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ALAMEDA POINT
SSIC NO. 5090.3

RESPONSE TO U.S. EPA COMMENTS ON DRAFT REMEDIAL INVESTIGATION WORK PLAN, IR SITE 26, WESTERN HANGAR ZONE, ALAMEDA POINT, CALIFORNIA DATED OCTOBER 10, 2001 CTO-014

Comments from Ms. Anna-Marie Cook

GENERAL COMMENTS	RESPONSE TO COMMENTS
General Comment 1. For many groundwater volatile organic compound (VOC) and polynuclear aromatic hydrocarbon (PAH) analyses, detection limits were elevated. For example, on Field Sampling Plan (FSP) Figure 2-9, detection limits for at least two of three analytes (Trichloroethylene (TCE), Vinyl Chloride, and 1,2-Dichloroethane) were elevated above the Maximum Contaminant Levels (MCLs) in 14 samples. The text notes that there were similar problems for the analysis of PAHs in soil samples. Detection limits must be low enough to meet Risk Assessment requirements. Please discuss how the detection limit problem will be addressed during the proposed investigation so that the extent of contamination can be delineated to MCLs or Preliminary Remediation Goals (PRGs).	The Navy concurs with the assessment that some of the VOC detection limits in groundwater were elevated during the Environmental Baseline Survey (EBS). The groundwater samples were collected from open direct push borings, and were affected by turbidity in some instances. Additionally, please refer to Figures 2-9 and 2-10 simultaneously. In most instances, if the TCE, vinyl chloride, and 1,2-dichloroethane detection limits were elevated, it was because the benzene and toluene were detected at concentrations significantly above the detection limits. By using the iterative approach to sampling groundwater at IR Site 26, and by reaching the horizontal extent of benzene and toluene in groundwater (particularly in Area 1), the detection limits for the chlorinated VOCs should be delineated to MCL concentrations, at least at the perimeter of a plume. The Navy also acknowledges PAH detection limits in soil were often elevated during EBS sampling. As noted by the reviewer in Specific Comment 29, "EPA recommends that Method 8270C with SIMS be used to minimize the impact of interferences from non-target compounds on the detection limits for PAHs." As discussed in the field sampling and the quality assurance project plans, Method 8270C with SIMS will be used for PAH analysis of soil.

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General Comment 2. There are large areas of the site where no groundwater sampling is proposed and where no groundwater sampling has been done. The groundwater flow direction is not known. It is possible that there are more areas of groundwater contamination at IR Site 26 than the two known plumes in Area 1 and Area 2. Please explain why a more comprehensive investigation for groundwater contamination has not been proposed and consider adding additional sampling locations to address areas of the site where sampling has not been done in the past.	As depicted on Figures 2-9 and 2-10 of the FSP, 65 groundwater samples were collected at or adjacent to Site 26 during the EBS. This sampling most likely identified plumes of groundwater contamination of significant size at Site 26. With the exception of Area 1, the documented location of the aviation gasoline pipeline break in 1941, the highest concentration of any VOC detected in groundwater within Site 26 during the EBS was 12 micrograms per liter (ug/L) of vinyl chloride. The distribution of non-detectable concentrations (at acceptable detection limits) of VOCs, as shown on Figures 2-9 and 2-10, strongly suggests that no other VOC plume of significant size exists in shallow groundwater at Site 26.

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General Comment 3. Under federal guidelines an aquifer is classified based on only two criteria: 1) TDS and 2) yield. The aquifer underlying Site 26 meets the definition of a Class II aquifer which means it can be used either as a current or future drinking water source, and in the case of Site 26 it would be considered a future drinking water source. Numerous places throughout the workplan refer to the FWBZ as being non-potable, which, although probably correct, is a statement that is irrelevant to setting and supporting CERCLA cleanup decisions. The potability of the aquifer is irrelevant in terms of cleanup requirements because it is assumed that future drinking water sources will often need to be treated prior to being fit for ingestion. The reason for the TDS threshold is that Congress determined in the 1980's that it in parts of the USA it is, or would be, economically feasible and beneficial to treat groundwater with TDS levels as high as 10,000 ppm. However, under CERCLA, even if an aquifer meets the Class II classification, occasionally there are compelling site specific reasons why the aquifer does not need to be cleaned to meet MCLs. Please refer to pages 6 and 7 of the document "Determination of the Beneficial Uses of Groundwater, Alameda Point", dated July 2000, for the site specific reasons why the Class II aquifer beneath Site 26 should not be considered **a potential drinking water source for CERCLA cleanup decisions.**	The western portion of IR Site 26 is located in the Western Region of Alameda Point, while the eastern portion of IR Site 26 is located in the Central Region of Alameda Point, as discussed in the report entitled, Final Determination of the Beneficial Uses of Groundwater, Alameda Point, and dated July 2000. The document indicates that, in the Central Region (which comprises the majority of IR Site 26), • "Based on federal TDS and yield criteria, the FWBZ…is a Class II aquifer. The SWBZ is a Class III aquifer because TDS concentrations exceed 10,000 mg/L…. Other factors indicating that the Class II groundwater in the central region should not be considered a potential drinking water source for CERCLA cleanup decisions include: safe yield and maximum pumping rate are inadequate to support common uses of water as well as multiple domestic users; existing saltwater intrusion at the base of the FWBZ, which would be accelerated by groundwater extraction; no supply wells currently exist within or down gradient of contaminated groundwater; and state and county limitations on well construction because of a thin, vulnerable aquifer. In consideration of the other mitigating factors and property reuse, the BCT has concluded that groundwater…is unlikely to be used as a drinking water source…. In addition, the RWQCB has issued Board Resolution 00-024 that recommended removing the drinking water supply use designation of groundwater beneath a portion of the central region (which includes IR Site 26) because of high TDS levels, existing salt water intrusion, potential for additional saltwater intrusion, vulnerability of the groundwater to point and nonpoint sources of groundwater contamination, and the groundwater is not reasonably expected to serve as a public drinking water supply." This text will be inserted in the work plan, and the field sampling plan, at the locations first identified in the reviewer's comments, as noted in the specific comments, and reference to the text made for subsequent comments.

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SPECIFIC COMMENTS	RESPONSE TO COMMENTS
Specific Comment 1. Section 1.3, Purpose and Scope of the Remedial Investigation, Page 2, first paragraph: See general comment # 3 and please revise.	Please see response to General Comment 3.
Specific Comment 2. Section 1.3, Purpose and Scope of the Remedial Investigation, Page 2, Table 1, FSP Section 2.1 Base and Site Operations History, Page A2-1, and FSP Table 2-1: There are no figures that show where the contaminated areas discussed in the text and listed in the tables are located so that the relationship between these areas and the proposed investigation can be assessed. These parcels are referenced throughout the text, so it is important to understand where they are located. Please provide a figure that shows where all of the IR-26 parcels that are listed in Table 1 and FSP Table 2-1 are located. Please include the buildings and building numbers on this figure. Also, please depict Areas 1 and 2 on this figure. If available, please also include a figure that shows the location of the former buildings that are listed in these tables; this information will be useful to understand the proposed investigation and potentially to help interpret source areas if contamination is found during the investigation.	The work plan will be augmented with a Figure that will depict individual parcels, Area 1, Area 2, and all available building numbers.
Specific Comment 3. Section 1.3, Purpose and Scope of the Remedial Investigation, Page **5:** See general comment # 3 and please revise.	Please see response to General Comment 3.

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Specific Comment 4. Section 1.3, Purpose and Scope of the Remedial Investigation, Page **5:** The text states that groundwater sampling points are "shown on Figure 4-1 of the FSP," however, Figure 4-1 includes proposed soil and soil gas sampling points. Please cite the correct figure.	The text will be revised to indicate that Figure 4-2 depicts the proposed groundwater sampling locations.
Specific Comment 5. Section 1.3, Purpose and Scope of the Remedial Investigation, Page 5 and FSP Section 1.3, Purpose and Scope of the Remedial Investigation, Page A1-6: The text states that "three discrete grab samples of groundwater will initially be collected at a minimum of two depths" and later states that there will be "three sampling points." It is unclear if three groundwater samples will be collected, one from each sampling point, or if six groundwater samples, two discrete samples from each boring, will be collected. Part of the confusion may be the phrase "three discrete grab samples" if six samples will be collected. Please clearly state the total number of samples to be collected.	The text will be revised to indicate that in each Area, three borings will initially be advanced, and that from each boring, a minimum of two samples will be collected, each at a separate depth. This will result in an initial six samples, collected from three borings, at each of Area 1 and 2. As discussed in the technical approach, subsequent sampling will be conducted until adequate delineation of VOCs in groundwater is accomplished.
Specific Comment 6. Section 1.3, **Purpose and Scope of the Remedial Investigation, Page 7, third paragraph:** Should the industrial/construction worker scenario include dermal contact with and inhalation of volatiles from groundwater. High levels of VOCs have posed a problem for workers involved with dewatering operations (such as laying sewer and storm pipe) at other sites.	The text will be revised to state "The HHRA will evaluate (1) residential, (2) industrial, and (3) subsurface utility construction worker scenarios." The subsurface utility construction worker scenario will include both dermal contact with groundwater, and inhalation of VOCs from groundwater. Additionally, Figure 4-3 in the FSP will be revised to reflect these exposure pathways.
Specific Comment 7. Section 2.3, Page 8, second paragraph: See General Comment #3 and please revise.	Please see response to General Comment 3. A sentence referring the reader to the discussion presented in Section 1.3 of the work plan will be provided in the text.

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Specific Comment 8. **Table 2, Page 11, Step 1**: See General Comment #3 and please revise.	Please see response to General Comment 3. A sentence referring the reader to the discussion presented in Section 1.3 of the work plan will be provided in the text.
Specific Comment 9. Table 2, Page 11, Step 2: Please consider industrial/construction worker exposure to groundwater through dermal contact and inhalation of volatiles during dewatering operations.	Please see response to Specific Comment 6.
Specific Comment 10. FSP Section 1.3, Page A1-5, first paragraph: See General Comment # 3 and please revise.	Please see response to General Comment 3. A sentence referring the reader to the discussion presented in Section 1.3 of the work plan will be provided in the text.
Specific Comment 11. FSP Section 1.3, Page A1-8: Please consider industrial/construction worker exposure to groundwater through dermal contact and inhalation of volatiles during dewatering operations.	Please see response to Specific Comment 6.

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Specific Comment 12. Table 2, FSP Table 4-1 and Quality Assurance Project Plan (QAPP) Table 3-1: One of the decision questions asks whether there are "COPCs in groundwater present adjacent to the storm drain system at IR Site 26," but the proposed groundwater sampling approach does not address this question. There are large areas of the site that have storm drains and groundwater is not being investigated. Please discuss how this question will be addressed in the sampling program and add additional locations as necessary to evaluate groundwater contamination in the vicinity of the storm drains.	Please see response to Specific Comment 21. The Navy has conducted numerous surveys to identify potential problem areas with respect to the storm sewer system at Alameda Point. Review of the EBS groundwater VOC data (refer to Figures 2-9 and 2-10 of the FSP) indicates that low to non-detectable concentrations of benzene, toluene, trichloroethylene, vinyl chloride, and 1,2-DCA were detected adjacent to storm drains in several portions of the site. Specifically, samples 030-Z06-034, 030-Z06-032, and 030-Z06-033 contained non-detectable concentrations of the listed VOCs, and were collected in the vicinity of storm sewers south of Building 24. Samples 032-Z06-015, 032-0020, 032-0019, 032-Z06-014, 032-0022, 032-0023, and 032-Z06-012 contained non-detectable concentrations of the listed VOCs, and were collected in the vicinity of storm sewers between Buildings 22 and 23. Samples 191-0028 and 191-0025 contained non-detectable concentrations of the listed VOCs, and were collected in the vicinity of storm sewers between Buildings 21 and 22. Samples 192-004-019, 192-0029, 192-0028, 192-004-016, 192-004-017, 192-0031, 192-004-020 contained non-detectable concentrations of the listed VOCs, and were collected in the vicinity of the storm sewer south of Building 20. The highest concentration of any VOC (12 ug/l of vinyl chloride) at IR Site 26, other than in Area 1, was located in Area 2. Based on the distribution of VOCs in groundwater identified during the EBS, the most significant contamination is located south and southwest of Building 23, in Area 1. This is the location where the question of proximity of contaminated groundwater to the storm sewer system is directed. At least one shallow monitoring well will be installed immediately north of the storm sewer located south of Building 23, in the area identified during the Hydropunch groundwater sampling as having the potential for the greatest VOC concentrations in Area 1. As discussed above, the concentrations of VOCs in groundwater in the remainder of IR Site 26 are significantly lower than the maximum concentration of 22,100 ug/L of benzene identified in Area 1.

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Specific Comment 13. Table 2, FSP Table 4-1 and QAPP Table 3-1: The expansion of the horizontal boundaries of the study area is discussed in Step 4 with respect to groundwater contamination, but there is no provision for expansion of the study area boundaries for soil contamination. Given the numerous previous sample results with elevated PAH detection limits north of the eastern part of Area 2, it appears that the study area boundaries should be expanded to evaluate whether there is PAH contamination in this area. Please discuss expansion of the study area to address the extent of soil contamination.	PAH compounds have been reported in shallow soil at Alameda Point throughout the former facility, and are likely not directly related to IR Site 26 activities. In addition, the area to the north of IR Site 26, and to the north of Area 2, is the current location of a petroleum related removal action. The elevated detection limits in this area were likely the result of the petroleum hydrocarbon release north of IR Site 26. The PAH sampling (68 samples from 17 locations) is consistent with the current basewide PAH sampling rationale for sample density. In addition, please note that PAH samples will be collected from locations north, south, east, and west of IR Site 26 during the Alameda Point PAH soil sampling activities currently being planned for the eight PAH-specific Site Inspection (SI) studies.
Specific Comment 14. FSP Section 2.2.2, Geology, Page A2-4, Table 2-2, and Figures 2-3 and 2-4: The text states that a "paleo-channel...runs from northeast to west through Alameda Point." Table 2-2 states that the Merritt Sand and Upper San Antonio Formation are absent within the paleo-channel. Based on the continuity of the Merritt Sand and the Upper San Antonio Formation, Figures 2-3 and 2-4 do not show the paleo-channel. The text in Section 2.2.4 states that "the paleochannel crosses from east to west through IR Site 26." Please resolve this discrepancy.	The text of Section 2.2.4 will be revised to indicate that the "paleochannel has been identified at Alameda Point, but not specifically at IR Site 26. Previous borings installed east of IR Site 26 (Figure 2-2) in an area near where the paleochannel was inferred to be present appear to contain Merritt Sand and do not confirm the presence of a paleochannel at these specific locations." Table 2-2, which is specific to IR Site 26, will be revised to remove reference to the paleochannel. The text of Section 2.2.2, which discusses the presence of the paleochannel in relation to the geology of the entire Alameda point region, will generally remain unchanged, other than to specify that the description is made on a basewide basis.
Specific Comment 15. FSP Section 2.2.2, Geology, Page A2-4: The last sentence is incomplete. Please provide the missing text.	The text will be completed to state "...with an approximate thickness of 55 to 90 feet. All of the above-mentioned Quaternary deposits are underlain by the terrestrial and estuarine deposits of the Alameda Formation of Tertiary age."

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Specific Comment 16. FSP Section 2.2.5, Ecological Habitats, Page A2-21 and Figure 2-7: The list of habitats in the text includes "beach" but the figure does not include this habitat type. The figure includes "California Least Tern Sanctuary" and "Brackish Pools" habitats, which are not discussed in the text. Further, the text states there are 9 habitats, including "open water" and the figure includes 10 habitats if "open water" is included. Please resolve these discrepancies.	The reviewer is correct in noting the ten habitats; the text will be revised. Figure 2-7, at its current scale, cannot depict the very narrow "beach habitat" of only a few feet in width located along the perimeter of Sea Plane Lagoon and Breakwater Beach. In addition, Figure 2-7 will be revised to depict the Brackish Pool habitat, and the text will briefly describe the habitat. The California least Tern Sanctuary is located within the runway area, and will be presented as a subset of the runway area in Table 2-5.
Specific Comment 17. FSP Table 2-5: This table is missing the "California Least Tern Sanctuary" and "Brackish Pools" habitats that are depicted on Figure 2-7. Please include all habitat types in this table.	Please see response to Specific Comment 16.
Specific Comment 18. FSP Section 2.2.6, Current Land Use and Figure 2-8: The text implies that Figure 2-8 depicts all eight current land uses, but only three of these are shown on Figure 2-8. Please resolve this discrepancy.	The text will be revised to state: "The land uses include: paved areas, unpaved areas, roads, unpaved roads, runway, sea-wall, structures, and water. Of these eight different land uses, IR Site 26 contains only paved areas, roads, and structures (Figure 2-8)."
Specific Comment 19. FSP Section 2.3.1, RCRA Facility Assessment, Page A2-22: The six RCRA sites listed and/or discussed in the text are not shown on any of the figures, so it is difficult to evaluate the relationship of these sites to the proposed investigation. Please provide a figure that shows the location of the six RCRA sites.	The six RCRA sites will be depicted on a revised figure.

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Specific Comment 20. FSP Section 2.3.3, Environmental Baseline Survey, Page A2-27: See General Comment #3 and please revise this section.	Please see response to General Comment 3.
Specific Comment 21. FSP Section 2.3.4, Page A2-27: Please explain why only Parcel 190 was included in the storm drain investigation and whether a data gap exists on the condition of storm drains within IR Site 26.	The Navy has (1) conducted closed circuit television surveys of the storm sewer system at Alameda Point, (2) evaluated the potential for damage to the storm sewer system, (3) evaluated invert depths in relation to groundwater, and (4) evaluated the location of known plumes to storm sewer lines. The results of these surveys have been reported to agency partners in the report referenced in Section 2.3.4 (Draft Final Storm Sewer Study Report, Alameda Point, dated December 4, 2000) as well as the Storm Sewer Study Technical Memorandum Addendum and Response to Agency Comments on the Draft Final Storm Sewer Study Report, Alameda Point, dated August 30, 2001. The information was used to prioritize repairs, further investigations, and identify data gaps. Therefore, it appears that the entire storm drain system at Alameda Point was "evaluated", the text inaccurately indicated that only Parcel 190 was "included." The storm sewer in Parcel 190 was the only portion of the storm sewer system at IR Site 26 identified by parcel number in the December 4, 2000 report (described as non-priority in Table 3-4). Both the 2000 and 2001 documents, however, depict a portion of the storm sewer system in Parcel 192 of IR Site 26 as damaged, low priority, although the reference is to the adjacent Parcel 37, which is not a part of IR Site 26. The text will be revised to indicate the storm sewer conditions as discussed above.
Specific Comment 22. FSP Section 2.4, Preliminary Extent of Contamination, Page A2-27 and Table 2-6: It is unclear if all 269 soil samples and 74 groundwater samples were collected from IR Site 26. Please specify the number of samples collected from IR Site 26.	The text will be revised to indicate "During the EBS, 269 soil samples and 74 groundwater samples were collected from or adjacent to IR Site 26, and analyzed."

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Specific Comment 23. FSP Section 2.4.1, Organic Contaminants, Page A2-29: There are 14 samples on Figure 2-9 where the detection limits for TCE and vinyl chloride significantly exceed the MCL (5 and 0.5 g/L, respectively). The detection limits were as high as 200 g/L and nearly all of the samples collected west and southwest of building 23 in Area 1 had elevated detection limits. This suggests that the extent of TCE and vinyl chloride contamination in this area is not detected. Please discuss why the detection limits were elevated and the implications of the elevated detection limits in the text.	The Navy concurs with the assessment that some of the VOC detection limits in groundwater were elevated during the Environmental Baseline Survey (EBS). The groundwater samples were collected from open direct push borings, and may have been affected by turbidity in some instances. Additionally, please refer to Figures 2-9 and 2-10 simultaneously. In most instances, if the TCE, vinyl chloride, and 1,2-dichloroethane detection limits were elevated, it was because the benzene and toluene were detected at concentrations significantly above the detection limits. Also, please refer to the response to general comment 1.

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Specific Comment 24. FSP Section 4.3, Soil Sampling, Page A4-2: The text states that if refusal is reached before targeted soil sampling depths are reached, the boring will be "relocated up to two times per location within a 5 foot radius of the original sampling location. The sampler will be advanced, without sampling to the depth at which refusal was met previously. Sampling will then continue to the target depth." While this approach may be useful to evaluate the horizontal extent of contamination, it does not adequately address the need to evaluate the vertical extent of contamination because contaminants generally migrate vertically in preferential pathways under the influence of gravity; vertical migration is not likely to have the same impact 5 or 10 feet away. In order to evaluate the vertical extent of contamination, samples must be collected from the same borehole. If this is not done, and samples are collected from two boreholes, it will be difficult to draw meaningful conclusions. For example, if contamination was detected in the 0 to 6 inch, and 6 to 24 inch samples, and then because of refusal, samples were collected at deeper intervals in a borehole 5 feet away from the first and no contamination was detected, it would not be possible to tell if the contamination was limited to the upper 2 feet because there were no samples from the upper 2 feet analyzed in the second borehole. It is possible that had samples been analyzed from the upper two feet of the second borehole, that no contamination would have been detected. However, if refusal is due to fill materials, samples from the original borehole may provide information about the extent of contamination. Please propose an approach that will facilitate evaluation of both the horizontal and vertical extent of contamination by requiring that all samples selected for analysis from the targeted depths all be from the same borehole.	The only COPCs in soil scheduled for analysis at IR Site 26 during the RI are PAHs. As the presumptive source of the PAHs in soil at IR Site 26 is the hydraulic fill which contained the PAHs from historical, turn-of-the-century petroleum activities in the region (an oil refinery, a manufactured gas plant [MGP] site, and an asphaltic pipe manufacturer), the PAHs are at least partially randomly distributed in the fill material. PAHs generally sorb to soil particles, and generally do not migrate vertically, other than by liquid flow under the influence of gravity, in areas such as IR Site 26 that are completely paved and not subject to aqueous infiltration. Based on the size of IR Site 26 (approximately 34 acres), horizontal movement of a refused borehole of no more than 5 feet should not significantly alter the interpretation of the data. However, the text will be revised to indicate that the first reattempt will be conducted within 2 feet of the initial sample location, subsurface utilities permitting.

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Specific Comment 25. FSP Section 4.3, Soil Sampling and Figure 4-1: Most of the locations where the detection limit for benzo(a)pyrene was significantly elevated (maximum detection limit was 120,000 µg/kg) were located just beyond th e boundary of IR Site 26 and Area 2. The area of concern is located north of the eastern part of Area 2. Please explain why resampling is not planned for this area and consider adding locations to evaluate PAH contamination in this area. Please also discuss whether the boundaries of the area of investigation will be expanded if soil contamination is detected at the site boundary.	PAH compounds have been reported in shallow soil at Alameda Point throughout the former facility, and are likely not directly related to IR Site 26 activities. In addition, the area to the north of IR Site 26, and to the north of Area 2, is the current location of a petroleum related removal action. The elevated detection limits in this area were likely the result of the petroleum hydrocarbon release north of IR Site 26. The PAH sampling (68 samples from 17 locations) is consistent with the current basewide PAH sampling rationale for sample density. In addition, please note that PAH samples will be collected from locations north, south, east, and west of IR Site 26 during the Alameda Point PAH soil sampling activities currently being planned for the eight PAH-specific Site Inspection (SI) studies.
Specific Comment 26. Table 4-1, Page A4-3, Step 1: See general Comment #3 and please revise. **Table 4-1, Page A4-3, Step 4:** Risk management decisions may include the decision to take action. It is implied in the following paragraph that only risks above 10^{-4} require further action and this implication is incorrect.	Please see response to General Comment 3. In addition, please note that the decision to conduct a risk management evaluation includes the possibility of subsequently reducing risk through either removal or remedial action. The text in the DQOs will be revised to indicate "...then a risk management evaluation will be undertaken for the site, which may include a decision to conduct further action."

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Specific Comment 27. FSP Section 4.4.1, Discrete Groundwater Sampling, Page A4-7: Groundwater samples have not been collected from the northwestern part of Area 1, east of buildings 23 and 24, or west of buildings 20 and 22. The proposed "iterative method" will probably not cover these areas, and the groundwater flow direction is not known. Please add at least five sample locations (one east of building 24, one northwest of building 23, one east of building 23, one west of building 22 and one west of building 23 to so that groundwater quality can be addressed. If groundwater is found to flow to the east or south, additional locations to the east and south may be needed; please discuss contingencies for additional groundwater sampling based on groundwater flow directions.	Until groundwater gradient direction is established at IR Site 26, as well as the results of the initial sampling, specific Hydropunch locations (other than the initial six locations) have not been proposed. By delineating to MCLs horizontally in each of Area 1 and Area 2, adequate delineation will be accomplished. Based on the current data from the EBS, sampling would be conducted north and east of Building 23, as delineation in those directions has not been accomplished, as well as south and west. Additionally, please note that the Hydropunch sampling results will be used to place monitoring wells at the site, which will provide repeatable, fixed sampling locations.
Specific Comment 28. FSP Table 4-2: It is not clear how concrete coring will provide any useful information; please explain why concrete coring is considered to be an investigation method. Also, it is unclear why are there 47 locations for concrete coring, geophysical surveying and land surveying when the total number of unique exploration points (excluding the duplicated six temporary wells that will be installed in some Hydropunch borings) is only 37. Please review the information in the table and correct the quantities as necessary.	Concrete coring will be removed as an investigative method. As presented in Table 4-2, 24 soil gas sampling locations, 17 borings for PAH soil sample collection, and a minimum of 6 groundwater sample borings (47 total initial locations) will be investigated.

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Specific Comment 29. FSP Section 5.4.1, Direct push sampling, page A5-2, Table 5-2, and QAPP Tables 3-4, 3-5, and 4-2: The text and tables indicate that PAHs will be analyzed using " U.S. EPA Method selective ion mass spectrometry (SIMS) 8270C." Please confirm if the correct citation is modified Method 8270C "Semivolatile Organic Compounds by GC/MS with Selected Ion Monitoring (SIM)." EPA recommends that Method 8270C with SIM be used to minimize the impact of interference from non-target compounds on the detection limits for PAHs. Please clearly indicate the analytical method to be used for this investigation in the text and tables.	The text and tables will be modified to indicate that PAHs will be analyzed by Method 8270C "Semivolatile Organic Compounds by GC/MS with Selected Ion Monitoring (SIM).
Specific Comment 30. FSP Section 5.4.2, Hollow Stem Auger, Page A5-3: The text states that "soil samples will be collected from 1 to 2.5 feet bgs and 4 to 5.5 feet bgs for geologic logging or for laboratory analyses at depths specified in Table 4-1." Table 4-1 does not specify any sampling depths. Please revise this statement to cite where the sampling depths are specified. Also, in order to select the screened interval for the wells and to understand the units across which a well is screened, it is necessary to collect soil samples across the screened interval. Please revise the text to specify that soil samples will also be collected across the screened interval of each well.	The text and tables will be revised to indicate that soil samples for PAH analysis will be collected continuously from the surface to eight feet below ground surface. In addition, please refer to Section 5.5., Monitoring Well Installation and Development. The text, in part, reads "A sample of the formation to be screened will be analyzed for grain-size distribution using ASTM Methods D-421 and D-422 to confirm the correct filter-screen size."
Specific Comment 31. FSP Section 5.5, Monitoring Well Installation and Development, Page A5-7: The text specifies how well development water will be handled but does not specify how soil cuttings will be handled and disposed. Please specify how soil cuttings will be managed.	The text will be revised to refer the reader to Attachment E, the Investigation-derived Waste Management Plan.

**RESPONSE TO U.S. EPA COMMENTS ON DRAFT REMEDIAL INVESTIGATION WORK PLAN,
IR SITE 26, WESTERN HANGAR ZONE, ALAMEDA POINT, CALIFORNIA
DATED OCTOBER 10, 2001
CTO-014**

Comments from Ms. Anna-Marie Cook

Specific Comment 32. FSP Section 5.6.1, Discrete Groundwater Sampling, Page A5-8: According to text on page A1-6, temporary wells will be installed to estimate groundwater flow directions. The text in section 5.6.1 states that temporary wells will be installed if sufficient water is not produced for sampling or if there is evidence "that free-phase petroleum product" may be present. The use of temporary wells for water level measurements is not discussed. Please revise the text to include temporary wells for water level measurements. Please specify how free-phase product will be identified. Also, please discuss the length of time that temporary wells will be left in place and specify procedures for abandoning the temporary wells.	The text on page A1-6, as well as in Section 5.6.1 will be revised to indicate that only the initial three groundwater sampling locations in each of Areas 1 and 2 will definitely have temporary wells installed (for a period no longer than 24 hours) for the purpose of establishing a groundwater gradient direction. The six initial temporary groundwater wells will be the only temporary wells where groundwater elevation is measured for groundwater gradient determination purposes. These six temporary wells (three each at Areas 1 and 2) will be destroyed with bentonite or concrete grout by means of a tremie pipe in accordance with California Department of Water Resources Bulletin 74-90. Temporary wells will only be installed at the subsequent discrete groundwater sampling locations only if adequate sample volume is not generated by the Hydropunch method. The potential presence of free phase product will be evaluated in the six temporary wells using a disposable bailer or an electronic oil interface probe; the potential presence of free phase product will be evaluated in the Hydropunch samples collected from the shallower depth at each location by visual observation of the liquid recovered during sampling.
Specific Comment 33. FSP Section 5.7.2, Slug Tests, Page A5-10: The text does not specify how the slug test data will be interpreted. Please discuss how slug test data will be interpreted, including the name of the software package, if any, to be used.	The text will be augmented to state "Slug test data will be evaluated using the Bouwer-Rice Method (Bouwer and Rice 1976). The following reference will be added to Section 8: Bouwer, H. and R.C. Rice. 1976. A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells. Water Resources Research, 12 (1976): 423-428.

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Specific Comment 34. FSP Section 5.9, Sample Containers, Page A5-11: Visual inspection of the stainless steel or acetate sleeves is not sufficient to ensure that they are uncontaminated. Sample sleeves should either be decontaminated or have certification to document that they are uncontaminated. The text in section 5.13 states that "rinsate blanks will be prepared...through decontaminated or factory sealed soil or water sampling equipment," implying that sample sleeves will be decontaminated. Please revise the text to require decontamination of sample sleeves.	The text will be revised to state " Sample liners will be provided by the drilling contractor and will be decontaminated prior to use."
Specific Comment 35. FSP Table 5-1: Preservation with nitric acid is required for all Target Analyte List (TAL) metals, not just for mercury as implied in the entry in the "Preservation" column. Please delete the phrase "for mercury" from the TAL metals entry in the "Preservation" column.	The phrase "for mercury" will be deleted from the TAL metals entry in the "Preservation" column.
Specific Comment 36. FSP Section 5.13, Quality Control Samples, Page A5-17 and Table 5-3 and QAPP Section 6.3.1, Duplicates, Page B6-2: There is no provision for collection of field duplicate (or replicate) samples during soil and soil gas sampling. Duplicate samples are a measure of sampling technique, laboratory performance, and possible inhomogeneities in the sample and should be collected for all media. Please add field duplicate samples for soil and soil gas sampling or explain why duplicate samples will not be collected.	Field duplicates (or replicates) are not planned for the soil gas sampling activities at IR Site 26. Because the soil gas is collected over a period of time using EPA Method TO-15, and from a very localized volume of void space, an attempt to collect a duplicate sample results in a sample of soil gas collected from a different and unique location. In addition, field duplicates (or replicates) are not planned for the soil sampling activities at IR Site 26. PAHs are the only analytes scheduled for analysis in soil. The source of the PAHs is presumed to be the fill material, and previous numerous analyses at Alameda Point have indicated that the PAHs in the fill are heterogeneous in nature. Therefore, the non-homogeneity of PAHs in soil is well established; duplicates and replicates will provide little value in measuring variability in sampling technique or laboratory performance. Additionally, because the entire length of soil core (0 to 8 feet bgs) will be analyzed in four individually analyzed aliquots (0.0 - 0.5, 0.5 - 2.0, 2.0 - 4.0, and 4.0 - 8.0 feet bgs), field duplicate samples cannot be collected.

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Specific Comment 37. QAPP Table 3-5: The analysis for TAL metals is cited as "EPA Method SIMS 6010B/7000 Series (EPA SW-846)." EPA method 6010B is "Inorganics by Inductively Coupled Plasma - Atomic Emission Spectrometry" and the 7000 series methods mostly require atomic absorption (AA). Please explain the reference to "SIMS" for metals analyses or delete this acronym.	Reference to "SIMS" will be removed from Table 3-5.
Specific Comment 38. QAPP Section 3.3, Standard Operating Procedures: There is no SOP for soil gas sampling. Field personnel should not be expected to consult a reference library during sampling, all necessary information and procedures should be available to them. Please specify a SOP for soil gas sampling or provide procedures in the text.	The Technical Specification for Soil Gas Monitoring (TS-003) is the functional equivalent of a CLEAN SOP. A copy of the technical specification will be included with the SOPs in the field during soil gas sampling activities.
Specific Comment 39. QAPP Section 4.3, Sample Containers: The containers, analytical method(s), preservation and holding times for soil gas samples are not specified. Please specify the container(s), analytical method(s), preservation and holding times for soil gas samples.	Soil gas samples will be collected in six-liter summa canisters, and analyzed by EPA Method TO-15, Analysis of VOCs Collected in Canisters (625/R-96-010b), January 1997. The holding time is 14 days, and no preservatives are used. This information will be provided in the final version of the QAPP.
Specific Comment 40. QAPP Section 6.3.2, Blanks, Page B6-2: There is no discussion of the blanks necessary to assess the potential for sample contamination during soil gas sampling. Please specify and discuss the necessary soil gas sampling blanks.	One field blank sample will be collected each day that routine soil gas samples are collected. Please note however, that ambient air routinely has low, but detectable concentrations of VOCs; therefore, ambient air field blank samples will likely contain VOCs unrelated to sampling handling.

CLEAN 3 Program
Bechtel Job No. 23818
Contract No. N68711-95-D-7526
File Code: 0232
IN REPLY REFERENCE: CTO-0014/0035

November 9, 2001

Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 02R1
1220 Pacific Highway
San Diego, CA 92132-5190

Subject: Response to U.S. EPA Comments on Draft Remedial Investigation Work Plan, IR Site 26, Western Hangar Zone, Alameda Point, Alameda, California

Dear Mr. Selby:

Enclosed for your review, please find five copies of the Response to U.S. EPA Comments on the Draft Remedial Investigation Work Plan for Installation Restoration Site 26, Western Hangar Zone, Alameda Point, California, dated November 9, 2001. As directed by the Navy RPM, we are concurrently transmitting copies of the document to Ms. Anna-Marie Cook of U.S. EPA, Mr. Daniel Murphy of DTSC and Mr. Dennis Mishek of the RWQCB. In addition, we are forwarding copies on behalf of the Navy to the parties listed on the attached transmittal sheet.

If you have any questions, please contact Pete Stang, CTOL, at (619) 744-3048 or me at (415) 768-9917.

Very truly yours,

for Janet Argyres
Project Manager

Enclosure

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BECHTEL ENVIRONMENTAL, INC.

CLEAN 3 TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-95-D-7526 **Document Control No.** CTO-0014/0035

File Code: 0232

TO Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 02R1
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: November 9, 2001
CTO #: 0014
LOCATION: Alameda Point, California

FROM: for Janet Argyres, Project Manager

DESCRIPTION: Response to U.S. EPA Comments on the Draft Remedial Investigation Work Plan, IR Site 26, Western Hangar Zone – Dated November 2001

TYPE: Contract Deliverable (Cost) ____ CTO Deliverable (Technical) X Other: ____

VERSION: N/A (e.g., Draft, Draft Final, Final, etc.) REVISION No: 0

ADMIN RECORD: Yes X No ____ U.S. EPA Category ____ Confidential ____
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