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Ser 642.1/8062
January 8, 1998

Dear RAB Member:

We hope you had a wonderful holiday. The Moffett Federal Airfield (MFA) Base Closure Team and the Community Co-Chair wish to remind you to attend our next Restoration Advisory Board (RAB) meeting.

Our next RAB meeting will again be held on January 15, 1998 at the City of Mountain View Police/Fire Administration Building. The meeting will begin at 7:00 p.m. The agenda for the meeting is as follows:

7:00-7:05 PM Meeting Overview
7:05-7:10 PM November Minutes Approval
7:10-7:40 PM Remedial Project Managers Meeting Report
7:40-7:50 PM Subcommittee Reports
7:50-8:10 PM Revised Draft Final Stationwide FS Presentation
8:10-8:45 PM Revised Draft Final Stationwide FS Discussion
8:45-9:00 PM Agenda/Schedule for March RAB Meeting

Attached you'll find a list of upcoming projects at Moffett for Fiscal Years 1998 and 1999 as enclosure (1). In addition, a copy of the Department of Fish and Game comments on the Draft Final Station-Wide Feasibility Study Report is attached as enclosure (2).

If you have any questions or comments, please contact me at (415) 244-2563, Mr. Hubert Chan of this office at (415) 244-2562, or Mr. David Glick, Moffett's Community Co-Chair, at (408) 987-0210.

Sincerely,

ORIGINAL SIGNED BY:
STEPHEN CHAO
~~BRAC Environmental Coordinator~~
Moffett Federal Airfield
By direction of
the Commanding Officer

Distribution:
Moffett Federal Airfield RAB Members
Karen Huggins, ARC Ecology/ARMS Control Research Center
Eric Ortega, Onizuka Air Station
Maurice Bundy, Potential RAB Member

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Blind copy to:
10A, 642, 6421, 6422, 6423, 6426, 09CMN, 60B
Tetra Tech EMI (Attn: Tim Mower)
Montgomery Watson (Attn: Kim Walsh)
NFESC (Attn: Maurcen Little)
Information Repository (2 Copies)
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File: Moffett

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Moffett RAB Members:

Ann	Coombs	Alternate Member
Russ	Frazer	Alternate Member
Stewart	McGee	Alternate Member
Maurice	Ancher	Community Member
John	Beck	Community Member
Robert	Davis	Community Member
David	Glick	Community Member
John	Gurley	Community Member
Paul	Lesti	Community Member
Bob	Moss	Community Member
Edwin	Pabst	Community Member
Richard	Schuster	Community Member
Lenny	Siegel	Community Member, Pacific Studies Center
Ted	Smith	Community Member, Silicon Valley Toxics Coalition
Steve	Sprugasci	Community Member
Robert	Strena	Community Member
Mary	Vrabel	Community Member
Alex	Terrazas	Community Member, Mountain View Representative (Interim)
Jack	Walker	Community Member, Sunnyvale Representative
James	McClure	MEW Representative
Sandra	Olliges	NASA Representative
Steve	Chin	Regulatory Member
Scott	Flint	Regulatory Member
Michael	Gill	Regulatory Member
Jim	Haas	Regulatory Member
Loren	Henning	Regulatory Member
Bob	Holston	Regulatory Member
Thomas	Iwamura	Regulatory Member
Michael	Rochette	Regulatory Member
Joyce	Whiten	Regulatory Member
Peter	Strauss	Silicon Valley Toxics Coalition TAG Consultant

PROJECTS FUNDED PREVIOUS YEARS

Site 1 Landfill CAP Construction (\$1 million to \$2 million)
Site 2 Landfill Consolidation (\$500,000 to \$1 million)
Eastside Aquifer Pump 'N Treat System Construction (\$1 million to \$2 million)
Westside Aquifer Pump 'N Treat System Construction (\$1 million to \$2 million)
RIST System Maintenance (\$200,000 to \$500,000)
Westside Aquifer Monitoring and System Maintenance - 1st Year (\$250,000 to \$500,000)
Eastside Aquifer Monitoring and System Maintenance - 1st Year (\$250,000 to \$500,000)
Stationwide FS (Less than \$100,000)
Golfcourse Landfill #2 FS (Less than \$100,000)
Petroleum Sites Evaluation (Less than \$100,000)

Projects For Fiscal Year 1998

Site 1 Landfill Monitoring and Maintenance - 1st Year (\$100,000 to \$250,000)
Site 2 Monitoring and Maintenance - 1st Year (Less than \$100,000)
Westside Aquifer Monitoring and System Maintenance - 2nd Year (\$250,000 to \$500,000)
Eastside Aquifer Monitoring and System Maintenance - 2nd Year (\$250,000 to \$500,000)
Stationwide RD (Less than \$100,000)
Continued Quarterly Sampling and Monitoring (\$250,000 to \$500,000)
Sodium Dithionite Lab Study (Less than \$100,000)
Site 1 Landfill Construction Change Order (\$250,000 to \$500,000)
Westside Aquifer Pump 'N Treat System Construction Change Order(\$250,000 to \$500,000)
Eastside Aquifer Pump 'N Treat System Construction Change Order (\$250,000 to \$500,000)

Projects For Fiscal Year 1999

Site 1 Landfill Monitoring and Maintenance - 2nd Year (\$100,000 to \$250,000)
Site 2 Monitoring and Maintenance - 2nd Year (Less than \$100,000)
Westside Aquifer Monitoring and System Maintenance - 3rd Year (\$250,000 to \$500,000)
Eastside Aquifer Monitoring and System Maintenance - 3rd Year (\$250,000 to \$500,000)
Stationwide RA, Phase 1 (Less than \$100,000)
Golf Course Landfill #2 RA (\$1 million to \$2 million)
Continued Quarterly Sampling and Monitoring (\$250,000 to \$500,000)

State of California

Memorandum

To : Mr. Joseph Chou
California Environmental Protection Agency
Department of Toxic Substances Control
700 Heinz Avenue, Building F, Suite 200
Berkeley, California 94710

Date : June 6, 1997

From : Department of Fish and Game

Subject : Review of the Moffett Federal Airfield Draft Final Station-Wide Feasibility Study Report (dated November 8, 1996) (5920/60120/NTX 405 00:80)

This memorandum is in response to your resource request dated November 19, 1996, requesting review of the subject document. This Moffett Federal Airfield (MFA) Draft Final Station-Wide Feasibility Study (FS) Report attempts to identify and evaluate a range of remedial alternatives to cleanup environmental contamination at sites that have not been previously addressed. This FS report is partially based on information contained in the draft final Phase II site-wide ecological assessment (SWEA) report, which has yet to be finalized. Once the SWEA has been revised, with all the outstanding issues addressed, the Department of Fish and Game expects the FS will be revised accordingly. As a State of California natural resource trustee agency, the Department of Fish and Game (DFG) recommends that the following specific comments and concerns be addressed to ensure that State trust natural resources, including fish, wildlife species, biota, and their habitats, are protected.

Specific Comments**1. Executive Summary (page ES-2)**

Several issues that "remain unclear" in the SWEA are listed. Please specify whether these are all the outstanding issues that remain to be resolved. Pertaining to the SWEA, DFG has concerns, which are discussed below, with the following outstanding issues pertaining to the use of the high toxicity reference values (TRVs) and the use of Hazard Quotients (HQs).

The report utilizes two toxicological "benchmarks", referred to as Hazard Quotients which are used to assess potential adverse effects to ecological receptors, including State fish, wildlife, biota, and their habitats. HQ₁ and HQ₂ or the ratio of a particular exposure route dosage (or media concentration) to a reference dose (or media concentration), utilized high Toxicity Reference Values (= less sensitive receptor responses), whilst HQ₃ and HQ₄ were derived from "low" TRVs or values developed from longer term exposures or more sensitive toxic endpoints, such as reproduction.

These HQ's need to be evaluated in the context of their use in determining the ecological risks of hazardous chemical releases and the subsequent selection of a remedial action or risk management decision. The principal result of a "remedy" or "remedial action" is to "...prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger...to the

ENCLOSURE (2)

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environment¹ and "protect and restore (natural) trust resources"². This latter overarching and equally important aim of the hazardous waste cleanup or remediation becomes the minimum standard or remediation goal to be attained in the select of a remedial action. With that guidance and as the principal State trustee for fish, wildlife, biota, and their habitats, DFG can only recommend remedial actions which restore trustee resources to "baseline" or "conditions that would have been expected at the assessment area had the discharge or release of the hazardous material not occurred (underline added)³. Consequently, this guidance (Comprehensive Environmental Response, Compensation and Liability Act, CERCLA, law and regulations) clearly does not allow cleanup goals that would allow continued toxicity to natural resource populations, for example. The HQ's which are derived from the "low" TRV's must be used to establish risk or the likelihood of adverse effects from contaminants to trust natural resources. These HQ's should protect the most sensitive species, as they use lowest no observable adverse effect levels or NOEALs. If one did not employ these lower values to estimate risks and drive the remediation, it is intuitively obvious that full protection of fish, wildlife, biota, and their receptors can not be achieved. Any resultant remedial action, based upon the high TRV will, more likely than not, cause continued injuries to State trust resources. Further restoration actions are warranted by the Federal and State natural resource trustees if HQ₁ and HQ₂ criteria are employed in the remedial investigation. If the HQ_{3/4} estimates exceed one, more evaluation is need to define, characterize, and evaluate natural resource endpoints responses or injuries (*sensu* CERCLA § 107, injuries to natural resources) to allow the State and federal natural resource trustees to determine the need for further actions, for example restoration.

2. Section 1.2.4 Contamination Entering from Off Site (page 12)

Please specify on whether the Middlefield, Ellis, and Whisman (MEW) Superfund site is the sole source of VOC contamination at MFA.

3. Section 1.3.2 Site-Wide Ecological Assessment (pages 16-17)

Please elaborate further on the Phase I SWEA methodology and site characterization described in this section.

It is stated that wetland areas were identified based on criteria from the U. S. Fish and Wildlife Service (USFWS) and the U. S. Army Corps of Engineers (COE). Please specify whether all the wetland areas were identified utilizing both criteria, how the USFWS and COE criteria differ, and why the wetland areas were not identified based on DFG criteria.

4. Section 1.3.2.1 Phase II SWEA Overview (pages 17-23)

Refer to DFG comment number one above pertaining to HQs, HIs, and TRVs.

¹ CERCLA § 101 (24); 40 CFR Ch.1, Part 300, Subpart A, § 300.5

² CERCLA § 122(j)(2); quote from US EPA, 1992. The role of natural resource trustees in the Superfund process. ECO Update, OSWER Publ. 9345.0-051. p.8.

³ 43 CFR Subtitle A, §11.72 (b)(1).

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What will be done or is being done to eliminate and/or address all the listed major sources of uncertainties associated with the risk assessment for benthic, avian, and mammalian receptors.

5. Section 1.3.2.2 Summary of Ecological Risk (page 23)

What is meant by moderate in the statement "...results in a moderate possibility of adverse effects on receptors?"

6. Section 1.3.3.2 Wetland Areas (page 30)

This section seems to focus on the role of wetlands as "waste treatment systems" and "limited sinks." It is necessary to take into account that some of the wetlands at MFA are closed systems, not open systems with flushing action, which tend to accumulate the contaminants removed from the waste water, thus making them accessible to the food web (i.e., aiding in the biotransfer of contaminants to higher trophic level organisms). Wetlands can "limit the bioavailability of a number of constituents," but they do not stop all the constituents from being bioavailable.

Pertaining to the statement that "...sediment bioassays showed limited toxicity for some organisms, the potential impact to populations in these marshes is not clear." When and what is being done to make this clear.

There is existing contamination in the wetlands and the remediation of at least the identified hot spots should be taken into consideration in this section.

7. Section 1.4.2 Identification of Potential ARARs (page 34)

DFG submitted a list of potential ARARs and TBCs to Ms. Susan Mearns of Montgomery Watson on March 29, 1994 and to the Department of Toxic Substances and Control (DTSC) on September 30, 1996. DFG requests that all potential ARARs and TBCs submitted by DFG be addressed, either in the text of these sections or in Appendix A.

Please provide the rationale for determining that DFG's potential ARARs are not applicable or relevant and appropriate. Also, please also provide the rationale for considering and rejecting DFG's TBCs. Finally, please explain how those ARARs identified in Appendix A are more stringent than DFG's potential ARARs/TBCs and how they will ensure protectiveness of fish, wildlife, biota, and their habitat.

8. Section 1.4.2.2 Potential Federal and State Location-Specific ARARs (page 36)

Pertaining to the statement "The State of California has adopted the U. S. Fish and Wildlife Service definition for wetland areas and does not have more stringent laws and regulations for protection of wetland and flood plain areas than the federal laws and regulations." The DFG has adopted the USFWS wetland definition (as contained in Cowardin et al., 1979) for Department use in conjunction with application of DFG's Wetland Resources Policy. Please clarify if this is the USFWS criteria that the wetlands were identified on as stated on page 17.

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It is stated that "under the federal program, if wetland destruction or loss is necessary, then new, comparable wetlands areas may need to be established so that there is no net loss of wetlands." The DFG wetland policy stresses the need to compensate for the loss of wetland habitat on an acre-for-acre basis. For every acre of wetland lost, no less than an acre of wetland must be created from non-wetland habitat. Compensation for the loss of wetland habitat values to fish and wildlife resources requires the creation of habitat values at the compensation site which at least duplicate those habitat values which are lost to project implementation.

Mitigation for habitat values lost to the implementation of a project may be accomplished in four ways taking into consideration mitigation site location and wetland type to be created or enhanced: In-kind, on-site; In-kind, off-site; Out-of-kind, on-site; and Out-of-kind, off-site. Please refer to the enclosed document "Department of Fish and Game Recommended Wetland Definition, Mitigation Strategies, and Habitat Value Assessment Methodology" for further information.

Please elaborate on how long it will take for the "capping or excavation of contaminated soil and sediment" to be complete and describe what actions will be taken to compensate for the interim-loss of wetlands and adverse impacts to fish and wildlife during these remediation activities. Please also elaborate upon how the impacted wetlands would be "re-established" the factual basis for determining that no wetlands will be "lost". Please also explain what contingencies are planned for in the event wetlands are not re-established or are lost during the remediation.

9. Section 2.1.1.1 Chemicals of Concern (page 42)

The DFG does not agree with the elimination of metals from consideration for the purposes of identifying remediation areas. The Phase II SWEA identifies metal concentrations in the sediment that occur at levels above the background levels. These present high levels may pose potential ecological risks to the wildlife present.

10. Section 3.1.4 Removal (page 55)

Cost alone does not provide sufficient justification to warrant the removal of only the first 1 foot of soil when as stated, "pathways to human and ecological receptors are through direct contact with the top 2 feet of soil and sediment."

11. Section 3.2.4 Containment (page 65)

Please elaborate on the wetland "restoration" that would be involved and specify on how the wetlands from the Eastern Diked Marsh and the stormwater retention pond would be "relocated." Since it would depend on the capping material utilized on whether "the ecosystem may reestablish itself," DFG would not support the use of capping material that would not allow this to occur.

12. Section 4.1 Sediments (page 76)

The listed issues regarding the SWEA that still remain unclear all involve CERCLA requirements (see DFG comment number one). Also, refer to DFG comment number one in regards to the

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unacceptable use of HQ₁ for any of the remedial options proposed, the use of HQ₁ would not provide adequate protection to the natural resources and their habitats.

The statement "...destroying active and thriving wetlands and ecological habitats for uncertain benefits" (which is made several times throughout the document), concludes that remedial action will cause injuries to wetlands without providing any analysis, data, or evaluation. DFG believes that remediation of hazardous waste in wetlands is feasible, is cost effective, and can be accomplished without destroying the wetland for "uncertain benefits." Reference to "active and thriving wetlands" is difficult to evaluate in the context of exposure to hazardous wastes, and resultant toxicological impacts. With respect to regulatory guidance the SWEA has not evaluated, considered, nor analyzed data and studies to determine the "baseline" condition of State fish, wildlife, biota, and their habitats. As a consequence the State Natural Resource Trustee Agency can not concur with the conclusion that the remediation (or lack thereof) complies with the intent of CERCLA to return natural resources to conditions which prevailed (or would have prevailed) had the release of hazardous substances not occurred.

As part of the remedial action, there should be an analysis and evaluation of how Navy intends to compensate the state for the injuries to its natural resources and related services lost to the public that occur during remediation and post-remediation. While DFG's preference is for full restoration, i.e., a return to conditions that would have existed had the release(s) not occurred, DFG also recognizes that rehabilitation, replacement, and/or acquisition of equivalent resources may be viable alternatives under certain circumstances.

13. Section 5.1.3 Removal and Off-Site Disposal (pages 90-91)

It is stated that "the ecological exposure pathway is contained within the top 1 foot of sediment," yet on page 55 is stated that "pathways to human and ecological receptors are through direct contact with the top 2 feet of soil and sediment." These are contradictory statements, please clarify.

Elaborate on what is meant by "minimal verification" sampling will be necessary. And what is meant by "low" in the statement, "The remaining risks associated with residual COCs left in place (at depths greater than 1 foot) are low..."

14. Section 6.1.2 Balancing Criteria (page 102-104)

DFG disagrees with the statement that Alternative 2 (institutional controls through fencing, signs, and ecological monitoring) may meet the threshold criteria of overall protection of human health and the environment. DFG believes long-term ecological monitoring is not protective of fish, wildlife, biota, and their habitat and would fail to meet DFG's stated ARARs if subsequent monitoring determined that adverse impacts to ecological receptors have occurred or continue to occur.

Moreover, DFG believes Alternative 2 does not meet the strong statutory preference for remedies that provide long-term effectiveness and permanence or that reduce toxicity, volume or mobility of contaminants that would be met by selection of Alternatives 3-7.

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The statement is made "Alternative 7 offers the most long-term effectiveness and permanence" and in the preceding paragraph it is stated that "Alternatives 2 through 7 all provide the same level of permanence." These are contradictory statements, please clarify. What is the time frame being discussed when referencing "long term" monitoring, effectiveness, and permanence.

Pertaining to the statement, "The restoration of these areas to the baseline condition will require significant effort." Does "baseline condition" mean prior to any contaminants having been released and what is meant by "significant"?

15. Appendix A (page A-2)

First and foremost, please respond to DFG comment number seven.

In the analysis of the "Executive Order 11990 Wetlands Protection" the report implies that habitat destruction is unavoidable and damage to wetland areas including benthic communities and, presumably other natural resources by the implementation of remedial action of capping and/or excavation. DFG believes that there are engineering and ecological techniques available to mitigate/minimize impacts from those remedial treatments. Although the ARAR analysis does not further identify how the alternatives will comply with this executive order DFG believes none of the described alternatives are precluded because of this ARAR.

Table A-1 also states "overtime habitat should re-establish naturally." DFG would like to have clarification of this statement. DFG strongly believes that active re-vegetation and other mitigation measures should occur to restore the wetland to baseline conditions as soon as possible. The Department of the Navy (DON) should not solely rely upon natural restoration.

16. Appendix C (pages C-1, C-5)

This appendix presents options for the "long-term monitoring at MFA to track the progress of the ecosystem toward recovery." Is the time frame being placed on "long-term monitoring" 5 years? In a five year period there will be a total of three biological surveys conducted (one immediately following the remediation action, another one 2 years after and the final one 5 years following the remedial action). Monitoring should occur on a frequent basis (i.e., no less than every 5 years), it should commensurate with the types of vegetation and the sedimentation recovery rates, and it should be conducted for the life of the contaminant(s) left in place. Given the potential adverse impacts that may result from the proposed remediation activities, DFG believes that DON may need to monitor beyond 5 years in order to ensure that full restoration has occurred.

In which instances are the soils of concern not adjacent to the runways or near operational activities?

Please specify which bivalve larvae is being contemplated for use as a test organism for the long-term monitoring plan.

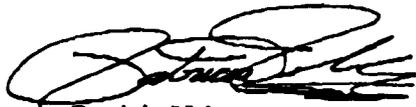
Pertaining to the establishment of a reference site to use for MFA, DFG would like to have this issue investigated further. DFG is not certain that the proposed San Francisco Bay site that is

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currently being used for Hunter's Point, may be the best site for MFA, this warrants further discussion.

Since the biological surveys will not be a detailed cataloging of the entire biological community, which specific species will the survey focus on to ensure that species that may be impacted are not overlooked. Will the sediment biological survey focus on the whole benthic population present or just select organisms? Will a census on all birds present be conducted or just on specific key species? How will the "health of the special status species" be monitored?

Thank you for the opportunity to comment upon the subject document. Staff from the DFG's Military Facilities Team should be included in any further discussions and document review pertaining to this Station-Wide Feasibility Study Report for Moffett Federal Airfield. If you have any questions regarding this memorandum, please contact Ms. Patricia Velez, Senior Biologist, Military Facilities Team, California Department of Fish and Game, 20 Lower Ragsdale Drive, Suite 100, Monterey, California, 93940 or by telephone at (408) 649-2876.



Patricia Velez
Senior Biologist
Moffett Federal Airfield, Program Manager

Enclosure

cc: California Department of Fish and Game

Mr. Don Lollock
Sacramento

Mr. Jonathan Clark
Sacramento