounds in groundwater samples collected from monitoring wells located down gradient from the scrapyard.

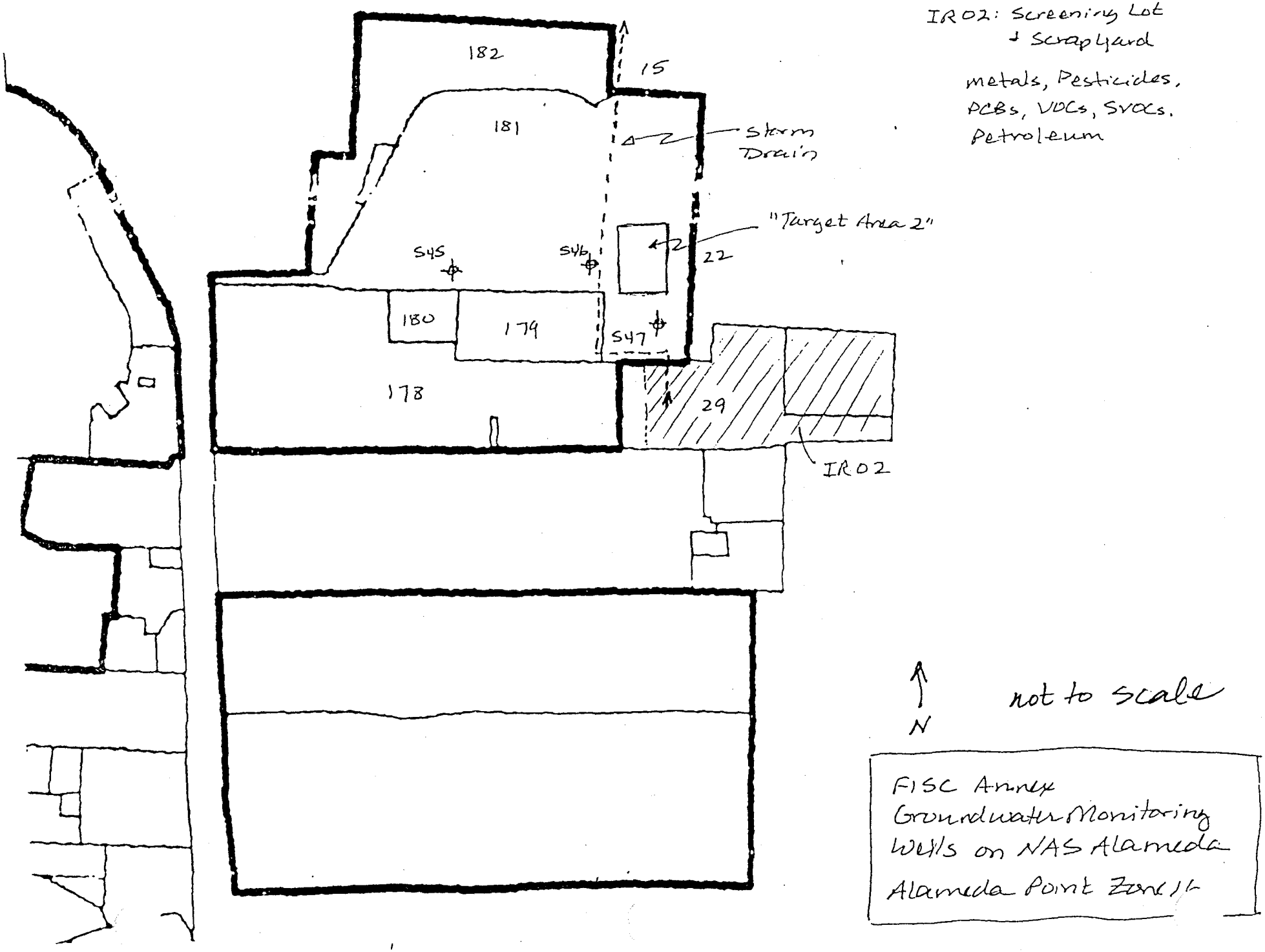
1988: Navy assesses suitability of warehouse area for construction of Navy housing. To aid in assessing concerns about impacts from past operations and waste disposal activities, and evaluate suitability for use as housing, Navy implements a supplementary study of soil and groundwater contamination. Investigation indicates high concentrations of nickel and chromium in soil and benzene and naphthalene in groundwater. Replacement of the top six inches to one foot of soil is recommended to reduce potential risks associated with housing development "in the northern portion of the warehouse area" (Parcel 178).

1994-1996: FISC Annex Groundwater Monitoring Program

- Three monitoring wells associated with the Alameda Annex FISC Scrapyard IR site have been installed on Parcel 181
- Benzene in soil - up to 10,000 ug/kg (residential PRG = 620 ug/kg)
- TPH, benzene, chromium, lead, nickel detected at "elevated concentrations" in groundwater samples from monitoring wells.
- FISC Annex RI report does not identify source on FISC property
- Alameda Point investigations do not target groundwater contamination in Zone 16

1994-1996: Alameda Point Parcel Evaluation/EBS report identifies Parcel 181 Target Area 2 (Southeast Area), an area of approximately 63,000 square feet in the southeast portion of the parcel that appeared to be stained in an aerial photo dated 1966. Six "surface" soil samples and one field duplicate were collected from depths of about 0.5 to 1.5 feet below ground surface; analyzed for total petroleum hydrocarbons and metals. Six soil gas samples and one field duplicate were collected from depths of about 2.5 to 3 ft bgs and analyzed for volatile organic compounds. Results: Metals below PRGs or within typical background concentrations; TPH (motor oil) 33 to 45 mg/kg - no gasoline or diesel

December 1998 - DTSC and U.S. EPA request presentation of groundwater data at BCT meeting



IR02: Screening Lot + Scrapyard

metals, Pesticides, PCBs, VOCs, SVOCs, Petroleum

not to scale

FISC Annex
Groundwater Monitoring Wells on NAS Alameda
Alameda Point Zone 1

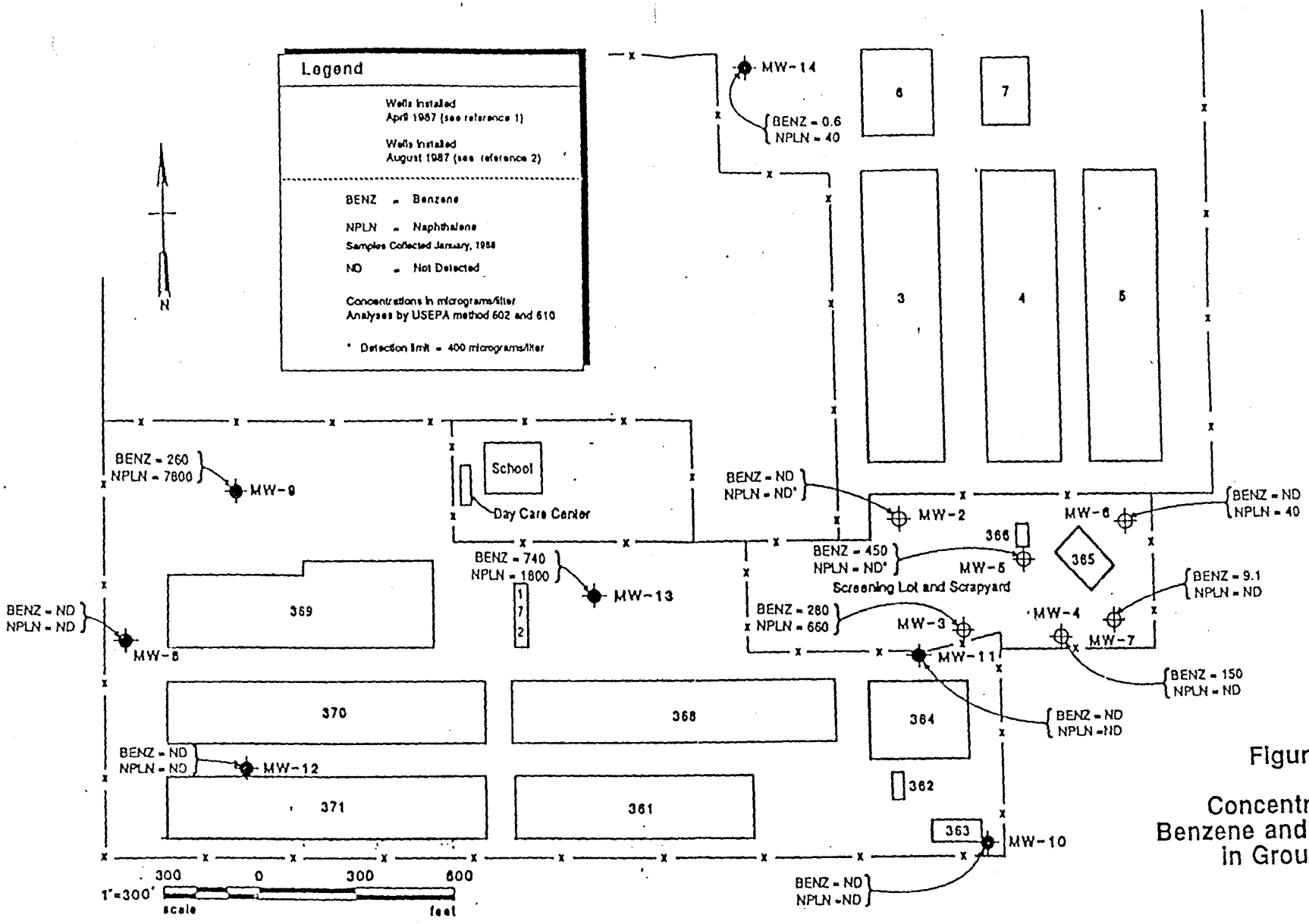
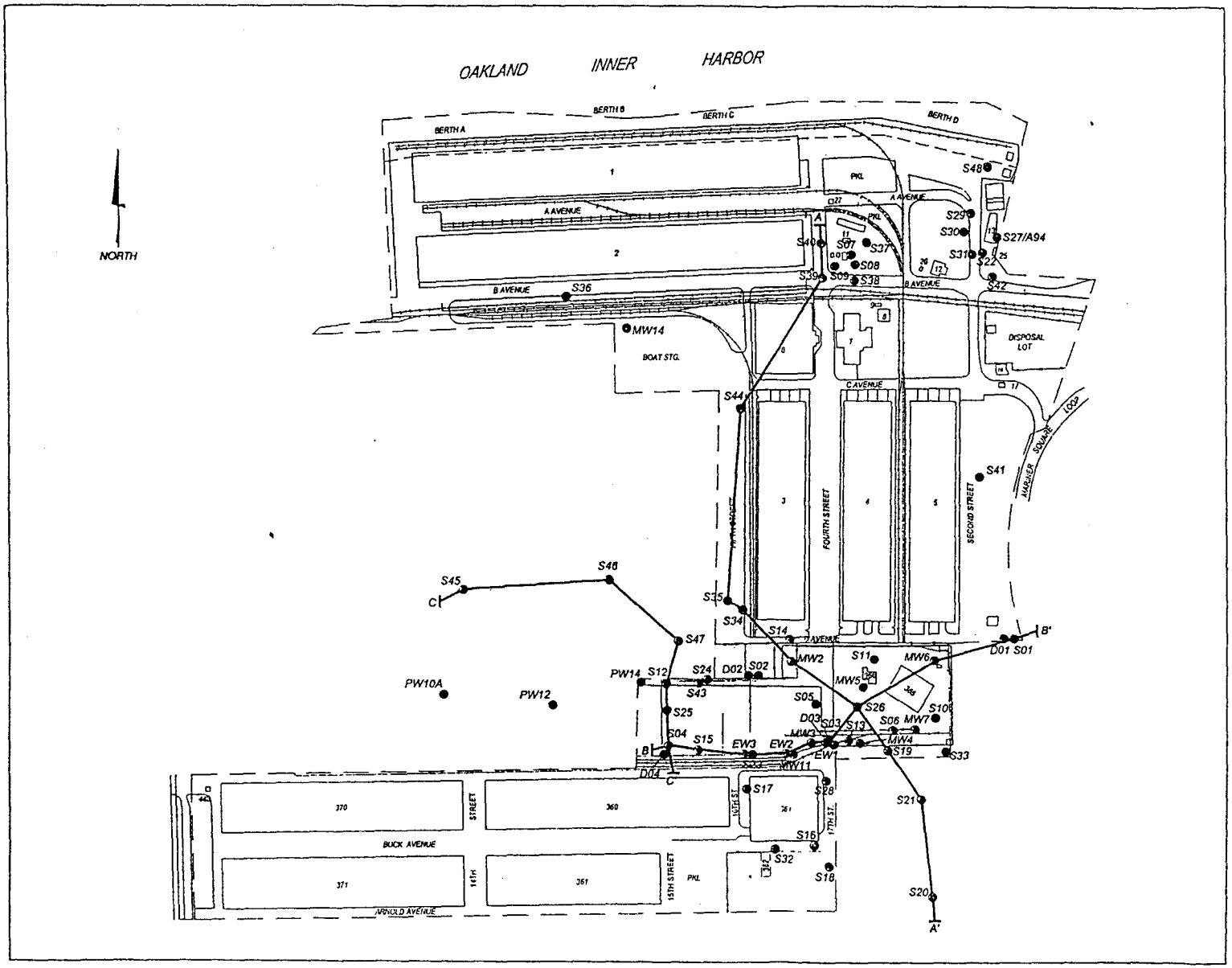


Figure 4-2

Concentrations of Benzene and Naphthalene in Groundwater

ERM-West 3/88
Job #400.62



LEGEND

- S21 — SHALLOW MONITORING WELL
- D01 — DEEP MONITORING WELL
- C — C' — CROSS SECTION LINE

NOTES: S48 WAS INSTALLED IN JUNE 1998, AND IS NOT PART OF THE CUMULATIVE GROUNDWATER MONITORING PROGRAM

SCALE IN FEET

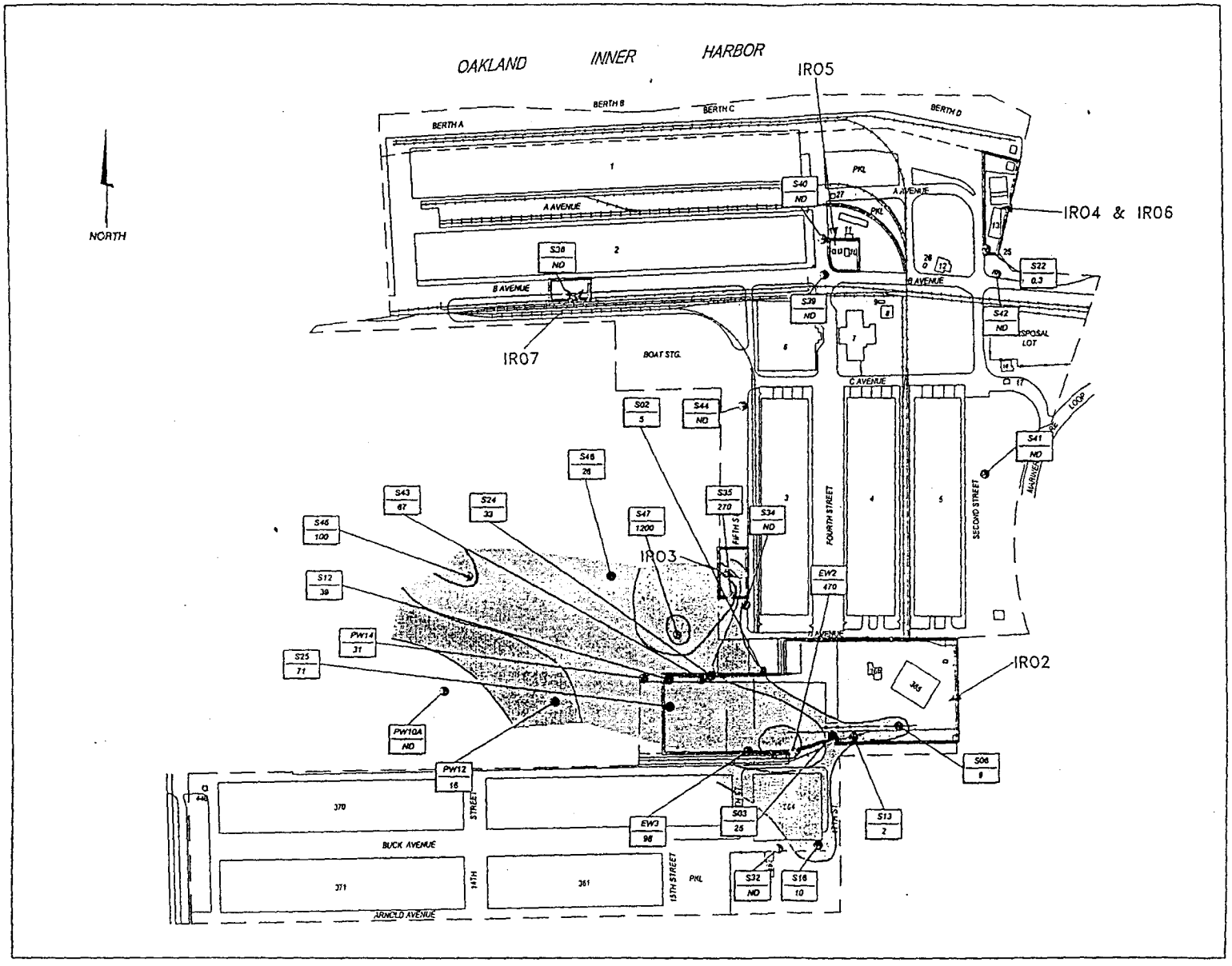
0 100 200 400

FLEET AND INDUSTRIAL SUPPLY CENTER, OAKLAND
ALAMEDA FACILITY/ALAMEDA ANNEX SITE

FIGURE 2-5

LOCATIONS OF MONITORING WELLS AND CROSS SECTIONS A-A', B-B', AND C-C'

TETRA TECH EM INC.



LEGEND

S21 / 2 — MONITORING WELL NUMBER / BENZENE CONCENTRATION (in µg/L)

MONITORING WELL LOCATION

ESTIMATED EXTENT OF BENZENE IMPACTED GROUNDWATER (5–20 µg/L)

ESTIMATED EXTENT OF BENZENE IMPACTED GROUNDWATER (20–100 µg/L)

ESTIMATED EXTENT OF BENZENE IMPACTED GROUNDWATER (100–700 µg/L)

ESTIMATED EXTENT OF BENZENE IMPACTED GROUNDWATER (>700 µg/L)

NOTES: ONLY SAMPLED WELLS ARE SHOWN

ND NOT DETECTED

SCALE IN FEET

0 100 200 400

FLEET AND INDUSTRIAL SUPPLY CENTER, OAKLAND
ALAMEDA FACILITY/ALAMEDA ANNEX SITE

FIGURE 5-9

DETECTED BENZENE CONCENTRATIONS
NINTH MONITORING EVENT
(OCTOBER 1996)

TETRA TECH EM INC.

TABLE 5-1

DETECTED VOLATILE ORGANIC COMPOUNDS AND TOTAL PETROLEUM HYDROCARBONS IN SHALLOW WELLS CUMULATIVE GROUNDWATER MONITORING PROGRAM FISCO ALAMEDA FACILITY/ALAMEDA ANNEX

Analyte	Frequency of Detection	Maximum Concentration Detected (µg/L)	Well with Highest Concentration	Reference Concentration (µg/L)[a]
Volatile Organic Compounds				
1,1,2-Trichloroethane	2 of 356	17.0	S09	NA
1,1-Dichloroethane	1 of 356	0.8	S10	NA
1,2-Dichloroethene (total)	7 of 356	2.0	MW2	NA
Acetone	1 of 356	5.0	S10	NA
Benzene	208 of 356	1,400	S47	700 (marine, chronic)
Carbon Disulfide	4 of 356	0.6	S32	NA
Chlorobenzene	2 of 356	0.2	S02 and S13	NA
Chloroform	1 of 356	0.6	S25	NA
Ethylbenzene	191 of 356	120	S47	NA
Styrene	79 of 356	120	S47	NA
Toluene	219 of 356	140	S47	5000 (marine, chronic)
Vinyl Chloride	8 of 356	10.0	S22	NA
Xylene (total)	241 of 356	260	S47	NA
Total Petroleum Hydrocarbons				
TPH Gasoline	242 of 356	8.1	S47	NA
TPH Diesel	282 of 356	15.0	S47	NA
TPH Motor oil	318 of 356	1.1	S22	NA

Notes:

a Reference concentration is the lower of the following:

- Water quality criteria for the protection of marine ecosystems published in Table III-3 of the water quality control plan for the San Francisco Bay Basin Region (RWQCB 1995)
- Federal marine ambient water quality criteria (USEPA 1997)

NA No reference concentration available

Benzene Trend (Time- Series Plots) Analysis and Migration Potential at Areas near Alameda Annex Sites IR01, IR02, and IR03 and Alameda Point Housing

Time- series plots for benzene concentrations and shallow groundwater elevations at 20 monitoring wells were generated. The 20 wells were sampled in the last round of groundwater sampling (October 1996) and are located at Alameda Annex Sites IR01, IR02, and IR03 and Alameda Point housing area. Benzene has not been detected during nine rounds of groundwater sampling from March 1994 to October 1996 in Wells S44 and S41, located north and northeast of the area.

The following conclusions can be drawn from the time- series plots and the previous studies completed at Alameda Annex. The studies include: the Groundwater Fate and Transport Modeling Report, October 2, 1998; the Cumulative Groundwater Monitoring Report, November 12, 1998; and the Remedial Investigation Report, January 1996

- Benzene concentration has been stabilized or shows a decreasing trend at the area. Time- series plots show that benzene concentrations in 15 wells (EW2; EW3; PW14; S2; S3; S6; S12; S16; S24; S25; S35; S43; S45; S46; and S47) stabilized from 1994 to 1996. Benzene concentrations in 5 wells (PW10, PW12, S13, S32, and S34) showed a decreasing trend during the same period.

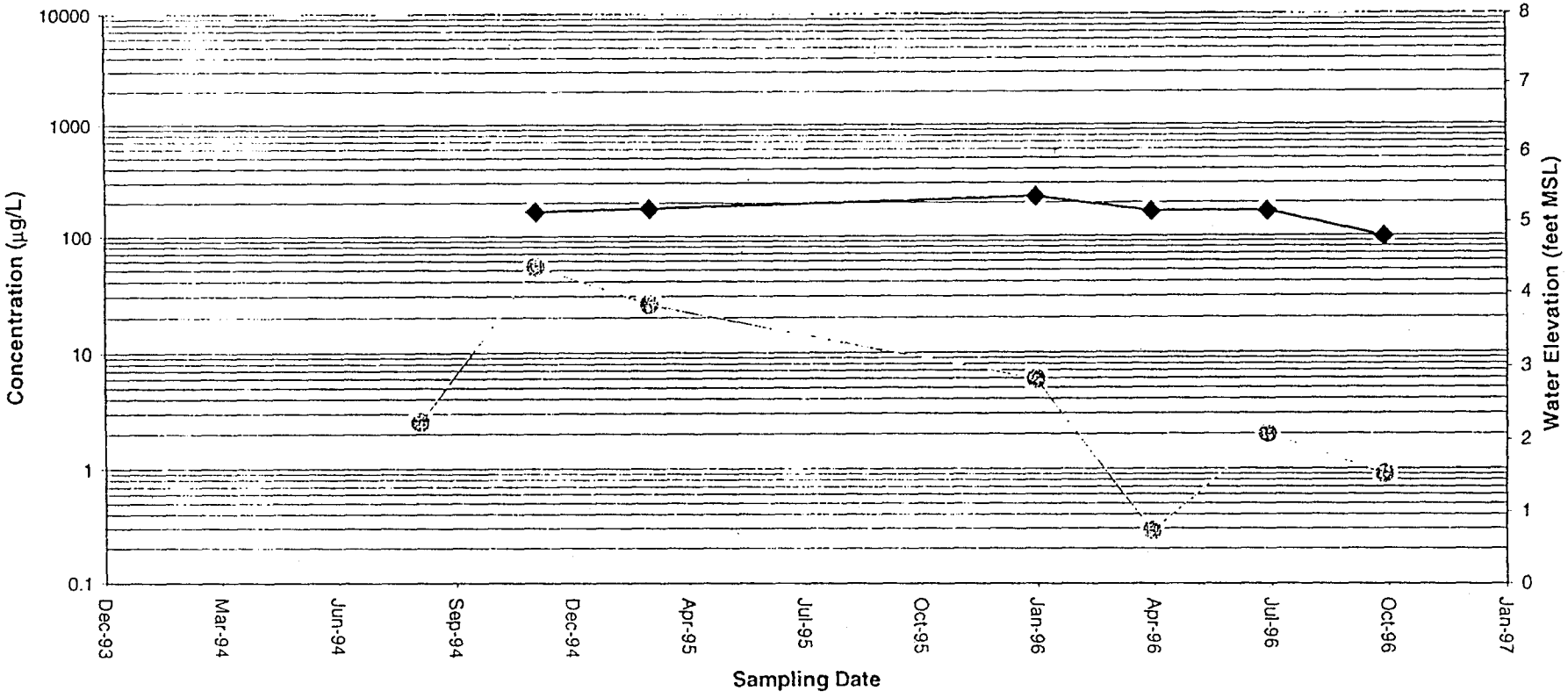
- Variations in benzene concentration appear to be related to shallow groundwater elevations. Generally, lower benzene concentration corresponds with higher groundwater elevation, which may be caused by dilution from to infiltration recharge to groundwater.

- Benzene plumes have been present in the Alameda Point housing area since early phases of the site investigation at Alameda Annex. One of the hot spots in groundwater benzene contamination is Well S47, located outside of the Alameda Annex property boundary (in the Alameda Point Housing area). This well was considered to be a benzene source in the Groundwater Fate and Transport Modeling report. It cannot be concluded that the benzene plumes in the Alameda Point housing area are a result of benzene migration from the Alameda Annex IR01, IR02, and IR03 sites.

- Groundwater flow direction is toward the northwest at the area. Therefore, the Alameda Point housing area is downgradient of Alameda Annex IR01, IR02, and IR03 sites. Benzene plumes in this area will continuously migrate to the northwest based on modeling results.

- Benzene plumes at the area may expand a little over next few years, but then their sizes will start to reduce, according to the most conservative prediction of the benzene fate and transport modeling. Benzene plumes are unlikely to migrate significant distances from the current locations (October 1996 locations).

BENZENE CONCENTRATION AND GROUNDWATER ELEVATION
MONITORING WELL S45
(ALAMEDA ANNEX, ALAMEDA, CALIFORNIA)

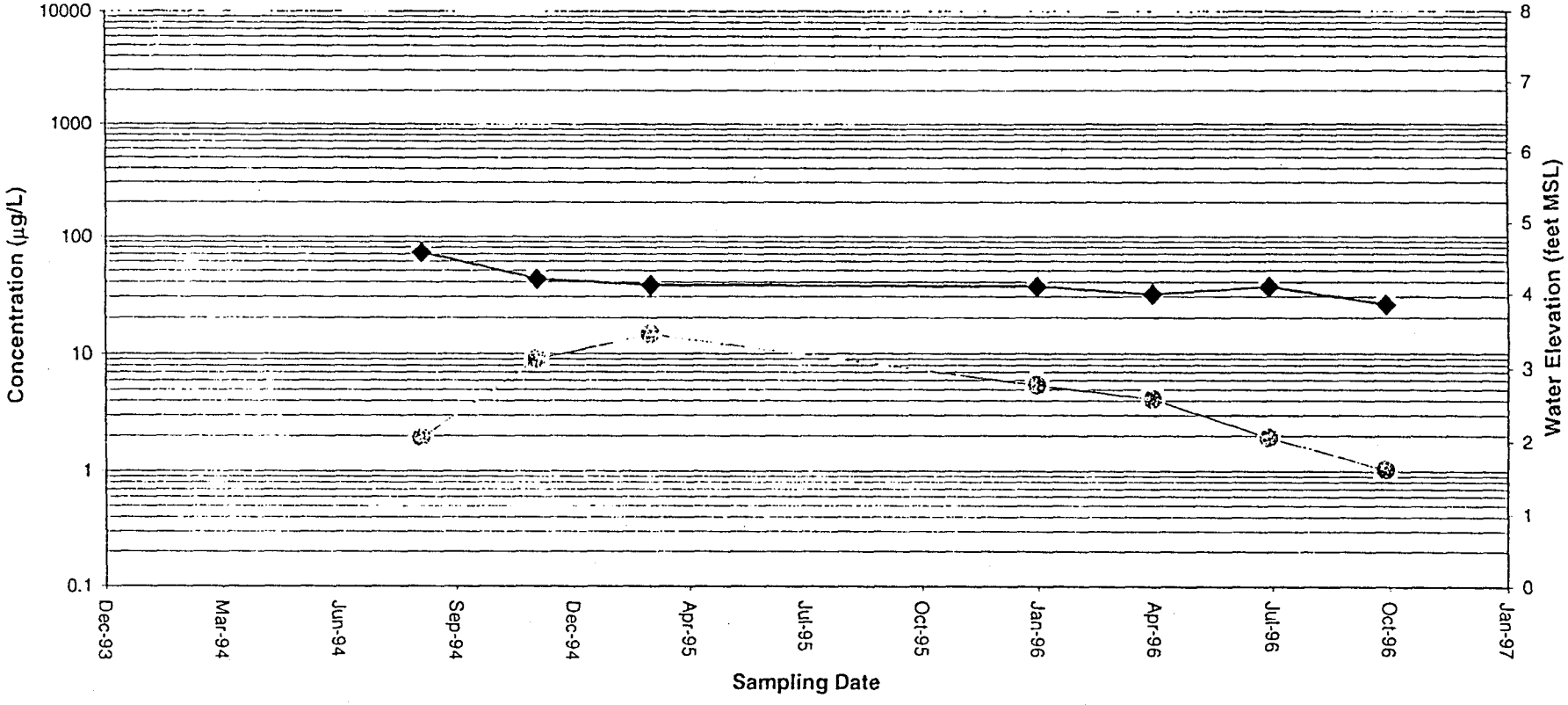


Benzene

Ground Water Elevation

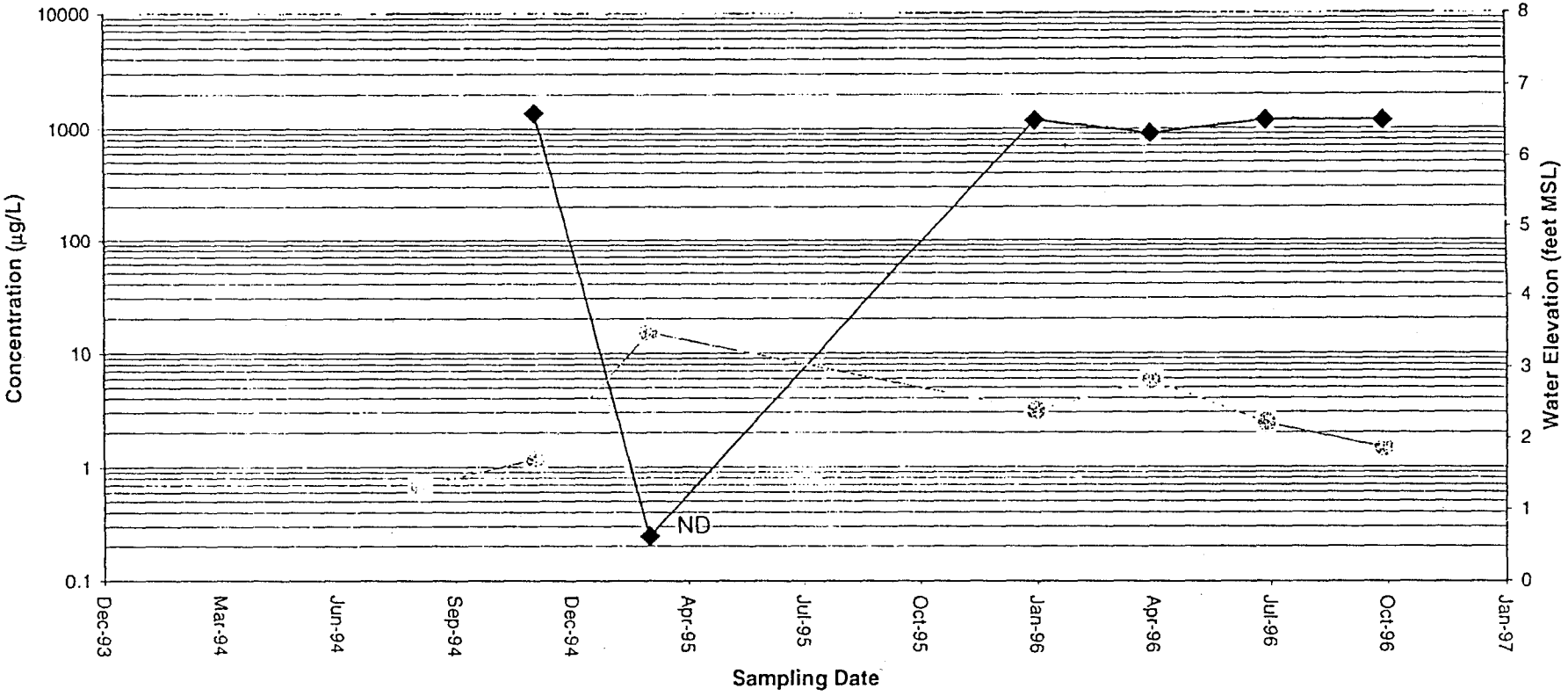
Notes:
µg/L - Micrograms per Liter.
MSL - Mean sea level

BENZENE CONCENTRATION AND GROUNDWATER ELEVATION
MONITORING WELL S46
(ALAMEDA ANNEX, ALAMEDA, CALIFORNIA)



Notes:
µg/L - Micrograms per Liter.
MSL - Mean sea level

BENZENE CONCENTRATION AND GROUNDWATER ELEVATION
MONITORING WELL S47
(ALAMEDA ANNEX, ALAMEDA, CALIFORNIA)

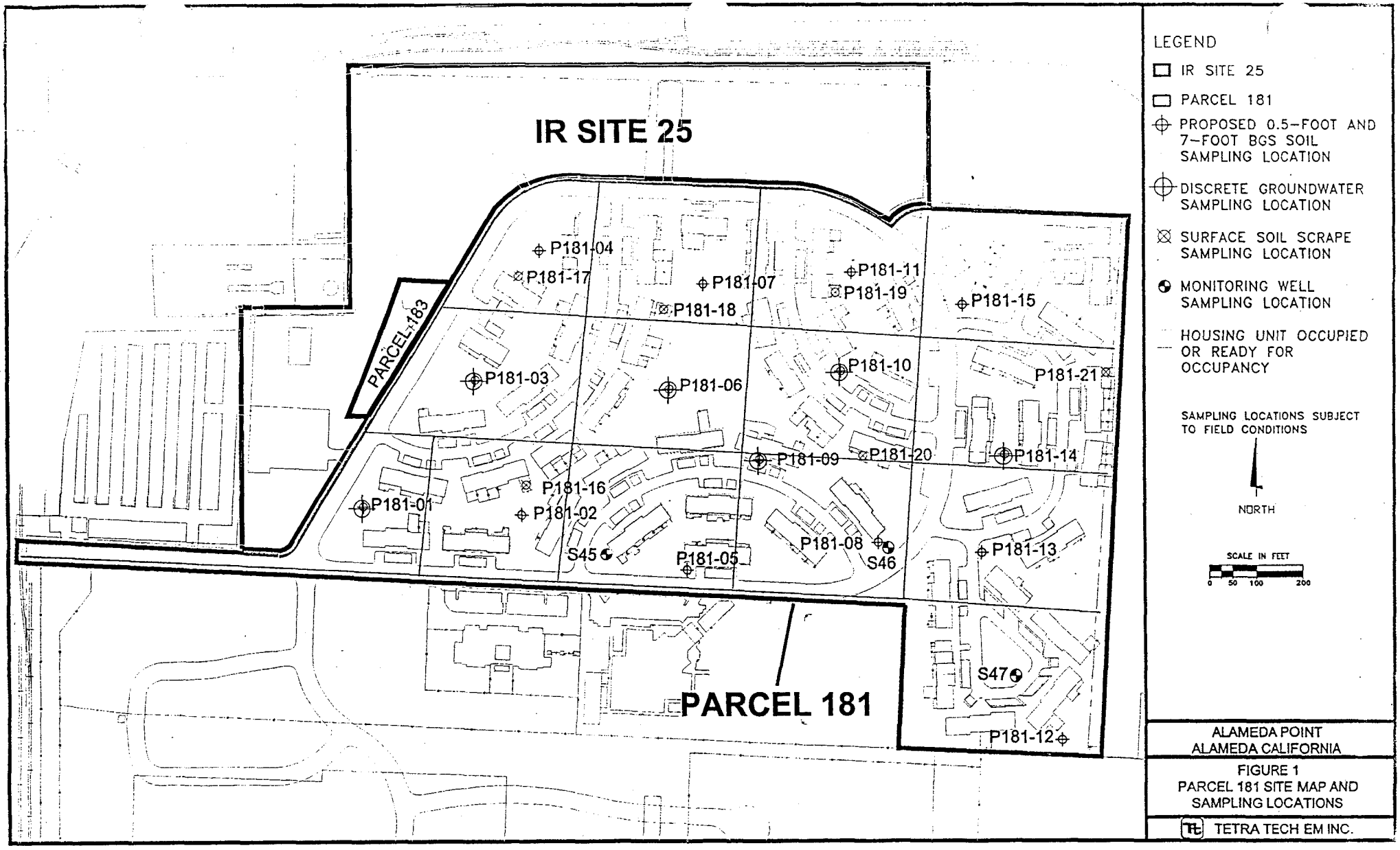


Notes:

ND - Non detect: concentration posted for non-detect results is one-half of the detection limit for the sample.

µg/L - Micrograms per Liter.

MSL - Mean sea level



ALAMEDA POINT
ALAMEDA CALIFORNIA

FIGURE 1
PARCEL 181 SITE MAP AND SAMPLING LOCATIONS

TETRA TECH EM INC.

CLEANUP STATUS AT NAVY BRAC BASES (NPL[1] vs non-NPL)

SUPERFUND CLEANUP PROCESS

Remedial Investigation (Contaminant Study)	Feasibility Study (engineering study of cleanup options)	Record of Decision (ROD) (remedy selected)	Remedial Design (design of cleanup remedy)	Remedial Action (cleanup conducted)
Removal Cleanup Actions				

MARE ISLAND (not on the NPL):

Landfill	Feasibility Study in progress, Remedial Investigation incomplete.
	Area E (Remedial investigation complete)
	All other OUs[2]/Parcels in Remedial Investigation Phase

TREASURE ISLAND (not on the NPL):

	All OUs/Parcels in Remedial Investigation Phase

ALAMEDA NAS (not on the NPL):

Marsh/Subtidal Crust	Feasibility Study in progress
	All other OUs/Parcels in Remedial Investigation Phase (RI for OU1 near complete)

HUNTERS POINT (Federal NPL Site):

Parcel A (cleanup complete)	
Parcel B (cleanup in progress)	
Parcel D (ROD in draft)	
Parcel C, E & F	C, D & E Feasibility Studies nearing draft final

MOFFETT FIELD (Federal NPL Site):

OU 1 & 5 (cleanup in progress at OU5, near complete at OU1)	
OU 6 & 7	Feasibility Study near completion; RODs in 1999

El TORO (Federal NPL Site):

OU 3A (cleanup complete)	
OU 2A (design in progress)	
OU 1, 2B & C (ROD in preparation)	

[1]NPL National Priorities List: EPA's list of federal Superfund sites.

[2]OU Operable Unit: Subdivisions of the base for dividing up cleanup actions.

U.S. EPA is Considering Placement of NAS Alameda on the Superfund National Priorities List (NPL)

- First formal step is to seek the position of the State on listing NAS Alameda.

1

What is the NPL?

- The list of federal Superfund sites.
- Grants EPA specific regulatory authority.
- At DoD sites, leads to a Federal Facilities Agreement (FFA) between EPA, State and DoD.

2

Why is EPA Taking this Step?

- Concern about cleanup progress to date and current ability to resolve cleanup disputes.
- NPL sites have a track record of better progress than similar non-NPL bases.

3

How will NPL Listing Improve Cleanup Process?

- The FFA enhances cleanup through:
  - → Improved accountability to cleanup process by all parties
  - → Enforceable schedules
  - → Penalty authorities for regulatory agencies that enhance Navy accountability
  - → Ultimate decision maker (EPA Administrator for disputes

(Note: At non-NPL bases, the State's agreement (FFSRA) lacks clear penalty authorities and does not identify an ultimate decision maker for disputes.)

4

Impacts to Reuse

- Perceptions of negative impacts to reuse at closing bases not borne out by experience.
- Significant reuse active at many NPL closing bases (Fort Ord, Sac. Army Depot, all AFBs in Calif. (all are NPL)).
- Improved cleanup process helps reuse.

5

Next Steps

1. Wait for input from State and gather input from City and RAB. Navy headquarters is also consulted. **If you want to voice your opinion on NPL listing, write to both the State and EPA, Region 9.
2. If there is not significant negative State or local input, EPA publishes a Federal Register Notice for proposed NPL listing. A formal 60 day public comment period starts. (April)
3. EPA publishes the Final NPL listing in Federal Register. (July)
4. Negotiate Federal Facilities Agreement.

6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

26 FEB 1999

OFFICE OF THE
REGIONAL ADMINISTRATOR

Honorable Gray Davis
Governor of California
State Capitol, First Floor
Sacramento, CA 95814

Dear Governor Davis:

The United States Environmental Protection Agency (EPA) is considering placement of the former Naval Air Station (NAS) Alameda and areas beyond the air station where hazardous substances released from the air station have come to be located (the "Site") on the Superfund National Priorities List (NPL) pursuant to its authority under Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Section 9605. NAS Alameda is located at the west end of Alameda Island, in the City of Alameda, Alameda County, California. Based on analytical results from investigations performed by the Navy, EPA has concluded that the Site poses a significant threat to public health, welfare, or the environment. By this letter, EPA is seeking the position of the State of California on listing NAS Alameda on the NPL.

Since 1936 when the Navy acquired title to NAS Alameda the air station's primary mission was to provide facilities and support for fleet aviation activities. In September 1993, NAS Alameda was selected for closure by Congress and officially closed in April 1997. Wastes generated at the Site included industrial solvents, acids, paint strippers, degreasers, caustic cleaners, pesticides, chromium and cyanide wastes, waste oils containing PCBs, radium associated with dial painting and stripping, medical debris, and inert and unexploded ordnance. Solid wastes generated at the Site were disposed into two on-base landfills. All liquid industrial wastewaters generated at the Site prior to 1974 were discharged untreated to the Seaplane Lagoon and the Oakland Inner Harbor.

The California Department of Toxic Substances Control (DTSC) has the current role of lead state regulatory agency overseeing the Navy's Installation Restoration Program for cleanup at NAS Alameda. In June 1988, the California Department of Health Services issued a Remedial Action Order for NAS Alameda requiring that a remedial investigation be conducted at the Site for selected areas of concern. The Navy began conducting the investigation activities in 1990 without any formal agreement with the State. The State and the Navy began preparation of a draft Federal Facility Site Remediation Agreement (FFSRA) in April 1993 to define the responsibilities of the parties involve and outlined a cleanup schedule. Agreement on a final FFSRA was never reached. In January 1999, DTSC issued a draft Corrective Action Order for the Site in response to "continuing efforts by the Navy and the Department of Defense to challenge state regulatory authority and to unilaterally dictate reduced levels of regulatory oversight." As a result of this action, the Navy and DTSC have begun again negotiations on an FFSRA.

After NAS Alameda was listed for closure in 1993, EPA became involved as one of the Base Realignment and Closure Cleanup Team (BCT) members, in a partnership with the Navy and the State. As part of the BCT, EPA works to help implement the President's "five point plan" for cleanup and reuse of closing military bases. EPA's role has been to provide assistance and oversight for cleanup activities at the Site, but our role generally has not been a formal regulatory role because the Site is not on the NPL. In September 1995, EPA considered putting NAS Alameda on the NPL. As required by law at the time, EPA sent a letter to the State requesting concurrence for listing NAS Alameda on the NPL. On behalf of the State, DTSC did not concur because of a concern that public perceptions regarding the base being on the NPL might impact reuse of the base, and because the investigations and cleanups seemed, at the time, to be proceeding appropriately. As discussed below, the expected progress has not materialized, resulting in, among other things, potential adverse impacts to reuse from delays in completing the cleanup.

Hazardous substances from the Site have the potential for impacting the environment through the air, soil, surface water and groundwater pathways. Review of recently available data shows that the landfills have extensive low-level radiological contamination, significant quantities of unexploded ordnance, PCBs, medical debris, pesticides, mercury wastes, and asbestos. An ongoing radiological cleanup action in the vicinity of one of the aircraft engine facilities shows radiological contamination extending both laterally and vertically far beyond the original scope of the project. Recent data for groundwater beneath both aircraft engine facilities has shown potentially carcinogenic solvents present in concentrations up to millions of parts per billion, with free solvent product present. Degradation of these solvents has left high levels of vinyl chloride, a known human carcinogen, in the groundwater, which at times can be as shallow as three feet below ground surface. Recent data have also shown high levels of carcinogenic PAH contamination in soils in a park used for recreational purposes, necessitating closure of the park. It appears likely that the PAH soil contamination also extends to a neighboring residential area. Limited sediment data from the Seaplane Lagoon confirm that industrial wastes from Site operations have been deposited in the lagoon for a number of decades. Contamination in the lagoon consists of metals, PCBs and PAHs.

The primary CERCLA cleanup actions taken to date resulted in excavation of lead and PCB impacted soils in two areas on the Site, removal of sediment from storm drains, and an ongoing removal of soil and drain pipes with radiological contamination. Although a considerable amount of soil and groundwater data have been collected basewide, to date NAS Alameda has not completed any remedial investigations or feasibility studies; it will be several years before the final cleanup remedy is in place. Even Navy headquarters has recently expressed concern about the overall lack of cleanup progress and the high cost of cleanup at NAS Alameda, as well as at three other Bay Area Navy bases, and they have undertaken a study to examine these problems.

EPA believes that NPL listing of NAS Alameda would be a positive step towards furthering our mutual goals of expeditiously remediating the Site and facilitating environmentally safe reuse. NPL listing leads to a more effective partnership between EPA and the State through a CERCLA required Federal Facilities Agreement signed by the Navy, State and EPA that provides an effective framework of enforceable schedules, penalty authorities for regulatory agencies that enhance Navy accountability for the cleanup, and an ultimate decision maker (EPA's Administrator) for disputes that arise in the cleanup process. In contrast, because of unclear state authorities at military bases, the FFSRA currently under discussion between DTSC and the Navy does not provide clear mechanisms

for enforcement, lacks penalty authorities, and lacks a final decision maker for disputes. At federal facilities with the magnitude of concerns like those at NAS Alameda, we believe NPL listing provides critical differences for a more effective cleanup process.

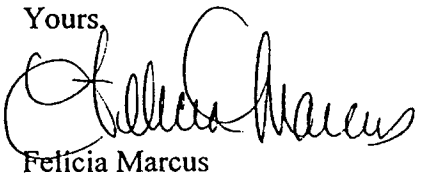
It has been EPA's experience that bases on the NPL progress more rapidly with cleanup than similar bases not on the NPL. For example, all of the NPL closing Navy bases in California (Moffett Field, El Toro and Hunters Point) have made substantially more progress in cleanup than the progress made at NAS Alameda. In addition, we have also seen substantial progress in reuse efforts at the 12 closing military bases in California that are on the NPL. While some fear that NPL listing creates a stigma that negatively impacts redevelopment, the experience in California shows no negative impacts to redevelopment from being on the NPL. Rather, the significant impacts on redevelopment come from a lack of progress in completing cleanups. In light of these concerns, we have already begun discussions with officials from the City of Alameda to help them understand the potential ramifications of NPL listing for NAS Alameda.

The City of Alameda, the community, and the Restoration Advisory Board (RAB) have all expressed frustration over the slow progress made on cleanup at the Site, the drawn out past disagreements over cleanup decisions and administrative procedures, the lack of a dispute resolution process, and the lack of authority accorded to the regulatory agencies. With NPL listing we can effectively move forward to address these concerns.

As has been true in the past, EPA is committed to coordinating with the State of California regarding Superfund listing proposals, and EPA is interested in receiving the State of California's response in this matter. I would appreciate your written response within 30 days of receipt of this correspondence in order for EPA to complete its decision making process and to determine whether to issue a proposed rule for listing NAS Alameda.

Should you require any additional information on this matter, please do not hesitate to call Keith Takata at (415) 744-1730 or me at (415) 744-1001.

Yours,



Felicia Marcus
Regional Administrator

cc: Winston Hickox, Secretary, California Environmental Protection Agency
Tim Fields, Jr., Acting Assistant Administrator for Solid Waste and Emergency Response
James M. Flint, Alameda City Manager

Site 1
1943-1956 Landfill

Site 1 is located in the north west corner of Alameda Point and received wastes generated at NAS Alameda between 1943 and 1956.

Major Issues

- Pistol Range/Ordnance
  - Pistol range in use between 1940s and 1993.
  - Elevated lead levels in the soil from bullets.
  - Area just north of the Pistol Range is a disposal area for 20 mm projectiles.
  - Additional surface and subsurface surveys planned in next 6 months.

- Radiological
  - Many anomalies (readings above background) were found across Site 1. No anomalies will be removed under the current removal action.
  - Readings that indicate likely radiological sources may be removed as part of the final remedy. (i.e. dials, brushes)
  - Radiological surveys have been extended to potentially impacted areas and are continuing.
  - Issues discussed with regulators on 1/26/98. Additional meetings with regulators scheduled for 9-10 March 99 to determine action levels.

- Groundwater risk to ecological receptors in SF Bay needs to be addressed.
- Presumptive remedy for landfills is a landfill cap.

Site 1
Presumptive Remedy

Presumptive remedy for a most landfills is a landfill cap.
Presumptive remedy does not eliminate the need to address groundwater in the FS.

EPA developed criteria used to determine applicability of the presumptive remedy at a military landfill.

- Characteristics of wastes disposed of in the landfill
- Presence of military wastes in the landfill (i.e. UXO and radiological)
- Size of the landfill (approx. > 2 acres)

The presumptive remedy consists of the following components:

- Landfill cap
- Leachate collection and treatment
- Landfill gas collection and treatment
- Institutional controls to supplement engineering controls

<u>REFERENCES</u>

EPA, 1993, Presumptive Remedy for CERCLA Municipal Landfill Sites, September, 1993.
EPA 1996, Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, December 1996.

Site 1
Feasibility Study

The Feasibility Studies for presumptive remedy sites provide a landfill cap as the presumptive remedy for addressing soil contamination and various alternatives for addressing groundwater contamination.

The Feasibility Study for Site 1 (OU3) will look at the design criteria for the landfill cap, evaluate groundwater treatment alternatives, and address the UXO and radiological issues.

Landfill cap design requirements

- Need to address surface drainage and erosion.
- Need to ensure adequate design for any remaining UXO and radiological issues
- Need to assess appropriate institutional controls to supplement engineering controls
- Need to consider how reuse (golf course) impacts the design.

Groundwater clean up requirements

- Need to target chemicals which exceed ecological risk
- Need to assess treatment alternatives, engineering controls, and institutional controls.
- Need to evaluate each potential remedy against nine criteria in EPA's FS Guidance.

ATTACHMENT D

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD
ADDITIONAL MATERIALS

Letter from Jo-Lynne Lee, on behalf of the RAB, to Gov. Gray Davis, regarding consideration of NAS Alameda for placement on the Superfund NPL

OU-1 RI Focus Group comments to Steve Edde regarding review of the three draft versions of OU-1, 03/02/99

ALAMEDA RESTORATION ADVISORY BOARD
JO-LYNNE Q. LEE
COMMUNITY CO-CHAIR
2866 SANTA CLARA AVENUE
ALAMEDA, CA 94501

March 12, 1999

Hon. Gray Davis
Governor of California
State Capitol, First Floor
Sacramento, CA 95814

James M. Flint
City Manager
2263 Santa Clara Avenue
Alameda, CA 94501

Felicia Marcus
Regional Administrator
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Re: Consideration of former Naval Air Station (NAS) Alameda for placement on Superfund National Priorities List (NPL).

Gentlemen and Ms. Marcus:

The Alameda Restoration Advisory Board (RAB) has reviewed Ms. Marcus' letter of February 26, 1999 concerning consideration of former Naval Air Station Alameda for placement on Superfund National Priorities List. We wish to advise you that the Alameda RAB supports and endorses the concept of having the former Naval Air Station Alameda, and areas beyond the air station where hazardous substances released from the air station have come to be located, placed on the Superfund National Priorities List.

Thank you.

Very truly yours,

Jo-Lynne Q. Lee
Community Co-Chair,
Alameda RAB

cc:

Steve Edde
Navy BRAC Environmental Coordinator
950 W. Mall Square, Suite 200
Alameda, CA 94501

Mary Rose Cassa
California EPA – Dept. of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710-2737

Anna-Marie Cook
U.S. Environmental Protection Agency
75 Hawthorne Street, SFD 8-2
San Francisco, CA 94105

Lynn Suer
U.S. Environmental Protection Agency
75 Hawthorne Street, SFD 8-2
San Francisco, CA 94105

Elizabeth Johnson
Alameda Reuse and Redevelopment Agency
950 W. Mall Square
Alameda, CA 94501

David Berger
Assistant City Manager
City of Alameda
950 W. Mall Square
Alameda, CA 94501

Alameda RAB
Community Members

Restoration Advisory Board at Alameda Point
Operable Unit #1 Focus Group
C/O Ken Kloc, 833 Market Street, Suite 1107, San Francisco, CA 94103

March 2, 1999

Mr. Steve Edde
Navy BRAC Environmental Coordinator
950 W. Mall Square, Suite 200
Alameda, CA 94501

Dear Mr. Edde,

The OU-1 RI Focus Group of the Alameda Point RAB has reviewed the three draft versions of the OU-1 RI that have been released by the Navy. In the process, we have prepared three sets of technical comments with the assistance of independent environmental professionals commissioned through both the TAPP and TOSC programs. We have also received and reviewed two sets of Navy responses to our comments.

We have been pleased to see that the readability of the RI report has improved with each round of review. However, the Focus group maintains that the RI still contains a number of technical deficiencies that the Navy has not yet adequately addressed. We feel that if these technical problems are allowed to pass through the review process without revision, then the Navy and the community may wind up accepting a final OU-1 RI that does not adequately characterize the potential risks posed by OU-1. We would like to point out that, insofar as RAB members on the OU-1 Focus Group represent community interests, the OU-1 RI does not at this time obtain full community acceptance.

The purpose of this letter is to identify four of the more significant and continuing problems in the OU-1 RI, to discuss the reasons for our criticisms, and finally, to recommend ways to correct these problems. To wit:

Problem #1

> There has been insufficient sampling of the soil and ground water at several of the OU-1 sites. In several cases, ground water plumes have been identified but not fully delineated. Sampling underneath large buildings has been lacking and sampling near joints in the storm water and industrial sewer lines, as well as, around sump and catch-basin areas, has been incomplete.
>
> For example, we point to problems with the RI at Sites 6 and 8, which were identified by the RAB's contractor, RRM, during the first round of technical review. There is a near complete absence of sampling under Building 41 at Site 6, which covers approximately 2 acres (240 ft. by 350 ft). Even though extensive solvent use has been documented in this building, and even though a ground water plume has been identified approximately 30 feet from the western edge of the

building (Well # M06-06), only one soil sample for TPH was collected under the building foundation during the EBS. This soil sample tested positive for TPH. However, the RI did not follow up on this information.

At Site 8, there has been no sampling under Building 114, a structure which was used for pesticide storage. In addition, extensive storm water and industrial waste water linkages exist under the site, many of which have not been adequately investigated.

Recommendation:

A follow-up sampling program is needed to close the data gaps that still exist at the OU-1 sites. The Navy's response to our previous comments on this issue was that, "additional sampling will be considered in the FS." If additional sampling is relegated to the FS, then the Navy must insure that sampling is not limited only to those areas where contamination has already been demonstrated to exist.

Problem #2

The Navy continues to use an attenuation factor of 1×10^{-5} as a general model for the soil-gas to indoor air pathway. We believe this to be technically indefensible.

The attenuation factor of 1×10^{-6}, observed in the Lawrence Berkeley Laboratory study conducted by M.L. Fischer et. al. (Environmental Science and Technology, v30, pp 2948-57, 1996), was based upon empirical measurements at a single site. The magnitude of attenuation observed in the study was shown to be dependent upon the presence of two factors: (i) the study site contained an impermeable layer at 0.7 meters below ground surface, and (ii) additional attenuation appears to have occurred due to biodegradation of the gasoline components observed in the study.

In order to prevent the inappropriate use of their results, Fischer et. al. specifically warned that the results of their study could not, "be directly applied to estimate indoor air quality at other sites without the risk of incurring significant errors." Differences in soil permeability from site to site and differences in biodegradation rates among chemicals can produce variations in the soil-gas attenuation factor much greater than one order of magnitude. Thus, the Navy's safety factor of 10, applied to Fischer's 1×10^{-6} soil-gas attenuation factor, is unlikely to be conservative at many Alameda Point sites, especially those sites that do not contain the impermeable layer, and at sites which contain biologically inert chemicals.

Recommendation:

The Navy should abandon its unorthodox and non-conservative scaling factor approach and instead use standard CERCLA guidance to conservatively characterize the soil gas to indoor air pathway. This guidance is contained in *Air/Superfund National Technical Guidance Study Series, Assessing Potential Indoor Air Impacts for Superfund Sites, September 1992.* It advises the use of conservative, site-specific soil-gas modeling, in conjunction with soil gas and air monitoring, when necessary.

Problem #3

We have previously criticized the Navy for inappropriately calculating exposure point concentrations by aggregating sample data across the whole IR Site. The Navy's use of site-wide aggregation is based upon an incorrect definition of exposure units at the site (EPA describes an "exposure unit" as the areal extent of a receptor's movements during a single day. Therefore the appropriate exposure unit for a residential scenario would be the size of a typical backyard).

Furthermore, the Navy has not sufficiently evaluated areas of significant impact (i.e., hot-spots) in its exposure assessments. Regarding soil hot-spots, Section 6.5.3 of Risk Assessment Guidance for Superfund (RAGS) states, "The area over which the activity is expected to occur should be considered when averaging the monitoring data for a hot spot. For example, averaging soil data over an area the size of a residential backyard (e.g., an eighth of an acre) may be most appropriate for evaluating residential soil pathways."

The sites in OU-1 are all several acres in size. Thus, the Navy's claim that the "sites are small enough to allow data aggregation" across the entire site is in conflict with EPA guidance on exposure assessment.

Similar arguments can be made for exposure point concentrations in groundwater. Since there is a reasonable likelihood that a well could be developed at a plume center, data at the plume center should be used to calculate the exposure point concentration. The Navy states that "the highest point is not representative of conditions of the groundwater under residential use..." In the absence of conservative ground water modeling, this assertion is speculative. Depending upon the specific chemicals involved, as well as, the aquifer characteristics at the site, ground water contamination may persist at high levels for many years after pumping of the ground water has begun.

Recommendation:

Follow standard guidance in developing exposure point concentrations.

Problem # 4

The Navy has refused to develop provisional toxicity criteria based upon route-to-route extrapolation of toxicity data and surrogate chemical analysis. The use of route-to-route extrapolation and surrogates is standard procedure in regulatory toxicology and these methods have been widely used by EPA.

For example, the EPA Region 9 PRG Tables frequently extrapolate oral toxicity values in order to develop inhalation toxicity values. In addition, EPA risk assessment guidance also supports the use of surrogate chemicals in developing toxicity values. For example, the supplemental guidance to RAGS published by EPA Region 4, states: "When a chemical has no chronic toxicity values, the value of a chemical that is related both chemically and toxicologically, i.e., structure-activity relationship, is used."

Recommendation:

> The Navy's risk assessment needs to use all available Reference Doses and Slope Factors, including those presented in the latest version of the EPA Region 9 PRG Tables. In addition, provisional toxicity criteria should be developed using appropriate surrogate chemicals and route-to-route extrapolation, whenever this is possible. When these methods cannot be used, the risk assessment should present a detailed review of toxicity information for each qualitatively assessed chemical, and also provide a thorough analysis of the potential risk of exposure to each of these chemicals.

We appreciate the fact that the Navy is willing to accept ongoing and detailed community input to the base restoration process. We hope that our comments throughout the entire OU-1 review process have been useful to you in your continuing efforts to characterize and clean-up contamination problems at Alameda Point.

Sincerely yours,

Ken Kloc

Ken Kloc
OU-1 Technical Focus Group Leader

cc: Mary Rose Cassa, California Department of Toxic Substances Control
Anna-Marie Cook, U.S. Environmental Protection Agency, Region 9
Lynn Suer, U.S. Environmental Protection Agency, Region 9