



February 1, 1996

Mr. Stephen Chao/Mr. Hubert Chan  
Department of the Navy  
Engineering Field Activity West  
Naval Facilities Engineering Command  
900 Commodore Drive, Building 208  
San Bruno, California 94066-2402

CLEAN Contract N62474-88-D-5086  
Contract Task Order 0236

**Subject: Moffett Federal Airfield Operable Unit 1 (OU1) Feasibility Study (FS)  
Draft Response to Silicon Valley Toxics Coalition (SVTC) Comments**

Dear Messrs. Chao and Chan:

Enclosed are PRC Environmental Management, Inc.'s (PRC's) responses to written comments received from the SVTC concerning the OU1 Final FS Report and Proposed Plan, dated May 15, 1995. SVTC written comments were mistakenly not included in the previous November 30, 1995 submittal and several concerns were inadvertently omitted. Enclosed are updated pages of the November 30, 1995 response to comment letter that incorporate SVTC written comments. PRC apologizes for any inconvenience this may have caused. The comments and responses will become part of the record of decision for OU1.

If you have any questions, please call us at (303) 295-1101.

Sincerely,

Thomas J. Peters, P.E.  
Project Engineer

Michael N. Young  
Project Manager

TJP/cmj

Enclosures

cc: Peter Strauss, MHB  
Mr. Ted Smith, SVTC (letter only)

Response: The Navy is revising the cap design and will conduct additional field work as a result of comments received during the public comment period.

### 3.8 COMMENTS FROM THE SILICON VALLEY TOXICS COALITION

Note: SVTC submitted a written statement of which portions were presented at the June public meeting. In addition, SVTC submitted a set of written comments. The public meeting written statement and associated responses are listed first, followed by the full set of written comments and associated responses.

#### Written Statement:

*My name is Peter Strauss. I am the Director of Environmental Management with MHB Technical Associates in San Jose. I am the Technical Advisor to SVTC, which has a Technical Assistance Grant from the EPA to help it participate in the decision making process regarding the Superfund sites at Moffett and the so-called MEW companies south of the Bayshore Freeway.*

*I first commented on a draft FS in 1993. Since then, two other drafts were completed. I wish to commend the Navy for being responsive to the concerns that I raised about the capping of the landfills. Briefly, the Navy has agreed to alter its proposed plan in several ways:*

- 1) *Added minimization of infiltration as an RAO, thereby adding an extra foot of material to the cap;*
- 2) *Integrated OUI, as originally defined as constituting soils only, with groundwater*
- 3) *Waiting to design and implement a remedy until information was developed on the ecological effects of alternatives;*
- 4) *Sampled in additional areas that our hydrologist identified;*
- 5) *Describing some details about the monitoring and sampling plan;*
- 6) *Adding a leachate collection trench to the northern boundary between the Site 1 landfill and the SWRP. Leachate will be transferred to one of the treatment facilities;*
- 7) *Developing a rudimentary contingency plan should leachate migrate outside the boundaries of the landfills.*

*I think that these are major improvements to the original proposed remedy.*

*However, I believe that the plan has to be improved. Four general areas that will need improvement are: 1) the contingency plan involving detections of leachate outside of the landfills needs to be strengthened; 2) a contingency plan should be developed that deals with the event that the use of the facility changes, or the federal government no longer wants to operate and maintain the drainage system at Moffett; 3) to the degree possible, the remediation strategy should try to enhance the quality of surrounding wetlands; and, 4) that all measures should be taken to have the remedy conform to community standards.*

- 1. While I realize that little leachate has been detected in this area previously, it is important to establish guidelines or criteria for when the leachate system will be mechanically activated. The FS proposes that this be done when leachate exceeds the ambient water quality criteria. The FS states that hydraulic control or a packaged leachate system can be implemented if AWQC are exceeded. I propose that activation levels be set at percentage of the AWQC, in combination with an increase in the level detected at existing wells for two consecutive quarters. This seems quite reasonable to me, as it would allow time to plan the remediation and gain approvals from regulatory agencies.*

*Regarding Site 2, while I recognize that hydraulic control could be maintained by lift station 191, I am concerned that there is no contingency plan if monitoring wells detect leachate migration. The aeration nozzle at Building 191 can only effectively treat some volatile organic compounds (VOCs), and will not treat PCBs and semivolative organic compounds (SVOCs), and inorganics. Therefore, I recommend that the Navy develop a contingency plan to treat leachate from Site 2, if monitoring points outside the landfill detect contaminants at levels similar to Site 1.*

*Additionally, I am concerned that relatively few AWQC are established for organic compounds. It is important that action levels be established for all possible constituents.*

**Response:** The collection trench will be activated when AWQC for the protection of aquatic life are exceeded in groundwater in the trench. This strategy is conservative and

protective because contaminant levels in the trench would not be representative of surface water contaminant levels. Surface water is downgradient from the trench and contaminant levels will be reduced by processes such as adsorption and dilution between the trench and surface water. Therefore, if AWQCs are exceeded in the trench, corrective actions can be initiated before AWQCs are exceeded in surface water.

Using AWQC is conservative. The National Oceanic and Atmospheric Administration (NOAA), Coastal Resources Coordination (CRC) branch, provides guidelines to identify potential impacts to coastal resources and habitats that are likely to be affected by waste sites. For groundwater, NOAA recommends using a screening level of 10 times the AWQC. According to NOAA, this conservative screening provides a high degree of confidence that any sources eliminated from future consideration pose no potential threat to resources of concern (NOAA 1994).

At Site 2, a corrective action would consist of a groundwater extraction and treatment that addresses specific contaminants that are migrating. Groundwater can be extracted prior to reaching the Building 191 lift station and treated for metals, SVOCs, PCBs, or VOCs, if necessary.

AWQC have been identified for over 100 organic compounds, including chlorinated solvents, benzene, toluene, ethylbenzene, polynuclear aromatic hydrocarbons (PAHs), SVOCs, PCBs, and pesticides. The Navy will continue to update triggering levels as information becomes available.

- The FS is incomplete in that the RAs evaluated assume that the facility will continue to be used at levels similar to current use. After thinking this through, I think that this issue poses the largest potential problem to the Navy and the Community.*

*As you know, some community members are opposed to having Moffett Field continue to operate. With budget slashers going to work in Washington, I don't think we can assume that the Department of Defense or NASA is going to want to operate the airfield.*

*So the question arises of what would happen if the drain system and the pumps are turned off. Would elimination of pumping inundate some of the areas, and defeat the purpose of the remedy? Who would have responsibility for maintaining the drainage system, in the event that Moffett is not operated as an airfield? These are all questions that should be thought about, before a remedy is implemented. At the very least, there should be some institutional mechanism to pass along knowledge of the remedy and consequences of not maintaining the drainage and pumping system.*

Response: Building 191's maintenance needs will be incorporated into the ROD.

3. *I believe that efforts should be made to protect, and wherever possible, enhance existing wetlands, including the SWRP to the north of Site 1. I think it is important to recognize that this is somewhat degraded wetland that is potentially habitat for endangered species (salt harvest mouse). By enhancing the wetland, possibly by removing or creasing the levees to allow for more tidal flushing, pickleweed communities which are essential for the salt harvest mouse may become established.*

Response: Efforts will be made to re-establish pickleweed destroyed during cap construction. A mitigation plan will be submitted during the RD to outline re-establishment efforts.

4. *The Navy should be held to the same standards as private parties, including the Cities of Mountain View and Sunnyvale. In this context, an early comment on a draft FS requested that the Navy investigate and consider other remedies for old landfills that abut the San Francisco Bay. I provided a list of landfills that I knew about. It would seem prudent, if the Navy has not investigated these landfills, with the addition of Mountain View and Sunnyvale, that it does so before the remedy is implemented.*

Response: Information was received about Oyster Point, Third Avenue Landfill, and the old Stinson Beach Landfill. The following paragraphs summarize information obtained and discuss any information applicable to OU1.

CIWMB was contacted for information regarding Oyster Point. The remedy was selected to prevent leachate migration and included a single-layer, low-permeability

cap and a slurry wall. The cap was constructed solely with bay muds. The landfill was closed in the early 1970s and the area is now a marina. It is not known whether leachate migration was occurring, however, a slurry wall was constructed. Since it is not known whether leachate migration was occurring, it is difficult to compare these circumstances and associated remedy to OU1.

CIWMB was also contacted for information regarding the Third Avenue Landfill. The remedy was a multilayer clay cap and shoreline reconstruction. Waste is located below the water table, however, leachate migration was not occurring. No remedy was implemented to restrict potential leachate migration. This circumstance is similar to Site 1; however, at Site 1 a groundwater interceptor trench is proposed to protect surface water from potential future leachate migration.

Caltrans was contacted for information regarding the Stinson Beach Landfill. The remedy was excavation, dewatering, segregation of hazardous and nonhazardous wastes, disposal, and restoration. Leachate migration was a concern at the Stinson site, but it was not occurring. This remedy was completed as a mitigation project to restore intertidal mudflat habitat destroyed during reconstruction of Route 1. The remedy was apparently not pursued to control leachate migration.

CIWMB stated that apparently several old landfills around the bay have waste below the water table. However, leachate migration is generally not a problem.

The Navy must comply with the same landfill closure regulations as local landfills. CIWMB has identified 14 CCR solid waste landfill closure regulations as applicable for OU1. During the public comment period, CIWMB stated that the Navy's proposed alternative would not meet specified performance standards in 14 CCR. As a result, the Navy has agreed to revise the proposed plan based on a prescribed, state pre-approved configuration for the two landfill caps at OU1. Additional public comments will be solicited from December 20, 1995 to January 31, 1996 on this revised proposal. In addition, a public meeting will be held January 16, 1996 regarding the revised proposal.

Written Comments from Peter Strauss of SVTC:

*As a result of concerns raised by the THE Committee of the RAB and regulatory agencies, I have reviewed previous SVTC comments, the Navy's response, and the Navy's commitments. Below I have elaborated on some of our earlier concerns, my understanding of the Navy's commitments, and issues that still need to be addressed. Additionally, following discussions with DSTC and the RAB on August 9 and 10, 1995 respectively, I have included a framework for developing a contingency plan should the Navy find that leachate is migrating from Site 1.*

*The written comments contain some passages which are underlined, in **bold**, or **both**. Underlined passages are meant to highlight previous SVTC concerns. Bold passages are what we believe to be Navy commitments. Bold and underlined passages are SVTCs recommendations and action items.*

*Comment 1: "It is inappropriate to develop a remediation strategy which does not take full account of existing and potential communication between the leachate in landfill material and the groundwater under and around the landfills." (December 1993).*

*The original remediation strategy articulated in the OUI Draft FS did not take account of groundwater at all. After regulatory pressure, the Navy agreed to consider both soils and groundwater at the landfills, which makes common sense. In 1993, we requested that the Navy provide information on the "the radius [and] or depth of groundwater that is going to be considered."*

***Based on recent discussions at RAB meetings and meetings with regulators, it is unclear that the radius and depth of groundwater that was considered was adequate.** Refer to comments about potential groundwater flow on the southern boundary of the Runway Landfill, and anecdotal information that the waste was buried 21 feet below ground surface. If the depth of waste is in fact 21 feet, then existing monitoring wells within the landfill, and those surrounding the landfill would be sufficient to detect the migration of potentially contaminated groundwater.*

*Response: The Navy has focused groundwater investigations on the uppermost aquifer at the landfill perimeter. If any groundwater impacts become evident, the radius and depth*

of subsequent groundwater investigations will be increased to encompass the plume of leachate that has migrated.

Comment 2: Minimizing infiltration should be a remedial action objective. (December 1993).

*There is no reason to believe that leachate from the landfills will not eventually migrate. One may hypothesize that it may be minimal and retarded by surrounding clays, but there is little doubt that it will eventually migrate. Therefore, we have argued that a strategic objective of the remediation at the site should be to minimize infiltration, to slow migration of leachate.*

*On July 25, 1994, after a technical meeting with Dr. Oberdorfer and me, the Navy committed to add minimizing infiltration as an RAO presentations. First, in a response to DTSC Comment 105, dated April 10, 1995, the Navy stated that "minimizing infiltration is not a primary cap function." Second, this was re-iterated at the August 10 RAB meeting. Third, during the public hearing, the Navy's consultant failed to include minimizing infiltration as a RAO.*

*There is nothing in the Remedial Action Plan that would limit infiltration, but for the cap. Although minimizing infiltration is included in the final FS as an RAO, it is important that it be fully considered in the design of the remedy. It is not clear from the response to DTSC's comments cited above whether this has been done, or whether the Navy intends to do this.*

Response: The Navy has agreed to revise the OU1 landfill cap configurations to include a low-permeability layer to minimize infiltration.

Comment 3: There is a disconnect between the amounts of hazardous materials detected in the OU1 RI/draft FS and the tons of liquid and solid hazardous materials that were reported in the IAS. (December 1993).

*Although we recognize that the IAS was based on anecdotal information, we recommended that the Navy reconcile this disparate information in the FS. It is difficult to dismiss these anecdotal reports merely because a few borings and wells*

have not shown heavy contamination. Other explanations could exist, including that these contaminants are now in the Bay or groundwater, that they have degraded, that they weren't located by the borings, or that they were disposed of at another landfill on the base. In fact, there is a third landfill located within the Golf Course that was identified by IT in 1988. (December 1993). (Subsequently, it was discovered that there is actually a fourth landfill).

With respect to the Navy's first response to this comment, (i.e. "The Navy does not agree that reconciliation of the past fate of landfill refuse is needed. These data...would be based on speculation."), we responded that it is incumbent upon the Navy to prove that the IAS was incorrect. (April 14, 1994).

On July 20, 1994, the Navy described the reasons why it believes that IAS may be incorrect, and committed to a strategy of enhancing containment by evaluating a vertical barrier at the northern boundary of Site 1, and corrective action should drummed waste begin to be detected migrating from the site. It is not clear that the Navy has followed through with this commitment. For example, although the Navy proposed that a vertical leachate collection trench be installed at the north side of Site 1, the plan does not offer any concrete remedy should drummed waste begin to migrate to the south. In light of the AI-aquifer gradients travelling north to south, the location of additional vertical barriers needs to be reevaluated. (See Comment 6, below).

Additionally, although many reasons were given by the Navy for not adopting the information from the IAS, it seems that enough questions have been raised by the RAB, that the issue of what is in the landfills requires some reevaluation and explanation, with public review before the RAB. We recommend that the Navy begin with the July 20, 1994 response to SVTC comments as a starting point, as we believe that this was a good first effort to attempt to address this issue.

Response: The northern location selected for the groundwater interceptor trench is most appropriate. A potential for flow (gradient) has been measured from the leachate zone to the SWRP. Therefore, the trench was positioned between the Site 1 landfill and

the SWRP to protect ecological receptors at the SWRP. It is not necessary at this time to develop contingencies in the event leachate is migrating southward. Any releases along the southern border could be addressed by additional containment or hydraulic control systems, if needed. There are no receptors close to the southern boundary. There would not be any immediate threat to human health and the environment, and therefore, it is not cost-effective to construct contingencies at this time.

The issue regarding the content of the landfills will be revisited when the Navy conducts a radiation survey. This is the only remaining information that is needed to implement the remediation strategy. Any additional information regarding the content of the landfills will not change the proposed remedial strategy.

*Comment 4: The Solid Waste Assessment Test (SWAT) concluded that leachate contained elevated levels of organic compounds and metals, and that seepage could enter surface waters. It also concluded that the A-1 aquifer was contaminated at this location, (i.e. Site 1), but suggested that contamination may be from another source. (December 1993).*

*The Navy responded that corrective action strategies appropriate for OUI landfills include hydraulically controlling gradients through leachate extraction and treatment, or combining extraction with vertical barriers. Additionally, disparities between leachate contaminants and the A-aquifer contaminants suggest a source other than landfills. The Navy responded that the SWAT stated that "upgradient sources have not been fully evaluated, [and] the concentrations of metals found in the A-aquifer are not considered definitive of landfill leakage."*

*First, the final plan and the ROD should describe in detail the additional enhancements to the containment strategy that may include vertical barriers and hydraulic control through leachate extraction (See comment 9 below). Also, has further analysis of upgradient sources led to any change of opinion or shed new light on this subject? Please identify possible upgradient sources of heavy metals and organics.*

Response: The only subsurface barriers needed at this time have been described in the FS report and proposed plan.

At Site 1, no upgradient sources have been identified. At Site 2, some of the plumes identified in the OU5 FS are upgradient. However, comparisons of upgradient and downgradient concentrations enable the Navy to determine whether Site 2 is contributing to groundwater contamination.

Comment 5: The design [e.g. base materials of the old landfills] needs to be better understood before a remedy is proposed. (December 1993)

*Based on the data presented, it appears that the Navy does not know much about the initial design of these landfills. There is not an adequate description of the base material or the sides of the landfill to make a reasonable judgement pertaining to how these may contain the fill materials for long durations. In order to contain the landfill contents, it is essential that design characteristics of the existing landfill be well understood. (December 1993)*

*The Navy responded to this comment by stating that the conductivity of "surrounding" soils has been tested and evaluated. Since the remediation strategy is one of containment, it is crucial that the Navy be as certain as possible that base materials won't leak, and that waste is not deposited below a clay layer, as suggested at the July 13, 1995 RAB meeting. Based on the present knowledge of the lithology of the landfills, we recommend that this issue be re-evaluated.*

*Additionally, it appears that groundwater flowing into the landfill, with a downward gradient from North to South. This exacerbates our concerns about the need to understand the containment (or lack thereof) of the fill before developing a remedial plan, and importantly, and raises the question of whether the remediation strategy of containment can be successful with only a cap. There may have to be several other elements to the remedial action plan before it can be designed to successfully contain leachate and groundwater. Therefore, the final plan should state that additional remedies may be needed if contamination outside the landfill is found.*

*This statement should be as specific as possible.*

Response: The permeability of underlying soils has not been fully characterized. Extensive sampling or excavation would be required if it was necessary to completely characterize the soil beneath the landfill. However, this information is not necessary and the Navy does not assume that clay layers beneath the landfills are continuous. The information from the limited soil investigations offered a possible explanation for the lack of evidence of contaminant migration. However, it would be difficult to prove conclusively that naturally occurring barriers to groundwater movement exist. Therefore, because it is not known conclusively, continual groundwater monitoring and contingency plans to protect nearby vulnerable receptors are proposed. In addition, the Navy will conduct more field work to further investigate potential contaminant migration.

The corrective action requirements under 23 CCR discuss the necessity for additional remedies to address leachate migration.

Comment 6: *We noted (December 1993) that groundwater at Site 1 flows in the south-southeast direction, towards Building 191. It appeared, however, based on Figures 3, 4 and 5, that most soil sample points and groundwater wells located outside of Site 1 were found on the north side of the landfill. Plate 1 and page 18 (of Draft FS) indicated that no samples were collected or analyzed from the borings and wells to the south-southeast of Site 1. We also asked whether the Navy believed that there are enough monitoring points on the south-southeast side of Site 1? (December 1993)*

*The Navy's response (dated February 4, 1994) to these two comments stated that the OUI Technical Memorandum and the additional field work plan describe groundwater flow patterns in detail and the adequacy of the monitoring network. At that point in time, there were four monitoring wells south and southeast of Site 1. The OUI Additional Field Investigation, Technical Memorandum of December 29, 1993, shows the locations of four new monitoring wells at Site 1: one at the west-southwest perimeter; one at the southeastern perimeter; and another on the southern perimeter (the fourth is located at the northern perimeter). The location of the new well on the*

southern perimeter was screened to monitor "shallow concentrations of contaminants" migrating towards the Building 191 pump house. At this point in time, it was not apparent to Navy consultants (although it was suspected) that mounding of groundwater was occurring in Site 1. There are a number of problems with this response which have been brought to our attention through the excellent work of the RAB.

First, there are very different potentiometric surfaces described in the Technical Memorandum (Figures 10 and 11) from those described in the Final FS (Figures 12 and 13). There is not an explanation of why the potentiometric surfaces changed from the Technical Memorandum, based on fourth quarter 1993 data, and the FS, based on February 1994 data. Assuming that there are perched water zones within the landfill, Figure 11 of the Technical Memorandum depicts yet another elevation and gradient. As a result, we believe that the Navy must explain and reconcile these differences. In addition, it must make clear any assumptions that went into the models used to map the elevations. With relatively few data points inside the perimeter of the landfill, it is difficult to realistically depict leachate or groundwater contour levels.

A second problem is that it has never been clear how the Navy has differentiated between leachate and the shallow groundwater in the A-1 aquifer. Since the wells inside the landfill are drilled to the base of the landfill, one cannot differentiate between leachate and groundwater within the aquifer. The Technical Memorandum treats leachate and groundwater as one in the same, and it would appear that this would be a rational explanation if the bathtub model of the landfill is correct, as implied in the Technical Memorandum. In contrast, the FS conceptual model, however, depicts a semi-confined A1-aquifer that is below the base of the landfill (see Figure 11 of the FS). However, the measured depth of this A1-aquifer is 0.7 to 1.0 feet below the leachate levels (at approximately W1-11, see Figures 12 and 13 of the FS). Since the elevation of leachate level at this monitoring point is approximately 8 feet above the base of the landfill (see Figure 7, then it must be concluded that A1-aquifer is flowing through the landfill. We do not believe that this fact is in dispute: however, we are concerned that there may have been conclusions drawn based on a reliance on models of groundwater movement as depicted by the FS conceptual model.

I draw two conclusions from this.

- a) *There appears to be an imaginary line between leachate and groundwater, for they both will mix in the landfill. Therefore, this conceptual model is incorrect. Because of the apparent contradiction (conceptual model versus actual results), we ask whether the hydrogeology of the site is understood enough to develop a remediation strategy, and that the conceptual model be modified. Potentiometric surfaces are developed by relatively few number of data points for the size of the area, and we feel strongly that the Navy must gather more information before it develops a remedial design*
- b) *Because of the concern that the Navy may have relied on an incorrect conceptual model, we recommend that past assumptions and conclusions related to the framework that a semi-confined A1-aquifer beneath the landfill (Site 1) be revisited, and adjusted if need be.*
- c) *The remedial investigations and strategies cannot and should not be locked in time as new techniques or new information is developed. OUI appears to be a case-in-point where the results of an investigation were frozen in time, without regard to changing information. Apparently there have been changes of assumptions between the Technical Memorandum and the OUI draft-final FS, in which the potentiometric surfaces based on February 1994 data were first presented. Because of this apparent change, the monitoring well data gap to the south, as brought to your attention by the RAB, is very evident. Despite SVTC's early concerns raised in December 1993 about the sufficiency of the monitoring well system on the south side of Site 1, the Navy does not appear to have adjusted the monitoring well system to account for new information. We strongly believe that the remediation plan needs to be flexible as new information is developed.*

Response: The Navy's conceptual model of the hydrogeology has changed since the Technical Memorandum as new information has been received and evaluated. The current conceptual model is described in the May 15, 1995 submittal of the FS report. Additional data will be collected and incorporated into the conceptual model, as appropriate.

The Navy believes that the hydrogeology of the site is adequately understood such that a remedial strategy can be developed. The current hydrogeologic conceptual model may be updated as additional information becomes available; however, changes to the conceptual model do not significantly affect the remediation strategy.

Groundwater elevation data indicate that the water pressure in the A1-aquifer is above

atmospheric pressure at some OUI locations, indicating that the A1-aquifer is semi-confined. This conclusion does not affect the remedial strategy, as the remedial strategy is adequate regardless of whether the A1-aquifer is semi-confined.

The groundwater monitoring and corrective action requirements found under 23 CCR allow for flexibility as new information becomes available.

*Comment 7: The FS is incomplete in that the RAs evaluated assume that the facility will continue to be used at levels similar to current use. Some community members are opposed to having Moffett Field continue long-term operations under NASA, almost as if there had not been a change in stewardship. (April 14, 1994)*

*"The remedial action (RA) should not foreclose future options, such as reducing or eliminating flights, and significantly scaling back industrial activity. The RA should account for, wherever possible, a reduced use scenario where pumping from Building 191 no longer occurs. Elimination of pumping would create a stronger horizontal force on landfill contents and may affect groundwater levels, and will likely change groundwater flow patterns and direction in some areas." Consequently, migration of constituents via groundwater/leachate transport is more likely to occur. (April 14, 1994)*

*As federal commitments to the facility seem to be in flux, we think that there is a strong need to look ahead at the possibility of the drain system being turned off. We were pleased to hear that the Navy, based on the meeting at DTSC and the RAB in August 1995, also thinks that this is enough of a possibility that it will discuss potential remedies and contingencies as part of the response to the public hearing and comments. We believe that more investigation should take place, including: 1) an evaluation of expected environmental effects on the landfills should the drain system be turned off: and, 2) an investigation and description of low cost techniques that could be installed now which would mitigate some or all of the negative environmental effects identified in 1) above. We also ask that a very specific contingency plan be described which would alleviate the effects of turning off the drain, which cannot be avoided by low cost techniques described in 2) above.*

Response: The Navy has proposed a cleanup plan for OU1 which likely requires the continued operation of the runway subdrain system and the lift station at Building 191. The continued operation of this system is an integral component for most land uses, and continued operation is planned to support the airfield. The subdrain system is necessary to prevent surface water flooding and has a notable effect on groundwater flow direction and velocity in the northern part of MFA. Continued operation of the drain system is essential for nearly all future landfill uses at MFA.

Should the land use at MFA change in the future, the provisions of the National Environmental Policy Act (NEPA) will apply. Therefore, an environmental impact statement (EIS) would be developed to evaluate environmental effects from a change in land use. This evaluation would include studying impacts to disposal sites. After the EIS evaluates impacts from land use changes, a decision can be made based on the specified land use as well as public comments. The public can participate in the process by attending public meetings and submitting written comments on the EIS.

Comment 8: "I believe that efforts should be made to protect, and wherever possible, enhance existing wetlands, including the storm water retention pond to the north of Site 1. In the context of the Ecological Assessment, I think it is important to recognize that this is a somewhat degraded wetland that is potentially habitat for endangered species (salt harvest mouse). By enhancing the wetland, possibly by removing or creasing the levees to allow for more tidal flushing, pickleweed communities which are essential for the salt harvest mouse may become established." (April 14, 1994)

*We are pleased that the Navy has agreed to install a leachate collection trench on the north side of Site 1 to protect this potentially fragile ecosystem. We also believe that prior to remedial design, it is important that the Navy take an independent look at possibilities for enhancing the existing wetlands. **We therefore recommend that an independent evaluation of ways to enhance the wetlands be made a formal commitment.***

Response: Comment noted.

Comment 9: The remedial proposal is based on the assumption that should leachate migrate from the landfills, it will be detected and appropriate remedies can be installed, as required. This concept is insufficient unless the FS contains a contingency plan that establishes action levels that will require action, and what those actions are likely to be. I propose that action levels be set at a fairly low percentage of the maximum contaminant level (MCL), in combination with an increase in the level detected at existing wells. For example, if the TCE MCL is 5 ppb, I would propose that remedial action (in this instance, likely to be leachate collection and treatment) be triggered when TCE is detected at 25 percent of the MCL, and concentrations have increased over two quarters. (The above is an example of how a triggering mechanism could work, not a proposed standard.) (April 14, 1994)

We have since revised the proposed action levels. Our current proposal is that action levels be set at 25 percent of the Water Quality Criteria, triggered when concentrations of contaminants increase over two consecutive quarters. This would at the very least give the Navy time to plan a remedy and a treatment for contaminated leachate. We strongly recommend that the Navy adopt this criteria for the leachate collection trench north of Site 1.

With regards to potential leachate migration south of Site 1, a detailed contingency plan should be developed and included as part of the ROD. Below, we have suggested the following framework on how to develop this plan.

- a) The plan should be detailed enough to provide the public and the regulators with sufficient information and criteria for action so that it will act as a verifiable commitment in the ROD;
- b) Because we don't know what will be found by additional wells on the southern edge of Site 1, several scenarios should be included in developing the plan. For example, the following presents a range of findings; 1) no detectable finding of leachate migration; 2) migration of heavy metals, VOCs and SVOCs, above the MCL but below the AWQC; and, 3) migration of heavy metals, VOCs and SVOCs, above the AWQC.
- c) For each scenario, a plan should be articulated. For example, if scenario 1 is found, the contingency may commit to further monitoring; if scenario 3 is found, the plan may commit to a leachate extraction and treatment system either within, or on the edge of the landfill.

Response: The collection trench will be activated when AWQC for the protection of aquatic life are exceeded in groundwater in the trench. This strategy is conservative and protective because contaminant levels in the trench will not be representative of surface water contaminant levels. Surface water is downgradient from the trench and contaminant levels will be reduced by processes such as adsorption and dilution. Therefore, if AWQCs are exceeded in the trench, corrective actions can be initiated before AWQCs are exceeded in surface water.

Using AWQC is conservative. The NOAA CRC branch provides guidelines to identify potential impacts to coastal resources and habitats that are likely to be affected by waste sites. For groundwater, NOAA recommends using a screening level of 10 times the AWQC. According to NOAA, this conservative screening provides a high degree of confidence that any sources eliminated from future consideration pose no potential threat to resources of concern (NOAA 1994).

It is not necessary at this time to develop contingencies in the event leachate is migrating southward. As discussed above, any releases along the southern border could be addressed by additional containment or hydraulic control if needed. There are no receptors close to the southern boundary. There would not be any immediate threat to human health and the environment, and therefore, it is not cost-effective to construct contingencies at this time.

*Comment 10: Because wells inside of the landfill are screened to the bottom of the landfill, leachate is not truly characterized. Rather, the leachate wells reveal a mixture of leachate and groundwater. While we are not suggesting that you remedy this, this fact should be taken into consideration in future testing and modeling. For example, we are concerned that low detects found in areas outside the landfills are not discounted, and do not become a rationale for saying that no leachate is migrating. When low detects are found, we believe that it is the Navy's burden of proof to demonstrate that it is not due to a leak in the landfill.*

Response: The monitoring program will be conducted in accordance with 23 CCR. Title 23 CCR identifies statistical procedures to be used for evaluating monitoring data.

N00296.002742  
MOFFETT FIELD  
SSIC NO. 5090.3

DRAFT RESPONSE TO COMMENTS ON THE  
FINAL FEASIBILITY STUDY REPORT AND  
PROPOSED PLAN

DATED 30 NOVEMBER 1995

IS FILED AS ADMINISTRATIVE RECORD NO.  
**N00296.002394**