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Dear Ms. Wells and Ms. Kloss:

Enclosed for your consideration is the Engineering Evaluation/Cost Analysis, Revision 1, for Installation Restoration Site 29, Hangar 1 Former Naval Air Station Moffett Field, Moffett Field, California (EE/CA). This document summarizes the results of evaluation and recommendation of the removal action alternatives for Hangar 1.

The Navy requests comments, if any, by September 13, 2008. A public meeting for the EE/CA will be held on August 26, 2008 at the American Legion Post 564, 2120 Walsh Avenue, Santa Clara, CA 95050. The meeting will be from 7:00 to 9: 30 PM.

For questions about Hangar 1 and the Navy's environmental restoration program, please contact Mr. Mark Walden, Lead Remedial Project Manager, at 619-532-0931 or myself at 619-532-0963.

Sincerely,

DARREN NEWTON
BRAC Environmental Coordinator
By direction of the Director

Enclosure: 1. Engineering Evaluation/Cost Analysis, Revision 1, for Installation Restoration Site 29, Hangar 1 Former Naval Air Station Moffett Field, Moffett Field, California of July 30, 2008

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ENGINEERING EVALUATION/COST ANALYSIS
REVISION 1
July 30, 2008

DCN: ECSD-5713-0068-0001

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REVISION 1
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TABLE OF CONTENTS

PAGE

LIST OF TABLES iv

LIST OF FIGURES iv

ABBREVIATIONS AND ACRONYMS v

EXECUTIVE SUMMARY ES-1

1.0 INTRODUCTION 1-1
1.1 REGULATORY FRAMEWORK 1-1
1.2 EE/CA ORGANIZATION 1-3

2.0 SITE CHARACTERIZATION 2-1
2.1 SITE DESCRIPTION AND BACKGROUND 2-1
2.1.1 Site Description 2-1
2.1.2 Site Background 2-1
2.1.3 Hangar 1 History 2-2
2.1.4 Hangar 1 National Register Eligibility 2-2
2.2 PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS 2-4
2.2.1 Previous Investigations by SamplingMedia 2-4
2.2.2 Time-Critical Removal Action Conducted by the Navy 2-9
2.3 SOURCE, NATURE, AND EXTENT OF CONTAMINATION 2-10

3.0 IDENTIFICATION OF THE REMOVAL ACTION OBJECTIVE 3-1
3.1 STATUTORY FRAMEWORK 3-1
3.2 REMOVAL ACTION OBJECTIVE 3-1
3.3 DETERMINATION OF REMOVAL SCOPE 3-2
3.4 DETERMINATION OF REMOVAL SCHEDULE 3-3
3.5 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS 3-3
3.5.1 Identification Process for Federal ARARs 3-5
3.5.2 Identification Process for State ARARs 3-6
3.5.3 Methodology Description 3-6
3.5.4 Potential Chemical-specific ARARs 3-7
3.5.5 Location-specific ARARs 3-19
3.5.6 Potential Action-specific ARARs 3-21

4.0 IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES 4-1

TABLE OF CONTENTS
(Continued)

PAGE

4.1 ADDITIONAL REGULATORY CONSIDERATIONS 4-1
4.2 ALTERNATIVE EVALUATION CRITERIA 4-2
4.2.1 Implementability 4-2
4.2.2 Effectiveness 4-3
4.3 HANGAR 1 REMOVAL ACTION ALTERNATIVE ANALYSIS 4-4
4.4 HISTORIC MITIGATION 4-5
4.5 HANGAR 1 REMOVAL ACTION ANALYSIS 4-7
4.5.1 ALTERNATIVE 1: ENCLOSE ENTIRE HANGAR INSIDE ANOTHER STRUCTURE 4-7
4.5.2 ALTERNATIVE 2: COVER WITH RUBBERIZED MATERIAL 4-10
4.5.3 ALTERNATIVE 3: COAT WITH ASPHALT-EMULSION 4-13
4.5.4 ALTERNATIVE 4: COAT WITH ACRYLIC COATING 4-16
4.5.5 ALTERNATIVE 5: COAT WITH PLASMA-SPRAYED OXIDE 4-20
4.5.6 ALTERNATIVE 6: COVER WITH NEW VISUALLY SIMILAR SIDING 4-24
4.5.7 ALTERNATIVE 7: MEDIA BLAST CONTAMINATED SURFACES 4-26
4.5.8 ALTERNATIVE 8: NEUTRALIZE PCBs USING EMULSIFIED BIMETALLIC EXTRACTION 4-29
4.5.9 ALTERNATIVE 9: REMOVE CONTAMINANTS BY CHEMICAL STRIPPING AND COATING 4-33
4.5.10 ALTERNATIVE 10: REMOVE SIDING AND COAT EXPOSED SURFACES 4-36
4.5.11 ALTERNATIVE 11: DEMOLISH AND REMOVE HANGAR 4-40
4.5.12 ALTERNATIVE 12: COLLECT STORMWATER RUNOFF AND TREAT ON SITE 4-44
4.5.13 ALTERNATIVE 13: COLLECT STORMWATER RUNOFF AND TREAT/DISPOSE OFF SITE 4-47
4.6 SUMMARY OF IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES 4-51
4.7 INTERIOR COATING ALTERNATIVES 4-52
4.7.1 Description 4-53
4.7.2 Implementability 4-54
4.7.3 Effectiveness 4-54
4.7.4 Summary 4-56
4.8 SUMMARY OF IDENTIFICATION AND ANALYSIS OF INTERIOR COATING ALTERNATIVES 4-56

5.0 COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES 5-1

TABLE OF CONTENTS
(Continued)

PAGE

5.1 REMOVAL ACTION ALTERNATIVES 5-1
5.1.1 Implementability 5-1
5.1.2 Effectiveness 5-3
5.1.3 Cost Analysis of the Alternatives.....5-6
5.1.4 Summary 5-7

6.0 RECOMMENDED REMOVAL ACTION ALTERNATIVE.....6-1

7.0 REFERENCES 7-1

APPENDICES

Appendix A Technical Description of Robertson Protected Metal

Appendix B Laboratory Analysis of Hangar 1 Siding

Appendix C Cost Detail for Removal Action Alternatives

Appendix D Response to Comments on Engineering Evaluation/Cost Analysis dated May 5, 2006

LIST OF TABLES

Table 2-1	Key Results from Previous Investigations at Hangar 1
Table 3-1	Summary of Potential Federal Chemical-specific ARARs
Table 3-2	Summary of Potential State Chemical-specific ARARs
Table 3-3	Summary of Potential Federal Location-specific ARARs
Table 3-4	Summary of Potential State Location-specific ARARs
Table 3-5	Summary of Potential Federal Action-specific ARARs
Table 3-6	Summary of Potential State Action-specific ARARs
Table 4-1	Evaluation of Removal Action Alternatives, Hangar 1
Table 4-2	Evaluation of Interior Coating Alternatives, Hangar 1
Table 5-1	Removal Action Alternatives Cost Summary
Table 5-2	Removal Action Alternatives and Historic Mitigation Measures Cost Summary

LIST OF FIGURES

Figure 2-1	Regional Location Map
Figure 2-2	Hangar 1 Location Map
Figure 2-3	Hangar 1 Photograph
Figure 2-4	Storm Drain System Around Hangar 1
Figure 2-5	Hangar 1 Siding Composition

ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
$\mu g/100cm^2$	micrograms per 100 square centimeters
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
AM	Action Memorandum
APE	area of potential effect
ARAR	applicable or relevant and appropriate requirement
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan for the San Francisco Bay Region
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
Cal. Code Regs.	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
ch	chapter
COC	contaminant of concern
CWA	Clean Water Act
DERP	Defense Environmental Restoration Program
div	division
DoD	Department of Defense
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
EDM	Eastern Diked Marsh
EE/CA	Engineering Evaluation/Cost Analysis
FFA	Federal Facility Agreement
HAER	Historic American Engineering Record
HAP	hazardous air pollutant
Harding ESE	Harding Environmental Science and Engineering

ABBREVIATIONS AND ACRONYMS
(Continued)

HSWA	Hazardous and Solid Waste Amendments
IR	Installation Restoration
IRP	Installation Restoration Program
ISSi	Integrated Science Solutions, Inc.
LDR	land disposal restriction
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MROSD	Midpeninsula Regional Open Space District
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
Navy	U.S. Department of the Navy
NAWQC	National Ambient Water Quality Criteria
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTCRA	Non-Time-Critical Removal Action
O&M	operation and maintenance
OHP	Office of Historic Preservation
OSHA	Occupational Safety and Health Administration
PAI	Professional Analysis Incorporated
PCB	polychlorinated biphenyl
PM_{10}	particulate matter less than 10 microns in diameter
PMO	Program Management Office
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPE	personal protective equipment
ppm	parts per million
PRG	Preliminary Remediation Goal

ABBREVIATIONS AND ACRONYMS
(Continued)

RAB	Restoration Advisory Board
RAO	Removal Action Objective
RCRA	Resource Conservation and Recovery Act
STLC	Soluble Threshold Limit Concentration
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCLP	Toxicity Characteristic Leaching Procedure
TCRA	Time-Critical Removal Action
tit	title
TSCA	Toxic Substances Control Act
TtFW	Tetra Tech FW, Inc.
TTLC	Total Threshold Limit Concentration
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound
Water Board	San Francisco Bay Reigional Water Quality Control Board
WATS	West-Side Aquifers Treatment System
WQO	water quality objective

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EXECUTIVE SUMMARY

This Engineering Evaluation/Cost Analysis (EE/CA) presents the results of the evaluation and recommendation of a removal action for Hangar 1 at the former Naval Air Station Moffett Field (Moffett), California. The EE/CA was performed in accordance with current U.S. Environmental Protection Agency (USEPA) and U.S. Department of the Navy (Navy) guidance documents for a Non-Time-Critical Removal Action (NTCRA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EE/CA summarizes the site characteristics and identifies the removal action objective (RAO). The EE/CA describes and evaluates possible removal action alternatives, based on three criteria: implementability, effectiveness, and costs; provides an analysis of the alternatives, including the estimated costs; and presents the recommended removal action alternative.

SITE BACKGROUND

Hangar 1 was built in 1932 to house the airship *U.S.S. Macon*. In 1994, as part of the transfer of Moffett to National Aeronautics and Space Administration (NASA) under the Base Realignment and Closure program, the property management responsibility for Hangar 1 was transferred to NASA. Since then, NASA has used Hangar 1 for air shows, open houses, the Moffett Field Museum, and various commercial and public functions.

Hangar 1 is situated west of the Moffett runways between Sayre Avenue and Cummins Avenue. It is a large structure measuring 1,133 feet long, 308 feet wide, and 198 feet high, and is constructed with a steel-frame covered with corrugated siding. The siding is commercially known as Robertson Protected Metal and is known to contain both polychlorinated biphenyls (PCBs) and asbestos. In addition, the siding and internal structural steel frame of Hangar 1 were coated with lead-based paint that contained PCBs. The area surrounding the hangar is paved, with the exception of several small areas of sod located directly next to the hangar. The interior floor of the hangar is concrete.

NASA restricted access to certain interior areas of the hangar after lead-contaminated dust was identified as a health concern in late 2000. When subsequent testing revealed that PCBs were also present inside the hangar, the hangar was closed to all uses except maintenance activities.

In 2003, the exterior of the siding of Hangar 1 was coated with an asphalt emulsion as a Time-Critical Removal Action (TCRA) to cover and contain hazardous building materials and prevent migration of contaminants to the environment, and fencing was installed around the hangar to control access.

The Navy added Hangar 1 to the Installation Restoration Program as Site 29 in September 2004.

PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS

In 1991, NASA completed construction of a stormwater settling basin (settling basin) that is approximately 2,000 feet northwest of Hangar 1, to limit sediment transport to Installation Restoration Site 25, which includes the Eastern Diked Marsh, Stormwater Retention Pond, and the Midpeninsula Regional Open Space District property. This action also reduced contaminant migration. The settling basin receives stormwater runoff from the western portion of Moffett. In 1997, during routine cleanout and sampling activities conducted by NASA, a relatively uncommon PCB, Aroclor-1268, was discovered in sediment in the settling basin. Subsequently, NASA conducted a series of investigations in the surrounding areas to determine its source.

Results of these investigations indicated that the PCBs, specifically Aroclor-1260 and Aroclor-1268, were present in paint and interior layers of the Hangar 1 siding at concentrations of up to 5,500 milligrams per kilogram (mg/kg) and 188,000 mg/kg, respectively. In addition, analytical results from the lead-based paint on the structural steel inside the hangar indicated PCB concentrations of Aroclor-1260 and Aroclor-1268 up to 120 mg/kg and 94 mg/kg, respectively. Total PCBs were reportedly present in paint on the interior structural steel at concentrations ranging from 65 to 214 mg/kg. Based on these sampling results, Hangar 1 was confirmed to be a source of the PCB contamination found in the settling basin. PCBs on interior and exterior building materials of Hangar 1 are the contaminants of concern (COCs) and the regulatory driver for this removal action, but the presence of asbestos and lead in the hangar building materials raises health and safety-related issues and other hazardous materials management issues that must also be addressed in planning and implementing any response action at the Hangar 1 site.

The Navy and NASA conducted separate TCRAs at the Hangar 1 site following discovery of the contaminants in and around the hangar. In 2002, the concrete floor of Hangar 1 was cleaned and all hangar occupants were removed from the hangar. In 2003, NASA implemented a TCRA to remove sediments contaminated with PCBs from the stormwater collection trench around the perimeter of Hangar 1, and to remove potentially contaminated sediments present on paved surfaces immediately surrounding the structure. The Navy's TCRA was completed in October 2003 and included pressure washing the siding and then coating it with asphalt emulsion. The paved areas around the hangar were also cleaned by pressure washing to remove PCBs from the surface areas. Subsequently, in February 2005, as part of an ongoing effort to reduce contamination, the Navy cleaned out the Hangar 1 rain gutters by collecting, sampling, and disposing of the contaminated sediments in the gutters.

Although the interim actions discussed above have reduced the release of COCs from the exterior of Hangar 1, these are short-term control actions that do not adequately address the source of PCB contamination. The asphalt-emulsion coating has a limited warranty of approximately 3 to 5 years. The Navy intends to mitigate the threat of further discharge of PCBs from Hangar 1 and to complete a removal action while the interim coating is still effectively in place.

REMOVAL ACTION OBJECTIVE

In accordance with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, the removal action is being conducted to control the migration of PCBs from Hangar 1 to the environment through source elimination or containment, thereby eliminating risks to human health and the environment.

The proposed RAO is to control the release of PCBs at Hangar 1, thereby reducing the potential risks to human health and the environment while minimizing future operation and maintenance activities at the site.

The RAO will provide the criterion for evaluation of the removal action alternatives based upon implementability, effectiveness, and cost, and for the selection of a CERCLA NTCRA for this site. This NTCRA addresses the PCB contamination from the surface of the interior concrete floor slab, the building interior, and the exterior face of the hangar siding. It should also be noted that this removal action is not addressing 1) potential releases to groundwater, because data previously collected indicate there have been no impacts on groundwater; 2) adjacent structures and soils, because they are outside the scope of this NTCRA; 3) contamination in or below the concrete foundation, because the foundation will be left in place and there are no indications that it is contaminated; or 4) institutional controls, because they are outside the scope of this NTCRA. Once the NTCRA is complete, sampling will be conducted to determine if the area surrounding the hangar has been impacted as a result of the removal action. The sampling approach will be detailed in the NTCRA work plan.

Although PCBs are the regulatory driver for this removal action, asbestos and lead are also present in interior and exterior Hangar 1 building materials. Building materials containing asbestos and lead that are in good condition and not subject to disturbance may generally be left in place per USEPA and Department of Defense policy. However, in the course of addressing the PCB contamination at Hangar 1, it will be necessary to take into account health and safety issues associated with handling and working in the vicinity of materials containing asbestos and lead and to comply with requirements for proper management, abatement, or disposal of asbestos and lead as hazardous materials.

REMOVAL ACTION ALTERNATIVES

A broad range of removal action alternatives is described and evaluated in Section 4.0 of this EE/CA based on two of the three EE/CA criteria, implementability and effectiveness, taking into consideration site-specific conditions. Removal action alternatives that either coat or encapsulate the hangar, or include full siding removal will also address the interior components of the hangar consisting of the interior siding (corrugated Robertson Protected Metal siding), redwood ceiling, structural steel, and catwalks as part of the RAO. At the conclusion of Section 4.0, the alternatives that are determined feasible for success in achieving the RAO are retained for a

comparative analysis in Section 5.0, which addresses the third EE/CA criteria, cost. The following removal action alternatives were evaluated as part of this EE/CA:

- Alternative 1: Enclose entire hangar inside another structure
- Alternative 2: Cover with rubberized material
- Alternative 3: Coat with asphalt-emulsion
- Alternative 4: Coat with acrylic coating
- Alternative 5: Coat with plasma-sprayed oxide
- Alternative 6: Cover with new visually similar siding
- Alternative 7: Media blast contaminated surfaces
- Alternative 8: Neutralize PCBs using emulsified bimetallic extraction
- Alternative 9: Remove contaminants by chemical stripping and coating
- Alternative 10: Remove siding and coat exposed surfaces
- Alternative 11: Demolish and remove hangar
- Alternative 12: Collect stormwater runoff and treat on site
- Alternative 13: Collect stormwater runoff and treat/dispose off site

The first stage of the review consisted of subjecting each of the above alternatives to a detailed evaluation in terms of their implementability and effectiveness in addressing the RAO. The implementability of an alternative evaluates the technical and administrative feasibility and the availability of various services and materials required during its implementation. The implementability also includes community acceptance, which is considered by making this EE/CA available for public review and by taking community concerns into account. There will be a comment period of at least 30 days at the time the EE/CA becomes available to the public. The effectiveness of an alternative refers to its ability to meet the RAO within the scope of the removal action. The effectiveness evaluates the ability of the alternatives to protect public health and the environment; to comply with the applicable or relevant and appropriate requirements (ARARs); to address issues related to the National Historic Preservation Act (NHPA); to be effective in the short and long term; and to reduce the toxicity, mobility, or volume of the contaminants through treatment.

Two of the above criteria led to the elimination of an alternative at this stage of the evaluation: 1) implementability (technical feasibility, administrative feasibility, availability of services and materials, community acceptance), and 2) effectiveness (overall protection of human health and the environment, compliance with ARARs, short-term effectiveness, long-term effectiveness, reduction of toxicity, mobility, or volume through treatment). An alternative that was not technically feasible or not proven was determined not to be a viable alternative and eliminated from further consideration. Five alternatives fell into this category and were eliminated:

Alternative 1, enclose entire hangar inside another structure; Alternative 3, coat with asphalt-emulsion; Alternative 5, coat with plasma-sprayed oxide; Alternative 7, media blast contaminated surfaces; and Alternative 8, neutralize PCBs using emulsified bimetallic extraction.

An alternative could not be further considered if it would not be in compliance with ARARs. One alternative fell into this category: Alternative 9, remove contaminants by chemical stripping and coating.

An alternative that would not be protective of human health and the environment could not be further considered. Therefore, any alternative that would not meet this requirement was eliminated from further analysis. Three alternatives fell into this category: Alternative 3, coat with asphalt-emulsion (already eliminated for technical feasibility), Alternative 12, collect stormwater runoff and treat on site, and Alternative 13, collect stormwater runoff and treat/dispose off site.

Elimination of eight alternatives at the first stage of the review left five alternatives to compare in detail to determine the appropriate removal action. These were Alternatives 2, 4, and 6, which involve covering or coating the exterior of the existing siding; Alternative 10, which involves removing the Robertson Protected Metal siding and encapsulating the remaining structural steel paint; and Alternative 11, which involves demolition and the permanent removal of contaminants.

COMPARATIVE ANALYSIS

The remaining five alternatives (Alternatives 2, 4, 6, 10, and 11) were subjected to a comparative cost analysis, which included removal and operation and maintenance measures factored into the costs. The focus of the comparative analysis was to assess the implementability, effectiveness, and cost of the alternatives relative to one another. Such an analysis complies with the requirements of the Navy Installation Restoration Manual (Navy, 2000) and utilizes the *Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA* (USEPA, 1993). Following completion of the analysis required by CERCLA, an additional comparison of costs associated with recommended NHPA mitigation measures was performed.

The five alternatives were found to be technically feasible and administratively feasible; comply with ARARs; use standard construction services, equipment, and materials; provide adequate protection of public health and the environment; provide adequate short-term effectiveness; but do not reduce the toxicity, mobility, or volume of contaminants through treatment.

Alternatives 2, 4, and 6 effectively contain the contamination in place over the long term for as long as the integrity of the exterior cover material and the interior coating is adequately maintained. Alternative 10 would be effective over the long term if the exposed coating on the structural steel is adequately maintained. Alternative 11 is the only alternative that would completely remove all contamination and be effective over the long term without future maintenance.

RECOMMENDED REMOVAL ACTION ALTERNATIVE

Based on the detailed analyses presented in this EE/CA, the Navy's recommended alternative for the planned NTCRA is Alternative 10, remove siding and coat exposed surfaces. Alternative 10 consists of the complete removal of the siding; demolition and disposal of all interior structures, including interior buildings, catwalks, and redwood ceiling; and the removal of the resulting contaminated and non-contaminated debris to appropriate off-site disposal or recycling facilities. The exposed structural steel would be coated as part of the removal action for Alternative 10.

This alternative best meets the RAO and the NCP criteria because it:

- Is technically feasible based on commonly used construction techniques and demonstrated proven approaches
- Is administratively feasible; uses federal funding for support and follow on maintenance of the steel coating
- Uses widely available conventional construction equipment, services, and skilled workers
- Provides a high degree of long-term protection of the public and the environment because the PCBs in Hangar 1 siding and associated interior components would be removed, and the remaining PCBs in structural steel paint would be contained
- Complies with ARARs
- Provides adequate short-term effectiveness during implementation
- Imposes minimal restrictions on future use of the site and provides a frame that could be used for future development

The estimated cost for Alternative 10, including Level 1 Historic American Engineering Record documentation, oral histories of individuals who worked in the hangar during different eras, virtual Hangar 1 interactive compact disk, inventory-catalogue of Hangar 1 collections contained in the Moffett Field Museum, preservation of Hangar 1 man-cranes, and coating the steel frame with a protective coating similar in color to the hangar's former siding is $26,160,000.

1.0 INTRODUCTION

This Engineering Evaluation/Cost Analysis (EE/CA) addresses the containment and/or removal of sources of polychlorinated biphenyls (PCBs) from Hangar 1 at the former Naval Air Station (NAS) Moffett Field (Moffett), California. The EE/CA evaluates a broad range of removal action alternatives and identifies the proposed response for conducting a Non-Time-Critical Removal Action (NTCRA) at this site. This EE/CA is prepared on behalf of the Navy's Base Realignment and Closure (BRAC) Program Management Office (PMO) West. This work is conducted under Contract Task Order No. 0068, issued under Remedial Action Contract No. N68711-98-D-5713. The regulatory framework for conducting the NTCRA is described below and followed with a brief outline of the removal action selection process presented in the remainder of this EE/CA.

1.1 REGULATORY FRAMEWORK

The Navy will conduct this NTCRA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The NCP defines removal actions to include:

> "…the cleanup or removal of released hazardous substances from the environment; such actions as may necessarily be taken in the event of the threat of release of hazardous substance into the environment; such action as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances; the disposal of removal material; or the taking of such other actions as may be necessary to prevent, minimize or mitigate damage to the public health or welfare of the United States or to the environment, which may otherwise result from a release or threat of release."

The U.S. Environmental Protection Agency (USEPA) has classified removal actions into three types based on the circumstance surrounding the release or threat of release: emergency, time critical, and non-time critical. The removal action for Hangar 1 at Moffett has been determined to be an NTCRA, in accordance with 40 Code of Federal Regulations (C.F.R), Part 00.415(b)(4)(i), which states:

> "(4) Whenever a planning period of at least six months exists before on-site activities must be initiated, and the lead agency determines, based on a site evaluation, that a removal action is appropriate: (i) the lead agency shall conduct an engineering evaluation/cost analysis (EE/CA) or its equivalent. The EE/CA is an analysis of removal alternatives for a site."

The NTCRA for Hangar 1 is intended to control the release of PCBs contained within the structure or remove these contaminants. PCBs, specifically Aroclor-1260 and Aroclor-1268, are the contaminants of concern (COCs) for this NTCRA. PCBs are probable human carcinogens and ecological toxins. PCBs that are specifically associated with Hangar 1 were discovered in

water and sediment samples taken from the stormwater collection system, which originates in the area surrounding Hangar 1, as well as from the stormwater settling basin at Site 25. These investigations led to the conclusion that the siding material on Hangar 1 was a source of the PCB contamination. Because of the immediate threat posed by the COCs, the Navy performed a Time-Critical Removal Action (TCRA) at Hangar 1 in October 2003 (Tetra Tech FW, Inc. [TtFW], 2004). The Navy's TCRA included covering the exterior siding with an asphalt-emulsion coating that has a warranty of approximately 3 to 5 years. The Navy's TCRA was considered a short-term removal action until a long-term environmental response is provided. Therefore, the proposed NTCRA addresses the source of the Hangar 1 contaminants and provides an effective long-term removal action.

This EE/CA provides the basis for the selection of a CERCLA NTCRA for Hangar 1. The Navy is the lead agency for the Hangar 1 removal action and, as the lead agency, the Navy will select an alternative at the conclusion of the public participation activities. The USEPA and the San Francisco Bay Regional Water Quality Control Board (Water Board) have provided technical advice and oversight during the investigation and preparation of this EE/CA.

It should also be noted that this removal action is not addressing 1) potential releases to groundwater, because the data previously collected indicate there have been no impacts on groundwater; 2) adjacent structures and soils, because they are outside the scope of this NTCRA; 3) contamination in or below the concrete foundation, because the foundation will be left in place and there are no indications that it is contaminated; or 4) institutional controls, because they are outside the scope of this NTCRA.

On May 5, 2006, a previous version of the EE/CA was issued by the Navy. The Navy has decided to issue a revised EE/CA for Hangar 1 (Site 29) at Moffett and seek additional public comment. This decision to revise the EE/CA is based on concerns expressed by the public in review of the EE/CA published on May 5, 2006, and new information received by the Navy. The public is encouraged to review and comment on the proposed removal activities described in this EE/CA. There will be a comment period of at least 30 days at the time this EE/CA becomes available to the public. An Action Memorandum (AM) on the removal alternative that takes into account regulatory and public comments will be prepared based on this EE/CA. The AM will provide a written decision to select an appropriate removal action. The AM substantiates the need for a removal action, identifies the proposed action, and explains the rationale for the removal action selection. To gain a more thorough understanding of the activities associated with this removal action, the public is encouraged to review pertinent documentation at the information repository for this activity available at the following location:

Mountain View Public Library
585 Franklin Street
Mountain View, CA 94041
650-903-6337

The Navy has conducted community relation activities, including regular Restoration Advisory Board (RAB) meetings, site tours, open house information sessions, and distribution of information update mailers to the community. The Navy contacts for this project are Mr. Darren Newton, BRAC PMO West, BRAC Environmental Coordinator, 619-532-0963, and Ms. Melanie Ault, BRAC PMO Coordinator, 619-532-0768.

The complete Administrative Record for this site is located at 1220 Pacific Highway, San Diego, California, and is maintained by Ms. Diane Silva, 619-532-3676, Naval Facilities Engineering Command, Southwest.

1.2 EE/CA ORGANIZATION

This EE/CA utilizes the *Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA* (USEPA, 1993) and the pertinent Navy guidelines provided under the Installation Restoration Program (IRP). The remainder of this EE/CA is organized as follows:

- Section 2.0 provides the historical background on Hangar 1, the results of previous investigations and removal actions, and the nature and extent of contamination at the site.
- Section 3.0 develops the removal action objective (RAO) for this NTCRA and describes the removal scope, schedule, and the applicable or relevant and appropriate requirements (ARARs).
- Section 4.0 identifies a broad range of removal action alternatives and includes a detailed evaluation of these alternatives in terms of their implementability and effectiveness.
- Section 5.0 provides a comparative analysis of the removal action alternatives that were retained for further evaluation, based on implementability, effectiveness, and cost.
- Section 6.0 identifies the recommended removal action alternative for Hangar 1 following the EE/CA process described in Sections 3.0, 4.0, and 5.0.
- Section 7.0 is a list of references cited in this EE/CA.

This EE/CA also includes four appendices, which provide supporting documents for Hangar 1 material specifications, the laboratory test results for Hangar 1 siding material, the cost detail for the alternatives, and the response to comments on the EE/CA dated May 5, 2006.

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2.0 SITE CHARACTERIZATION

This section provides a general description of Hangar 1 and its historical background, previous investigations and removal actions, and a summary of the nature and extent of contamination.

2.1 SITE DESCRIPTION AND BACKGROUND

A general site description of former NAS Moffett Field and Hangar 1, as well as background information, is provided below.

2.1.1 Site Description

Moffett encompasses approximately 2,200 acres in Santa Clara County, California. It is located approximately 35 miles south of San Francisco, 10 miles north of San Jose, and approximately 1 mile south of San Francisco Bay (Figure 2-1). Located immediately adjacent to Moffett, but physically separated by dikes, are U.S. Fish and Wildlife Service ponds, the Stormwater Retention Pond, and wetlands to the north; a Lockheed Martin facility to the east; U.S. Highway 101 (Bayshore Freeway) to the south; and Stevens Creek to the west and the Midpeninsula Regional Open Space District (MROSD) to the northwest.

Hangar 1 is situated west of the Moffett runways between Sayre Avenue and Cummins Avenue (Figure 2-2). It is a large structure measuring 1,133 feet long, 308 feet wide, 198 feet high, and is constructed with a steel frame and corrugated siding. The siding consists of Robertson Protected Metal, known to contain both PCBs and asbestos. In addition, Hangar 1 was coated with lead-based paint. In 2003, the Hangar 1 exterior was coated with an asphalt-emulsion. The area surrounding the hangar is paved, with the exception of several small areas of sod located adjacent to the hangar. The hangar frame is structural steel, which was coated with a lead-based paint that contains PCBs. The interior floor is concrete. An aerial photograph of Hangar 1 is included as Figure 2-3.

2.1.2 Site Background

Moffett was commissioned as NAS Sunnyvale in 1933 to support the West Coast dirigibles for the Lighter-than-Air program. In 1935, NAS Sunnyvale was transferred to the U.S. Army Air Corps. In 1939, the National Advisory Committee for Aeronautics, the predecessor to the National Aeronautics and Space Administration (NASA), established Ames Aeronautical Laboratory on land northwest of Moffett, which later became NASA Ames Research Center. NAS Sunnyvale was returned to Navy control in 1942 and was renamed NAS Moffett Field. Since the 1950s, the primary mission of NAS Moffett Field was to support anti-submarine warfare training and patrol squadrons.

Environmental restoration activities began at Moffett in 1983 as part of the Navy's IRP. Under the IRP, the Navy is responsible for assessing, investigating, and responding to releases of hazardous substances that present a potential risk to human health and the environment. Under CERCLA, as stated in 40 Code of Federal Regulations (C.F.R.), Part 300.175(b)(4), "[Department of Defense] DoD has responsibility to take all action necessary with respect to releases where either the release is on, or the sole source of the release is from, any facility or vessel under the jurisdiction, custody, or control of DoD." All of the sites identified through the IRP were investigated, and many have been closed.

In 1987, the USEPA placed Moffett on the National Priorities List (NPL). Environmental investigation and restoration activities at Moffett are coordinated under a Federal Facility Agreement (FFA) signed by the Navy, USEPA, and the California Environmental Protection Agency, including the Water Board, on September 14, 1990.

In 1992, NAS Moffett was designated for closure as an active military base under the DoD BRAC Program. NASA, which already operated the Ames Research Center on the northern side of the base, assumed control of the facility in July 1994 and currently is the federal property manager for Moffett. Current federal and state agencies located at Moffett include the U.S. Department of the Army, U.S. Department of the Air Force, and California Air National Guard. These resident agencies use the federal airport and provide facilities for military personnel and their families, including family housing, a commissary, a military clinic, a service station, tennis courts, and an 18-hole golf course.

2.1.3 Hangar 1 History

Hangar 1 was built in 1932 to house the airship *U.S.S. Macon*. After Hangar 1 was no longer used to house Navy Lighter-than-Air program aircraft, both the Army and the Navy used the hangar for aircraft maintenance, training facilities, and office space. In 1994, as part of the transfer of Moffett to NASA under the BRAC program, the property management responsibility for Hangar 1 was transferred to NASA. NASA used Hangar 1 for air shows, open houses, the Moffett Field Museum, and various commercial and public functions until building occupants were relocated due to concerns about potential exposure to PCB and lead contamination. Hangar 1 has been closed to all uses except access by essential maintenance, abatement, or environmental cleanup personnel since May 2003.

2.1.4 Hangar 1 National Register Eligibility

Hangar 1 is individually eligible for the National Register of Historic Places (NRHP) and is a contributing element of the United States NAS Sunnyvale California - Historic District (Moffett Field) (hereinafter referred to as the Historic District), which is listed on the NRHP. The NRHP lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. To be eligible for listing in the NRHP, a

property must possess both “significance” and “integrity” of location, design, setting, materials, workmanship, feeling, and association. When evaluated within its historic context, a property’s significance is judged by the application of the four National Register Criteria for Evaluation. In accordance with 36 C.F.R., Part 60.4, a property may be determined eligible for listing in the NRHP if it meets at least one of four main criteria:

- **Criterion A:** Properties that are associated with events that have made a significant contribution to the broad patterns of our history.
- **Criterion B:** Properties that are associated with the lives of persons significant in history.
- **Criterion C:** Properties that embody the distinct characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- **Criterion D:** Properties that have yielded, or may be likely to yield, information important in prehistory or history.

The Historic District is eligible at the national level of significance under Criteria A and C and has two periods of significance: 1930–1935 and 1942–1946. The noncontiguous Historic District is eligible under Criterion A for its associations with the Lighter-than-Air program and the contributing element of the Historic District, which is based on the contributions that program has made to history under the themes of coastal defense and naval technology. The Historic District is also eligible under Criterion C for its distinctive master plan and architecture, including a landscaped “commons,” massive airship hangars (Hangar 1 and two smaller hangars), and “fine regional examples of Spanish Colonial Revival design” (Navy, 1994).

The NRHP nomination for the Historic District indicates that Hangar 1 is eligible for the NRHP under Criteria A and C for its association with a significant episode in the development of naval aviation prior to World War II, and as an example of early twentieth-century military planning, engineering, and construction in the Streamline Moderne architectural style (Navy, 1994). As part of the Art Deco movement, Streamline Moderne “emphasized horizontal aspects of design and is characterized by curved end walls, rounded corners, and flush windows” (Navy, 1994). Reuse guidelines for Hangar 1 that were developed in 2001, before knowledge of the PCB contamination, identified these Streamline Moderne elements at Hangar 1 and explained that the hangar’s materials and construction method were innovative for the time (Page & Turnbull, Inc., 2001). Thus, the guidelines identified both the Streamline Moderne form and the corrugated metal panels on the exterior as two of several character-defining exterior features (Page & Turnbull, Inc., 2001).

NAS Sunnyvale (now the former NAS Moffett Field) was commissioned as one of two NASs in the early 1930s to port the two U.S. Naval Airships (dirigibles). The NASs were developed through the efforts of Admiral William A. Moffett to provide security for the lengthy expanse of the U.S. coastlines via air reconnaissance. Hangar 1 at NAS Sunnyvale was built in 1932 to house the airship *U.S.S. Macon*. The construction of Hangar 1 preceded the construction of the remainder of the base, which began in 1933. The hangar was the first building constructed at the station and was central to the overall function and purpose of NAS Sunnyvale. Hangar 1 is located perpendicular to the main axis of the station plan and provided the visual focus for the 1933 NAS Sunnyvale master plan (Navy, 1994).

Hangar 1 is a structure that was designed to hold fully inflated airships. Along with its counterpart in Akron, Ohio, Hangar 1 remains one of the largest structures in the United States without internal support. The floor area is just over 8 acres. There are enormous curved "clam shell" doors on the ends of the building that pivot back when opened (Navy, 1994). These clam shell doors and the exterior metal skin are distinctive characteristics of a 1930s hangar type. The method of construction is also significant for its contribution to engineering because it involved an innovative building process, which needed to be developed specifically for the hangar because of its massive size and distinctive design (Page & Turnbull, Inc., 2001).

2.2 PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS

In 1991, NASA completed construction of a stormwater settling basin (settling basin) that is approximately 2000 feet northwest of Hangar 1, to limit sediment transport to Installation Restoration Site 25, which includes the Eastern Diked Marsh (EDM), Stormwater Retention Pond, and the MROSD property. This action also reduced contaminant migration. The stormwater settling basin is located at the upstream end of a series of catch basins that control stormwater runoff from the western side of Moffett. The location of the settling basin is shown on Figure 2-4. Several sampling and follow-up investigations have shown PCB contamination in sediments in the stormwater system leading to the settling basin. In general, PCBs were formerly used in equipment as insulating materials, and to a lesser extent, in building materials as fire retardants. PCBs are probable human carcinogens and ecological toxins that bioaccumulate in the environment. Because of the persistence and toxicity of PCBs in the environment, its manufacture was discontinued in the United States in 1977.

Because of the particular mixture of PCBs detected in sediments, Hangar 1 was suspected as a possible PCB source and was added to the Navy's IRP as Site 29. Actions were undertaken to control the PCB contamination found in the storm drain system.

2.2.1 Previous Investigations by SamplingMedia

Investigations into PCB locations, concentrations, and sources were conducted on a variety of media including the settling basin of the EDM, stormwater, building materials, storm sewer sediment, and air. The following paragraphs provide detail of these sampling results.

Settling Basin – Sediment

In 1997, during routine cleanout and sampling activities conducted by NASA, a relatively uncommon PCB, Aroclor-1268, was reported in sediment samples from the settling basin (Professional Analysis Incorporated [PAI], 2002). Analytical results showed concentrations of Aroclor-1268 in the sediment samples ranging from 0.05 milligram per kilogram (mg/kg) to 0.8 mg/kg (PAI, 2002) (Table 2-1). The USEPA Region 9 Industrial Soil Preliminary Remediation Goal (PRG) for an unspecified mixture of PCBs with high risk is 0.74 mg/kg. PCBs with high risk normally refer to Aroclor-1254. Aroclor-1268 is considered comparable to Aroclor-1254 due to a similar molecular structure. Accordingly, the Aroclor-1268 concentration of 0.8 mg/kg exceeded the associated Industrial Soil PRG level of 0.74 mg/kg. There was no obvious source to explain the presence of this PCB in the storm drain system.

Stormwater

In April 1999, Aroclor-1268 was reported in a stormwater sample collected from Manhole D-1 (1.1 micrograms per liter [μg/L]), which is located at the northwest corner of Bushnell Road and McCord Avenue (see Figure 2-4). In an attempt to identify the source of the Aroclor-1268, sediment samples were collected from 15 catch basins upstream of Manhole D-1 in June 1999. However, the analytical results indicated no detectable concentrations for any isomers of PCBs in sediment samples upstream of Manhole D-1 (NASA, 2003a,b).

As a result of the sediment sampling conducted in the summer of 1999, five additional sampling locations upstream of Manhole D-1 were added to the stormwater sampling program in October 1999, including Manholes 107 and 109 (see Figure 2-4). Aroclor-1268 was not detected in influent and effluent stormwater samples collected during the 1999 to 2000 storm year, but was reported in 2002 in samples from both at concentrations of 1.2 and 0.63 μg/L, respectively (NASA, 2003a,b) (see Table 2-1).

In March 2003, samples of stormwater runoff were collected directly from both the siding along the east side of Hangar 1 and from a rainwater downspout (DMJMH+N, 2003). Both samples were split, and Aroclor-1268 was reported in the runoff from the siding at 3.09 and 6.7 μg/L, and in the sample from the downspout below the laboratory detection limit and at 0.37 μg/L (see Table 2-1).

Building Structural Materials

Sampling to confirm the presence of PCBs in the exterior construction materials at Hangar 1 was undertaken in October 2002. Samples collected from the various surface materials of the structure, including the flat roof, roof sealant, window putty, and the coating on the exterior siding, were analyzed (Benchmark Environmental Engineering, 2003). Analytical results are presented in Table 2-1 and summarized below.

Siding

As shown in Table 2-1, the most significant levels of Aroclor-1260 and Aroclor-1268 were reported in samples collected in October 2002 from paint and interior layers of the siding. Concentrations of Aroclor-1260 and Aroclor-1268 were reported up to 5,500 and 188,000 mg/kg, respectively. Concentrations in samples from upper black walls ranged from 2 to 12 mg/kg and 5 to 119 mg/kg for Aroclor-1260 and 1268, respectively.

During the October 2002 sampling of the exterior Hangar 1 building materials (Benchmark Environmental Engineering, 2003), two paint chip samples were collected and analyzed for total lead. Two samples collected from the exterior doors were reported to have 101,160 mg/kg and 198,570 mg/kg of total lead.

Various Hangar 1 building materials, including siding, roofing, and other surface materials, were analyzed for asbestos in October 2002. Nearly half of these building material samples contained between 0.7 and 18 percent asbestos by weight (Benchmark Environmental Engineering, 2003). A sample of the hangar siding was analyzed in 2005. The analytical data are discussed in Section 2.3 and included in Appendix B.

The Hangar 1 siding materials are considered porous surfaces under the Toxic Substances Control Act (TSCA) because they consist of an inner core impregnated with PCBs as well as an outer metal surface coating with PCB-containing paint. Because of this determination, only certain decontamination methods may be used to remove the PCBs from siding materials.

Window Putty

Aroclor-1260 and Aroclor-1268 were also reported to be present in the window putty (from 1.7 to 77 mg/kg and from 4 to 409 mg/kg, respectively) (Benchmark Environmental Engineering, 2003). Because one of the window putty samples had abnormally high PCB concentrations, and because the ratio of Aroclor-1260 to Aroclor-1268 in the elevated window putty sample was close to the ratio of the PCBs reported in the siding, it was assumed that the elevated window putty concentration was due to inclusion of some siding material in the sample (NASA, 2003b). To confirm this possibility, five additional putty samples were collected. Aroclor-1260 was not detected in any of the five additional putty samples tested, and Aroclor-1268 was reported between 0.4 and 2.1 mg/kg (see Table 2-1).

Roofing Material and Roof Sealant

Samples of the flat roof and roof sealant located under the center walkway of the roof were collected and analyzed for PCBs in October 2002. The roof is constructed with a multi-ply asphalt built-up membrane coated with a water-based emulsion. Six samples were collected from the roof with each sample containing five layers. Each layer was separated and analyzed. The results indicated that Aroclor-1260 and Aroclor-1268 were present up to a maximum of 0.9 and 0.5 mg/kg, respectively. One sample of the roof sealant was collected. Aroclor-1260 was reported at 5.7 mg/kg, and Aroclor-1268 was reported at 4.4 mg/kg (see Table 2-1).

Structural Steel

Samples of the paint on the structural framework inside the hangar were collected in 2005 (Integrated Science Solutions, Inc. [ISSi], 2005) (see Table 2-1). Prior to collecting the sample, the area was cleaned. Then the paint was ground off using a sander to remove the required amount of paint for the sample. Analytical results indicated that the paint was lead-based and contained Aroclor-1260 and Aroclor-1268 at concentrations from 33 to 120 mg/kg and 32 to 94 mg/kg, respectively. Total PCBs were reportedly present at concentrations from 65 to 214 mg/kg. In addition, analytical results taken from the structural steel paint indicated lead levels as high as 200,000 mg/kg. In March 2003 dust samples were obtained from the interior of the hangar. The analytical results of the samples indicated PCB concentrations from below the detection limit to 320 mg/kg.

Because it was coated with PCB-containing paint, the structural steel surface is considered a porous surface under TSCA. Because of this determination, only certain decontamination methods may be used to remove the PCBs from the structural steel.

Concrete Floor Slab

Wipe samples of the concrete floor were collected in 2002 (83 samples) and 2003 (4 samples). Wipe sample results indicated PCB concentrations ranged from below the detection limit to 21.2 micrograms per 100 square centimeters (µg/100cm^2) and lead concentrations were below the detection limit. The PCB concentrations are above the USEPA cleanup level of 10 µg/100cm^2 (see Table 2-1).

Core samples were obtained from the floor in 2003. A core sample was analyzed for PCBs; Aroclor-1268 was reported at 0.0949 µg/kg and Aroclor-1260 was below the detection limit (see Table 2-1). Various depths of this sample were analyzed to determine if PCBs were penetrating the floor surface to any degree. The analysis indicated that PCBs were not penetrating the floor surface to any degree (DMJMH+N, 2003). The core samples were also analyzed for lead, and the results indicated that the concentration of lead (from any source) within the interior of the concrete floor slab ranges from 4.4 to 5.0 mg/kg (see Table 2-1). A Synthetic Precipitation

Leaching Procedure performed on this concrete indicated lead was below the detection limit (DMJMH+N, 2003).

Results indicate that the hangar-related PCB and lead contamination is limited to the surface of the floor slab (DMJMH+N, 2003) (see Table 2-1). Because PCBs present in dust do not migrate through concrete, as would liquid PCBs, subsurface contamination is not likely. There are no indications from the previous investigations, available historical records, or visible staining that liquid PCB spills occurred.

Stormwater Collection Trench Sediment

In March and July 2003, sediment that had been collected in the stormwater collection trench around the perimeter of Hangar 1 was tested for the presence of PCBs. Aroclor-1268 was reported in the March 2003 samples at concentrations from 65.5 to 72.4 mg/kg and in samples collected in July 2003 at concentrations from 2.2 to 540 mg/kg (see Table 2-1). Lead and zinc analyses were also conducted on perimeter collection trench sediment samples. Additionally, in February 2005 the Navy sampled sediment from the rain gutters on the hangar. The sample had Aroclor-1268 at 250 mg/kg, lead at 4,520 mg/kg, zinc at 3,380 mg/kg, and asbestos (as chrysotile) at 2 percent. Results are summarized in Table 2-1.

Air

Following the discovery of elevated levels of PCBs in the interior paint of Hangar 1, two separate investigations of the ambient air inside and outside the hangar were conducted. In October 2002, NASA sampled for PCBs and lead in air inside and outside the hangar. In November 2002, Harding Environmental Science and Engineering (ESE) sampled and analyzed for PCBs and lead in air inside and outside the hangar.

The NASA PCB sampling results indicated that Aroclor-1268 was not detected in ambient air outside of the hangar (NASA, 2003b). However, Aroclor-1268 was reported in the samples from inside the hangar at concentrations from 0.0888 to 0.1115 micrograms per cubic meter ($\mu g/m^3$). For the direct-contact exposure pathway of ambient air, the USEPA Region 9 PRG for PCBs is 0.0034 $\mu g/m^3$.

The Harding ESE PCB sampling results indicated that Aroclor-1268 was not detected in ambient air outside of the hangar (Harding ESE, 2002). This and other investigations indicated that Aroclor-1268 was inside the hangar at concentrations from 0.0292 to 0.1115 $\mu g/m^3$. All of the indoor air samples exceeded the PCB PRG.

The lead sampling results indicated that lead was present in ambient air outside of the hangar (Harding ESE, 2002) at concentrations from 0.0041 to 0.0093 $\mu g/m^3$. Lead was reported in the samples from inside the hangar at concentrations from below the detection limit to 0.0127 $\mu g/m^3$. The California Air Resources Board promulgated a California Ambient Air Quality Standard of

1.5 µg/m^3. All of the air samples analyzed for lead were below the California Ambient Air Quality Standard.

Additional Data Collected from the West-Side Aquifers Treatment System

The Navy operates the West-Side Aquifers Treatment System (WATS) at Moffett to treat groundwater impacted by solvents and petroleum products. The system is located approximately 100 feet west of Hangar 1. The WATS collects groundwater from seven extraction wells and two sumps in Hangar 1. The two sumps in Hangar 1, the Hangar 1 Sump, and Electric Vault #5 are connected to steam pipes under the hangar. Groundwater seeps into the steam pipes and flows to the sumps. When the sumps reach a designated water level, the water is automatically pumped out by sump pumps. The groundwater is pumped to WATS. In July 2003, the Navy sampled the influent from the extraction wells and the sumps and analyzed the samples for Aroclor-1268. Sample results indicated that for all the groundwater samples collected, concentrations of Aroclor-1268 were below the detection limit (Table 2-1).

Time-Critical Removal Action Conducted by NASA

In September 2003, NASA implemented an action to remove sediments contaminated with PCBs from the stormwater collection trench located around the perimeter of Hangar 1 and to remove potentially affected sediments present on paved surfaces immediately surrounding the structure. NASA's action involved cleaning out and characterizing sediment residue in the stormwater collection trench surrounding Hangar 1.

NASA notified the Water Board of the presence of Aroclor-1260 and Aroclor-1268 within the stormwater collection trench in a letter dated July 1, 2003 (NASA, 2003c).

2.2.2 Time-Critical Removal Action Conducted by the Navy

The Navy performed a TCRA as an interim removal action at Hangar 1 to limit the migration of PCBs from the exterior surfaces of the building materials into the storm drain system leading to Site 25.

In October 2003, the Navy TCRA included the following:

- The exterior surface of the hangar was cleaned by pressure washing to remove any grease, oil, and dirt that may have inhibited adhesion of the selected coating materials.
- The exterior corrugated siding was coated with an asphalt emulsion. The purpose of the coating was to isolate the siding contaminants until a final remedy is selected. The coating was not applied to the flat roof, window surfaces, walk-in doors, vehicle rollup doors, or exterior appurtenances, such as gutters and stormwater discharge piping.

- The area around the hangar was cleaned by pressure washing following coating of the structure to remove any contaminants that may have been present on surrounding paved surfaces.
- A permanent, 6-foot-high, chain-link security fence was installed to control access to the hangar.

A complete summary of the TCRA activities is provided in the TCRA Completion Report (Tetra Tech FW, Inc. [TtFW], 2004). Since the TCRA was completed, periodic visual inspections of the coating on the exterior siding are being conducted. In addition, in February 2005 as part of an ongoing effort to reduce contamination, the Navy cleaned out the rain gutters on Hangar 1 by collecting, sampling, and disposing of the contaminated sediments in the gutters. The results of samples collected from these sediments are included in Table 2-1.

2.3 SOURCE, NATURE, AND EXTENT OF CONTAMINATION

The results from sampling and testing building materials confirmed that Hangar 1 was a source of the PCBs reported in the settling basin. Analytical results indicated that Aroclor-1260 and Aroclor-1268 were present at significantly elevated levels in the siding and were present at relatively low to nondetectable levels in the flat roof materials, roof sealant, and window putty. Excluding small items, such as the window putty, the hangar shell consists of the following primary components:

- **Flat Roof:** The roof is a five-ply built-up roof membrane coated with a water-based emulsion. The analytical results from testing bulk samples of the roof materials revealed low concentrations of Aroclor-1260 and Aroclor-1268 (maximum concentration of 0.9 and 0.5 mg/kg, respectively).
- **Siding:** The exterior and interior corrugated surface of the hangar consists of two types of materials. The first material is classified as v-beam siding, which was installed to a height of 132 feet above ground. Above the v-beam siding, a mansard siding was installed up to the flat roof transition. Both sidings are Robertson Protected Metal siding. As described by the manufacturer, the siding consists of multiple layers laminated symmetrically during manufacturing on an innermost sheet of steel. These layers applied to the sheet of steel are shown schematically in Figure 2-5 and described in detail in Appendix A, as summarized below:

  Layer 1: A specially annealed steel sheet protected from corrosion by the following four layers.

  Layer 2: An air-blown (pre-oxidized) petroleum asphalt layer ranging from 24 to 28 mils thick encases the sheet of steel. (A mil equals one one-thousandth of an inch or .0254 millimeter.) This layer is marginally pliable, but very dry. Particles disengage from the layer when prodded (as opposed to shattering).

  Layer 3: Asphalt-saturated asbestos felt (ranging from 24 to 28 mils thick) makes up Layer 3. This asphalt is slightly different from the Layer 2 asphalt in that it contains a fire retardant, which has high concentrations of PCBs. This

layer is marginally pliable, but also very dry. Particles disengage from the layer when prodded (as opposed to shattering).

Layer 4: A weatherproofing compounded bitumen (asphalt-based) (ranges from 12 to 20 mils thick), which was intended to keep moisture and oxygen away from the underlying asphalt and to lock in the bituminous binders and oils. This layer is dry and brittle, exhibiting a glass-like fracture when disturbed.

After Layers 2, 3, and 4 were applied to the sheet of steel, they were fused together in a heated press. After the coated sheet of steel cooled, it was corrugated.

Layer 5: Aluminum paint (estimated 4 mils thick) of an unknown resin base composes Layer 5.

Additional layers of paint, added over the years after the hangar was constructed, are the suspected sources of the lead present in the siding and in sediment samples. The final coating on the exterior of the hangar, an asphalt-based emulsion, was applied during the Navy's TCRA that was conducted in October 2003.

To further characterize the composition of the siding and the location of the PCBs, a small section of the siding was submitted to a laboratory for a detailed layer-by-layer analysis for contaminants. The sampling and analyses were completed in June 2005. The laboratory report, included in Appendix B, indicated the presence of four layers, including the metal sheet. The four layers, listed from innermost to outermost, and a summary of the results of the analyses, are included below:

Steel Sheet

- PCBs: Aroclor-1268 at 19 mg/kg (probably from adhered tar adhesive)
- Iron: >99 percent
- No evidence of galvanization
- No asbestos

Tar adhesive (could not be separated from fibrous mat, equivalent to manufacturer's description of Layer 2)

- PCBs: Aroclor-1268 at 36,000 mg/kg
- Tar pitch
- No asbestos

Fibrous mat (could not be separated from tar adhesive, equivalent to manufacturer's description of Layers 3 and 4)

- PCBs: Aroclor-1268 at 36,000 mg/kg
- Chrysotile asbestos: 80 percent by weight
- Cellulose (cotton): 5 percent by weight
- Horse hair: 5 percent by weight
- Tar pitch from tar layer

Silver paint outer layer (equivalent to manufacturer's description of Layer 5)

- PCBs: Aroclor-1268 at 6,600 mg/kg
- No asbestos

The above results suggest that the outer layer of the hangar is impacted with greater than 6,000 mg/kg of Aroclor-1268. Because the outer layers are potentially porous surfaces, it is possible that PCBs were present in the paint, or that the Aroclor-1268 migrated to the outer layer from the underlying PCB-containing, asphalt-rich layer.

In summary, two sets of results were presented for the siding material: the initial sampling results in Table 2-1 and the more recent sampling results presented above. The combined results of these investigations have shown that Aroclor-1268 is present in paint on the siding at concentrations greater than 6,000 mg/kg, and in interior layers of the Hangar 1 siding up to a maximum concentration of 188,000 mg/kg (18.8 percent by weight). Aroclor-1260 is present in interior layers of the siding up to a maximum concentration of 5,500 mg/kg. These high concentrations result in sediment and water concentrations in the stormwater collection system that exceeded the Industrial PRG levels of 0.74 mg/kg for PCBs in soil and 0.034 μg/L for PCBs in water.

Although PCBs are the COCs and the regulatory driver for this removal action, the Hangar 1 building materials also contain asbestos and lead, which are hazardous materials. Interior building components of the hangar include the following:

- **Structural Steel:** The lead-based paint used to coat the structural steel is showing evidence of deterioration, and the steel is showing signs of rust in some areas. The structural steel paint had Aroclor-1260 and Aroclor-1268 at concentrations up to 120 and 94 mg/kg, respectively. Total PCBs were reportedly present at concentrations from 65 to 214 mg/kg (ISSi, 2005).
- **Redwood Ceiling:** The redwood ceiling that makes up the upper portion of the interior face of the hangar was painted with a silver coating visually similar to the one used for the structural steel. There are no known sample results from the coating on the redwood ceiling; therefore, for this EE/CA, the paint on the redwood ceiling is assumed to be the same lead-based paint with PCBs as the structural steel.
- **Catwalk Planks:** There are seven levels of catwalks that run the length of the hangar on each side and two catwalks that run down the center of the hangar ceiling. The catwalks consist of wooden planks (possibly non-treated redwood) painted with a silver paint visually similar to the redwood ceiling and the structural steel. There are no known sample results from the coating on the catwalk planks; therefore, for this EE/CA, the paint on the redwood catwalk planks is assumed to be the same lead-based paint with PCBs as the structural steel.

Building materials containing asbestos and lead that are in good condition and not subject to disturbance may generally be left in place per USEPA and Department of Defense (DoD) policy.

However, in the course of addressing the PCB contamination at Hangar 1, it will be necessary to take into account health and safety issues associated with handling and working in the vicinity of materials containing asbestos and lead and to comply with requirements for proper management, abatement, or disposal of asbestos and lead as hazardous materials.

The following findings are based on the analytical results of the building materials, sediment, and related Hangar 1 sampling:

- The siding and other building materials on Hangar 1 have high concentrations of PCBs that have adversely affected the sediment and surface water concentrations in the nearby stormwater collection system.
- The structural steel paint has high concentrations of PCBs that may have also contributed in the migration of PCBs.
- The Navy, regulatory agencies, and NASA have agreed that these findings warrant an additional response designed to control continued release of COCs from Hangar 1 to the environment.

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3.0 IDENTIFICATION OF THE REMOVAL ACTION OBJECTIVE

This section sets forth the authority governing this NTCRA, identifies the RAO, and describes the removal action scope, the anticipated schedule, and the ARARs.

3.1 STATUTORY FRAMEWORK

This removal action is performed pursuant to CERCLA and NCP under the authority delegated by the Office of the President of the United States through Executive Order 12580 as redelegated. This order provides the Navy with authorization to conduct removal actions. The Defense Environmental Restoration Program (DERP) provides funding to the Navy for removal actions conducted under CERCLA. This removal action is non-time critical because a 6-month planning period was available from the time a removal action was determined to be necessary to the time when the removal action would be initiated.

This EE/CA identifies the recommended removal action alternative for Hangar 1 by evaluating the potentially applicable removal alternatives for the site. This EE/CA complies with the requirements of CERCLA; the Superfund Amendments and Reauthorization Act (SARA); the NCP at 40 C.F.R.; the DERP at 10 United States Code (U.S.C.) Section 2701, et seq.; and Executive Order 12580. This EE/CA is undertaken pursuant to 40 C.F.R., Part 300.415 (b)(4)(i) and (b)(4)(ii). The requirements for this EE/CA and its mandated public comment period provide an opportunity for public input with regard to the cleanup process.

The Navy is the lead agency for this NTCRA. As such, the Navy will choose the remedy after conducting all public participation activities. An AM that provides a written decision on the selected remedy and takes regulatory and public comments into account will be prepared based on this EE/CA. A written response to questions and comments submitted on the EE/CA during the public comment period will be provided as part of the AM.

3.2 REMOVAL ACTION OBJECTIVE

This removal action is being conducted in order to control the migration of PCBs from Hangar 1 to the environment through source elimination or containment, thereby eliminating human health and environmental concerns associated with potential exposure pathways, including the surface water runoff pathway to Site 25. As described in Section 2.3, the COCs are PCBs (Aroclor-1260 and Aroclor-1268). PCBs are present in the siding and interior components of Hangar 1. Building components from Hangar 1 are considered the most likely source of the PCBs reported in sediment in the stormwater collection trench around the perimeter of Hangar 1. The Navy, NASA, and regulatory agencies have agreed that source elimination or containment would control further release of PCBs from Hangar 1 to the environment and, therefore, would be the focus of this NTCRA.

Based on CERCLA and the NCP, the proposed RAO is to control the release of COCs at Hangar 1, thereby reducing the potential risks to human health and the environment while minimizing future operation and maintenance activities at the site.

The RAO will provide a basis for evaluation of removal action alternatives and recommendation of the most viable alternative for Site 29 that is presented in Sections 4.0, 5.0, and 6.0. Note that there will be no target cleanup goals required for the contaminants because the removal action will include either total removal or containment of the source.

3.3 DETERMINATION OF REMOVAL SCOPE

The scope of this NTCRA is to reduce the risks to human health and the environment associated with the release of COCs identified in the building components of Hangar 1. Specifically, the proposed removal action should control the migration of contaminants from Hangar 1 by controlling the source of contaminants released from the structure.

This NTCRA addresses the PCB contamination from the surface of the interior concrete floor slab, the building interior, and the exterior face of the hangar siding. It should also be noted that this removal action is not addressing 1) potential releases to groundwater, because data previously collected indicate there have been no impacts on groundwater; 2) adjacent structures and soils, because they are outside the scope of this NTCRA; 3) contamination in or below the concrete foundation, because the foundation will be left in place and there are no indications that it is contaminated; or 4) institutional controls, because they are outside the scope of this NTCRA. Once the NTCRA is complete, sampling will be conducted to determine if the area surrounding the hangar has been impacted as a result of the removal action. The sampling approach will be detailed in the NTCRA work plan.

The Navy will document the selection of the removal alternative in an AM. Upon successful completion of the removal action, the Navy will develop a Project Closeout Report to document the removal action and provide the basis for any subsequent steps that need to be taken.

Alternatives that leave COCs in place may require additional CERCLA documentation. Costs for these actions have not been included as part of this EE/CA.

3.4 DETERMINATION OF REMOVAL SCHEDULE

The limited warranty of the existing TCRA coating was the major consideration in determining the project schedule. The Navy intends to finalize the EE/CA and AM in time to complete the removal action while the interim coating is still effective. The schedule for implementation of the selected remedy will be included in the AM.

3.5 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

As the lead federal agency, the Navy has primary responsibility for identifying potential ARARs at the Hangar 1 site. In preparing this ARAR analysis, the Navy considered the following measures, which are consistent with CERCLA and NCP:

- Identified federal ARARs for the alternatives addressed in the EE/CA, taking into account the Hangar 1 site-specific information
- Reviewed potential state ARARs identified by the state to determine whether they meet CERCLA and NCP criteria to constitute state ARARs
- Evaluated and compared federal ARARs and their state counterparts to determine which is more stringent
- Reached a conclusion as to which federal and state ARARs are the most stringent and/or "controlling" ARARs for each alternative

The final determination of federal ARARs will be made when the Navy issues the AM. The federal government implements a number of federal environmental statutes that are the source of potential federal ARARs, either in the form of the statutes or regulations promulgated thereunder. Examples include the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Safe Drinking Water Act, TSCA, and their implementing regulations. See NCP preamble at 55 Federal Register 8764–8765 (1990) for a more complete listing.

The proposed removal action alternatives were reviewed against potential federal ARARs, including but not limited to those set forth at 55 Federal Register 8764–8765 (1990), in order to determine if they were applicable or relevant and appropriate in utilizing the CERCLA and NCP criteria and procedures for ARAR identification by lead federal agencies.

Section 121(d) of the CERCLA of 1980 (CERCLA, 42 U.S.C. Section 9621[d]), as amended, states that remedial actions at CERCLA sites must attain (or the decision document must justify the waiver of) any federal or more stringent state environmental standards, requirements, criteria, or limitations determined to be legally applicable or relevant and appropriate. Although Section 121 of CERCLA does not itself expressly require that CERCLA removal actions comply with ARARs, the USEPA has promulgated a requirement in the NCP mandating that CERCLA removal actions ". . . shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state

environmental or facility siting laws" (40 C.F.R., Part 300.415[j]). It is Navy policy to follow this requirement.

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address the situation at a CERCLA site. The requirement is applicable if the jurisdictional prerequisites of the standard show a direct correspondence when objectively compared to the conditions at the site. An applicable federal requirement is an ARAR. An applicable state requirement is an ARAR only if it is more stringent than corresponding federal ARAR.

If the requirement is not legally applicable, then the requirement is evaluated to determine whether it is relevant and appropriate. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not applicable, address problems or situations similar to the circumstances of the proposed removal action and are well suited to the conditions of the site (USEPA, 1988). A requirement must be determined to be both relevant and appropriate in order to be considered an ARAR.

The criteria for determining relevance and appropriateness are listed in 40 C.F.R., Part 300.400(g)(2) and include the following:

- Purpose of the requirement and the purpose of the CERCLA action
- Medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site
- Substances regulated by the requirement and the substances found at the CERCLA site
- Actions or activities regulated by the requirement and the removal action contemplated at the CERCLA site
- Any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site
- Type of place regulated and the type of place affected by the release or CERCLA action
- Type and size of structure or facility regulated and the type and size of structure or facility affected by the release or contemplated by the CERCLA action
- Consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resources at the CERCLA site

According to CERCLA ARARs guidance (USEPA, 1988), a requirement may be "applicable" or "relevant and appropriate," but not both. Identification of ARARs must be done on a site-specific basis and involve a two-part analysis: first, a determination whether a given requirement is

applicable; then, if it is not applicable, a determination whether it is nevertheless both relevant and appropriate. It is important to explain that some regulations may be applicable or, if not applicable, may still be relevant and appropriate. When the analysis determines that a requirement is both relevant and appropriate, such a requirement must be complied with to the same degree as if it were applicable (USEPA, 1988).

To constitute an ARAR under CERCLA, a requirement must be determined to be substantive, rather than procedural or administrative. Therefore, only the substantive provisions of requirements identified as ARARs in this analysis are considered to be ARARs. Permits are considered procedural or administrative requirements. Provisions of generally relevant federal and state statutes and regulations that were determined to be procedural or non-environmental, including permit requirements, are not considered to be ARARs. CERCLA Section 121(e)(1), 42 U.S.C., Section 9621(e)(1), states that "No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on-site, where such remedial action is selected and carried out in compliance with this section." The term "on-site" is defined for purposes of this ARAR discussion as "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the removal action" (40 C.F.R., Part 300.5).

Pursuant to USEPA guidance, ARARs are generally divided into three categories: chemical-, action-, and location-specific requirements. This classification was developed to aid in the identification of ARARs. ARARs are identified on a site-specific basis for removal actions using CERCLA authority as the basis for cleanup.

Tables 3-1 through 3-6 present each potential ARAR with an initial determination of ARAR status (i.e., applicable, relevant and appropriate, or not an ARAR). For the determination of relevance and appropriateness, the pertinent criteria were examined to determine whether the requirements addressed problems or situations sufficiently similar to the circumstances of the potential removal actions contemplated, and whether the requirement was well suited to the site. A negative determination of relevance and appropriateness indicates that the requirement did not meet the pertinent criteria. Negative determinations are documented in the tables and are discussed in the text only when an additional discussion is warranted.

3.5.1 Identification Process for Federal ARARs

As the lead federal agency, the Navy has primary responsibility for identifying federal ARARs at Hangar 1. Potential federal ARARs that have been identified for Hangar 1 are discussed in Sections 3.5.4.1, 3.5.5.1, and 3.5.6.1. Pursuant to the definition of the term "on-site" in 40 C.F.R., Part 300.5, the on-site areas that are part of this action include Hangar 1.

3.5.2 Identification Process for State ARARs

To qualify as a state ARAR under CERCLA and the NCP, a state requirement must be:

- A state law or regulation
- An environmental or facility siting law or regulation
- Promulgated (of general applicability and legally enforceable)
- Substantive (not procedural or administrative)
- More stringent than corresponding federal requirements
- Identified in a timely manner
- Consistently applied

Identification of potential state ARARs was initiated through Navy requests that the State Water Resources Control Board (SWRCB) identify potential state ARARs, an action described in more detail in Section 3.5.3.

3.5.3 Methodology Description

In preparing this ARAR analysis, the Navy undertook the following measures, consistent with CERCLA and the NCP:

- Identified federal ARARs for each removal action alternative addressed in the EE/CA, taking into account site-specific information
- Reviewed potential state ARARs identified by the state to determine whether they meet CERCLA and NCP criteria to constitute state ARARs
- Evaluated and compared federal ARARs and their state counterparts to determine whether state ARARs are more stringent than the federal ARARs or are in addition to the federally required actions
- Reached a conclusion as to which federal and state ARARs were the most stringent and/or "controlling" ARARs for each alternative

Identifying and Evaluating State ARARs

The CERCLA/NCP requirements at 40 C.F.R, Part 300.515 for removal actions provide that the lead federal agency request that the state identify chemical-, action-, and location-specific state ARARs upon completion of site characterization. The requirements also provide that the lead federal agency request identification of all categories of state ARARs (chemical-, action-, and location-specific) upon completion of identification of removal alternatives for detailed analysis. The state must respond within 30 days of receipt of the lead federal agency requests. The remainder of this subsection documents the Navy's efforts to date to identify and evaluate state ARARs.

Chronology of Efforts to Identify State ARARs

The following chronology summarizes the Navy's efforts to obtain state assistance in identifying state ARARs for the removal action at Hangar 1. Key correspondence between the Navy and the state agencies relating to this effort is included in the Administrative Record for this EE/CA.

The Navy requested state chemical-, action-, and location-specific ARARs for Hangar 1 on October 8, 2004. It sent a letter to the Water Board soliciting ARARs based on potential cleanup scenarios proposed by the Navy.

The Navy received a letter from the Water Board providing its chemical-, action-, and location-specific ARARs on November 2, 2004 (Water Board, 2004). The ARARs were prepared with the understanding that:

- WATS, separate from Hangar 1, will address any potential discharges of pollutants from Hangar 1 into the groundwater. *(Groundwater from the extraction wells and the sumps were analyzed for Aroclor-1268. Sample results indicated that for all the groundwater samples collected, concentrations of Aroclor-1268 were below the detection limit [Table 2-].)*
- The pollution caused by the stormwater from Hangar 1 at IR Site 25 (Stormwater Retention Pond) will be considered as part of IR Site 25.
- The majority of the area surrounding Hangar 1 is paved and regularly maintained by NASA.

This ARAR analysis addresses the potential state ARARs that are identified in the above correspondence from the Water Board and in codes and regulations from the following state agencies and departments:

- Department of Toxic Substances Control (DTSC)
- Air Resources Board
- Bay Area Air Quality Management District (BAAQMD)

3.5.4 Potential Chemical-specific ARARs

Chemical-specific ARARs are generally health- or risk-based numerical values or methodologies applied to site-specific conditions that result in the establishment of a cleanup level. Many potential ARARs associated with particular removal alternatives (such as closure or discharge) could be characterized as action-specific, but they include numerical values or methodologies to establish them so they fit into both categories (chemical- and action-specific). To simplify the comparison of numerical values, most action-specific requirements that include numerical values are included in this chemical-specific section.

This subsection presents a summary of specific regulations and presents ARAR determinations and conclusions addressing numerical cleanup values for Hangar 1.

3.5.4.1 Potential Federal Chemical-specific ARARs

The following potential federal chemical-specific ARARs have been identified. Further discussion is contained in Table 3-1.

National Ambient Water Quality Criteria and Standards

Section 304(a)(1) of the Clean Water Act (CWA) (33 U.S.C. Section 1314[a][1]) directs USEPA to publish and periodically update the National Ambient Water Quality Criteria (NAWQC). These standards are intended to protect human health and aquatic life from contamination in surface water. The NAWQC are updated in the Federal Register. The latest list of the NAWQC through June 2000 was published in the Federal Register on December 10, 1998, with amendments in 64 Federal Register 19,781. These criteria reflect the latest scientific knowledge on the identifiable effects of pollutants on public health and welfare, aquatic life, and recreation. These criteria serve as guidance to individual states in adopting water quality standards under Section 303(c) of the CWA that protect aquatic life from both acute and chronic adverse effects. The regulation 40 C.F.R., Part 131.36(b) is potentially applicable to discharges of surface water, which may be generated through stormwater runoff at the site.

The federal water quality criteria at 40 C.F.R., Parts 131.36(b), 131.37, and 131.38 (referred to as the National Toxics Rule and the California Toxics Rule) are potentially applicable federal requirements for any discharges to surface water.

Additional water quality standards for salinity in San Francisco Bay are set forth in 40 C.F.R., Part 131.37, General Notes 10(i) and 10(ii) to 40 C.F.R., Part 131.38. These regulations set specific criteria for water quality and amend the applicable Basin Plan criteria if the Basin Plan excluded the particular compound, or the criterion was less stringent than the federal standard contained in USEPA's Section 304(a) criteria for Priority Toxic Pollutants found at 40 C.F.R., Part 131.36(b)(1).

RCRA Hazardous Waste Standards

RCRA is a federal statute passed in 1976 to meet four goals: the protection of human health and the environment, the reduction of waste, the conservation of energy and natural resources, and the elimination of the generation of hazardous waste as expeditiously as possible. The Hazardous and Solid Waste Amendments (HSWA) of 1984 significantly expanded the scope of RCRA by adding new corrective action requirements, land disposal restrictions, and technical requirements. RCRA, as amended, contains several provisions that are potential ARARs for CERCLA sites.

Substantive RCRA requirements are applicable to removal actions on CERCLA sites if the waste is a RCRA hazardous waste, and either the:

- Waste was initially treated, stored, or disposed of after the effective date of the particular RCRA requirement; or
- Activity at the CERCLA site constitutes treatment, storage, or disposal, as defined by RCRA (USEPA, 1988).

The preamble to the NCP indicates that state regulations that are components of a federally authorized or delegated state program are generally considered federal requirements and potential federal ARARs for the purposes of ARAR analysis (55 Federal Register 8666, 8742 [1990]). The state of California received approval for its base RCRA hazardous waste management program on July 23, 1992 (57 Federal Register 32726 [1992]). The state of California Environmental Health Standards for the Management of Hazardous Waste, set forth in California Code of Regulations (Cal. Code Regs.), Title (tit.) 22, Division (div.) 4.5, were approved by USEPA as a component of the federally authorized state of California RCRA program. On September 26, 2001, California received final authorization of its revised State Hazardous Waste Management Program by the USEPA (63 Federal Register 49118 [2001]).

The regulations of Cal. Code Regs., tit. 22, div. 4.5 are, therefore, a source of potential federal ARARs for CERCLA removal actions. The exception is when a state regulation is "broader in scope" than the corresponding federal RCRA regulations. In that case, such regulations are not considered part of the federally authorized program or potential federal ARARs; instead, they are purely state law requirements and potential state ARARs.

The USEPA July 23, 1992, notice approving the state of California RCRA program (57 Federal Register 32726 [1992]) specifically indicated that the state regulations addressed certain non-RCRA, state-regulated hazardous wastes that fell outside the scope of federal RCRA requirements. Cal. Code Regs., tit. 22, div. 4.5 requirements would be potential state ARARs for such non-RCRA, state-regulated wastes.

A key threshold question for the ARAR analysis is whether or not the contaminants at Hangar 1 constitute federal hazardous waste as defined under RCRA and the state's authorized program, or qualify as non-RCRA, state-regulated hazardous waste. Federal RCRA hazardous waste determination is necessary to determine whether a waste is subject to RCRA requirements at Cal. Code Regs., tit. 22, div. 4.5 and other state requirements at Cal. Code Regs., tit. 23, div. 3, Chapter (ch.) 15. The first step in the RCRA hazardous waste characterization process is to evaluate contaminated media at the site(s) and determine whether the contaminant constitutes a "listed" RCRA waste. The preamble to the NCP states that "… it is often necessary to know the origin of the waste to determine whether it is a listed waste and that, if such documentation is lacking, the lead agency may assume it is not a listed waste" (55 Federal Register 8666, 8758 [1990]).

This approach is confirmed in USEPA guidance for CERCLA compliance with other laws (USEPA, 1988) as follows:

> To determine whether a waste is a listed waste under RCRA, it is often necessary to know the source. However, at many Superfund sites, no information exists on the source of wastes. The lead agency should use available site information, manifests, storage records, and vouchers in an effort to ascertain the nature of these contaminants. When this documentation is not available, the lead agency may assume that the wastes are not listed RCRA hazardous wastes, unless further analysis or information becomes available that allows the lead agency to determine that the wastes are listed RCRA hazardous wastes.

RCRA hazardous wastes that have been assigned USEPA hazardous waste numbers (or codes) are listed in Cal. Code Regs., tit. 22, Sections 66261.30-66261.33. The lists include hazardous waste codes beginning with the letters “F,” “K,” “P,” and “U.”

Knowledge of the exact source of a waste is required for source-specific listed wastes (K waste codes). Some knowledge of the nature or source of the waste is required even for listed wastes from non-specific sources, such as spent solvents (F waste codes) or commercial chemical products (P and U waste codes). These listed RCRA hazardous wastes are restricted to commercially pure chemicals used in particular processes such as degreasing.

P and U wastes cover only unused and unmixed commercial chemical products, particularly spilled or off-spec products (USEPA, 1991). Not every waste containing a P or U chemical is a hazardous waste. To determine whether a CERCLA investigation-derived waste contains a P or U waste, there must be direct evidence of product use. In particular, the following criteria must be met. The chemicals must be:

- Discarded (as described in 40 C.F.R., Part 261.2[a][2])
- Either off-spec commercial products or a commercially sold grade
- Not used (soil contaminated with spilled unused wastes is a P or U waste)
- The sole active ingredient in a formulation

Hazardous wastes can be classified as either listed or characteristic. Hangar 1 wastes are anticipated to be characteristic hazardous wastes, specifically for toxicity. Assumptions were made regarding waste classification for the purpose of this EE/CA based on previously collected data; however, all waste will be fully characterized prior to off-site disposal and will be managed accordingly.

Hazardous waste characteristics, as defined in 40 C.F.R., Parts 261.21 to 261.24, are commonly referred to as ignitability, corrosivity, reactivity, and toxicity. California environmental health standards for the management of hazardous waste set forth in Cal. Code Regs., tit. 22, div. 4.5

were approved by USEPA as a component of the federally authorized California RCRA program. Therefore, the characterization of RCRA waste is based on the state requirements.

The characteristics of ignitability, corrosivity, reactivity, and toxicity are defined in Cal. Code Regs., tit. 22, Sections 66261.21–66261.24. According to Cal. Code Regs., tit. 22, Section 66261.24(a)(1)(A), "A waste that exhibits the characteristic of toxicity pursuant to subsection (a)(1) of this section has the USEPA Hazardous Waste Number specified in Table I of this section, which corresponds to the toxic contaminant causing it to be hazardous." Table I assigns hazardous waste codes beginning with the letter "D" to wastes that exhibit the characteristic of toxicity; D waste codes are limited to "characteristic" hazardous wastes.

According to Cal. Code Regs., tit. 22, Section 66261.10, waste characteristics can be measured by an available standardized test method or be reasonably classified by generators of waste based on their knowledge of the waste provided that the waste has already been reliably tested or if there is documentation of chemicals used.

The requirements at Cal. Code Regs., tit. 22, Section 66261.24 list the toxic contaminant concentrations that determine the characteristic of toxicity. The concentration limits are in milligrams per liter (mg/L). These units are directly comparable to total concentrations in waste groundwater and surface water. For wastes that are solid in nature, these concentrations apply to the extract or leachate produced by the Toxicity Characteristic Leaching Procedure (TCLP).

A waste is considered hazardous if the contaminants in the wastewater or in the soil TCLP extract equal or exceed the TCLP limits. TCLP testing is required only if total contaminant concentrations in soil equal or exceed 20 times the Total Threshold Limit Concentration (TTLC) limits because TCLP uses a 20-to-1 dilution for the extract.

Site concentrations of lead exceed 20 times the TTLC limits and are expected to be considered a RCRA hazardous waste. Other regulations apply, such as TSCA, which will further characterize site wastes. These regulations are detailed in follow-on sections.

RCRA Groundwater Protection Standards

These standards are not "applicable" because IR Site 29 does not contain a RCRA waste management unit. However, substantive provisions of Cal. Code Regs. tit. 22, Section 66264.94(a)(1), (a)(3), (c), (d), and (e) are "relevant and appropriate" and, therefore, potential federal ARARs for groundwater because the wastes at the site are similar or identical to RCRA hazardous wastes.

Land Disposal Restrictions

RCRA land disposal restrictions (LDRs) at Cal. Code Regs., tit. 22, Section 66268.1(f) are potential federal ARARs for discharging waste to land. This section prohibits the disposal of hazardous waste to land unless 1) it is treated in accordance with the treatment standards of Cal. Code Regs., tit. 22, Section 66268.40 and the underlying hazardous constituents meet the universal treatment standards at Cal. Code Regs., tit. 22, Section 66268.48; and 2) it is treated to meet the alternative soil treatment standards of Cal. Code Regs., tit. 22, Section 66268.49; or a treatability variance is obtained under Cal. Code Regs., tit. 22, Section 66268.44. These are potentially applicable federal ARARs because they are part of the state-approved RCRA program. RCRA treatment standards for non-RCRA, state-regulated waste are not potentially applicable federal ARARs, but they may be relevant and appropriate state ARARs.

Bay Area Air Quality Management District Regulations

The Clean Air Act (CAA) establishes the National Ambient Air Quality Standards (NAAQS) in 40 C.F.R., Parts 50.4–50.12. NAAQS are not enforceable in and of themselves; they are translated into source-specific emissions limitations by the state. Substantive requirements of the BAAQMD regulations that have been approved by the USEPA as part of the State Implementation Plan (SIP) under the CAA are potential federal ARARs for air emissions (CAA, Section 110). The SIP includes rules for emissions restrictions for particulates, organic compounds, and hazardous air pollutants, as well as standards of performance for new sources.

BAAQMD Regulation 2, Rule 2-301 specifies that the best available control technology will be applied to any new source or modified source with the potential to emit 10.0 pounds or more per highest day of precursor organic compounds, non-precursor organic compounds, nitrogen oxides, sulfur dioxide, particulate matter less than 10 microns in diameter (PM_{10}), or carbon monoxide. This regulation is not applicable to activities at the NTCRA, because there are no “sources” as defined by the regulation; however, it is considered potentially relevant and appropriate since the work being conducted could potentially emit particulates. Appropriate dust control measures will be in place to prevent triggering this regulation.

BAAQMD Regulation 6-301 limits visible emissions from the site, as specified by the Ringelmann Chart. Best Management Practices (BMPs) to reduce dust emissions will help maintain compliance with the regulation, which is considered potentially applicable to removal activities.

BAAQMD Regulation 6-311 sets emission rate limits for particulate matter. Because the limits are based on process weight rate and the removal action employs no production processes, the regulation is neither applicable nor relevant and appropriate.

BAAQMD Regulation 8, Rule 3, requires that architectural coatings must meet standards for maximum volatile organic compound (VOC) content, and lists specific VOC content for each type of coating. The rule applies to anyone who supplies, sells, manufactures, as well as anyone who applies, or solicits the application of, any architectural coating. This rule is potentially relevant and appropriate to alternatives specifying coating.

BAAQMD Regulation 11, Rule 1 requires air monitoring for lead, a hazardous air pollutant (HAP). Lead discharges in excess of 1 microgram per cubic meter are prohibited. Because the removal action does not meet the definition of a source, this rule is not considered applicable. In addition, any demolition will be performed using standard industry work practices with no grinding or scarifying; emissions will not be sufficient to consider the regulation potentially relevant and appropriate.

BAAQMD Regulation 11, Rule 2 describes the asbestos management and removal requirements during demolition and renovation projects. It is potentially applicable where asbestos may be removed.

3.5.4.2 Potential State Chemical-specific ARARs

The following potential state chemical-specific regulations have been identified and are further set forth in Table 3-2.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (referred to as the Porter-Cologne Act) became Division 7 of the California Water Code in 1969. The Porter-Cologne Act requires each regional board to formulate and adopt Basin Plans for all areas within the region (California Water Code, Section 13240). It also requires each regional board to establish water quality objectives (WQOs) that will protect the beneficial uses of the water basin (California Water Code, Section 13241), and to prescribe waste discharge requirements that would implement the Basin Plan for any discharge of waste to the waters of the state (California Water Code, Section 13263[a]).

Other sections of the Porter-Cologne Act include California Water Code, Section 13243, which allows regional boards to specify conditions or areas where waste discharge is not permitted. California Water Code, Section 13269, provides the Water Board's authority for waivers for reports or compliance with requirements, as long as it is not against the public interest. California Water Code, Section 13360, specifies circumstances for regional boards to order compliance in a specific manner.

The Navy accepts the substantive provisions of California Water Code, Sections 13241, 13243, 13263(a), 13269, and 13360 of the Porter-Cologne Act as enabling legislation as implemented through the beneficial uses, WQOs, waste discharge requirements, and promulgated policies of the Water Board.

California Water Code, Section 13304, was provided by the Water Board as an ARAR for Hangar 1. However, this section sets forth enforcement authority and an enforcement process (orders issued by the state) and is procedural in nature. It does not constitute an ARAR because it does not establish or contain substantive environmental "standards, requirements, criteria, or limitations" (CERCLA Section 121) and is not in itself directive in intent. Through its enforcement authority and procedures, substantive state environmental standards set forth in other statutes, regulations, plans, and orders are enforced. In addition, California Water Code, Section 13304, is no more stringent than the substantive requirements of the potential state ARARs identified in the following sections; therefore, it is not an ARAR for this removal action.

California Water Code, Section 13307.1(c), was identified by the Water Board as an ARAR for Hangar 1 and enforces the implementation of land-use restrictions if a site is subject to a cleanup order. However, the scope of this removal action is limited to addressing releases of hazardous substances from Hangar 1 into the environment via stormwater runoff. The Navy does not intend to address institutional controls as part of the response addressed by this EE/CA for Hangar 1. Therefore, this requirement does not pertain to the scope of the removal action. If necessary, institutional controls will be addressed though a separate CERCLA process.

SWRCB Resolution No. 88-63 was provided by the Water Board as an ARAR for Hangar 1. The Navy accepts that this resolution may be an ARAR for surface water drinking sources. No discharges to surface water drinking sources will occur, and groundwater remediation is not considered part of this NTCRA; therefore, this resolution is not applicable to the removal action.

Cal. Code Regs., tit. 27, Section 20080 et seq. and Cal. Code Regs., tit. 23, Section 2510 et seq. were provided by the Water Board as ARARs for Hangar 1. Because on-site discharge of waste to land is not part of the proposed removal action, these regulations are not applicable to the removal action.

Cal. Code Regs., tit. 27, Section 20230 was provided by the Water Board as an ARAR for Hangar 1. This regulation allows inert waste to be discharged at units, which are not classified. Because this NTCRA is being conducted under CERCLA, site waste must be disposed of in accordance with the CERCLA off-site rule; therefore, this regulation is not applicable to the removal action.

Basin Plan

The Basin Plan (1994) for the San Francisco Bay Region was prepared and implemented by the Water Board to protect and to enhance the quality of the waters in San Francisco Bay. The Basin Plan establishes location-specific beneficial uses and WQOs for the surface water and groundwater of the region and is the basis of the Water Board regulatory programs. The Basin Plan includes both numeric and narrative WQOs for specific groundwater sub-basins. The

WQOs are intended to protect the beneficial uses of the waters of the region and to prevent nuisance to humans or the environment.

Beneficial use and reuse of water are key aspects of the Basin Plan. Hangar 1 is located in the Santa Clara Basin. The following beneficial-use designations for surface water, specifically for Stevens Creek, include:

- Freshwater replenishment
- Water contact recreation
- Non-contact water recreation
- Wildlife habitat
- Cold freshwater habitat
- Warm freshwater habitat
- Fish migration
- Fish spawning

WQOs have been established for the basin. Sediment, suspended materials, and toxic substances are the most likely potential direct threat to surface water quality from the site. WQOs include the following:

- Sediment and suspended materials shall not be discharged in concentrations that cause nuisance or adversely affect beneficial uses.
- The specific surface WQOs for toxic pollutants potentially present at Hangar 1 include the following:

Compound	**4-day Average (µg/L)**	**1-hour Average (µg/L)**
Lead	2.5	65
Zinc	120	120

Abbreviations and Acronyms:

µg/L – micrograms per liter

Numeric WQOs have not been established in the Basin Plan for PCBs. A narrative objective for toxic substances in surface water states:

> "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include, but are not limited to, decreased growth rate and decreased reproductive success of resident or indicator species. There shall be no acute toxicity in ambient waters. Acute toxicity is defined as a median of less than

> 90 percent survival, or less than 70 percent survival, 10 percent of the time, of test organisms in a 96-hour static or continuous flow test. There shall be no chronic toxicity in ambient waters."

Substantive provisions in Chapters 2 through 4 of the Basin Plan for the Water Board are considered potentially applicable to the removal action.

State Water Resources Control Board Resolutions 92-49 and 68-16

SWRCB Resolution 92-49 (as amended on April 21, 1994, and October 2, 1996) is titled Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under California Water Code Section 13304. This resolution was proposed by the Water Board as a potential ARAR and contains policies and procedures for the regional boards that apply to all investigations and cleanup and abatement activities for all types of discharges subject to California Water Code Section 13304.

SWRCB Resolution 68-16, Statement of Policy With Respect to Maintaining High Quality of Waters in California, was proposed by the Water Board as a potential ARAR and establishes the policy that high-quality waters of the state "shall be maintained to the maximum extent possible" consistent with the "maximum benefit to the people of the state." It provides that whenever the existing quality of water is better than the required applicable water quality policies, such existing high-quality water will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the policies. It also states that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge to existing high-quality waters will be required to meet waste-discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that a) pollution or a nuisance will not occur, and b) the highest water quality consistent with maximum benefit to the people of the state will be maintained.

The Navy and the state of California have not agreed on whether SWRCB Resolutions 92-49 and 68-16 and Cal. Code Regs., tit. 23, Section 2550.4 are ARARs for this removal action. This EE/CA documents each party's positions on the resolutions but does not attempt to resolve the issue.

Navy's Position Regarding SWRCB Resolutions 92-49 and 68-16

The Navy recognizes that the key substantive requirements of Cal. Code Regs., tit. 22, Section 66264.94 (and the identical requirements of Cal. Code Regs., tit. 23, Section 2550.4 and Section III.G of SWRCB Resolution 92-49) require cleanup to background levels of constituents unless such restoration proves to be technologically or economically infeasible and an alternative cleanup level of constituents will not pose a substantial present or potential hazard to human

health or the environment. In addition, the Navy recognizes that these provisions are more stringent than corresponding provisions of 40 C.F.R., Part 264.94 and, although they are federally enforceable via the RCRA program authorization, they are also independently based on state law to the extent that they are more stringent than the federal regulations.

The Navy has also determined that SWRCB Resolution 68-16 is not a chemical-specific ARAR for determining removal action goals. More specifically, the language of SWRCB Resolution 68-16 indicates that it is prospective in intent, applying to new discharges in order to maintain existing high-quality waters. It is not intended to apply to restoration of waters that are already degraded. However, the Navy agrees that SWRCB Resolution 68-16 is an action-specific ARAR for regulating the discharge of treated water back into surface waters.

The Navy's position is that SWRCB Resolutions 68-16 and 92-49 and Cal. Code Regs., tit. 23, Section 2550.4 do not constitute chemical-specific ARARs for this removal action because they are state requirements and are not more stringent than federal ARAR provisions of Cal. Code Regs., tit. 22, Section 66264.94. The NCP set forth in 40 C.F.R., Part 300.400(g)(4) provides that only state standards more stringent than federal standards may be ARARs (see also CERCLA Section 121[d][2][A][ii]) ([42 U.S.C., Section 9621[d][2][A][ii]).

The substantive technical standard in the equivalent state requirements (i.e., Cal. Code Regs., tit. 23, div. 3, ch. 15 and SWRCB Resolutions 92-49 and 68-16) is identical to the substantive technical standard in Cal. Code Regs., tit. 22, Section 66264.94. This section of Cal. Code Regs., tit. 22 will likely be applied in a manner consistent with equivalent provisions of other regulations, including SWRCB Resolutions 92-49 and 68-16.

State of California's Position Regarding SWRCB Resolutions 92-49 and 68-16

The state does not agree with the Navy determination that SWRCB Resolutions 92-49 and 68-16 and certain provisions of Cal. Code Regs., tit. 23, div. 3, ch. 15 are not ARARs for this removal action. SWRCB has interpreted the term "discharges" in the California Water Code to include the movement of waste from soils to groundwater and from contaminated to uncontaminated water (SWRCB, 1994). However, the state agrees that the proposed action would comply with SWRCB Resolutions 92-49 and 68-16, and compliance with the Cal. Code Regs., tit. 22 provisions should result in compliance with the Cal. Code Regs., tit. 23 provisions. The state does not intend to dispute this removal action, but reserves its rights if implementation of the Cal. Code Regs., tit. 22 provisions is not as stringent as state implementation of Cal. Code Regs., tit. 23 provisions. Because Cal. Code Regs., tit. 22 regulation is part of the state's authorized hazardous waste control program, it is also the state's position that Cal. Code Regs., tit. 22, Section 66264.94 is a state ARAR and not a federal ARAR (United States v. State of Colorado, 990 F.2d 1565 [1993]).

State Water Resources Control Board Resolution 88-63

SWRCB Resolution 88-63, Adoption of Policy entitled "Sources of Drinking Water," was proposed by the Water Board as a potential ARAR and establishes criteria to help the Water Board identify potential sources of drinking water. According to this resolution, all groundwater in California is considered suitable or potentially suitable for domestic or municipal freshwater supply, except in cases where any one of the following water quality and production criteria cannot be met:

- Total dissolved solids exceed 3,000 mg/L (or electrical conductivity is greater than 5,000 micro-Ohms per centimeter) and the Water Board does not reasonably expect the groundwater to supply a public supply system.
- Groundwater is contaminated either by natural processes or by human activity unrelated to a specific pollution incident, and cannot reasonably be treated for domestic use either by BMPs or best economically available treatment practices.
- The groundwater does not provide sufficient water to supply a single well capable of producing an average sustained yield of 200 gallons per day.

The Navy has determined that this resolution may be an ARAR for surface water drinking sources. However, no discharges to surface water drinking sources will occur. Additionally, groundwater treatment is not a part of this removal action. As a result of these two factors, this resolution is neither applicable nor relevant and appropriate and, therefore, not an ARAR for the site.

Non-RCRA-Hazardous Waste Standards

State requirements such as non-RCRA, state-regulated hazardous waste requirements may be potential state ARARs because they are not within the scope of the federal ARARs (57 Federal Register 60848). The Cal. Code Regs., tit. 22, div. 4.5 requirements that are part of the state-approved RCRA program would be potential state ARARs for non-RCRA, state-regulated hazardous wastes.

The site waste characteristics need to be compared to the definition of non-RCRA, state-regulated hazardous waste. The non-RCRA, state-regulated waste definition requirements at Cal. Code Regs., tit. 22, Section 66261.24(a)(2)(a)(8) are potential state ARARs for determining whether other RCRA requirements are potential state ARARs. This section lists the TTLCs and Soluble Threshold Limit Concentrations (STLCs). The site waste may be compared to these thresholds to determine whether the waste meets the characteristics for a non-RCRA, state-regulated hazardous waste. Wastes including those that contain lead greater than the TTLC or STLC, asbestos, and PCBs greater than 50 mg/kg are expected to be non-RCRA-hazardous wastes.

Hazardous Waste LDRs for Non-RCRA-Hazardous Waste

If the generated wastes are classified as a non-RCRA-hazardous waste, then Cal. Code Regs., tit. 22, Section 66268.105 could be potentially applicable. These standards must be attained prior to land disposal of the waste. Assumptions were made regarding waste classification for purpose of this EE/CA based on previously collected data; however, all waste will be fully characterized prior to off-site disposal and will be managed accordingly.

3.5.5 Location-specific ARARs

Potential location-specific ARARs are identified and discussed in this section. The discussions are presented based on various attributes of the site location, such as whether it is a historic property. Additional surveys will be performed in connection with the removal action design and removal action to confirm location-specific ARARs, where inadequate siting information currently exists, or in the event of changes to planned facility locations.

3.5.5.1 Potential Federal Location-specific ARARs

The following potential federal location-specific regulations have been identified. They are further set forth in Table 3-3.

National Historic Preservation Act of 1966

The substantive provisions of Section 106 of the NHPA (16 U.S.C., Section 470, et seq.) and their implementing regulations (36 C.F.R., Part 800), as amended, are potential federal ARARs. The Navy is required to take into account the effects of CERCLA removal actions on any historic properties included in or eligible for inclusion in the NRHP **[**http://www.cr.nps.gov/nr/**]**. The NRHP is a list of districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

The substantive requirements of 36 C.F.R., Part 800 are summarized below:

1. <u>Identify cultural resources included in (or eligible for inclusion based upon the criteria set forth at 36 C.F.R., Part 800.4) the NRHP that are located at or near the area under study</u>.

   Hangar 1 is individually eligible for listing in the NRHP and is a contributing element of the Historic District, which is listed in the NRHP. The area under study should be identified and documented as the area of potential effects per 36 C.F.R., Part 800.4(a)(1).

2. <u>Identify and take into account the possible effects of proposed removal action alternatives on historic properties included in or eligible for inclusion in the NRHP</u>.

   If the proposed removal action will have no effect on historic properties, document a finding of “no historic properties affected” (36 C.F.R., Part 800.4[d]).

3. Identify and take into account adverse effects of proposed removal action alternatives on historic properties.

   If the proposed removal alternatives will have an effect on such resources, apply the Criteria of Adverse Effect and determine whether or not such effects are adverse effects (36 C.F.R., Part 800.5). If it is determined that the effects are not adverse, document a "finding of no adverse effect" (36 C.F.R., Part 800.5[b]).

   If it is determined that there will be adverse effects to historic properties, document a "finding of adverse effect" and take into account measures that would avoid, minimize, or mitigate adverse effects in accordance with the substantive requirements of 36 C.F.R., Part 800.6. More specifically, adverse effects of the removal action alternatives and historic mitigation measures are evaluated in the EE/CA. The recommended removal action is further evaluated in the Assessment of Adverse Effects to the United States Naval Air Station Sunnyvale, California – Historic District from the Recommended Site 29 Removal Action Alternative (TtEC, 2008).

4. Resolve Adverse Effects.

   If the Navy is unable to resolve adverse effects to the satisfaction of the Office of Historic Preservation (OHP) and Advisory Council on Historic Preservation (ACHP), it will take their comments into account and address them in Responsiveness Summaries in a manner consistent with the substantive requirements of 36 C.F.R., Parts 800.6 and 800.7.

These substantive requirements shall be addressed by the Navy in the CERCLA removal action selection process in lieu of the procedural requirements set forth in 36 C.F.R., Part 800. More specifically, the Navy shall focus the CERCLA process by actively seeking the expertise and comments of the following entities to ensure that the substantive requirements of the NHPA and 36 C.F.R., Part 800 are adequately addressed: the OHP, the ACHP, and other interested parties.

These entities shall be provided with the opportunity to review and comment upon the EE/CA and the draft Removal Action Work Plan. Their comments shall be addressed in responsiveness summaries accompanying the AM and the final Removal Action Work Plan, respectively. The Navy has determined that the Area of Potential Effect (APE) for the proposed project is confined to the Historic District. The Navy shall also meet and discuss alternatives, adverse effects, and historic mitigation with OHP, ACHP, and with stakeholders throughout the CERCLA process.

Migratory Bird Treaty Act of 1972

The Migratory Bird Treaty Act (16 U.S.C., Sections 703–712) prohibits at any time, using any means or manner, the pursuit, hunting, capturing, and killing or attempting to take, capture, or kill any migratory bird. This act also prohibits the possession, sale, export, and import of any migratory bird or any part of a migratory bird, as well as nests and eggs. A list of migratory birds for which this requirement applies is found at 50 C.F.R., Part 10.13. It is the Navy's position that this act is not legally applicable to the Navy actions. However, the Migratory Bird Treaty Act is considered a potentially relevant and appropriate requirement for this removal action because of

the potential for the hangar to serve as a temporary roosting area. A biological survey will be conducted prior to beginning the removal action to address migratory birds.

3.5.5.2 Potential State Location-specific ARARs

The following potential state location-specific regulation has been identified. It is further set forth in Table 3-4.

California Fish and Game Code Section 3005(a)

The taking of birds and mammals by poison (site contaminants) is prohibited. Substantive provisions are potentially applicable because site contaminants could potentially kill birds or mammals. The taking of birds and mammals will be prevented by containing contaminants and severing the pathway of exposure from siding contaminants. It is the Navy's position that the requisite federal sovereign immunity waiver does not exist to authorize applicability of the California Fish and Game Code. However, this requirement is deemed to be a "relevant and appropriate" state ARAR.

3.5.6 Potential Action-specific ARARs

The potential action-specific ARARs that may require consideration in evaluation of the remedial action alternatives are discussed in the subsections below.

3.5.6.1 Potential Federal Action-specific ARARs

The following potential federal action-specific regulations have been identified. They are further set forth in Table 3-5.

Staging Piles

Wastes generated during the removal action will be stockpiled on lined and bermed stockpile areas prior to off-site disposal. The wastes will be managed in accordance with the following federal requirements. It is expected that the stockpiled wastes will be RCRA-hazardous; however, waste characterization will be conducted during the removal action.

If, based on representative sampling and analysis of each wastestream, wastes are determined to be RCRA hazardous waste, then the substantive provisions of the amended (effective 22 April 2002) RCRA staging pile regulations are potentially applicable. These regulations consist of the performance and technical standards for staging piles (40 C.F.R., Parts 264.554[d][1][i–ii] and [d][2]); and closure requirements for staging piles (Part 264.554[j]–[k]). A staging pile may be designated for temporary (up to 2 years or more based on the necessity to assure timely and efficient implementation of remedial actions [Part 264.554{i}{2}]) treatment or storage of solid, nonflowing remediation waste. The RCRA LDRs, the landfill minimum technology

requirements, and the waste pile permitting requirements are not applicable to staging piles for RCRA hazardous wastes.

The staging pile regulations also require that the unit facilitate a remedy that is reliable, effective, and protective (40 C.F.R., Part 264.554[d][1][I]), and be designed using appropriate measures (e.g., liners, covers, run-on/runoff controls) to prevent or minimize releases and cross-media transfers of hazardous wastes and constituents (Part 264.554[d][1][ii]). For units located in a previously contaminated area of the facility, all remediation wastes, contaminated containment system components, structures, and equipment that are contaminated with waste or leachate must be removed or decontaminated within 180 days after the operating term of the staging pile expires (Part 264.554[j]). In addition, contaminated subsoils must be decontaminated. For units located on uncontaminated areas of the facility, within 180 days following expiration of the operating term, the staging pile must be closed in accordance with waste pile closure requirements at Cal. Code Regs., tit. 22, Section 66264.258(a) or Section 66265.258(a) and the closure performance standards at Cal. Code Regs., tit. 22, Section 66264.111 or Section 66265.111 for permitted and interim status facilities, respectively (Part 264.554[k]).

Hazardous Waste Management

Hazardous wastes, as defined by Cal. Code Regs., tit. 22, Section 66261, are managed in accordance with state requirements for both RCRA and non-RCRA-hazardous waste. Management includes control over generation, accumulation, storage, and analysis. The following regulations are considered potentially applicable to wastes generated from each of the alternatives.

Cal. Code Regs., tit. 22, Sections 66262.10(a) and 66262.11 include standards that are applicable to generators of hazardous waste. Requirements include obtaining a USEPA identification number, determining if wastes are hazardous or not, and accumulating waste within specified time limits.

Cal. Code Regs., tit. 22, Section 66262.34 permits hazardous wastes to be accumulated on site for up to 90 days without having to obtain a permit. In order to comply with accumulation requirements, waste must be stored in containers in accordance with 66262.171-178.

Once accumulation begins, containers must be stored and managed in accordance with the requirements of Cal. Code Regs., tit. 22, Section 66264.171-178. These include placing waste into compatible containers, conducting inspections, providing secondary containment to prevent releases to the environment, and separating incompatible materials by means of a dike or berm. Additionally, containers of ignitable or reactive waste must be stored at least 50 feet from the facility property line. At closure, hazardous waste and residues from the containment system must be removed and the lining or remaining containers must be decontaminated.

Wastes that are generated as a result of the removal action must be properly analyzed in order to perform waste characterization prior to disposal in accordance with Cal. Code Regs., tit. 22, Section 66264.13 (a) and (b).

Waste Disposal

RCRA wastes, which are land disposed, will be subject to LDRs and must attain levels achievable by best demonstrated available technology. Regulations are presented in Cal. Code Regs., tit. 22, Section 66268.40. Non-RCRA-hazardous waste LDRs are presented in Cal. Code Regs., tit. 22, Section 66268.105.

All non-hazardous wastes, excluding liquids, may be discharged to an approved facility authorized to accept such waste in accordance with Cal. Code Regs., tit. 22, Section 20220 (b), (c), and (d). In addition, due to the status of the removal action being conducted under the guidance of CERCLA, all waste generated as a result of the removal action must be disposed of at a CERCLA off-site rule-approved facility. Therefore, this regulation is potentially applicable to the extent that the facility is also CERCLA off-site rule-approved.

Designated wastes may only be discharged to Class I or II facilities. Although it is not anticipated that designated waste will be disposed of as a result of the removal action, all waste must be disposed of at CERCLA off-site rule-approved facilities. Because there are currently no approved Class III CERCLA off-site rule-approved facilities, all waste must be disposed of at either Class I or II facilities, depending on its hazardous characteristics. This regulation is considered potentially relevant and appropriate.

Certain metal-containing wastes may not be disposed of at either a Class II or III facility if they exceed certain threshold values. Any wastes that contain total lead in excess of 350 parts per million (ppm), copper in excess of 2,500 ppm, or nickel in excess of 200 ppm must be disposed of in a Class I approved facility. It is expected that the majority of waste generated during the removal action will require disposal as hazardous waste and will require Class I disposal. Regardless, all wastes will be evaluated to ensure compliance with California Health and Safety Code, Section 25157.8.

Management and Disposal of PCBs under TSCA

TSCA regulations govern the management and disposal of PCBs contained within the siding, structural steel, and other materials used to build Hangar 1. Because the PCBs are integral to the manufacture of the product and their presence is not the result of a spill or release from another source, upon disposal, the siding is defined as PCB bulk product waste. Regulations in 40 C.F.R., Part 761.60(e) and 761.62(a) govern the disposal of bulk product waste and allow for disposal through a variety of methods. Only those methods specified in 761.62(a) are permissible at the site due to the fact that the siding is also considered RCRA-regulated because of the lead content of the paint.

The requirements of 40 C.F.R., Parts 761.40, 761.50, and 761.65 govern the storage and disposal of PCBs and is potentially applicable. All TSCA waste will be managed in accordance with TSCA regulations. Waste that is also considered hazardous waste, will be managed under both TSCA and RCRA requirements. 761.180 governs the required recordkeeping and monitoring that apply to PCBs. It is considered potentially applicable.

The regulation at 40 C.F.R., Part 761.79 provides expanded decontamination procedures. It is potentially applicable to the decontamination of TSCA waste, as well as the decontamination of tools and equipment that contact PCBs during the removal action. The regulation of 40 C.F.R., Part 61(a)(5)(v) provides disposal requirements for personal protective equipment (PPE) and non-porous surfaces that have been decontaminated. These requirements are applicable to wastes generated during cleaning activities, which may occur as a result of removal and reuse of man-cranes.

Transportation of Hazardous Materials

The regulations at 49 C.F.R., Parts 171 and 172 govern all aspects of packaging, marking, labeling, placarding, and manifesting of Department of Transportation (DOT) hazardous materials, which include hazardous wastes. DOT defines a "person" as one who offers "hazardous materials for transportation in commerce or transports hazardous material to further a commercial enterprise." Because the Navy does not meet the definition of a "person," this regulation is not applicable. However, because hazardous materials will be transported to off-site disposal facilities, this regulation is considered relevant and appropriate to the removal action.

National Emissions Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants for asbestos are located in Subpart M. The procedures in 40 C.F.R., Part 61.145(c) contain the requirements that govern asbestos removal and handling during a response action.

3.5.6.2 Potential State Action-specific ARARs

The following potential state action-specific regulations have been identified. They are further set forth in Table 3-6.

SWRCB Order No. 99-08

The Navy has determined that Section 121 (e)(1) of CERCLA and the corresponding provision in the NCP (40 C.F.R., Part 300.400[e][1]) apply to the discharge of stormwater from the Hangar 1 area and that a National Pollutant Discharge Elimination System (NPDES) permit (either general or individual) is not required for that discharge. However, the Navy will comply with the substantive provisions of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (SWRCB Order No. 99-08) identified by the state

of California as "[to be considered] TBC" guidance for compliance with the federal CWA and state of California water quality requirements identified as potential water quality ARARs in this EE/CA. Associated reporting and record keeping are considered procedural and are, therefore, not substantive.

The Navy will also comply with the following substantive provisions of the General Permit: substantive requirements for development and implementation of BMPs, substantive requirements for the content of a Stormwater Pollution Prevention Plan (SWPPP), and substantive technical monitoring and analytical requirements (location and frequency of sample collection, parameters to be tested, and analytical methodologies). Compliance with these substantive requirements will be documented in an appendix to the Removal Action Work Plan titled "Stormwater Management Plan." This plan will include descriptions of the BMPs to be implemented during the removal action and address substantive SWPPP requirements.

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4.0 IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES

This section identifies a broad range of removal action alternatives to be examined against the RAO for Hangar 1 as presented in Section 3.0. The removal action alternatives are described and evaluated in this section based on two of the three EE/CA criteria, implementability and effectiveness, taking into consideration site-specific conditions. The Navy is aware of the public interest in Hangar 1 and has also identified and evaluated a broad range of historic mitigation measures that would comply with the substantive provisions of the NHPA and 36 C.F.R., Part 800. At the conclusion of this section, the alternatives that are determined to have a reasonable chance of success in achieving the RAO are retained for a comparative analysis in Section 5.0, which addresses the third of the three EE/CA criteria, cost.

4.1 ADDITIONAL REGULATORY CONSIDERATIONS

The NCP (40 C.F.R., Part 300.430[a]) sets forth the following goals, management principles, and expectations to assist in the identification and evaluation of appropriate remedial action alternatives. They were considered in this EE/CA in order to ensure that the selected removal action will be consistent with and support long-term remedial goals.

The subject goals include selecting alternatives that meet three principles:

- The remedy must be protective of human health and the environment.
- The remedy must maintain that protection over time.
- The remedy must minimize untreated waste.

The following expectations, applicable to the removal action for Hangar 1, were used to help identify various alternatives:

- Treatment should be used to address the principal contaminant threats wherever practicable. This is most applicable where highly contaminated areas occur or areas where highly mobile materials are present.
- Engineering controls such as contaminant containment should be used when the waste presents a relatively low long-term threat or where treatment is impracticable.
- Innovative technologies should be considered when such technologies offer the potential for comparable or superior treatment performance or implementability.

The above goals and expectations provided a basis for identifying a broad range of the removal action alternatives for Hangar 1 presented in Section 4.3.

4.2 ALTERNATIVE EVALUATION CRITERIA

Alternatives listed in Section 4.3 are subjected to a detailed evaluation in terms of implementability and effectiveness criteria, along with specific components of these criteria that affect the ultimate selection of an appropriate response for Hangar 1. Sections 4.2.1 and 4.2.2 define the evaluation criteria and their specific components. Section 4.5 describes and evaluates 13 removal actions for Hangar 1. Coating options for addressing the interior components for Hangar 1 are evaluated in Section 4.7 and used as common costs for removal action alternatives that are retained for comparative analysis in Section 5.0 (for applicable alternatives).

Recognizing the significant concerns relating to the cultural and historic value of Hangar 1, and to meet the substantive requirements of NHPA and 36 C.F.R., Part 800, a range of historic mitigation measures are discussed in this section for the 13 alternatives, with the historic measures tailored to the specific alternatives. At the conclusion of this section, the alternatives that are determined to have a reasonable chance of success in achieving the RAO are retained for a comparative analysis in Section 5.0. Cost, the third of the three EE/CA evaluation criteria, is also addressed in Section 5.0.

4.2.1 Implementability

Implementability addresses the technical and administrative feasibility of implementing the alternative, as well as the availability of various services and materials required during its implementation along with community acceptance. Implementability is assessed through the four elements described below.

Technical Feasibility

Technical feasibility covers several factors, including technical difficulties and unknowns associated with the construction and operation of a technology, the reliability of the technology, the ability to monitor the effectiveness of a remedy, and the ease of undertaking additional removal actions if the remedy is not effective.

Administrative Feasibility

Administrative feasibility involves the necessity for coordinating with other offices and agencies and the ability and time required to obtain any necessary approvals or permits (for off-site actions). Availability of funds and funding sources for specific types of actions are part of the administrative considerations.

Availability of Services and Materials

This is influenced by the availability of personnel and technology suitable to perform the action; adequacy and availability of off-site treatment, storage, and disposal capacity; ability to procure

services and materials; and the potential effectiveness of prospective technologies at the site (i.e., are bench-scale tests required prior to implementation).

Community Acceptance

Assessment of each alternative in accordance with this evaluation criterion will be based upon consideration of public comments received after this EE/CA is published and made available for public comment. A previous version of this EE/CA was published on May 5, 2006. Comments received during the comment period for that version were evaluated and incorporated into this revised EE/CA, where appropriate. The assessment of each alternative in this revised version will require determining which components of the alternatives interested persons in the community support, have reservations about, or oppose. The assessment cannot be completed until public comments have been considered.

4.2.2 Effectiveness

The effectiveness of an alternative refers to its ability to meet the RAO within the scope of the removal action. In considering the effectiveness of an alternative, the NCP details the five elements described below.

Overall Protection of Human Health and the Environment

The NCP mandates that alternatives shall be assessed to determine whether they could adequately protect human health and the environment in both the short and long term from unacceptable risks posed by hazardous substances, pollutants, or contaminants present at the site. Overall protection of human health and the environment draws on the assessments of other evaluation criteria, especially short- and long-term effectiveness and compliance with ARARs.

Compliance with ARARs

Alternatives shall be assessed to determine whether or not they attain ARAR requirements under federal and state environmental laws.

Short-term Effectiveness

The short-term effectiveness of an alternative is evaluated by addressing the effects of the alternative during implementation. The following factors are considered when evaluating short-term effectiveness: protection of the community, protection of the workers, environmental impacts, and time until the RAO is achieved.

Long-term Effectiveness and Permanence

Alternatives are assessed for the long-term effectiveness they afford, along with the degree of certainty that the alternative would prove to be successful. Factors that are considered include the magnitude of residual risk remaining from untreated waste or treatment residuals remaining at

the conclusion of the removal action, and the adequacy and reliability of controls that are necessary to manage waste, which may remain in place.

Reduction of Toxicity, Mobility, or Volume through Treatment

The degree to which an alternative employs treatment that reduces toxicity, mobility, or volume is assessed. Considered important are the amount of contaminants that would be destroyed or removed; the degree to which it could be expected that contaminants would be destroyed or treated; the degree to which treatment is irreversible; the type and quantity of residuals that may remain following the removal action; and the degree to which treatment reduces the inherent hazards posed by principal threats at the site.

4.3 HANGAR 1 REMOVAL ACTION ALTERNATIVE ANALYSIS

The selection of removal action alternatives identified for evaluation in this EE/CA was based upon whether the alternatives would satisfy the Hangar 1 RAO, and the ARARs presented in Section 3.5. The range of these alternatives also considered the NCP goals and expectations for these alternatives discussed in Section 4.1. Accordingly, the following 13 removal action alternatives are selected for a detailed evaluation:

- Alternative 1: Enclose entire hangar inside another structure
- Alternative 2: Cover with rubberized material
- Alternative 3: Coat with asphalt-emulsion
- Alternative 4: Coat with acrylic coating
- Alternative 5: Coat with plasma-sprayed oxide
- Alternative 6: Cover with new visually similar siding
- Alternative 7: Media blast contaminated surfaces
- Alternative 8: Neutralize PCBs using emulsified bimetallic extraction
- Alternative 9: Remove contaminants by chemical stripping and coating
- Alternative 10: Remove siding and coat exposed surfaces
- Alternative 11: Demolish and remove hangar
- Alternative 12: Collect stormwater runoff and treat on site
- Alternative 13: Collect stormwater runoff and treat/dispose off site

The above alternatives generally fall into three groups. The first group includes alternatives that offer covering or coating the Hangar 1 exterior without removal of COCs (Alternatives 1, 2, 3, 4, and 6). The second group consists of alternatives that involve removal and/or treatment of the COCs (Alternatives 5, 7, 8, 9, 10, and 11). The third and final category includes alternatives that

address the Hangar 1 COCs indirectly through capture and control of contaminant migration (Alternatives 12 and 13).

Additionally, two other coating alternatives were researched based on community interest: one using silicone coating and another based on epoxy coating. These were evaluated for the exterior surface in concert with material suppliers and were not found to be compatible with the Hangar 1 exterior siding. Therefore, they were not carried forward for comparative analysis. Typically, silicone paints are applied to smooth indoor surfaces, not a coarse substrate such as asphalt-emulsion. Vendors that supply exterior silicone paints do not consider asphalt-emulsion to be a good substrate, and therefore they recommend stripping the siding down to the metal or covering the siding with aluminum flashing or siding panels prior to applying the silicone paint. Epoxy coatings have excellent adhesion properties to coarse surfaces and have been widely used for environmental and industrial applications. A drawback of using epoxy coating as an exterior coating for the siding is that when weathered, it begins to appear "chalky," which would negatively affect the visual impact of the hangar. Weathered epoxy, coupled with the curvature and flexibility of the siding, can become brittle and begin to crack and peel. A more detailed discussion on the effectiveness of silicone and epoxy coatings is provided in Appendix D, Response to General Comment 7A.

4.4 HISTORIC MITIGATION

Historic mitigation measures will be performed to substantively comply with the NHPA and while not an ARAR, the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68) will also be utilized to provide mitigation guidance. In addition, the Navy has met and consulted with OHP, ACHP, and other stakeholders throughout the CERCLA process and in the evaluation of the following historic mitigation measures that will be considered:

- Level 1 Historic American Engineering Record (HAER) documentation
- Oral histories of individuals who worked in the hangar during different eras
- Virtual Hangar 1 interactive compact disk (CD)
- Inventory-catalogue of Hangar 1 collections contained in Moffett Field Museum
- Preservation of Hangar 1 man-cranes
- Matching or replacing Hangar 1 exterior features with coatings or materials similar in color and appearance to the original hangar
- Coating the exposed steel frame with a protective coating similar in color to the former siding

Level 1 HAER documentation will include a combination of information to record the historic property and to provide historic context for public interpretation and enrichment. The documentation will include recording the property itself, and its relation to the Historic District,

through development of measured drawings prepared to HAER documentation standards. Measured drawings will include plans, elevations, sections, and detail drawings along with a cover sheet, site plan, and written information. The HAER documentation will also include archival quality, large format, black and white photographs of Hangar 1 prepared according to HAER photographic specifications.

The oral history archive will be developed as a historic record. It will include interviews with individuals who worked in the hangar during the Dirigible Era, Army Era, Blimp Era, Jet Fighter Era, and P-3 Orion Era. The oral histories will be given to the Moffett Field Museum. As described below, they will also be included in a virtual Hangar 1 interactive compact disk that will be distributed to various interested parties.

The virtual Hangar 1 interactive CD will include a three-dimensional interactive representation of the hangar in each historic era designed for a wide age range of the interested public. It will include a narrative description and photographs of the hangar, portions of the oral histories, materials collected and developed by the HAER efforts, and video clips. The CD will be distributed to the Moffett Field Museum, historic preservation societies, veterans groups, schools, libraries, RAB members, other interested parties, and will be available for purchase at the NASA gift shop.

An inventory of the Hangar 1 collections contained in the Moffett Field Museum will be performed. These collections include Hangar 1 photographs, artifacts, models, drawings, and publications. The Moffett Field Museum is open to the public.

Man-cranes, which were part of the original Hangar 1 installation made to travel along overhead rails running the length of the hangar, will be removed as part of the removal action. Upon removal, the man-cranes will be preserved and may be donated to the Moffett Field Museum.

Alternatives that cover or coat the siding of the building will use materials that match, as closely as possible, the original colors of the hangar. This would be done to minimize the visual changes caused by the implementation of alternatives that affect the character-defining architectural features of Hangar 1.

Alternatives that remove the siding, decking, and roofing, but leave the underlying steel frame, will have the steel frame coated with protective coating colored to match the original hangar's former siding. This will result in a ghosting effect reminiscent of the original Hangar 1. The steel frame will provide a sense of scale and will suggest the dominance on the landscape once held by Hangar 1 within the context of the Historic District. Replacing the siding with a material similar in color and appearance to the original hangar siding to minimize the visual changes caused by the implementation of this alternative is also considered in the EE/CA.

The Hangar 1 removal action analysis in Section 4.5 identifies mitigation measures discussed above that were considered for each removal action alternative evaluated in that section.

4.5 HANGAR 1 REMOVAL ACTION ANALYSIS

This section identifies 13 removal action alternatives for the Hangar 1 exterior based on the RAO identified in Section 3.0. The removal action alternatives are described and evaluated in this section based on two of the three EE/CA criteria, implementability and effectiveness, taking into consideration site-specific conditions. The third EE/CA criterion, cost, is retained for comparative analysis in Section 5.0.

4.5.1 ALTERNATIVE 1: ENCLOSE ENTIRE HANGAR INSIDE ANOTHER STRUCTURE

Alternative 1 includes enclosing the entire hangar inside another superstructure such as a tent, an aluminum structure, or other types of architectural membrane. The hangar's existing siding would not be removed or replaced. This alternative is described below and evaluated for implementability and effectiveness.

4.5.1.1 Description (Alternative 1: Enclose Entire Hangar Inside Another Structure)

This alternative provides encapsulation of Hangar 1 by enclosing it inside another structure with impermeable walls. The structure would be designed and engineered to meet the required building construction guidelines for loading, winds, earthquakes, and other pertinent standards. The structure is expected to include a metal frame that would provide additional support for the structural shell and would be tied to Hangar 1 for additional support using fasteners. A detailed analysis and design of the existing Hangar 1 structure would be required. Routine inspection and maintenance of the structure would be required.

4.5.1.2 Implementability (Alternative 1: Enclose Entire Hangar Inside Another Structure)

Technical Feasibility

The design, engineering, and installation of the structure would create complexity and difficulties considering the size and location of the structure, and is unprecedented. A new enclosure for Hangar 1 would have to be taller and larger in size and would create an increased obstruction to airfield operations; therefore, this alternative would not be technically feasible.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

This alternative requires elaborate engineering design and planning. The alternative uses standard construction equipment, material, and expertise. Skilled construction workers are available. Sediment, rinsate, and construction debris waste generated during the removal action would be disposed at an approved off-site disposal facility. A properly licensed waste-hauling company would provide transportation of the contaminated waste to the selected facility. Approved facilities located in both California and Nevada have sufficient capacity to manage the expected amount of waste.

4.5.1.3 Effectiveness (Alternative 1: Enclose Entire Hangar Inside Another Structure)

Overall Protection of Public Health and the Environment

This alternative would provide adequate protection of public health and the environment, provided the cover material for the structure is routinely inspected and repaired throughout its life span. The structure would control any release of PCBs by providing total enclosure of the hangar and eliminating any direct exposure to the atmosphere. During installation of the structure, the work area would be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs, as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. This alternative would comply with air quality ARARs with the proper air monitoring during implementation. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. All wastes generated in the course of the removal action would be characterized, managed, and disposed of properly in compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and would affect the Historic District because it would completely cover the hangar, thus obscuring its character-defining features. The alternative would specifically affect the character-defining architectural features that make this building distinctive under Criterion C. The following aspects of the hangar's historic integrity and that of the Historic District would be affected: location, design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and application of a coating on the structure that would be colored to match, as closely as possible, the original colors of the hangar in order to minimize the visual changes caused by the implementation of this removal action alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlling access to the project site and by conducting air monitoring and runoff control during implementation. Disposal of project-related wastes, such as construction debris and decontamination water, at a CERCLA-approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using proper PPE as designated in specific activity hazards analyses. The required construction equipment and procedures would conform to Occupational Safety and Health Administration (OSHA) specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

The alternative would be effective over the long term for as long as the integrity of the new structure would be preserved. This would require routine inspection and maintenance of the new structure. The RAO would be achieved by complying with the ARARs and enclosing the PCB source, but the structure component materials would eventually deteriorate with time and need to be replaced in the future.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity or volume of the contaminants through treatment. Reduction of mobility at the site is addressed by isolating the siding from the atmosphere and controlling it from releasing contaminants to the environment.

4.5.1.4 Summary (Alternative 1: Enclose Entire Hangar Inside Another Structure)

Alternative 1, enclosing Hangar 1 within another superstructure, is not a viable alternative. The alternative is not technically feasible because the structure would present an added obstruction to airfield operations due to its proximity to the existing runways, and is unprecedented. The alternative is administratively feasible. The required services and material for implementation of this alternative would be available. This alternative would provide adequate protection of public and the environment, as long as the integrity of the structure material is preserved. The alternative, in combination with the proposed historic mitigation measures, would be in compliance with ARARs. The alternative is effective in the short term. The alternative is effective in the long term but is subject to routine maintenance and repair or replacement of damaged material. The mobility of the PCBs may be reduced, but the volume and toxicity would be unaffected.

4.5.2 ALTERNATIVE 2: COVER WITH RUBBERIZED MATERIAL

This alternative includes covering the exterior surface of Hangar 1 with a protective rubberized material and, thereby, controlling the release of PCBs to the environment. The siding would not be removed or replaced. This alternative is described below and evaluated for implementability and effectiveness.

4.5.2.1 Description (Alternative 2: Cover with Rubberized Material)

This alternative, similar to an approach taken on a maintenance project performed on a similar hangar in Akron, Ohio, provides containment of PCBs in the siding and the roof of Hangar 1 by installation of a “black” rubberized material. The siding is first covered with a layer of plywood. Then the black rubberized material is installed over the outer structure, including the clamshell doors. The hangar windows and access doors would not be covered since they would be replaced. The black rubber is a 60-mil membrane, untalced, and unreinforced that comes in 54-inch by 100-foot rolls. A fastening rail system is attached to the plywood and is used to hold the rubber in place against the plywood surface. The rail system and the membrane would run perpendicular to the ground. The rails would be spaced 48 inches apart to allow for at least 6 inches of overlap of the rubber. The end laps of the rolls would be glued upon installation and secured with fasteners. The installation requires use of fasteners, caulking, and sealant throughout and at all rubber termination points. This would provide maximum encapsulation of the surface for as long as the integrity of the rubber material is preserved. Routine inspection and maintenance of the rubber material would be required. The hangar windows and access doors would not be covered since they would be replaced.

4.5.2.2 Implementability (Alternative 2: Cover with Rubberized Material)

Technical Feasibility

This alternative is technically feasible and has been implemented at a similar facility in Akron, Ohio.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

This alternative uses standard construction equipment, material, and expertise. Skilled construction workers would also be available. An approved off-site disposal facility would be used to dispose of contaminated wastes and debris from the site. A properly licensed waste-hauling company would provide transportation of the contaminated waste to the selected facility. Approved facilities located in both California and Nevada have sufficient capacity to manage the anticipated amount of waste.

4.5.2.3 Effectiveness (Alternative 2: Cover with Rubberized Material)

Overall Protection of Public Health and the Environment

This alternative would provide adequate protection of public health and the environment, provided the rubber material is routinely inspected and repaired throughout its life span, which is estimated to be 30 years. The rubber material would control any release of PCBs by providing enclosure of the siding and eliminating any direct exposure to the atmosphere. During installation of the rubber material, the work area must be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs, as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Air quality ARARs would be complied with during implementation of this alternative, although there is low potential for dust generation. This alternative would comply with air quality ARARs with the proper air monitoring during application. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. Sediment, rinsate, and other wastes generated in the course of the rubber material installation would be characterized, managed, and disposed of properly in compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and the Historic District because it would completely cover the hangar with material that is not consistent with the construction materials used in 1932 and would not meet the Secretary of the Interior's Standards for Treatment of Historic Properties for Rehabilitation. Similar to Alternative 1, this alternative would obscure Hangar 1's character-defining features and would cause an adverse visual effect to the Historic District. The character-defining architectural features of the hangar under Criterion C would be affected. The following aspects of the hangar's historic integrity and that of the Historic District would be affected: design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and application of a coating on the structure that would be colored to match, as closely as possible, the original colors of the hangar in order to minimize the visual changes caused by the implementation of this removal action alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlling access to the project site and by conducting air monitoring and runoff control during implementation. Disposal of project-related wastes, such as construction debris and decontamination water, at a CERCLA-approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using proper PPE as designated in specific activity hazard analyses. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative would effectively contain the PCBs that remain in place over the long term for as long as the integrity of the rubberized material is preserved. This would require routine annual inspection and maintenance of the membrane. In addition, the rubber material would eventually deteriorate with time and may need to be replaced approximately every 30 years depending on conditions. Accordingly, the RAO would be achieved by complying with the ARARs and encapsulating the PCB source.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity or volume of the contaminants through treatment. Reduction of mobility on the site is addressed by isolating the siding from the atmosphere and controlling it from releasing PCBs to the environment.

4.5.2.4 Summary (Alternative 2: Cover with Rubberized Material)

Alternative 2, covering the Hangar 1 surface with rubberized material, is technically and administratively feasible. The required services and material for implementation of this alternative would be available. This alternative would provide adequate protection of the public and the environment, as long as the integrity of the rubberized material is preserved. The alternative, in combination with the proposed historic mitigation measures, is in compliance with the ARARs. The alternative is effective in the short term. Long-term effectiveness for containing the PCBs that remain in place is subject to routine maintenance, repair, or replacement of damaged material. The mobility of the PCBs would be reduced, but the volume and toxicity would be unaffected.

4.5.3 ALTERNATIVE 3: COAT WITH ASPHALT-EMULSION

This alternative includes coating the exterior surface of Hangar 1 with an asphalt-emulsion to control the release of PCBs to the environment. The siding would not be removed or replaced. The alternative is described below and evaluated for implementability and effectiveness.

4.5.3.1 Description (Alternative 3: Coat with Asphalt-Emulsion)

The hangar would be coated with an asphalt-emulsion to control the release of PCBs to the environment. This asphalt-emulsion was applied to the hangar as a TCRA in 2003 as an interim removal action. The asphalt-emulsion would consist of two different coatings. Henry #107, or equivalent, asphalt-emulsion would be applied to the black upper walls and roof of the hangar. Henry #107, manufactured by the Henry Company, is a solvent-free material made from asphalt emulsified with bentonite clay and water. It is waterproof and does not crack, run, or sag under extreme weather conditions. The silver lower walls of the hangar would be coated with Henry #229, or equivalent. Henry #229 is a heavy-bodied, non-fibered, water-based aluminum coating. It

is formulated with aluminum pigment blended into a clay-type asphalt-emulsion. The coatings would be applied with power-brooms after surface preparation by power washing.

4.5.3.2 Implementability (Alternative 3: Coat with Asphalt-Emulsion)

Technical Feasibility

This alternative is not technically feasible as a reliable long-term exterior coating even though it was successfully executed during the Navy TCRA in October 2003 as part of an interim removal action. Coating the hangar exterior with an asphalt-emulsion as part of a removal action would require the application of several emulsion layers, along with bi-annual touch ups, as part of the long-term operation and maintenance (O&M) regimen. The additional layers of emulsion will cause additional stresses on the substrate and in turn will accelerate the degradation of the siding.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

The materials and the services for this alternative would be available. The previous supplier (Henry Company; note that other equivalent suppliers would be available) of the materials is a large company that has been in business since 1933. An approved off-site disposal facility would be used to dispose of wastes and debris from the site. A properly licensed waste-hauling company would provide transportation of waste to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the anticipated amount of waste.

4.5.3.3 Effectiveness (Alternative 3: Coat with Asphalt-Emulsion)

Overall Protection of Public Health and the Environment

This alternative has a warranty of 3 to 5 years; therefore, it would not be effective over the long term for protection of public health and the environment. The asphalt emulsion would temporarily control any releases of PCBs by providing an interim encapsulation of the siding. Weathering of the siding, along with additional layers of asphalt emulsion, will cause the siding to peel and crack, therefore exposing the siding and potentially causing future releases of PCBs. Recent evidence of minor cracking and peeling has been observed on the layer of asphalt emulsion placed as part of the 2003 interim removal action. The O&M program for Alternative 3 entails routine touch up and recoating of the siding, but as additional weathering of the siding continues and additional coatings are applied, the degradation rate of the siding will accelerate.

Compliance with ARARs

This alternative would comply with federal and California state ARARs, as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Air quality ARARs would be complied with during implementation of this alternative, although there is low potential for dust generation. This alternative would comply with air quality ARARs with the proper air monitoring during application. VOC emissions from the coatings are quite limited, and asphalt-emulsion is compliant with air quality ARARs. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. Wastes generated in the course of the asphalt emulsion installation would be characterized, managed, and disposed of properly in compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and may affect the Historic District. Even though the materials would not be consistent with those used in 1932 for the original construction, choosing colors for the asphalt-emulsion that would be compatible with the hangar's current colors as well as applying the Secretary of the Interior's Standards for Treatment of Historic Properties for Rehabilitation could lessen the effect of this alternative to the level of no adverse effect. Careful treatment would preserve the hangar's integrity of design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and choosing the colors of the asphalt-emulsion coating to match, as closely as possible, the original colors of the hangar. This would minimize the visual changes caused by the implementation of this alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlled access to the project site and by conducting air monitoring and runoff control during implementation. Disposal of project-related wastes at a CERCLA-approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using standard PPE. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination

reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative does not effectively contain PCBs in the siding for the long-term, since additional layers of emulsion will increase the stresses on the existing substrate and further accelerate the failure of the coating over the siding. The RAO would be partially achieved because the alternative complies with the ARARs and encapsulates the source, but the removal action does not address the source in the long term.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity or volume of the contaminants through treatment. Reduction of mobility on the site is addressed by isolating the siding from the atmosphere and controlling it from potentially releasing contaminants to the environment.

4.5.3.4 Summary (Alternative 3: Coat with Asphalt-Emulsion)

Alternative 3, covering the Hangar 1 surface with an asphalt-emulsion coating, is not a viable alternative. The alternative is not technically feasible because weathering of the siding, along with additional layers of asphalt emulsion, will decrease the integrity of the siding. This alternative is administratively feasible. The required services and material for implementation of this alternative would be readily available, and skilled workers with directly related experience are available as well. This alternative cannot provide adequate long-term protection to the public and the environment even if the coating is routinely maintained. The alternative, in combination with the proposed historic mitigation measures, is in compliance with ARARs. The mobility of the PCBs would be reduced, but the volume and toxicity would be unaffected.

4.5.4 ALTERNATIVE 4: COAT WITH ACRYLIC COATING

This alternative is a more flexible and elastic version of the Belzona ceramic cladding coating that was evaluated in the May 5, 2006, EE/CA. In this section, acrylic coating refers to the material covering the hangar exterior and includes a flexible acrylic coating that is highly adhesive to the existing hangar siding. Two types of acrylic coating were evaluated; the first is manufactured by Belzona and consists of a high-strength polyester-webbed reinforcing sheet embedded in the coating system. The other type of acrylic coating is manufactured by Sherwin Williams and is a non-reinforced acrylic coating that has been tested on a similar hangar in Akron, Ohio. Acrylic coatings would minimize the release of contaminants to the environment.

The existing siding would not be removed or replaced. The alternative is described below and evaluated for implementability and effectiveness.

4.5.4.1 Description (Alternative 4: Coat with Acrylic Coating)

The Belzona 3111 Flexible Membrane System is a flexible and elastic acrylic system embedded with a tough, flexible, and elastic polymeric film (Belzona 9311). The Sherwin Williams acrylic coating system consists of a Loxon® Acrylic Primer overlaid with a Uniflex® Elastomeric coating that is sprayed directly over the siding. The hangar windows and access doors would not be coated since they would be replaced.

Acrylic coatings are flexible and can tightly follow the exterior contours. The coatings would provide seamless, long-term weather- and water-proofing for the hangar exterior and offer excellent protection against infrared and ultra-violet radiation and natural and industrial pollutants. Acrylic coatings are impermeable to water and would control the release of PCBs to the environment. They are ideally suited for joints, seams, flashings, and complex roof and dome designs.

The Belzona acrylic coating is sprayed on a reinforcing sheet that is positioned directly over the siding with a bonding agent. The reinforcing sheet gives the coating additional adhesion, prevents localized cracking/peeling, and ensures that the product is applied at a constant thickness. This system has been used for many industrial applications and is proven to last in all environmental conditions.

The Sherwin Williams acrylic coating was successfully tested on the exterior siding of a similar hangar in Akron, Ohio. The testing was performed in August of 2006 and proved the Robertson Protected Metal to be a compatible substrate for this acrylic coating system.

4.5.4.2 Implementability (Alternative 4: Coat with Acrylic Coating)

Technical Feasibility

This alternative is technically feasible. An acrylic coating has been successfully applied to many types of surfaces in the past including painted surfaces, stucco, cement, steel, stone, and brickwork. In the past, acrylic coatings have been applied to surfaces similar to Hangar 1.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

The materials and the services for application and ongoing O&M would be available. Both acrylic coating suppliers are established companies that have proven track records in the coating and roofing industries. The procedures for applying the acrylic coating would be similar to those for the asphalt-emulsion coating that was successfully applied to Hangar 1 for the Navy's TCRA in 2003. An approved off-site disposal facility would be used for disposal of wastes and debris from the site. A properly licensed waste-hauling company would provide transportation of the waste to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the anticipated amount of waste.

4.5.4.3 Effectiveness (Alternative 4: Coat with Acrylic Coating)

Overall Protection of Public Health and the Environment

The alternative would provide adequate protection of public health and the environment with proper application and O&M. The acrylic coating is flexible and the elastic material would control any release of PCBs by providing encapsulation of the siding and eliminate any direct exposure to the atmosphere. The alternative would require long-term O&M activities to preserve the integrity of the impermeable layer. During application of the acrylic coating, the work area would be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Air quality ARARs would be complied with during implementation of this alternative, although there is a low potential for dust generation. This alternative would comply with air quality ARARs with the proper air monitoring during application. These acrylic coatings are compliant with air quality ARARs. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. Wastes generated in the course of the acrylic coating installation would be characterized, managed, and disposed of properly in compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and may affect the Historic District. Even though the materials would not be consistent with those used in 1932 for the original construction, choosing colors for the acrylic coating that would be compatible with the hangar's original colors as well as applying the Secretary of the Interior's Standards for Treatment of Historic Properties for Rehabilitation could lessen the effect of this alternative to the level of no adverse effect. Careful treatment would preserve the hangar's integrity of design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate

potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and choosing the colors of the proposed acrylic coating to match, as closely as possible, the original colors of the hangar. This would minimize the visual changes caused by the implementation of this alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlled access to the project site and by conducting air monitoring and runoff control during implementation. Disposal of project-related wastes at an approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using standard PPE during application of the coating. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative would effectively contain the PCBs that remain in place. The alternative would be effective over the long term for as long as the integrity of the acrylic coating is preserved. This would require inspections and touch-ups every 5 years and recoating after 15 years from application for the Belzona coating and inspections and touch-ups at years 1, 3, and 5, and a recoat at years 10 and 20 for the Sherwin Williams coating. The RAO would be achieved because the alternative complies with the ARARs and encapsulates the source.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity or volume of the contaminants through treatment. Reduction of mobility on the site is addressed by isolating the siding from the atmosphere and controlling it from potentially releasing contaminants to the environment.

4.5.4.4 Summary (Alternative 4: Coat with Acrylic Coating)

Alternative 4, covering the Hangar 1 surface with acrylic coating, is technically and administratively feasible. The required services and material for implementation of this alternative would be readily available, and skilled workers with related experience would be available as well. This alternative would provide adequate protection of the public and the environment, as long as the integrity of the acrylic coating is preserved. The alternative, with the proposed historic mitigation measure, is in compliance with ARARs. The alternative is effective in the short term. Long-term effectiveness for containing the contamination that remains in place is subject to inspections and touch-ups every 5 years and recoating after 15 years from application for the Belzona coating and inspections and touch-ups at years 1, 3, and 5, and a recoat at years 10 and 20 for the Sherwin Williams coating. The mobility of the PCBs would be reduced, but the volume and toxicity would be unaffected.

4.5.5 ALTERNATIVE 5: COAT WITH PLASMA-SPRAYED OXIDE

This alternative includes coating the surface of Hangar 1 with a plasma-sprayed oxide to minimize the release of PCBs to the environment. The siding would be removed, stripped of the existing coatings, coated, and reattached. The alternative is described below and evaluated for implementability and effectiveness.

4.5.5.1 Description (Alternative 5: Coat with Plasma-Sprayed Oxide)

The plasma spray process involves the spraying of molten or heat-softened material (usually a metal compound) typically onto a metal or ceramic surface to provide a coating. Material in the form of powder is injected into a very high temperature plasma flame (argon, nitrogen, hydrogen, or helium), typically about 30,000 degrees Fahrenheit (°F), where it is rapidly heated and accelerated to a high velocity. The hot material impacts the substrate surface at a temperature of about 300 °F and rapidly cools, forming a coating. The powder is so rapidly heated and accelerated that spray distances can be on the order of 25 to 150 millimeters. The plasma spray process is usually used in industry to coat metal or ceramic parts with a resistant metal coating to increase hardness and longevity. In addition, worn parts are sprayed to repair the parts instead of replacing them.

This process entails the removal, packaging, and transportation of the removed siding panels to a plasma spraying facility because the process cannot be performed at the project site. Because the detached siding is a RCRA/TSCA waste, the transportation would be subject to RCRA and TSCA regulations. Also, the facility that treats the siding needs to be a permitted facility to dispose of both RCRA and TSCA waste. The surface to be coated must be clean and rough to maximize the surface area to allow for good adhesion. This is typically done by media blasting the surface prior to application. The stripped material would be disposed of at an appropriate approved facility.

4.5.5.2 Implementability (Alternative 5: Coat with Plasma-Sprayed Oxide)

Technical Feasibility

This alternative is not feasible for a number of reasons. This technology is typically used to treat metal or ceramic surfaces. The necessary equipment would not allow for the coating of the siding panels in place; instead, panels would have to be removed, sent to a coating facility, coated, and then reinstalled on the hangar. Removal/reinstallation of existing siding is not feasible. The siding panels are attached to the structure with fasteners in such a manner that the fasteners and the siding would be damaged if removal were attempted. In addition, each panel is glued to the underlying panel with a tar material. The siding would bend, crack, and possibly break off in pieces during removal attempts and could not be reinstalled. The surface of the siding panels would have to be media blasted down to the steel core prior to coating because of the hot process of application and to increase the surface area to maximize adhesion. The waste from the media blasting would have to be collected, transported, and disposed of at a proper facility.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

The services and materials would be available for this alternative, although not for this type of application. Plasma spraying technology has been available since the late 1950s, and facilities to apply the coating have been available since that time. Skilled construction workers would be available for the removal and reinstallation of the siding panels after being coated. An approved off-site disposal facility would be used for disposal of wastes and debris from the site and the coating facility. A properly licensed waste-hauling company would provide transportation of the wastes to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the anticipated amount of waste.

4.5.5.3 Effectiveness (Alternative 5: Coat with Plasma-Sprayed Oxide)

Overall Protection of Public Health and the Environment

The alternative would provide adequate protection of public health and the environment with the proper application. The removal of the existing covering and addition of a plasma-oxide coating would control any release of PCBs by providing encapsulation of the siding and eliminating any direct exposure to the atmosphere. The alternative would require long-term O&M activities to ensure the integrity of the impermeable layer. During the removal and reapplication of the siding panels at the site, the work area must be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs, as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Air quality ARARs would be complied with during implementation of this alternative. The media blasting of the siding panels would take place in a controlled environment at a plasma-oxide spraying facility. Because of the potential for dust generation, as a result of taking down the siding panels, several BAAQMD regulations would potentially apply. Visible emissions, emission limit rates for particular matter, lead emissions, and requirements for asbestos management would all be potentially applicable to this alternative. Implementing engineering controls such as adequately wetting the siding prior to dismantling and carefully lowering the siding panels to the ground would limit emissions during the siding removal. With the implementation of engineering controls and appropriate air monitoring, this alternative would comply with air quality ARARs. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. Storage and decontamination requirements would comply with appropriate RCRA and TSCA ARARs. Assumptions were made regarding waste classification for the purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly. Wastes generated in the course of the plasma-oxide application would be characterized, managed, and disposed of properly in compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and may affect the Historic District. The materials would not be consistent with those used in 1932 for the original construction, and because the color of the plasma-sprayed oxide coating cannot be selected, this alternative may not meet the Secretary of the Interior's Standards for Treatment of Historic Properties for Rehabilitation. Careful treatment would preserve the hangar's integrity of design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and matching the surface coating, as closely as possible, to the original colors of the hangar to minimize the visual changes caused by the implementation of this alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlled access to the project site and by conducting air monitoring and runoff control during implementation. Disposal of project-related wastes at a CERCLA-approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using standard respiratory protection and protective clothing worn during the removal of the siding panels, the media blasting of the siding panels, the application of the plasma-oxide coating, and the replacement of the panels. The required construction equipment and procedures would conform to OSHA specifications. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative would be effective in the long-term for Hangar 1 because the Hangar 1 siding is media blasted down to the steel core prior to coating with the plasma-sprayed oxide. The RAO would be achieved because the alternative eliminates the source.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of the contaminants through treatment. Reduction of toxicity, mobility, and volume on site is achieved by removing PCBs from the siding, and controlling it from potentially releasing contaminants to the environment.

4.5.5.4 Summary (Alternative 5: Coat with Plasma-Sprayed Oxide)

Alternative 5, covering the Hangar 1 surface with a plasma-oxide coating, is not a viable alternative because the technology is typically used on metal or ceramic surfaces. The siding panels would have to be removed and sent to a plasma-coating facility for treatment, and the surface of the siding panels would have to be media blasted down to the steel core prior to coating because of the hot process of application. The alternative is not technically feasible. The siding could not be removed without damaging the fasteners and the siding panels. The siding would bend, crack, or possibly break off in pieces and could not be re-installed due to this damage incurred during removal. The alternative is administratively feasible. The required services and material for implementation of this alternative would be readily available, and skilled workers with directly related experience would be available as well. This alternative would provide adequate protection of the public and the environment. The alternative, in combination with historic mitigation measures, is in compliance with ARARs. The alternative is effective in the short term and long term. The on-site toxicity, mobility, and volume of PCBs would be reduced by removing contaminants from the siding.

4.5.6 ALTERNATIVE 6: COVER WITH NEW VISUALLY SIMILAR SIDING

This alternative includes covering the surface of Hangar 1 with a visually similar siding to minimize the release of PCBs to the environment. The existing siding would not be removed or replaced. The new siding would be placed directly over the original siding. The alternative is described below and evaluated for effectiveness and implementability.

4.5.6.1 Description (Alternative 6: Cover with New Visually Similar Siding)

The hangar would be covered with a visually similar siding material. The material to be used would be DURO SPAN corrugated series 80 wall panels manufactured by Enduro Composite Systems, or an equivalent. The panels would be attached to the hangar using screw-type fasteners at every other rib. Butyl lap tape sealer would be used at locations where the panels overlap. Impervious sheeting would be used as an underlayment to ensure the system is watertight. The hangar windows and access doors would not be covered since they would be replaced.

4.5.6.2 Implementability (Alternative 6: Cover with New Visually Similar Siding)

Technical Feasibility

This alternative is technically feasible. The siding could be installed over the existing siding using standard building practices.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

The materials and the services for application would be available. The supplier of the materials (Enduro Composite Systems) has been in business for over 30 years. The services for the installation of the siding would be readily available in the area. An approved off-site disposal facility would be used for disposal of wastes and debris from the site. A properly licensed waste-hauling company would provide transportation of the wastes to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the waste.

4.5.6.3 Effectiveness (Alternative 6: Cover with New Visually Similar Siding)

Overall Protection of Public Health and the Environment

The alternative would provide adequate protection of public health and the environment with the proper installation. The new siding would control any release of the PCBs by providing total coverage of the existing siding and eliminating any direct exposure to the atmosphere. The alternative would require minor long-term O&M activities to ensure the integrity of the siding.

During application of the visually similar siding, the work area must be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California State ARARs as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Air quality ARARs would be complied with during implementation of this alternative. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. Wastes generated in the course of the siding installation would be characterized, managed, and disposed of properly in compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 because it would completely cover the hangar with material that is not consistent with the construction materials used in 1932 and would not meet the Secretary of the Interior's Standards for Treatment of Historic Properties for Rehabilitation. Similar to Alternative 2, this alternative would obscure Hangar 1's character-defining features and would cause an adverse visual effect to the Historic District. The character-defining architectural features of the hangar under Criterion C would be affected. The following aspects of the hangar's historic integrity and that of the Historic District would be affected: design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and matching the new siding applied to the structure, as closely as possible, to the original colors of the hangar to minimize the visual changes caused by the implementation of this alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlled access to the project site and by conducting air monitoring and runoff control during implementation. Disposal of project-related wastes at an approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using standard respiratory protection and

protective clothing worn during the installation of the siding. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative would effectively contain the PCBs that remain in place over the long term for as long as the integrity of the new siding is preserved. This would require bi-annual inspections of the siding. The RAO would be achieved because the alternative complies with the ARARs and encapsulates the source.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of the contaminants through treatment. Reduction of mobility on the site is addressed by isolating the siding from the atmosphere and controlling it from potentially releasing PCBs to the environment.

4.5.6.4 Summary (Alternative 6: Cover with New Visually Similar Siding)

Alternative 6, covering the Hangar 1 surface with visually similar siding, is technically and administratively feasible. The required services and material for implementation of this alternative would be readily available, and skilled workers with directly related experience would be available as well. This alternative would provide adequate protection of the public and the environment, as long as the integrity of the new siding is preserved. The alternative, in combination with historic mitigation measures, is in compliance with ARARs. The alternative is effective in the short term. Long-term effectiveness for containing the PCBs that remain in place is subject to routine maintenance, repair, and/or replacement of damaged material. The mobility of the PCBs would be reduced but the volume and toxicity would be unaffected.

4.5.7 ALTERNATIVE 7: MEDIA BLAST CONTAMINATED SURFACES

This alternative includes media blasting Hangar 1 to remove the existing coating layers from interior and exterior surfaces of the siding down to the steel core and cover the steel with a protective coating. The siding would be removed, media blasted, reattached, and coated. The alternative is described below and evaluated for implementability and effectiveness.

4.5.7.1 Description (Alternative 7: Media Blast Contaminated Surfaces)

Hangar 1 would be media blasted using standard media blasting technologies to remove the outer layers of the siding down to the steel core. The siding would have to be removed to be media blasted. The siding would be media blasted to the metal core in an appropriate enclosure. The siding would then be reinstalled on the hangar and coated to protect the steel from oxidizing.

4.5.7.2 Implementability (Alternative 7: Media Blast Contaminated Surfaces)

Technical Feasibility

This alternative is not technically feasible. It is not feasible to remove and reinstall the siding. The siding panels are attached to the structure with fasteners in such a manner that the fasteners and the siding would be damaged if removal were attempted. The siding would bend, crack, or possibly break off in pieces during removal attempts and could not be reinstalled.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

The services and materials would be available for this alternative. Media blasting is a standard technology, and many companies are able to perform the service at their facility. Removing the siding panels is not possible without damaging them since the siding panels are riveted onto the structural frame. If required, an approved off-site disposal facility would be used for disposal of wastes and debris from the site. A properly licensed waste-hauling company would provide transportation of the wastes to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the waste.

4.5.7.3 Effectiveness (Alternative 7: Media Blast Contaminated Surfaces)

Overall Protection of Public Health and the Environment

Although not technically feasible, this alternative is an effective long-term and permanent action for Hangar 1 because the hangar siding would be media blasted down to the steel core. Once the siding was removed, proper use of negative pressure, as well as media blasting facilities with proper sealing and exhaust mechanisms, would protect public health and the environment. On-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs, as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Air quality ARARs would be complied

with during implementation of this alternative. A substantial amount of dust would be generated by the media blasting. Because of the potential for dust generation, as a result of taking down the siding panels, several BAAQMD regulations would potentially apply. Visible emissions, emission limit rates for particulate matter, lead emissions, and requirements for asbestos management would all be potentially applicable to this alternative. Implementing engineering controls such as adequately wetting the siding prior to dismantling and carefully lowering the siding panels to the ground would limit emissions during the siding removal. With the implementation of engineering controls and appropriate air monitoring, this alternative would comply with air quality ARARs. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. Storage and decontamination requirements would comply with appropriate TSCA ARARs. Wastes generated in the course of the media blasting would be characterized, managed, and disposed of properly in compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and may affect the Historic District. Existing side panels would be damaged during removal and media blasting of historic materials, which would not meet the Secretary of the Interior's Standards for Treatment of Historic Properties for Rehabilitation. This alternative may alter character-defining features of the hangar and may have an adverse visual effect on the Historic District. The following aspects of the hangar's historic integrity would be affected: design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and covering the surface with a coating that matches, as closely as possible, the original colors of the hangar to minimize the visual changes caused by the implementation of this alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlling access to the project site. Disposal of project-related wastes at a CERCLA-approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using proper PPE as designated in specific activity hazards analyses. The required construction equipment and

procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite, and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone. Engineering controls would limit dust during removal of the siding. The siding panels would be transported to a qualified faciltiy or media blasted on site in a special structure that would control dust migration.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative is an effective long-term action for Hangar 1 because the hangar siding would be media blasted down to the steel core. The RAO would be achieved because the alternative eliminates the PCB source.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of the contaminants through treatment. However, on site, the toxicity, mobility, and volume would be reduced because the source is removed to an approved facility where it could be properly managed to control further release to the environment.

4.5.7.4 Summary (Alternative 7: Media Blast Contaminated Surfaces)

Alternative 7, media blast contaminated surfaces, is not a viable alternative. Although the alternative is administratively feasible, it is not technically feasible. The siding could not be removed without damaging the fasteners and the siding panels. The siding would bend, crack, or possibly break off in pieces and could not be reinstalled properly. The required services and material for implementation of this alternative would be readily available, and skilled workers with directly related experience would be available as well. The alternative would protect public health and the environment, in combination with historic mitigation, maintain compliance with the ARARs, and provide long-term effectiveness. Although it does not use treatment to reduce toxicity, mobility, or volume at the site, it reduces the toxicity, mobility, and volume of PCBs.

4.5.8 ALTERNATIVE 8: NEUTRALIZE PCBs USING EMULSIFIED BIMETALLIC EXTRACTION

This alternative is an effective long-term action for Hangar 1 because the materials on the hangar siding would be removed down to the steel core. The Hangar 1 siding would have to be removed, treated, and reinstalled. This alternative is described below and evaluated for implementability and effectiveness.

4.5.8.1 Description (Alternative 8: Neutralize PCBs Using Emulsified Bimetallic Extraction)

This alternative is based on using emulsified bimetallic extraction, an innovative technology that is under laboratory development by researchers at NASA's Kennedy Space Center and the University of Central Florida. Emulsified bimetallic extraction uses an emulsion containing a solvent (e.g., d-limonene) to penetrate the asphalt-emulsion placed during the 2003 Navy TCRA and a carrier to distribute micro-scale bimetallic particles to extract PCBs and chemically break them down into harmless by-products. NASA performed a laboratory experiment with a small piece of the Hangar 1 siding. They immersed a piece of siding in a bimetallic emulsion using toluene as the carrier. Within 48 hours, all the layers of the siding had sloughed off and settled to the bottom of the container leaving only the steel core of the siding. The settled material was periodically sampled and analyzed for PCBs. There was 99 percent destruction of the PCBs within 49 days. Asbestos and lead were unaffected by this process.

This process would generate a waste stream containing asbestos and lead that would require disposal. In addition, the siding would have to be removed, packaged, and transported to the facility to be treated and then reinstalled. Because the detached siding is a RCRA/TSCA waste, the transportation would be subject to RCRA and TSCA regulations. Also, the facility that treats the siding needs to be a permitted facility to dispose of both RCRA and TSCA waste. Assumptions were made regarding waste classification for purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly.

4.5.8.2 Implementability (Alternative 8: Neutralize PCBs Using Emulsified Bimetallic Extraction)

Technical Feasibility

This alternative is not technically feasible. The siding would have to be removed to soak the individual siding panels in the emulsion. It is not feasible to remove and reinstall the siding. The siding panels are attached to the frame with fasteners in such a manner that the fasteners and the siding would be damaged if removal were attempted. In addition, the siding would bend, crack, or possibly break off in pieces during removal attempts and could not be reinstalled properly.

In addition, the alternative is not a proven technology for the hangar. Additional full-scale studies would need to be performed and data evaluated prior to using the technology for the hangar.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

The materials and part of the services for emulsified bimetallic extraction currently are not commercially available. If required, an approved off-site disposal facility would be used for disposal of wastes and debris from the site. A properly licensed waste-hauling company would provide transportation of the wastes to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the waste.

4.5.8.3 Effectiveness (Alternative 8: Neutralize PCBs Using Emulsified Bimetallic Extraction)

Overall Protection of Public Health and the Environment

This alternative would provide adequate protection of public health and the environment. The siding panels would be removed and the bimetallic emulsion process would remove all layers from the steel core of the siding (Figure 2-5). The siding panels would then be reinstalled on the hangar with the PCBs removed. During emulsified bimetallic extraction, the work area must be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs, as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. This alternative would comply with air quality ARARs with the proper air monitoring during application of the bimetallic emulsion. Because of the potential for dust generation, as a result of taking down the siding panels, several BAAQMD regulations would potentially be applicable. Visible emissions, emission limit rates for particular matter, lead emissions, and requirements for asbestos management would all be potentially applicable to this alternative. Implementing engineering controls such as adequately wetting the siding prior to dismantling and carefully lowering the siding panels to the ground would limit emissions during the siding removal. With the implementation of engineering controls and appropriate air monitoring, this alternative would comply with air quality ARARs. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. Storage and decontamination requirements would comply with appropriate TSCA ARARs. Wastes generated in the course of the siding removal and bimetallic treatment would be characterized, managed, and disposed of properly in compliance with RCRA, TSCA, and state non-RCRA-hazardous waste ARARs.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and may affect the Historic District. Existing side panels would be damaged during removal and bimetallic extraction may not meet the Secretary of the Interior's Standards for Treatment of Historic Properties for Rehabilitation. This alternative may alter character-defining features of the hangar and may have an adverse

visual effect on the Historic District. The following aspects of the hangar's historic integrity would be affected: design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, preservation of Hangar 1 man-cranes, and covering the surface with a coating that matches, as closely as possible, the original colors of the hangar to minimize the visual changes caused by the implementation of this alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlling access to the project site. Disposal of project-related wastes at a CERCLA-approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using proper PPE as designated in specific activity hazards analyses. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite, and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative is effective in the long term for Hangar 1 because the layers of the Hangar 1 siding would be removed down to the steel core. The RAO would be achieved because the alternative eliminates the source.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative reduces the toxicity, mobility, and volume of PCBs through treatment.

4.5.8.4 Summary (Alternative 8: Neutralize PCBs Using Emulsified Bimetallic Extraction)

Alternative 8, using emulsified bimetallic extraction to remove PCBs, is not a viable alternative. The alternative is not technically feasible because the siding would need to be removed for treatment and the technology has not been tested on a representative full-scale level. The alternative is administratively feasible. The required materials and part of the services for this alternative are not commercially available. The alternative protects public health and the environment, maintains compliance with ARARs when applied in combination with historic mitigation measures, and provides both short- and long-term effectiveness. The alternative addresses the toxicity and volume of PCBs through treatment and, because the PCBs would be destroyed, reduces mobility.

4.5.9 ALTERNATIVE 9: REMOVE CONTAMINANTS BY CHEMICAL STRIPPING AND COATING

This alternative includes the use of a chemical paint stripper to remove PCBs from the painted surface of the hangar. The Hangar 1 siding would not be removed or replaced. This alternative is described below and evaluated for implementability and effectiveness.

4.5.9.1 Description (Alternative 9: Remove Contaminants by Chemical Stripping and Coating)

This alternative is based on using a chemical paint stripper to remove the PCBs in the outermost layers of the existing coating on the outer face of the siding. This process would be applied in a paint-on, scrape-off process without dismantling the siding. This process would generate a RCRA/TSCA waste in the form of paint sludge and stripper containing PCBs and lead that would require disposal. Assumptions were made regarding waste classification for purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly. The surface would then be recoated to control the PCBs in the layers closest to the steel core from being exposed and released to the environment. Several layers in the siding are potentially porous. The use of chemical paint stripper to remove PCBs from porous surfaces is not a USEPA-approved, TSCA, self-implementing cleanup method.

4.5.9.2 Implementability (Alternative 9: Remove Contaminants by Chemical Stripping and Coating)

Technical Feasibility

This alternative is technically feasible. Chemical stripping of painted surfaces is a common practice. The chemical paint stripping would address the outermost layers containing surficial PCBs, but does not address the innermost layers of the siding that contain PCBs closest to the steel core. Upon removal of the outermost layers, the surface would be recoated to control PCBs from being released to the environment.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

Chemical stripper is commercially available. The application would use standard industry methods used for paint stripping. Skilled workers would also be available to support chemical paint-stripping operations. The sludge would be characterized and disposed of at an approved facility. Other wastes and debris from the site would be transported to appropriate disposal facilities. A properly licensed waste-hauling company would provide transportation of the wastes to the selected facilities.

4.5.9.3 Effectiveness (Alternative 9: Remove Contaminants by Chemical Stripping and Coating)

Overall Protection of Public Health and the Environment

This alternative would provide adequate protection of public health and the environment. Chemical stripping would remove the asphalt-emulsion and paint layers from the hangar, which would remove the PCBs from the hangar surface. However, this would expose the layers of the siding that contain PCBs that are closest to the steel core. This surface would be recoated to control the PCBs from being released to the environment. During chemical stripping, the work area would be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

A porous surface is defined as any surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal, corroded metal, fibrous glass, or glass wool. For purposes of removing PCBs from surfaces and generating remediation waste, porous surfaces have different requirements than non-porous surfaces. This alternative would not comply with federal and California state ARARs, as identified in Section 3.5 (and summarized in Tables 3-1 through 3-6), because chemical stripping of paint from porous surfaces is not a designated TSCA decontamination procedure for removal of PCBs from porous surfaces as outlined in 40 C.F.R., Part 761.79 (Decontamination Standards and Procedures). Storage or staging requirements would comply with appropriate TSCA ARARs. Several layers in the siding are potentially porous. However, with regards to waste management, any wastes generated in the course of Alternative 9 implementation could be characterized, managed, and disposed of properly in compliance with TSCA, RCRA, and state non-RCRA-hazardous waste ARARs. This alternative would comply with air quality ARARs with the proper air monitoring during the chemical stripping process. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and may affect the Historic District. It is unknown what the effect would be on the original materials or the resulting appearance. This alternative may alter character-defining features of the hangar and may have an adverse visual effect on the Historic District. The following aspects of the hangar's historic integrity would be affected: design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, and preservation of Hangar 1 man-cranes, and matching the colors of the new proposed surface, as closely as possible, to the original colors of the hangar to minimize the visual changes caused by the implementation of this alternative. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected in the short term under this alternative. Controlled access to the project site and conducting air monitoring and runoff control during implementation would protect the public health. Disposal of project-related wastes at an approved off-site disposal/incineration facility would protect both the public and the environment. Site workers would be protected by using standard respiratory protection and protective clothing worn during the chemical stripping of the siding. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative would be effective over the long term for as long as the integrity of the material coating the PCBs in the layers closest to the steel core is maintained. This would require routine inspection and maintenance of the coating. The RAO would be achieved by encapsulating the source of PCBs.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of the contaminants through treatment. However, on site, the mobility and volume of lead and PCBs would be reduced because surficial PCBs would be permanently removed to an appropriate approved disposal facility where they could be properly managed to control further release to the environment. PCBs in the layers of siding closest to the steel core would remain.

4.5.9.4 Summary (Alternative 9: Remove Contaminants by Chemical Stripping and Coating)

Alternative 9, chemical stripping of Hangar 1, is not a practical alternative since the use of chemical paint stripper to remove PCBs from porous surfaces is not a USEPA-approved self-implementing cleanup method. The alternative is technically and administratively feasible. The required services and material for implementation of this alternative would be readily available, and skilled workers with directly related experience would be available as well. This alternative would provide adequate protection of the public and the environment. The alternative would not be in compliance with ARARs because chemical stripping of paint from porous surfaces is not a designated TSCA decontamination procedure for porous surfaces as outlined in 40 C.F.R., Part 761.70 (Decontamination Standards and Procedures). The alternative is effective in the short term. Long-term effectiveness for containing the PCBs that remain in place is subject to routine maintenance, repair, or replacement of damaged material. The mobility of the PCBs would be reduced, but the volume of PCBs in the layers of siding closest to the steel core would be unaffected.

4.5.10 ALTERNATIVE 10: REMOVE SIDING AND COAT EXPOSED SURFACES

This alternative includes removing the siding from the hangar in order to remove the source of the PCB contamination and coating the exposed structural steel surface to encapsulate the PCBs in paint remaining on the structural steel. This alternative is described below and evaluated for implementability and effectiveness.

4.5.10.1 Description (Alternative 10: Remove Siding and Coat Exposed Surfaces)

This alternative includes the removal of the siding and the roof from Hangar 1. The work would be accomplished in stages and would require coordination to separate waste and debris according to their contents and potential waste classification. This removal action alternative would begin with demolition of the interior buildings and structures (redwood ceiling and catwalk planks) of the hangar. Any asbestos-containing material (ACM) abatement required as part of interior building demolition would also be performed as necessary. The hangar itself would be used as a containment vessel during these activities. Maintaining the doors and windows in a closed position at this stage of demolition would control the potential release of potential contaminants during demolition of the interior structures. Following the demolition of the necessary interior

features, windows, doors, and other exterior features of the building, except the siding, would be removed, characterized, segregated, and properly disposed of at an approved off-site facility. Next, the siding would be detached from the hangar frame by removing the siding panel fasteners. Roofing would be removed similarly to minimize releases of PCBs and other hazardous materials. As the siding panels and roof are removed, they would be packaged for transit and transported to an approved off-site facility.

All wastes generated would be transported to appropriate disposal facilities for RCRA and TSCA waste. Assumptions were made regarding waste classification for the purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly. Activities would include pressure washing the structural steel, concrete slab flooring of the hangar, and the perimeter stormwater trench followed by analysis and disposal of the rinsate. The final step would be to coat accessible surfaces of the structural steel infrastructure with a primer and finish coat of weather-resistant epoxy to contain the steel paint. The structural steel coating would be subject to inspections and touch-ups every 5 years and recoating every 10 years.

4.5.10.2 Implementability (Alternative 10: Remove Siding and Coat Exposed Surfaces)

Technical Feasibility

This alternative is technically feasible. This alternative uses standard demolition, washing, and construction procedures.

Administrative Feasibility

Implementation of this alternative is considered administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

The washing of the hangar's exposed surface and the removal of the siding and roofing could be performed using conventional and readily available equipment and standard transportation and disposal practices. The services for cleaning the hangar interior and removing the siding would be readily available in the area. Skilled workers and materials would also be readily available. Approved off-site disposal facilities would be used for disposal of wastes. A properly licensed waste-hauling company would provide transportation of the wastes to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the waste.

4.5.10.3 Effectiveness (Alternative 10: Remove Siding and Coat Exposed Surfaces)

Overall Protection of Public Health and the Environment

Protection of public health and the environment would be ensured by removal of the siding and containment of the PCBs in structural steel paint. Potential environmental impacts during the removal action include air and surface water concerns involving the release of PCBs and other hazardous materials during removal of the siding. During removal of the siding, the work area would be properly secured and controlled to protect the public and the environment. The hangar perimeter trench would be used to collect surface water, if necessary. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California State ARARs as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Air quality ARARs would be the primary focus during implementation of this alternative. Storage and decontamination requirements would comply with appropriate RCRA and TSCA ARARs. BAAQMD regulations would be applicable due to the potential for dust generation during removal of side panels. Visible emissions, emission limit rates for particulate matter, lead emissions, and requirements for asbestos management would all be potentially applicable to this alternative. Implementing engineering controls such as adequately wetting the siding prior to dismantling and carefully lowering the siding panels to the ground would limit emissions during the siding removal. With the implementation of engineering controls and appropriate air monitoring, this alternative would comply with air quality ARARs. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action.

The storage, disposal, and management of Hangar 1 siding and roofing would be regulated under RCRA and TSCA. Large quantities of RCRA and TSCA waste would be generated and would require careful oversight to ensure that RCRA/TSCA waste streams were stored in accordance with regulations. Solids, rinsate, and other wastes would be characterized, managed, and disposed of properly. Compliance with RCRA and state non-RCRA-hazardous waste ARARs would be maintained if this alternative were implemented. Assumptions were made regarding waste classification for the purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and would affect the Historic District because most of the original structure would be altered. This alternative would affect the character-defining architectural features that make this building distinctive under Criterion C. The following aspects of the hangar's historic integrity and that of the Historic District would be

affected: design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, and preservation of Hangar 1 man-cranes. Two additional mitigation measures considered include coating the steel frame with a protective coating colored to match, as closely as possible, the original hangar siding to minimize the visual changes caused by implementation of this alternative, and replacing Hangar 1 exterior features with materials similar in color and appearance to the former siding. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected primarily through controlling access to the project site. Disposal of project-related wastes at an approved off-site disposal facility would protect both the public and the environment. Site workers would be protected by using standard respiratory protection and protective clothing worn during the siding and roofing removal. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

By removing the siding and roofing, most of the PCB source is removed. The alternative would effectively contain the paint containing PCBs on the structural steel over the long term for as long as the integrity of the coating is preserved. The exposed structural steel would require recoating every 10 years. The RAO would be achieved because the alternative complies with the ARARs and encapsulates the remaining PCB source.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of the contaminants through treatment. However, on-site toxicity, mobility, and volume of PCBs would be reduced, because the siding, roof, and ceiling would be permanently removed to an approved facility where they would be properly managed to control further release to the environment. Any collected surface water would also be properly disposed.

4.5.10.4 Summary (Alternative 10: Remove Siding and Coat Exposed Surfaces)

Alternative 10, remove siding and coat exposed surfaces, is a viable alternative. The alternative is technically and administratively feasible. The required services and material for implementation of this alternative would be readily available, and skilled workers with directly related experience would be available as well. The alternative is effective in the short term. Long-term effectiveness for containing the remaining PCBs on the structural steel is subject to inspections and touch-ups every 5 years and recoating the structural steel every 10 years. Although it does not use treatment to reduce toxicity, mobility, or volume at the site, this alternative would reduce the toxicity, mobility, and volume of the PCBs on site by transferring waste material to an approved facility, where it would be properly managed to minimize future impacts to the environment.

4.5.11 ALTERNATIVE 11: DEMOLISH AND REMOVE HANGAR

This alternative includes the complete demolition of Hangar 1 and off-site transport and disposal of the waste and debris materials. This alternative would control the migration of PCBs from Hangar 1 through complete elimination of the source. This alternative is described below and evaluated for implementability and effectiveness.

4.5.11.1 Description (Alternative 11: Demolish and Remove Hangar)

Alternative 11 involves the complete demolition of Hangar 1, including its interior features, and the removal of the resulting debris to appropriate off-site disposal facilities. The demolition would be accomplished in stages and would require coordination to separate waste and debris according to their contents and potential waste classification. The demolition of Hangar 1 would begin with the demolition of all interior buildings and structures (redwood ceiling and catwalk planks) of the hangar. Any ACM abatement required as part of interior building demolition would also be performed. The hangar itself would be used as a containment vessel during these activities. Maintaining the doors and windows in a closed position at this stage of demolition would control the release of contaminants during demolition of the interior structure. Following the demolition of the interior features, windows, doors, and other exterior features of the hangar, except the siding, would be removed, characterized, segregated, and properly disposed. Next, the siding panels would be detached from the frame by removing the siding panel fasteners. Roofing would be removed to control the spread of contamination. As the siding panels and roof are

removed, they would be packaged for transit, then transported to an approved off-site facility. Once the siding panels were removed, the steel framework would be demolished, stockpiled, and then transported to an appropriate disposal facility for RCRA and TSCA waste.

Assumptions were made regarding waste classification for purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly. The perimeter concrete apron would also be demolished and properly disposed. Final cleanout would include pressure washing the concrete slab flooring of the hangar and the perimeter stormwater trench followed by analysis and disposal of the rinsate. At the conclusion of field activities, Hangar 1 exterior and interior features would be removed, and no source of PCBs associated with Hangar 1 would remain at the site.

4.5.11.2 Implementability (Alternative 11: Demolish and Remove Hangar)

Technical Feasibility

Demolition and removal of the building debris and waste to appropriate facility are technically feasible methods to achieve the RAO. Conventional construction/demolition methodologies and equipment such as cranes, lifts, swing stages, and trucks could be used to demolish the structure and transport the debris to an appropriate facility for off-site disposal. The site is accessible with available space for segregation of the resulting debris, proper packaging, and temporary storage prior to transportation to the off-site disposal facility. Activities associated with this alternative would be conducted safely and in a manner that is protective of human health and the environment. Standard construction/demolition methodologies would be reliable.

Administrative Feasibility

The demolition and removal of Hangar 1 is administratively feasible and does not require additional funding sources to complete. Procedural requirements, such as permits, would not be required, as all actions, except transport and disposal, would be conducted on site.

Availability of Services and Materials

The demolition of the hangar could be performed using conventional and readily available equipment and standard transportation and disposal practices. Skilled local workers, equipment, and material would be available. An approved off-site disposal facility would be used for disposal of all RCRA, TSCA, and non-RCRA-state hazardous wastes. A properly licensed waste-hauling company would provide transportation of the contaminated waste to the selected facility. Approved facilities located in both California and Nevada have sufficient capacity to manage the waste.

4.5.11.3 Effectiveness (Alternative 11: Demolish and Remove Hangar)

Overall Protection of Public Health and the Environment

This alternative would provide total protection of public health and the environment by complete removal of the source of PCBs. Potential environmental impacts during the removal action include air and surface water concerns involving the release of PCBs and other hazardous materials during removal of the siding. During the demolition activities, the work area would be properly secured and controlled to protect the public and the environment. The hangar perimeter trench would be used to collect surface water, if necessary. Also, on-site workers would be protected by using appropriate safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs described in Section 3.5. Storage and PCB decontamination requirements would comply with appropriate TSCA ARARs. Air quality ARARs would be the primary focus during implementation of this alternative. In particular, this alternative would have to comply with several BAAQMD regulations associated with controlling dust generated as a result of demolition. Visible emissions, emission limit rates for particulate matter, lead emissions, and asbestos management requirements would all be potentially applicable to this alternative and must be followed.

The storage, disposal, and management of Hangar 1 siding would be regulated under TSCA. Large quantities of TSCA waste would be generated and would require careful oversight to ensure that TSCA waste streams were stored in accordance with regulations. Construction debris, contaminated sediments, rinsate, and other wastes would be characterized, managed, and disposed of properly. Compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs would be maintained if this alternative were implemented.

Historic Mitigation

This alternative would have an adverse effect on Hangar 1 and an effect on the Historic District. The alternative would affect all of the hangar's character-defining historic and architectural features that make this building distinctive under Criterion C. The following aspects of the hangar's historic integrity and that of the Historic District would be affected: design, setting, materials, workmanship, feeling, and association. Consideration of these effects and appropriate potential mitigation measures in coordination with OHP, ACHP, and other stakeholders, and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett

Field Museum collections, and preservation of Hangar 1 man-cranes. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

This alternative would provide short-term protection of public health by controlling the release of PCBs and implementing appropriate mitigating measures during Hangar 1 demolition. Possible short-term environmental effects would be generally limited to air and surface water impacts. The air and surface water impact mitigation measures would include implementing stormwater management, spill control, and minimizing the air dispersal of the COCs. Only authorized and properly trained staff would operate the construction equipment used in demolishing the structure and transporting the wastes to the appropriate disposal facility. Site workers would be protected by using appropriate respiratory protection and PPE. A contamination reduction zone would be used to control migration of potential contaminants from the worksite. Disposal of project-related wastes at an approved off-site disposal facility would protect both the public and the environment.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

The demolition and removal of Hangar 1 would provide long-term effectiveness and permanent removal of the identified source of PCB contamination. Following removal of the hangar structure, no future O&M activities would be required. The RAO would be achieved upon completion of the site activities.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of the contaminants through treatment. However, on site, the toxicity, mobility, and volume of PCBs would be eliminated because the source would be permanently removed to an approved facility where it could be properly managed to control further release to the environment. Recycling or smelting of the structural steel was not considered since decontaminating all the surfaces of the riveted structural members to recycling standards outweigh the cost of disposal. Any collected surface water would also be properly disposed.

4.5.11.4 Summary (Alternative 11: Demolish and Remove Hangar)

Alternative 11, demolition and off-site disposal of Hangar 1, is technically and administratively feasible. The required services and material for implementation of this alternative would be readily available, and skilled workers with directly related experience would be available as well. The alternative protects public health and the environment, maintains compliance with ARARs,

when applied in combination with proposed historic mitigation measures, and provides both short- and long-term effectiveness. This alternative is also permanent. Although it does not use treatment to reduce toxicity, mobility, or volume at the site, this alternative eliminates the toxicity, mobility, and volume of PCBs on site by transferring waste to an approved facility, where it would be properly managed to minimize future impacts to the environment.

4.5.12 ALTERNATIVE 12: COLLECT STORMWATER RUNOFF AND TREAT ON SITE

This alternative includes collecting and treating stormwater runoff from the exterior surface of Hangar 1 to mitigate PCB migration through stormwater. This alternative is described below and evaluated for implementability and effectiveness.

4.5.12.1 Description (Alternative 12: Collect Stormwater Runoff and Treat On Site)

This alternative provides capture for all stormwater having contact with the hangar surface through the design, installation, and maintenance of a stormwater collection and treatment system. Hangar surfaces include the walls, roof, and the pavement immediately surrounding the hangar, which could contain PCBs that have separated from the hangar surface. An on-site treatment facility would be designed and built to treat the contaminated stormwater. Large storage tanks would be required to contain the captured stormwater prior to treatment.

4.5.12.2 Implementability (Alternative 12: Collect Stormwater Runoff and Treat On Site)

Technical Feasibility

Installation of a large-scale stormwater collection system to capture contaminated stormwater generated as a result of contact with the hangar structure is technically feasible. An on-site treatment system for the contaminated stormwater could be constructed. Large tanks would be required to provide storage capacity to manage the stormwater prior to treatment. Based on collecting stormwater for treatment over an area extending 30 feet beyond the footprint of the hangar, during a 10-year storm event of 0.5-inch/hour, approximately 2,000 gallons per minute (2.88 million gallons per day) would be generated.

Administrative Feasibility

This alternative is administratively feasible and does not require additional funding sources to complete. Permits for the off-site discharge of treated stormwater would be required.

Availability of Services and Materials

This alternative could be implemented using readily available materials and conventional and readily available equipment. Skilled local workers, equipment, and material would be available. An approved off-site disposal facility would be used for disposal of any removal action-

generated wastes. Treatment/disposal facilities in California have sufficient capacity to manage the waste.

4.5.12.3 Effectiveness (Alternative 12: Collect Stormwater Runoff and Treat On-Site)

Overall Protection of Public Health and the Environment

This alternative does not protect public health and the environment. Even though on-site stormwater would be treated, this alternative fails to control PCBs (exposed at greater levels over time as the shell of the hangar disintegrates) from becoming airborne and migrating to other stormwater collection points not connected to the treatment system and possible human and ecological receptors. This exposure pathway has the potential to affect public health, particularly as the hangar ages and the existing coating reaches the end of its life span. Additionally, the alternative does not reduce the generation of waste because there is no source control or elimination. Additional waste would actually be generated as a result of implementing this alternative because a large volume of stormwater is collected and treated following its contact with the hangar surface.

Potential environmental impacts during the removal action would be lower than other alternatives because the hangar surface would remain largely undisturbed. During the construction of the system, the work area would be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California state ARARs as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. ARARs involving water protection and quality would be met if this alternative were implemented.

The storage, disposal, and management of hangar wastes generated by the removal action would be regulated under TSCA. Minimal amounts of RCRA/TSCA waste would be generated. TSCA waste streams would be stored in accordance with regulations. Assumptions were made regarding waste classification for purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly. Sediment, rinsate, and other wastes would be characterized, managed, and disposed of properly. Compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs would be maintained if this alternative were implemented.

Historic Mitigation

This alternative would have an effect on Hangar 1 and may affect the Historic District. Although the details of the installation and materials of the "large-scale stormwater collection system" and "on-site treatment system" are unknown, these systems might include visual impacts to the Historic District (including the placement of "large storage tanks" required for storage and treatment).

Careful treatment through design and placement could preserve the hangar's and the Historic District's integrity of design, setting, materials, workmanship, feeling, and association. The effects and historic mitigation have been discussed with OHP, ACHP, and other stakeholders. The analysis of effects and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 C.F.R., Part 68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, and preservation of Hangar 1 man-cranes. In addition to these mitigation measures considered, another mitigation measure would be to design the proposed storage and treatment system to be aesthetically compatible with the Historic District. These mitigation options are described in detail in Section 4.4, Historic Mitigation.

Short-term Effectiveness

Public health would be protected during the removal action through general isolation of the project site. Disposal of project-related wastes at approved off-site disposal facilities would protect both the public and the environment. Possible short-term environmental effects would be generally limited to air and surface water impacts associated with the potential release of the COCs. Site workers would be protected by using proper PPE as designated in specific activity hazard analysis. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. Enhanced construction mitigation measures would be implemented for stormwater management, spill control, and for minimizing the air dispersal of the COCs. A contamination reduction zone would be used to control migration of potential contaminants from the worksite.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative is not effective in the long-term removal because the Hangar 1 siding (the source of the PCB contamination) remains in place and airborne contaminant migration is not controlled. The alternative is only effective for capturing on-site stormwater in the long term. Capturing and treating the stormwater would remove this contaminant migration pathway. As the structure ages, it is expected that contaminant concentrations in the stormwater would increase. The alternative is not considered effective over the long term with regards to airborne contaminant migration because of the potential for the siding to crack and/or chip as the hangar ages. Additionally, this alternative requires long-term O&M. On-site personnel would be required to operate the treatment system and to perform needed maintenance on the stormwater collection system. Sampling would be required to ensure that the collection and treatment systems would be working as designed.

The RAO would not be achieved because the source of PCBs would not be controlled or eliminated and PCB contamination would not be decreased. It would only be controlled through on-site treatment. Additionally, this alternative does not address airborne contaminant migration, which is expected to increase as the hangar ages.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of contamination through treatment at the source. This alternative does include capturing and treatment of the stormwater, which would reduce the toxicity, mobility, and volume of PCBs adjacent to Hangar 1.

4.5.12.4 Summary (Alternative 12: Collect Stormwater Runoff and Treat On Site)

Alternative 12, stormwater collection and treatment on site, is technically feasible; however, there would be certain difficulties inherent with treating large quantities of water during the wet season including the construction of large storage tank(s) to hold stormwater prior to treatment. The alternative is administratively feasible; however, on-site treatment would require sampling prior to discharge of treated stormwater off site. The services and materials would be readily available. The alternative would not provide protection of the public and the environment because it does not control airborne migration of PCBs. The alternative, when applied in combination with proposed historic mitigation measures, is compliant with ARARs and is effective in the short term. However, the alternative is not effective in the long term because the siding would remain in place and airborne contaminant migration would not be controlled. The alternative would not reduce the toxicity, mobility, or volume of contaminants through treatment.

4.5.13 ALTERNATIVE 13: COLLECT STORMWATER RUNOFF AND TREAT/DISPOSE OFF SITE

This alternative includes collecting and appropriate treatment prior to disposal of stormwater runoff from the exterior surfaces of Hangar 1 off site to mitigate PCB migration through

stormwater. This alternative is described below and evaluated for implementability and effectiveness.

4.5.13.1 Description (Alternative 13: Collect Stormwater Runoff and Treat/Dispose Off Site)

This alternative provides capture for all stormwater having contact with the hangar surface through the design, installation, and maintenance of a stormwater collection system. Hangar surfaces include the walls, roof, and pavement immediately surrounding the hangar, which could contain PCBs that have separated from the hangar surface. Large storage tanks would be required to contain the captured stormwater prior to shipment off site for appropriate treatment prior to disposal.

4.5.13.2 Implementability (Alternative 13: Collect Stormwater Runoff and Treat/Dispose Off Site)

Technical Feasibility

Installation of a large-scale stormwater collection system to capture contaminated stormwater generated as a result of contacting the hangar structure is technically feasible. Large storage tanks would be required to provide capacity to manage the stormwater prior to transport off site for appropriate treatment and disposal. Based on collecting stormwater for treatment over an area extending 30 feet beyond the footprint of the hangar, during a 10-year storm event of 0.5-inch/hour, approximately 2,000 gallons per minute (2.88 million gallons per day) would be generated.

Administrative Feasibility

This alternative is administratively feasible and does not require additional funding sources to complete.

Availability of Services and Materials

This alternative could be implemented using readily available materials and conventional and readily available equipment. Skilled local workers, equipment, and material would be available. An approved off-site disposal facility would be used for disposal of any removal action-generated wastes. Such facilities in California have sufficient capacity to manage the waste.

4.5.13.3 Effectiveness (Alternative 13: Collect Stormwater Runoff and Treat/Dispose Off Site)

Overall Protection of Public Health and the Environment

This alternative does not protect public health and the environment. Even though on-site stormwater would be treated, this alternative fails to control PCBs (exposed at greater levels over

time as the shell of the hangar disintegrates) from becoming airborne and migrating to other stormwater systems and possible ecological receptors. This exposure pathway has the potential to affect public health, particularly as the hangar ages and the existing coating reaches the end of its life span. Additionally, the alternative does not reduce the generation of waste because there is no source control or elimination. Additional waste would actually be generated as a result of implementing this alternative because stormwater is collected, transported, appropriately treated, and disposed of following its contact with the hangar surface. Potential environmental impacts during the removal action would be lower than other alternatives because the hangar surface would remain largely undisturbed. During the construction of the system, the work area would be properly secured and controlled to protect the public and the environment. Also, on-site workers would be protected by using appropriate worker safety measures and PPE.

Compliance with ARARs

This alternative would comply with federal and California ARARs as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. ARARs involving surface water requirements would be met through the implementation of stormwater BMPs during the removal action. ARARs involving water protection and quality would be met if this alternative were implemented.

The storage, treatment, disposal, and management of hangar wastes generated by the removal action would be regulated under TSCA. Minimal amounts of RCRA/TSCA waste would be generated. TSCA waste streams would be stored in accordance with regulations. Assumptions were made regarding waste classification for purpose of this EE/CA based on previously collected data; however, all waste would be fully characterized prior to off-site disposal and would be managed accordingly. Sediment, rinsate, and other wastes would be characterized, managed, and disposed of properly. Compliance with RCRA, state non-RCRA-hazardous waste, and TSCA ARARs would be maintained if this alternative were implemented.

Historic Mitigation

Similar to Alternative 12, this alternative would have an effect on Hangar 1 and may affect the Historic District. Although the details of the installation and materials of the “large-scale stormwater collection system” would be unknown, this system may include visual impacts to the Historic District (including the placement of “large storage tanks”).

Careful treatment through design and placement could preserve the hangar’s integrity of design, setting, materials, workmanship, feeling, and association. The effects and historic mitigation have been discussed with OHP, ACHP, and other stakeholders. The analysis of effects and implementation of historic mitigation would constitute compliance with the substantive requirements of the applicable portions of the NHPA and 36 C.F.R., Part 800.

Mitigation measures would be performed to substantively comply with the NHPA and the Secretary of the Interior’s Standards for the Treatment of Historic Properties (36 C.F.R., Part

68). Mitigation measures considered include preparation of Level 1 HAER documentation, oral histories, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, and preservation of Hangar 1 man-cranes. In addition to these mitigation measures to be considered, another mitigation measure would be to design the proposed storage and treatment system to be aesthetically compatible with the Historic District.

Short-term Effectiveness

Public health would be protected during the removal action through general isolation of the project site. Disposal of project-related wastes at approved off-site disposal facilities would protect both the public and the environment. Possible short-term environmental effects would be generally limited to air and surface water impacts associated with the potential release of the COCs. Potential impacts would be mitigated by minimizing disturbance of the surface of the hangar. Site workers would be protected by using proper PPE in accordance with specific activity hazards. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel. Enhanced construction mitigation measures would be implemented for stormwater management, spill control, and for minimizing the air dispersal of the COCs. A contamination reduction zone would be used to control migration of potential contaminants from the worksite.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

This alternative is not effective in the long term because the hangar siding (the source of the PCB contamination) would remain in place and airborne contaminant migration would not be controlled. The alternative would only be effective for capturing stormwater on site in the long term. Capturing and disposing of the stormwater off site would remove this contaminant migration pathway. As the structure ages, it is expected that contaminant concentrations in the stormwater would increase. The alternative is not considered effective over the long term with regards to airborne contaminant migration because of the potential for the siding to crack and/or chip as the hangar ages. Additionally, this alternative requires long-term O&M. On-site personnel would be required to perform needed maintenance on the stormwater collection system.

The RAO would not be achieved because the source of PCBs would not be controlled or eliminated and PCB contamination would not be decreased. It would only be controlled through off-site treatment and disposal. Additionally, this alternative does not address airborne contaminant migration, which is expected to increase as the hangar ages.

Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative does not reduce the toxicity, mobility, or volume of contamination through treatment at the source. This alternative does include capturing and treatment of the stormwater; it would reduce the toxicity, mobility, and volume of PCBs adjacent to Hangar 1.

4.5.13.4 Summary (Alternative 13: Collect Stormwater Runoff and Treat/Dispose Off Site)

Alternative 13, stormwater collection and its treatment off site, is technically feasible; however, there would be certain difficulties inherent with capturing and storing large quantities of water, including the construction of large storage tank(s) to hold stormwater prior to treating off site. The alternative is administratively feasible. There would be no barriers to the availability of services and materials. The alternative would not provide protection of the public and the environment because it does not control airborne contamination migration. The alternative is compliant with ARARs and is effective in the short term. However, the alternative is not effective in the long term because the siding remains in place and airborne migration of PCBs is not controlled. The alternative would not reduce the toxicity, mobility, or volume of contaminants through treatment.

4.6 SUMMARY OF IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES

Thirteen potential removal action alternatives were identified and evaluated with respect to implementability and effectiveness. Table 4-1 summarizes the evaluation results. Each element of implementability and effectiveness is listed in the table for each of the 13 alternatives. If the element was satisfied by an alternative, a “Yes” designation was given to the element. If the element was not satisfied by an alternative, the element was given a “No” designation. A designation for community acceptance has not been included in the table; it will be addressed after this document has been made available to the public. The table assists in an analysis to determine which alternatives should remain for further consideration through comparative analysis, including costs, in Section 5.0.

There are five criteria that can lead to the elimination of an alternative at this stage of evaluation if the element has a single “No” designation in Table 4-1. These elements are technical feasibility, administrative feasibility, availability of services, compliance with ARARs, and overall protection of human health and the environment.

An alternative that is not technically feasible or not proven is not considered as a viable alternative. Therefore, any alternative that does not meet this requirement is eliminated from further consideration. Five alternatives fall into this category: Alternative 1, enclose entire hangar inside another structure; Alternative 3, coat with asphalt-emulsion; Alternative 5, coat

with plasma-sprayed oxide; Alternative 7, media blast contaminated surfaces; and Alternative 8, neutralize PCBs using emulsified bimetallic extraction.

An alternative cannot be considered if it is not in compliance with ARARs. One alternative falls into this category: Alternative 9, remove contaminants by chemical stripping and coating.

An alternative that is not protective of human health and the environment cannot be considered. Therefore, any alternative that does not meet this requirement is eliminated from further analysis. Two alternatives fall into this category: Alternative 12, collect stormwater runoff and treat on site, and Alternative 13, collect stormwater runoff and treat/dispose off site.

The elimination of the eight alternatives above leaves five alternatives to compare in detail to determine the appropriate removal action. These include Alternatives 2, 4, and 6, which involve covering or coating the existing siding; Alternative 10, which involves the removal of the Robertson Protected Metal siding and containment of PCBs in the remaining structural steel paint; and Alternative 11, which involves permanent removal of Hangar 1. These alternatives will be further evaluated in Section 5.0.

4.7 INTERIOR COATING ALTERNATIVES

To completely address the RAO, methods of mitigating PCBs in the interior components of the hangar (corrugated Robertson Protected Metal siding, redwood ceiling, structural steel, and catwalks) were also evaluated based on two of the three EE/CA criteria, implementability and effectiveness, taking into consideration site-specific conditions. The third EE/CA criteria, cost, is retained for comparative analysis in Section 5.0. The following interior coating alternatives were evaluated:

- Acrylic coating
- Epoxy coating
- Asphalt-emulsion coating
- Polyurethane foam coating

Interior coating alternative selection mirrored the approach established for evaluation of the removal action alternatives. For Alternative 10, the coatings were evaluated for their weather resistant performance because they would be exposed to the weather once the siding was removed. For Alternatives 2, 4, and 6, these Interior coatings were not evaluated based on weather-resistance performance because the siding would stay in place and therefore the coatings would not be exposed to weathering.

In preparation for applying any of the coatings described in this section, accessible surfaces inside the hangar interior would be pressure washed and areas with rusted steel would be mechanically prepared or chemically stripped. In addition, perimeter buildings along the west

and east side of the hangar would be abated, demolished, and properly disposed of as ACM to gain access to the interior siding and lower sections of the structural steel. The buildings along the north end of the hangar, not causing an obstruction, would not be demolished during interior coating activities.

4.7.1 Description

Acrylic Coating

Two variations of acrylic coatings were evaluated: the first is a Belzona 5131 EG-Cladding, which is a modified acrylic emulsion; and the second is a Sherwin Williams system that utilizes an epoxy primer with an acrylic top coat. The Belzona system consists of one coat of 3921 GSC conditioner and two coats of 5131 EG-Cladding. This is a very flexible system that is impermeable to water and will control the release of PCBs into the environment. It is ideally suited for joints, seams, flashings, and complex roof and dome designs. The Belzona system would require inspections/touch-ups every 5 years and a recoat every 15 years. The Sherwin Williams system consists of a 2-part Macropoxy 920 pre-prime and a Fast Clad® 128 HB acrylic top coat. The Sherwin Williams system was selected for coating the interior siding at a similar hangar in Akron, Ohio, because it had 1) compatible chemical and mechanical characteristics with the Robertson Protected Metal siding, 2) good adhesion, 3) high elongation, and 4) the capability of penetrating and stabilizing the Robertson Protected Metal siding. The Sherwin Williams system would require inspections/touch-ups every 5 years and a recoat every 10 years. Both acrylic coating systems are compatible with the interior surfaces and would be sprayed on.

Epoxy Coating

The interior of the hangar would be covered with Neopoxy 5300 series epoxy coating. The epoxy has a 50-year design life, much longer than the 30-year O&M requirement for other potential interior coatings, and requires inspections/touch-ups every 5 years. The epoxy is applied using state-of-the-art epoxy spray equipment capable of reaching and applying epoxy up to 220 feet vertically. Once applied, the material forms a “jointless” solid protective coating.

Asphalt-Emulsion Coating

The proposed asphalt-emulsion option for the interior siding and ceiling is the same that was applied to the hangar exterior as an interim removal action during the TCRA in 2003. The proposed asphalt-emulsion system consists of a Henry #229 Aluminum Emulsion to be applied on the interior siding and redwood ceiling, and ICI Dulux Paint 4308-9020 Solvent Borne on the structural steel. The asphalt-emulsion option would require frequent inspections/touch-ups and a recoat every 12 years. The coatings would be sprayed onto all interior surfaces.

Polyurethane Foam Coating

This alternative proposes covering the Hangar 1 interior with polyurethane foam. Rigid polyurethane foam is an expanded plastic material that forms an impervious barrier over irregular surfaces. Polyurethane foam's closed cell structure allows it to insulate and waterproof at the same time. Following surface preparation, a primer is first applied on the surface then the foam is sprayed on. Polyurethane foam coatings, as an encapsulant of contaminants, have been tested successfully at a similar hangar in Akron, Ohio.

4.7.2 Implementability

Technical Feasibility

The acrylic, epoxy, and asphalt emulsion coatings are technically feasible and proven to adhere well on surfaces similar to the interior of the hangar. The polyurethane foam, even though it is proven to be a viable coating for the hangar, is not technically feasible because it creates a fire hazard due to its flammable properties. The fire hazard can be eliminated by isolating the foam with a fireproofing cover, but this would make it prohibitively expensive, and complete isolation of the foam cannot be achieved over all the surfaces of the hangar interior components.

Administrative Feasibility

Interior coatings are considered administratively feasible and do not require additional funding sources to complete.

Availability of Services and Materials

The materials, services for application, and ongoing O&M would be available for all interior coating alternatives. An approved off-site disposal facility would be used for disposal of contaminated wastes and debris from the site. A properly licensed waste-hauling company would provide transportation of wastes to the selected facilities. Approved facilities located in both California and Nevada have sufficient capacity to manage the waste.

4.7.3 Effectiveness

Overall Protection of Public Health and the Environment

The interior coating alternatives provide adequate protection of public health and the environment with the proper application and O&M. The interior coatings evaluated are capable of controlling the release of PCBs by providing encapsulation of the interior portions of the hangar and eliminating direct exposure to the atmosphere. The coatings would require long-term O&M activities to preserve their integrity. During application, the work area must be properly secured and controlled to protect the public and the environment. On-site workers would be

protected by using appropriate worker safety measures and PPE. The polyurethane foam presents a fire hazard that poses a safety risk to the public.

Compliance with ARARs

All interior coating alternatives would comply with federal and California State ARARs as identified in Section 3.5 and summarized in Tables 3-1 through 3-6. Implementation of these alternatives would comply with air quality ARARs. VOC emissions from coatings are quite limited and all evaluated coatings comply with those ARARs. Wastes generated in the course of the coating operations would be characterized, managed, and disposed of properly in compliance with RCRA and state non-RCRA-hazardous waste ARARs.

Historic Mitigation

Applying coating layers to the interior of the hangar would not have a visual effect on the hangar and hence would neither contribute to, nor detract from, the Historic District.

Short-term Effectiveness

Public health would be protected primarily through controlled access to the project site, conducting air monitoring, and containment of water and particulates during implementation. Disposal of project-related wastes at approved off-site disposal facilities would protect both the public and the environment. Site workers would be protected by using standard PPE during application of the coating. The required construction equipment and procedures would conform to OSHA specifications. The hangar and other work areas would be properly delineated to limit access by unauthorized personnel only. A contamination reduction zone would be used to control migration of potential contaminants from the worksite and to ensure that unprotected personnel would not be exposed by maintaining a safe distance from the work zone.

Short-term effectiveness would be achieved because this alternative would control the migration of contaminants from the hangar and protect public and worker health during implementation.

Long-term Effectiveness and Permanence

The interior coatings would be effective over the long term for as long as the integrity of the coatings is preserved. Both acrylic coatings would require inspections and touch-ups every 5 years and recoating 15 years after application (Belzona) and every 10 years (Sherwin Williams). The epoxy coating has a life expectancy of 50 years, but should be inspected every 5 years to ensure that no recoating is required. The asphalt-emulsion would be subject to inspections and touch ups every 2 years and recoating every 3 to 5 years. Polyurethane foam would require inspections and touch-ups every 5 years and no recoating.

The RAO would be achieved because coating the interior complies with the ARARs and encapsulates the PCB source.

Reduction of Toxicity, Mobility, or Volume through Treatment

The interior coatings do not reduce the toxicity, mobility, or volume of the contaminants through treatment. Reduction of mobility on the site is addressed by isolating the paint containing PCBs from the atmosphere and controlling it from potentially releasing contaminants to the environment.

4.7.4 Summary

The acrylic, epoxy, and asphalt-emulsion coatings are technically feasible, with the exception of the polyurethane foam. The coatings are administratively feasible. The required services and material for applying the coatings are readily available, and skilled workers with directly related experience are available as well. The interior coatings, except for the polyurethane foam, which poses a fire hazard, would provide adequate protection of the public and the environment, as long as the integrity of the coatings is preserved. The coating alternatives comply with federal and state ARARs. The coating alternatives are effective in the short term, but the long-term effectiveness is subject to routine inspection, repair, and periodic recoating except for the epoxy and polyurethane coatings. The mobility of the contaminants would be reduced, but the volume and toxicity would be unaffected.

4.8 SUMMARY OF IDENTIFICATION AND ANALYSIS OF INTERIOR COATING ALTERNATIVES

Four potential interior coating alternatives were identified and evaluated with the same criteria applied to the removal action alternatives and described in Section 4.7. Table 4-2 summarizes the evaluation results.

An interior coating alternative that is not technically feasible or not proven is not considered as a viable alternative. Therefore, any alternative that does not meet this requirement is eliminated from further consideration. The polyurethane foam coating alternative falls into this category because it imposes a potential fire hazard to the hangar.

All interior coating alternatives were found to be administratively feasible, had available services and materials, are overall protective of the environment, are compliant with ARARs, and would be effective in the short term. Long-term effectiveness of the interior coatings can be achieved for as long as the integrity of the coatings is preserved.

The elimination of the polyurethane foam coating leaves three coating alternatives for comparative analysis. Because the acrylic, epoxy, and asphalt-emulsion interior coatings are all equally viable alternatives, the most cost-effective alternative will be chosen as the common interior coating cost. The comparative analysis is discussed in Section 5.0.

5.0 COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES

This section includes a comparative analysis of the five removal action alternatives that have been retained for further evaluation in terms of their implementability, effectiveness, and cost. The first two criteria used in this analysis are the same as those used in Section 4.0; however, the total cost for each alternative, including O&M and for coating the interior components (when applicable), is included as an additional factor to consider when selecting the most appropriate alternative for Hangar 1.

5.1 REMOVAL ACTION ALTERNATIVES

The five removal action alternatives retained for a comparative analysis include the following:

- Alternative 2 – Cover with rubberized material
- Alternative 4 – Coat with acrylic coating
- Alternative 6 – Cover with new visually similar siding
- Alternative 10 – Remove siding and coat exposed surfaces
- Alternative 11 – Demolish and remove hangar

These alternatives were described in Section 4.0 and were evaluated in detail in terms of their effectiveness in achieving the RAO for the site. The focus of the comparative evaluation presented in this section is to assess the implementability and effectiveness of the alternatives in a comparative setting relative to one another. The cost of implementation of each alternative is presented below to identify an alternative for Hangar 1 that is not only the most implementable and technically effective but is also cost-effective.

5.1.1 Implementability

The implementability of removal action alternatives is compared based on the technical feasibility, administrative feasibility, and availability of services and materials.

Technical Feasibility

The above alternatives are technically feasible, although they would have different degrees of difficulty and complexity during implementation. Alternative 2 has been implemented in a similar application in Akron, Ohio. The Belzona and Sherwin Williams coatings for Alternative 4 are both compatible with the hangar siding and are expected to be equally feasible. Alternative 6 is also technically feasible because it uses standard construction techniques for covering the existing siding of Hangar 1 with visually similar siding.

Alternatives 2, 4, and 6 would be the least intrusive to the Hangar 1 structure because the existing siding stays in place; however, partial demolition of the interior buildings is required to gain access to the interior siding and lower sections of the structural steel for coating the interior. The hangar windows and access doors would not be covered (or coated for Alternative 4) since they would be replaced. Since catwalks would need to be removed in order to be coated, it is more cost efficient to dispose of them at a proper disposal facility than to coat and reinstall. In addition, the amount of contaminated material that remains would be reduced by disposing of the catwalks.

Alternatives 10 and 11 both involve removal of the contaminated siding from Hangar 1 and demolition of all of the interior structures (interior buildings, redwood ceiling, and catwalk planks). For Alternative 10, the remaining PCBs in paint on the structural steel surfaces would be contained with a primer and finish coat of epoxy selected for endurance and weather elements. Alternative 11 is the most challenging from a construction standpoint because it involves total demolition of Hangar 1, including all external and internal features. In summary, all five alternatives would be technically feasible, with Alternative 4 being the least destructive and the easiest alternative to implement.

Structural Analysis

A structural analysis of Hangar 1 was completed by the Navy in 2008 (Exeltech, 2008). The scope of the structural analysis included:

- Review of as-built documents and reports
- Performance of a site visit and evaluation of the existing condition of the facility
- Preparation of a field summary memorandum summarizing the findings
- Development of evaluation criteria for the study
- Analysis of the hangar for gravity, wind, and seismic loads for the selected mitigation options
- Identification of deficient elements and development of retrofit concepts
- Recommendations for the removal of catwalks and other non-structural elements to avoid impacting the structural integrity of the hangar
- Development of cost estimates for the proposed retrofit options
- Preparation of a report of the findings

The structural analysis indicated that due to the additional weight added onto the hangar by implementing Alternatives 2, 4, and 6, retrofitting the structure would be required prior to implementation. Alternative 10 would not require any retrofitting, but would require some minor bracing due to the local effects of wind and gravity and not due to a structural deficiency.

The costs of the retrofitting and additional bracing are included in Appendix C. A detailed design for each alternative will be required prior to implementation.

Administrative Feasibility

Implementation of all alternatives is considered administratively feasible.

Availability of Services and Materials

All five alternatives use standard construction equipment and services. Alternatives 2 and 4 rely on availability of specialized cover or coating material whose durability and life span must be carefully examined to ensure that the material or coating would follow the required specifications. In addition, Alternatives 2, 4, 6, and 10 would require periodic inspection, maintenance, and repair to ensure that the material and coating continue to serve their primary purpose as a barrier to PCB migration from the existing Hangar 1 exterior and interior components. Alternative 11 has an advantage over the others by being a one-time action, not requiring any future services or material.

Community Acceptance

Assessment of each alternative in accordance with this evaluation criterion will be based upon consideration of public comments received after this EE/CA is published and made available for public comment. A previous version of this EE/CA was published on May 5, 2006. Comments received during the comment period for that version were evaluated and incorporated into this revised EE/CA, where appropriate. The assessment of each alternative in this revised version will require determining which components of the alternatives interested persons in the community support, have reservations about, or oppose. The assessment cannot be completed until public comments have been considered.

5.1.2 Effectiveness

The effectiveness of removal action alternatives is compared based on overall protection of public health and the environment, compliance with ARARs, short-term effectiveness, long-term effectiveness, and reduction of toxicity, mobility, or volume through treatment.

Overall Protection of Public Health and the Environment

All five alternatives would provide adequate protection of public health and the environment. However, the level of this protection could be potentially affected by the site conditions over time for some of these alternatives. Alternatives 2, 4, and 6 rely on either the covering or coating of the existing siding and interior components to control PCBs from being directly exposed to the atmosphere and thereby posing a threat to human health and the environment. Because the source of PCB contamination remains in place for these alternatives, the public health and

environmental protection provided by these alternatives would be contingent upon adequate inspection and maintenance of the cover or coating materials over their associated life spans. Alternative 10 consists of complete removal of the siding and containment of the PCBs in the structural steel paint. Alternative 11 completely removes the PCB sources. Alternatives 10 and 11 are superior to Alternatives 2, 4, and 6 in terms of overall protection of public health and the environment, with Alternative 11 permanently eliminating the threat of future PCB releases from the site.

Compliance with ARARs

All five alternatives would comply with federal and California state ARARs as identified in Section 3.5 and summarized in Tables 3-1 through 3-6.

Historic Mitigation

All alternatives would have an effect on the historic character of Hangar 1, and mitigation measures considered will include preparation of Level 1 HAER documentation, oral histories of individuals who worked in the Hangar during different eras, preparation and distribution of a virtual Hangar 1 interactive CD, inventory of Moffett Field Museum collections, and preservation of Hangar 1 man-cranes. Alternatives 2, 10, and 11, in particular, would have an adverse visual effect on the Historic District. The degree of this effect varies among the alternatives with Alternatives 2, 4, 6, and 10 affecting the character-defining features of the hangar, with Alternative 11 removing all visual components. Alternative 11 would result in the most significant effect because the hangar would be completely removed under this alternative.

Preparation of the Level 1 HAER documentation is underway. Additional historic mitigation options considered ranged from matching the color of the coating as closely as possible to the original siding (Alternatives 2, 4, and 6) to re-siding the hangar frame with a similar appearing siding (Alternative 10).

The Navy shall focus the CERCLA process by actively seeking the expertise and comments of the following entities to ensure that the substantive requirements of the NHPA and 36 C.F.R. Part 800 are adequately addressed: the OHP, the ACHP, and other interested parties.

These entities shall be provided with the opportunity to review and comment on the EE/CA and the draft Removal Action Work Plan. Their comments shall be addressed in responsiveness summaries accompanying the AM and the final Removal Action Work Plan, respectively.

Short-term Effectiveness

All five alternatives would provide adequate short-term effectiveness with respect to public health protection through controlling access to the project site and by conducting air monitoring and runoff control during implementation. Similarly, site workers would be protected by using proper

PPE and conforming to OSHA specifications when using different construction equipment. Alternatives 2, 6 and 11 may require longer durations for implementation; therefore, they would be the least effective alternatives in the short term. Short-term effectiveness would be highest for Alternative 4, which would take the minimal amount of time to implement and cause the least amount of disturbance to the Hangar 1 structure. Alternatives 10 and 11 would generate a large amount of waste material and debris requiring disposal at approved facilities. Also, Alternatives 10 and 11 have the potential to generate a high amount of fugitive dust that must be adequately controlled. All alternatives address the RAO directly by removing or containing the PCB source.

Long-term Effectiveness and Permanence

Alternatives 2, 4, and 6 would effectively contain the PCBs that remain in place over the long term for as long as the integrity of the exterior cover material (the special coating, covering, or the new siding) and interior coatings are adequately maintained. This would require routine inspection and maintenance. In addition, these are not permanent actions because the component materials associated with Alternatives 2, 4, and 6 would eventually deteriorate and need to be replaced depending on the material durability and specifications and the environmental conditions of the site. Alternative 10 removes the majority of the PCBs and contains the remaining PCBs in structural steel paint. Alternative 10 would also be effective over the long term for as long as the coating on the structural steel is adequately maintained, but it is also not a permanent solution. In contrast, Alternative 11 would be a permanent action because it completely removes the source of PCBs. While all alternatives achieve the RAO pertaining to compliance with the ARARs, Alternative 11 would be the only alternative among the five that achieves the RAO through source removal and minimizes O&M. Therefore, Alternatives 10 and 11 would be superior to Alternatives 2, 4, and 6 in being the most effective in the long term.

Reduction of Toxicity, Mobility, or Volume through Treatment

None of the retained alternatives involve the use of treatment to reduce the toxicity, mobility, or volume of contaminants through treatment. Alternatives 2, 4, and 6 reduce the mobility by installing a protective barrier over the contaminated material either through coating or new cover materials. Alternatives 10 and 11 minimize the mobility of the PCBs from Hangar 1 by properly disposing of the contaminated material (completely or partially) within an approved off site facility where it could be properly managed to control further release to the environment. Alternatives 10 and 11 would be expected to have the highest degree of certainty with respect to reduction of mobility and volume in comparison to Alternatives 2, 4, and 6 because the design, monitoring, and maintenance requirements for the regulated approved facility are well detailed and highly effective.

5.1.3 Cost Analysis of the Alternatives

The capital, O&M, and total present worth costs for the retained removal action alternatives are presented in Table 5-1. A cost estimating basis of estimate and detailed cost tables, including cost breakdown by task, are included in Appendix C. The cost estimates have been refined to the extent possible using the site-specific information and are also based on qualified contractors' prices and proposals. The cost estimates for the retained alternatives, presented in this EE/CA, capture the known or expected response costs and are accurate within the USEPA guidance range of +50 percent to -30 percent for "Study Estimate" (USEPA, 1988).

For Alternatives 2, 4, 6, and 10, the cost for O&M was based on a typical CERCLA 30-year duration and includes inspection and repair of the covering or coating materials. Alternative 11 is a one-time action and does not require any O&M costs.

Application and material costs for the interior components were obtained from qualified contractors. The acrylic and asphalt-emulsion interior coating alternatives were significantly more expensive than the epoxy-coating alternative due to the significant costs associated with frequent inspection/touch-ups and recoats of the acrylic and asphalt-emulsion over a 30-year period. Applying an epoxy coating over the interior components of the hangar, including O&M, costs $15.4 million. This cost has been commonly applied to Alternatives 2, 4, and 6 as shown in Appendix C under the Coating of Interior Components line item.

Overall, the estimated removal action costs ranged from $25.8 million to $49.5 million including O&M. Alternative 2 has an estimated cost of $49.5 million. Two separate types of acrylic emulsions were evaluated for Alternative 4, the reinforced acrylic emulsion (Belzona) and the non-reinforced acrylic emulsion (Sherwin Williams). The Sherwin Williams acrylic emulsion chosen had an estimated cost of $48.6 million because it had a lower application cost over the Belzona reinforced acrylic emulsion. Alternative 6, cover with new visually similar siding, is estimated at $49.3 million. Alternative 10 has an estimated cost of $25.8 million. Alternative 11 has an estimated cost of $26.3 million.

Table 5-2 presents the estimated costs for the removal action alternatives from Table 5-1 and the costs of the various historic mitigation measures associated with each of the alternatives. The cost of the Level 1 HAER documentation, oral histories of individuals who worked in Hangar 1 during different eras, virtual Hangar 1 interactive CD, and inventory catalogue of Hangar 1 collections contained in the Moffett Field Museum applies to all alternatives and totals $350,000. The costs for matching the hangar's exterior colors varies from $0 to $3.4 million. The historic mitigation measure cost of $3.4 million for both Alternatives 2 and 6 is the same since both covers must be painted initially and recoated every 10 years. Alternative 4 has no costs associated with matching existing colors since the acrylic coating can be formulated to match existing colors, and subsequent recoating costs are covered under O&M. The re-siding cost estimate for Alternative 10 is $14.9 million.

The total costs for the removal action alternatives and historic mitigation measures ranged from $26.2 million for Alternative 10 to $53.2 million for Alternative 2.

5.1.4 Summary

All five of the alternatives would be technically feasible; administratively feasible; use standard construction services, equipment, and materials; provide adequate protection of public health and the environment; comply with ARARs; and provide adequate short-term effectiveness. However, they do not reduce the toxicity, mobility, or volume of contaminants through treatment.

Alternatives 10 and 11 are the only alternatives that remove all, or the majority of, the contamination, with Alternative 11 being a permanent remedy.

Alternative 10 is the least costly of the removal action alternatives.

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6.0 RECOMMENDED REMOVAL ACTION ALTERNATIVE

This EE/CA was performed in accordance with current USEPA and Navy guidance documents (USEPA, 1993; Naval Facilities Engineering Command Southwest, 1994) for NTCRAs under CERCLA. The purpose of this EE/CA is to identify and to analyze various removal actions required to address the PCBs in building materials of Hangar 1 at Moffett Field, California.

Based on the comparative analyses of the removal action alternatives in terms of implementability, effectiveness, and cost (presented in Section 5.0), the Navy's recommended alternative for the planned NTCRA is Alternative 10, which entails removal of all interior structures and siding, and containment of the PCBs in structural steel paint with an epoxy coating. Contaminated and non-contaminated debris will be transported to appropriate off-site disposal facilities.

The Navy also considered historic mitigation measures as described in Section 4.4, and recommends the following:

- Level 1 HAER documentation
- Oral histories of individuals who worked in the Hangar during different eras
- Virtual Hangar 1 interactive CD
- Inventory-catalogue of Hangar 1 collections contained in Moffett Field Museum
- Preservation of Hangar 1 man-cranes
- Coating the exposed steel frame with protective coating similar in color to the former siding

Alternative 10, remove siding and coat exposed surfaces, is recommended because the primary source of PCBs (the Robertson Protected Metal siding) would be removed, and remaining PCBs in structural steel paint would be adequately contained. Alternative 10 removes the majority of the sources from the site; thus, there would be minimal threat of any potential future release of PCBs into the environment. This alternative best meets the RAO and the NCP criteria because it:

- Is technically feasible based on commonly used construction techniques and demonstrated proven approaches
- Is administratively feasible; uses federal funding for support and follow on maintenance of the steel coating
- Uses widely available conventional construction equipment, services, and skilled workers
- Provides a high degree of long-term protection of the public and the environment because the PCBs in Hangar 1 siding and associated interior components are removed, and the remaining PCBs in structural steel paint are contained
- Complies with ARARs

- Provides adequate short-term effectiveness during implementation
- Imposes minimal restrictions on future use of the site and provides a frame that could be used for future development

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TABLES

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HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 2-1

KEY RESULTS FROM PREVIOUS INVESTIGATIONS AT HANGAR 1

Date (Reference)	Sample Medium	Analyte(s)	Concentration(s)
1997 (PAI, 2001)	Sediment from settling basin	Aroclor-1268	0.05 to 0.8 mg/kg
1999 to 2000 (NASA, 2003b)	Stormwater samples	Aroclor-1268	non-detect
December 2001 B.E.E.	Hangar 1 building materials, exterior panel, 1 sample	Lead	198,570 mg/kg
October 2002 (PAI, 2001)	Sediment from settling basin influent	Aroclor-1268	2,900 µg/kg
	Stormwater from Manhole 107	Aroclor-1268	1.2µg/L
October 2002 (B.E.E., 2003)	Hangar 1 building materials, exterior corrugated panel siding; 18 samples	Aroclor-1260 Aroclor-1268	Maximum 5,500 mg/kg Maximum 188,000 mg/kg
	Various building materials from exterior roofing and surfacing materials; 40 samples	Asbestos	18 samples with 0.7 to 18% asbestos (as chrysotile)
	Hangar 1 building materials, paint chips from doors	Lead	101,160 mg/kg 198,570 mg/kg
	Hangar 1 building materials, window putty; eight initial samples	Aroclor-1260 Aroclor-1268	1.7 to 77 mg/kg* 4 to 409 mg/kg*
	Hangar 1 building materials, window putty; five confirmation samples	Aroclor-1260 Aroclor-1268	non-detect 0.4 to 2.1 mg/kg
	Hangar 1 building materials, five-ply asphalt roof membrane; six samples; five layers per sample	Aroclor-1260 Aroclor-1268	0.9 mg/kg 0.5 mg/kg
	Hangar 1 building materials, roof sealant; one sample	Aroclor-1260 Aroclor-1268	5.7 mg/kg 4.4 mg/kg
2002 (NASA, 2003b)	Stormwater samples	Aroclor-1268	1.2 µg/L
October 2002 (NASA, 2003b)	Ambient air sampling from outside and inside of hangar; four screening stations	PCB – inside	0.0888 – 0.1115 µg/m^3
		Lead – inside	non-detect – 0.0127 µg/m^3
		PCB – outside	non-detect
November 2002 (Harding ESE, 2002)	Ambient air sampling from outside and inside of hangar	PCB – inside	0.0292 – 0.0407 µg/m^3
		PCB – outside	non-detect
QE Report 2002 December	Hangar 1 concrete floor wipe sample, 83 samples	PCBs	non-detect - 16 µg/100cm^2
March 2003 (DMJMH+N, 2003)	Rainwater runoff from Hangar 1 siding	Aroclor-1268	3.09 and 6.7 µg/L
	Rainwater from Hangar 1 downspout	Aroclor-1268	0.37 µg/L and non-detect
March 2003 (NASA, 2003b)	Sediment from stormwater collection trench on east side of Hangar 1	Aroclor-1268	65.5 and 72.4 mg/kg

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 2-1

KEY RESULTS FROM PREVIOUS INVESTIGATIONS AT HANGAR 1

Date (Reference)	Sample Medium	Analyte(s)	Concentration(s)
March 2003 DMJMH+N	Hangar 1 interior, dust samples	PCBs	non-detect to 320 mg/kg
July 2003 (NASA, 2003b)	Sediment from stormwater collection trench around Hangar 1; 17 samples	Aroclor-1268	2.2 to 540 mg/kg
		Lead	330 to 2,200 mg/kg
		Zinc	290 to 4,300 mg/kg
B.E.E., 2003	Hangar 1 building materials, upper (black) walls, 8 samples	Aroclor-1260 Aroclor-1268	2 to 12 mg/kg 5 to 119 mg/kg
May 2003 DMJMH+N	Hangar 1 concrete floor, 1 sample	Aroclor-1260 Aroclor-1268	non-detect 0.09 µg/quantity
		Lead	4.4 to 5.0 mg/kg
		Lead (SPLP)	non-detect
May 2003 DMJMH+N	Hangar 1 concrete floor wipe sample, 4 samples	Aroclor-1260 Aroclor-1268 Lead	non-detect non-detect – 21.2 µg/100cm^2 non-detect
February 2005	Hangar 1 rain-gutter sediment sample	Aroclor-1268	250 mg/kg
		Lead	4,520 mg/kg
		Zinc	3,380 mg/kg
		Asbestos	2% asbestos (as chrysotile)
ISSi, 2005	Hangar 1 building materials, interior paint on steel, 4 samples	Aroclor-1260 Aroclor-1268 Total PCBs	33 to 120 mg/kg 32 to 94 mg/kg 65 to 214 mg/kg
		Lead	Maximum 200,000 mg/kg

Notes:

The results that are presented summarize significant findings of previous investigations and do not represent all of the data previously collected.

* Samples of window putty are likely contaminated with exterior coating material.

Abbreviations and Acronyms:

µg/c^2 – micrograms per cubic centimeter
µg/kg – micrograms per kilogram
µg/L – micrograms per liter
µg/m^3 – microgram per cubic meter
B.E.E. – Benchmark Environmental Engineering
Harding ESE – Harding Environmental Science and Engineering
ISSi – Integrated Science Solutions, Inc.
mg/kg – milligrams per kilogram
NASA – National Aeronautics and Space Administration
PAI – Professional Analysis Incorporated
PCB – polychlorinated biphenyl
SPLP – Synthetic Precipitation Leaching Procedure

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-1

SUMMARY OF POTENTIAL FEDERAL CHEMICAL-SPECIFIC ARARS[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Clean Water Act of 1977, as Amended (33 U.S.C., ch. 26, §§ 1251–1387)				
Water quality standards.	Discharges to waters of the United States.	40 C.F.R. § 131.36(b) and 131.38	Potentially Applicable	These standards are potentially applicable to discharges of surface water, which may be generated through stormwater runoff at the site.
Water quality standards.	Discharges to the San Francisco Bay/ Sacramento–San Joaquin Delta Estuary.	40 C.F.R. § 131.37	Potentially Applicable	This establishes water quality criteria for discharges to surface waters. These standards may be potentially relevant and appropriate for site stormwater discharges.
Resource Conservation and Recovery Act (42 U.S.C., ch. 82, §§ 6901–6991[i])				
Defines RCRA hazardous waste. A solid waste is characterized as toxic, based on the TCLP, if the waste exceeds the TCLP maximum concentrations.	Waste.	Cal. Code Regs., tit. 22, §§ 66261.21, 66261.22(a)(1), 66261.23, and 66261.24(a)(1), and 66261.100	Potentially Applicable	Potentially applicable for determining whether waste is hazardous. RCRA provides specific guidance for determining both characteristic and listed hazardous wastes. Characteristic wastes will be generated during the response action.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-1

SUMMARY OF POTENTIAL FEDERAL CHEMICAL-SPECIFIC ARARS[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Groundwater Protection Standards: requirements to ensure that hazardous constituents entering the groundwater from a regulated unit do not exceed the concentration limits for contaminants of concern in the uppermost aquifer underlying the waste management area of concern at the POC.	A regulated unit that receives or has received hazardous waste before 26 July 1982 or regulated units that ceased receiving hazardous waste prior to 26 July 1982 where constituents in or derived from the waste may pose a threat to human health or the environment.	Cal. Code Regs., tit. 22, § 66264.94(a)(1) and (3)(c), (3)(d), and (3)(e),	Potentially Relevant and Appropriate	The requirement is relevant and appropriate to vadose zone soil because although the site is not a regulated unit, it contains chemicals similar to what may be found in a regulated unit.
LDRs prohibit disposal of hazardous waste unless treatment standards are met.	Hazardous waste land disposal.	Cal. Code Regs, tit. 22., § 66268.1(f)	Potentially Applicable	Potentially applicable for hazardous waste
Treatment standards including technology requirements before hazardous waste can be disposed to land.	Hazardous waste land disposal.	Cal. Code Regs., tit. 22, § 66268.40	Potentially Applicable	Potentially applicable for hazardous waste
BACT shall be applied to any new source or modified source, which results in an emission with the potential to emit 10 pounds or more per highest day of precursor organic compounds, non-precursor organic compounds, nitrogen oxides, sulfur dioxide, PM_{10} or carbon monoxide. This regulation is not applicable, because there are no “sources” on site as defined by the regulation. It is not relevant and appropriate, because any limited duration demolition work will not yield 10 pounds of PM_{10}.	BAAQMD air regulations.	Regulation 2, Rule 2-301	Not an ARAR	

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-1

SUMMARY OF POTENTIAL FEDERAL CHEMICAL-SPECIFIC ARARS[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
A person shall not emit from any source for a period or periods aggregating more than 3 minutes in any hour, a visible emission, which is as dark as or darker than No. 1 on the Ringelmann Chart or of such opacity as to obscure an observer's view to an equivalent or greater degree. All alternatives will use dust control methods to minimize visible emissions. BMPs will be implemented to reduce the potential for emissions from the site.	BAAQMD air regulations.	Regulation 6-301	Potentially Applicable	
Emission rate limits for particulate matter based from general operations are based on process weight rate and since the removal action employs no production processes. The regulation is neither applicable nor relevant and appropriate.		Regulation 6-311	Not an ARAR	
This rule states that architectural coatings must meet standards for maximum VOC content, and lists specific VOC content for each type of coating.		Regulation 8, Rule 3	Potentially Applicable	
Air monitoring for lead, a HAP, is required. Lead emission discharges in excess of 1 microgram per cubic meter, as measured at ground level, are prohibited. This regulation is potentially applicable if structural steel is subject to grinding or scarifying.		Regulation 11, Rule 1	Potentially Applicable	
This rule describes the asbestos management requirements during demolition and renovation projects.		Regulation 11, Rule 2	Potentially Applicable	

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-1

SUMMARY OF POTENTIAL FEDERAL CHEMICAL-SPECIFIC ARARS[a]

Notes:

[a] Many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARARs table.
[b] Only the substantive provisions of the requirements cited in this table are potential ARARs.

Abbreviations and Acronyms:

ARAR – applicable or relevant and appropriate requirement
BAAQMD – Bay Area Air Quality Management District
BACT – best available control technology
BMP – Best Management Practices
Cal. Code Regs. – California Code of Regulations
C.F.R. – Code of Federal Regulations
HAP – hazardous air pollutant
LDR – land disposal restriction
PM10 – particulate matter less than 10 microns in diameter
RCRA – Resource Conservation and Recovery Act
UTS – universal treatment standard
VOC – volatile organic compound

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-2

SUMMARY OF POTENTIAL STATE CHEMICAL-SPECIFIC ARARs[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
State and Regional Water Quality Control Boards				
Authorizes the SWRCB and RWQCB to establish in water quality control plans beneficial uses and numerical and narrative standards to protect both surface water and groundwater quality. Authorizes regional water boards to issue permits for discharges to land or surface or groundwater that could affect water quality, including NPDES permits, and to take enforcement action to protect water quality.		Cal. Water Code, div. 7, §§ 13241, 13243, 13263(a), 13269, and 13360 (Porter-Cologne Act)	Potentially Applicable	The DON accepts the substantive provisions of §§ 13241, 13243, 13263(a), 13269, and 13360 of the Porter-Cologne Act enabling legislation, as implemented through the beneficial uses, WQOs, waste discharge requirements, promulgated policies of the Basin Plan for the San Francisco Bay Region, as potential ARARs.
		California Water Code, div. 7, § 13304	Not an ARAR	California Water Code, Section 13304 was provided by the Water Board as an ARAR for Hangar 1. However, Section 13304 does not constitute an ARAR because it does not itself establish or contain substantive environmental "standards, requirements, criteria or limitations" (CERCLA Section 121) and is not in itself directive in intent. In addition, Section 13304 is not more stringent than the substantive requirements of the potential state and federal ARARs identified in this table.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-2

SUMMARY OF POTENTIAL STATE CHEMICAL-SPECIFIC ARARs[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
		California Water Code § 13307.1(c)	Not an ARAR	California Water Code, Section 13307.1(c) was provided by the Water Board as an ARAR for Hangar 1. However, the scope of this removal is limited to addressing releases of hazardous substances from Hangar 1 into the environment via runoff. The Navy does not intend to address other conditions that may give rise to the need for institutional controls at Site 29.
Incorporated into all regional board basin plans. Designates all groundwater and surface waters of the state as drinking water except where the TDS is greater than 3,000 ppm, the well yield is less than 200 gpd from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices.		SWRCB Res. 88-63 (Sources of Drinking Water Policy)	Not an ARAR	SWRCB Resolution No. 88-63 was provided by the Water Board as an ARAR for Hangar 1. The Navy accepts that this resolution may be an ARAR for surface water drinking sources. No discharges to surface water drinking sources will occur, and groundwater remediation is not considered part of this removal action; therefore, this resolution is not applicable to the removal action nor is it relevant and appropriate.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-2

SUMMARY OF POTENTIAL STATE CHEMICAL-SPECIFIC ARARs[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
		Cal. Code Regs., tit. 27, § 20080 et seq. and Cal. Code Regs., tit. 23, § 2510 et seq.	Not an ARAR	27 Cal. Code Regs., 20080 et seq. and 23 Cal. Code Regs., Section 2510 et seq. were provided by the Water Board as ARARs for Hangar 1. Because on-site discharge of waste to land is not part of the proposed removal action, these regulations are not applicable to the removal action nor are they relevant and appropriate.
	Porter-Cologne Water Quality Control Act	27 Cal. Code Regs. 20230	Not an ARAR	27 Cal. Code Regs. 20230 was provided by the Water Board as an ARAR for Hangar 1. This regulation allows inert waste to be discharged at units that are not classified. Because this removal action is conducted under CERCLA, all site waste must be disposed of in accordance with the CERCLA off-site rule; therefore, this regulation is not applicable to the removal action.
Describes the water basins in the San Francisco Bay Region, establishes beneficial uses of groundwater and surface water, establishes WQOs, including narrative and numerical standards, establishes implementation plans to meet WQOs and protect beneficial uses, and incorporates statewide water quality control plans and policies.		Comprehensive Water Quality Control Plan for the San Francisco Bay (Basin Plan) (California Water Code Section 13240)	Potentially Applicable	Substantive requirements pertaining to beneficial uses, WQOs, and certain statewide water quality control plans are potential state ARARs for impacts to surface water during this removal action.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-2

SUMMARY OF POTENTIAL STATE CHEMICAL-SPECIFIC ARARs[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Establishes the policy that high-quality waters of the state "shall be maintained to the maximum extent possible" consistent with the "maximum benefit to the people of the State." It provides that whenever the existing quality of water is better than that required by applicable water quality policies, such existing high-quality water will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the policies. It also states that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge to existing high-quality waters will be required to meet waste-discharge requirements that will result in the best practicable treatment or control of the discharge.		Statement of Policy with Respect to Maintaining High Quality of Waters in California, SWRCB Res. 68-16	Not an ARAR	SWRCB Resolution 68-16, Statement of Policy With Respect to Maintaining High Quality of Waters in California, was proposed by the Water Board as a potential ARAR, and establishes the policy that high-quality waters of the state "shall be maintained to the maximum extent possible" consistent with "the maximum benefit to the people of the state". It is the Navy's position that Res. 68-16 is not an ARAR for existing contamination or further migration of existing contaminant plumes. However, it may be and ARAR if discharges to surface water or groundwater are planned. Because no discharges are planned, Res. 68-16 is not an ARAR.
Describes requirements for RWQCB oversight of investigation and cleanup and abatement activities resulting from discharges of hazardous substances. RWQCB may decide on cleanup and abatement goals and objectives for the protection of water quality and beneficial uses of water within each region. Establishes criteria for "containment zones" where cleanup to established water-quality goals is not economically or technically practicable.		Policies and procedures for investigation and cleanup and abatement of discharges under Cal. Water Code § 13304, SWRCB Res. 92-49	Not an ARAR	Not an ARAR because Cal. Code Regs. tit. 22, § 66264.94(c) is determined to be a federal ARAR and because SWRCB Res. 92-49 is not more stringent.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-2

SUMMARY OF POTENTIAL STATE CHEMICAL-SPECIFIC ARARs[a]

Requirement	Prerequisite	Citation[b]	ARAR Determination	Comments
Incorporated into all regional board basin plans. Designates all groundwater and surface waters of the state as drinking water except where the TDS is greater than 3,000 ppm, the well yield is less than 200 gpd from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices.		SWRCB Res. 88-63 (Sources of Drinking Water Policy)	Not an ARAR	This resolution may be an ARAR for surface water drinking sources. However, no discharges to surface water drinking sources will occur. Additionally, groundwater treatment is not a part of this removal action. In light of these facts, this resolution is not an ARAR for the site.
Cal/EPA Department of Toxic Substances Control				
Definition of "non-RCRA hazardous waste."	Waste.	Cal. Code Regs., tit. 22, § 66261.3(a)(2)(C) or 66261.3(a)(2)(F), 66261.22(a)(3) and (4), 66261.24(a)(2)-(a)(8), 66261.101	Potentially Applicable	Potentially applicable for determining whether a waste is a non-RCRA hazardous waste.
This regulation oversees LDRs for certain classifications of non-RCRA hazardous waste including asbestos and aqueous wastes containing metals, both of which would be generated as a result of the response action.	Hazardous waste LDRs for non-RCRA, California hazardous waste.	22 Cal. Code Regs. 66268.105	Potentially Applicable	Potentially applicable where non-RCRA wastes are generated.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-2

SUMMARY OF POTENTIAL STATE CHEMICAL-SPECIFIC ARARs[a]

Notes:

[a] Many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARARs table.

[b] Only the substantive provisions of the requirements cited in this table are potential ARARs.

[c] Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the DON accepts the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only pertinent substantive requirements of specific citations are considered potential ARARs.

Abbreviations and Acronyms:

ARAR – applicable or relevant and appropriate requirement
Cal. Code Regs. – California Code of Regulations
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
EE/CA – Engineering Evaluation/Cost Analysis
gpd – gallons per day
LDR – land disposal restriction
Navy – Department of the Navy
NPDES – National Pollutant Discharge Elimination System
NTCRA – non-time-critical removal action
ppm – parts per million
RCRA – Resource Conservation and Recovery Act
STLC – Soluble Threshold Limit Concentration
SWRCB – State Water Resources Control Board
TTLC – Total Threshold Limit Concentration
WQO – Water Quality Objectives

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-3

SUMMARY OF POTENTIAL FEDERAL LOCATION-SPECIFIC ARARS

Location	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
National Historic Preservation Act of 1966, as Amended (16 U.S.C. § 470–470x-6)[b]					
Historic project owned or controlled by federal agency	Action to preserve historic properties; planning of action to minimize harm to properties listed on or eligible for listing on the National Register of Historic Places.	Property included in or eligible for the National Register of Historic Places.	16 U.S.C. § 470-470x-6, 36 C.F.R., Pt. 800 40 C.F.R., § 6.301(b)	Potentially Applicable	Hangar 1 is individually eligible for listing in the National Register and is a contributing element of the U.S. Naval Air Station Sunnyvale Historic District, which is listed on the National Register. Applying the substantive provisions of the statute and regulations, the EE/CA will analyze each project alternative for potential effects to Hangar 1 and the historic district. The analysis will aid in determining whether such effects are adverse, and if so, take into account measures that would avoid, minimize, or mitigate adverse effects. The State Historic Preservation Office and the Advisory Council on Historic Preservation are being given an opportunity to comment on the action, and input from the State Historic Preservation Office is being sought. The CERCLA community involvement program will afford stakeholders and interested members of the public the opportunity to provide their input on proposed mitigation.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-3

SUMMARY OF POTENTIAL FEDERAL LOCATION-SPECIFIC ARARS

Location	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
Migratory Bird Treaty Act of 1972 (16 U.S.C. §§ 703–712)					
Migratory bird area	Protects almost all species of native migratory birds in the U.S. from unregulated "take," which can include poisoning at hazardous waste sites.	Presence of migratory birds.	16 U.S.C. §703	Potentially Relevant and Appropriate	Except as permitted by regulations, it is unlawful to pursue, hunt, take, capture, offer to sell, barter, purchase, or deliver any migratory bird, nest, or egg. The remedial design process will identify measures necessary to prevent an unregulated "take" of protected bird species. It is the Navy's position that this act is not legally applicable to Navy actions. However, substantive portions of the Migratory Bird Treaty Act are considered a potentially relevant and appropriate requirement for this removal action. A biological survey will be conducted prior to starting any intrusive work, and the impacts on nesting/roosting raptors will be minimized.

Notes:

[a] Only the substantive provisions of the requirements cited in this table are potential ARARs.

Abbreviations and Acronyms:

ARAR – applicable or relevant and appropriate requirement
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R. – Code of Federal Regulations
EE/CA – Engineering Evaluation/Cost Analysis
Navy – Department of the Navy
U.S.C. – United States Code

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-4

SUMMARY OF POTENTIAL STATE LOCATION-SPECIFIC ARARS

Location	Requirement	Prerequisite	Citation[a]	ARAR Determination	Comments
California Endangered Species Act (Cal. Fish & Game Code §§ 2050–2116)					
		Actions impacting birds or mammals.	Cal. Fish and Game Code § 3005(a)	Potentially Relevant and Appropriate	The taking of birds and mammals, including taking by poison (site contaminants), is prohibited. The taking of birds and mammals will be prevented by containing contaminants and severing the pathway of exposure to siding contaminants. It is the Navy's position that the federal sovereign immunity has not been waived; therefore, the California Fish and Game Code does not legally apply. However, this requirement is deemed to be a potentially relevant and appropriate state ARAR.

Notes:

[a] Only the substantive provisions of the requirements cited in this table are potential ARARs.

Abbreviations and Acronyms:

ARAR – applicable or relevant and appropriate requirement
Navy – Department of the Navy

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HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-5

SUMMARY OF POTENTIAL FEDERAL ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R & A	TBC	
Resource Conservation and Recovery Act (42 U.S.C. §§ 6901–6991[i])							
Waste Piles	Allows generators to accumulate solid remediation waste in a U.S. EPA-designated pile for storage only, up to 2 years, during remedial operations without triggering LDRs.	Hazardous remediation waste temporarily stored in piles.	40 C.F.R. § 264.554(d)(1)(i–ii) and (d)(2), (e), (f), (h), (i), (j), and (k)	1,2,5,8, 9,10,11			Potentially applicable where solid, non-flowing RCRA wastes are stored in stockpiles.
On-site waste generation	Person who generates waste shall determine if that waste is a hazardous waste	Generator of waste.	Cal. Code Regs., tit. 22, § 66262.10(a), 66262.11	1-12, interior			Potentially applicable for any operation where hazardous waste is generated. Several wastestreams including siding, loose paint, decontamination wastewater, and structural steel may be characterized as RCRA hazardous waste pending analysis due to lead concentrations. The determination of whether wastes generated during the removal activity are hazardous will be made at the time the wastes are generated.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-5

SUMMARY OF POTENTIAL FEDERAL ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R & A	TBC	
	Requirements for analyzing waste for determining whether waste is hazardous.	Generator of waste.	Cal. Code Regs., tit. 22, § 66264.13(a) and (b)	1-12, interior			Potentially applicable for waste generated during the removal action.
Hazardous waste accumulation	On-site hazardous waste accumulation is allowed for up to 90 days as long as the waste is stored in containers in accordance with § 66262.171–178 or in tanks, on drip pads, inside buildings, and is labeled and dated, etc.	Accumulate hazardous waste.	Cal. Code Regs., tit. 22, § 66262.34	1-12, interior			Potentially applicable for operations where hazardous waste is generated and transported. The determination of whether wastes generated during response action activities are hazardous will be made at the time the wastes are generated.
Placement of waste in land disposal units	Movement of excavated materials to new location and placement in or on land will trigger LDRs for the excavated waste or closure requirements for the unit in which the waste is being placed.	Materials containing RCRA hazardous wastes subject to LDRs are placed in another unit.	Cal. Code Regs., tit. 22, § 66268.40	1-12, interior			Potentially applicable where waste is placed on land.
Container storage	Containers of RCRA hazardous waste must be: • maintained in good condition, • compatible with hazardous waste to be stored, and closed during storage except to add or remove waste. Inspect container storage areas weekly for deterioration.	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage elsewhere, in a container.	Cal. Code Regs., tit. 22, § 66264.171, 66264.172, and 66264.173	1-12, interior			Potentially applicable for waste stored in containers on site.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-5

SUMMARY OF POTENTIAL FEDERAL ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R & A	TBC	
Toxic Substances Control Act (15 U.S.C. §§ 2601–2692)							
Disposal of PCBs	Provides expanded decontamination procedures and disposal options for PCBs. Ensures consistency with RCRA land disposal restriction.	Remedial actions involving PCBs.	40 C.F.R. § 761.50.	1-12, interior			This ARAR is potentially applicable to disposal of all TSCA waste, as well as the decontamination of tools and equipment that contact PCBs during the removal action.
	PCB bulk product waste shall be disposed of according to performance-based disposal options either in a TSCA-approved incinerator/landfill or by a TSCA-approved alternative disposal method.		40 C.F.R. § 761.62(a)	1-12, interior			This ARAR is potentially applicable to disposal of all TSCA waste, as well as the decontamination of tools and equipment that contact PCBs during the removal action.
Disposal of PCBs	All PCB articles or containers must be removed and disposed within 1 year of storage.	PCB concentrations of 50 ppm or greater and PCB items with PCB concentrations of 50 ppm or greater.	40 C.F.R. § 761.65(a)	1-12, interior			This ARAR is potentially applicable to waste regulated under TSCA
	This ARAR provides expanded decontamination procedures. It is potentially applicable to the decontamination of TSCA waste, as well as the decontamination of tools and equipment that contact PCBs during the removal action.		40 C.F.R. § 761.79	1-12, interior			This ARAR is potentially applicable to disposal of all TSCA waste, as well as the decontamination of tools and equipment that contact PCBs during the removal action.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-5

SUMMARY OF POTENTIAL FEDERAL ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R & A	TBC	
Marking of PCBs	The following must be marked as designated in 40 C.F.R. § 761.45: PCB containers containing greater than 50 ppm PCBs, PCB articles (see 40 C.F.R. § 761.45), PCB article containers, storage areas used to store PCBs, and PCB items for disposal. All marks must be on the exterior of PCB container and must be clearly visible.	PCB article described in 40 C.F.R. § 761.45.	40 C.F.R. § 761.40	1-12, interior			This ARAR is potentially applicable to waste regulated under TSCA
PCB storage on-site prior to disposal	Storage facilities must be constructed with adequate roof and walls; with a floor and curb of impervious materials; without drain valves, floor drains, expansion joints, sewer lines, or other openings; and above the 100-year floodwater level.	PCB concentrations of 50 ppm or greater and PCB items with PCB concentrations of 50 ppm or greater.	40 C.F.R. § 761.65(b)	1-12, interior			Storage facilities for PCBs must have adequate roof and walls; with a floor and curb of impervious materials; without drain valves, floor drains, expansion joints, sewer lines, or other openings; and above the 100-year floodwater level. This regulation is potentially applicable if a long-term (1 year) storage area is determined to be necessary to manage TSCA wastes. Wastes that are both RCRA and TSCA will be managed under both regulations, following the more stringent of the two when overlap exists.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-5

SUMMARY OF POTENTIAL FEDERAL ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R & A	TBC	
PCB storage on-site prior to disposal	TSCA wastes in temporary storage (30 days or less) need not comply with the storage regulations in 40 C.F.R. § 761.65(b) for the following items: PCB articles and equipment that are non-leaking; leaking articles and equipment placed in non-leaking containers; PCB containers containing non-liquid PCBs, such as soil, rags, and debris; or liquid PCBs between 50-500 ppm if covered by the Spill Prevention, Control, and Countermeasures Plan. All storage areas must be properly marked. No item of movable equipment used to handle PCBs that comes in contact with PCBs shall be moved from the storage area unless it has been decontaminated as specified in 40 C.F.R. § 761.79. All stored articles must be checked for leaks every 30 days. Containers must be dated when they are placed in storage.	Temporary storage of PCB concentrations of 50 ppm or greater and PCB items with PCB concentrations of 50 ppm or greater.	40 C.F.R. § 61.65(c)(3), (c)(4), (c)(7), and (c)(8).	1-12, interior			

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-5

SUMMARY OF POTENTIAL FEDERAL ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R & A	TBC	
Federal Hazardous Materials Transportation Law (49 U.S.C. §§ 5101–5127)							
Hazardous materials marking, labeling, and placarding	Each person who offers hazardous material for transportation or each carrier that transports it shall mark each package, container, and vehicle in the manner required. Each person offering nonbulk hazardous materials for transportation shall mark the proper shipping name and identification number (technical name) and consignee's name and address. Hazardous materials for transportation in bulk packages must be labeled with proper ID number, specified in 49 C.F.R. § 172.101 table, with required size of print. Packages must remain marked until cleaned or refilled with material requiring other marking. No package marked with a proper shipping name or ID number may be offered for transport or transported unless the package contains the identified hazardous material or its residue.	Person who offers hazardous material for transportation; carries hazardous material; or packages, labels, or placards hazardous material.	49 C.F.R. § 172.300 49 C.F.R. § 172.301 49 C.F.R. § 172.302 49 C.F.R. § 172.303		1-12, interior		Potentially relevant and appropriate for transport of DOT hazardous materials while on site. Shipping requirements must be met prior to off-site transport.

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-5

SUMMARY OF POTENTIAL FEDERAL ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R & A	TBC	
	The markings must be durable, in English, in contrasting colors, unobscured, and away from other markings.contains the identified hazardous material or its residue.		49 C.F.R. § 172.304		1-12, interior		
	Labeling of hazardous material packages shall be as specified in the list.		49 C.F.R. § 172.400		1-12, interior		Potentially relevant and appropriate for transport of DOT hazardous materials while on site. Shipping requirements must be met prior to off-site transport.
Hazardous materials marking, labeling, and placarding	Each bulk packaging or transport vehicle containing any quantity of hazardous material must be placarded on each side and each end with the type of placards listed in Tables 1 and 2 of 49 C.F.R. § 172.504.	Each person who offers for transport or transports any hazardous materials shall comply with these placarding requirements.	49 C.F.R. § 172.504		1-12, interior		Potentially relevant and appropriate for transport of DOT hazardous materials while on site. Shipping requirements must be met prior to off-site transport.

Notes:

[a] Only the substantive provisions of the requirements cited in this table are potential ARARs.

Abbreviations and Acronyms:

A – Applicable
ARAR –applicable or relevant and appropriate requirement
C.F.R. – Code of Federal Regulations
DOT – Department of Transportation
LDR – land disposal restriction
PCB – polychlorinated biphenyl
ppm – parts per million
R&A – Relevant and Appropriate
RCRA – Resource Conservation and Recovery Act
TBC – to be considered
TSCA – Toxic Substances Control Act
TSD – treatment, storage, and disposal

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HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-6

SUMMARY OF POTENTIAL STATE ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R	TBC	
	The Navy will comply with the substantive provisions of the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (SWRCB Order No. 99-08) identified by the state of California as "TBC" guidance for compliance with the federal CWA and state of California water quality requirements identified as potential water quality ARARs in this EE/CA. Associated reporting and recordkeeping are considered procedural and are, therefore, not substantive. The Navy will also comply with the substantive requirements for development and implementation of BMPs, substantive requirements for the content of an SWPPP, and substantive technical monitoring and analytical requirements (location and frequency of sample collection, parameters to be tested, and analytical methodologies).	NPDES Stormwater Pollution Prevention.	SWRCB Order No. 99-08			1-12, interior	
Disposal of waste	Requires that nonhazardous solid waste as defined at § 20220(a) be discharged to a classified waste management unit.	Discharge of nonhazardous solid waste after 18 July 1997 to land for treatment, storage, or disposal.	Cal. Code Regs., tit. 27, § 20220(b), (c), and (d)	1-12, interior			Potentially applicable for waste that meets the definition of nonhazardous waste. Wastes will be characterized prior to disposal to determine applicability

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 3-6

SUMMARY OF POTENTIAL STATE ACTION-SPECIFIC ARARS

Action	Requirement	Prerequisite	Citation[a]	ARAR Determination			Comments
				A	R	TBC	
Disposal of non-RCRA waste	Land disposal restrictions for non-RCRA, California-regulated hazardous waste.	Non-RCRA, California-regulated hazardous waste disposal.	Cal. Code Regs., tit. 22, § 66268.105	1-12, interior			Potentially applicable where more stringent than federal ARARs.
Disposal of waste	Requires that designated waste as defined at Cal. Water Code § 13173 be discharged to Class I or Class II waste management units.	Discharges of designated waste after 18 July 1997 (nonhazardous waste that could cause degradation of surface or ground waters) to land for treatment, storage, or disposal.	Cal. Code Regs., tit. 27, § 20210	1-12, interior			Potentially applicable to waste that meets the definition of "designated waste". All wastes will be characterized prior to disposal.
Waste disposal	Wastes that contain total lead in excess of 350 ppm, copper in excess of 2,500 ppm, or nickel in excess of 200 ppm must be disposed in a Class I landfill.	Waste containing total lead, copper, or nickel in excess of specified levels.	Cal. Health & Safety Code § 25157.8	1-12, interior			Potentially applicable for disposal of wastes. All wastes will be characterized prior to disposal.

Notes:

[a] Only the substantive provisions of the requirements cited in this table are potential ARARs.

Abbreviations and Acronyms:

ARAR – applicable or relevant and appropriate requirement
BDAT – best demonstrated available technology
BMP – Best Management Practice
Cal. Code Regs. – California Code of Regulations
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CWA – Clean Water Act
EE/CA – Engineering Evaluation/Cost Analysis
EPA – U.S. Environmental Protection Agency
LDR – land disposal restriction
Navy – Department of the Navy
NPDES – National Pollutant Discharge Elimination System
ppm – parts per million
RCRA – Resource Conservation and Recovery Act
SWPPP – Stormwater Pollution Prevention Plan
SWRCB – State Water Resources Control Board
TBC – to be considered

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 4-1

EVALUATION OF REMOVAL ACTION ALTERNATIVES
HANGAR 1

REMOVAL ACTION ALTERNATIVES	IMPLEMENTABILITY				EFFECTIVENESS				
	Technical Feasibility	Administrative Feasibility	Availability of Services and Materials	Community Acceptance	Overall Protection of Public Health and the Environment	Compliance with ARARs	Short-term Effectiveness	Long-term Effectiveness	Reduction of Toxicity, Mobility, or Volume through Treatment
1. Enclose entire hangar inside another structure	NO	YES	YES	_	YES	YES	YES	YES	NO
2. Cover with rubberized material	YES	YES	YES	_	YES	YES	YES	YES	NO
3. Coat with asphalt-emulsion	NO	YES	YES	_	NO	YES	YES	NO	NO
4. Coat with acrylic coating	YES	YES	YES	_	YES	YES	YES	YES	NO
5. Coat with plasma-sprayed oxide	NO	YES	YES	_	YES	YES	YES	YES	NO
6. Cover with new visually similar siding	YES	YES	YES	_	YES	YES	YES	YES	NO
7. Media blast contaminated surfaces	NO	YES	YES	_	YES	YES	YES	YES	NO
8. Neutralize PCBs using emulsified bimetallic extraction	NO	YES	NO	_	YES	YES	YES	YES	YES
9. Remove contaminants by chemical stripping and coating	YES	YES	YES	_	YES	NO	YES	YES	NO
10. Remove siding and coat exposed surfaces	YES	YES	YES	_	YES	YES	YES	YES	NO
11. Demolish and remove hangar	YES	YES	YES	_	YES	YES	YES	YES	NO
12. Collect stormwater runoff and treat on site	YES	YES	YES	_	NO	YES	YES	NO	NO
13. Collect stormwater runoff and treat/dispose off site	YES	YES	YES	_	NO	YES	YES	NO	NO

Notes:

Community acceptance will be determined once the document is made available to the public and after a meeting to receive, record, and respond to public comment.
Shading indicates alternatives to be retained for further analysis.

Abbreviations and Acronyms:

ARAR - applicable or relevant and appropriate requirement
PCB - polychlorinated biphenyl

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HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 4-2

EVALUATION OF INTERIOR COATING ALTERNATIVES
HANGAR 1

REMOVAL ACTION ALTERNATIVES	IMPLEMENTABILITY				EFFECTIVENESS				
	Technical Feasibility	Administrative Feasibility	Availability of Services and Materials	Community Acceptance	Overall Protection of Public Health and the Environment	Compliance with ARARs	Short-term Effectiveness	Long-term Effectiveness	Reduction of Toxicity, Mobility, or Volume through Treatment
1. Acrylic Coating	YES	YES	YES	_	YES	YES	YES	YES	NO
2. Epoxy Coating	YES	YES	YES	_	YES	YES	YES	YES	NO
3. Asphalt-emulsion Coating	YES	YES	YES	_	YES	YES	YES	YES	NO
4. Polyurethane Foam Coating	NO	YES	YES	_	NO	YES	YES	YES	NO

Notes:

Community acceptance will be determined once the document is made available to the public and after a meeting to receive, record, and respond to public comment.
Shading indicates alternatives to be retained for further analysis.

Abbreviations and Acronyms:

ARAR - applicable or relevant and appropriate requirement
PCB - polychlorinated biphenyl

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HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 5-1

REMOVAL ACTION ALTERNATIVES COST SUMMARY

Task	Alternative 2 Cover with Rubberized Material	Alternative 4 Coat with Acrylic Coating	Alternative 6 Cover with New Visually Similar Siding	Alternative 10 Remove Siding and Coat Exposed Surfaces	Alternative 11 Demolish and Remove Hangar
Construction					
Direct	$ 41,151,777	$ 36,342,877	$ 42,054,877	$ 15,781,450	$ 18,375,150
Indirect	$ 8,184,700	$ 5,097,700	$ 7,155,700	$ 6,916,700	$ 7,956,700
Total Construction	**$ 49,336,477**	**$ 41,440,577**	**$ 49,210,577**	**$ 22,698,150**	**$ 26,331,850**
Total O&M (30 Years)	**$ 167,704**	**$ 7,125,642**	**$ 96,100**	**$ 3,114,647**	**$ -**
Total Estimated Costs	**$ 49,500,000** [1]	**$ 48,570,000** [1]	**$ 49,310,000**	**$ 25,810,000** [1]	**$ 26,330,000**

Notes:

Cost detail provided in Appendix C; Summary costs are rounded to the nearest $10,000.00.

Costs accurate within the EPA Guidance range of -30 percent to +50 percent for study estimates.

[1] These costs do not represent the totals within Appendix C due to rounding

Abbreviations and Acronyms:

O&M - operation and maintenance

USEPA - U.S. Environmental Protection Agency

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HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

TABLE 5-2

REMOVAL ACTION ALTERNATIVES AND HISTORIC MITIGATION MEASURES COST SUMMARY[1]

Alternative	Removal[5] Action Costs	Historic[2] Mitigation	Removal Action and Historic Mitigation[2] Cost	Other Historic Mitigation	Removal Action, Historic Mitigation, and Other Historic Mitigation Cost
Alternative 2 – Cover with Rubberized Material	**$49,500,000**	$350,000	$49,850,000	$3,370,000[3]	$53,220,000
Alternative 4 – Coat with Acrylic Coating	**$48,570,000**	$350,000	$48,920,000	$0	$48,920,000
Alternative 6 – Cover with New Visually Similar Siding	**$49,310,000**	$350,000	$49,660,000	$3,370,000[3]	$53,030,000
Alternative 10 – Remove Siding and Coat Exposed Surfaces	**$25,810,000[6]**	$350,000	$26,160,000	$14,910,000[4]	$41,070,000
Alternative 11 – Demolish and Remove Hangar	**$26,330,000**	$350,000	$26,680,000	$0	$26,680,000

Notes:

1 Cost detail is provided in Appendix C. Summary costs are within the Environmental Protection Agency Guidance Range of –30 percent to +50 percent for study estimates.

2 Level I HAER documentation, oral histories of individuals who worked in the hangar during different eras, virtual Hangar 1 interactive CD, and inventory-catalogue of Hangar 1 collections contained in Moffett Historical Museum.

3 Includes costs for applying and maintaining an exterior coat that matches the hangar's original colors.

4 Includes costs for covering the hangar structural frame and roof with a siding similar in appearance to the original hangar siding and replacement of windows and access doors.

5 Includes costs for preservation of man-cranes.

6 Protective coating will be similar in color to the orginal siding.

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FIGURES

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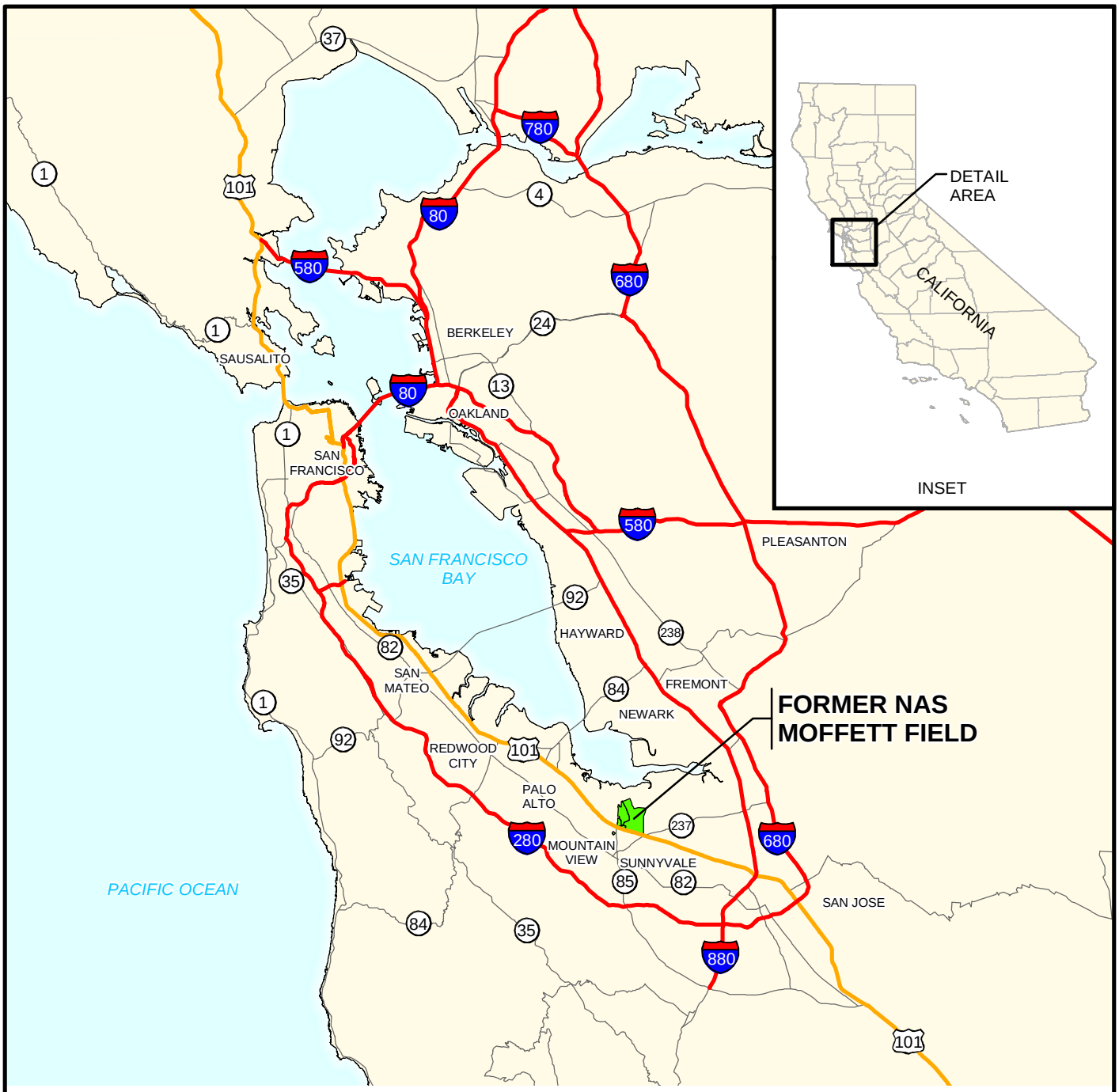


LEGEND

- STATE HIGHWAY
- US HIGHWAY
- INTERSTATE HIGHWAY
- FORMER NAS MOFFETT FIELD
- WATER

NOTE:

NAS - NAVAL AIR STATION

5 0 5 10 Miles

Scale: 1" = 10 Miles

N

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

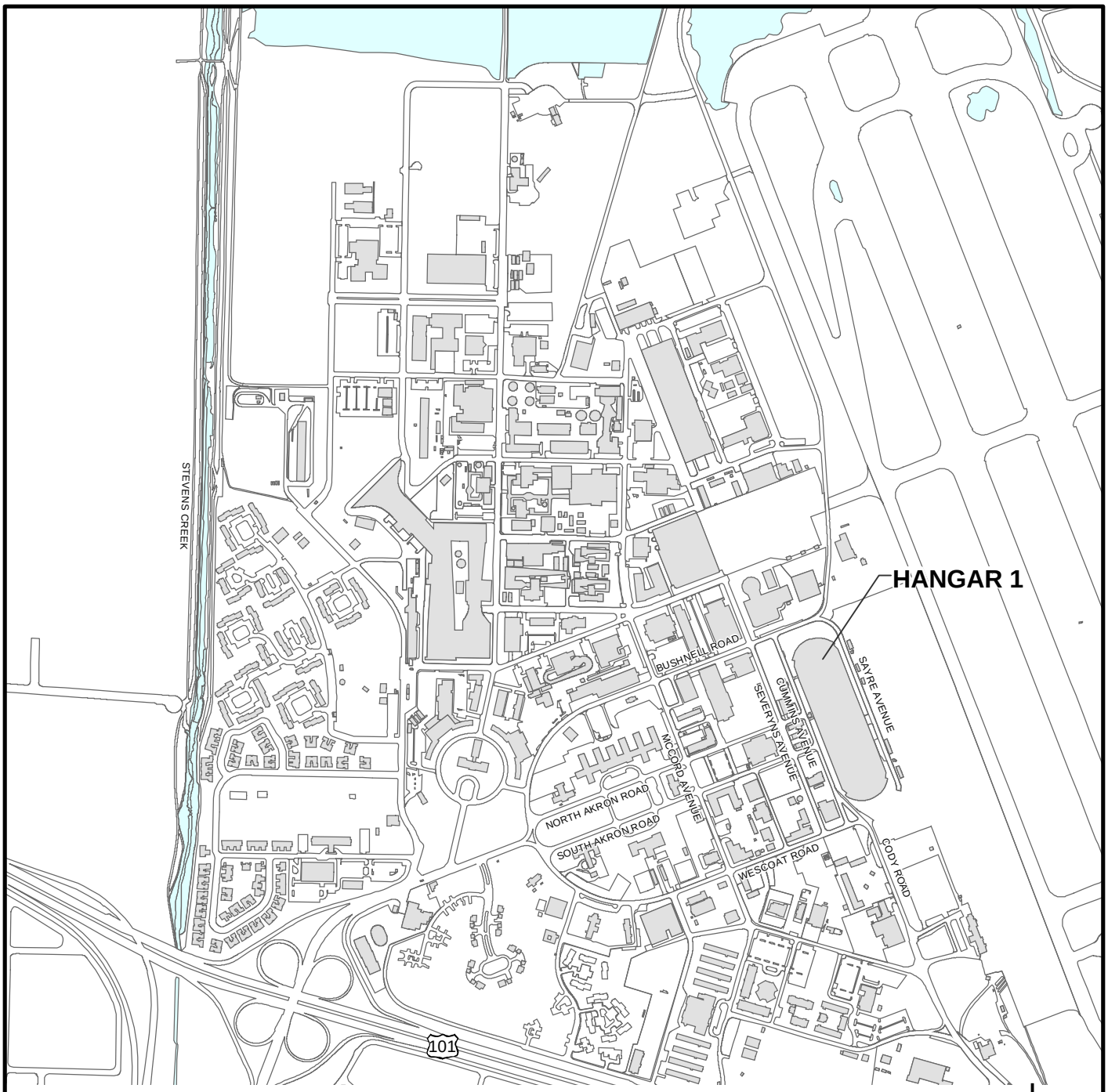
FIGURE 2-1

REGIONAL LOCATION MAP

FORMER NAS MOFFETT FIELD
MOFFETT FIELD, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-5713-0068-0001
FILE NUMBER: 080003R2902.mxd

TETRA TECH EC, INC.



500 0 500 1,000 Feet

Scale: 1" = 1000'

N

LEGEND

BUILDING

WATER/WETLAND

NOTE:

NAS - NAVAL AIR STATION

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

FIGURE 2-2

HANGAR 1 LOCATION MAP

FORMER NAS MOFFETT FIELD
MOFFETT FIELD, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-5713-0068-0001
FILE NUMBER: 080003L2903.mxd

TETRA TECH EC, INC.

75 0 75 150 Feet

Scale: 1" = 150'

NOTES:

NAS - NAVAL AIR STATION

PHOTOGRAPH TAKEN FEBRUARY 2002

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

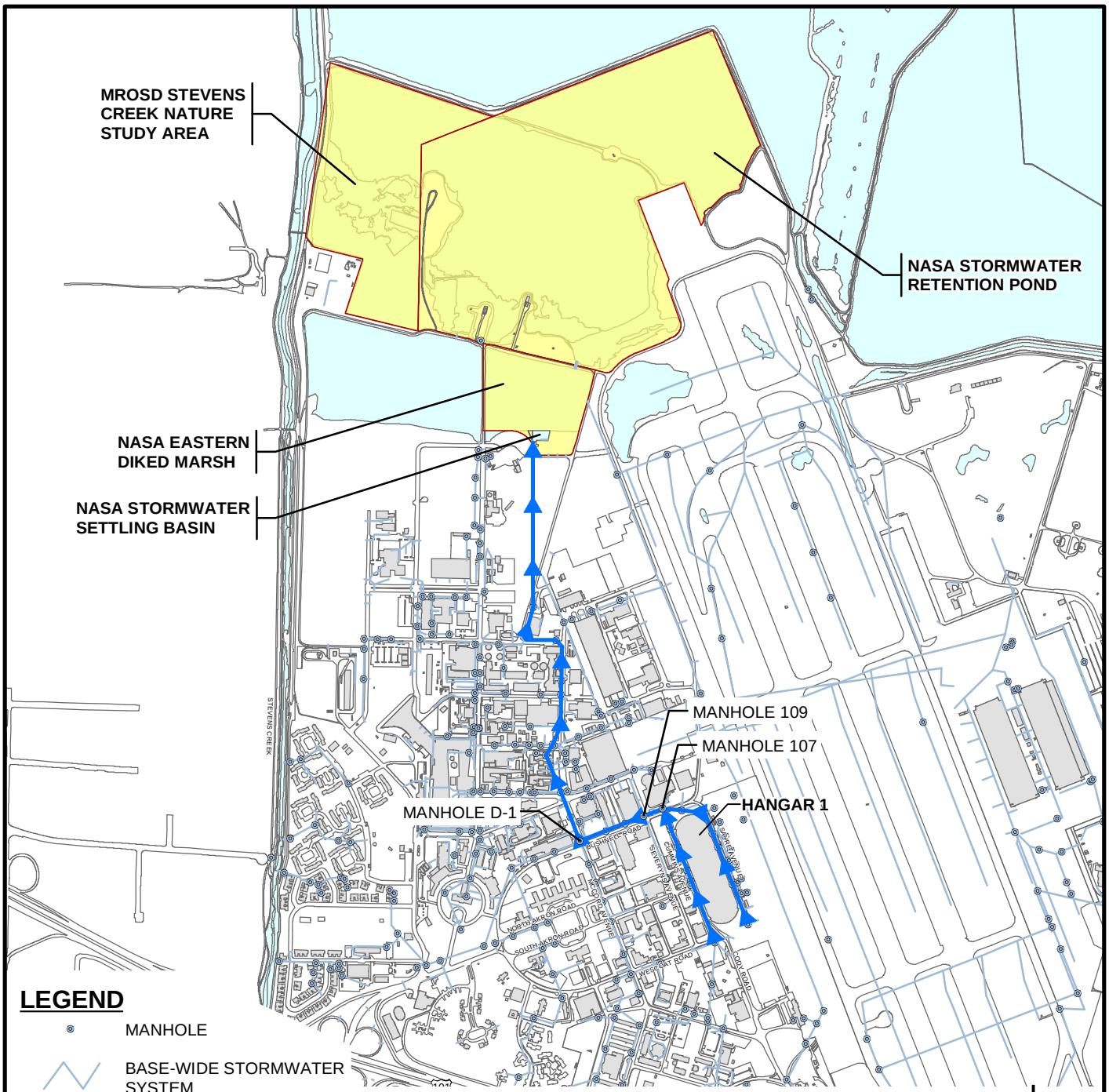
HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

FIGURE 2-3

HANGAR 1 PHOTOGRAPH
FORMER NAS MOFFETT FIELD
MOFFETT FIELD, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-5713-0068-0001
FILE NUMBER: 080003L2904.mxd

TETRA TECH EC, INC.



LEGEND

- MANHOLE
- BASE-WIDE STORMWATER SYSTEM
- STORMWATER FLOW FROM HANGAR 1 TO STORMWATER SETTLING BASIN
- SITE 25
- BUILDING
- WATER/WETLAND

750 0 750 1,500 Feet

Scale: 1" = 1500'

N

NOTES:

MROSD - MIDPENINSULA REGIONAL OPEN SPACE DISTRICT

NAS - NAVAL AIR STATION

NASA - NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

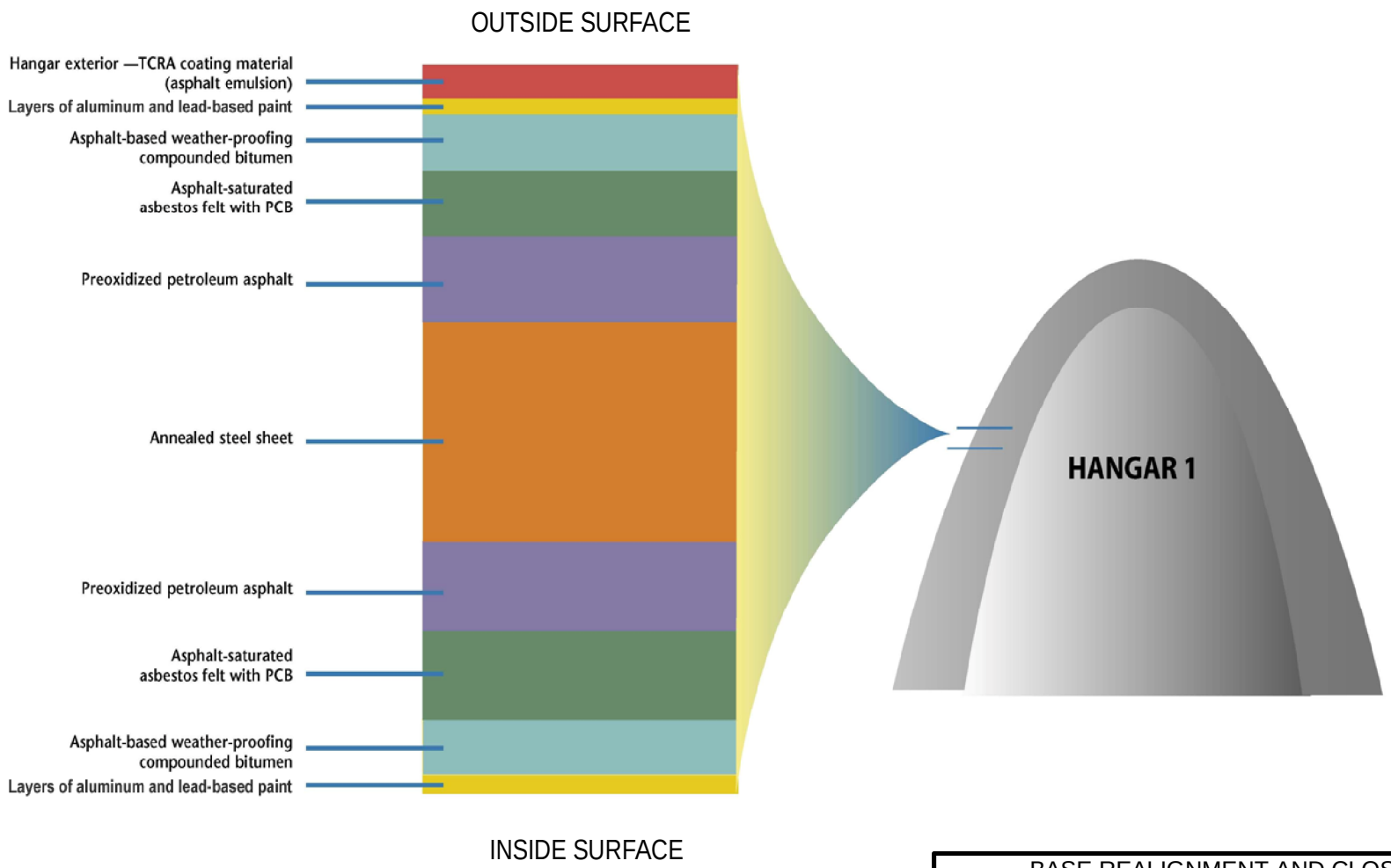
FIGURE 2-4

STORM DRAIN SYSTEM AROUND HANGAR 1

FORMER NAS MOFFETT FIELD
MOFFETT FIELD, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-5713-0068-0001
FILE NUMBER: 080003L2905.mxd

TETRA TECH EC, INC.



NOTES:

NAS - NAVAL AIR STATION

PCBs - POLY CHLORINATED BIPHENOLS

TCRA - TIME CRITICAL REMOVAL ACTION

BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA

HANGAR 1 ENGINEERING EVALUATION/COST ANALYSIS

FIGURE 2-5

HANGAR 1 SIDING COMPOSITION

FORMER NAS MOFFETT FIELD
MOFFETT FIELD, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-5713-0068-0001
FILE NUMBER: 080003T2906.mxd

TETRA TECH EC, INC.

APPENDIX A

TECHNICAL DESCRIPTION OF ROBERTSON PROTECTED METAL

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Lockheed Martin
Maritime Systems & Sensors
1210 Massillon Rd.
Akron, OH 44315-0001

Report# MPE-21876PR-2 RPM Definition

January 4, 2005

Subject: Technical Description of Robertson Protected Metal

The Lockheed Martin Airdock is located in Akron, Ohio. The building is approximately 1175 feet long, 325 feet wide and 211 feet tall with the wall/roof line assuming an approximate parabolic shape and enclosed on each end with spherical profile doors.

The Airdock siding is Robertson Protected Metal (RPM) manufactured in 1929 by the H.H. Robertson Company, formerly known as the Asbestos Protected Metal Company.

The siding consists of five components. The following description is taken from various literatures of the 1920s, as listed at the end, and from recent observations.

Component 1 is specially annealed steel sheet protected from corrosion by the other four components. This description of the base metal derives from the H.H. Robertson literature. The sheet was corrugated after the coatings were applied. Currently, the steel appears to be unoxidized where the coatings are intact.

Component 2 is an air-blown (preoxidized) petroleum asphalt layer encasing the steel at a weight of about 16 pounds per hundred square feet. H.H. Robertson Company refined the asphalt with its own process. H.H. Robertson literature describes the material as "an air-blown petroleum asphalt having a low susceptibility factor, being soft and adhesive at low temperatures, yet not flowing at temperatures reached on roofs, even in the tropics… contains practically no mineral matter..." It was applied by drawing the steel sheet through a vat of this asphalt maintained at 350 deg-F. In samples, the asphalt layer is marginally pliable, but very dry and particles disengage from the Component (as opposed to shattering) when prodded by a manual instrument. It is in the range of 24-28 mils thick (1 mil = 0.001").

Component 3 is an asphalt-saturated asbestos felt which was larger than the steel sheet. It was applied to both sides and then wrapped around the edges of the asphalt-coated steel sheet. H.H. Robertson literature suggests that the saturant is a slightly different asphalt than the component 2 asphalt. The J.H. Young article indicates that the asbestos saturant is an asphalt containing hexacloronaphthalene as a fire retardant. However, chemical analysis of the RPM coating shows that the fire retardant is in fact Aroclor 1268, which is a blend of highly chlorinated PCBs, and present at a concentration of about 4.0 percent by weight. From samples, the condition of the asphalt in this layer is about the same as that underneath it: somewhat pliable, but very dry and particles disengage from the Component when prodded by a blunt instrument. This layer is in the range of 24-28 mils thick.

Lockheed Martin
Maritime Systems & Sensors
1210 Massillon Rd.
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Component 4 is a weather-proofing compounded bitumen (asphalt-based) of the stearin-pitch type described as being "similar to the best baking Japan bases." It is described as a waterproof coating intended to keep moisture and oxygen away from the underlying asphalt and to lock in the bituminous binders and oils. The coating was applied over the Component 3 impregnated felt by a hot roll method with the rollers maintained at 425 deg-F. Its applied weight was about 14 pounds per hundred square feet. Samples indicate this layer is dry and brittle, exhibiting glass-like fracture when disturbed. Its thickness is in the range of 12-20 mils.

After being applied to the steel sheet, components 2, 3 and 4 were fused together and to the steel sheet in a heated press at the time of manufacture. When cooled, the coated sheet was then formed into corrugations.

Component 5 appears to be an aluminum paint of unknown resin base. The paint is about 4 mils thick. There is an H.H. Robertson marketing sheet which indicates that RPM was available with either aluminum paint or aluminum foil. The base portion of the paint coating is resin-saturated aluminum pigment covered by a clear layer of resin. The aluminum paint on samples is brittle and the top portion of the aluminum pigment layer is oxidized. The oxidized aluminum is part of the gray appearance of this layer, but, in addition, there is a darker gray which appears to be some of the Component 4 bituminous coating dissolved into the clear paint layer by the paint solvents at time of application. The paint resin is immediately soluble in methyl ethyl ketone and can be mechanically dispersed into reagent alcohol to form a gel. There is a reasonable chance that this was a cellulose nitrate lacquer, which, in fact, may have been dispersed in solvent of which alcohol was the chief component, as suggested by the J.H. Young article.

Components 2-5 form a coating over the steel sheet core and are referred to collectively as RPM coating. RPM coating appears to be in the region of 70 mils thick. Visual observation revealed a significant amount of fine-crack crazing in the RPM coating on a day with air temperature around 15 deg-F, which had not previously been observed at warmer temperatures. Crazed areas with various sized cracks were observed earlier (warmer temperatures) in isolated areas adjacent to historic roof leaks.

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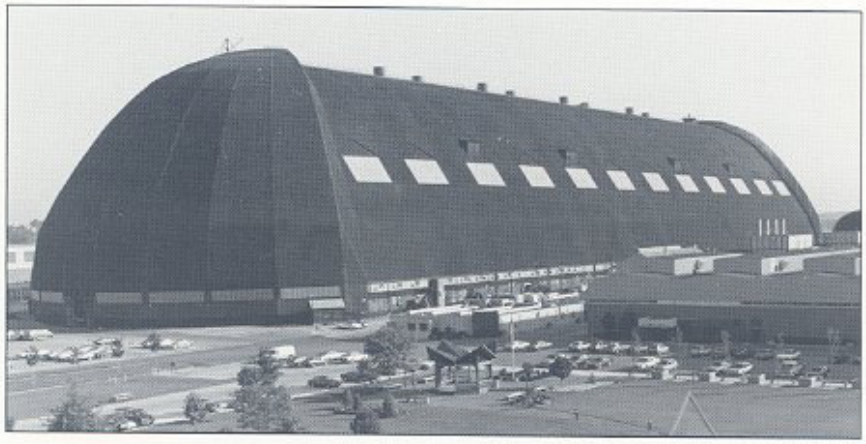
Reference literature.

- Robertson Protected Metal, two page ad, undated
- Robertson Protected Metal for Roofing, Walls and Partitions of Buildings, Catalogue No. 105, 5 excerpt pages, undated
- How "Asbestos-Protected Metal" Was Developed Commercially, J.H. Young, Senior Industrial Fellow, Mellon Institute of Industrial Research, University of Pittsburgh, Pittsburgh, PA, undated.
- Robertson Protected Metal, Marketing Brochure, 1925, 4 pages.
- Robertson Protected Metal, Marketing Brochure, undated, 7 pages.
- A Survey of Robertson Protected Metal, H.H. Robertson Company, 1926, 16 pages.
- Miscellaneous H.H. Robertson literature, undated, 4 pages.
- U.S. Patent No. 1327933, Coating Material, J.H. Young, Jan. 13, 1920.



The Airdock as it stands today, provides uninterrupted floor space—the size of seven football fields.

APPENDIX B

LABORATORY ANALYSIS OF HANGAR 1 SIDING

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EMSL Analytical, Inc.

107 Haddon Avenue, Westmont, NJ 08108
Phone: (856) 858-4800

Materials Science Division

Attn.: ***Pete Everds***
Tetra Tech ECI
1230 Columbia Street
Suite 500
San Diego, Ca. 92101
Phone: 619-471-3504 Fax: 619-471-3577

EMSL Case No.:	360500515
Sample(s) Received:	05/27/05
Date of Analysis:	06/10/05
Date Printed:	06/13/05
Reported By:	J.Newton

- Laboratory Report -

Analysis of Laminate

For

Project: Hangar 1 / Sub-Contract # 056016

Analyzed by: 06/10/05

John Newton
Laboratory Manager

Date

QA/QC : 06/10/05

Eugenia Mirica Ph.D.
Materials Scientist

Bruce Benjamin
QA Officer

Date

EMSL Analytical, Inc.

107 Haddon Avenue, Westmont, NJ 08108
Phone: (856) 858-4800

Procurement of Samples and Analytical Overview:

The sample for analysis arrived at EMSL Analytical's corporate laboratory in Westmont, NJ. on 05/27/05. The package arrived in satisfactory condition with no evidence of damage to the contents. The sample was submitted for the purpose of identifying its layers, and determining the asbestos and PCB content of each layer. The sample reported herein has been analyzed per the following equipment and methodologies.

Methods & Equipment:	Polarized Light Microscopy (PLM) epi-Reflected Light Microscopy (RLM) Scanning Electron Microscopy (SEM) Energy Dispersive X-Ray Spectrometry (EDX) Fourier Transform Infrared Spectrometry (FTIR) Gas Chromatography (GC)
Descriptions & Definitions:	Sample: Samples or materials that are the focus of the analysis. Reference: Samples or materials submitted for the purposes of supporting comparative analysis. ND: None Detected N/A: Not Applicable

EMSL Analytical, Inc.

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Data and Analysis:

Table 1. Layer composition and asbestos results

Sample	Layer #	Layer ID	Thickness (mm)	Layer Components	Comments
Coated metal Sheeting	1	Silver paint	<0.1	Aluminum-based paint	A
	2	Fibrous mat	0.4	Asbestos (chrysotile) Cellulose (cotton) Hair (horse)	80% 5% 5% C
	3	Tar adhesive	0.3	Tar pitch	A,B
	4	Metal sheeting	0.8	Iron (Fe)	>99%
	5	Tar adhesive	0.3	Tar pitch	A,B
	6	Fibrous mat	0.4	Asbestos (chrysotile) Cellulose (cotton) Hair (horse)	80% 5% 5% C
	7	Silver paint	<0.1	Aluminum-based paint	A

A) No asbestos was detected in the layer.

B) The tar pitch layer (L3 and L5) contains the greatest hydrocarbon concentration, equivalent to greater than eighty percent (>80%) of the hydrocarbons in the sample.

C) The fibrous mat also contains tar pitch (~5% to 8%) that is likely the result of manufacture and migration of layers L3 and L5 during application.

EMSL Analytical, Inc.

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Table 2. PCB Results

Sample	Layer #	Layer ID	Analyte	Concentration (ug/Kg) (ppb)
Coated metal Sheeting	1 & 7	Silver paint	Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	<500,000 <500,000 <500,000 <500,000 <500,000 <500,000 <500,000 <500,000 6,600,000
	4	Metal	Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	<2,700 <2,700 <2,700 <2,700 <2,700 <2,700 <2,700 <2,700 19,000
	2, 3, 5 & 6	Fibrous mat & Tar adhesive	Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	<2,500,000 <2,500,000 <2,500,000 <2,500,000 <2,500,000 <2,500,000 <2,500,000 <2,500,000 36,000,000

107 Haddon Avenue, Westmont, NJ 08108
Phone: (856) 858-4800

Supporting Documentation

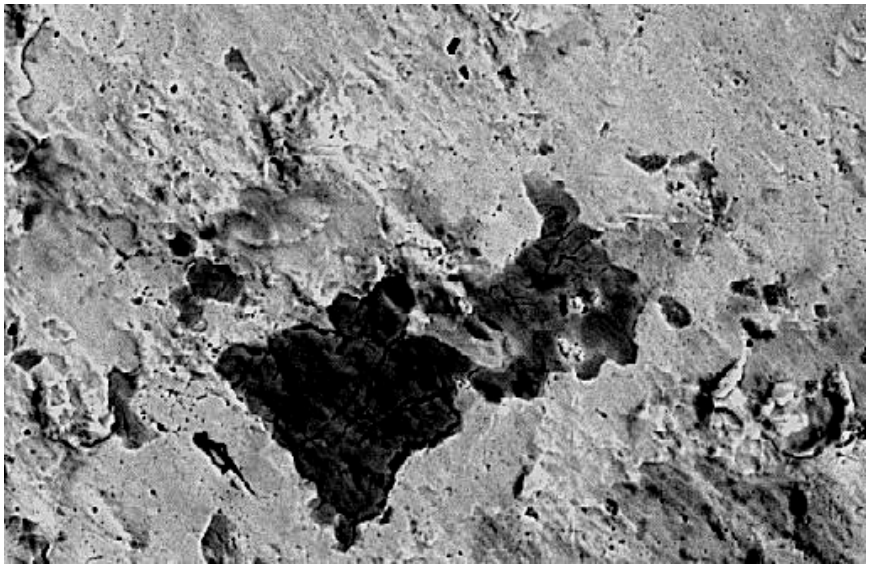

Figure 1: SEM back-scatter electron image (BEI) showing the surface of the metal.
The dark area is remaining tar and the light is the iron. No evidence of galvanization is present.

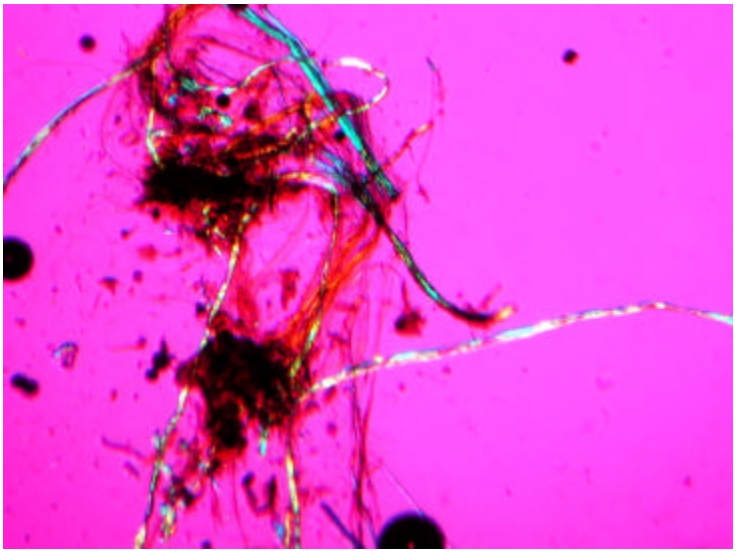

Figure 2: PLM 400X image of the fibrous mat showing the chrysotile asbestos and cellulose components.

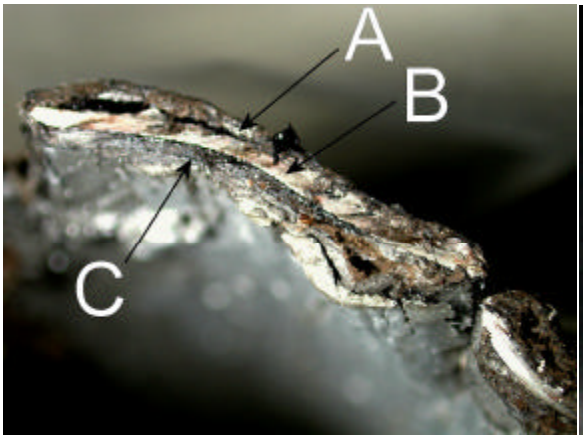

Figure 3: Cut section of the metal sample showing the tar/fibrous mat/paint layers (A&C) and the metal (B)

Figure 4: Aluminum-based paint

Figure 5: Fibrous mat

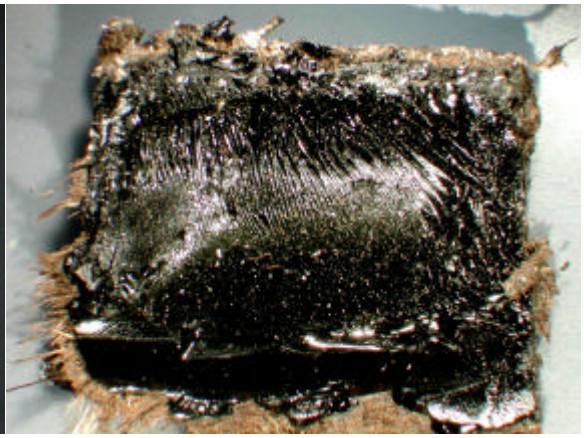

Figure 6: Tar adhesive

107 Haddon Avenue, Westmont, NJ 08108
Phone: (856) 858-4800

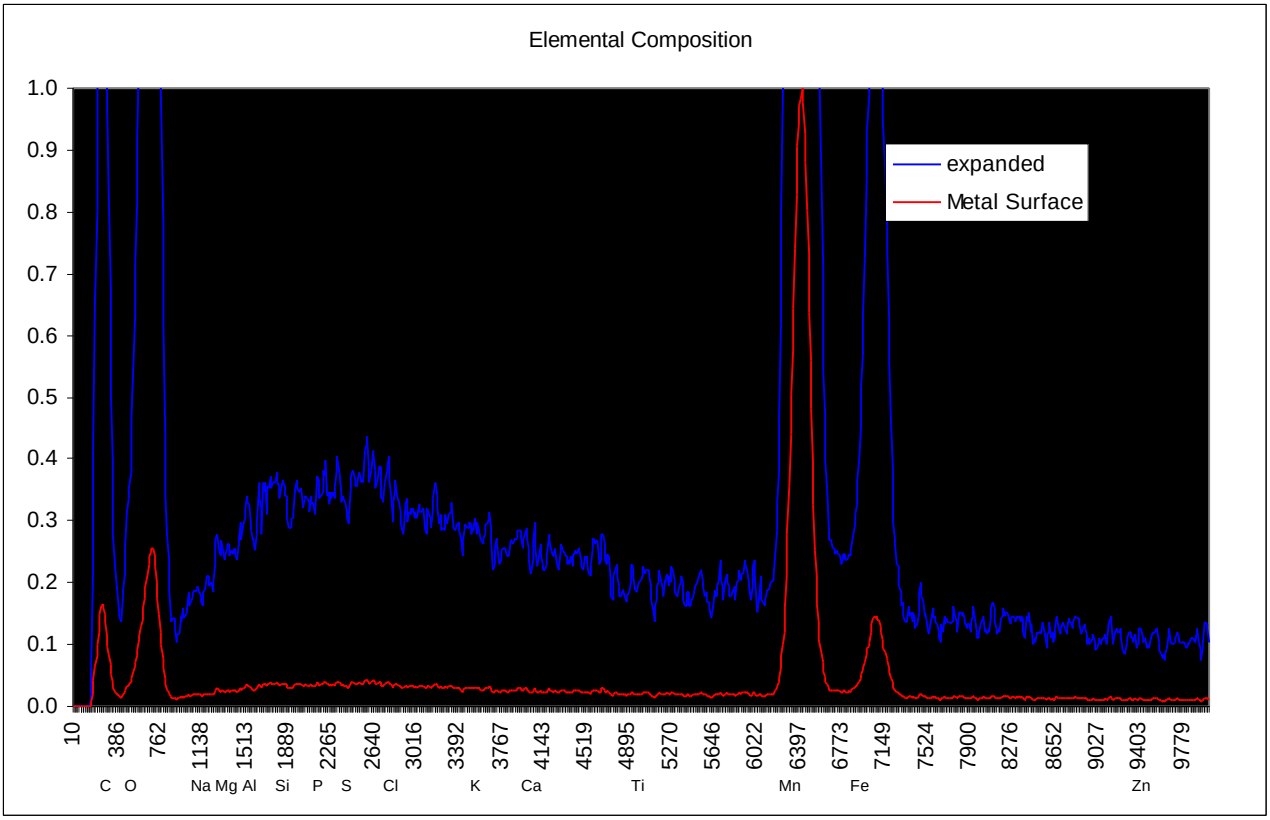

Figure 7: EDX spectra of the surface of the metal showing no evidence of a galvanized coating.

EMSL Analytical, Inc.

107 Haddon Avenue, Westmont, NJ 08108
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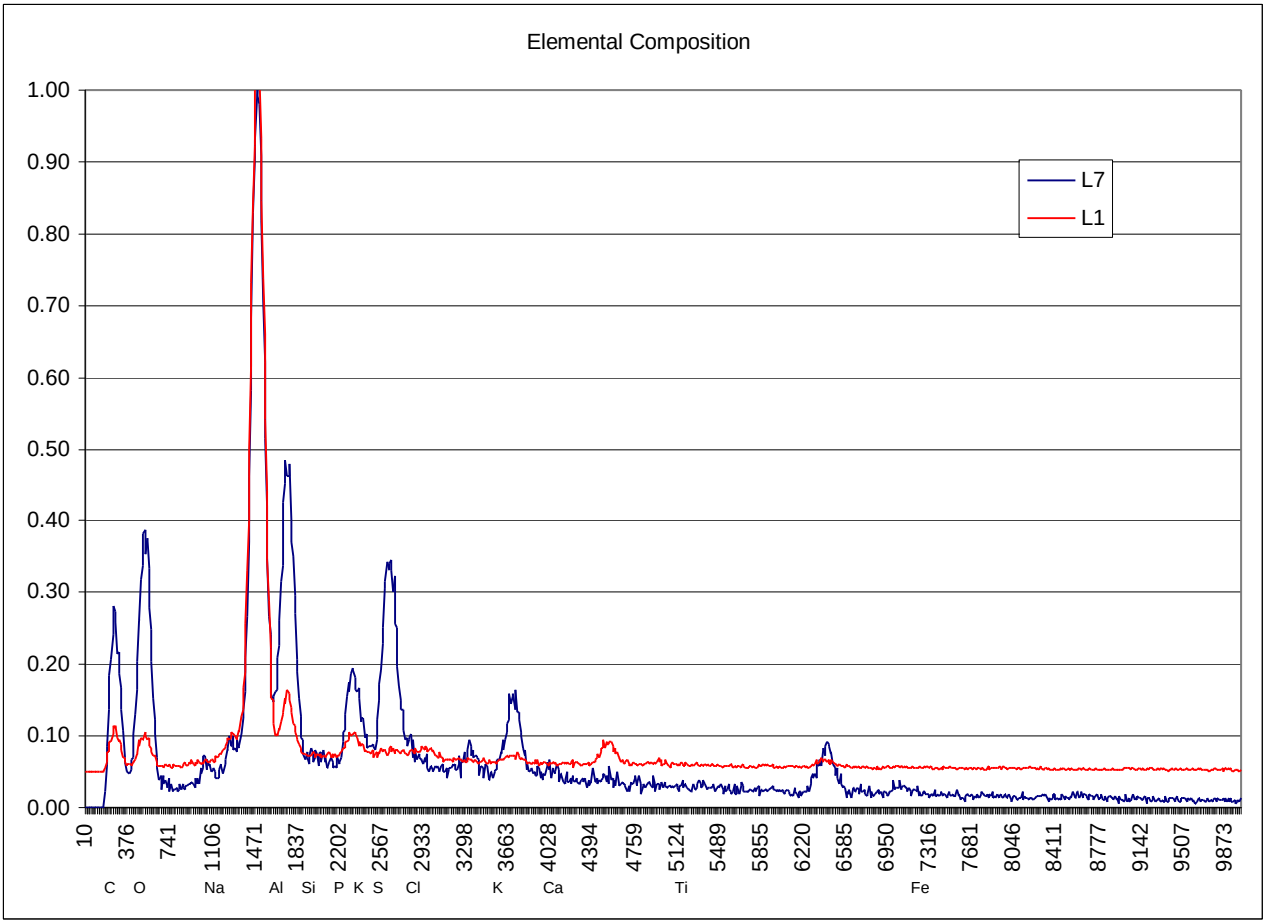

Figure 8: EDX spectra showing the elemental composition of the paint layers.
L1 is nearly all paint. L7 is a mixture of aluminum-based paint with the fibrous mat particles.

APPENDIX C

COST DETAIL FOR
REMOVAL ACTION ALTERNATIVES

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COST DETAIL FOR REMOVAL ACTION ALTERNATIVES

BASIS OF ESTIMATE

Cost details for Alternatives 2, 4, 6, 10, and 11 are provided in tables at the end of this appendix. The following describes what is included in the cost details.

1.0 CONSTRUCTION DIRECTS

Construction direct costs include costs of construction labor, equipment, materials, cleanup, and disposal. Costs are based on built-up estimates of crews, production, and estimated quantities of work; past pricing; or budgetary subcontractor pricing (contractor-provided price quotes are footnoted in the table for each alternative). The costs included in Appendix C tables include a 20 percent overhead, fee, and technical development contingency for the prime contractor.

1.1 MOBILIZATION

All field related pre-construction costs are included in mobilization.

1.1.1 Procurement

Costs under this element include scope of work development for major project subcontractors and initial site supplies and materials. Costs include subcontract modifications and closeout.

1.1.2 Personnel Training

Costs under this element include entrance/exit medical exams for all craft workers throughout the duration of the project as well as all required site-specific health and safety training.

1.1.3 Site Mobilization and Preparation

Costs include mobilization costs for equipment and temporary facilities. Site fencing for setting up the site exclusion zone is included along with necessary traffic barriers and controls.

1.1.4 Utility Disconnect

The Engineering Evaluation/Cost Analysis (EE/CA) cost estimate includes costs for rerouting electrical power and isolating the water supply to the hangar. The hangar houses an electrical power supply room that feeds power to the hangar and to other users at former Naval Air Station Moffett Field (Moffett). To safely demolish the interior buildings and continue uninterrupted power, the electrical power supply must be rerouted permanently. In addition, the water supply lines entering the hangar will need to be isolated. The isolation of underground utilities, such as steam lines and phone lines, is not expected to impact other users at Moffett; therefore, re-routing costs for these isolations are not needed.

1.2 INTERIOR BUILDING ABATEMENT AND DEMOLITION

For alternatives that leave the siding in place (Alternatives 2, 4, and 6), demolition of approximately 70 percent of all interior buildings, as well as isolation of utilities, is required to gain access to the interior siding and lower sections of the structural steel for coating the interior. Alternatives 10 and 11 include costs for the demolition of all interior buildings.

1.2.1 Asbestos Abatement

Costs include the mobilization of the asbestos, hazardous, and regulated waste abatement subcontractor crew and equipment to initiate abatement of interior features. The abatement would be inclusive of all regulated wastes and asbestos (friable and nonfriable) within the hangar (exclusive of the Robertson Protected Metal siding). Abatement would include accessible pipe lines under removable floor plates and from all interior offices. The costs would also include cleaning ceiling and floor areas to be free from debris, dust, and paint chips; containing debris and spoils in roll-off boxes; and pre-profiling, manifesting, and shipping spoils to an approved landfill. The costs for Alternatives 2, 4, and 6 are equal and reflect demolition only of the perimeter buildings required to gain access to the interior siding. The costs included for Alternatives 10 and 11 are based on separate qualified contractor quotes. The Alternative 11 quote reflects the efficiency also achieved by demolition of all interior offices and complete removal of the Hangar 1 steel structure.

1.2.2 Interior Building Demolition

Costs include the demolition of all interior offices and complete removal of the Hangar 1 steel structure; cleaning ceiling and floor areas to be free from debris, dust, and paint chips; containing debris and spoils in roll-off boxes; and pre-profiling, manifesting, and shipping spoils to an approved landfill. For alternatives that leave the siding in place (Alternatives 2, 4, and 6), demolition of approximately 70 percent of all interior buildings is required to gain access to the interior siding and lower sections of the structural steel for coating the interior. Costs for Alternative 10 include the demolition of all interior buildings. Costs for Alternative 11 are based on a qualified contractor quote that reflects the efficiency also achieved by demolition of all interior offices and complete removal of the Hangar 1 steel structure.

1.2.3 Environmental Cleanout/Removal

All costs for environmental cleanup of equipment within the hangar, such as mercury switches, batteries, draining of oils, and fluorescent lights, are included in the environmental cleanout/removal for Alternatives 2, 4, 6, 10, and 11. Note that the costs included for Alternative 11 are based on a qualified contractor quote that reflects the efficiency also achieved by demolition of all interior offices and complete removal of the Hangar 1 steel structure.

1.2.4 Equipment Removal

Costs are included for the removal and cleaning of eight man-cranes located in Hangar 1 that were used to move equipment and conduct work on items in the hangar.

1.2.5 Facility Cleanout/Washing

This cost is for cleaning the hangar's interior to remove loose/flaking contamination and dust. In addition, for Alternatives 2, 4, and 6, costs are included for cleaning the exterior surfaces of the remaining interior buildings. Costs include initial environmental preparation, floor cleaning, and handling hazardous wastes. The costs for Alternative 11 are based on a qualified contractor quote that reflects the efficiency also achieved by demolition of all interior offices and complete removal of the Hangar 1 steel structure.

1.2.6 Waste Management/Transport and Disposal

Throughout the duration of the project, periodic cleanup of the site and adjacent properties will be performed to limit the accumulation of debris and waste materials. All wastes would be handled in accordance with a Waste Management Plan and would be removed from the site as quickly as possible.

Waste disposal costs are based on asbestos abatement debris and general construction debris going to a Class II Landfill. For applicable alternatives, Resource Conservation and Recovery Act /Toxic Substances Control Act waste (siding, redwood ceiling, structural steel, and catwalk planks) would be disposed of at a Class I Landfill.

Due to the extent of waste management/transport and disposal for Alternative 11, the costs have been further broken down to show individual costs for steel, asbestos-containing material, and miscellaneous debris.

1.3 ENVIRONMENTAL SAMPLING AND MONITORING

This section includes all costs associated with collecting, analyzing, reporting, and validating confirmation and air samples.

1.3.1 Analytical Sampling

Costs are for initial site verification sampling, waste characterization/profiling (including total threshold limit concentration and soluble threshold limit concentration tests required for California-specific state-regulated hazardous wastes), and initial water discharge sampling. Upon completion of the removal action and washing of the perimeter trench, swipe confirmation samples will be collected and analyzed for polychlorinated biphenyls (PCBs), lead, and asbestos.

1.3.2 Air/Personnel Monitoring

Costs include mobilization and installation of upwind and downwind air monitoring stations (meteorological station, and low- and high-volume air samplers). Costs also include baseline

sampling prior to intrusive activities and daily air monitoring during removal action activities. Pursuant to the Health and Safety Plan, personal air monitoring will be conducted and negative pressure exclusion zones will be used as needed.

1.4 EXTERIOR AND INTERIOR REMOVAL ACTIONS

The following sections include costs for executing the removal actions for Alternatives 2, 4, 6, 10, and 11. Interior coating costs are included for Alternatives 2, 4, and 6, since the siding would not be removed.

1.4.1 Removal Action Costs

Qualified contractors provided the costs for each alternative included in this element. For Alternatives 2, 4, and 6, costs include coating/encapsulation of the exterior siding and repair and/or coating of the roof. Costs also include window and access door replacement for Alternatives 2, 4, and 6. For Alternative 10, costs include coating accessible surfaces of the exposed structural steel with a primer and finish coat of weather-resistant epoxy to contain the steel paint.

1.4.2 Coating of Interior Components

Application and material cost estimates for the interior components were obtained from qualified contractors. The acrylic and asphalt-emulsion interior coating alternatives (evaluated in Section 4.7 of the main EE/CA) were significantly more expensive than the epoxy-coating alternative due to the significant costs associated with adequately maintaining the acrylic and asphalt-emulsion over a 30-year span, which cost $53.2 million and $44.9 million, respectively. Applying an epoxy coating over the interior components of the hangar, including operations and maintenance (O&M), costs $15.4 million. This cost includes coating interior components (siding, redwood ceiling, and structural steel) for Alternatives 2, 4, and 6 with a long-lasting (50-year design life) epoxy coating requiring minimal maintenance. This cost has been commonly applied to Alternatives 2, 4, and 6.

1.4.3 Structural Retrofitting and Bracing

A structural analysis of Hangar 1 was completed by the Navy in 2008 (Exceltech, 2008). The Structural Analysis and Gravity, Seismic, and Wind Vulnerability Study provides the basis for the costs of structural retrofitting required for Alternatives 2, 4, and 6, and minor bracing required for Alternative 10. The costs included in Appendix C tables include a 20 percent overhead, fee, and technical development contingency for the prime contractor.

1.5 STRUCTURE DEMOLITION

The following sections describe the costs for executing the demolition portion of the removal actions for Alternatives 10 and 11.

1.5.1 RPM Siding / Roof Demolition

Includes contractor-provided costs for demolition of the hangar siding and roof. Alternatives 10 and 11 siding/roof demolition costs were provided by two separate contractors; therefore, the cost proposals varied since the approach for executing each alternative differed between the contractors.

1.5.2 Structural Steel Demolition

Includes contractor provided costs for demolition of structural steel for Alternative 11.

1.5.3 Waste Debris Handling/Sizing

Includes contractor provided costs for handling and sizing demolition debris such as structural steel, concrete curtain wall, door, and gear box foundations.

1.6 DEMOBILIZATION

All field-related, post-construction costs are included in demobilization.

1.6.1 Site Cleanup

Costs include cleaning floor areas that may have been affected by structure removal such as dust, paint chips, or wood debris; containing spoils in roll-off boxes; and pre-profiling, manifesting, and shipping spoils to an approved landfill.

1.6.2 Demobilization

Costs include equipment and temporary facilities demobilization.

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2.0 CONSTRUCTION INDIRECTS

Construction indirect (management/support) costs have been estimated based on required project support and the estimated level of effort to effectively manage the proposed work activities.

2.1 MEETINGS

All meeting-related costs are included in this cost element.

2.1.1 Pre-Mobilization Meetings

Upon award of the contract, a kick-off meeting/formal site visit will be held with all responsible parties and stakeholders.

2.1.2 Public and Agency Meetings

Costs are for attending and preparing discussion materials for an estimated 10 Base Realignment and Closure (BRAC) Cleanup Team (BCT) meetings and Restoration Advisory Board (RAB) meetings.

2.1.3 Community Relations

Costs are included for providing community relations support tasks as required by the Comprehensive Environmental Response, Compensation, and Liability Act to include risk communications services for the life of the project. This work element includes work the community relations subcontractor would perform, such as RAB meetings, BCT meetings, public meetings/open houses, public notices, Fact Sheets, media relations, and risk communication.

2.2 PROJECT DOCUMENTS

This work element includes development of the Work Plan.

A Work Plan will be prepared for this project, which will describe in detail how the fieldwork will be accomplished. This Work Plan will include a Health and Safety Plan, Contractor Quality Control Plan, Sampling and Analysis Plan, Waste Management Plan, Traffic Control Plan, Stormwater Management Plan, and Project Schedule.

2.3 GENERAL SITE REQUIREMENTS

General site requirements are based on removal action durations as proposed by product application contractors, with an additional 6 months for project management to allow for pre- and post-construction activities.

2.3.1 Construction Management

Construction management includes budget and schedule control, personnel and subcontractor management, health and safety/quality control oversight, and regulatory compliance.

2.3.2 Project Management

Project management includes overall project execution and coordination with all stakeholders and regulatory agencies.

3.0 OPERATIONS AND MAINTENANCE

Costs for O&M are to adequately maintain the removal action components to ensure the remedy remains protective of human health and the environment at Hangar 1 over the next 30 years. A present worth analysis was conducted on the O&M based on a nominal discount rate of three percent for 30-year Office of Management and Budget Circular A-94, and costs were normalized to 2007 dollars. To escalate the normalized 2007 dollars to normalized 2008 dollars, the costs would be adjusted by approximately four to five percent, based upon Global Insight Indices for the Labor/Consumer Products Indices escalation from May 2007 to July 2008.

3.1 EXTERIOR OPERATIONS AND MAINTENANCE

Costs for O&M include the inspections, repairs, and recoating required for monitoring and maintaining the exterior of the hangar for 30 years, including management.

3.1.1 Inspections, Touch-ups, and Recoating

Costs are based on manufacturers' recommended schedule for inspections, touch-ups, and recoating. Alternative 2 requires annual inspection with minimal repairs. Alternative 4 requires inspections and touch-ups at years 1, 3, and 5, and a recoat at years 10 and 20. Alternative 6 requires biannual inspections and minor maintenance. Alternative 10 requires inspection and touch-up every 5 years and a recoat of the structural steel at years 10 and 20. The interior epoxy-coating associated with Alternatives 2, 4, and 6 requires inspection every 5 years to ensure that no recoating is required.

3.1.2 Management

Management is estimated at 20 percent of the direct O&M costs.

3.2 INTERIOR OPERATIONS AND MAINTENANCE

Costs for O&M include the inspections, touch-ups, and recoating required to monitor and maintain the interior hangar coating for 30 years, including management.

3.2.1 Inspections, Touch-ups, and Recoating

Costs are based on manufacturers' recommended schedule for inspections, touch-ups, and recoating. The epoxy coating requires minimal maintenance. It is recommended that the coating be inspected every 5 years.

3.2.2 Management

Management is estimated at 20 percent of the direct O&M costs.

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APPENDIX C

ALTERNATIVE 2
COVER WITH RUBBERIZED MATERIAL

Item Description	Qty	Unit	Total Labor	Total Equipment	Total Subcontractor	Total Other (supplies/tax)	Total Cost
Construction Directs							
Mobilization							
Procurement	1	ls	$ 77,331	$ -	$ -	$ 2,069	$ 79,400
Personnel Training	1	ls	$ 27,277	$ -	$ 4,820	$ 1,703	$ 33,800
Site Mobilization and Preparation	1	ls	$ -	$ -	$ 84,769	$ 21,631	$ 106,400
Utility Disconnect	1	ls	$ -	$ -	$ 780,000	$ -	$ 780,000
Interior Building Abatement and Demolition							
Asbestos Abatement	1	ls	$ -	$ -	$ 999,000	$ -	$ 999,000
Interior Building Demolition	0.7	ls	$ -	$ -	$ 437,000	$ -	$ 305,900
Environmental Cleanout/Removal	1	ls	$ -	$ -	$ 257,000	$ -	$ 257,000
Equipment Removal (Man-Cranes)	8	ea	$ -	$ -	$ 240,000	$ -	$ 240,000
Facility Cleanout/Washing	1	ls	$ -	$ -	$ 1,007,500	$ -	$ 1,007,500
Waste Management/Transport and Disposal	1	ls	$ 186,320	$ 100,276	$ 462,644	$ 5,760	$ 755,000
Environmental Sampling and Monitoring							
Analytical Sampling	1	ls	$ -	$ -	$ 20,400	$ -	$ 20,400
Air/Personnel Monitoring	21	mon	$ -	$ -	$ 1,463,700	$ -	$ 1,463,700
Exterior and Interior Removal Actions							
Rubber Membrane Installation over Siding and Roof[a]	1	ls	$ -	$ -	$ 11,477,000	$ -	$ 11,477,000
Coating of Interior Components[b]	1	ls	$ -	$ -	$ 15,390,000	$ -	$ 15,390,000
Retrofit of Structural Systems[c]	1	ls	$ -	$ -	$ 8,141,977	$ -	$ 8,141,977
Demobilization							
Site Cleanup	1	ls	$ 61,033	$ 7,047	$ -	$ 11,920	$ 80,000
Demobilization	1	ls	$ -	$ -	$ 8,727	$ 5,973	$ 14,700
						Subtotal	**$ 41,151,777**
Construction Indirects							
Meetings							
Pre-mobilization meetings	1	ls	$ 26,909	$ 334	$ -	$ 6,258	$ 33,500
Public and Agency Meetings	1	ls	$ 54,564	$ 799	$ -	$ 9,837	$ 65,200
Community Relations	1	ls	$ -	$ -	$ 369,000	$ -	$ 369,000
Project Documents							
Comprehensive Work Plan	1	ea	$ 360,000	$ 2,000	$ -	$ 38,000	$ 400,000
General Site Requirements							
Construction Management	21	mon	$ 4,772,393	$ 440,872	$ -	$ 1,401,303	$ 6,614,568
Project Management	27	mon	$ 506,803	$ 46,818	$ -	$ 148,811	$ 702,432
						Subtotal	**$ 8,184,700**
Operations & Maintenance (30 years)							
Exterior O&M							
Inspections, Touch-Ups and Recoating	1	ls	$ -	$ -	$ 117,603	$ -	$ 117,603
Management	20	percent	$ -	$ -	$ -	$ -	$ 23,521
Interior O&M							
Inspections and Touch-Ups (no recoating required)	1	ls	$ -	$ -	$ 22,151	$ -	$ 22,151
Management	20	percent	$ -	$ -	$ -	$ -	$ 4,430
						Subtotal	**$ 167,704**
						Total	**$ 49,504,182**

a) Based on Moisture -Guard Corporation estimate dated March 19, 2007 (exterior)
b) Based on International Pipe Lining Technologies estimate dated April 9, 2007 (interior) cost includes coating all interior components (structural steel, redwood celling, interior siding)
c) Based on Exeltech estimate dated July 21, 2008. The costs included in Appendix C tables include a 20 percent overhead, fee, and technical development contingency for the prime contractor.

APPENDIX C

ALTERNATIVE 4
COAT WITH ACRYLIC COATING

Item Description	Qty	Unit	Total Labor	Total Equipment	Total Subcontractor	Total Other (supplies/tax)	Total Cost
Construction Directs							
Mobilization							
Procurement	1	ls	$ 77,331	$ -	$ -	$ 2,069	$ 79,400
Personnel Training	1	ls	$ 27,277	$ -	$ 4,820	$ 1,703	$ 33,800
Site Mobilization and Preparation	1	ls	$ -	$ -	$ 84,769	$ 21,631	$ 106,400
Utility Disconnect	1	ls	$ -	$ -	$ 780,000	$ -	$ 780,000
Interior Building Abatement and Demolition							
Asbestos Abatement	1	ls	$ -	$ -	$ 999,000	$ -	$ 999,000
Interior Building Demolition	0.7	ls	$ -	$ -	$ 437,000	$ -	$ 305,900
Environmental Cleanout/Removal	1	ls	$ -	$ -	$ 257,000	$ -	$ 257,000
Equipment Removal (Man-Cranes)	8	ea	$ -	$ -	$ 240,000	$ -	$ 240,000
Facility Cleanout/Washing	1	ls	$ -	$ -	$ 1,007,500	$ -	$ 1,007,500
Waste Management/Transport and Disposal	1	ls	$ 186,320	$ 100,276	$ 462,644	$ 5,760	$ 755,000
Environmental Sampling and Monitoring							
Analytical Sampling	1	ls	$ -	$ -	$ 20,400	$ -	$ 20,400
Air/Personnel Monitoring	12	mon	$ -	$ -	$ 850,800	$ -	$ 850,800
Exterior and Interior Removal Actions							
Acrylic Coating over Siding and Roof[a]	1	ls	$ -	$ -	$ 7,281,000	$ -	$ 7,281,000
Coating of Interior Components[b]	1	ls	$ -	$ -	$ 15,390,000	$ -	$ 15,390,000
Retrofit of Structural Systems[c]	1	ls	$ -	$ -	$ 8,141,977	$ -	$ 8,141,977
Demobilization							
Site Cleanup	1	ls	$ 61,033	$ 7,047	$ -	$ 11,920	$ 80,000
Demobilization	1	ls	$ -	$ -	$ 8,727	$ 5,973	$ 14,700
						Subtotal	**$ 36,342,877**
Construction Indirects							
Meetings							
Pre-mobilization meetings	1	ls	$ 26,909	$ 334	$ -	$ 6,258	$ 33,500
Public and Agency meetings	1	ls	$ 54,564	$ 799	$ -	$ 9,837	$ 65,200
Community Relations	1	ls	$ -	$ -	$ 369,000	$ -	$ 369,000
Project Documents							
Comprehensive Work Plan	1	ea	$ 360,000	$ 2,000	$ -	$ 38,000	$ 400,000
General Site Requirements							
Construction Management	12	mon	$ 2,753,991	$ 251,209	$ -	$ 806,030	$ 3,811,230
Project Management	18	mon	$ 302,603	$ 27,602	$ -	$ 88,565	$ 418,770
						Subtotal	**$ 5,097,700**
Operations & Maintenance (30 years)							
Exterior O&M							
Inspections, Touch-Ups and Recoating	1	ls	$ -	$ -	$ 5,915,884	$ -	$ 5,915,884
Management	20	percent	$ -	$ -	$ -	$ -	$ 1,183,177
Interior O&M							
Inspections and Touch-Ups (no recoating required)	1	ls	$ -	$ -	$ 22,151	$ -	$ 22,151
Management	20	percent	$ -	$ -	$ -	$ -	$ 4,430
						Subtotal	**$ 7,125,642**
						Total	**$ 48,566,220**

a) Based on Sherwin Williams Industrial and Marine Coatings estimate dated February 16, 2007 (exterior siding) and D.C. Taylor Corporation estimate dated March 23, 2007 (exterior roof)

b) Based on International Pipe Lining Technologies estimate dated April 9, 2007 (interior) cost includes coating all interior components (structural steel, redwood celling,interior siding)

c) Based on Exeltech estimate dated July 21, 2008. The costs included in Appendix C tables include a 20 percent overhead, fee, and technical development contingency for the prime contractor.

APPENDIX C

ALTERNATIVE 6
COVER WITH NEW VISUALLY SIMILAR SIDING

Item Description	Qty	Unit	Total Labor	Total Equipment	Total Subcontractor	Total Other (supplies/tax)	Total Cost
Construction Directs							
Mobilization							
Procurement	1	ls	$ 77,331	$ -	$ -	$ 2,069	$ 79,400
Personnel Training	1	ls	$ 27,277	$ -	$ 4,820	$ 1,703	$ 33,800
Site Mobilization and Preparation	1	ls	$ -	$ -	$ 84,769	$ 21,631	$ 106,400
Utility Disconnect	1	ls	$ -	$ -	$ 780,000	$ -	$ 780,000
Interior Building Abatement and Demolition							
Asbestos Abatement	1	ls	$ -	$ -	$ 999,000	$ -	$ 999,000
Interior Building Demolition	0.7	ls	$ -	$ -	$ 437,000	$ -	$ 305,900
Environmental Cleanout/Removal	1	ls	$ -	$ -	$ 257,000	$ -	$ 257,000
Equipment Removal (Man-Cranes)	8	ea	$ -	$ -	$ 240,000	$ -	$ 240,000
Facility Cleanout/Washing	1	ls	$ -	$ -	$ 1,007,500	$ -	$ 1,007,500
Waste Management/Transport and Disposal	1	ls	$ 186,320	$ 100,276	$ 462,644	$ 5,760	$ 755,000
Environmental Sampling and Monitoring							
Analytical Sampling	1	ls	$ -	$ -	$ 20,400	$ -	$ 20,400
Air/Personnel Monitoring	18	mon	$ -	$ -	$ 1,258,200	$ -	$ 1,258,200
Exterior and Interior Removal Actions							
Cover with New Visually Similar Siding[a]	1	ls	$ -	$ -	$ 12,585,600	$ -	$ 12,585,600
Coating of Interior Components[b]	1	ls	$ -	$ -	$ 15,390,000	$ -	$ 15,390,000
Retrofit of Structural Systems[c]	1	ls	$ -	$ -	$ 8,141,977	$ -	$ 8,141,977
Demobilization							
Site Cleanup	1	ls	$ 61,033	$ 7,047	$ -	$ 11,920	$ 80,000
Demobilization	1	ls	$ -	$ -	$ 8,727	$ 5,973	$ 14,700
						Subtotal	**$ 42,054,877**
Construction Indirects							
Meetings							
Pre-mobilization meetings	1	ls	$ 26,909	$ 334	$ -	$ 6,258	$ 33,500
Public and agency meetings	1	ls	$ 54,564	$ 799	$ -	$ 9,837	$ 65,200
Community Relations	1	ls	$ -	$ -	$ 369,000	$ -	$ 369,000
Project Documents							
Comprehensive Work Plan	1	ea	$ 360,000	$ 2,000	$ -	$ 38,000	$ 400,000
General Site Requirements							
Construction management	18	mon	$ 4,093,003	$ 377,229	$ -	$ 1,201,543	$ 5,671,776
Project Management	24	mon	$ 444,694	$ 40,985	$ -	$ 130,545	$ 616,224
						Subtotal	**$ 7,155,700**
Operations & Maintenance (30 years)							
Exterior O&M							
Inspections, Touch-Ups and Recoating	1	ls	$ -	$ -	$ 57,932	$ -	$ 57,932
Management	20	percent	$ -	$ -	$ -	$ -	$ 11,586
Interior O&M							
Inspections and Touch-Ups (no recoating required)	1	ls	$ -	$ -	$ 22,151	$ -	$ 22,151
Management	20	percent	$ -	$ -	$ -	$ -	$ 4,430
						Subtotal	**$ 96,100**
						Total	**$ 49,306,677**

a) Based on Best Contracting Services Incorporated estimate dated March 23, 2007 (exterior)
b) Based on International Pipe Lining Technologies estimate dated April 9, 2007 (interior), cost includes coating all interior components (structural steel, redwood celling, interior siding)
c) Based on Exeltech estimate dated July 21, 2008. The costs included in Appendix C tables include a 20 percent overhead, fee, and technical development contingency for the prime contractor.

APPENDIX C

ALTERNATIVE 10
REMOVE SIDING AND COAT EXPOSED SURFACES

Item Description	Qty	Unit	Total Labor	Total Equipment	Total Subcontractor	Total Other (supplies/tax)	Total Cost
Construction Directs							
Mobilization							
Procurement	1	ls	$ 55,783	$ -	$ -	$ 1,917	$ 57,700
Personnel Training	1	ls	$ 27,277	$ -	$ 4,820	$ 1,703	$ 33,800
Site Mobilization and Preparation	1	ls	$ -	$ -	$ 84,769	$ 21,631	$ 106,400
Utility Disconnect	1	ls	$ -	$ -	$ 780,000	$ -	$ 780,000
Interior Building Abatement and Demolition							
Asbestos Abatement[a]	1	ls	$ -	$ -	$ 1,081,000	$ -	$ 1,081,000
Interior Building Demolition[a]	1	ls	$ -	$ -	$ 437,000	$ -	$ 437,000
Environmental Cleanout/Removal[a]	1	ls	$ -	$ -	$ 257,000	$ -	$ 257,000
Equipment Removal (Man-Cranes)	8	ea	$ -	$ -	$ 240,000	$ -	$ 240,000
Facility Cleanout/Washing[a]	1	ls	$ -	$ -	$ 775,000	$ -	$ 775,000
Waste Management/Transport and Disposal	1	ls	$ 393,143	$ 156,148	$ 1,060,102	$ 8,606	$ 1,618,000
Environmental Sampling and Monitoring							
Analytical Sampling	1	ls	$ -	$ -	$ 20,400	$ -	$ 20,400
Air/Personnel Monitoring	17	mon	$ -	$ -	$ 1,123,200	$ -	$ 1,123,200
Exterior and Interior Removal Actions							
Coat Structural Steel with Paint/Primer[a]	1	ls	$ -	$ -	$ 3,732,000	$ -	$ 3,732,000
Structure Demolition							
RPM Siding / Roof Demolition[a]	1	ls	$ -	$ -	$ 5,000,000	$ -	$ 5,000,000
Structural Retrofit - Local Impacts[b]	1	ls	$ -	$ -	$ 425,250	$ -	$ 425,250
Demobilization							
Site Cleanup	1	ls	$ 61,033	$ 7,047	$ -	$ 11,920	$ 80,000
Demobilization	1	ls	$ -	$ -	$ 8,727	$ 5,973	$ 14,700
						Subtotal	**$ 15,781,450**
Construction Indirects							
Meetings							
Pre-mobilization meetings	1	ls	$ 26,909	$ 334	$ -	$ 6,258	$ 33,500
Public and agency meetings	1	ls	$ 54,564	$ 799	$ -	$ 9,837	$ 65,200
Community Relations	1	ls	$ -	$ -	$ 369,000	$ -	$ 369,000
Project Documents							
Comprehensive Work Plan	1	ea	$ 360,000	$ 2,000	$ -	$ 38,000	$ 400,000
General Site Requirements							
Construction Management	17	mon	$ 3,893,873	$ 359,674	$ -	$ 1,202,651	$ 5,456,198
Project Management	23	mon	$ 423,059	$ 39,078	$ -	$ 130,665	$ 592,802
						Subtotal	**$ 6,916,700**
Operations & Maintenance (30 years)							
O&M							
Inspections, Touch-Ups and Recoating	1	ls	$ -	$ -	$ 2,595,539	$ -	$ 2,595,539
Management	20	percent	$ -	$ -	$ -	$ -	$ 519,108
						Subtotal	**$ 3,114,647**
						Total	**$ 25,812,797**

a) Based on past pricing received from RESTEC during summer of 2006. Scope includes abatement, interior demolition, siding removal and Structural Steel Coating.
b) Based on Exeltech estimate dated July 21, 2008. The costs included in Appendix C tables include a 20 percent overhead, fee, and technical development contingency for the prime contractor.

APPENDIX C

ALTERNATIVE 11
DEMOLISH AND REMOVE HANGAR

Item Description	Qty	Unit	Total Labor	Total Equipment	Total Subcontractor	Total Other (supplies/tax)	Total Cost
Construction Directs							
Mobilization							
Procurement	1	ls	$ 55,783	$ -	$ -	$ 1,917	$ 57,700
Personnel Training	1	ls	$ 34,779	$ -	$ 9,612	$ 2,909	$ 47,300
Site Mobilization and Preparation	1	ls	$ -	$ -	$ 84,769	$ 21,631	$ 106,400
Utility Disconnect	1	ls	$ -	$ -	$ 780,000	$ -	$ 780,000
Interior Building Demolition							
Asbestos Abatement[a]	1	ls	$ -	$ -	$ 776,000	$ -	$ 776,000
Interior Building Demolition[a]	1	ls	$ -	$ -	$ 252,000	$ -	$ 252,000
Environmental Cleanout/Removal[a]	1	ls	$ -	$ -	$ 44,100	$ -	$ 44,100
Equipment Removal (Man-Cranes)	8	ea	$ -	$ -	$ 240,000	$ -	$ 240,000
Facility Cleanout/Washing[a]	1	ls	$ -	$ -	$ 662,000	$ -	$ 662,000
Waste Management/Transport and Disposal							
Steel Handling, Transport and Disposal	1	ls	$ -	$ -	$ 3,187,800	$ -	$ 3,187,800
Asbestos Containing Material Transport and Disposal	1	ls	$ -	$ -	$ 1,659,433	$ -	$ 1,659,433
Miscellaneous Debris and Material Handling	1	ls	$ 114,597	$ -	$ 126,170	$ -	$ 240,767
Environmental Sampling and Monitoring							
Analytical Sampling	1	ls	$ -	$ -	$ 88,800	$ -	$ 88,800
Air/Personnel Monitoring	19.5	mon	$ -	$ -	$ 1,632,150	$ -	$ 1,632,150
Structure Demolition							
RPM Siding / Roof Demolition[a]	1	ls	$ -	$ -	$ 3,736,000	$ -	$ 3,736,000
Structural Steel Demolition	170	days	$ 1,065,072	$ 814,601	$ 1,736,178	$ 49,150	$ 3,665,000
Waste Debris Handling/Sizing	170	days	$ 323,445	$ 736,779	$ -	$ 44,776	$ 1,105,000
Demobilization							
Site Cleanup	1	ls	$ 61,033	$ 7,047	$ -	$ 11,920	$ 80,000
Demobilization	1	ls	$ -	$ -	$ 8,727	$ 5,973	$ 14,700
						Subtotal	**$ 18,375,150**
Construction Indirects							
Meetings							
Pre-mobilization meetings	1	ls	$ 26,909	$ 334	$ -	$ 6,258	$ 33,500
Public and agency meetings	1	ls	$ 54,564	$ 799	$ -	$ 9,837	$ 65,200
Community Relations	1	ls	$ -	$ -	$ 369,000	$ -	$ 369,000
Project Documents							
Comprehensive Work Plan	1	ea	$ 360,000	$ 2,000	$ -	$ 38,000	$ 400,000
General Site Requirements							
Construction Management	19.5	mon	$ 4,635,405	$ 395,848	$ -	$ 1,391,381	$ 6,422,634
Project Management	25.5	mon	$ 480,936	$ 41,070	$ -	$ 144,360	$ 666,366
						Subtotal	**$ 7,956,700**
						Total	**$ 26,331,850**

a) Based on past pricing received from Bayview Environmental during summer of 2006. Scope includes abatement, interior demolition, and siding removal.

APPENDIX D

RESPONSE TO COMMENTS ON THE ENGINEERING EVALUATION/COST ANALYSIS DATED MAY 5, 2006

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RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS IR SITE 29, HANGAR 1 FORMER NAS MOFFETT FIELD MOFFETT FIELD, CALIFORNIA

Written on: June 28, 2006	**Received on**: June 28, 2006
From: Joe Boscacci, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (1A)	
Comment 1: Rick: I would strongly recommend that the U.S. Navy not demolish Hangar 1. It is worth retaining and as a retired U.S. Army Colonel who was born and raised in the Bay Area, Hangar 1 has been a landmark and symbol of an earlier age in aviation preceding World War II, Korea, Vietnam, Desert Storm and the Gulf Wars of the 21st century. I have a print of Hangar 1 in my home in Los Altos, purchased by my wife for my birthday from the Moffett Field museum and am always asked by people from out of California to tell them about the exciting days of dirigibles. For the U.S. Navy to tear it down would be a real shame since its annual budget allocation of funding for huge warships in the billions to save $12 million to tear it down and only double that to restore it. I would sincerely appreciate your advocacy for not tearing down Hangar 1. In the past 10 years too many of our former military bases and buildings have seen the wrecking ball to "save money" while our Congress approves "a bridge going to nowhere" in Alaska thanks to the lobbying of Senator Ted Stevens. If you would like to talk with me, I would be happy to assist in any way to save Hangar 1. Best Regards, Joe Boscacci, 48 South Avalon Drive, Los Altos, CA 94022, (650) 917-0220	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: June 27, 2006	**Received on**: June 27, 2006
From: Fred Ballard	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (2A)	
Comment 1: Dear Mr. Weissenborn: I cannot believe that the U.S. Navy would be so lacking a decent respect for a building of historical significance that it would fail to preserve and restore Hangar 1 at Moffett Field. In its scale and its success for its purpose it has no rival except perhaps the Vehicle Assembly Building at the Kennedy Space Center. Like the VAB, Hangar 1 is not only an integral part of one of our country's boldest undertakings, it is a significant accomplishment in its own right. Even though the Navy no longer has dirigibles, Hangar 1 retains its worth. It is a monument to the challenges of its construction and a testament to the ingenuity and determination that are the best part of our nation's character. It cannot be appreciated or even comprehended from photographs or a virtual tour, no matter how realistic: it must be experienced firsthand. We live in a time that counts the price of everything and the value of nothing and among mean-spirited people who would prevent the Government from spending money on anything not "useful" in the most small-minded of accountings. I for one would gladly see my tax dollars go to preserve this awe-inspiring structure. Fred Ballard, PMP, fballard@us.ibm.com, 631.380.2039	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 26, 2006	**Received on**: June 26, 2006
From: Lucinda Chandler, San Jose, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: US Navy WAVES, 1963-66	

GENERAL COMMENTS (3A)

Comment 1: Dear Richard Weissenborn: To Save Hangar 1 Committee: http://www.savehangarone.org/node/58#comment I was dismayed to hear that there were those wanting to destroy a historic national building - Hangar 1 at Moffett Field. Then after visiting your website today, encouraged that it may not happen yet. I served at NAS Moffett in 1965-66 in flight dispatch at airport in WAVES. I was in that hangar and saw the huge Guppy airplane in there. Both are unforgettable memories. An amazing sight. Well-worth historically saving. I was just watching BBC today 25 June 06, on local PBS TV channel. They had a story saying that Bush administration has commissioned $150 million for satellite airships by Lockheed Martin for 24 hour surveillance blimps from hangar in Akron Ohio. Discussed rover blimps set out at edge of space to provide surveillance at high altitudes. They are using WWI blimp hangar in Akron Ohio and showed pictures of that massive hangar. You might want to investigate if Navy can again use Moffett's Hangar 1 for these TARS blimps as surely there'll be more hangars needed than just one in Ohio to protect our coasts. Here is website about new TARS blimp -- http://www.missilethreat.com/systems/blimp_usa.html It could be good incentive to help save Hangar 1, saving time and expense building a new one and all the hassles of acquiring land when Hangar 1 is already available with a little clean-up.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

In view of North Korea's threats with missiles, it could be urgent re-usage of Moffett's Hangar 1 since North Korea is threatening to launch long range missiles that could reach California. Sincerely Lucinda Chandler, US Navy WAVES, 1963-66 162 Topeka Ave, San Jose CA 95128, HF 408-294-6177	

Written on: June 24, 2006	**Received on**: June 24, 2006
From: Donald Stone (USN-RET), Pamela Stone, D. Joseph Stone, James Dunn (USMC-RET), Faye Dunn	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public members	
GENERAL COMMENTS (4A)	
Comment 1: Please do not show such great disregard for this Hangar's history, the wishes of the community and the myriad opportunities for re-use that a cleaned, restored Hangar 1 would offer. I urge the Navy to strip the landmark's toxic skin and re-coat it with environmentally sensitive materials instead of getting rid of this structure. Hangar 1 has a special place in Naval History, our community and our country. It is the focal point of the US NAS Sunnyvale Historic District, listed on the NRHP and is eligible for an NHRP designation in its own right. It was revolutionary in it's time and choosing demolition would completely ignore the Hangar's historical significance. Must you destroy everything simply because it is not being used at the moment or because someone has determined it to be "environmentally" unsafe? There are other answers than destruction! I realize this may be a new idea to the Navy, but it's something they need to think about more than once in their history. Most of our bases have been shut down, the majority of our ships are	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

in the ships grave yards and now you are attempting to destroy historical landmarks. Our founders would sure be disappointed if they could see what has happened to America and her defenses over the past 20 years just as so many American's are right now. It's time to think about repairs, restoration or restructuring instead of destruction or demolition for a change. Destroying the old is not necessarily the best thing to do every single time. Think!!! Donald Stone (USN-RET) Pamela Stone, D. Joseph Stone James Dunn (USMC-RET), Faye Dunn	

Written on: June 23, 2006	**Received on**: June 23, 2006
From: Ralph B. DeBolt, CWO4, USNR-Ret.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (5A)	
Comment 1: Hello Mr. Weissenborn, I am in strong opposition to the demolition of Hangar 1, Moffett Field. I believe your rough estimate of demolition costs is an exaggeration designed to appeal to penny pinchers. The NASA study must be factored in to more realistic cost figures when the bidders ask. Now you want to wait until after bids are in and make a final decision. You say that revealing bids isn't allowed. Fine, but the bids TOTALS are, right? Release them so we can have the opportunity to match the funds that would save the hangar. You are aware of the San Jose Mercury opinion poll showing over 85% of our	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

citizens desire to preserve the hangar. That should tell you something. And what about the brass plaque on the runway side of the hangar regarding its historic status? You are OK with EPA rules about pollutants and you should be, but easily disregard things like Historic status? I am a retired Navy officer. I've never been reluctant to admit it. If we lose the hangar over fancy figure manipulations and hidden "Catch 22" agendas, I'll hide my medals. Sincerely, Ralph B. DeBolt, CWO4, USNR-Ret.	The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 23, 2006	**Received on**: June 23, 2006
From: J.C. Stevick, CDR, USN, ret.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (6A)	
Comment 1: Dear Rick Weissenborn, The best job I ever had was as chief pilot of the RAG in the early 1970s. I loved every day of it. My office was in Hangar 1. It is time to move on. The structure is a liability. Wasting money to save it is madness. Take it down now. J.C. Stevick, CDR, USN, ret.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: June 22, 2006	**Received on**: June 22, 2006
From: Bob Moss, Palo Alto, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: RAB community co-chair	
GENERAL COMMENTS (7A)	
Comment 1: Richard Weissenborn BRAC Environmental Coordinator, Former NAS Moffett Field BRAC Program Management Office West 1455 Frazee Rd. Suite 900 San Diego, CA 92108 Dear Mr. Weissenborn; I would like to provide some additional comments and suggestions regarding the EE/CA for Hangar 1 at Moffett Field. While I provided oral testimony at the May 23 community meeting and also submitted 2 pages of comments on the EE/CA at that time, there are other issues that have come to my attention that need to be transmitted to you so that they may be properly addressed. The press and several other sources noted that the Navy plans to go out for bids on Alternatives 10 and 11, but will not disclose publicly the terms and conditions for bidding. This will prevent the public and any interested parties from fully and fairly evaluating the alternatives and the cost estimates, and verifying their accuracy. It is premature and inappropriate to ask for bids on Alternatives 10 and 11 when there are several other alternatives that are fully compliant with all of the criteria and Objectives for successfully protecting health and the environment and also will preserve Hangar 1 as a major historical structure, and for many future uses. I request that any bid requests include the 2 alternatives, 14 (epoxy coating) and 15 silicone coating or painting), that I described May 23. Failure to fully evaluate these options	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. In preparation of the EE/CA, Silicone coatings produced by the Lord Corporation and Illinois Institute of Technology Research Institute (IITRI) were researched as potential exterior coating options. Typically, silicone coatings are applied to smooth surfaces, not a coarse substrate such as asphalt emulsion, which is on the exterior of the hangar. Upon review of the exterior condition of Hangar 1, the silicone coating vendors determined that the features of the exterior are not a compatible substrate for silicone coatings, and recommended the Navy remove silicone paints from further evaluation. Epoxy was also researched as an exterior coating as well as an interior coating option in the revised EE/CA. A drawback of using epoxy as an exterior coating for the hangar is the curvature and flexible properties of the hangar siding. As the epoxy coating weathers, these properties will accelerate cracking and peeling, and will result in areas of exposed original siding. As a result, use of epoxy as a coating for the hangar's exterior siding was removed from consideration. However, since epoxy coating adheres best to smooth, flat surfaces such as that found on the structural steel, the revised EE/CA recommendation

would make the EE/CA incorrect and inadequate, and would result in a significant waste of public funds. The Alternatives that were studied incorrectly omitted 2 Alternatives that meet all of the criteria and Objectives for successfully protecting health and the environment. Those are coating both the inside and outside of Hangar 1 with an epoxy coating which I proposed as Alternative 14, and Alternative 15, coating the outside of Hangar 1 with a silicone paint or coating, and covering the inside of Hangar 1 with another material such as epoxy, asphalt emulsion, or heavy duty paints. Both of these Alternatives must be fully and completely evaluated. Epoxy sealant and coating, Alternative 14, is perfectly practical and feasible. After the May 23 hearing a NASA Ames employee who spoke to me noted that Building 218 was coated with 3 different samples of epoxy more than 15 years ago. They are still there and in almost the original colors and conditions, despite many years of exposure to the sun and weather. Clearly this is a technically feasible, environmentally compatible option, and it will cost less than Alternatives 10 and 11. Maintenance costs for either epoxy or silicone coatings will be significantly less than other coating Alternatives such as 2, 3 and 4, and far less than total costs of Alternatives 10 and 11. Alternative 15, coating the outside of Hangar 1 with a silicone paint or coating, and covering the inside of Hangar 1 with another material such as epoxy, may cost more than Alternative 14 since the silicone paints are relatively expensive, but they are very resistant to water and weather, so long term maintenance costs should be lower. Several times you noted that the cost estimates in the EE/CA could be off by –30 to +60%. Without a full understanding of the terms and conditions of the bid requests it is impossible for anyone to really understand any bid costs and how valid they are. Therefore I request that the terms of all RFPs and requests for bids be disclosed publicly. This is particularly important when any proposal that involves coating, painting or sealing the surface is involved, since the Navy repeatedly omitted any coatings on the inside of Hangar 1, despite the universal rejection of this omission by all other parties, such as EPA, RWQCB, almost all public and community RAB members, the City of Sunnyvale, City of Mountain View, and SCVWD. If interior coating is omitted from the bids, that must be revealed so that more accurate cost estimates can	includes coating the structural steel infrastructure with a primer and a finish coat of weather resistant epoxy to encapsulate PCBs within the paint currently covering the steel. For interior applications, epoxy was found to be a viable alternative. The design life of epoxy coating, as well as costs were more favorable over the other interior coatings evaluated in the revised EE/CA.

be prepared and valid cost comparisons made. A glaring error in costing for Alternative 11 is omission of costs that will be imposed on NASA if Hangar 1 is removed. Most of the utility lines for Ames and Moffett go through Hangar 1. If it is demolished those utilities must be relocated at significant cost. Those costs must be identified and disclosed, as they will increase the actual total cost of Alternative 11 significantly. The Navy may claim that utility relocation costs are not their obligation and cost, but NASA has a strong case that any costs to relocate utilities due to demolition of Hangar 1 should be paid by the Navy, since if the Hangar were retained no utility relocations or expenses would be needed. I am enclosing below a copy of the letter that was delivered to your staff at the May 23 Public Hearing, in case it was not transmitted to you formally. Technically Invalid and Incomplete Statements in the Site 29 (Hangar 1) EE/CA Review of the EE/CA and various comments by participants in the RAB meeting May 18, 2006 revealed a significant number of errors, omissions, and incorrect statements and cost information that raise significant doubts about the conclusions presented in the EE/CA. It is so full of errors and omissions that it cannot be used to justify ANY action for remediation of the contamination in the walls and roof of Hangar 1. Some of the problems are described below. None of the options that involved coating or sealing the hangar walls considered the inside surfaces of Hangar 1, only the outside. This approach, when it was applied to the present asphalt sealing of only the outside, was universally condemned by NASA, EPA, RWQCB, SCVWD, the City of Mountain View, the City of Sunnyvale, and almost all public members of the RAB. It is clear that coating or sealing the outside surface only would not protect the environment or human health, so the cost estimates in the EE/CA are inadequate and incomplete. If remediation does not address sources of contamination from inside the hangar it makes future use or re-use impossible, and fails to comply with the basic obligations of the Navy under CERCLA and BRAC. Thus Options 2, 3, 4 and 6 must be corrected to include interior sealing of all surfaces, to give more realistic cost and feasibility information. It also is important to note that interior surface maintenance costs will be far less than	

exterior surface maintenance costs; long-term total costs for both inside and exterior coatings will not be twice the present costs for those options. Also it is feasible to have different treatments on the outside and inside of Hangar 1. For example, the outside could be treated per Option 4, ceramic coating, which has total direct and indirect estimated costs of $5.9 million (with a generous 20% management and 20% contingency) and then coat the inside with asphalt per Option 3 which has a total direct and indirect cost of $4.3 million. The long term maintenance cost of Option 3 on the inside of Hangar 1 will be far less than the estimated cost of $17.7 million, so the total cost of Option 4 exterior + Option 3 interior would be $10.2 million for initial coating plus long term maintenance of perhaps $26 million. During discussions in 2005 of methods to treat the surfaces of Hangar 1 to seal the surfaces and prevent migration of PCBs, lead and asbestos to the environment, I suggested using epoxy or silicone for coatings. In the EE/CA on p. 4-2 use of epoxy was rejected because of “its sensitivity to ultraviolet light.” Use of silicone products was rejected because they “are used in electrical circuit boards and are not generally recommended for the type of application considered for Hangar 1”. These statements attributed to Techno Coatings are incorrect. Epoxy is used in a number of applications on the outside of spacecraft, where it is exposed to far higher levels of radiation and ultraviolet than anything found on earth. Epoxy samples were exposed in orbit to both radiation and atomic oxygen for 5.75 years in the LDEF experiment with some darkening but with little degradation of physical or mechanical properties. Materials such as Hysol EA956 survived UV and atomic oxygen exposure with little loss of performance or appearance (1-3). Other epoxy materials have been exposed to solar radiation in orbit for up to 20 years without failure. As for silicones, in addition to the use cited in circuit boards, silicones are used for water seals, coatings, electrical and thermal grounding, and as thermal control paints. Silicone paints such as S13GLO (IITRI), A276 (Lord Corp) and Z93 (IITRI) have been exposed to solar and UV radiation, solar flares, and micrometeorites for 5.75 years in the LDEF experiment with little significant change in performance or properties, (2, 3) and for as long as 20 years in synchronous orbit with no loss of performance and with absolutely no maintenance.	

References 1) NASA TM 58246 L. Leger, "Oxygen Atom Reaction with Shuttle Materials at Orbital Altitudes", May 1982, 2) D. L. Edwards, J. M. Zwiener, et. Al, "Radiation Induced Degradation of White Thermal Control Paint", NASA/CR-1998-208598, 20th Space Simulation Conference, Oct. 1998. 3) NASA Contractor Report 4646, Evaluation of Adhesive Materials Used on the Long Duration Exposure Facility, March 1995. A number of silicone coatings could be used to coat and seal the surfaces of Hangar 1, including white paints S13GLO, A276 and Z93, clear coating such as DC93-500 (Dow Corning) or CV-2500 (NuSil). In addition to sealing the PCBs, lead and asbestos in, these coatings would not change the appearance of Hangar 1 noticeably, preserving the historic character of the structure. As noted above, combinations of coatings and sealants can be used. For example, a silicone-based paint or sealant could be used to coat the outside of Hangar 1, and a cheaper material that is easier to apply such as epoxy or asphalt (Option 3) could be used to coat the inside. Maintenance of external silicone coatings will be relatively inexpensive, based on actual flight experiences, and the internal coatings also will require relatively little maintenance since they will not be exposed to storms or UV radiation. Since these types of coatings were not evaluated, the EE/CA is defective and must be redone, with a full evaluation of various epoxy and silicone coatings. Silicone paints and coatings such as those noted above must be evaluated and compared with the 6 potentially acceptable options. The recommended Option 11 to demolish and remove the hangar appears to significantly understate the true cost of demolition. In May 2003 DMJMH+M prepared a Hangar 1 demolition cost estimate for NASA. It includes cost elements that are omitted from the EE/CA. For example, the EE/CA says nothing about protecting the health and safety of workers engaged in demolition of a structure known to contain toxic and hazardous materials. The NASA cost estimate does, for $2.45 million. The EE/CA has a cost of $2.58 million for interior asbestos abatement, nothing for exterior panels. It estimates $443,000 for disposal of siding and roof panels. The NASA study has an estimate of $700,000 just for hazardous dump fees plus $1.3 million for	

hazardous waste disposal. These costs are so different that they bring into question all costs in the EE/CA. The NASA report acknowledges potential scrap value of the steel frame, estimated at $1 million in 2003. The salvage value does not appear to have been deducted from the final demolition cost estimate. The NASA costs also are subject to escalation, recommended as 2.5%, but would be closer to 3.5%/year since 2003. EE/CA Option 10, to remove the toxic siding and roof of Hangar 1 and replace it with a clean, similar siding, has an estimate of $7.6 million in direct costs to remove the existing siding and roof, plus a cost of $11.8 million for demolition, $24.6 million total. The NASA report also considered removal and replacement of the siding with a non-toxic replacement siding. The NASA report estimates $4.45 million, plus $9.3 million to install a replacement exterior, a total estimated cost to remove and replace the siding, including management and contingency, is $19.7 million, taking into account a number of expenses such as personnel protection not shown in the EE/CA. In summary, the EE/CA is flawed and not suitable for use to evaluate all viable remedial options and costs to address contamination in Hangar 1. Options 2, 3, 4, and 6 that were studied in the EE/CA and found feasible did not consider treatment of the inside of Hangar 1 so they are neither technically nor administratively adequate. Functionally suitable materials such as coating or sealing with epoxy and silicones on the outside and inside of Hangar 1 were incorrectly dismissed from proper consideration. The stated costs of the preferred Option 11 omitted significant expenses known to be associated with demolition of contaminated structures, and disposal of hazardous wastes. Accurate and complete cost and feasibility analyses of various Options were not presented. The EE/CA must be rejected as submitted and replaced with a full RI/FS to correct these errors and omissions. The RI/FS also must demonstrate whether the cost estimates in the EE/CA are more correct than those in the 2003 NASA report for Hangar 1 remediation. Yours very sincerely, Bob Moss, RAB Community Co-Chair	

Written on: June 22, 2006	**Received on**: June 22, 2006
From: Bill Gilwee, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (8A)	
Comment 1: Dear Mr. Weissenborn: I am writing to support the group that is trying to save Hanger 1 at Moffett Field. I want to preserve this historic site and also to save the $12 million required to tear it down. Fifty years ago I was working in Ohio for a company that made circuit boards for IBM and many other electronic companies. There was a plan to incorporate Aroclor in the circuit boards to improve their "cold punch" properties and also improve the fire resistant properties. The circuit boards were made by impregnating a special type of paper with a varnish of epoxy resin and acetone. After drying the resin saturated paper, the paper was stacked and subjected to heat and pressure. The boards were then "cured" and could be cut to various dimensions. We added various amounts (1 to 10%) of Aroclor to the epoxy varnish. The Aroclor was dissolved in the acetone with the liquid epoxy resin. At first we were happy with the boards made with the Aroclor. However, a big problem arose. When the circuit boards went through the normal process of adding transistors and solder etc., it was necessary to go through "degreasing" to remove contaminants. This process extracted an unacceptable amount of the Aroclor. That was the end of my experience with Aroclors. My point is that Aroclors are soluble in a number of different solvents. It seems like a good scrubbing of the interior of Hangar 1 would remove the Aroclor. In case this has not been tried, I thought I would mention my experience. This would not be cheap, but I'm sure it would be a lot less than $12 million. Sincerely yours, Bill Gilwee, 80 Cody Lane, Los Altos, CA 94022, 650-948-4733	**Response 1:** Thank you for sharing your experience with Aroclors. Neutralizing PCBs using bimetallic Extraction (Alternative 8) and Removing contaminants by Chemical Stripping (Alternative 9) were evaluated in the EE/CA. Alternative 8 was found to not be technically feasible and Alternative 9 would not be in compliance with ARARs. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 22, 2006	**Received on**: June 22, 2006
From: Valori Stitt, Los Altos Hills, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (9A)	
Comment 1: Dear Sir, My husband, our two children and I have lived in the Bay Area all of our lives. To us, Hangar 1 is as much a landmark of the San Francisco Bay Area as the Golden Gate Bridge, Coit Tower or Alcatraz Island. Tearing down this historic building would be a tragedy. Hangar 1 is a large, visible reminder of the contributions the military—especially the Navy--has made to the Bay Area and to our country. It represents aeronautical and naval history for us, our children and future generations. Why throw that away? Retaining and restoring this historic structure could be leveraged to generate good press, good will and good support for our military. Best regards, Valori & Gordon Stitt, Los Altos Hills, CA	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 2006	**Received on**: June 2006
From: Mary S. Levine, Palo Alto, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (10A)	
Comment 1: (10A.1) Public Testimony by community professional experts has established the feasibility of preserving Hangar 1. To replace the hangar in all its glory with a tombstone in order to build expensive residences with facilities for private planes will not be a safe use of our sky ways. Does owning the real estate at Moffett on which the hangar stands include documentation giving air rights to the Navy? President Kennedy worked with Congress to pass legislation requiring every historical building and site in the U.S. to be identified and put into a national database. A few years ago, it was reported that already 2/3 of all those on the database were destroyed. Recently, Palo Alto's City Council was deceived by a Texas based company into believing they would sell the acreage they controlled on the corner of El Camino and Charlston Rd. known as Rickey's. Although the original buildings were on the Nat'l Registry of Historic Places, that entire site was leveled, the historic buildings destroyed. The Navy's decision to demolish Hangar 1 at Moffett is another potential tragedy of destruction. Halt this unthinkable action. When the Palo Alto Times ran a banner front page black headline, Trianon Demolition Contract Let with a photo of that historic building taking up the rest of the top half of the front page. I successfully stepped in on the basis that a promise had been made to preserve it. The mansion was saved. So I attended the May 23, 2006 community hearing to end another presence, not to participate in the hearing on the proposed demolition of Hangar 1.	**Response 1:** (10A.1) Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

As I listened to the reports of prior promises to preserve Hangar 1, to reports of the value it had for individuals and the greater community, I realized I had information no one else had. This prompted me to speak out. In order to establish my ties to the Navy, yet I most vociferously oppose the Navy's decision to destroy Hangar 1, I related that my father had been in the Navy WWI and was transferred as a civilian to the Philadelphia Navy year to be part of Billie Mitchell's team. He outfitted Admiral Byrd's expedition to the South Pole in 1932 and spent the rest of his working life there, I, too, worked at the Philadelphia aircraft factory and Boeing after my college graduation. Therefore I recounted the following incident: Years ago the man who represented the union of civilian Moffett employees appeared at my desk. He was devastated because many of this union's members had developed cancer and were dying. It was established that contamination at Moffett was responsible but the Navy refused to act to clean up the cause of the illnesses and deaths. This is CRIMINAL NEGLIGENCE! 1 reason now being given for destroying Hangar 1 is the cost of the clean-up. Which the Navy is required to do what would the cost have been to clean-up when the Navy first learned from the union of the life-threatening contamination? Knowing the danger, all future contamination could have been prevented by satisfactory oversight policy of any subsequent threat. The Navy IS RESPONSIBLE and must be brought to understand that the Hangar 1 demolition must be halted. There is a precedent for the Navy to make a major investment in something other than its standard military role. Last year a U.S. Navy hospital ship went to aid the Tsunami victims. Dr. Isadore Rosenfeld "Parade's" Health Editor said this changed attitudes toward America and on Muslims in Indonesia so he proposed the ship be regularly deployed around the world. The Navy agreed now this ship is in Asia for a 5 month tour. This is the next leg of its new mission of dedication. Investing in the needed restoration of Hangar 1 at Moffett instead of sponsoring its destruction would vastly engender widespread acquisition of historical knowledge showing the effect U.S. aviation has had on our lives, as well as enhancing the Navy's reputation.	

The many personal testimonials at the May 23, 2006, community meeting verified the need to oppose any misplaced power that would be exercised to cause the destruction of Hangar 1. Why won't the Navy agree this time?	

Written on: June 2006	**Received on**: June 2006
From: Victor Ojakian, Palo Alto, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (11A)	
Comment 1: Save Hangar 1. Victor Ojakian	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: June 2006
From: Mona Miller, Palo Alto, Calif. and Elizabeth C. Syike	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (12A)	
Comment 1: I support saving Hangar 1- it's an important part of our history – can be used for so many things. Mona Miller, 751 Christine Dr., Palo Alto, CA 94303-4443 Save Hangar 1. It's a landmark and can be useful. Elizabeth C. Syike, 789 Josina Ava, Palo Alto, CA 94306	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 2006	**Received on**: June 22, 2006
From: Vic Befera, Palo Alto, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: U.S. Navy War Veteran, 1944-1945	
GENERAL COMMENTS (13A)	
Comment 1: Thank you for conducting the public meeting regarding Hangar 1 and giving us the opportunity to express our views. We hope you will recognize the unprecedented support for preserving the historic structure. The Navy might regret demolishing a part of its aerospace history. Surely you would wish it possible if the U.S.S. Monitor and U.S.S. Merrimac commemorating the first of the ironclads could have been saved. Converting Hangar 1 into a majestic air and space museum would add luster to the rich traditions of the U.S. Navy. We beg you to seek additional funds to pursue Alternative 10. San Francisco Mayor Roger Lapham,	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised

1947: "The cable cars must go. They're outmoded, expensive and inefficient."	EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 22, 2006	**Received on**: June 22, 2006
From: Michael Milley	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (14A)	
Comment 1: To: Mr. Rick Weissenborn BRAC Environmental Coordinator Navy BRAC PMO West 1455 Frazee Road Ste 900 San Diego, CA 92108-4310 Dear Mr. Weissenborn, I am a long time home-owner in Los Altos. I am writing to express my opinion that Hangar 1 should be preserved. I urge you and the Navy to find a way to preserve the structure. If nothing else, defer demolition until the community can vote to fund the preservation effort. Michael Milley, michael.milley@att.net	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 22, 2006	**Received on**: June 22, 2006
From: Jennifer Granath	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (15A)	
Comment 1: I would like to communicate my thoughts on Hangar 1 having grown-up in Silicon Valley. I believe demolishing this building would do a disservice to our younger generation. They have very little historical sites in this area, as it is so relatively new. Looking around the country and the world, there are many historic buildings that make a city recognizable...the statue of liberty in New York, the Sears tower in Chicago, the Golden Gate Bridge in San Francisco, the Moffett Field Hangar in Mountain View. Just because something is expensive to maintain, doesn't mean we should tear it down instead. My 12 year old son recently came to the WWII plane exhibit held at Moffett and he absolutely loved learning about the historic planes that his great-grandfathers had been involved with. When I was a child, we used to go watch the Blue Angels and walk through the Hangar to see the displays. My kids are now at the age where they would love to do more of this, and without this unique facility, it would not be the same. Thank you for helping to preserve Hangar 1 and you could open it up for public functions to bring in some extra money similar to other museums in the area. Regards, Jennifer Jennifer Granath, (650) 941-4774, Fax (610) 956-4774	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: June 21, 2006	**Received on**: June 21, 2006
From: John Goldsborough, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (16A)	
Comment 1: I am strongly against the destruction of Hangar 1 at Moffett Field. There must be a way to appease the environmental zealots which preserves the Nationally historic structure and costs less than destruction over the long term. John Goldsborough, Los Altos	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 26, 2006	**Received on**: June 26, 2006
From: Christopher Espinoza	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (17A)	
Comment 1: Mr. Rick Weissenborn, I am writing to you with regards to saving Hangar 1. I have lived in the bay area practically all my life and I remember going to Ames as a child and seeing the immense Hangar from the freeway. It was definitely a site to see and made me wonder about the cool things that used to go on there. I also remember going there for a flight exhibit they had one time and looking around. As I grew older, I would bring friends by and explain to them what Hangar 1 was and how I was proud to have it as a landmark of the bay. I had wished that they would clean it up and reopen it with flight exhibits, history of NASA, NAVY, etc so that I could go back there. I would have liked to take my future family there one day and explain the history behind it. This landmark was one of my inspirations for pursuing and becoming and engineer. I know that if it was taken down, not only would we lose a historic landmark but some of the NAVY history and history of the Bay Area as well. Sincerely, Christopher Espinoza, System Engineer, FBM Operational Reentry Systems, Office: (408) 743-4952, Fax: (408) 742-9804, christopher.a.espinoza@lmco.com	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 21, 2006	**Received on**: June 26, 2006
From: Marie Wiley Ross, Livermore, Calif.	**Submitted Via**: Letter to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (18A)	
Comment 1: Dear Sir, I am distressed by the news in an Aviation Magazine to see that the removal of Hangar 1 at Moffett Field is proposed. I consider the Hangar an historical monument. It speaks of a period in Naval History with which I am well acquainted since my father, R. Adm. Herbert V. Wiley-Ret., was the last captain of the USS Macon. I as living in Palo Alto at the time the USS Macon was lost. The enormous hangar has been a prominent landmark on the Peninsula and I believe it should be preserved at all cost as a visual representation of a period in Naval History, and the last 75 years of California History. The role of the dirigibles and later the blimps is an important part of United States History as well! I hope these factors will influence the decision of what will be done with Hangar 1. I add my voice and that of my family to this effort. Very Sincerely, Marie Wiley Ross	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 22, 2006	**Received on**: June 2006
From: James T. Beall, Jr., Chair, Board of Supervisors	**Submitted Via**: Letter to Mr. Weissenborn
Affiliation/Agency: Board of Supervisors, County of Santa Clara	
GENERAL COMMENTS (19A)	
Comment 1: RE: Hangar 1 Engineering Evaluation/Cost Analysis Dear Mr. Rick Weissenborn, At the June 20, 2006, Santa Clara County Board of Supervisors meeting, the Board voted to request that Hangar 1 at former Naval Air Station Moffett Field be retained as a unique County resource. Constructed in 1932, Hangar 1 was designated a Naval Historical Monument in the early 1950's. The structure is a dominant feature of the former naval base and provides the focus of the original air station plan. Hangar 1 is significant as an engineering feat and a unique example of Moderne Style architecture in its form. The structure was built to house the 785-foot dirigible, the U.S.S Macon, and the hangar system and support buildings for porting dirigibles are part of a unique defense engineering technology. Based at the Sunnyvale Naval Air Station from October 1933 until it crashed at sea in February 1935, the U.S.S Macon was the largest and last dirigible built by the U.S. Government. The structure is a nationally recognized symbol of the history of aviation on the west coast, and a unique example of architectural and engineering achievement in this country. The Santa Clara County Board of Supervisors appreciates the opportunity to comment on this important decision. Sincerely, James T. Beall, Jr., Chair, Board of Supervisors	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: June 16, 2006	**Received on**: June 2006
From: Edward Souza, Chairperson; Karen White, Vice Chairperson; Leslie Masunaga; Jean McCloskey; Yollette Merritt; Robert Pedretti; Darius Przygoda; James Rowan; Ethel Worn	**Submitted Via**: Letter to Mr. Weissenborn
Affiliation/Agency: County of Santa Clara, Historical Heritage Commission	
GENERAL COMMENTS (20A)	
Comment 1: RE: Hangar 1 Engineering Evaluation/Cost Analysis Dear Mr. Weissenborn, At the June 15, 2006, Santa Clara County Historical Heritage Commission (HHC) meeting, the HHC discussed the Hangar 1 Engineering Evaluation/Cost Analysis (EE/CA) summarizing the results of the Navy's evaluation and selection of the removal alternative for Hangar 1 at the former Naval Air Station Moffett Field. The HHC unanimously voted to issue a strong statement of support for the retention of Hangar 1. Regarding the cost analysis of the alternatives, the EE/CA states that the cost estimates presented are accurate within the U.S. Environmental Protection Agency guidance range of +50% to 30% for "Study Estimate" (EE/CA Page 5-5). The HHC believes that the EE/CA cost estimates are such gross estimates that they do not accurately represent the alternatives and should not be relied upon for sound and informed decision-making. In addition, the cost estimates do not take into consideration the cost of replacing base infrastructure facilities currently integrated into Hangar 1, such as the electrical grid, a significant portion of the base's steam plant, several underground utility tunnels extending into the base, and above-ground structures located inside the hangar. Finally, the cost estimates should be placed in context for the public with the entire cost of clean-up of the former naval base required as a result of the Navy's development and use of the facility on publicly purchased land. It should also be noted that the demolition of Hangar 1 has environmental consequences, in that the hazardous material contained in the structure must be disposed of off site. An alternative to this adverse environmental	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

impact would be to clean up Hangar 1 and retain the look, feel and massing of the structure. Regarding the unique contributions of Hangar 1 as a historic icon and landmark resource for future generations, Hangar 1 is one of only two dirigible hangars remaining in the United States. The structure is a nationally recognized symbol of the history of aviation on the west coast, and a unique example of architectural and engineering achievement in this country. The centerpiece of the Sunnyvale Naval Air Station National Register Historic District, Hangar 1 is an incomparable asset to the region, state, and nation and maintains future educational, economic, recreational, tourism and business opportunities for the Silicon Valley. The HHC is not advocating for the preservation of Hangar 1 for preservation or history's sake, but firmly believes this national treasure has tremendous redevelopment potential as a Smithsonian West, conference center, event center or educational space center. The world-renowned Silicon Valley possesses strong entrepreneurial talent, which could be utilized in the drive to reuse the facility. The implementation of a new use for Hangar 1 is not being requested from the Navy, solely the retention of the structure and remediation of the toxic waste. While there is tremendous redevelopment potential for Hangar 1, its historical significance should also be reinforced. Constructed in 1932, Hangar 1 was taller than any building in the South Bay, with the exception of the Bank of America tower in San Jose. The structure was built to house the 785-foot dirigible, U.S.S. Macon. Based at the Sunnyvale Naval Air Station from October 1933 until it crashed at sea in February 1935, the U.S.S. Macon was the largest and last dirigible built by the U.S. Government. The hangar system and support buildings for porting dirigibles are part of a unique defense engineering technology. The historical significance of Hangar 1 was recognized a half-century ago when it was designated a Naval Historical Monument in the early 1950's. The former Sunnyvale Naval Air Station is significant at the national level and its association with airship technology during the inter-war era between 1932 and 1945. Hangar 1 is significant as an engineering feat and a unique example of Modern Style architecture in its form, and should be retained for use by future generations. Again, the HHC issues a strong statement of support for the retention of Hangar 1 and appreciates the opportunity to comment on this important decision.	

Written on: June 27, 2006	**Received on**: June 29, 2006
From: Jackie Morris, San Jose, Calif.	**Submitted Via**: Letter to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (21A)	
Comment 1: Dear Mr. Weissenborn, Wish to encourage you to preserve Hangar 1! I have lived in Santa Clara all my life and I have seen many changes and many icons being demolished. Can't we as human beings save some of our heritage? Years ago a man who was in some kind of power to tear down the town of Santa Clara (California). He regretted his actions until the day he passed away. So please consider saving some historical icon for the valley. Enclosed are articles published in the local papers, which I agree to, please reconsider what you do to preserve a national monument. Sincerely, Jackie Morris [Attached article: "Navy study to urge razing Moffett Field's Hangar 1," Bay Area Briefing, MercuryNews.com, May 1, 2006. Attached article: "Hangar 1 valuable for both its history and its potential," Opinion, San Jose Mercury News, May 19, 2006. Attached print of Save Hangar 1 Committee Web page.]	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: June 2006	**Received on**: June 2006
From: Stephanie Munoz, Los Altos Hills, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (22A)	
Comment 1: I feel very strongly that it is wrong to destroy Hangar 1, and that, to tell the truth, the Navy has no right to appropriate the steel of the structure. I do see a possibility that the Navy's obligation might be fulfilled by merely removing the toxic skin and leaving the frame alone, so that a design competition would elicit the most worthy application for the fabulous structure, e.g. a conservatory like Houston Museum of Natural Science Butterfly Park, and this would not preclude the possibility of future use as an aerodrome for lighter-than-air craft. We don't know where the future of air travel is going, and it is within the realm of possibility that we might have dirigibles again. It is quite disheartening to witness the aplomb with which otherwise responsible persons in our society tolerate the destruction of assets of aesthetic or pragmatic value, or both. I remember, after WWII, the medical officers on ships accidentally on purpose let thousands of dollars worth of supplies slide over the edge rather than cope with the Herculean paperwork of saving it. They always say "there's a right way or wrong way and Navy way." This time, I hope you do it the right way. Respectfully yours.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: Unknown Date	**Received on**: Unknown Date
From: Michael D. Makinen, Palo Alto, CA	**Submitted Via**: Written comment form
Affiliation/Agency: Historic Committee Chairman, city of Palo Alto	
GENERAL COMMENTS (23A)	
Comment 1: I am opposing the Navy's proposal to demolish Hangar 1 at Moffett Field as the Navy's preferred EE/CA approach to solving the PCB contamination problem. The Navy has failed to take into consideration that viable reuse opportunities have recently developed including FEMA's interest in developing a regional FEMA Center at Moffett Field. This plan would result in rental income from FEMA that would be available to NASA Ames through leasing authority recently given to NASA and also by way of the National Historic Preservation Act. In addition, the benefits to the Bay Area in terms of disaster readiness that would be provided by Hangar 1 as a FEMA Center are incalculable. FEMA already has a strong presence at Moffett Field in terms of utilization of Building 144 for FEMA warehouse stocking and other areas that are used for emergency vehicle and equipment storage. Other factors not taken into consideration by the Navy include the loss of income to the local communities that would derive from heritage tourism. If Hangar 1 was cleaned-up and resided, then it could be put back into service and could serve as a historic site that the public could visit and plan vacation trips around. The long term economic benefit to the community, in the form of heritage tourism, has been totally neglected in the analysis undertaken by the Navy. These benefits would in the long term greatly exceed any minor additional costs required to clean the structure and re-side the hangar. As a historic icon and a reminder of the Navy's long service at Moffett Field, it would be a great disservice for the Navy to destroy a strong reminder of naval	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

history in the Bay Area. The Hangar could serve as a Naval recruiting site in addition to other factors mentioned above. I implore the Navy to act with respect to this historic icon of the Bay area and to correct the environmental deficiencies that affect the hangar so that others can reutilize this structure in an appropriate and sensitive manner.	

Written on: June 30, 2006	**Received on**: July 5, 2006
From: Nick Galiotto, Mountain View, CA	**Submitted Via**: Fax to Rick Weissenborn
Affiliation/Agency: Mayor, City of Mountain View	
GENERAL COMMENTS (24A)	
Comment 1: (24A.1) On June 27, 2006, the Mountain View City Council considered and approved comments regarding the United States Navy's Hangar 1 Engineering Evaluation/Cost Analysis (EE/CA) report. In summary, the City remains opposed to demolition of the hangar and encourages the Navy to select Alternative 10, siding removal and disposal, cleanup of the structural steel and replacement with new siding as historic mitigation. This preservation alternative satisfies the "implementability" and "effectiveness" criteria of the EE/CA more than Alternative 11, the demolition alternative, because it meets the community acceptance and historic mitigation criteria. The City is also concerned that the detailed bids for demolition versus preservation currently being sought and studied by the Navy may not be made public prior to the Navy's final decision-making document. Additionally, the community was not permitted to review and comment on the scope of the request for bids prior to its release. This type of closed process is contrary to the Navy's good history of informing and listening to the community concerning clean-up efforts at Moffett and the City encourages the Navy to rethink this process.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

SPECIFIC COMMENTS	
Comment 2: (24A.2) Specifically, the City of Mountain View submits the following comments regarding the EE/CA: 1. The City of Mountain view opposes the demolition of Hangar 1 at Moffett Federal Airfield. The Navy should clean up AND restore the hangar so environmental contamination issues from PCBs, lead and asbestos on the exterior and in the interior of the hangar are no longer an impediment for potential future use.	**Response 2:** (24A.2) The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.
Comment 3: (24A.3) 2. The detailed bids for demolition versus preservation currently being sought and studied by the Navy should be made available to the public as soon as possible. Additionally, an extended time period should be allowed for community review and response to the bids before the Navy issues an action memorandum decision. The length of this time period should be determined in dialogue with the community. Since the Navy's request for bids was not made public prior to its release, the Navy should be willing to revise and rebid, or otherwise amend the results, if there are significant community or agency concerns with the scope of the bids. For example, demolition cost estimates should cover the scope of demolition that NASA Ames requires, such as whether the foundation of the hangar needs to be removed or not, and the cost of replacing base infrastructure facilities that are currently part of Hangar 1 such as the electrical grid, a portion of the base's steam plant, underground utility tunnels and aboveground structures located inside the hangar. Thank you for the opportunity to comment on the EE/CA. As you are aware, Hangar 1 has been an important part of the Mountain View community since its construction in 1933 and the City and its community members are vitally interested in its preservation and future use. The City looks forward to hearing the Navy's response to these comments and continuing to be involved in this issue. Please	**Response 3:** (24A.3) The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

contact Kevin Woodhouse, Assistant to the City Manager, at (650) 903-6301 if you have any questions or require additional information regarding these comments.	

Written on: Unknown Date	**Received on**: Unknown Date
From: Sara Turner, Cupertino, CA	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (25A)	
Comment 1: Attending the meeting on May 23 its obvious to me that the decision has been made already of Hanger 1. But I do not believe the Navy has made the decision to remove it. As all the valuable, fertile land in Santa Clara County has had to succumb to "big money" so the demise of Hanger 1. There are so many other "sensible" projects that could be on that property it boggles my mind that they cannot be agreed on. Why not a fabulous "green" recreation area, or educational facilities? Big money high rise "Hong Kong" type housing and commercial is unacceptable. We are already reaching "Tokyo" traffic conditions. So goes "stopped" traffic on 101 like Bay Bridge traffic every week day morning. Observe all the "empty" buildings up and down the peninsula sitting on what once was fertile, productive land. I do not vote for the demise of this icon.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 3, 2006	**Received on**: Unknown Date
From: James R. VanPernis, Jr., Sunnyvale, CA	**Submitted Via**: Written comment form
Affiliation/Agency: Member of the SHOC	
GENERAL COMMENTS (26A)	
Comment 1: The rationale behind the Navy's approach to the initial cost estimates regarding the fate of Hangar 1 has been called into serious question. My understanding is that the Navy, in an attempt to address this concern, has, or will soon, put the alternative 10 and 11 options out to bid. It is in the public's interest for the Navy to release the full details of the secret bidding process and the results of that process (once completed) prior to the announcement of a final decision on those alternatives. This is also in the Navy's best interest, in that it could help restore the community's confidence in the Navy's approach to this controversial subject. I support the preservation of Hangar 1 and hope that the Navy's approach in this matter is even-handed and truly fair-minded.	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Kathleen Hall, Mountain View, CA	**Submitted Via**: Fax to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (27A)	
Comment 1: We received the information on the July 13 meeting at Moffett Field. We are hoping that the Navy listened to the community and will save the Hangar.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic

We frequent Moffett Field several times per week (dad is retired military), and always bring our out of town visitors to see the Hangar and to visit the Museum. My cousin, a military history buff and TV Anchorman from Virginia was absolutely amazed by Hangar 1 and wished he had many hours to spend in the museum library, is a true landmark, a piece of history that should not be lost. I was quite upset to read that bids to the Navy on demolition vs preservation were to be kept secret until after a decision was made. I hope that was a mis-understanding on my part because it was unclear why this decision, paid by the taxpayers should not be made in an open forum. It seems that America is being paved over with malls and high density housing in the interest of progress. At the ***very minimum*** let's not rush to a hasty decision. It is unfortunate that this project cannot be put on the ballot, I think it would be a clear cut decision in favor of preservation. There are so many bad decisions made by the government these days, let's do something right for a change, save Hangar 1.	Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 28, 2006	**Received on**: Unknown Date
From: Judy Huang, Project Manager	**Submitted Via**: Letter to Rick Weissenborn
Affiliation/Agency: California Regional Water Quality Control Board	
GENERAL COMMENTS (28A)	
Comment 1: (28A.1) The San Francisco Bay Regional Water Quality Control Board staff reviewed the *Engineering Evaluation/Cost analysis for Installation Restoration Site 29, Hangar 1, Former Naval Air Station Moffett Field, Santa Clara County, California*, dated May 5, 2006 (EE/CA) and has the following comments: 1. **Exclusion of Interior of the Hangar:** Alternatives 2 through 9 proposed in the EE/CA only address the exterior of the Hangar. Therefore they do not comply with	**Response 1:** (28A.1) The Navy has revised the EE/CA to include remediation of the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). Within the removal alternatives that control contamination are four methodologies for remediating the interior components: acrylic coating; epoxy coating; asphalt-emulsion coating; and polyurethane foam coating. These four

all applicable or relevant and appropriate requirements (ARARs) and should not be considered as valid alternatives for the remediation of Hangar 1. As stated previously in our November 15 2004 letter, "by not including the characterization and remediation of the interior of Hangar 1, the Navy threatens to cause waste to be deposited where it is likely to create a condition of pollution." Without cleanup of the interior of Hangar 1, the site remains an incompletely remediated site and the threat of discharges in waters of the State will continue.	methodologies for remediating the interior components are evaluated in Section 4.0 of the revised EE/CA.
SPECIFIC COMMENTS	
Comment 2: (28A.2) **Table 3-2, Summary of Potential State Chemical-Specific ARARs:** This section stated that Porter-Cologne Water Quality Control Act (Porter-Cologne Act) Section 13304 is not an ARAR because it is procedural in nature. Staff disagrees with this assessment. Section 13304(a) of the Porter-Cologne Act not only sets out the procedure for enforcement, it also grants the Water Board authority to require remediation when there is a discharge or threatened discharge into Waters of the State. Although Staff disagrees with the validity of Alternative 2 through 9, staff concurs that both Alternative 10, remove siding and clean exposed surfaces, and Alternative 11, demolish and remove hangar, will protect human health, the environment and comply with State laws and regulations. Please contact me at (510) 622-2363 or e-mail jchuang@waterboards.ca.gov if you have any questions.	**Response 2:** (28A.2) The Navy is aware of and respects the position of the Water Board. Due to the disagreement between the Navy and the Water Board on this issue, language explaining both the Navy's and Water Board's positions with regard to the State Water Resources Control Board (SWRCB) Resolution 92-49 is included in Section 3.0. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Ruth H. Wolgast, Mountain View, CA	**Submitted Via**: Fax and letter to Rick Weissenborn,
Affiliation/Agency: WWII Navy Supply Officer and Federal Civil Service Supply Specialist at Moffett Field for 25 years	
GENERAL COMMENTS (29A)	
Comment 1: Because classified WWII records are now being declassified, the Navy has a tremendous opportunity to make a unique museum and memorial here on the West Coast in Hangar 1 at Moffett Field. Gathering all of the newly released material and making it accessible to visitors in one place would be a huge drawing card to the already existing museum, creating an important historical resource and a fitting remembrance. Please consider it!	**Response 1:** Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS IR SITE 29, HANGAR 1 FORMER NAS MOFFETT FIELD MOFFETT FIELD, CALIFORNIA

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Clarice Arné, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (1B)	
Comment 1: I would like to see Hangar 1 remain where it is. I hope that with funding there would be a way to remove the environmental dangers and keep the Hangar. I am willing to contribute financially to saving the Hangar. I would also be willing to work toward raising funds to keep the Hangar.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Irmgard Auckerman, San Jose, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (2B)	
Comment 1: The Coliseum in Rome is approximately 2000 plus years old. The Hangar is only approximately 70 years old. It's got a lot of life left… Let's make the Hangar our Coliseum and let tourist from all over the world come to Mountain View to see it. "Our Hangar Needs Preserving." Thanks.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: June 12, 2006	**Received on**: June 2006
From: Steven Baird, Sunnyvale, Calif.	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (3B)	
Comment 1: I am concerned that the EE/CA does not provide a true "apples to apples" comparison of the costs of the various alternatives proposed. In particular, I am concerned that the full costs of the remediation of the toxic substances as part of the demolition option are not set forth compared to the option of retaining the hangar by residing it. For the apparently nominal differential in the true costs comparison between those two options, and the unique historical significance of Hangar 1, I request that the option of residing Hangar 1 be selected.	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: G. Baumgartner, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (4B)	
Comment 1: Save the Hangar at all costs. It represents lighter than air history from WWI to WWII.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Megan Bellue, San Jose, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Preservation Action Council of San Jose and National Trust for Historic Preservation	
GENERAL COMMENTS (5B)	
Comment 1: I'm speaking tonight as executive director of the Preservation Action Council of San Jose and also as a representative of the National Trust for Historic Preservation. The debate about the demolition of the iconic Hangar 1 helps crystallize the modern chapter of historic preservation advocacy. Painted as a hulking toxic dinosaur of a place, the 360,000-square-foot engineering marvel is a testament to the power of the US Armed Forces and human ingenuity while acting as a challenge to us all to retain a sense of place. When historic buildings are torn down we lose tangible links to our past and communities begin to lose touch with	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

the stories that identify them and the places where that history happened. Among historic buildings the Navy's Hangar 1 is a giant. Even its detractors can see that it is Silicon Valley's most recognizable landmark. Sense of place is no less critical to community character and quality of life than good schools, affordable housing and clean water. It's important for us to remember what drew populations to a place, how they prospered and survived, and the places where they lived, governed, conducted business and in this case innovated. At Moffett Field, we must weigh the monumentality of the historic resource and the iconic richness of the many stories it tells against environmental hazards and the challenges of reuse. The Navy's latest study recommends demolition and removal as the optimal solution. According to the Navy, it's too expensive to retain the remarkable dirigible barn and simply easier and more expedient to tear it down and walk away. It sounds like a clear-cut dollars-and-cents decision, but it is not. The only thing clear-cut about the Navy's report is its failure to provide a single reason compelling enough to justify demolition of one of the West's most important engineering marvels. According to the Navy's own estimates, saving Hangar 1 would increase the cost of base cleanup by $12 million, a mere 6 percent increase in the $200 million budget for remediation of Moffett Field. At its height and size and given the prevailing winds, questions abound as to how the building can be safely demolished. The task of demolition is perhaps even more daunting than engineering such a massive structure in the first place, and it is surely fraught with greater uncertainty. Moreover, because of its proximity to active runways nothing can be built in Hangar 1's place. Hangar 1 tower is an irreplaceable icon of Silicon Valley and every effort should be made to ensure its preservation. Thank you.	The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar’s steel frame standing.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: May 23, 2006	**Received on**: May 23, 2006
From: William A Benson, Palo Alto, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (6B)	
Comment 1: Tearing down the Hangar will not solve the problem, it will simply be moved to another place. This Hangar is not unique, the surface finish is common to many buildings. Is the answer to tear all other buildings too. This kind of an answer is drastic, costly and unproductive. In my opinion the Hangar finish can be removed safely in a controlled environment and possibly be refinished at the same time. The Hangar is structurally sound and no one that I know of has had their health in peril by being exposed to the Hangar. The building has the potential for so many uses (even a sound stage). Don't tear down the Hangar – fix the problem.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 15, 2006	**Received on**: May 17, 2006
From: Celia Boyle and Jay Hopkins, Palo Alto, California	**Submitted Via**: Postcard
Affiliation/Agency: Public members	
GENERAL COMMENTS (7B)	
Comment 1: We vote to scrap the Hanger at Moffett Field. It is a toxic hazard. .	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 8, 2006	**Received in**: June 2006
From: Ralph Britton, Palo Alto, Calif.	**Submitted Via**: Letter to Rick Weissenborn
Affiliation/Agency: Public member	
SPECIFIC COMMENTS (8B)	
Comment 1: Dear Mr. Weissenborn, This letter is to express my deep concern that the Navy is urging that Moffett Field Hangar 1 be destroyed. This Historic Building represents a unique example of a piece of aviation history that should be preserved. The sheer size of the building serves to illustrate the enormous volume of the dirigibles. Since none of these	**Response 2:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in

aircraft survive, the building alone remains to show future generations the impressive engineering and manufacturing technology that went into creating these huge airships. True, the Macon, Akron and Los Angeles did not, in the end, prove to have a successful military mission. Nevertheless, dirigibles did play an important role in the development of aviation. In spite of its dramatic end, the Hindenburg made numerous successful Atlantic crossings, and dirigibles served for anti-submarine surveillance even in WWI. My father told me that his troop ship was escorted for some days on the way to Southampton in 1918 by dirigibles from Great Britain. The Moffett structure is one of the few surviving monuments to the great experiment of lighter-than-air aircraft developed for military and commercial service. This building should remain as a tangible artifact of a remarkable period of scientific and engineering progress. Furthermore, if remediation of the toxic materials is accomplished and the building is once again made usable, it can serve as a museum and a site for various scientific and other valuable educational programs. Even if the cost of preserving is marginally higher than destruction, it is miniscule in comparison the value of the building as a center for these functions. Considering that citizens of the area *gave* the site for Moffett Field to the Navy, it seems disingenuous that it should now seek to destroy this potential community resource. It rather seems fitting that a thankful Naval Administration would honor the historic depression-era commitment on the part of the Cities of Sunnyvale and Mountain View by retaining this building as a community resource. Furthermore, it is a reminder of the Navy's vital role in that period. Very truly yours, Ralph Britton	the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Joan Brodovsky, San Jose, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
SPECIFIC COMMENTS (9B)	
Comment 1: There is a poster set up for the open house that I suspect is WRONG. It says that the concentration of PCBs in Hangar 1 (I assume in the "skin") is 188,000 mg/kg. That would be .188 kg/kg – or almost 20%. I doubt that. Please clarify. Also, suggest that 1) you don't mislead the public and 2) you don't base conclusions on this data.	**Response 2:** The number on the poster is correct and you are correct that this is almost 20 percent of the sample by weight. In 2003, NASA engaged subcontractors to conduct a variety of sampling in and around Hangar 1. The activities included sampling various media for PCBs (Aroclor 1260 and Aroclor 1268). Six samples were taken from the siding (Skin). The concentrations of polychlorinated biphenyls (PCBs) (Aroclor 1268) varied from 36,000 to 188,000 milligrams per kilogram (mg/kg).

Written on: May 30, 2006	**Received on**: Unknown Date
From: Gregory M. Brown, Tallahassee, Florida	**Submitted Via**: Letter to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (10B)	
Comment 1: (10B.1) I wish to comment on the subject Engineering Evaluation/Cost Analysis (EECA) for Hangar 1. I was an enlisted Navy air crewman during the Cold War era, trained in Hangar 1 with VP-31, and was stationed at Moffett Field with VP-48. I also have 20-plus years experience as a professional engineer and wish to comment on the EECA and the Navy's preferred alternative for Hangar 1.	**Response 1:** (10B.1) The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated

I believe the Navy's preferred Alternative 11--demolition and off-site disposal of Hangar 1--does not balance the many legitimate interests that include protection of public health and the environment, and preservation of a unique physical structure of historical importance. In addition, the EECA only provides risk managers a limited number of alternatives to manage risks while balancing effectiveness, feasibility, and costs. The Navy should reconsider its preferred alternative and propose alternatives that will not only manage the environmental risks posed by polychlorinated biphenyls (PCB), lead, and asbestos containing material, but will preserve the structure and character of Hangar 1. I have the following specific comments:	against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.
SPECIFIC COMMENTS	
Comment 1: (10B.2) Signature page; by definition the EECA is an engineering document. Final engineering documents submitted to public agencies should be signed and sealed by the engineer with responsible charge as required by the State of California Board of Engineers and Land Surveyors.	**Response 1:** (10B.2) Officers and employees of the United States are exempt from registration requirements of the California Professional Engineers Act and the provisions of the California Business and Professions Code. Ca. Bus. & Prof. Code Sections 6704, 6739, 6787. Engineering document submittal requirements mandated under state law by the California Board of Engineers and Land Surveyors are not applicable to the Navy's preparation and submission of the EE/CA pursuant to CERCLA.
Comment 2: (10B.3) Page 3-1; *"The Navy is the lead agency for this NTCRA. As such, the Navy will choose the remedy after conducting all public participation activities, including a public meeting after the publication and release of the EE/CA, a written response to all pertinent questions and comments presented during the public meeting, and a written response to all questions and comments submitted during the public comment period."* This statement is to me an expression of the Navy's assumption of sovereign immunity as a federal agency. A unilateral approach by the Navy that does not include other federal, state, and local agencies as equal partners in the decisions for the fate of Hangar 1 delegitimizes any alternative the Navy may propose. I recommend that the Navy establish a partnering program for Hangar 1 with other applicable public agencies using a framework of consensus decision making. The Base Realignment and Closure Program Management Office West should follow the lead taken by the Southern	**Response 2:** (10B.3) This quote is a statement of the Navy's responsibilities under the CERCLA. As the lead agency, it is the Navy's responsibility to carry out the requirements mandated under CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). EPA, the Water Board and NASA are members of the Moffett Field BRAC Closure Team (BCT). The BCT works closely with the Navy on the progress of all sites at Moffett Field, including Hangar 1. Input and participation from regulatory agencies as well as the public is important under CERCLA and has been incorporated into the revised EE/CA.

Division Naval Facilities Engineering Command with its very successful partnering initiative with the U.S. EPA Region 4 and the State of Florida. Consensus decision making by the Navy in partnership with other applicable public agencies reduces life-cycle costs, balances interests, and results in better quality decisions with more optimum long-term outcomes.	
Comment 3: (10B.4) Table 3-3; Table 3-3 states that the "*Material is a mixed waste governed by RCRA.*" Mixed waste is typically defined as a waste that includes both RCRA and low-level radioactive waste. I do not believe that the Toxic Substance Control Act (TSCA) uses the term "mixed waste" to describe a waste that contains both TSCA and Resource Conservation and Recovery Act (RCRA) waste.	**Response 3:** (10B.4) The EPA defines a "mixed waste" as a "waste containing both radioactive and (chemically) hazardous waste." The Navy appreciates the comment and has made the needed correction in the revised EE/CA.
Comment 4: (10B.5) Page 3-19; "*Unless discussed here, the balance of the TSCA regulations governing PCBs are not applicable to this CERCLA response action due to the combination of RCRA and TSCA wastes and the bulk nature of the PCB contaminated siding. Also, TSCA requirements are neither applicable nor relevant and appropriate due to the fact that the PCBs present at Hangar 1 were an integral part of the manufacturing process and not the result of a spill or immediate release.*" According to U.S. EPA guidance (EPA530-R-99-056), PCBs may be subject to RCRA regulations in addition to TSCA regulations when present in wastes which are themselves RCRA listed or characteristic hazardous wastes. RCRA hazardous wastes that contain PCBs are subject to all applicable Subtitle C regulations, including manifesting, treatment, storage, disposal, and recordkeeping requirements. PCB-containing RCRA hazardous wastes are also subject to certain land disposal restrictions. This guidance does not indicate that if a waste containing PCBs is also governed by RCRA, TSCA requirements can be ignored. I hope the federal and state environmental agencies will scrutinize the Navy's claim that TSCA is not an applicable or relevant and appropriate requirement (ARAR). The protectiveness of the proposed remedy may be reduced if TSCA is ignored as an ARAR. In addition, the cost effectiveness of the Navy's preferred alternative will be falsely inflated since disposal costs may be biased low if TSCA is ignored as an ARAR.	**Response 4:** (10B.5) The section was revised as follows: Management and Disposal of PCBs under TSCA TSCA regulations govern the management and disposal of PCBs contained within the siding at Hangar 1. Because the PCBs are integral to the manufacture of the product and their presence is not the result of a spill or release, the siding is defined as PCB bulk product waste. Regulations in 40 CFR, Part 761.60(e) and 761.62(a) govern the disposal of bulk product waste and allow for disposal through a variety of methods. Only those methods specified in 761.62(a) are permissible at the site due to the fact that the siding is also considered RCRA-regulated because of the lead content of the paint. The requirements of 40 C.F.R. Parts 761.40, 761.50, and 761.65 govern the storage and disposal of PCBs and is potentially applicable. All TSCA waste will be managed in accordance with TSCA regulations. Waste that is also considered hazardous waste will be managed under both TSCA and RCRA requirements. 761.180 governs the required recordkeeping and monitoring that apply to PCBs. It is considered potentially applicable.

	40 CFR, Part 761.79~~50~~ provides expanded decontamination procedures. It is potentially applicable to the decontamination of TSCA waste, as well as the decontamination of tools and equipment that contact PCBs during the removal action. 40 C.F.R., Part 61(a)(5)(v) provides disposal requirements for personal protective equipment (PPE) and non-porous surfaces that have been decontaminated. These requirements are applicable to wastes generated during decontamination activities, which may occur as a result of removal and reuse of man-cranes. Table 3-3 has been revised to reflect the changes made to the text.
Comment 5: (10B.6) Page 5-2; "*Alternatives 10 and 11 have advantages over the others by being a one-time action, not requiring any future Navy services or material*." The Navy is vainly attempting to eliminate its environmental liability in the short term by proposing a preferred alternative that includes demolition of Hangar 1 and off-site disposal. The preferred alternative merely transfers environmental risks to another location such as a landfill, particularly if TSCA is ignored as an ARAR. Environmental risks transferred to an off-site location continue to pose a long-term liability to the Navy and federal taxpayers. I suspect the Navy's preferred alternative is institutionally convenient in the short-term for parochial budgeting and scheduling reasons (i.e., "bean-counting.") It may be more rational to preserve Hangar 1 and manage environmental risks on-site. The Navy and National Academy of Science have developed a process called adaptive site management that reduces life-cycle costs and manages long-term environmental risks at Navy environmental restoration sites. A remedial strategy based on adaptive site management should be developed for Hangar 1 that allows the structure and its character to be preserved and used for future beneficial uses while protecting public health and the environment. As a citizen of the United States, a payer of federal taxes, and a registered voter in state and national elections, I have an interest in the quality of the decisions that the Navy makes on my behalf. Thank you for your consideration of my comments.	**Response 5:** (10B.6) Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Beth Bunnenberg, Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Palo Alto Historical Association	
GENERAL COMMENTS (11B)	
Comment 1: Hello. I'm Beth Bunnenberg, 2351 Ramona Street in Palo Alto, and I wanted to address you on historic preservation matters. The EE/CA recommends -- the recommended alternative is demolition. The report discusses historical mitigation measures. In reality, there is no mitigation matter that takes away demolition. The structure is gone. Now then, all the oral histories, photographs, bronze markers, footprint designs, et cetera, are mere shadows of the reality of this magnificent structure. It is on the National Register of Historic Places and has national historic significance. I urge the Navy through this process to have the foresight to save Hangar 1. Alternative 10 appears to be a viable way to do this. The report does discuss the loss of some historic fabric on the roof and the siding. Now, historic regulations regularly allow to replace roofs and to replace siding, whether they be shingles or wood or metal, when they are decomposing. In this case the decomposition is that the hangar is having toxic chemical problems, not dry rot, but the result is the same. The roof and the siding need to be replaced. Therefore, a visually comparable replacement of non-toxic material is a much more desirable historic outcome. Please choose alternative 10. Also, the public has been asking what you would do if Hangar 1 is saved. Suggestions range from a convention center, a major display space, great parties, I hear, and a -- a big favorite is Smithsonian West. There are uses. Please support tradition by saving this structure for future generations and leaving them with the reality rather than mere shadows of what might have been. Thank you.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Walter Carroll, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (12B)	
Comment 1: I believe the Hangar should be renovated – not torn down. While there are many reasons for maintaining it, I think that bringing it up to sufficient repair that people could be housed there temporarily in the event of a disaster, i.e. "The Big One" earthquake, disease care and isolation, or terrorist strike. I don't believe there are any other facilities in the Bay Area that could provide indoor housing for a massive incident. I'm sure the Navy's agenda is to destroy the Hangar. However, if a federal agency could do a feasibility study on this option, and even split the cleanup/renovation, perhaps Hangar 1 could still be used for the common good. Thank you.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Ted Chamberlain, Santa Clara, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (13B)	
Comment 1: My God, I love that it's got its own climate. My name is Ted Chamberlain. I live at 986 Capitola Way, and I'm the first one to speak that lives in Santa Clara. One of the earlier speakers said something about him being here as an 11 year old, he rode his bike over here to watch the first planes land or whatever it was, and he did that on March 3rd of 1933. That's my birthday. This building and I	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property

are exactly the same age. Now -- and I -- I know that I'm not ready to be going, and I hope this building isn't either. My total cholesterol is only 118. My triglycerides are 135, and my PSA is less than 0.1. Now, that's really wonderful information for everybody to know, but the fact of the matter is that's not without my getting some medications. This place needs some medications, too, and it really isn't a significant issue that the cost, I think, is pretty infinitesimal compared to other things that our Government is spending its money on, particularly on what it costs a day in Iraq. I think the suggestions of making Hangar 1 something like a Smithsonian West or SpaceWorld are excellent. I know that it can be achieved. I read a comment in the paper a couple weeks ago, I guess it was, and somebody else alluded to it saying that it's ugly and it should go and, you know, just get rid of it. And I think this was a tongue-in-cheek comment made by the author because the person was probably asked to write the -- you've got to write the negative side. Well, I think beauty is in the eye of the beholder, and I believe it is beautiful and useful beyond a chalk line in the dust. Do not destroy it, please.	owner, which is a separate federal action from the Navy's environmental restoration efforts. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Stanley Chernack, Los Altos, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (14B)	
Comment 1: And do you know why all of you are here today? Because of the action of just one man. I was in the Bureau of Aeronautics in 1946 and we received a letter from the Ford Motor Company. And do you know what they said to us? We will completely demolish Hangar 1, and we will cart it away at no cost. One man said no, Vice Admiral Rosenthal. I worked for him. I'm qualified both as a Naval aviator and a Naval airship pilot. I talk about Moffett Field in a practical way. In 1946 the Department of the Interior came to us and said will you build us an airship that could carry flame-retardant liquid so we can fight forest fires. Every single year we lose thousands of acres, and helicopters don't carry too much, the airplanes	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

are too fast, but the airship can hover, and we can put the fire out. The Navy said no. Be practical about it. Today 9/11 has changed our view about insurgencies. The Coast Guard is chafing at the bit. They want airships to patrol the East Coast from the hangar at Lakehurst and patrol the West Coast with a hangar at Moffett Field. The hangar is about 75 years old. It's good for another 75 years. After all, the Panama Canal locks are over 100 years old and they are still working. There's no problem in retaining it. I flew with the Russians in World War II. It took 999 days to bombard and destroy the City of Leningrad, and when the Germans backed out, they left over 500,000 bodies at Leningrad. And today it's the most beautiful city in Russia. It's called St. Petersburg. It has statutes and avenues. It's beautiful. And if the Russians can remove 500,000 bodies and build a city like Leningrad, somebody should be able with ingenuity to remove whatever contaminants you have here at the Moffett Field. (Applause.) I made my point. I could say more, but I am not Caesar who said I came, I saw, and I conquered. Not yet.	The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: John Chesnutt, San Francisco, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: U.S. EPA	
GENERAL COMMENTS (15B)	
Comment 1: I'm a manager in the Superfund federal facility cleanup office at the US Environmental Protection Agency Region 9 in San Francisco. We're the lead regulatory agency overseeing the Navy's cleanup efforts at the Moffett Superfund site, and I wanted to take this opportunity to briefly speak to the EPA's interest in the Hangar 1 removal action. The EPA's primary concern is that the Navy's response action addresses both the exterior and the interior of the hangar because environmental samples from both indicate that the hangar presents a threat to the public health and the environment. The Navy began addressing the exterior contamination, as Rick has presented, in October of 2003 by recoating the corrugated siding through a time-critical removal action. They contested the need	**Response 1:** The Navy has revised the EE/CA to address Hangar 1's interior. Remediation of the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks) were evaluated based on the three EE/CA criteria: implementability, effectiveness, and cost, while taking into consideration site-specific conditions. The revised EE/CA evaluated a broad range of removal alternatives that control contamination by either: coating or encapsulating the hangar; removing the siding and addressing the exterior and interior components of the hangar; or controlling the contaminant migration by collecting and treating stormwater runoff.

to address the interior pursuant to CERCLA, although the hangar had been closed and fenced off since the discovery of the contamination as he also indicated. So in February of 2005, the EPA and the San Francisco Regional Water Quality Control Board lodged a formal dispute with the Navy under our federal facility agreement to have the hangar addressed as a whole. Through an informal dispute resolution, we did agree to disagree on the applicability of the CERCLA law itself to the interior of the structure primarily because the Navy agreed to address the hangar in its entirety by conducting the non-time-critical removal action. We understood the Navy's need to address the hangar quickly before the coating wears thin, and they also committed to address the substantive aspects of historic preservation requirements, having identified them as an applicable or relevant and appropriate requirement. Like the public, the EPA's reviewing the engineering evaluation/cost analysis, particularly looking to see that it is consistent with our dispute resolution in that it provides a number of options, both preservation and destruction, that holistically addressed the structure's contamination. We provided some verbal comments to the Navy at the May 11th Restoration Advisory Board meeting and will be submitting formal comments within this period. If the Navy's selected alternative does not permanently address the contamination, both the exterior and the interior, when we'll require that the Navy conduct a follow-on remedial action that does another feasibility study and a record decision with another opportunity for public comment. Thank you.	Additionally, the revised EE/CA evaluates the alternative of permanent removal of contaminants. Within the removal alternatives that control contamination are four methodologies for remediating the interior components: acrylic coating; epoxy coating; asphalt-emulsion coating; and polyurethane foam coating. These four methodologies for remediating the interior components are evaluated in Section 4.0 of the revised EE/CA. Alternatives that leave contaminants of concern in place may require additional CERCLA documentation.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Melvin Cobb, Mountain View, California	**Submitted Via**: Letter
Affiliation/Agency: Public member	
SPECIFIC COMMENTS (16B)	
Comment 1: (16B.1) My comments refer to text contained on specific EE/CA page numbers, the issue associated with the topic, and a summary of my question for the Navy. **EE/CA Contents (p. ES-5)** "Alternative 11 is recommended because … it: • Is technically feasible based on commonly used demolition techniques and demonstrated proven approaches. … • Uses widely available conventional construction equipment, services and skilled workers. • Provides the highest degree of protection of the public and the environment." (p. 4-42) "The required services and material for implementation of this alternative would be readily available and skilled workers with directly related experience would be available as well. Issue: The Navy position seems to be that Alternative 11 (Demolition) will be extremely routine, risk-free and allow no release of toxic materials to threaten people or the environment, both during demolition and removal phase, and after demolition. The EE/CA contains no justification, evidence, or any concrete examples or precedents that would tend to support these broad claims. These claims are particularly hard to believe, considering the immense size of the building, its extreme height, the high wind levels present above the ground, the fact that many siding panels are stuck to each other and to the supporting structure by paint or corrosion, and that high contaminant levels have been identified	**Response 1:** (16B.1) Similar Robertson Protected Metal siding panels have been successfully removed in a similar project utilizing wet methods. The siding panels at Hangar 1 will be removed using the same protocols. All the demolition debris will be contained within the curtain wall footprint. To further protect the public continuous air monitoring will be conducted during all phases of the project to monitor for any fugitive dust that escapes the exclusion zone. The air monitoring will comply with the substantive requirements of the Bay Area Air Quality Management District (BAAQMD).

throughout the building. There simply are no direct precedents nor even remotely similar precedents for demolishing a building of this height, surface area, and self-supporting construction that contained similar toxic materials. Preventing toxic materials from escaping from roofing and siding materials at heights of up to 210 feet above ground will require unprecedented and extremely expensive contaminant control procedures. Further, everyone in the work area will have to wear sealed protective clothing with special respirators, and personnel, vehicles and equipment leaving the worksite will all have to be thoroughly decontaminated. Question: Based on these considerations, how do you justify your broad claims that Alternative 11 would be a routine demolition?	
Comment 2: (16B.2) **EE/CA Contents (p. ES-3 and p. 1-2)** "It should also be noted that this response action is not addressing … contamination in or below the concrete foundation because no contamination has been detected in concrete core samples… " (p. 4-39) "Alternative 11 involves the complete demolition of Hangar 1… Final cleanout would include pressure washing the concrete slab flooring of the hangar, followed by analysis and disposal of the rinsate." (p. 4-35) "The removal action would include abatement of ACM, PCBs and lead present within the hangar and cleaning of exposed Hangar 1 surface, including the frame and floor. Cleaning would be conducted using pressure washing to rinse the dust to the floor where both contaminants and water could be recovered for treatment and/or disposal." Issue: The Navy seems to believe that the concrete flooring is completely sealed such that no contamination can enter or pass through the foundation. This is a totally incorrect perception. Simply because a few concrete core samples did not disclose contaminants does not mean that the entire flooring and foundation can be disregarded as a potential contamination problem. For example, Hangar 1 construction drawings show that the foundation and flooring slab are not a single monolithic block, but consists of many dozens of individually-poured concrete blocks that are separated by wide expansion joints. Both water and dust can readily accumulate in or pass through such large gaps. Furthermore, there are multiple storm drains, and many utility tunnels and conduits for steam pipes, electrical	**Response 2:** (16B.2) Concrete floor slab sampling conducted to date indicates that the Hangar-related PCBs and lead contamination are limited to the surface and near-surface of the floor slab. The core sample results indicate that the concentration of lead (from any source) within the interior of the concrete floor slab ranges from 4.4 to 5.0 milligrams per kilogram (mg/kg). A Synthetic Precipitation Leaching Procedures (SPLP) leaching tests performed on this concrete was non-detect for lead. A PCB result for a different floor core sample was reported 0.0949 microgram (µg)/quantity Aroclor 1268. Groundwater samples from beneath the hangar and sump water samples indicated that the groundwater had not been impacted by contaminants from the hangar. There are no indications that contaminants have migrated through the concrete and therefore, no reason to suspect that they may be present in the soil below the concrete. This NTCRA addresses the contamination from the surface of the interior concrete floor slab to the exterior face of the hangar siding. Upon completion of the removal action, the paved surfaces from the footprint of the hangar to the outer edge of the perimeter stormwater trench will be cleaned and confirmation samples collected. In addition, during the removal action best management practices and proper equipment will be used to contain contamination. More detailed information on these procedures will be outlined in the Removal Action Work Plan.

cables, helium piping and telephone lines that all penetrate the floor slab or foundation. These are all obvious problem areas that can harbor contaminants, leak them into the ground or transmit them into the storm drains or into adjacent utility spaces. Question: Since the pressurized washing that you now propose, or past conditions such as leaked rainwater, floor sweeping, normal traffic, or wind currents would easily cause to contaminants to flow into or fall into expansion joints, storm drains and utility services, how do you justify your contention that there is not now nor will there be post-demolition contamination that is contained in, under, or around the foundation?	
Comment 3: (16B.3) **EE/CA Contents (p. ES-2).** "Based on these sampling results, Hangar 1 siding was confirmed to be the source of the PCB contamination found in the settling basin." (p. 1-2) "These investigations led to the conclusion that the siding material on Hangar 1 was the source of the PCB contamination." Issue: The siding is not the only possible source of contaminants. The US Navy and US Air Force were the largest consumers of many different products containing Aroclor 1268 and related fireproofing PCBs during the 5 decades that such products were sold. Every US military aircraft, starting with the Macon, and continuing on until all PCBs were banned from military use, has contained a substantial amount of PCBs for fireproofing the large amounts of foam insulation, tires, flexible rubber, hard rubber, composite materials, electrical wiring, floor panels, wall paneling, engine accessories and fittings, brake linings, and fabrics. Consequently, it is entirely possible that some of the present interior PCB concentrations may have originated from previously stored salvage materials, previous shop and retrofit operations, and PCB contaminants released during aircraft maintenance, and aircraft stripping and refitting operations over the years. Additionally, the reason why the expensive PCB-containing siding was used in the first place was because the Navy and the California fire marshal both required that all materials and supplies used to construct the Hangar, from the foundation up to the topmost roofing membrane, had to be as fireproof as 1932 technology permitted. Consequently, many of the interior building materials also contained	**Response 3:** (16B.3) Despite one major and many Zamboni floor cleaning efforts by NASA (approximately every two weeks from 2000 to 2003), Aroclor 1268 was detected by wipe samples from the concrete floor above the EPA clean-up level of 10 ug/100cm^2. The results indicate a continuous deposition of Aroclor 1268 to the floor. These results prompted sample collection by NASA from the Hangar (paint, window putty, siding, dusts) which were analyzed for PCBs. The results of these sampling events show the deteriorating siding to be the most likely source of PCB contamination. Upon completion of the removal action, the paved surfaces from the footprint of the hangar to the outer edge of the perimeter stormwater trench will be cleaned and confirmation samples collected. The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks).

PCBs and asbestos. Note that the most extreme PCB levels have consistently been found on the inside of the Hangar, and if non-siding sources prove to be major PCB contributors, a thorough inside cleanup can mitigate the problem while minimizing the demands on an exterior solution. Question: What evidence can you cite that positively eliminates all other materials and contamination sources, such as aircraft maintenance residues and all interior building materials, from contributing to existing PCB concentrations inside the Hangar?	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Amelia Davis, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (17B)	
Comment 1: Ever since I was a kid I knew about Hangar 1. I always thought it was enormous on the outside and was far more impressed when my father showed me the inside. He worked there and even though I was too young at the time to understand what he did, I do remember him excitedly telling me all about it. I marveled at the idea that it used to be home to one singular blimp. It seemed impossible! Later I got to attend a home school science class inside. I was so excited to finally get to be in there so much. Each time I would imagine the blimp. I remember all the air shows where people would pack inside to keep out of the burning hot sun, avoiding the inevitable sunburn if left in the sun. I loved the little museum, and went when I could – a total of 5 times. Now it is a landmark of home. When I am coming home from school I pass it and I know I am home.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: May 16, 2006	**Received on**: Unknown Date
From: Ben Debolt, Mountain View, California	**Submitted Via**: Written comment to The Honorable Donald C. Winter
Affiliation/Agency: Public member	
SPECIFIC COMMENTS (18B)	
Comment 1: The Honorable C. Winter, I am a 52 year resident of Mountain View, a retired school principal here and a retired USNR officer. I was the founding president of the Moffett Field Historical Society. Saving our Hangar 1 is of vital importance to me. I ask your help. The Navy has decided that the only solution to mitigating the toxic materials in the corrugated metal skin of the historic Hangar 1 at the former Naval Air Station Moffett Field in Mountain View, Calif. is demolition of the historic building. I/we absolutely refuse to believe this is a responsible plan, because there are viable alternatives. To add insult to injury, the Navy's plan includes leaving a "crime scene chalk outline" of the building as a reminder of its historical relevance to the region. How shortsighted and irresponsible! By adding an incrementally small amount of money to what the Navy will have spent on clean-up efforts at the former military base, this wonderful structure can be restored to its former iconic stature. The difference in cost between destruction of the building and saving it is approximately $12 million – around 5 percent of the total clean-up costs for Moffett Field. That averages out to only $35 per square foot to save the entire building. It would cost hundreds of millions of dollars today to build something similar, and you can't even construct a simple office building in Santa Clara County for less than $200 per square foot.	**Response 2:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

By restoring this magnificent building, the Navy would also make it possible to reutilize Hangar 1 in the future as an educational facility housing the real artifacts of the region's aerospace research and history. The formal comment period on the Navy's Engineering Evaluation/Cost Analysis (EE/CA) ends on June 5, 2006. I ask that you please do everything you can to convince the Navy's Environmental Offices that demolition is not the answer. They need to do the right thing and step up to their responsibility at Moffett Field, and not only restore Hangar 1, but restore the Navy's credibility with the community at large. Please help us save Hangar 1 for future generations! Thank you, Ben Debolt, Mountain View, CA	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Clifton Demartini, Campbell, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
SPECIFIC COMMENTS (19B)	
Comment 1: The Hangar 1 building is a landmark in the community, important to many. There appear to be questions remaining regarding the full costs for removal (Alternative 11) versus Alternative 10. The differences seem to be small. Alternative 10 will preserve the structure for generations.	**Response 2:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: R.W. and J.E. Dommus, La Luz, New Mexico	**Submitted Via**: Comment form
Affiliation/Agency: USN Retired	
GENERAL COMMENTS (20B)	
Comment 1: We are USN (retired) and extremely knowledgeable in Naval Air history. There are few reminders for future generations of the USN airship/blimp era. Hangar 1 is a true historic landmark that deserves to be preserved for our future generations. We would gladly help by distributing any material in our area.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Dorith Endler, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (21B)	
Comment 1: Please preserve Hangar 1 for future generations! Preserve history!	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Diane Farrar, Moffett Field, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: NASA Ames Research Center, NASA Research Park	
GENERAL COMMENTS (22B)	
Comment 1: This is just a question for the record might be too specific for this forum, but it does relate to environmental issues. Recently someone in toxicology tried to convince me that PCBs are not carcinogenic to humans if they are ingested, only if they are inhaled, and I just am posing that question for the record. It might be relevant to demolition costs and other matters. I certainly am not a fan of PCBs and want to protect the wetlands, but I'm just curious about this claim.	**Response 1**: The International Agency for Research on Cancer and the Environmental Protection Agency classify PCBs as a probable human carcinogen. The National Toxicology Program has concluded that PCBs are reasonably likely to cause cancer in humans. The National Institute for Occupational Safety and Health has determined that PCBs are a potential occupational carcinogen, but no route of exposure was singled out by the agencies as posing more or less of a threat.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Bill Gaunt, Sunnyvale, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (23B)	
Comment 1: My name is Bill Gaunt. I've lived here for 47 years in Sunnyvale. I'm from 717 Hebrides Way. And my throat is getting dry. What I wanted to say was in 1950, we came down here from Seattle to visit my aunt who lived in Palo Alto, and I was 16 years old. And we drove down Bayshore Highway when it was "bloody Bayshore," and the first thing I saw was Hangar 1. At 15 years old, it really, really impressed me, and I just pray that you guys will change your minds because I'd like my grandchildren to see it and be impressed like I was. You know, there's been so	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

many changes in this area. When I got -- when I got here in '50, all the roads behind us, the cities, all this, that was all prune -- oh, thank you. They were all apricot and prune orchards. The main road through here was a dirt road. I can't think. I've been on it a million times. The main road that goes right down through San Jose and clear up to Palo Alto. Stevens Creek Boulevard. It was a dirt road when I came here. It was nothing but farmers selling their wares on the side of the street. We went up Blossom Hill Road, and Almaden Valley was nothing but a valley of blossoms. The fragrance is something you would never -- you would remember even as a 15 year old. Now all that is gone. They put up houses. The fastest growing city in the United States, San Jose was, if I'm not incorrect, 18 years in a row. That was the Almaden Valley that got consumed, and they went north -- went south of here. Now, the last thing. The thing that everybody has honored and cherished, Hangar 1, you guys want to tear down. I mean, there are places all over the United States where they kept historic -- they kept things going. The national parks. Everything that -- the monuments all over, the Civil War monuments, the Revolutionary War. I mean, for crying out loud, for the money you guys are talking about, can't you just save this? This is important to this area and this community, and I'd really like you to take a second thought, and I want my grandchildren to see that building.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Carl Gillespie, Jr., Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Retired NASA	
GENERAL COMMENTS (24B)	
Comment 1: I'm Carl Gillespie, Jr. I live at 4142 Amaranta Court in Palo Alto. The gentleman a while ago mentioned that there's a good deal of aviation history in our country. If you go back to the Wright brothers, and I've been back where the first flights were made. That's there. You can go see it. I can take the kids and the grandkids and go there. There's also the -- the Lindbergh flight in 1927 across the	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

North Atlantic, and, of course, you can go into the building in Washington DC and see the Spirit of St. Louis. Another thing is the hangar in 1933, '32-'33. Again, the last speaker, the other speaker, did speak about the history there. We -- we have come a long ways. I remember early in his presidency, President Jack Kennedy called for the building of a spaceship to go to Mars -- to go to the moon and to return safely within this decade, and, by George, we did it, and those spaceships are preserved. There is -- we have two machines walking around on Mars. That's been there for about two years now, and they are still working. Don't you ever believe that everything associated on the ground here on Earth will be preserved for our kids. The -- one minute. The history, there's all kinds of things. There's the Alamo, the Golden Gate Bridge, the Space Needle in Seattle. You know, if --I can't -- I spent some time in Texas. I know if I took two men and -- one of them with a bulldozer and one with a wrecking ball, and we went to the Alamo and started working on it, it wouldn't be long before it would be stopped. And I call you ladies and gentlemen to stop this. Thank you.	The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Frances Grabau, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (25B)	
Comment 1: I'm just across the street. If you think about 101, I'm just on the other side. So I look at the airport all the time with the hangars and so forth. I've also followed the difficulties that they found with troubles on both the buildings and the grounds, and I have attended the -- from time to time the cleanup that has gone on, and I appreciate it very much. Thanks to the Navy for doing this and carrying it on, and I hope to see it happen more. And thanks to the people who are interested enough to turn out like this. Thank you. I'm an ex-pilot. I'm a history buff. I have something to say, though,	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

about too emotional attachment to the hangar. The most important thing we have here is the health of our citizens. I was shocked when shortly after the time that I bought my house that -- to discover that this is a hotbed of pollution around here from Fairchild, et cetera, from the different companies that built here, and then, in addition, the airport and the buildings. So I think we have to remember when we're looking at this that the first thing that comes is cleanup beyond all reasonable doubt because all these people who are in the neighborhood are counting on having a healthy environment. So my encouragement to the Navy is be sure that you keep a balanced look at all the values of the community, and while I love history and go everywhere to look at all of the historical places here in California, the first thing I did was to learn the history and to look at the places here that have made this a wonderful community, but don't get carried away by the passions. Look at it reasonably. Look at it value wise, budget wise. Keep it balanced. But we must get rid of the pollution. Thank you.	The Navy is also working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Sanford Gum, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Mountain View Kiwanis Club	
GENERAL COMMENTS (26B)	
Comment 1: I may be one of the -- one of the first civilians in Hangar 1. I was born in 1922 in San Jose and started flying at age 12, and I remember distinctively in 1933, '33, the Macon was flying over, and my buddy and I, only the second time in my life -- that was the first time I ever cut school. We got on our bicycles and we rode out to Moffett Field to see the plane coming in -- the plane -- the dirigible coming in. See, I've only been flying since -- I have a pilot's license for 65 years, a Navy pilot for 33, and -- thanks. You're taking my time. But I realize there's a balance between the historical and the practical. I'm more of a practical. My wife is more of a philosophical. So 63 years we've had a lot of good discussions. But save a life? Yeah, it is. You know, that's what we want to do. I believe that those of us	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

that -- that believe that we own the land because we're natives of our country, and we have the will and the desire and the know-how to save this life. Thank you.	

Written on: May 18, 2006	**Received on**: May 18, 2006
From: Jeanne Haxton, Mountain View, Calif.	**Submitted Via**: E-mail comment to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (27B)	
Comment 1: There was a recent, extensive article in the San Jose Mercury News about the possibility of a bird flu pandemic, and the fact that little is being done to prepare for such an emergency in our area, although Santa Clara County is evidently in the forefront of this kind of preparedness. One of the main things that was said to be needed was a large facility that was completely outfitted with medical supplies, food, beds, medical staff on call and so forth. Hangar 1 immediately came to mind as the perfect size, location, etc. As long as it could be made safe, i.e., toxic materials removed and/or neutralized, using this building for such a purpose would appear to be ideal for everyone. Since our government appears to be concerned about the pandemic possibility, it would seem likely they could provide funds to help bring the facility into a safe condition. Jeanne Haxton, Mountain View, CA	**Response 1:** Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Anne Hess, San Jose, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (28B)	
Comment 1: The hangar should be saved! Keep the structure, cleanup and reuse the inside. The US is lazy with its historic buildings. Please don't lose the opportunity to save this one.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Gerard Heyenga	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Concerned citizen	
GENERAL COMMENTS (29B)	
Comment 1: I've done work in this area, and I feel that Hangar 1 represents a problem that's invasive throughout not only this country, but this world. It's estimated that about 4 billion pounds of toxin is released into the US environment in the last year, per year. And America is a clean country. Can you imagine what it's like in other countries? So Hangar 1 has a problem. Maybe we could use this as an opportunity to go and see let's deal with the problem, let's use the community	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

that we have, and that includes all the universities, includes the Navy to go and say is there any way that we can use the latest technologies to either immobilize these toxins, change them in situ rather than moving them off somewhere else to another community? Because we're going to come to a point when there's no point to move these toxins to another place because it's all contaminated, and it makes no difference. So maybe this is an opportunity, if nothing else, to draw people together to say let's deal with this, and in time, let's not, you know, drag it out, say we have 12 months, 24 months to come up with solutions within our community, within the universities in our community, at Ames, to come up with a decent solution, and, if that fails, then maybe only then say, okay, the ultimate then is to actually remove it. Thank you very much.	The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 31, 2006	**Received on**: May 31, 2006
From: Mark Hirsch, Fremont, California	**Submitted Via**: Fax to Rick Weissenborn, E-mail to Rick Weissenborn, Written comment
Affiliation/Agency: New Tech Law Group	
GENERAL COMMENTS (30B)	
Comment 1: I am writing this letter in response to the article about the hanger at Moffett Field. That hanger is a very, very unique resource that is irreplaceable. I am very proud to say my grandfather was one of the individuals that formed a group that bought the land which was then given to the federal government which then became Moffett Field. Additionally, my grandfather, who never flew on a plane in his life, was able to go on the inaugural flight of the Macon, in consideration of this donation. I think it would be a tragedy to let this unbelievable resource get away from us and I think we must do everything we can to try to preserve it. I am in very much support of preserving this resource.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Carleton Hoffner, Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (31B)	
Comment 1: I've lived here for 30 years. I don't know any of you people. My positions are strictly my own. I come from a third generation Navy family. I'm a graduate of the Naval Academy. I'm a civil engineer. I was formerly a director of maintenance for the Navy on the West Coast, and prior to that was responsible in Washington DC to provide input and personal justification to the Congress for Navy construction. What I've heard tonight is a lot of things, and they are very emotional. Hangar 1, and I personally -- I have a personal relationship with that hangar. I've been through it. I've been through all the catwalks. I've been up on top of it a number of times. I was responsible for having it -- the siding changed back about 25 years ago when I worked for Naval Air Systems Command in Washington. The thing is a marvel. When it was -- when it was built it was an outstanding engineering feat. It was designed for a single purpose. It was to house an airship that was part of a glorious field in those days. Unfortunately, that glorious era ended when the Macon and its sister airships no longer were serviceable, had crashed and so forth. This facility became obsolete when the Macon left. It has been used for a number of things over a number of years, including P2Vs. The Army had it for a while. P3s and so forth. I was through it at the time when the P3s were there and personally inspecting it. The facility is not going to last forever without considerable work being done inside. We're not talking about just taking the hazardous waste and so forth that were part of what you have to remove now, but if you -- if the Navy, in fact, does spend extra money and replaces the thing and makes it so that it's useful for some purpose henceforth, I'm not sure what that purpose is. It has not served an adequate function since the Macon crashed. The P3s were in there. It has its -- it is the most energy inefficient building I have ever observed because it has its own weather system inside. It is	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

almost impossible to make that building where you do not lose heat. If you want to keep the working surface where people don't have to wear gloves and work on the aircraft, you have to keep the heat, and it does nothing but go up into the rafters. The Navy has a responsibility to correct the pollutions that were made in it. Congress will fund that. Congress would be very unhappy if the Navy spent, and all of you should be very unhappy if the Navy spent a lot of money on something that had no further function for the Navy. MS. TENNYSON: We need to wrap up your time. MR. HOFFNER: Thank you. I will. Recognize that once the facility is either -- is left -- if it's left in place, it's going to be -- continue to be a financial sponge because it doesn't stand on its own. It requires additional funding just to keep it maintained and operating. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Eberhard Holweger, San Jose, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (32B)	
Comment 1: I strongly recommend that the toxic clean-up of Hangar 1 continue in order to preserve this landmark of US aviation history. While it appears almost symptomatic that military bases have polluted the environment (Fort Ord, Alameda), it is necessary to undo past sins of omission – for the good of the environment, the reputation of the Navy (in this case) and for the civilians living near military bases. Hangar 1 has a rich history and I gladly see my tax dollars being spent for a needed, peaceful purpose. Preserve Hangar 1.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Gus Holweger, San Jose, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (33B)	
Comment 1: And I thought it wouldn't happen, but my predecessor just stole my thunder. I am -- I grew up Friedrichshafen, the very birthplace of the Zeppelin, and I was there in 1997 when the prototype of the new Zeppelin NT was being built. And I was privileged to take a videotape of the building of that prototype which now circles Lake Constance, as my predecessor said, and its twin brother is cruising over Yokohama, Japan. It's a much smaller version of the Zeppelin. It has a passenger cabin for 12 passengers. One for 19 passengers is under construction. And so dirigibles are alive and well and much safer, and the technology, as my predecessor said, is far advanced to what we saw in the '30s. So I wanted to tell you that, and if you go to Friedrichshafen, you can take a cruise of the Swiss Alps and the lake. It's about $240 an hour and that will be a memorable part of your vacation if you choose to do that. But the other thing I wanted to mention, and that's much closer to what we have been hearing all night and what we are discussing, and that is that we have heard an awful lot about costs and why they are being incurred and so forth. And I always like to look at the other side, and that is the potential use of a decontaminated Hangar 1. And I think there were so many good suggestions, and if you would just think about the potential in revenues, it would make up for those millions of dollars that are being spent for decontaminating Hangar 1 in no time flat. And I was also not too long ago at the Hiller Aviation Museum, and I was most impressed with the aviation history of California and the West Coast, and if all this could be brought together at a refurbished Hangar 1, I believe we would have a greatly enhanced landmark, which it already is in its own right. Thank you.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Carl Honaker, San Jose, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Save Hangar One committee	
GENERAL COMMENTS (34B)	
Comment 1: The first thing I want to do is thank all of our friends and supporters of the Save Hangar 1 movement for showing up tonight. It's both a good news story and a bad news story. The good news story is we have a tremendous amount of public support this evening. The bad news is a tremendous number of them were turned away at the door because we do not have sufficient room here for a meeting for that number of people. I want to thank the NASA public safety folks for making sure that we're all safe in this building, but the unfortunate circumstances are that the Save Hangar 1 Committee asks that we have another public meeting to allow those who were not able to come in today to make their statement. Most of the folks here know I was the last executive officer at Moffett Field, kind of an emotional connection to this facility and especially Hangar 1. I was also a founding member of the Moffett Field Historical Society and the vice-president of the Air Club of Northern California. My connections here go on and on. Larry Shapiro asked a very good question, so I won't ask it again about how many people support the movement here, but I did want to find out how many of you heard about this through posters and things that you saw in town. Just raise your hand. That's great. So the movement was working. It's nice to have articles and other things that reflect our concerns, but it's really nice to have that grass roots effort of people out there in the streets handing out flyers to let people know about this. I also want to thank those of the Greatest Generation for turning out today. It's not easy for those folks to be here, so give yourself a big hand for being here. There are other things you can do, folks, to help this cause. There's a petition signing out in the lobby, if you want to catch that on your way out. We'd be happy to give you another Save Hangar 1 sticker if you'd sign up. We've got letters that you can send to your elected officials, easy letters, form letters, or you can write your own. We've got the	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

addresses for you. And, of course, the written comment sheet that the folks from the Navy have brought along is probably your most direct way to make a comment this evening. We encourage you to do that. Everybody here probably already knows my position on this thing. It's -- aside from the article I wrote and some articles that Lenny has written and others trying to convince folks that we need to take another look at this, the potential incremental cost for restoring the hangar versus demolishing it is what we consider to be almost inconsequential. It's less than 5 or 6 percent of the total outlay that the Navy is going to spend on their mitigations at Moffett Field, and so we need to make sure that the EE/CA properly shows that. I just wanted to make sure that everybody knew that what the Navy intends to do with the demolished hangar is basically the same thing as a crime scene. They want to put a chalk outline around the dead body and put a stake in the heart of the hangar. I think that it's extremely short-sighted and disappointing. For a little bit more effort, the Navy can be a hero to the local community instead of a villain.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Jane Horton, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (35B)	
Comment 1: I'm a native of the Bay Area. I've lived in Mountain View for 31 years. On Whisman Road, I'm across the street from a Superfund site. My home is under remediation for contamination, and this is paid for by responsible polluting parties. They are not the Government, but private industry all over the country is being charged for cleanup, and they are doing it and being held responsible for cleanup. I'm just throwing that out as a thought on expenses for cleanup. This hangar is part of our history, and it's an example of an amazing structure. It was made before there was computers, and it's part of an era of excellence and creativity. My 70-year-old neighbor's father helped build this hangar. My mother	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative

grew up in Oakland and took the train past the hangar on her childhood summer vacations to the beach. It's an engineering marvel. It's very short-sighted for it to be torn down. In my experience the Navy has not always been quite accurate in cost prediction. In fact, they have a reputation of underpredicting costs. So that my expectation is that the teardown will be at least double what they predict. But how do we put a price on the historical value of the hangar? It cannot be replaced ever, and it is part of our history. If we took two minutes of the cost of this war in Iraq, we could spend that money to make the hangar safe. It's impossible for me to believe that we can put men on the moon but that we can't save Hangar 1. Thank you.	evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Bill Hough, San Jose, California	**Submitted Via**: Letter
Affiliation/Agency: Public member	
SPECIFIC COMMENTS (36B)	
Comment 1 (36B.1)**:** The Navy's EE/CA that recommends tearing down Moffett Hangar 1 is a flawed document that "back in" to a predetermined conclusion that the Navy had reached a year ago. During the summer of 2005, the Navy's position re: Hangar 1 was made clear at Restoration Advisory Board meetings held at Mountain View City Hall. The reaction from the public was strongly opposed to demolition. This opposition was also expressed by members of the community at an August 18, 2005 meeting at Moffett Field. After this widespread criticism of the Navy's demolition proposal, they agreed to do this EE/CA, although the results indicate that the study was simply conducted to reinforce the course of action that the Navy wanted to take all along. An Article in the May 19, 2006 Mountain View Voice indicates that NASA's 2003 engineering analysis estimated the cost of tearing down the hangar would exceed	**Response 1:** (36B.1) The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

$30 million, not the $12 million claimed in the EE/CA. This higher, more believable, number bolsters the case for an alternative action, one that would stabilize the hangar while ensuring it be preserved and used by future generations. Unfortunately, NASA did not release its study in a timely manner, proving that the fix is in: the government is determined to destroy the hangar, despite the strong support from the community to save it. The Navy's EE/CA is fundamentally flawed. It justifies an already-reached conclusion by low-balling the cost of demolition. It also completely ignores the community's strong desire to see the hangar preserved as stated at numerous public forums during 2005. It's time to discard this bogus study and prepare an honest assessment that meets the joint goals of protecting the environment and preserving history. These goals need not be mutually exclusive.	
	Submitted Via: Oral comment at public meeting
Comment 2: (36B.2) I grew up here in the Valley, although I just got back from a 20-year stint in New York. And I can tell you that in New York, they let Penn Station get demolished back in the early '60s, and they're still kicking themselves for that. More recently, there was a certain act of mass murder committed in New York, and officialdom in New York is trying to inflict a very unpleasant replacement for the World Trade Center, and there's a grass roots organization on the Internet, the Twin Towers Alliance. You can Google them at twintowersalliance.org or dotcom and sign their petition because they have the same fight going on back in New York as they have going on here, lack of -- lack of respect for history and vandalized monuments that were destroyed. Well, the less said about that the better. The Navy's EE/CA that recommends tearing down Moffett Hangar 1 is a flawed document that backs into a predetermined conclusion that the Navy had reached a year ago. During the summer of 2005, the Navy's position on Hangar 1 was made clear at the Restoration Advisory Board meeting held at Mountain View City Hall. The reaction from the public was strongly opposed to demolition. This opposition was also expressed by members of the community at the August 18, 2005 meeting at Moffett Field. After this widespread criticism of the Navy's demolition proposal, they agreed to do this EE/CA, although the results indicate that the study was simply conducted to reinforce the course of	**Response 2:** (36B.2) The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

action the Navy wanted to take all along. An article in the May 19, 2006, and that's wrong, it should be, I think, July 19, 2006, Mountain View Voice -- no, I'm sorry. That is the right date. May 19th, 2006 Mountain View Voice indicates that NASA's 2003 engineering analysis estimated that the cost of tearing down the hangar would exceed $30 million, not the $12 million claimed in the EE/CA. This higher and more believable number bolsters the case for alternative action, one that would stabilize the hangar while ensuring it be preserved and used by future generations. Unfortunately, NASA did not release its study in a timely manner proving that the fix is in. The Government is determined to destroy the hangar despite the strong support from the community to save it. The Navy's EE/CA is fundamentally flawed. It justifies an already-reached conclusion by lowballing the cost of demolition. It also completely ignored the community's strong desire to see the hangar preserved as stated in numerous public forums during 2005. It is time to discard this bogus study and prepare an honest assessment that meets the joint goals of protecting the environment and preserving history. These goals need not be mutually exclusive. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: David Hoyt, Saratoga, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Spaceworld Foundation	
GENERAL COMMENTS (37B)	
Comment 1: I'm Dave Hoyt, 20785 Meadow Oak Road in Saratoga, and I'm a member of the board of directors of SpaceWorld Foundation. Unfortunately, I'm not nearly as articulate as Seth is, who's also a member of the board and spoke earlier, but I'd like to comment on future use of the hangar. Years ago or a number of years ago NASA, Sunnyvale and Mountain View provided seed funding for an aviation and space-based museum and education center that would be housed in Hangar 1 with a mission to excite and inspire our next generation of scientists and engineers. At the time it was called California Air and Space Center. Now it's	**Response 1:** Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

called SpaceWorld. Now, in raising the large amount of money that you need to develop something on the order of SpaceWorld, you need to be able to present prospective donors with detailed plans for how you're going to use that money. Now, that requires -- that -- Rick earlier mentioned that the community had not been able to come up with money to save -- to find a reuse for Hangar 1. That may be true, but it's also true that there really was never a chance to do that because with the uncertainties surrounding Hangar 1 we could never put together the plans required in order to, you know, in a serious way go out to donors to develop that funding. Now, in part due to that uncertainty regarding to Hangar 1, NASA and SpaceWorld Foundation are now working on a much scaled-back effort that will use part of this building and also the tent across the plaza. Now, we hope that this will be an interim step toward a full SpaceWorld in Hangar 1 in the future, but that requires that the building be put into an environmentally sound condition so that a public and private consortium can create a world class facility. What better thing can we do with this incredible historic facility than to put it in the condition where it can be repurposed to excite, inspire and train our next generation of scientists, engineers and explorers? I urge the Navy and all responsible public officials to include the potential future use of this hangar in their decision-making process. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Judy Huang, Oakland, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: San Francisco Bay Regional Water Quality Control Board	
GENERAL COMMENTS (38B)	
Comment 1: I am the project manager assigned to Hangar 1. I will be reviewing the EE/CA for compliance with state laws and regulations and will be providing comments to the Navy. Along with the EPA, the Water Board will require the Navy to address both the interior and the exterior of the hangar. That means that all potential sources of contaminants originating from both the exterior and the interior	**Response 1:** The Navy has revised the EE/CA to address Hangar 1's interior in addition to the hangar's exterior. Remediation of the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks) were evaluated based on the three EE/CA criteria: implementability, effectiveness, and cost, while taking

of the hangar need to be eliminated. One point I would like to emphasize is that under section 13360 of the California Water Code, the Water Board cannot specify a method of compliance nor does the Board have any input on land use issues outside the scope of environmental and human health protection. The Water Board's mandate is to ensure that the selected remedy will protect the environment, human health and comply with all state laws and regulations. Thank you.	into consideration site-specific conditions. The revised EE/CA evaluated a broad range of removal alternatives that control contamination by either: coating or encapsulating the hangar; removing the siding and addressing the exterior and interior components of the hangar; or controlling the contaminant migration by collecting and treating stormwater runoff. Additionally, the revised EE/CA evaluates the alternative of permanent removal of contaminants. Within the removal alternatives that control contamination are four methodologies for remediating the interior components: acrylic coating; epoxy coating; asphalt-emulsion coating; and polyurethane foam coating. These four methodologies for remediating the interior components are evaluated in Section 4.0 of the revised EE/CA. Alternatives that leave contaminants of concern in place may require additional CERCLA documentation.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Georganna Hymes, East Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (39B)	
Comment 1: I'm Georganna Hymes. I live at 140 Azalia Drive. That's in East Palo Alto. And I've been there for 59 years. I was here in 1947 until in the '50s, and the hangar was here at that time. And then when the Navy closed down the base, I was down in the officers club where we had counselors telling us what we would have, and they would not destroy the base. We were made promises at that time, and now the promises are failing. I keep looking around, and I got on my computer. I sent e-mails out to Sunnyvale and Mountain View when they had their meetings. I attended the Sunnyvale one and the Mountain View, I was late getting there, but I attended both of them. And I made my recommendations and I told them get busy because of what the Navy was going to do to us. And I think the people in Sunnyvale were shocked to see a lady walk in and demand that they do something	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

about the Navy. I said I can't believe they are doing this to us. They promised us all these things. Now they've taken away everything from the base. They kicked the military families out the other day. And I said, oh, my goodness. I couldn't help but cry. They said they couldn't live on the base any longer. You can't have the hangar any longer. And I have my grandkids waiting to go to the hangar, and they keep closing it down. Even NASA is stationed outside the gate. I don't think you can do anything there anymore. So what are we doing? Is this the Navy? I can't believe it's the Navy. I thought the Navy -- my husband did a career there, and they always called me the chief, too, because I worked right along with him. And even in Alaska they -- when I get there, they said, okay, the doctors, they are going to help you, they're going up the hill, anywhere you want to go, and I helped him until I left him two years. So I'm used to the Navy. Please, Navy, please, leave the hangar alone. This is for our children, our grandchildren. I know you left. And we do not need any money. They just give away 40 billion overseas. They don't know where it is. They don't know where it is. I get calls all the time from all over the country. The last one was to revamp the Bay Area in 43 minutes. The Pentagon, I told them to save Monterey. I recommended that when I read it, and all that were stationed out here, I recommend save that, too. I said we don't have anything. Do you know what they told me? The nearest station if something happened to us is in Nevada. They said if anything happened to you, it's in Nevada. So think about that. Navy, we want the hangar, and the kids want something to do over there, and we are going to be here to see the hangar redone.	

Written on: May 25, 2006	**Received on**: Unknown Date
From: Robert Kennel, San Mateo, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (40B)	
Comment 1: (40B.1) Hanger One at Moffett Field is one of the few last remaining items from the short but significant Airship Era. There are no more zeppelins, only by standing next to or inside of the hanger can you fully appreciate just how massive the giant airships were built. No DVD or book can describe the experience. The hanger and the most technically advanced zeppelin ever built, the Macon, show what the Navy was able to accomplish even in the Depression Era. Please don't take away from future generations the unique experience of Hanger 1. Why erase forever such an important part of aviation and most importantly Naval history?	**Response 1:** (40B.1) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.
	Submitted Via: Oral comment at public meeting
Comment 2: (40B.2) I just wanted to read this. "Out of the softening sunset came the airship and the manner of its moving was beautiful. Few inanimate objects attain beauty in the pursuance of their course, and yet to me at least the flight of the ship was far lovelier than the swooping of a bird or the jumping of a horse. For it seemed to carry with it a calm dignity and a consciousness of destiny which ranked it among the wonders of time itself." The Zeppelins are gone. All we have is the hangars. I feel fortunate -- I feel unfortunate that the Zeppelins -- which I don't get to experience that, but I do feel fortunate I get to experience the hangars. I, too, flew over it last night at 1,500 feet. It's a beautiful sight. It's sad that -- it would be sad if other generations -- other generations didn't get to enjoy it. Please save it. Thanks.	**Response 2:** (40B.2) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Terry Kline, Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (41B)	
Comment 1: I'd like to address the land underneath the hangar and -- okay. I wrote my notes on it. I believe the land underneath was the Pastoral Boriagas Rancho that was bought for one dollar. I think through my research the Navy got the land for this facility for one dollar, and the Navy's got a lot of good use out of that one dollar for a long time. So I would hope that the Navy could find a little heart in the bottom of their budget to return a good deal to the people of the here and now. Thank you.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Philip Kurokawa, Menlo Park, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (42B)	
Comment 1: My name is Philip Kurokawa. I live at 804 17th Avenue, Menlo Park, and have been here in the Bay area since -- excuse me -- since moving up from Southern California in 1964. I remember seeing Hangar 1 for the very, very first time when I attended a number of the air shows that were put on there by the Blue Angels, Thunderbirds and other aircraft. I also saw the interior of the Hangar 1 with all the exhibits over the years that I've attended the air shows there. To destroy Hangar 1 to me would be destroying the Washington Monument. Since it is a	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

historical landmark, although it's not identified, as far as I know, as a state historical monument or a federal monument, it's been mentioned that they are in both of those categories. To me it's downright rude or should I say unthinkable for the Navy to say let's destroy this historical landmark, and I encourage the Navy to reconsider their steps and preserve Hangar 1. Like other speakers have said, I would not condone seeing four corners to indicate the demolishment of Hangar 1 in the future. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Elizabeth Lara, Saratoga, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (43B)	
Comment 1: My name is Elizabeth Lara, and I was born and raised in Saratoga, California right here in the South Bay, and I had the privilege to attend all the different open houses held here at Moffett Field for the annual Blue Angels flyover events, normally during the 4th of July. And I just wanted to say that how important I see the Hangar 1 as really being an institution to the development and growth of technology and scientists and really what is now our Silicon Valley. Hangar 1 signifies not only that development but also the -- the interest that we have as humans to understand, you know, our space, our environment and everything that encapsulates around that. As a married woman with a son, I can only hope that, you know, my son can continue and see that same legacy that having not just Moffett Field but the hangar here and what that represents. And the fact that we have a multitude of wealth and a multitude of physicists, scientists in this area, I think that is important for us to hold on	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

to our legacy and to hold on to our history. And so my statement is please do what you can to retain Hangar 1.	

Written on: June 13, 2006	**Received on**: June 13, 2006
From: Bill Leikam, Palo Alto, Calif.	**Submitted Via**: E-mail comment to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (44B)	
Comment 1: Please, do not let the Navy destroy Hangar 1 at Moffett Field. Renovate it. I have just read a lengthy report contradicting an earlier and "erroneous" report that points out how renovation can occur. I hope that you have read it and agree. As a long time resident of the Santa Clara Valley, I urge the Navy to repair this facility and not destroy this great landmark of ours. Sincerely, Bill Leikam, President Muzility, LLC, www.Muzility.com, (A Video Platform), 650-856-3041, Palo Alto, Ca. 94306	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 5, 2006	**Received on**: May 12, 2006
From: Donald Letcher, Mountain View, California	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (45B)	
Comment 1: As a long time Mtn. View property owner – and current resident I strongly disagree with the removal of Hanger 1. LEASE IT TO CLEAR CHANNEL. My Aunt, Emma E.R. Greene, lived in Mtn. View and for 20+ years was employed at Ames Research Development (not N.A.S.A) and I grew up with Hanger 1 (as well as the City of Mtn. View). The City of Mtn. View currently has no "heart" and REFUSES to allow citizen input on any subject – I hope your agency would CONSIDER long-term resident input. (Probably NOT). Why not allow Clear Channel to lease the hanger CHEAP to retrofit it (hopefully with solar) and establish a Concert Center there? – YOU CONTACT THEM. Mtn. View is FORCING Clear Channel affiliates out of Mtn. View with criminal charges (bogus, I believe) and horrendous lawsuits – I think they would be open to offers of an excellent opportunity to continue to supply first-class entertainment to San Jose residents IF THE LEASE FEES WERE EXTREMELY REASONABLE and long-term. Everybody wins (except the City Attorney (Michael Martello) and his TAXPAYER PAID private attorney friends (STUBBS & LEONE)) 1. The landmark stays 2. N.A.S.A. gets the clean-up done 3. Residents continue to get first-rate entertainment 4. The crybaby cops don't have to taser party goers (FED. GOV'T DOES NOT ALLOW TASERS)	**Response 1:** Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

5. Clear Channel affiliates don't have to worry about Martellos threats and legal attacks 6. Shoreline Park attendees don't have to put up with horrendous traffic problems (caused by Martello) Please listen. Thank you. Donald Letcher – 788 No Rengstorff Ave. Mtn. View , Ca 94043	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Mary Levine, Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (46B)	
Comment 1: My father was Navy in World War I. He was asked to leave the Navy and go into service as a civilian with the Navy at the Philadelphia Navy yard. There he supplied and equipped Admiral Byrd's expedition to the South Pole. I worked later at the same aircraft factory in Philadelphia as an inspector, and when we went to Seattle I worked at Boeing. I was the only woman there. When I came here naturally I was interested in the aviation history, and when I was working with Assemblyman Byron Sher's district office on Castro Street in Mountain View, there came a man into our office and talked with me. He was very worried. He was the head of the union for the civil employees here at Moffett Field, and with tears in his eyes he said, "I cannot get the Navy to listen, but our people are getting cancer at a very, very rapid rate." This was over twelve years ago. The contamination was identified. Assemblyman Sher, on his staff I served, was a law professor at Stanford, a former mayor of Palo Alto, a leading environmentalist in California, and in the legislature of our state he developed the Clean Air and Clean Water Acts. He was able to talk to this gentleman and they were able to get identification of contaminants here at Moffett Field. Those cancer victims continued to increase, and they died. Whether or not there is a matter of criminal negligence is a legal	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy will take every precaution to insure that the selected response action will be undertaken in a way that precludes any release of the contaminants to the environment. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

question which must be answered before any demolition is considered. I can't tell you how critical it is to also have figures developed that would have taken care of the contamination at that time and have those figures compared to what you're using now to try to justify the demolition of the hangar. Thank you.	

Written on: May 17, 2006	**Received on**: Unknown Date
From: Linda Lezotte, San Jose, California	**Submitted Via**: Written comment to the Honorable Donald C. Winter
Affiliation/Agency: Public member	
GENERAL COMMENTS (47B)	
Comment 1: Dear Mr. Secretary, The Navy has decided that the only solution to mitigating the toxic materials in the corrugated metal skin of the historic Hangar 1 at the former Naval Air Station Moffett Field in Mountain View, Calif. is demolition of the historic building. I absolutely refuse to believe this is a responsible plan, there are viable alternatives. To add insult to injury, the Navy's plan includes leaving a "crime scene chalk outline" of the building as a reminder of its historical relevance to the region. How shortsighted and irresponsible! By adding an incrementally small amount of money to what the Navy will have spent on clean-up efforts at the former military base, this wonderful structure can be restored to its former iconic stature. The difference in cost between destruction of the building and saving it is approximately $12 million – around 5 percent of the total clean-up costs for Moffett Field. That averages out to only $35 per square foot to save the entire building. It would cost hundreds of millions of dollars today to build something similar, and you can't even construct a simple office building in Santa Clara County for less than $200 per square foot.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

By restoring this magnificent building, the Navy would also make it possible to reutilize Hangar 1 in the future as an educational facility housing the real artifacts of the region's aerospace research and history. The formal comment period on the Navy's Engineering Evaluation/Cost Analysis (EE/CA) ends on June 5, 2006. I ask that you please do everything you can to convince the Navy's Environmental Offices that demolition is not the answer. They need to do the right thing and step up to their responsibility at Moffett Field, and not only restore Hangar 1, but restore the Navy's credibility with the community at large. Please help us save Hangar 1 for future generations! Sincerely, Linda J. LeZotte, Councilmember City of San Jose Council District One cc: Senator Barbara Boxer 1700 Montgomery Street, Suite 240 San Francisco, CA 94111 Senator Diane Feinstein C/o Jim Molinari, State Director One Post Street, Suite 2450 San Francisco, CA 94104 Governor Arnold Schwarzenegger State Capitol Building Sacramento, CA 95814 Congresswoman Anna Eshoo 698 Emerson Street Palo Alto, CA 94301 Congressman Mike Honda 3550 Stevens Creek Boulevard, Suite 330 San Jose, CA 95117	

Congresswoman Zoe Lofgren 635 North 1st Street, Suite B San Jose, CA 95112	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: James Lincoln, Moffett Field, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (48B)	
Comment 1: And I for one, like I told you outside, I'm very upset with the Navy. How many people were stationed at Moffett Field? You're stationed here; right? I was stationed here for 18 years. You're telling me that hangar is an environmental hazard, and you have not sent me any notification to go to the VA or see a doctor. Now, wait a minute, wait a minute. If there's that much of an effect, why haven't people been notified? I told you, and I'm telling everybody else in here, you sat there and said when that hangar is torn down, the problem will be cleared. And the man that was talking about the chalk outline, well, I know what's going on the other side of it. Those are condos that are going to be worth 2-4 million with your own private garage for your airplane. Another problem you've never addressed. Has anybody ever thought of the option Catch-23? That's where the C&O and the Navy get off their butts and bring the P3s back to Moffett Field, put them in Hangar 1. The overflow goes to Hangar 2, and we won't hear any more about an environmental hazard. If you're going to sell me on this thing, then notify me I've got a problem with my health because I'm having problems breathing. Thank you.	**Response 1:** The Navy will take every precaution to insure that the selected response action will be undertaken in a way that precludes any additional release of the contaminants to the environment. Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 9, 2006	**Received in**: June 2006
From: Richard D. Longstreth, Jr., Sunnyvale, Calif.	**Submitted Via**: Letter to Rick Weissenborn
Affiliation/Agency: Volunteer, Moffett Field Historical Society	
GENERAL COMMENTS (49B)	
Comment 1: We must continually look to our past so that we never forget who we are and what we have accomplished. History is not a disposable commodity. Indeed, it is considered so important that it has become a major discipline taught at universities. Any artifact, relic, souvenir or keepsake from the past which aids in the historical narrative has unalienable intrinsic value and should be preserved. Hangar 1 is a gigantic monument to the Navy's Lighter Than Air past, offering a picture window into the era preceding the advent of Heavier Than Air aviation. Most people take HTA for granted and probably do not even realize that LTA came first and laid an important foundation for what is simply considered normal flight today. In his book, The Airships Akron & Macon, Richard K. Smith reminds us of this legacy. I have borrowed from page 178: *Because the rigid airship project was terminated does not mean the experiment was a gross waste of effort and resources. Its development was significant in broadening aeronautical knowledge and in intensifying meteorological investigation; it created legacies of no mean value for the airplane and even the realms of nuclear and aerospace research. Little was known about duralumin aircraft alloys in the United States until the Bureau of Standards investigated them for the Navy; and the latter "encouraged" the Aluminum Corporation of America to undertake the industrial manufacture of duralumin for the Shenandoah's structure ten years before airplanes had any widespread use for the alloy.* *… And the airship alone was responsible for the development of the United States' helium resources. Today, nuclear and aerospace sciences use more helium than the airship ever did. … Too little is recalled of its moments of success, of the promise which many men once thought it had, and most specifically, the ZRS4&5's novel*	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

promise to naval warfare. As flying aircraft carriers they were embryonic; but to this date they remain the only aircraft originally designed to carry and service other aircraft, and no other aircraft of any type has approximated their airplane-carrying performance. The mooring towers, rail masts, and stern beams have long since been cut up for scrap; the mooring circles' tracks pulled up and their roadbeds leveled to leave curious patterns in evidence yet on the fields at Lakehurst and Sunnyvale. Very little public evidence remains of the ZRS4&5 epoch. *… But only at Lakehurst, at Akron, and at Moffett Field is there evidence which adequately testifies to the onetime reality of the USS Akron and the USS Macon. There – in much the same fashion that the great pyramids at Giza proclaim the onetime existence of their pharaohs – the empty airship hangars still stand, providing mute and massive testimony to the existence of the mammoth aircraft, which were aeronautics' first, and last, flying aircraft carriers.* In 1999, in a unique rescue, the National Park Service spent twelve million dollars of the taxpayers' money moving the entire Cape Hatteras Lighthouse in order to preserve a national treasure for future generations. And in 2006, we are quibbling about spending a similar amount to save another national treasure. Hangar 1 is certainly larger than a lighthouse. There is another angle to consider: Suppose the Navy restores the hangar. The ensuing public relations bonanza would silence critics and gladden lots of folks who think of Hangar 1 as their own. Picture this: At the end of an air show, the Blue Angels meet the audience. And people keep coming up to say thanks for fixing their hangar. And it happens at every air show. So many people care deeply about the touchstones of our past. A DVD tour of Hangar 1 does not excite. It can never deliver the unmitigated, spine tingling kick in the face that comes from simply walking through the structure. Compared to what the Navy normally spends to maintain cutting edge readiness, twelve million dollars is not extraordinary. Surely, somewhere in the Pentagon, there must be a watch pocket that can handle a petty cash disbursement of this magnitude. Respectfully, Richard D. Longstreth, Jr., NAS Moffett Field Sailor, March 1972-August 1973	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Yeugeniy Lysyy, Palo Alto, California	**Submitted Via**: Comment form
Affiliation/Agency: Kolomna Tramway	
GENERAL COMMENTS (50B)	
Comment 1: Hangar 1 doesn't look that dangerous to demolish it. If some toxins are being washed out – the dirty water must be collected and cleaned, or just evaporated, and sediments picked. While China goes up, America goes down, and here is a good and even symbolic example of how America destroys itself: like terrorist's destroyed the biggest building in New York – some "proud Americans" want to destroy the biggest building in the San Francisco Bay Area. Good thing they want to destroy an empty building, without people.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Judy K. Mach, Palo Alto, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (51B)	
Comment 1: I strongly support the stance of Save Hangar 1. I believe the Navy is taking a political stand against the Bay Area. Please look at realistic alternatives to provide for the physical and emotional health of the community. Spend the necessary money to preserve the hangar for future use and inspiration. Thank you.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

	The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 9, 2006	**Received on**: May 15, 2006
From: Ron MacKay, Jr., Buckley, Washington	**Submitted Via**: Letter to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (52B)	
Comment 1: I urge you to please save historic Hangar 1 at Moffett Field, California. I realize the up-grading costs will be significant, but I believe Hangar 1 can be revitalized by public support and private benefactors. We cannot turn our backs on an important element of American Aviation History. Please preserve Hangar 1 for future generations. Thanks you very much for your time and consideration.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Kevin Mathieu	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (53B)	
Comment 1: Hangar 1 to me is an amazing space. I grew up around here. My father did. My grandmother did. Going to the inside of Hangar 1 was remarkable. It was remarkable because there's a sense of space that you just can't find anywhere else. The closest I've ever found it in my entire life of exploring quite a few large buildings was up north in the middle of the just demolished Trojan water cooling power plant that's up in Oregon and Washington. This sense of space is unique. I do sculpture. I'm an artist. I find that it's irreplaceable. It was amazing as a child, as a Boy Scout, as a Cub Scout to check out this place, and I seriously hope that the Navy will consider the thoughts of the local citizens such as myself and future generations. I also want to mention that there's so little preserved in this area. Silicon Valley goes through different waves. We have a Silicon Graphics that's boom and busting and going on one day, and the next day it's gone. There's little that remains of our past except these large objects like Hangar 1. I believe from the comments I've heard before, Hangar 1 can be preserved for a decent cost. If you look at 7 million people in the Bay Area approximately, $5 apiece, what is that? You know, you spread that over five years or ten years, your costs go down even more. The Navy should consider not just the possibilities of its -- its reputation, but of what has made this country great, and it is here to preserve our country, and it should preserve it in all forms and fashions. Thank you much.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Stuart McGee, Sunnyvale, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Alternate RAB member	
GENERAL COMMENTS (54B)	
Comment 1: Stuart McGee, city of Sunnyvale, alternate RAB member for Vice Mayor Otto Lee. With your permission, I'd like to read a letter from our Honorable Mayor, Ron Swegles. “May 23, 2006. Mr. Richard Weissenborn, BRAC Environmental Coordinator, Former NAS Moffett Field, Base Realignment and Closure Program Management Office West, 1455 Frazee Road, Suite 900, San Diego, California. "Re: Support restoration of Hangar 1 at Moffett Field -- at Moffett Federal Air Field. "Dear Mr. Richard Weissenborn: The City of Sunnyvale strongly opposes demolition and supports use of federal funding for preservation of Moffett Field's Hangar 1. Our position remains unchanged even in light of the recent 100-plus page document, engineering evaluation/cost analysis CD and document that was made available to the public on May 5th, 2006. It includes estimates for the costs to preserve Hangar 1 at $26 million versus $12 million for demolition. "As a senior executive of a major metropolitan city who provides leadership in response to a constituency of citizens and taxpayers, I ask you to balance the significant benefits of restoration against the estimated project costs. “There will be a tremendous benefit to the community in having an operational, multifunctional historical facility on the scale of Hangar 1 in our area. The structure is a unique monument to the lengthy and distinguished presence of the US Navy in Santa Clara County.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar’s steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy’s environmental restoration efforts.

"I believe the community overwhelmingly supports the restoration of Hangar 1. Therefore, I would be willing to engage in discussions with the Navy, NASA and other stakeholders to explore all options which could make this monument a habitable and code-compliant asset for the region. "Although the bottom line established in the engineering evaluation/cost analysis is important to this decision, the needs and wishes of the community must hold a prominent position in the process. I urge -- I urge the US Navy to consider all public input and then work with the community to preserve Hangar 1, a landmark worth saving for the future. "Thank you for your attention to this issue surrounding restoration versus demolition of Hangar 1. Please contact Cory Campbell, Intergovernmental Relations Manager, 408-730-7475 or e-mail her at ccampbell@sunnyvale.ca.us. if you wish to have any questions regarding this city's interest in this important issue. "Sincerely, Honorable Ron Swegles, Mayor, City of Sunnyvale."	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Richard McKeethen, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (55B)	
Comment 1: I prefer that the Navy choose an option that allows for the restoration and preservation of Hangar 1 instead of demolition.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Derek Lyon McKeil, Sunnyvale, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (56B)	
Comment 1: I live on the flight path to this place. I want to point out to you guys I can hand a kid a book, the history of Hangar 1. The kid is going to leaf on it, whatever, be tossed aside. I can show a kid a video of Hangar 1, real neat pictures, graphics, you can do all kinds of cool stuff. It'd be lost in the modern media and a billion channels on cable to whatever purpose and not remembered. I can take a kid, I can put him in the middle of Hangar 1, and I can say this was the history of Naval aviation, dirigibles and what our world has done and our country. It becomes tangible, touchable, feel able, sensible, and all of a sudden instead of having to imagine an image or try to pull something out of a picture or a book, it's now real for this child, and the preservation continues for that child. So I'm going to ask of you guys. Please don't deny our children to have an opportunity to live this history that's sitting right out here at the end of the runway for future generations. Thank you.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Chris McNett, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (57B)	
Comment 1: Hangar 1 is a Mountain View landmark, visible from the entire region. Not only is its history unique and valuable, but its future could also be great if preserved. As many thousands of people drive past this beautiful, unique building every day on U.S. 101 and Highway 237, it adds great "atmosphere" to the region. It would be a tragedy to see this building go.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: R.G. Merrick, Cupertino, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (58B)	
Comment 1: Fix the building so it can be used for a museum. Do not destroy this landmark!	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Ron Moon, Atherton, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (59B)	
Comment 1: I'd like to have Hangar 1 remain for all of the reasons we've all heard, historical, sentimental and everything, but I'd also like it to remain because I'd like to see it used for airships. This may sound like a crazy idea, but airships have been known to carry very, very heavy loads, stay aloft for many hours, land in very -- at least deliver equipment and men at fairly small locations that don't require an airfield. The material and technologies have greatly advanced since the last airships actually flew. You have the control systems, the materials, basically manufacturing techniques, everything has improved. And right now there's a reevaluation of airships going on, and this is particularly in Germany because the old Zeppelin company is now building airships, and they're doing tours around mainly Lake Constance, and they are trying to do between Friedrichshafen and, say, Cologne or Berlin or something like that. Switzerland is doing it. They are selling these ships to Japan. They are trying to sell some to Africa. And the other thing that's going on is apparently DARPA has a program to use airships to replace AWACS planes because of the time they can remain aloft, and this program apparently is going on in North Carolina. So what I'd like to do is besides considering it for all the reasons we've heard before is considering it as having Moffett as a latent airship terminal in the event that airships do prove to be really useful and fairly economical. Thank you.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Sheri Morrison, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (60B)	
Comment 1: First, I'd like to thank you for your time tonight, which is going on, and the opportunity for the public to give our input. I consider myself an extremely environmentally conscious person, and I've done graduate work in public health. So you can be assured that there's nothing more important to me than cleaning up toxic environments. If there were no other way to deal with this problem than to demolish the hangar, I would be the first one to say do it. But there are other ways. There are other alternatives that are equally -- equally good in term of costs, as we've been talking about. I'm also the mother of an 18-year-old son, and I can tell you all about his growing up in the shadow of Hangar 1 and all that stuff, but the most important thing is that he is intending to be an aerospace engineer, and he's already been accepted into a college with that as a major. And I'm very proud of that, and it's certainly been influenced by where we live and the flight paths of our house. This -- our country in general, this area in particular, is really lacking in terms of science, math and engineering students and education. We know that. It's a huge, huge problem. Hangar 1 is a monumental engineering feat. There's very little -- it's very unique and it has the potential, if decontaminated and preserved and turned into an educational facility, of continuing to inspire, as it has my own son, future engineers, which we desperately need in this country. You can't replace being in that space and seeing its structure and hearing about how it was constructed. You can't replace that with pictures. You have to see it. You have to be in it. I really -- I just can't emphasize how important it is to this community but also to the future of this country to have these kinds of inspirations for our young people. And I also can't think of a more appropriate and exciting use of a preserved Hangar 1 than to take it from what was a military facility and show that there are other uses once we no longer need it for that that have an educational purpose, not	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

tearing it down to put in condominiums. I mean, I just think that would be tragic. So I just implore you to reconsider, to really take our public input seriously, to be responsive to the community and be a good partner with us. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Dorothy Morton, San Jose, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (61B)	
Comment 1: I'm a native San Josean, and my statement is an emotional one. I would not be standing here today if it wasn't for Hangar 1. My parents, Paul W. Morton and Eleanor Reese Morton met at Hangar 1 when they worked there as civilians in World War II and it just means a lot to me. They are both gone now. But I brought this photo of the 35th anniversary, a reunion of the civilian workers at Moffett Field from 1946, and I just found out tonight that this picture was taken outside of this building. I didn't even know that. So please try to save Hangar 1. Thank you.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Robert Moss, Palo Alto, California	**Submitted Via**: Comment form
Affiliation/Agency: Restoration Advisory Board Community Co-chair, Barron Park Association Foundation	
SPECIFIC COMMENTS (62B)	
Comment 1: (62B.1)Technically Invalid and Incomplete Statements in the Site 29 (Hangar 1) EE/CA Review of the EE/CA and various comments by participants in the RAB meeting May 18, 2006 revealed a significant number of errors, omissions, and incorrect statements and cost information that raise significant doubts about the conclusions presented in the EE/CA. It is so full of errors and omissions that it cannot be used to justify ANY action for remediation of the contamination in the walls and roof of Hangar 1. Some of the problems are described below. None of the options that involved coating or sealing the hangar walls considered the inside surfaces of Hangar 1, only the outside. This approach, when it was applied to the present asphalt sealing of only the outside, was universally condemned by NASA, EPA, RWQCB, SCVWD, the City of Mountain View, the City of Sunnyvale, and almost all public members of the RAB. It is clear that coating or sealing the outside surface only would not protect the environment or human health, so the cost estimates in the EE/CA are inadequate and incomplete. If remediation does not address sources of contamination from inside the hangar it makes future use or re-use impossible, and fails to comply with the basic obligations of the Navy under CERCLA and BRAC. Thus Options 2, 3, 4 and 6 must be corrected to include interior sealing of all surfaces, to give more realistic cost and feasibility information. It also is important to note that interior surface maintenance costs will be far less than exterior surface maintenance costs; long-term total costs for both inside and exterior coatings will not be twice the present costs for those options. Also it is feasible to have different treatments on the outside and inside of Hangar 1. For example, the outside could be treated per Option 4, ceramic coating, which has total direct and indirect estimated costs of $5.9 million (with a generous 20% management and 20% contingency) and then coat the inside with asphalt	**Response 1:** (62B.1) The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). The EE/CA was also revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

per Option 3 which has a total direct and indirect cost of $4.3 million. The long term maintenance cost of Option 3 on the inside of Hangar 1 will be far less than the estimated cost of $17.7 million, so the total cost of Option 4 exterior + Option 3 interior would be $10.2 million for initial coating plus long term maintenance of perhaps $26 million.	
Comment 2: (62B.2) During discussions in 2005 of methods to treat the surfaces of Hangar 1 to seal the surfaces and prevent migration of PCBs, lead and asbestos to the environment, I suggested using epoxy or silicone for coatings. In the EE/CA on p. 4-2 use of epoxy was rejected because of "its sensitivity to ultraviolet light." Use of silicone products was rejected because they "are used in electrical circuit boards and are not generally recommended for the type of application considered for Hangar 1." These statements attributed to Techno Coatings are incorrect. Epoxy is used in a number of applications on the outside of spacecraft, where it is exposed to far higher levels of radiation and ultraviolet than anything found on earth. Epoxy samples were exposed in orbit to both radiation and atomic oxygen for 5.75 years in the LDEF experiment with some darkening but with little degradation of physical or mechanical properties. Materials such as Hysol EA956 survived UV and atomic oxygen exposure with little loss of performance or appearance [1-3]. Other epoxy materials have been exposed to solar radiation in orbit for up to 20 years without failure. As for silicones, in addition to the use cited in circuit boards, silicones are used for water seals, coatings, electrical and thermal grounding, and as thermal control paints. Silicone paints such as S13GLO (IITRI), A276 (Lord Corp) and Z93 (IITRI) have been exposed to solar and UV radiation, solar flares, and micrometeorites for 5.75 years in the LDEF experiment with little significant change in performance or properties, [2, 3] and for as long as 20 years in synchronous orbit with no loss of performance and with absolutely no maintenance. A number of silicone coatings could be used to coat and seal the surfaces of Hangar 1, including white paints S13GLO, A276 and Z93, clear coating such as DC93-500 (Dow Corning) or CV-2500 (NuSil). In addition to sealing the PCBs, lead and asbestos in, these coatings would not change the appearance of Hangar 1 noticeably, preserving the historic character of the structure. As noted above, combinations of coatings and sealants can be used. For example, a silicone-based paint or sealant could be used to coat the outside of Hangar 1, and a	**Response 2:** (62B.2) In preparation of the EE/CA, Silicone coatings produced by the Lord Corporation and Illinois Institute of Technology Research Institute (IITRI) were researched as potential exterior coating options. Typically, silicone coatings are applied to smooth surfaces, not a coarse substrate such as asphalt emulsion, which is on the exterior of the hangar. Upon review of the exterior condition of Hangar 1, the silicone coating vendors determined that the features of the exterior are not a compatible substrate for silicone coatings, and recommended the Navy remove silicone paints from further evaluation. Epoxy was also researched as an exterior coating as well as an interior coating option in the revised EE/CA. A drawback of using epoxy as an exterior coating for the hangar is the curvature and flexible properties of the hangar siding. As the epoxy coating weathers, these properties will accelerate cracking and peeling, and will result in areas of exposed original siding. As a result, use of epoxy as a coating for the hangar's exterior siding was removed from consideration. However, since epoxy coating adheres best to smooth, flat surfaces such as that found on the structural steel, the revised EE/CA recommendation includes coating the structural steel infrastructure with a primer and a finish coat of weather resistant epoxy to encapsulate PCBs within the paint currently covering the steel. For interior applications, epoxy was found to be a viable alternative. The design life of epoxy coating, as well as costs were more favorable over the other interior coatings evaluated in the revised EE/CA.

cheaper material that is easier to apply such as epoxy or asphalt (Option 3) could be used to coat the inside. Maintenance of external silicone coatings will be relatively inexpensive, based on actual flight experiences, and the internal coatings also will require relatively little maintenance since they will not be exposed to storms or UV radiation. Since these types of coatings were not evaluated, the EE/CA is defective and must be redone, with a full evaluation of various epoxy and silicone coatings. Silicone paints and coatings such as those noted above must be evaluated and compared with the 6 potentially acceptable options. References 1) NASA TM 58246 L. Leger, "Oxygen Atom Reaction with Shuttle Materials at Orbital Altitudes", May 1982. 2) D. L. Edwards, J. M. Zwiener, et. Al, "Radiation Induced Degradation of White Thermal Control Paint", NASA/CR-1998-208598, 20th Space Simulation Conference, Oct. 1998. 3) NASA Contractor Report 4646, Evaluation of Adhesive Materials Used on the Long Duration Exposure Facility, March 1995.	
Comment 3: (62B.3) The recommended Option 11 to demolish and remove the hangar appears to significantly understate the true cost of demolition. In May 2003 DMJMH+M prepared a Hangar 1 demolition cost estimate for NASA. It includes cost elements that are omitted from the EE/CA. For example, the EE/CA says nothing about protecting the health and safety of workers engaged in demolition of a structure known to contain toxic and hazardous materials. The NASA cost estimate does, for $2.45 million. The EE/CA has a cost of $2.58 million for interior asbestos abatement, nothing for exterior panels. It estimates $443,000 for disposal of siding and roof panels. The NASA study has an estimate of $700,000 just for hazardous dump fees plus $1.3 million for hazardous waste disposal. These costs are so different that they bring into question all costs in the EE/CA. The NASA report acknowledges potential scrap value of the steel frame, estimated at $1 million in 2003. The salvage value does not appear to have been deducted from the final demolition cost estimate. The NASA costs also are subject to escalation, recommended as 2.5%, but would be closer to 3.5%/year since 2003.	**Response 3:** (62B.3) The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

EE/CA Option 10, to remove the toxic siding and roof of Hangar 1 and replace it with a clean, similar siding, has an estimate of $7.6 million in direct costs to remove the existing siding and roof, plus a cost of $11.8 million for demolition, $24.6 million total. The NASA report also considered removal and replacement of the siding with a non-toxic replacement siding. The NASA report estimates $4.45 million, plus $9.3 million to install a replacement exterior, a total estimated cost to remove and replace the siding, including management and contingency, is $19.7 million, taking into account a number of expenses such as personnel protection not shown in the EE/CA. In summary, the EE/CA is flawed and not suitable for use to evaluate all viable remedial options and costs to address contamination in Hangar 1. Options 2, 3, 4, and 6 that were studied in the EE/CA and found feasible did not consider treatment of the inside of Hangar 1 so they are neither technically nor administratively adequate. Functionally suitable materials such as coating or sealing with epoxy and silicones on the outside and inside of Hangar 1 were incorrectly dismissed from proper consideration. The stated costs of the preferred Option11 omitted significant expenses known to be associated with demolition of contaminated structures, and disposal of hazardous wastes. Accurate and complete cost and feasibility analyses of various Options were not presented. The EE/CA must be rejected as submitted and replaced with a full RI/FS to correct these errors and omissions. The RI/FS also must demonstrate whether the cost estimates in the EE/CA are more correct than those in the 2003 NASA report for Hangar 1 remediation.	

	Submitted Via: Oral comment at public meeting
Comment 4: (62B.4) I'm the co-chair and community co-chair of the RAB, and I'm also on the Board of Directors for the Barron Park Association Foundation which has oversight of the Superfund sites in Palo Alto. So I'm intimately familiar with what it takes to clean up a toxic site, what it takes for remediation. Let me make a couple of comments that haven't been made before. First of all, when implementation of a cleanup is considered, there are four aspects that are evaluated: Technical feasibility, administrative feasibility, availability of services and materials, and community acceptance. Option 11 to tear down the hangar totally fails community acceptance. What it has is total community condemnation. The San Jose Mercury ran a couple of articles almost two weeks ago on Hangar 1, and they asked people to e-mail in and take a vote, and in about two days they had some 1,700 votes. The vote was almost 85 percent to retain Hangar 1. The demolition of Hangar 1 fails your implementation and should be dismissed as an option. Secondly, we've heard a lot about the costs. Sandy Olliges of NASA very kindly sent me a copy of the three-year-old report that was done for two options. One of them was demolition of Hangar 1, and the other was essentially option 10 to replace the siding. They did a very detailed cost analysis, which includes a lot of elements which are missing from the EE/CA. The NASA report estimates approximately $27 million for equivalent of option 10 to replace the siding. They estimated a little over $30 million for demolition. They acknowledge in the report that the materials, the steel would have salvage value. They did not deduct that. If you deducted the salvage value of the steel, it would be approximately $29 million net. It's interesting that their evaluation of the equivalent of option 10 is very close, within 10 percent, of the Navy's, but demolition is more than twice as high, and we heard some of the reasons why the Navy estimate is wrong. Finally, one of the other things I do, I'm an internationally known expert on materials, especially spacecraft materials. And when I recommended a year ago that you look at coating with epoxy and silicones, the people who wrote the report said we can't do that because epoxy is attacked by UV and silicones are only used for coating circuit boards. Absolute nonsense. The L&F experiment flew over 3,000 materials, including a number of epoxies, in orbit for six years, brought them back, and the epoxies were not damaged. Silicones are used for thermal control paints on spacecraft. You put them up. You never fix them because you can't get up there. 20 years in orbit, and they work just fine. I insist that you add options 14 and 15, coating with epoxy and coating with silicone, and do a full RIFS.	**Response 4:** (62B.4) The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. Silicone coatings produced by the Lord Corporation and Illinois Institute of Technology Research Institute (IITRI) were researched as potential exterior coating options for the revised EE/CA. The revised EE/CA recommendation includes coating the structural steel frame with a primer and a finish coat of weather resistant epoxy to encapsulate PCBs with in the paint currently covering the steel.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Rory Mulholland, San Jose, California	**Submitted Via**: Comment form and *Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (63B)	
Comment 1: (63B.1) When I 1st moved to the Bay Area (from N.Y.) back in Sept. 68 via a T.W.A. B-707 (Ambassador Service) on a straight in approach to S.F.O., the 1st thing I saw was H-1. I like to think that such great icons from the past age are immortal and above reproach from modern day barbarism. At one point they wanted to tear down Grand Central Station but Jackie Kennedy saved it. But this is the exception, not the rule! Examples come to mind, the "Fabulous Fox" theater in S.F., numerous art deco buildings, great ocean liners the S.S. United States 0 rotting away. All once gone impossible to replace. Save H-1 for posterity, preserve American aviation history! **Comment 2***: (63B.2) I'd like to say that if the hangar goes, there will be no more, you know, Moffett Field anymore. That's it. That's the head of the dog. You cut it off, the tail goes. What's going to happen then? I think that it would be left open to some kind of development, and, you know, maybe that's what this is all about, you know, what's behind the scenes here. Also, Moffett Field is named for Rear Admiral Moffett who died in the USS Shenandoah disaster, I believe. At least I think so anyway. If he was alive, he would say to you, you know, do not take this hangar down. Thank you.	**Response 1:** (63B.1 and 63B.2) The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Linda Montgomery, San Jose, California	**Submitted Via**: Oral comment from public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (64B)	
Comment 1: I'm a fifth-generation native of this area. Hangar 1 has been a part of my life. I gazed at it in wonder as a child as we drove by on our way north. I gaze at it in wonder now. It's just been a wondrous thing to look at. It's just got so much history in it. When I went to the meetings last fall, I talked about it at the holidays with my family members, and that brought out so many stories of watching the Macon go over, of watching the hangar be built. And, you know, if I didn't have the hangar to look at, I wouldn't have a clue how big the Macon really was. We need to keep it. I know we can't keep it the way it is because it's poisoning the land. We can't do that. But we need to keep it in some way. The posts and the beacon and the chalked outline, that's not going to work for really showing someone how big that thing was. That's pretty much all I had to say. It's just that it's just a wonderful thing, and my family members were just -- they all were so very upset when they heard that there's a chance it may go away. And so I feel like I'm speaking for them, too. Please do what you can to try to save it. Take those other costs into consideration that aren't in the original quote because I believe they are in the other ones, and that would kind of level the playing field a lot. Thanks a lot.	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Jack Nadeau, San Jose, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Save Hangar 1 Committee	
GENERAL COMMENTS (65B)	
Comment 1: My name is Jack Nadeau. I'm here, of course, to speak for most people here, I think. The hangar is actual history. Tearing it down and having a video or markers delineating where it stood is not good enough. The history of aviation has an exciting chapter, a very short-lived chapter-- the lighter-than-air ships. It's a marvelously interesting and exciting period of time. I'd like to see young people for now and forever to be able to actually stand and be awestruck by the wonderful structure that stands right -- I've been there many times inside. I'm a life member of the historical museum. And to pull that chapter out of the book of aviation and just let it be destroyed would be a crime, I think a very serious crime, and, frankly, I can't believe that the Navy would even consider tearing it down. I can't believe that. I thought as a child growing up that that structure would always be around. It was built to protect the USS Macon, and now I think it's up to us who really care to make sure that it is protected for all time. What worries me is that the Navy has basically already made the decision to tear it down, and that's what bothers me so much because I don't know how much public opinion is, quote, "necessary" to convince the Navy that we really would like to keep the structure intact. That's all I'd like to say. Thank you.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Vanessa Nadeau, San Jose, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (66B)	
Comment 1: My name is Vanessa Nadeau. And I really want you guys to save the hangar because I want it to be there forever for -- for generations. And thank you.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: June 2006
From: Nancy Nguyen, Mountain View, Calif.	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (67B)	
Comment 1: Please, don't tear down Hangar 1.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Cheryl Orth, Moffett Field, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (68B)	
Comment 1: My name is Cheryl Orth. Address P.O. Box 209, Moffett Field. I attended a meeting a week and a half ago that NASA employees were invited to. Mr. Richard Weissenborn who gave the earlier presentation here spoke at that time, and he gave basically the same presentation. I'd like to read what I wrote to Senator Feinstein afterwards. It says: "I attended the disclosure meeting given for NASA employees by Richard Weissenborn, BRAC environmental coordinator. It was a very informative meeting on how the most economical solution to the pollution to the environment by Hangar 1 is to demolish it and clean the site. It appeared to be a no-brainer of 12 million for demolition versus 24 million for fixing it. "Then during the question time at the end of the presentation, a NASA employee of Code JF, which is facility logistics and airfield management division, started asking Mr. Weissenborn questions. It was a real eye-opening time. The $12 million for demolition and cleanup does not include the removal of the asbestos and lead contamination of the numerous structures inside the hangar where the former Navy flight simulators and offices were contained. "It does not include the removal of the concrete pillars and the electrical conduit inside of them. There were several other items as well, but these are the most expensive due to the asbestos, lead, et cetera, involved in their removal. "When asked why these items and their costs weren't included, Mr. Weissenborn replied, quote: 'They are separate contracts that have not yet been set for bid.' The NASA employee stated that the cost of these projects could easily exceed 5 to $8 million. "This certainly puts a new light on the true cost of the demolition of the hangar and gives a better cost comparison to the solution of the problem." I have worked in Building 243 at NASA-Ames Research Center for 22 years. I am approximately 200 yards from the hangar, the north end of the hangar, where on top of our building we have large air handlers where the air is	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

being pulled in all year long when the wind is coming right past Hangar 1 and into our building. Many of my fellow employees have been there for over 30 years, and none of us are sick yet, and I don't see why the hangar needs to come down. Thank you for your time.	

Written on: May 22, 2006	**Received on**: Unknown Date
From: Alan Oton, Mountain View, California	**Submitted Via**: Letter
Affiliation/Agency: Public member	
GENERAL COMMENTS (69B)	
Comment 1: My idea for preserving the existence of hangar one, the colossal structure at Moffett Field is to install common business ceilings inside the hangar. Providing more control over the temperature and much better looks. Offer a lease for businesses such as ice rinks, cd storage, non-water critical warehousing (if a flood danger does exist), whatever. But though keeping in mind that the hangar is not a compact disk, which is over all easy to mass produce. Not anything like what a dollar would want to be. And is then as you know when the owner passes on, thrown out. As part of a growing modern statistic of destruction, rather than return I.E. through the U.S. mail. The income from the lease of this property/landmark could be used to make changes to the hangars exterior looks, so long as there safe. Add some nice smoky grey tinted glass windows. Or put some solar cells on the roof. It looks like you've got about four acres up there. All along this remember that you are not a computer disk drive that just reads information and then divulges it to a computer. You must be sure that all your thoughts about this are in order. And that attempting these ideas for using the hangar are practical.	**Response 1:** Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Whatever the hangar is, Navy property, U.S. landmark, future colossal manufacturing room holding on to hangar one at Moffett Field and leasing it out to provide funds for replacing the exterior and other upkeeps makes sense. P.S. I looked through some of the EE/CA and saw they found some air contamination. But it did not state a source. My conclusion is that it may need to be washed.	

Written on: June 13, 2006	**Received on**: June 13, 2006
From: E.T. Perkins, Palo Alto, Calif.	**Submitted Via**: E-mail comment to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (70B)	
Comment 1: Dear Mr. Weissenborn, If anyone should appreciate tradition, it's the Navy. The world will NEVER see anything like Hangar 1 again. Please add my voice to those who really want to find a way to preserve it. It will make a wonderful landmark and a useful arena for our community. I wouldn't even mind a "JOIN THE NAVY" on the side if that would tempt anyone to fight for it. Thanks for listening! Ms. E. T. Perkins, 514 Thain Way, Palo Alto, CA 94306, muktida@aol.com	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 26, 2006	**Received on**: Unknown Date
From: E. Denley Raffery, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (71B)	
Comment 1: Dear Mr. Weissenborn – I attended the Hangar 1 meeting May 23, 2006 as a mildly interested citizen with nothing else to do that evening. However I came away feeling much moved by the attendees who stressed the historical importance of Hangar 1. I join them in urging you to cease and desist the plan to tear the bldg down but rather put whatever it takes into ridding Hangar 1 or the contaminants and preserving its majesty for future generations. It could be a museum of aeronautics. Sincerely, Denley Rafferty	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 7, 2006	**Received in**: June 2006
From: Otto Randolph, Los Gatos, Calif.	**Submitted Via**: Letter to Sandy Olliges, NASA
Affiliation/Agency: Public member	
GENERAL COMMENTS (72B)	
Comment 1: Dear Ms. Olliges, I attended the Hangar 1 Public Meeting at Moffett Field on May 23, 2006. Given the number of people in attendance, I was not surprised to learn that people were turned away due to limited room capacity. The purpose of the public comment is to ensure fairness in decision-making by allowing all stakeholders the opportunity to provide input. Given the importance of the issue to the public as evidenced by the size of the turn-out, I believe it is essential that a follow-up meeting is held so that all voices can be heard. I urge NASA to hold a follow-up meeting for the purpose of giving all stakeholders an equal opportunity to be heard. Sincerely, Otto Randolph cc: Mr. Rick Weissenborn, BRAC, San Diego, CA	**Response 1:** The Navy has reviewed the alternatives in the previous version of the EE/CA and has modified them based on public comments and technical analysis. There will be a formal comment period of at least 30 days at the time the revised EE/CA is made available to the public.

Written on: May 6, 2006	**Received on**: May 8, 2006
From: John Reid, Oakland, California	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (73B)	
Comment 1: Dear Mr. Weissenborn, I would like to request 2 copies of the Hangar 1 EE/CA on CD. Please send them to: John B. Reid 412 E. 12th Street Oakland, CA 94606-2311 Thank you, John B. Reid	**Response 1:** Two copies of the revised EE/CA on compact disk will be sent to Mr. Reid as requested.

Written on: May 25, 2006	**Received on**: June 7, 2006
From: Michael Reynolds, Palo Alto, Calif.	**Submitted Via**: E-mail comment to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (74B)	
Comment 1: Dear Sir: Yes, the Navy definitely SHOULD raze Hangar 1 at Moffett Field. I understand the sentiments of those who would like it preserved. But I hope you won't let the loud voices of a few hundred preservationists change the Navy's plans to raze Hangar 1.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action

The decision to raze Hangar 1 is the correct decision for the Navy and the correct decision for the 8+million people who live in the greater Bay Area. Raze it. I am a staunch preservationist. But I'm also a pragmatist. Raze it. I am a hopeless sentimentalist. But I'm also a pragmatist. Raze it. I'm a life-long local, and toured Hangar 1 as a cub scout. Raze it. Thank you for providing the opportunity for public comment, and thank you for your consideration. Sincerely, Michael Reynolds, 1620 Castilleja Avenue, Palo Alto, CA 94306	Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 11, 2006	**Received on**: June 11, 2006
From: Ed Sayre	**Submitted Via**: E-mail comment to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (75B)	
Comment 1: Mr. Weissenborn: I firmly believe we should save Hangar 1 as a monument to Naval Aviation. I am a retired Naval Aviator and I think we can make good use of the hangar. I think the EPA has called for over control in what they want done to the old halogen compounds. I think we can restore the hangar at a reasonable cost compared to what we can do with it in the future. Ed Sayre	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Nina Scheller, Mountain View, California	**Submitted Via**: Comment form
Affiliation/Agency: NASA civil servant	
GENERAL COMMENTS (76B)	
Comment 1: Removal of Hangar 1 is a short term solution made by short sighted bureaucrats. You are civil servants or contractors to the government. Do you understand that your position is to look after the American people and its assets? Hangar 1 is a true American asset. The Navy should go back to the drawing board, sharpen their pencils, use their ingenuity, and fix the Hangar. Demolition is not an option. To do so would be to admit that America is no longer a scientific and engineering power.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 9, 2006	**Received on**: May 9, 2006
From: Arthur Schwartz, Sunnyvale, Calif.	**Submitted Via**: E-mail comment to Rick Weissenborn
Affiliation/Agency: RAB member	
GENERAL COMMENTS (77B)	
Comment 1: Dear Mr. Weissenborn: Having read the EEC/CA report, I have a number of concerns and questions. As I told you earlier, I will be out of the country and cannot attend Thursday's meeting. I have submitted these comments to Sunnyvale Mayor Ron Swegles, Vice Mayor Otto Lee and Alternate RAB member Stewart McGee. I hope that out of the	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative

discussion that will take place on Thursday, that the Navy will take a different course of action. Hangar 1 should not be demolished. My main concern is to be sure that the Navy has not utilized cost estimates that have been prepared in such a manner as to justify demolishing Hangar 1. It would appear to me that some of the costs shown for the demolition appear to be too low. For instance, the cost of removing friable asbestos from the building interior is stated in Appendix C as $4.25 per sq. ft. Assuming a billed contractor cost of $100 per man-hour (actual figure can be used), this calculates out to 2.5 minutes of labor per sq. ft. I doubt that workers can come close to that speed considering the difficulty in reaching the interior of the siding and roofing panels and the fact that they are working in clean-room type suits and masks. A second factor is that the Navy has assumed that the only safety measure taken during this interior demolition is to close the windows and doors, thus using the hangar itself as a containment vessel. With wide variation in temperatures between the outside atmosphere and the interior of the hangar we can expect that during much of the daylight hours the interior will be heating up forcing air currents out through cracks and other small openings. Thus provisions will probably be required for fans and HEPA filters to capture asbestos so it cannot escape. Similarly when the exterior panels are removed, temporary enclosures may be required. Any such measures not only increase the fixed costs but also slow down the efforts of the workers carrying out the demolition. I have similar concerns regarding the siding and roof removal estimates. We need more information on who provided the data used in this cost estimate and how they arrived at the numbers. I am attempting to get some costs from demolition contractors but time is limited before Thursday's meeting. With regard to the cost summary for alternatives 2, 3, 4 and 6, the O&M is stated in terms of total dollars. Listing this in terms of annual costs would be more meaningful as once it is decontaminated and sealed; there may be uses for the hangar that would offset these costs. Thus the annual O&M costs for these alternatives would be:	evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The revised EE/CA also includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). In addition, the Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

2 $36,000 3 $588,867 4 $651,000 6 $32,333 And I would question how similar the siding must be under Alternative 6 to preserve the appearance and utility of Hangar 1. After all what makes this building unique is that it can be seen from miles away, too far to note the similarity of the siding. And it's the structure itself that is so unique that makes it a historic building, not the exact appearance of the siding. In Table 4-1, there are no entries in the column entitled "Community Acceptance". My involvement with Moffett Field began with serving as an Alternate on the Community Advisory Committee on Moffett Federal Airfield in 1996-1997. Every person I come in contact with desires the Hangar to be preserved and put to good public use. This was confirmed in an internet poll conducted last week by the San Jose Mercury News. A total of 1667 votes were cast in just a few days: 1390 (83%) to save it, 222 (13%) to demolish it and 55 (3%) don't care. This is an overwhelming majority. If I can think of anything else I will be in touch by email. Arthur Schwartz, Retired Consulting Engineer, 408-245-6367	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Jeff Segall, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (78B)	
Comment 1: I'd really like to thank the Navy for this extraordinary opportunity to hear this testimony this evening. I'm completely blown away by what I've heard this evening. I'm just going to spend a few minutes talking about my involvement with the hangar, although it pales in comparison with what I've heard earlier. You know, I've lived in this area for about 25 years, and the hangar has always been a landmark that identifies the area. Over the past ten years I've been a commuter from my home in Mountain View to my job in Sunnyvale, and I come down Ellis and out Moffett Park Drive going right by Hangar 1 on my bicycle, and only when you get close to the hangar can you really appreciate its immensity. It's like a man-made mountain. It just dominates my day as I come and go to work. So I'm clear that demolition of the hangar would be a loss to me personally, and that would be sad, but I ask what we will lose as a community and as a people when our proudest engineering accomplishments are destroyed to save some money, to save a few bucks. I ask that the Navy think outside the box and consider what is possible for this community if the hangar is saved for future generations. Thank you for consideration of my comments.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Larry Shapiro, Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (79B)	
Comment 1: My name is Larry Shapiro. My address for this purpose is 1901 Embarcadero Road. I'm a pilot of more than 50 years. I've been coming to this hangar for more than 60 years, and I fly over it and look at it daily, as I did today, also. And as a courtesy, I thank you all for this opportunity, and if I may. Is there anyone in this room who wants the hangar to go away? Ladies and gentlemen, I've been here for three hours. I was getting a little nervous because I was sitting by myself a good part of that time, and I am so tickled to see the amount of people here. You've had to deal with me before. I try not to be disrespectful, and I am emotional about this building. To me it's our Statute of Liberty. It's our Golden Gate Bridge down here on the Peninsula. It's our World Trade Center. It's a lot to a lot of people. And since I travel all over the world, I'm asked about this hangar, if it's still here. It's one of the things on the A list that guests visiting me want to see. We would never be anywhere discussing tearing down the Golden Gate Bridge because there's lead in the paint, and the same thing would happen to the Statute of Liberty. We just wouldn't do it. So here's the way I see this problem: We need to save a patient's life. It's dying. First let's save the life, which is what we're asking for. We can deal with the plastic surgery or artificial limbs later on. There should be only one thing now. Let's save the life of Hangar 1. Here's your people right here behind me. They are telling you that. When the Navy talks about $12 million, that's less than a fighter. It's less than a lot of things. We have so many alternatives to look at. There is money out there to make the hangar usable. If the hangar didn't do anything but stay right where it is, that would almost be enough, but it wouldn't be enough for the people sitting behind me. So, again, I would ask you. Help us save the life of this hangar. Give us the time for the plastic surgery and the other treatments necessary for it to live a healthy life again. And thank you. And thank all of you.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Seth Shostak	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Spaceworld	
GENERAL COMMENTS (80B)	
Comment 1: I am also on the board. I am on the board of the SpaceWorld Foundation that has been mentioned here. There's several things about this hangar. Most of the comments have addressed the sentimental value of the hangar. That is a serious concern. It's a concern worthy of consideration. The Eiffel Tower, which has been mentioned before, was built in the 1880s as part of the Paris Exposition. The plan was to tear it down a few years later. They did not. Okay? Despite the fact that it is very costly in terms of danger to humans. Lots of people jump off it. It was not torn down. If the Eiffel Tower had been replaced by four pylons marking the corners with the tricolor stuck in the middle, I don't think you would consider it the same structure. I don't think anybody is going to fly to Paris to see a book of photographs of the Eiffel Tower once it is gone. Those are the sentimental considerations. This hangar is after all an icon. It is more than something that has personal meaning to the people here. It is the icon of the South Bay. It is the only icon we have in the South Bay. But I'm here really to talk about the future of the hangar, and that is in our view to reuse it for a space center called SpaceWorld. Rick has said that will cost $400 million. Well, that's, in fact, a very phony number to bring up here because, in fact, that's the cost of exhibiting. All right? I can buy a $500,000 house, and if I fill it with Louis XIV furniture, it might be a $10 million house, but that doesn't mean you can't afford to buy the house. Okay? Whatever is put inside is irrelevant to the cost of keeping the hangar. And the reason for building SpaceWorld is that it would indeed be a Smithsonian West. In fact, we have been in touch with The Smithsonian about this sort of thing, but the point is that it will teach our kids about what's going to happen in the first part of the 21st century. We are finally going to sunder the bonds that have tied us to this planet for	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

300,000 years of history of homo sapiens. This is the first generation that's going to do that. There's only one generation that has to do that. Our kids will be the ones that do that. It would be terrible shame if we deprive them of the opportunity to do that right here. Some other place will do it. It should be here. I strongly urge that we not walk away from this opportunity to, in fact, bring our kids into the 21st century, and I would submit to you that 20 years from now, no one will be proud to say, "Hey, I tore down the hangar."	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Lenny Siegel, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Center for Public Environmental Oversight	
GENERAL COMMENTS (81B)	
Comment 1: I've been a member of the technical review committee and Restoration Advisory Board at Moffett Field since 1990. I'm executive director of the Center for Public Environmental Oversight, and I'm one of the founders of the Save Hangar 1 Committee. If our nation's intelligence agencies were to pick up chatter from some terrorist organization around the world that they were looking at symbols of United States history, symbols of United States technical advancement, and learned that they were looking at Hangar 1 at Moffett Field, we'd send the Air Force, we'd send the Navy out to protect this monument. But what do we do when the very institutions that we expect to protect our heritage propose to destroy them? We have to look to ourselves. We have to look to the fact that even though this is being done under the Superfund law, even though it's being done under basically a base closure, this is essentially a political issue. That we have to mobilize, not only tonight, but to write our senators, our member of Congress, to do whatever we can to reverse this unacceptable proposal. I mentioned I'm with the Save Hangar 1 Committee. You can go to savehangar1.org and sign up for our e-mail list. We have a meeting on June 5th at the Moffett museum at 7:00 p.m., that's Monday, June 5th, to plan our next action because we'll be organizing no matter what the	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Navy decides after listening to us tonight. We are not going to let this hangar fall. Now, why do I think that the Navy is responsible, why they are obligated to -- to not only remove the toxic contamination, which I do feel is a hazard, it's definitely a hazard to the wetlands, but also restore the hangar? Well, when we've had a several-year fight over the Moffett wetlands, what we said, and it's based on EPA guidance, is the Navy has an obligation to clean up the property to meet the reasonably anticipated land use, future land use. Well, once again, we have the same thing. The reasonably anticipated future land use of Hangar 1 is a hangar that's going to be a world class air and space center. The Navy has an obligation to clean that hangar so that we can use it in that way. It's as simple as that. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Robert Simmen, Sunnyvale, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Association of Old Crows, Defense Electronics	
GENERAL COMMENTS (82B)	
Comment 1: I'm here to speak just briefly about one of the many worthwhile uses that the hangar could be put to. I'm the Northern Pacific Regional Director of the Association of Old Crows. I usually pause here for some humorous laughter. We are an international association of approximately 15,000 people in 55 countries. We are the professional defense electronics association. Much of the equipment that was saving the lives of our aviators from World War II through Desert Storm and Kosovo, a lot of that equipment was built right here in the Bay Area. During the heydays in the '80s when we -- when our local chapter, the Golden Gate Chapter, had 1,500 members right here in Mountain View and Sunnyvale, we held classified conferences here in the base in the auditorium at Hangar 1, in the officers club. During the past 10 or 12 years, we have accumulated representative hardware that was manufactured here in the area that defended the lives of these pilots, including the collision avoidance, by the way, that's used in commercial airliners was	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

developed here on the Peninsula. We've accumulated approximately $2 million worth of this hardware, and we have it in storage because we're holding it in the hopes that we can use it in Hangar 1. We've been invited into other museums, and we're holding out because we think that this historic equipment should be displayed in a historic monument like the Hangar 1. Thank you very much.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Peter Strauss, San Francisco, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Silicon Valley Toxics Coalition	
GENERAL COMMENTS (83B)	
Comment 1: I'm the technical advisor to the Silicon Valley Toxics Coalition and have been working on Moffett Field in the mediation since -- since 1993. What I do for a job is I review documents, and I prepare comments, and from the environmental aspect of these -- of those documents. And speaking to all the regulators and having spoken to the Navy many times, I know that there's a great deal of what everybody assumes is a risk, but I think the EE/CA fails to convey that. And I urge you to take what is now circumstantial evidence that is in the -- in the -- in all the documents that I've been able to review and prove it to me. And there might be some documents that I don't -- that I don't possess or information that I don't possess, but I can't see the path that -- where, Rick, you've said that your -- you know, this is -- this is a problem. We all know it's a problem. So we're going to -- we're going to get rid of it. It's not conveyed in the EE/CA, and I ask you to convey that in the EE/CA. Thank you.	**Response 1:** NASA has completed an investigation for PCBs at Moffett Field. The result of this investigation has identified Hangar 1 as the source of Aroclor 1268. The Navy's Hangar 1 TCRA was completed in October of 2003. The TCRA coating has a three to five year warranty. Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

Written on: May 18, 2006	**Received on**: May 23, 2006
From: Ron Swegles, Sunnyvale, California	**Submitted Via**: Letter to Rick Weissenborn
Affiliation/Agency: Mayor of the city of Sunnyvale	
GENERAL COMMENTS (84B)	
Comment 1: The City of Sunnyvale strongly opposes demolition and supports use of federal funding for preservation of Moffett Field's Hangar 1. Our position remains unchanged, even in light of the recent 106 page Engineering Evaluation/Cost Analysis (EE/CA) CD and document that were made available to the public on May 5, 2006. It included estimates for the costs to preserve Hangar 1 at 26 million dollars verses 12 million dollars for demolition. As the senior executive of a metropolitan city who provides leadership and responds to a constituency of citizens and taxpayers, I ask you to balance the significant benefits of restoration against the estimated project costs. There would be a tremendous benefit to the community in having an operational, multi functional, historic facility, on the scale of Hangar 1, in our area. The structure is a unique monument to the lengthy and distinguished presence of the U.S. Navy in Santa Clara County. I believe the community overwhelmingly supports the restoration of Hangar 1. Therefore, I would be willing to engage in discussions with the Navy, NASA and other stakeholders to explore all options which could make this monument a habitable and code compliant asset for the region. Although the "bottom line" established by the Engineering Evaluation/Cost Analysis is important in this decision, the needs and wishes of the community must hold a prominent position in this process. I urge the U.S. Navy to consider all public input, and then work with the community to preserve Hangar 1, a landmark worth saving for the future.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Thank you for your attention to the issues surrounding the restoration verses demolishing of Hangar 1.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Zoltan Szoboszlay, San Jose, California	**Submitted Via**: Comment form
Affiliation/Agency: Moffett Field Historical Society	
SPECIFIC COMMENTS (85B)	
Comment 1: (85B.1) 1). According to table 4-1 of the EE/CA, both options # 10 and 11 meet the exact same goals (feasibility, health, long term effectiveness, etc.) 2a). According to table 5-1 of the EE/CA, the difference between options # 10 and 11 in cost is only 3%, which is probably within the margin of error of the estimation of costs. 2b). Missing from # 11 is the cost of removing, cleaning (decontamination), and storing historic artifacts from Hangar 1. Plus building tower for beacon. 3). Option # 10 preserves most of the historical properties of the site. Option # 11 destroys nearly all of the historical properties of the site. 4). Given the above four comments, the overall conclusions in the EE/CA report should have been to recommend option # 10 “Remove siding and clean exposed surfaces” over option # 11 “Demolish and Remove Hangar.” This is the position of the Moffett Historical Society.	**Response 2:** (85B.1) The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar’s steel frame standing.

	Submitted Via: Oral comment at public meeting
Comment 2: (85B.2) I represent the Moffett Field Historical Society. We have several members here, including our president, Bernie. It's the position of the Historical Society that the EE/CA report is wrong in concluding -- or in recommending option 11, demolition of the hangar. The report should have recommended option 10, removing the siding, but preserving the framework and here's the reason. If you look at Table 4-1, these are the goals of the cleanup, such as feasibility, public health and long-term effectiveness. Option 10 meets all the same goals as option 11. If you look at Table 5-1 of the report, there is only a 3 percent difference in cost, $350,000, between option 10 and option 11. Option 11, there is an omission, which is the cost of building the tower to hold the beacon. Also omitted was the cost of carefully removing, decontaminating and storing the historical artifacts. If those are included, option 10 is, in fact, the lower cost option, not option 11, demolition of the hangar. Most importantly, option 10 preserves most of the historical properties of the hangar, such as the orange peel doors, the beacon in its original location, the electric service cars that ride on rails suspended from the ceiling of the hangar. This is the only hangar in the world that has that feature. So for these reasons we'd like the Navy to correct the EE/CA report, and, if the Navy does that, we believe that option 10 should be recommended. Thank you.	**Response 2:** (85B.2) The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: David Tschang, Palo Alto, California	**Submitted Via**: Comment form
Affiliation/Agency: M&P Biz	
GENERAL COMMENTS (86B)	
Comment 1: (86B.1) "Solar energy the Building." Do not slap our face. Hire architects to solve problem. EE/CA needs to be audited by "SHOC," EPA. Save the Hangar be preserved.	**Response 1:** (86B.1) Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action

Explore all funding available from small business working. Use it as a focal point to recycle Hangar 1. Startup a recycle business and create jobs which M&P in East Palo Alto, East Menlo Park, East San Jose… Repent and save Hangar 1 for working space of M&P Biz. Habitat. Revive "Wenzhou" spirit of entrepreneurship in Bay Area and be productive. Besides winning CA lotto and have people wish. Save Hangar 1 working space for M&P Biz. Put to good use.	Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.
	Submitted Via: Oral comment at public meeting
Comment 2: (86B.2) I do hope that the -- all the audience here would really pass a message clearly that the Navy will not demolish this Hangar 1. To me from East Palo Alto, the Hangar 1 means opportunity of a working space. We don't have stocks. We don't have a lot of money. We don't have working space. I think we need working space for people to migrate up doing mom-and-pop business, which is my TV program is doing trying to advocate that. And this is very serious. You know, in -- in China, there's a city called Hangzhou. They have created 130,000 mom-and-pop factories in their home. See, that is the model. We have to rekindle the spirit of Hangzhou in East Palo Alto, East Oakland, East Menlo Park and East San Jose and also Chicago, so that we can get migration paths set up for the people that need to be organized and become productive. It is very critical that this space be used not just for museum, which is a past thing, but for the future migration path of our next generation, and I really do hope that -- that the mom and pop of this room will have their way. And this is very important. Such a huge space you can create at least 200 mom-and-pop working spaces. Huge amount of working space. I've been dreaming, talking about garages. This is no garage. It's a huge area. And a friend of mine is a very expert in doing building structure. He can easily line up the things like we're going to have the museum. Then you have a recycled thing. You have a recycled industry set up. And I think the people in Bay Area are really very kind and very sensible. I think there's a good use of this space. Demolishing it is really not a thing to do. And besides wishing that I would win the Lotto, maybe I can buy the whole thing. Thank you. And that's also a vision, working space for the people of East Palo Alto and all these unfortunate people. Thank you.	**Response 2:** (86B.2) The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Terry Terma, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Ames EC Peninsula Astronomical Society	
GENERAL COMMENTS (87B)	
Comment 1: I'm Terry Terma. I live at 1450 Todd Street in Mountain View and born in Palo Alto a couple years before the hangar was built. I can remember the Macon flying around in my youth before its disaster at sea. I want to speak in criticism of the demolition cost estimates. They talk about spilling no dust as they tear it down. If no contaminated dust is going to be spilled, it means you've got to clean up the interior completely before you start tearing down the exterior. Otherwise you spread that contaminated interior all around. Now, the -- as for replacing the siding, don't even need to do that. They've got a thin coat of paint on it now, and they worry about it being thin. Well, you can put on thicker stuff. It's been mentioned that epoxies and silicone coatings hold up in space for decades where they are exposed to extreme ultraviolet and solar-charged particles and all kinds of stuff that you don't have down here at the bottom of the atmosphere. So you can certainly get coatings on the exterior that will hold up, if you want to. On the interior, you don't need to do a total cleanup on the interior. You can erect plastic or whatever inside that structural steel skeleton, and it's not exposed to the UV and the weather and so on, and you can seal off that interior, and then -- at reasonable cost, and then you are in a good position to go ahead and develop the interior for usable space. And, of course, you've got to put in new restrooms and new utilities and so on because the old ones got sealed off outside and inside. But, you know, it's got to be cheaper than realistic estimates of how you demolish the thing without spreading contaminants. I'm afraid the Navy would be in for a terrible, terrible public relations disaster if they end up with monstrous overruns on their demolition and making everyone unhappy. Say, gosh, you know, for that kind of money, we could have saved the structure. So okay. 30 seconds more. So really	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The revised EE/CA also includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

they need to go back. I particularly endorse that speaker who talked about options 14, 15, addressing epoxies and silicone coatings. Let's get reasonable -- you know, just do reasonable engineering estimates. Let some outsiders get in and make some estimates on this. Thank you.	

Written in: June 2006	**Received in**: June 2006
From: Bach Tran, Santa Clara, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (88B)	
Comment 1: Please, don't tear down Hangar 1	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Anne Urban	**Submitted Via**: Letter to Rick Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (89B)	
Comment 1: I'd like to see Hangar 1 preserved. I believe that it's an important part of Mountain view's history. It's a symbol of our early vision and efforts, and it gives me a sense of our place in history. It is the first landmark that I was shown when I moved to California.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

The hangar reminds us of a time which is now looked on with great affection, and that the military has a remarkable and admirable history. It makes me feel that the military is cool. With the diminished resources available now, we'll never be able to build anything as impressive. Demolishing it would destroy a link to our past and a feature which could never be replaced. I've been inside it, and it is a marvelous space. The building would make a fantastic site for a museum. Even if the building never housed anything, it would still be a glorious landmark.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Jack Webb, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (90B)	
Comment 1: And I want to open it by saying save Hangar Number 1. There is a heritage here. There have been many comments tonight that are more invasive and have given me a great deal of time for thought, and I couldn't agree more with those comments which involve saving the hangar. I have a special reason for this. In October 1933 as a child of six I drove out with my family to watch the landing of the Macon, and I believe that that was the first -- it was the maiden voyage from the East Coast here. I watched that happen, and, of course, it was -- it was quite a thing to see, and it has been indelible on my mind. I can still see the sight in my mind. The other thing that is coincidental and why I thought I wanted to share this with everyone here is today is May the 23rd. It is my father's birthday, the anniversary of his birthday. My father led the electrical team which wired the motors that open and close the doors at Hangar Number 1. I want to see those doors open again. And these are my reasons for it, but I think that -- that it is the biggest icon, as so many have said tonight, of the West Coast, of this area, and I'm proud that I've lived long enough to share this with all of you. Thank you.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Natalie Wells, Palo Alto, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: PAST Heritage (Palo Alto/Stanford Heritage – preservation group)	
GENERAL COMMENTS (91B)	
Comment 1: Good evening. My name is Natalie Wells. I live at 3259 Alma Street, which becomes Central Expressway, in Palo Alto. And I'm here tonight to let you know about a new evolution that's -- or revolution that's taking place in the field of historic preservation. It's really pretty exciting. In an article several months ago in the San Francisco Chronicle, the writer researched and found that there were approximately 70 historic theaters that were undergoing historic renovation. What does this mean to us tonight? Well, dollars, lots of dollars. Money, tourism. All these issues have been mentioned tonight by other speakers, but I'm telling you that there is a little revolution taking place, and it's an exciting one. So all the money that you might spend on the restoration, renovation, whatever you want to call it of Hangar 1 could reap and double and triple with some of the projects that are being proposed by speakers tonight and I'm sure previous -- at previous meetings. So historic preservation is becoming the new thing, and cities are supporting historic preservation of the old theaters. And why do I mention the old theaters? Because they are small buildings. Well, they have some of the same problems, the same contamination problems that Hangar 1 has. So I urge you to reconsider alternative or option 10, and please think outside the box. You'll find that your investment in this direction will really pay off. Thank you.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Patrick Williams, Sunnyvale, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (92B)	
Comment 1: (92B.1) I am strongly opposed to the demolition of such a historically significant building. This building is significant nationally – only two in the country like it. It is also significant regionally as a South Bay and Bay Area icon – nothing like it anywhere else on the West Coast. It is also significant militarily. As a Navy veteran I believe that the military (Navy) historical heritage is very important to the region as well as to the country.	**Response 1:** (92B.1) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.
	Submitted Via: Oral comment at public meeting
Comment 2: (92B.2) I -- when I was a kid, 17 years old, I used to walk by the Murphy House which was in Sunnyvale, and they decided for some odd reason to tear that thing down. I would watch it, and I would look at it, 24 and I'd say, wow, what a beautiful building, you know. Now they want to make a facsimile of it. My goodness. I don't understand that at all. The real thing is here. I don't trust the Government to say, oh, we'll make a facsimile of that some day. I don't trust that at all. I -- I'm a Navy vet. I'm a resident of this community for 45 years or so, and that is an historical building that needs to be preserved unlike the Murphy House. Thank you very much.	**Response 1:** (92B.2) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Steve Williams, Mountain View, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Save Hangar One Committee	
GENERAL COMMENTS (93B)	
Comment 1: I'm Steve Williams. My address is 1734 West El Camino Real, Number 10, in Mountain View. I am one of the founders of the Save Hangar 1 Committee, and I'm also a pilot and aircraft owner. I want to thank the Navy for holding this public meeting and giving us the opportunity to respond to the EE/CA, and, of course, I want to thank all of my fellow community members for coming out tonight and participating in this very important process. My own position is that the hangar is very important historically and should be preserved, and my understanding from reading the EE/CA is that it is feasible to preserve the hangar, and so I feel that's what should be done. Having said that, I believe that there are significant errors and flaws in the EE/CA that make it very difficult for the public to meaningfully comment on it, and, in my opinion, that means that it would be a mistake to -- to make a final decision based on the EE/CA that we have in front of us now. I hope that the Navy will address the many questions that have been raised about the accuracy of the EE/CA and will do so in a timely way, and I hope that the Navy will take the time that's necessary to accept public comment and public input on the process, even if that means that it's going to go beyond the timelines that were outlined here tonight. Again, I thank you for holding this meeting, and I am very inspired by all the people that came here tonight to -- to participate. Thank you very much.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The EE/CA was revised based on public comments received and updated cost information. The revised recommended removal action alternative leaves the hangar's steel frame standing.

Written on: May 25, 2006	**Received on**: Unknown Date
From: Robert Worcester, Cupertino, California	**Submitted Via**: Comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (94B)	
Comment 1: I am against your plan to tear down Hanger 1. For sentimental reasons, but mainly because by your own admission, per page 2 of "Hanger 1 Update No. 3" you say: "and imposes no restrictions on future uses of the site." On page 3 of this same document you clam you will be "marking the site to denote the size of the structure." I'm sure this is a direct contradiction on the above statement. I do believe your true intention is to sell the property to a developer to build large homes for aircraft-owing families and provide each with an attached aircraft hanger/garage. Please prove me wrong and repair; NOT destroy this wonderful edifice.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Lincoln Worsham, Sunnyvale, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (95B)	
Comment 1: I'd like to thank the Navy for their -- for opening this forum to public comment. I'm a former NASA civil servant and a current Marine Corps brat. I find the current recommendation to demo the hangar unacceptable. It can be seen from Portola Valley all the way out to the East Bay hills. It chronicles a part that this Valley and the Navy has played in its fight against evil. Before me my great-	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

grandfather Robert Davis served here as crew on the Macon. Long before the fences went up or 9/11 there wasn't even a tumbler in the door. You can't replace the feeling you get when you walk inside and are dwarfed by its structure, the same way that it dwarfs military aircraft that were stored inside of it, by a chalk outline and a tombstone. This is why I'd like to request -- excuse me. I'd like to request that the Navy reevaluate the other options that would leave the hangar intact and as a monument to the Navy's commitment to this country and also as the residents of Sunnyvale who originally gave the land to the Navy. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Beth Whyman, Saratoga, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Preservation/Historical Community	
GENERAL COMMENTS (96B)	
Comment 1: I didn't expect the person in front of me to take my speech from me, but what my question, I have some questions. One was the PCBs did not start in 2001. They were identified in 2001, and when did they start, and how many years have humans and raptors and rats been damaged? That's -- you know, I don't know. Maybe that's in the report. I haven't read all the report. I also wanted to say that the Historic American Engineering Record document is not -- it's in a library, is not a compensation for the loss of Hangar 1. I don't know why I can't talk here. I'm a long-time Santa Clara County historian, and my experience with historic preservation is that if you want to do it, you can find a way to do it. And I think we should -- I agree with the first speaker that we should preserve Hangar 1. Thank you.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Bill Youngs, San Jose, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Disabled American Veterans, San Jose Chapter	
GENERAL COMMENTS (97B)	
Comment 1: In 1963 I attended my first air show here at Moffett Field as a Cub Scout with a booth in Hangar 1. In '73 I was transferred to FASOTRAGRUPAC in Hangar 1. I served in VP-31, VP-19, VP-91, VP-50 and combat wing 10. My statement concerns saving our hangar and is mostly emotional. I visited 27 countries in my Naval service. Each time returning the sight of Hangar 1 meant home as I'm a Palo Alto native. Many thousands of aviators were trained at FASO that went out to the fleet, myself included. Many of these airmen and women went on to careers in aviation after Naval service, and many retired here in the Bay Area. General aviation aircraft have used Hangar 1 as a navigational landmark for decades. It is important to save the structure for future generations and to continue to stand as one of the proudest continuations of traditions. The mentality of tear down a building and put in a parking lot is rampant in this country, and if it were not for historical societies and other preservationists, our history would be found only on a DVD. On January 14, 1966, the Navy designated Hangar 1 as a Naval historical monument. On my own side, my 14-year-old daughter had her first hot air balloon ride inside Hangar 1 at an air show years ago. She also had her first flight with the Young Eagles organization. I bet others in this room have similar memories that are just as important as mine. We have outspent the Soviets and collapsed that country. The Navy all but left the Bay Area. Look what happened at Hamilton Field. We should not let that happen here. Not again. The amount of money discussed here tonight is not insurmountable, and the way we throw it at an unjust war, we can throw a little at Hangar 1. Moffett Field is one of the most beautiful bases in the United States, and the key is Hangar 1. The Navy should consider the opposition presented here tonight on the merits of saving our history in	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

the South Bay, as well as the scientific and political opinions presented. We will not go quietly. Thank you.	

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Robert Zimmerman, Portola Valley, California	**Submitted Via**: Oral comment at public meeting
Affiliation/Agency: Aerospace History	
GENERAL COMMENTS (98B)	
Comment 1: I've been employed here at NASA as a civil servant in the '70s, and I'm now back as a contractor. A number of people have very articulately addressed the protection of the heritage and the fact that we have the technology to save it. I want to take a slightly different approach on what I've been hearing here tonight. The Navy spends tens of millions of dollars a year on image and recruitment. The proposed markers, beacons and outlines would be a stunning monument to the Navy's lack of vision and to the shortsighted vision of the perpetrators. Among the -- among the values the Navy attempts to instill in recruits and cadets at the Academy is protecting the values and the culture of our country. That the Navy would willfully destroy such symbols is beyond imagining. Hangar 1 is a very significant part of that heritage. Markers and photos are no substitute for its value as a symbol of American ingenuity and creativity and an inspiration to future generations. The Navy must preserve Hangar 1.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: May 23, 2006	**Received on**: May 23, 2006
From: Anonymous	**Submitted Via**: Unknown
Affiliation/Agency:	
GENERAL COMMENTS (99B)	
Comment 1: Tear it down and use the site and resources for future education use.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

COMMENTS RECEIVED AT THE MAY 11, 2006 RESTORATION ADVISORY BOARD MEETING
*** Due to technical difficulties with the audio recording device, comments denoted by an asterisk (*) are not verbatim, but capture the overall sense of the comment.**

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Peter Strauss, San Francisco, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: RAB member, Silicon Valley Toxics Coalition, TAG consultant	
GENERAL COMMENTS (100B)	
Yeah, I just want to ask a procedural question. [Rick Weissenborn] said that they're going to proceed with the action memorandum with the EE/CA going to final. That means that if we have, if there are substantial comments that are out of the public opinion that you decide that are relevant, are you going to put out another draft final? I have a problem with that. I'm going to have some substantive comments about the environmental data, for instance. And I suspect that there is nothing in the document that really talks about the environmental data, so I would like to see that in this document - that is just one example. And I think I could make a compelling case that this should be in this document – that we need to do a better report in terms of the environmental data. My question is whether there is a possibility of a revision of this document before it becomes final. I'm looking for a procedural interpretation from you guys and I've seen EE/CAs that are draft and draft final and that have been revised. And, I mean if there are substantial comments that cause the Navy to say, to take a second look at their alternatives, and say, well, we need to address this and this and this – I'm being vague right now.	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. There will be a formal comment period of at least 30 days at the time the revised EE/CA is made available to the public. NASA has completed an investigation for PCBs at Moffett Field. The result of this investigation has identified Hangar 1 as the source of Aroclor 1268. The Navy's Hangar 1 TCRA was completed in October of 2003. The TCRA coating has a three to five year warranty. Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

I want to talk about what I think is the major missing link here. And Lenny [Siegel] pointed that out a little bit. The EE/CA is premised on the fact that the only acceptable alternative is to remove all the source material. That means 10 and 11. When I think about that, it's almost like if you built a house that was built prior to 1978, you'd have to tear it down because it was obviously painted with lead paint. It's almost the sort of the equivalent argument, and I don't think that carries weight. I think you have to make the case that is, there's a new health risk, or there's an ecological health risk, and I don't think the EE/CA does that. I think all the data that you quote is prior to any of the Time-Critical Removal Actions both by NASA and by the Navy. And, so I don't see that there is a, there's an imminent hazard, at least as presented in the EE/CA, and I think you have to do that to, at least, to satisfy some of the community members that, hey, this is going to be, you know, you have to choose 10 or 11, or maybe you should choose number six and just re-side it and wait for some other funding. So, I mean, that's the environmental data that I'm looking for. I'm looking for some modeling, some what's going to happen. You know, you have a new settling basin that NASA built. It looks like it's about a half a mile from the Hangar to the wetlands. How does it get there? At what concentration? All those kinds of things. I don't see the case that's made, and I think you need to make the case, and I think that's a very, very important part of this puzzle because people are going to wonder why you tore down this magnificent structure. Thank you. Mr. Strauss asked if the Navy now thought it was valid to revise the EE/CA based on the comments received tonight. He said the community deserves a better EE/CA to comment on.	

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Lenny Siegel, Mountain View, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: RAB member, Center for Public Environmental Oversight	
GENERAL COMMENTS (101B)	
Comment 1: (101B.1) Lenny Siegel. I have a few questions of my own. A few questions on my own, but first I just want to follow up with what Peter [Strauss] said, because I think Peter's more critical of the EE/CA than I am. He thinks that there's some data missing that might lead to a different evaluation of the differential effectiveness, of the different alternatives. When the community, members of the community asked the Navy and the regulators for an RI/FS, Remedial Investigation/Feasibility Study, we said, well, that would really slow things down. We're going to do a robust EE/CA that we felt there was actually a legal requirement for an RI/FS for something of this nature, and we were told no, we'll just do everything as well, but we won't have to take as long. So please take that into consideration when you say, well, it's an EE/CA, of course it doesn't have all the data. Well, we were promised, quote, a robust EE/CA. **Comment 2:** (101B.2) I have three general, technical questions. I think you might be able to answer rather quickly, Rick [Weissenborn]. The first is, on Alternative 6, the placement of visually similar siding on Hangar 1. Is that only on the exterior, or on the exterior and the interior of the siding? **Comment 3:** (101B.3) Secondly, I read the EE/CA to say that under Alternative 10, that the mitigation may include, that your cost estimate would include placement of visually similar siding after removing the contaminated sidings. **Comment 4:** (101B.4) And my third question has to do with Alternative 11, the recommended alternative. I read that as not including the cost which I assume would be borne by NASA for modifying the infrastructure for Moffett Field that runs through Hangar 1, steam, electrical, whatever, that that's not part of the Navy's estimate.	**Response 1:** (101B.1) The EE/CA was revised based on public comments, new technical information, and updated costs. **Responses 2:** (101B.2 and) The placement of siding referred to in Alternative 6 was solely external and was to be mounted over existing siding. **Responses 3:** (101B.3) The Navy considered replacing the siding as a historic mitigation option. Historic mitigation costs are included in Table 5-2 of the revised EE/CA. **Responses 4, 5**: (101B.4 and 101B.5) Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. **Responses 6:** (101B.6) The public comment period for the EE/CA was extended from 30 days to 45 days. **Response 7:** (101B.7) NASA has completed an investigation for PCBs at Moffett Field. The result of this investigation has identified Hangar 1 as the source of Aroclor 1268. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. **Response 8**: (101B.8) Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Comment 5: (101B.5) Does NASA have any estimates yet on what that might cost, Sandy [Olliges]? [UI background conversation]. Okay, when do you think you'll have that? [UI background conversation] I mean, will you have it during the comment period, or is it something that we won't know? [UI background conversation] Okay. Just to explain for those people who haven't read the EE/CA. The two alternatives that the Navy has rated as acceptable are 10 and 11. Ten is $12.4 million more. We think if you'll include some of the costs that are borne by NASA, the difference would be shrunk. Now, for the Navy, maybe that doesn't make a difference, but for us as taxpayers, it does. **Comment 6:** (101B.6) And the final comment, or question, is what will the procedure be for requesting an extension of the comment period, and particularly your comment about somebody finding another source of money. I still believe that the Navy should pay for this out of the BRAC, Base Realignment and Closure, budget, but recognizing you're more likely to do what I want, if we can find some other source of money. That to me is in itself enough reason to request an extension so that we can work with our elected officials, foundations, and corporations to see what other resources might be available to make up the difference that's keeping the Navy from doing the right thing. **Comment 7:** (101B.7) Two more things to say. First, I want to clarify the environmental risk. I go around the country organizing workshops, and I bring in toxicologists, one of whose jobs is to point out to the communities in which we're working, that proximity in itself does not represent environmental risk. There has to be a pathway. My understanding, the two primary pathways where there is risk at Moffett Field, at Hangar 1, are in the interior of the Hangar, where breathing particulates such as PCBs is a hazard, and that's why NASA has closed the building. And, the migration of contamination from the Hangar to the wetlands, where it poses an ecological risk. I think those are serious risks, and I think several of the alternatives may address those well, particularly, as this point I favor number 10, but again, the fact that there's contamination doesn't mean that if you're standing 100 yards away or a mile away that that's going to be the cause of the problem. We've been looking at the Navy housing area at Moffett, and we're saying there's a risk not from the drinking water, but people breathing fumes that might be coming up. You have to identify a pathway and not just the proximity.	

Comment 8: (101B.8) The other point I want to make goes back to the beginning of the Base Realignment and Closure process in 1991, when Congress passed the law. At that time, federal officials, many federal officials basically said we will spend federal money to allow for communities to reuse closing bases as they see fit. Now, unfortunately, the military has back slipped from that in places. Sometimes it's impractical. We have a situation here where we have a community and a federal owner, and so is it what the community feels or what NASA feels, so those questions may come into play. Nevertheless, the reason I believe it is the Navy's obligation to make the property available for reuse as Hangar 1 is because that's the basic concept of the base closure process. Whether you want to take, put a park on an area that used to have unexploded ordnance, a marina on a place that has PCBs in the sediment, is the obligation of the federal government, and the Navy in this case, to do that cleanup. Now, I will do what I can to work with federal agencies to reduce that cost, it's not like I want to break the bank. Nevertheless, I believe that obligation is built into the base closure process, and I think this community is going to make an effective case over the next couple of months that that should happen.	

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Richard Eckert, Los Altos, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: RAB member	
GENERAL COMMENTS (102B)	
Comment 1: Yes, Richard Eckert, I'm a RAB member, also a former Navy pilot. And I'm kind of appalled that our government is going to be so cheap, they're willing to tear down a very unique, historical artifact to save a few dollars. I don't think it should go that way.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Robert Moss, Palo Alto, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: RAB member, Barron Park Association Foundation	

GENERAL COMMENTS (103B)

Comment 1: (103B.1) Just as an observation, I noticed that when you go through the effectiveness of the various 13 options, none of them are identified as recognizing or preserving the historic nature of the site. And one of them, of course, is the asphalt coating, which has already been done. And at no time did I hear anybody complain about the asphalt coating having any deleterious impact on the historic integrity of the site. It's already there. It's been there for three years. Nobody said anything. So, I have a real doubt that when you talk about historic integrity that you've taken the correct facts into effect, and I think that definitely should be considered. Also, I find it rather strange that it's considered basically the same level of a historic preservation to tear the building down as it is to do any of these other 10 or 12 things. **Comment 2:** (103B.2) And finally, in almost all of the total cost packages, you have two cost elements. There's the initial cost and there's the maintenance cost. And I think it's kind of absurd to talk about the dollar figures as being identical when any economist will tell you that if you talk about cost 30 years out, you should be talking about a cost adjusted figure. So the cost for maintenance in today's dollars is significantly lower than the figure you show over 30 years. So, when you talk dollars versus dollars, you should be talking about the same dollar figure as of July 1st 2006, or for actual fabrication in doing things, and for maintenance over the 30-year period. **Comment 3:** (103B.3) Also, as a generic comment, we talk about what is permanent versus long term. I think we all recognize that long term can be 90, 100, 150 years, we wouldn't call it permanent, but it's still sufficient. So, I think	**Responses 1:** (103B.1) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. **Response 2:** (103B.2) A present worth analysis was performed on the revised EE/CA for O&M based on a nominal discount rate of 5.2 percent for 30-years in accordance with OMB Circular A-94, and costs were normalized to 2007 dollars. In addition, the cost estimates in the revised EE/CA are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. **Response 3:** (103B.3 The revised EE/CA evaluates the alternatives based on their long-term effectiveness. The cost for O&M was based on a typical CERCLA 30-year duration. **Response 4:** (103B.4) The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). Epoxy was also researched as an exterior coating as well as an interior coating option in the revised EE/CA.

making that distinction in doing your evaluation is spurious, and I think that ought to be reconsidered. So, I'll stop and let other people make comments at this point. *The following portion of Mr. Moss' comment was not captured verbatim.* **Comment 4*:** (103B.4) Mr. Moss briefly described the process for eliminating alternatives and confirmed with Mr. Weissenborn that all coating options are for the hangar's exterior. Mr. Moss said Navy meetings with EPA and Water Board confirmed that the inside of the hangar also has to be addressed. Mr. Moss said the Navy should review the solutions he had previously recommended, such as epoxy coating, that are cheaper and more durable than the coatings selected in the EE/CA. Mr. Moss said his recommended coatings should be alternatives and the explanation of dismissal should have been provided in the EE/CA. He said an explanation of why NASA's cost estimates are different than the Navy's should be made available to the public. Mr. Moss added that since NASA owns the site, it is concerned with what to do with the site after the Navy cleans it. He said the hangar's rent would bring about $375,000 to $400,000 per month, resulting in a rental income of about $4.5 million per year. The cost to restore the hangar would be recouped, and NASA would continue to earn interest and value on it. Mr. Moss suggested the community speak with NASA about opportunity costs once they get the Navy to save the hangar. **Comment 5*:** (103B.5) Mr. Moss said the sediment basins are analyzed periodically. Tests conducted last November indicated PCBs and lead appear to be coming from the hangar. This indicates that the temporary coating may be wearing off, and the contamination could be coming from the hangar's interior, which hasn't been treated. NASA has expressed concern with the interior not being treated. If a remediation approach is taken, there will have to be ongoing observation of both inside and outside to ensure coatings are effective. This ongoing cost would be NASA's responsibility, or if NASA sells the building, it would be the buyer's responsibility. That is part of the cost the Navy has incorporated to get comparative cost estimates.	Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. **Response 5:** (103B.5) To monitor the effectiveness of the asphalt emulsion coating, NASA has sampled water from downspouts of the Hangar, during heavy rain events, each year since the 2003. The results of this sampling show trace amounts of PCBs ranging from non-detect to less than 10 parts per billion. These results show the TRCA is still effective in controlling the contaminants from Hangar 1. The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks).

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Kevin Woodhouse, Mountain View, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: RAB member, City of Mountain View	
GENERAL COMMENTS (104B)	
Comment 1: (104B.1) Kevin Woodhouse, city of Mountain View. I don't know if this is a question for the Navy or for the EPA, or both. My question is, one of the criteria for evaluating the alternatives is implementability, and one of the criteria for implementability is community acceptance. So, what weight, in that analysis, is going to be given to the community acceptance component of implementability in the evaluation? **Comment 2:** (104B.2) I mean, not directly. The question is, how much, how much community opposition equals $12 million, right? I mean, that's the direct question. I can't put it any more bluntly than that.	**Responses 1 and 2:** (104B.1 and 104B.2) In the comparative analysis conducted to determine which removal action alternative best meets National Contingency Plan evaluation criteria, community acceptance is not evaluated as a component of implementability. Community acceptance is actually evaluated along with state acceptance as a distinct "modifying" criterion separate and apart from implementability. Implementability, which addresses the technical and administrative feasibility of an action, is one of five primary balancing criteria by which all alternatives that meet threshold evaluation criteria are evaluated to determine which alternative achieves the best overall solution. As an evaluation criterion, community acceptance is not assigned a particular weight in the comparative analysis but is considered to determine which components of alternatives interested persons in the community support, have reservations about, or oppose.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Gabriel Diaconescu, Mountain View, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: RAB member	
GENERAL COMMENTS (105B)	
Comment 1: I want to say something which means for me very much. I'm a resident within some 300 yards from that famous Hangar, and related to [Kevin Woodhouse's] question, related to his question, which is the weight of people. I think the procedure was very good because first of all, it was the weight of the criteria. Which one is more important, health or the historical value? I like history, I am a little bit conservative, but when it is something about my immediate health, I am within that 300 yards, so my opinion is not to bring so easily many people because we can bring some people from Redwood City that not so relevant, like people living in that immediate proximity, and for instance, people from NASA, they are living there for many hours, they feel that threat, people from that immediate proximity, they feel that threat, so the idea is to appreciate that kind of - first priority is for health. If it is possible, I must speak about solution, but if it is possible to do both, then wonderful, but it's time for decision making. I like history; I like very much that historical monument. If it is possible to make, I am not speaking about solution, but criteria should be the weight of the first criteria should be very important. Health first, and it's not a good idea to transfer that weight to the people because first of all, it's not democratic. We have the same weight here. Even I am much closer to that place, or some other people, they, I cannot speak, what is your distance from that place? So I can ask. How many people here, they are within 300 yards? So, okay, that's good. So, the idea is to switch to the weight of criteria. Yeah, okay.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. Alternative 10 would safely remove contaminated materials from the structure while keeping its original frame, appearance and historic profile in the community.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Diane Farrar, Moffett Field, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: NASA Ames	
GENERAL COMMENTS (106B)	
Comment 1: (106B.1) Hi, my name is Diane Ferrar, I'm from NASA Ames, NASA research park division, and you know, this document is the basis for a public discourse, and we've been waiting many months for it, and it should be the foundation for a community decision, and I'm concerned about the actually credibility, the accuracy of the costs reflected in item, Alternative 10 and Alternative, what's the demolition, 11. And there was quite a lively discussion this morning, thank you Rick [Weissenborn] for talking to us at NASA Ames, by a staff member who was trained by the Navy to make cost estimates, and this staffer was quite concerned that the cost for demolition was lowballed, and that the cost for tearing down the cleaning up the site to make it healthy for this gentleman, and restoring the siding was inflated with costs that should not be in there, so I'm just concerned about having an honest public conversation when the costs have not been accurately, possibly accurately reflected. That's my concern, because I think we'd all like to have an honest conversation, and the decision is going to be based on costs, and to not have that foundation accurate is disturbing to me. *The following portion of Ms. Farrar's comment was not captured verbatim.* **Comment 2*:** (106B.2) Ms. Farrar questioned how the Navy could be trusted to respond to public comments if the EE/CA was not as thorough as what the public had expected or requested.	**Response 1:** (106B.1) The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. **Response 2:** (106B.2) The EE/CA was revised based on public comments received and updated cost information.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Jeff Segall, Mountain View, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (107B)	
Comment 1: (107B.1) Hi, my name is Jeff Segall, Mountain View resident. A couple of things. One is taking off of what Lenny [Siegel] said earlier, asked about the cost of restoring the infrastructure. At NASA, this is a question that I've raised and that other people have raised for a number of months now, and I just want to reiterate, as a taxpayer, as concerned citizens, I think it's important before any decision is made, especially on the basis of cost, that a foreseeable cost to the infrastructure of the public, of this publicly owned facility is not just oh, well, that will need to be figured out later. It seems to me that's a critical thing. If you take away that Hangar and damage the infrastructure of that base, that's something, the cost of that, even if it's not borne by the Navy, it's borne by the taxpayers, and so that's an important factor, I don't think this should be allowed to slide past while this is still something that's under public review. And I appreciate what the Navy is doing allow public comment, but I think this is an important point. We're making, if a decision is going to be made on the basis of cost, that all the true costs that are, that can be estimated in a reasonable way are done so. And I appreciate Sandy's [Olliges] comment about the, what it would take to restore the Hangar to ADA and all those things that would be very expensive. That was an important point. But it's also an important point to note that the recommended action, if the Hangar is taken down, it cannot be compared on the equal basis to Alternative 10 because in one case you have a Hangar, in the other you don't. The Hangar has a value, and that is something that is not being addressed here. The Hangar, even if it is not publicly usable has a value. And historic mitigation that you talk about, I'm sure it would be great, it's not the Hangar, and that's something that this period, this comment period is here to address, and I think that's something that everyone has to take away. If the difference between the cost of tearing down the Hangar and restoring	**Response 1:** (107B.1) Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. **Response 2:** (107B.2) The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks).

it, and the difference of restoring the base, that could be viewed as an investment in something that could return value to this community and to the federal government. So, that's the point I'm trying to make. Thank you very much for that. *The following portion of Mr. Segall's comment was not captured verbatim.* **Comment 2*:** (107B.2) In response to Mr. Segall's question, (question not recorded) Mr. Cora said that although interior air monitoring shows polychlorinated biphenyl (PCB) concentrations and the exterior doesn't, it does not signify that contamination doesn't exist. EPA believes there is migration from the interior to the exterior.	

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Mike Buhler, San Francisco, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: National Trust for Historic Preservation	
GENERAL COMMENTS (108B)	
Comment 1: (108B.1) Hi, Mike Buhler, I'm a regional attorney with the western office of the National Trust for Historic Preservation, and I have two comments, questions. The first is the potential additional costs to make the building usable. Those are outside the scope of this evaluation, is that correct? So, they do not come into play in terms of comparing the alternatives here. **Comment 2:** (108B.2) Secondly, I wanted to ask what the status is of Section 106 consultation under NHPA. **Comment 3:** (108B.3) Finally, has either SHPO or the Advisory Council on Historic Preservation commented on the adequacy of the mitigation included in the report? *The following portion of Mr. Buhler's comment was not captured verbatim.*	**Response 1:** (108B.1) Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. **Response 2 and 3:** (108B.2 and 108B.3) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. **Response 4*:** (108B.4) The Navy is responsible for the Section 106 consultation and has been working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Comment 4*: (108B.4) Mr. Buhler said NASA was responsible for Section 106 consultation and he asked whether NASA or the Navy was responsible for the costs associated with historic mitigation, such as replacing the siding. **Comment 5*:** (108B5) Mr. Mike Buhler asked if the Navy could proceed with the project if EPA wasn't in agreement. **Comment 6*:** (108B.6) Mr. Buhler asked for clarification on the potential for contaminant release from the structural beams inside the hangar and if it is currently unknown whether contaminants are being released.	Replacing the siding was a historic mitigation option considered in the revised EE/CA. However, it was not recommended as a historic mitigation option for the recommended removal action. **Response 5:** (108B.5) As lead agency, the Navy may proceed with the non-time critical removal action (NTCRA) without EPA agreement. However, a removal action agreed upon by both EPA and Navy is desirable. **Response 6:** (108B.6) A study in 2005 by ISSI revealed that structural steel contained lead levels as high as 200,000 mg/Kg and total PCBs at concentrations between 65 and 214 mg/Kg. Visual inspection of the structural beams indicates that some paint is deteriorating. It is not possible to determine whether the interior contamination (dust) is solely the result of the interior siding or is also being contributed to by the paint on the structural steel. The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks).

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Larry Shapiro, Palo Alto, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (109B)	
Comment 1: My name is Larry Shapiro. Very concerned citizen as I said earlier, and a year ago I sat in this room and I commented about the Golden Gate Bridge--how many deaths have come from that bridge. There will never be a meeting like this one to decide how to destroy it. That'll never happen. They'll only find ways to keep it. The same thing that happened with the Empire State Building, the Statue of Liberty, there would never be meetings like this. This meeting should only be about	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution

saving the Hangar. The fact that we're sitting here, all these people talking about the possibilities of tearing it down over money is just beyond anything that I can fathom. It doesn't seem to trouble the president of our country to taxi his airplane and park it out by the Hangar, and I'm assuming that he, the governor, and the gubernatorial candidates are aware of what's going on with this Hangar. And if they're not, then they should be. But, if it's safe enough for the president to park his airplane next to it, then it's got to be safe enough for it to continue living, and I thank you for your attention.	Contingency Plan criteria. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Steve Williams, Mountain View, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (110B)	
Comment 1: (110B.1) I'm Steve Williams, I'm a resident of Mountain View. I had three comments, one of which is a question that I hope you'll address. First of all, regarding the NASA rough estimate that you just mentioned for bringing the building up to a standard that would actually allow it to be reused, as opposed to just keeping the Hangar there in some form, $50 to $100 million does sound like a great deal of money, and I hope that people won't react to that without considering the following idea. First of all, nobody I've talked to thinks the Navy has that obligation. We understand that that's not part of this process, so, you know, you're correct in making that, we know that. But, I have to observe that if the Hangar is demolished, then we lose forever the opportunity to have it reused. Now, you might say, $50 to $100 million, there's no way we could ever raise that. We're quibbling over $12 million. The fact is that if the Hangar is there, and if it's resided, and if it's stable, then, even if it takes years or a decade to find the right tenant and to find the right fundraiser who can come up with the money to make, to actually reuse the Hangar, at least the Hangar will be there waiting for us. If we tear it down, we'll never have that opportunity and we'll lose a tremendous asset that our community has.	**Response 1:** (110B.1) The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. **Response 2:** (110B.2) Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. **Response 3 and 4:** (110B.3 and 110B.4) Yes. The Navy recommended Alternative 10, remove the siding and coat the exposed surfaces, in the revised EE/CA. Replacing the siding was considered as a historic mitigation option for this removal action alternative, but was not recommended. **Response 5:** (110B.5) The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of

Comment 2: (110B.2) Secondly, regarding the infrastructure costs at NASA, I believe I understood Rick [Weissenborn] to just say that that cost will be addressed in the future. That concerns me because I believe that cost does directly play into the community's evaluation of which of these costs are more acceptable, and so, if we're not going to have any opportunity to find out what that infrastructure is going to cost the taxpayers, it's a little bit difficult to make an evaluation of the Navy's recommendation here. **Comment 3:** (110B.3) And then finally, the one that maybe you'll respond to again is this question of Alternative 10, and whether Alternative 10 includes replacing the siding. As you've heard tonight, and as you saw in the press last week, there is a good deal of confusion over this because the section on Alternative 10 does not explicitly say that Alternative 10 will include replacing the siding. Now, I understand that that's because you put the historical mitigation in a separate section of the document, but perhaps you can make, once and for all, an unequivocal statement that Alternative 10 would not be considered, except including replacing the siding, because I think there's still a little bit of confusion on that point. Thanks. **Comment 4:** (110B.4) Let me ask the question. So, all of the alternatives in the EE/CA describe if the Navy were to choose that alternative after the public comment period, what the Navy would do, and you're saying that Alternative 10, if it were chosen by the Navy, would not necessarily include replacing the siding. Is that what you're saying? I'm extremely concerned that we're being asked to make a judgment and make a comment on this document when we can't understand precisely what it says. *The following portion of Mr. Williams' comment was not captured verbatim.* **Comment 5*:** (110B.5) Mr. Williams said it is not feasible to estimate opportunity cost, nor is it part of the Navy's job, because opportunity cost would be really large on one hand, and wouldn't exist on the other. Mr. Williams said although the EE/CA doesn't address the interior, the important point is that the costs presented in the EE/CA are not useful to the community when making comments.	the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks).

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Terry Terma, Mountain View, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: Space World/SETI	
GENERAL COMMENTS (111B)	
Comment 1: (111B.1) I'm Terry Terma, resident of Mountain View and born in Palo Alto. Now, I'm concerned about this teardown. I don't think that teardown is necessarily a simple, straightforward procedure that you know the cost of. You've got to encapsulate the whole thing before you even start to tear it down. And, you've, I mean, what other building that large has been given an airtight encapsulation, and when you start to tear down, now you can't mechanically support the encapsulation from the structure because you're tearing the structure down. If you get the structure partly torn down, and there is a failure of encapsulation, and leakage of toxic material as a result, then you've got to stop tearing it down, and then we're left, maybe for years, with a partly torn down building to look at that will never be usable but remains an eyesore. So, I think there are much more danger of cost overruns and time overruns, and hazard material leakage from tearing it down than there is from a straightforward encapsulation, which I was, like to see done on the inside, as well as the outside, so you leave the steel work with its toxic paint intact, and you just encapsulate inside it, and then you don't have to save the restrooms or anything, you can [UI] enough room inside to put in new restrooms, etc, and infrastructure inside the safe space. Thank you. *The following portion of Mr. Terma's comment was not captured verbatim.* **Comment 2*:** (111B.2) Mr. Terma said if the hangar is demolished without first being encapsulated, the Navy is risking contamination.	**Response 1:** (111B.1 and 111B.2) Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks).

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Seth Shostak	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: Space World/SETI Institute	
GENERAL COMMENTS (112B)	
Comment 1: My name is Seth Shostak, I'm with Space World, I'm on the board of Space World. I just want to, I hear a lot of laments here, and I can only think that you, Rick [Weissenborn], must have a fairly thick epidermis by now, and obviously the crowd is very sympathetic to preserving the Hangar. Something that hasn't been specifically said, although Steve [Williams] alluded to it, is the opportunity cost. Once it's gone, it's gone. You cannot reuse it for anything. This reminds me of the situation in 1963 when they tore town Penn Station in Manhattan, now they're busy trying to replace that with something at the old Farley Post Office building at an enormously greater cost than it would have taken to save the station in the first place. And that architecture's gone, that building's gone. Here, we're talking about reusing the Hangar for Space World. That's a project that we've studied, and studied, and studied, and it has a capital cost of about $400 million. The dollar flow through Mountain View and Sunnyvale, because of building that, is estimated to be about $30 million a year. All of this, of course, dwarfs the $12 million, which I don't think buys you even a crummy military helicopter these days, so, indeed, that's a small amount of money. Having said all this, the question is, what are we going to do about it except sit here and moan? Is there something to be done? And I think that the best thing to do is indeed, this is from my very naïve point of view, but the best thing to do is get enough time to actually do some action, particularly in Washington to influence the people that need to be influenced. Twelve million dollars is not a lot of money. The value of this building over the long-term future for the next 50 years is enormous in terms of educating our kids and bringing people to the South Bay.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Jack Gale, Mountain View, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: RAB member	
GENERAL COMMENTS (113B)	
Comment 1: (113B.1) Jack Gale from Mountain View. I would like to add one more thing to [Seth Shostak's comment] that's not explicitly stated, is that that building cannot be rebuilt or restored at any time because of the proximity to the active duty runway. Once it's gone … You can't put another building right there. *The following portion of Mr. Gale's comment was not captured verbatim.* **Comment 2*:** (113B.2) Mr. Gale questioned who in the Navy approved the EE/CA because there was no approval signature.	**Response 1:** (113B.1) The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. **Response 2:** (113B.2) The EE/CA recommends a removal action and is not formally approved; but is issued or published after it goes through Navy internal review and consensus. However, the Action Memo that follows after the EE/CA, that documents the decision on the selected removal action will be approved and signed by the BRAC Environmental Coordinator

Written on: May 11, 2006	**Received on**: May 11, 2006
From: John Kaiser	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: San Francisco Bay Regional Water Quality Control Board	
GENERAL COMMENTS (114B)	
The following portion of Mr. Kaiser's comment was not captured verbatim. **Comment 1*:** Mr. John Kaiser of the Water Board said it was unacceptable for the	**Response 1:** The Navy has revised the EE/CA to address Hangar 1's interior. Remediation of the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks)

Navy to not address the interior of the hangar since this has been discussed through the dispute resolution process. The Water Board has other issues that will be included in their official comments.	were evaluated based on the three EE/CA criteria: implementability, effectiveness, and cost, while taking into consideration site-specific conditions. The revised EE/CA evaluated a broad range of removal alternatives that control contamination by either: coating or encapsulating the hangar; removing the siding and addressing the exterior and interior components of the hangar; or controlling the contaminant migration by collecting and treating stormwater runoff. Additionally, the revised EE/CA evaluates the alternative of permanent removal of contaminants. Within the removal alternatives that control contamination are four methodologies for remediating the interior components: acrylic coating; epoxy coating; asphalt-emulsion coating; and polyurethane foam coating. These four methodologies for remediating the interior components are evaluated in Section 4.0 of the revised EE/CA. Alternatives that leave contaminants of concern in place may require additional CERCLA documentation.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Mr. Malkav (SP?)	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (115B)	
The following portion of Mr. Malkav's (SP?) comment was not captured verbatim. **Comment 1*:** Mr. Malkav (SP?), community member, said he is knowledgeable about the type of metal on the hangar siding, and to his knowledge, he hasn't found that this metal is salvageable.	**Response 1:** Thank you for your comment. The Navy also does not consider the hangar siding as a salvageable material based on the components adhered to siding's annealed steel sheet.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: Jack Nadeau, San Jose, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: Public member	
GENERAL COMMENTS (116B)	
The following portion of Mr. Nadeau's comment was not captured verbatim. **Comment 1*:** Mr. Jack Nadeau, community member, asked if the hangar ever had been appraised for its intrinsic value if it were built today.	**Response 1:** No.

Written on: May 11, 2006	**Received on**: May 11, 2006
From: John Chesnutt, San Francisco, Calif.	**Submitted Via**: Oral comment at the May 11, 2006 RAB meeting
Affiliation/Agency: U.S. EPA	
GENERAL COMMENTS (117B)	
The following portion of Mr. Chesnutt's comment was not captured verbatim. **Comment 1*:** Mr. Chesnutt said the EPA's opinion is that the Navy needs to address the interior of the hangar and this will be in EPA's comments. This will heavily weigh where the EPA falls on alternatives. The EPA is sympathetic to issues about tearing down the hangar. When there are costs involved, the EPA wants to ensure that funds are used effectively because the costs for this project affect funds available for use elsewhere.	**Response 1:** The Navy has revised the EE/CA to address Hangar 1's interior. Remediation of the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks) were evaluated based on the three EE/CA criteria: implementability, effectiveness, and cost, while taking into consideration site-specific conditions. The revised EE/CA evaluated a broad range of removal alternatives that control contamination by either: coating or encapsulating the hangar; removing the siding and addressing the exterior and interior components of the hangar; or controlling the contaminant migration by collecting and treating stormwater runoff. Additionally, the revised EE/CA evaluates the alternative of permanent

	removal of contaminants. Within the removal alternatives that control contamination are four methodologies for remediating the interior components: acrylic coating; epoxy coating; asphalt-emulsion coating; and polyurethane foam coating. These four methodologies for remediating the interior components are evaluated in Section 4.0 of the revised EE/CA.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS IR SITE 29, HANGAR 1 FORMER NAS MOFFETT FIELD MOFFETT FIELD, CALIFORNIA

Written in: June 2006	**Received on**: July 3, 2006
From: Susan Haviland, Palo Alto, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Palo Alto Historic Resources Board	
GENERAL COMMENTS (1C)	
Comment 1: I understand that the difference in cost between saving the structure and demolishing it works out to about $12 a square foot. Given current construction cost in the Bay Area, this is a bargain! The building is an important part of this area's history. Indeed the nation's history and is a rare and imposing building type. It seems crazy to demolish it when there are a number of uses for it – it would make a fabulous aerospace museum! I don't think you understand how important this building is to the community and, as a result, you have not used an iota of creative thinking about how it would be reused and how the cost of toxic mitigation could be recaptured. My humble suggestion is a joint venture with the Smithsonian.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

Written on: June 2006	**Received on**: July 3, 2006
From: Mary Jean Place, Palo Alto, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (2C)	
Comment 1: You made the mess, clean it up! Save the building!	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: July 3, 2006
From: Beth Bunnenberg, Palo Alto, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Palo Alto Historical Association, Save Hangar 1 Committee	
GENERAL COMMENTS (3C)	
Comment 1: I strongly believe that the demolition of Hangar 1 (Removal Action Alternative 11) would be a huge loss to our entire nation. I believe that there are options, especially Removal Action #10 which can retain the form and massing of this important structure. Hangar 1 is a nationally recognized symbol of the history of aviation on the west coast. It is listed on the National Register of Historic Places. It is an architectural and engineering marvel built in 1932 to span a huge space. Hangar 1 can be a future educational and economic asset such as a Smithsonian West or conference center to attract tourists, educators, and local businesses. I have major questions about the Navy's cost figures for Alternative #11. NASA estimates for demolition seem to have been much higher and included a number of important and necessary items. I request that Requests for Proposals be put out to compare #10 and #11. Please put my name on a list to receive information on the	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

results of these Requests for Proposals. Do not rush to judgment. I strongly support SAVING HANGAR ONE. Let the Navy show good stewardship of this national treasure and listen to the overwhelming community response to save Hangar 1.	The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

Written on: June 28, 2006	**Received on**: July 3, 2006
From: Christopher Cora, Remedial Project Manager	**Submitted Via**: Written comment
Affiliation/Agency: U.S. Environmental Protection Agency, Region IX	
GENERAL COMMENTS (4C)	
Comment 1: (4C.1) Re: Engineering Evaluation/Cost Analysis, IR Site 29 Hangar 1, Former Naval Air Station Moffett Field May 5, 2006 Dear Mr. Weissenborn: The U.S. Environmental Protection Agency (EPA) has reviewed the subject Engineering Evaluation/Cost Analysis (EE/CA) and provides the attached comments. EPA does not anticipate a revision of the EE/CA, unless the Navy concludes that it is appropriate based on comments received by the regulatory agencies and the public. EPA anticipates the Navy will address comments in the Response to Comments on the EE/CA and reflect any changes directly in the Action Memorandum for the chosen alternative. EPA requests that the Navy consult with EPA prior to signing the Action Memorandum so we can discuss the Navy's consideration of both public comments received during the public comment period and any additional information the	**Response 1:** (4C.1) The Navy appreciates EPA's thorough review. The revised EE/CA is based on public and agency comments and new information received. The Navy will meet with EPA to discuss consideration of comments received on the revised EE/CA prior to Navy's signature of the Action Memorandum.

Navy has acquired through its issuance of a request for proposal on Alternatives 10 and 11. If you have any questions, please contact me at (415) 972-3108. Sincerely, Christopher Cora, Remedial Project Manager Attachment cc: Sandy Olliges, NASA Judy Huang, SFB-RWQCB	
Comment 2 (attachment): (4C.2) U.S. EPA Comments on the May 5, 2006 EE/CA for IR Site 29, Hangar 1, Former NAS Moffett Field **General Comments:** EPA's overriding concern with the Hangar 1 EE/CA is that most alternatives considered are inappropriately limited to addressing releases from the exterior of the Hangar. EPA and the San Francisco Bay Regional Water Quality Control Board raised objections to this approach and consequently initiated a dispute under the Federal Facilities Agreement in 2005 (reference EPA's dispute letter, attached). The parties to the dispute raised two primary issues: (1) the Navy's desire to address the Hangar through a non-time critical removal action in order to address the contaminant releases before the 2003 time-critical removal action coating the exterior of the Hangar began to fail; and (2) the Agencies' concern that any response action address the contaminant releases from the Hangar as a whole. While the Agencies agreed that the Navy could address contamination at the Hangar through a non-time critical removal action, it was understood that the non-time critical removal action would address the Hangar in its entirety. Despite these agreements, many of the alternatives presented in this EE/CA, including four of the six alternatives retained in the Comparative Analysis of Alternatives chapter, do not fully address releases from the Hangar. It appears that only Alternatives 10 and 11 address the potential for releases from structures and surfaces from within the Hangar. Other alternatives provide for "encapsulation," either through a structure like Alternative 1, or exterior-only coatings like Alternatives. 2, 3, 4, and 5; however these alternatives do not provide a complete response to the release of hazardous substances from the Hangar into the	**General Comment Responses:** **Response 2:** (4C.2) The revised EE/CA addresses remediation of the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). Remediation was evaluated based on the three EE/CA criteria: implementability, effectiveness, and cost, taking into consideration site-specific conditions. Within the removal alternatives that control contamination are four methodologies for remediating the interior components: acrylic coating; epoxy coating; asphalt-emulsion coating; and polyurethane foam coating. These four methodologies for remediating the interior components are evaluated in Section 4.0 of the revised EE/CA. **Response 3:** (4C.3) The preferred alternative, Alternative 10, in the revised EE/CA does address the source as a whole. Alternative 10, Remove siding and coat exposed surfaces, is the recommended alternative in the revised EE/CA. Alternative 10 provides a high degree of protection of the public and the environment because the contaminated siding and associated interior components are removed, and the PCBs in the lead-based paint remaining on the structural steel is encapsulated. Alternatives that leave contaminants of concern in place may require additional CERCLA documentation. **Response 4:** (4C.4) It is agreed that the use of Galbestos is not accepted under the Toxic Substances Control Act (TSCA). It is the

environment.

Comment 3: (4C.3). Should the removal action fail to address the source of contamination as a whole, the removal will have to be followed up by remedial action. This approach would be inconsistent with the Navy's desire to expedite the process of addressing the Hangar as a whole as was advocated in the 2005 Dispute. In addition to the extra time spent dividing the Hangar response into two different CERCLA processes, such an approach would surely strain resources of both the Navy as well as the regulatory agencies.

Comment 4: (4C.4). The use of PCBs is limited under the Toxic Substance Control Act (TSCA) by the regulations found at 40 CFR § 761.20. Galbestos is not an authorized use of PCBs under those regulations. Thus, any use of the hangar that includes continued use of the Galbestos, or other PCB bulk product waste, will constitute a violation of TSCA. EPA believes it would be a better use of public funds to do this action once, instead of having to evaluate the potential for release through the remedial action program (RI/FS through ROD). Therefore, EPA finds many of the alternatives evaluated not protective of human health and the environment or in compliance with applicable or relevant and appropriate requirements (ARARs). Alternatives 10 and 11 are the only alternatives which satisfy the removal action objectives.

Specific Comments:

Comment 5: (4C.5) During the Navy's Public Meeting for the Hangar, one commenter referenced that Hangar 1 had been re-sided approximately 25 years ago. Clarify whether the siding was replaced in its entirety, in part, or at all and whether the replacement siding contained PCBs. If the siding was replaced, procedures used and costs expended will provide relevant information regarding future actions and may impact the scope of work addressed by this action.

Comment 6: (4C.6) Page ES-2, second paragraph and first bullet point: EPA agrees with the Navy's objective "to mitigate the threat from Hangar 1 and to complete a Removal Action while the interim coating is still effective" as well as the Removal Action Objective (RAO) to "control the release of contamination at Hangar 1." EPA reiterates its position that the removal action should address the environmental threats from the Hangar as a whole.

Comment 7: (4C.7) Although the EE/CA generally identifies as a RAO the Navy's intent to put forth a variety of options that are effective in the long-term in order to provide for the greatest number of potential opportunities to protect human health and the environment. Each was developed in accordance with and weighed against the criteria within the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The NCP does not require that each proposed alternative meet each of the criteria, only that the selected alternative must be weighed amongst each of the nine criteria; be protective of human health and the environment; and attain applicable or relevant and appropriate requirements (ARARs).

Specific Comment Responses:

Response 5: (4C.5) The Navy is aware that the hangar was repainted 25 years ago and the built-up roof was repaired around that time frame. No documentation of re-siding has been found.

Response 6: (4C.6) The revised EE/CA addresses contamination throughout the Hangar.

Response 7: (4C.7) The revised EE/CA addresses contamination throughout the Hangar.

Response 8: (4C.8) The text was revised as follows:

> The Navy and NASA conducted separate TCRAs at the Hangar 1 site following discovery of the contaminants in and around the hangar. In 2002, the concrete floor of Hangar 1 was cleaned and all hangar occupants were removed from the hangar. In 2003, NASA implemented a TCRA to remove sediments contaminated with PCBs from the stormwater collection trench around the perimeter of Hangar 1, and to remove potentially contaminated sediments present on paved surfaces immediately surrounding the structure. The Navy's TCRA was completed in October 2003 and included pressure washing the siding and then coating it with asphalt emulsion. The paved areas around the hangar were also cleaned by pressure washing to remove PCBs from the surface areas.

control of releases of contamination from Hangar 1, in several, places throughout the EE/CA the Navy limits the identification of contaminant sources to the Hangar siding (e.g. pages ES-2, 4-8, 4-11, 4-14, 4-18, 4-24, 4-3 5, 4-45, 4-49, 5-4). In the Executive Summary, the Navy summarizes that "[i]n brief, PCBs, asbestos, and lead are the primary contaminants of concern in the Hangar 1 siding material." (Page ES-2, emphasis added). Again, although this statement is true, EPA is concerned that the removal action should address these contaminants of concern throughout the Hangar.

Comment 8: (4C.8) Page ES-2, first full paragraph: The Navy identifies several actions taken to control exposure to contamination emanating from Hangar 1. Other actions taken include cleaning the concrete floor and removing all occupants from the building.

Comment 9: (4C.9) Page ES-3, first paragraph and page 1-2, third paragraph: The Navy explains that this action will not address contamination in or below the Hangar's concrete foundation. Testing has shown recontamination of the concrete floor from sources within the Hangar. Characterization of residual contamination on, in, or beneath the concrete should be done as a part of any alternative that allows the concrete to remain after the removal is conducted. Soils surrounding the hangar, which may be paved now, may have been contaminated during construction or repair of the Hangar. This contamination will need to be characterized and evaluated for potential response action (e.g., excavation, containment with institutional controls) if unacceptable risks exist.

Comment 10: (4C.10) Page ES-3, first paragraph: Institutional Controls. EPA encourages the consideration of institutional controls (ICs) for any alternative that leaves waste in place as part of this removal action. However, if the Navy is conducting any removal that will require a follow- on remedial action, then ICs can be considered at that point.

Comment 11: (4C.11) Page ES-5, second to last Paragraph: Because Alternatives 2, 3, 4, and 6 do not address all of the contaminant sources in the Hangar, these alternatives would not be effective over the long term. ln light of the remaining interior contamination sources, explain how these alternatives will be made effective over the long term.

Comment 12: (4C.12) Page 1-2, top paragraph: Investigations conducted at the

Subsequently, in February 2005, as part of an ongoing effort to reduce contamination, the Navy cleaned out the Hangar 1 rain gutters by collecting, sampling, and disposing of the contaminated sediments in the gutters.

Response 9: (4C.9) Concrete floor slab samples were collected in 2002 and 2003. Results indicate that the hangar-related PCB contamination is limited to the surface of the floor slab. The core sample results indicate that the concentration of lead (from any source) within the interior of the concrete floor slab ranges from 4.4 to 5.0 mg/kg. A Synthetic Precipitation Leaching Procedure performed on this concrete was non-detect for lead. A PCB result for a different floor core sample was reported as 0.0949 µg/quantity for Aroclor 1268. Because PCBs present in dust do not migrate through concrete, as would liquid PCBs, subsurface contamination is not likely. There are no indications from written evidence or staining that liquid PCB spills occurred. Therefore, there is no reason to suspect that PCBs may be present in the soil below the concrete slab.

Confirmation sampling of soil around Hangar 1will be performed following this removal action.

Response 10: (4C.10) Institutional controls are not being implemented as part of this NTCRA. Alternatives that leave contaminants of concern in place may require additional CERCLA documentation

Response 11: (4C.11) Interior contamination sources will be addressed in the revised EE/CA.

Response 12: (4C.12) The text of the EE/CA has been revised to address the Hangar 1 interior.

Response 13: (4C.13) In 2002, testing showed that contamination (PCBs and lead) was present on the interior of the hangar, and that the area was re-contaminated following the efforts to clean the concrete floors. Because of this, the occupants were relocated from Hangar 1, and the hangar was closed off, and fenced to

Hangar led the regulatory agencies to identify the Hangar siding as a significant source of the PCB contamination at Site 25. However, the investigations did not rule out contamination emanating from other parts of the Hangar, and other sources continue to be of concern to the agencies. Please clarify this throughout the EE/CA. **Comment 13:** (4C.13) Page 2-2, fourth paragraph: In 2002, occupants of Hangar 1 were removed from the building, the Hangar was closed off to the extent feasible, and the area was fenced off to control access to the Hangar. The access controls were instituted not following the discovery of contamination in the siding, but rather after testing found contamination in the interior of the Hangar, including re-contamination of the concrete floors following cleaning. **Comment 14:** (4C.14) Page 2-4, paragraph 3: Descriptions of previous investigations should include findings regarding contamination of the concrete floor within the Hangar. **Comment 15:** (4C.15) Page 2-6 paragraph 1: It is unclear from the discussion of the siding whether the Navy examined the interior of the siding or merely the outside layer. Please indicate whether the interior of the siding (i.e. the ceiling of the Hangar interior) was tested and what the results of that testing showed. **Comment 16:** (4C.16) Page 2-6, last paragraph: Explain whether it has been established that the Aroclor-1260, Aroclor-1268, PCBs, and lead on the structural steel were from the paint used to coat the steel and/or from dust or peeling from the Hangar siding. **Comment 17:** (4C.17) Page 2-10, 1st bullet point: Delete "The siding on" from the first bullet, or include the other building materials which contain PCBs in the bullet. **Comment 18:** (4C.18) Page 3-2, paragraph 4: The scope of this removal was intended to be the reduction of risk from releases from Hangar 1 as a whole, not merely the siding. In order for the EE/CA to meet the goal of reducing impact from Hangar sources, the action must address all of the Hangar's contaminant sources. **Comment 19:** (4C.19) Page .3-7, § 3.5.3, First Bullet: The West-side Aquifers Treatment System (WATS) is not designed to treat releases of PCBs, lead, or	control access. In 2003, the exterior of the siding of Hangar 1 was coated with an asphalt emulsion as a Time-Critical Removal Action (TCRA) to reduce the potential for release of, or exposure to, these contaminants. The Navy added Hangar 1 to the Installation Restoration Program (IRP) as Site 29 in September 2004. **Response 14:** (4C.14) This paragraph is a lead-in paragraph to the whole Section 2.2 that details observed concentrations in all of the media sampled. Findings regarding contamination of the concrete floor within the Hangar have been added into Section 2.2.1 on page 2-7. **Response 15:** (4C.15) The Navy analyzed a piece of the hangar siding in 2005. Both the interior and exterior portions were analyzed. The results of analysis are discussed in Section 2.3 and the laboratory report is included in Appendix B. **Response 16:** (4C.16) Page 2-7, second paragraph was revised as follows: <u>Structural Steel</u> Samples of the paint on the structural framework inside the hangar were collected in 2005 (Integrated Science Solutions, Inc. [ISSi], 2005) (see Table 2-1). Prior to collecting the sample, the area was cleaned. Then the paint was ground off using a sander to remove the required amount of paint for the sample. Analytical results indicated that the paint was lead-based and contained Aroclor-1260 and Aroclor-1268 at concentrations from 33 to 120 mg/kg and 32 to 94 mg/kg, respectively. Total PCBs were reportedly present at concentrations from 65 to 214 mg/kg. In addition, analytical results taken from the structural steel paint indicated lead levels as high as 200,000 mg/kg. In March 2003 dust samples were obtained from the

asbestos if released from the Hangar to groundwater.

Comment 20: (4C.20) Page 3-12, Bay Area Air Quality Management District Regulations, Regulation 2, Rule 2- 301: This rule should be a potential ARAR. Because dust control measures have not yet been selected, the potential for releases of particulate matter less than 10 microns in diameter remains a potential.

Comment 21: (4C.21) Page 3-18, § 3.5.5.1: The EE/CA explains that the Navy does not consider TSCA regulations at 40 CFR 761.61 to be ARARs because the PCBs present are not the result of a spill or immediate release but rather were an integral part of the manufacturing process of the Hangar itself. However, both the regulations at 40 CFR 761.61 and at 40 CFR 761.62 should be ARARs for this action. The Galbestos and paint manufactured with PCBs that are part of the Hangar materials are bulk product wastes regulated under 40 CFR 761.62. However, the deterioration of the Galbestos and paint at the Hangar has produced dust contaminated with PCBs, which has repeatedly contaminated the Hangar's air and concrete floors, constituting a release or a spill of PCBs. NASA and the Navy have documented contaminated air and dust within the Hangar containing Aroclor 1268. The material contaminated by that dust thus becomes PCB remediation waste regulated under 40 CFR 761.61. While 40 CFR 761.62 assumes intact PCB bulk product waste is entirely removed, 761.61 recognizes that contamination from a release is not limited and requires verification sampling under Subpart 0 of 40 CFR 761.

Comment 22: (4C.22) Page 3-19, § 3.5.5.1 and Table 3-3: The Navy states in several places in the EE/CA that the "balance of TSCA regulations are not applicable". One reason cited is that RCRA treatment, storage and disposal (TSDs) requirements are more stringent than certain TSCA regulations. It may be the case in some instances that RCRA TSDs are more stringent than TSCA regulations; however, TSCA and RCRA are both federal environmental regulations that are applicable or relevant and appropriate to this action, and as such, both can simultaneously be ARARs. Even if it were possible to replace a set of federal regulations with another set of federal regulations as ARARs, the EE/CA does not specify which RCRA TSD regulations are more stringent than the TSCA regulations. Additionally, the Navy appears to argue that TSCA regulations

interior of the hangar. The analytical results of the samples indicated PCB concentrations from below the detection limit to 320 mg/kg.

Because it was coated with PCB-containing paint, the structural steel surface is considered a porous surface under TSCA. Because of this determination, only certain decontamination methods may be used to remove the PCBs from the structural steel.

Response 17: (4C.17) Page 2-13, 1st bullet point was revised as follows:

The siding and other building materials on Hangar 1 have high concentrations of PCBs that have adversely affected the sediment and surface water concentrations in the nearby stormwater collection system.

Response 18: (4C.18) The revised EE/CA evaluates alternatives to address contamination on the interior and the exterior of the Hangar.

Response 19: (4C.19) Comment noted. WATS is not designed to treat PCBs, lead, nor asbestos. However, there is no indication that pollutants from Hangar 1 are impacting the groundwater.

Response 20: (4C.20) Page 3-12, 3rd paragraph was revised as follows:

BAAQMD Regulation 2, Rule 2-301 specifies that the best available control technology will be applied to any new source or modified source with the potential to emit 10.0 pounds or more per highest day of precursor organic compounds, non-precursor organic compounds, nitrogen oxides, sulfur dioxide, particulate matter less than 10 microns in diameter (PM_{10}), or carbon monoxide. This regulation is not applicable to activities under the NTCRA, as there are no

governing PCBs are not applicable due to the combination of RCRA and TSCA wastes. RCRA does not regulate the storage or disposal of PCBs. TSCA does regulate the use of PCBs as well as the storage and disposal of PCBs with a concentration> 50 ppm, as cited on page 3-18 of the EE/CA. Galbestos is subject to the bulk product waste regulations of TSCA found at 40 CFR § 761.62. Furthermore, NASA and the Navy have documented contaminated air and dust within the Hangar as containing Aroclor 1268. PCBs released from Galbestos are considered a spill under TSCA and the areas contaminated by such spills are subject to the PCB remediation waste requirements of 40 CFR § 761.61. Therefore, both statutes are applicable and relevant and appropriate for this action.

Comment 23: (4C.23) Section 4, Compliance with ARARs, Alternatives 1, 2, 3, 4, 5, 6, & 7: EPA does not concur that these alternatives would comply with federal ARARs identified in Section 3.5. Galbestos is not an authorized use of PCBs under Subpart B of 40 CFR § 761. Thus, the future use of the structure as a museum or public space is not an acceptable use under TSCA if the PCB bulk product wastes remain. This comment also applies to the Compliance with ARARs discussion in § 5.3 on Alternatives 2, 3, 4, and 6.

Comment 24: (4C.24) Page 4-10, §4.5.3, and Page 4-25, § 4.9.3: These sections state that the alternative provides "total encapsulation of the siding". The description of these alternatives in the EE/CA does not meet the definition of encapsulation". Encapsulation would be to completely surround an object, in this case both sides of the Galbestos siding.

Comment 25: (4C.25) Appendix C, Alternative 10: The cost detail for Alternative 10 does not appear to include the cost for removing paint containing PCBs and lead by sandblasting or an equivalent method. In addition, line item 2, Pressure-washing of a building interior is not an approved procedure for removal of PCB bulk product waste pursuant to TSCA. 40 CFR § 761 .79(b)(3)(i)(B) and 40 CFR § 761 .79(b)(3)(ii)(B) regulate self-implementing decontamination procedures approved under TSCA for non-porous surfaces in contact with non-liquid PCBs.

Comment 26: (4C.26) Appendix C, Alternatives 10 and 11: Clarify whether the cost detail includes the costs of preventing releases of PCBs, lead, or asbestos during demolition. Due to the size of the structure and the anticipated difficulty in removing the siding, dust generation must be minimized and/or contained to the "sources" as defined by the regulation**; however, it is considered potentially relevant and appropriate since the work being conducted could potentially emit particulates. Appropriate dust control measures will be in place to prevent triggering this regulation.**

Response 21: (4C.21) While the Navy agrees that 761.62 should be an ARAR and included it within the EE/CA for this NTCRA, the Navy disagrees that the presence of dust constitutes a release or spill, with regards to TSCA, and therefore disagrees that 761.61 is an ARAR.

A related example from EPA's *2001 Q and A Manual* is as follows: "Contaminated concrete that is removed from a building is PCB waste and is regulated for disposal, regardless of whether the building itself is demolished or reused. If the concrete was contaminated by a ***spill, release, or other unauthorized disposal of PCB liquids*** (emphasis added), it may be PCB remediation waste depending on the concentration of the PCBs and the date of the spill, release, or disposal. If the concrete contains or is coated with a material that was manufactured to contain PCBs, and at the time of designation for disposal contains PCBs 50 ppm, it is PCB bulk product waste."

Based on the statement above, there is a strong indication that EPA is restricting spills, releases, or unauthorized disposal to liquids only.

Additionally, 761.3 defines PCB bulk product waste as follows: "PCB bulk product waste includes, but is not limited to: Non-liquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is ***contaminated by spills*** from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned up in accordance with subpart D of this part." In the previous quote,

greatest extent practicable to prevent short term impacts and potential contamination of the surrounding area. **Comment 27:** (4C.27). Appendix C, Alternative 11: Requirements for scrap metal recovery ovens are detailed in 40 CFR § 761.72. C1arify whether the estimated "profit" for disposing of the structural steel (footnote f) includes the requirements identified at 40 CFR § 761 .79(c)(6)(i).	only spill was cited. The Navy disagrees that dust from painted surfaces and siding constitutes a spill under TSCA. **Response 22:** (4C.22) Page 3-19 (new Page 3-23), the Management and Disposal of PCBs under TSCA section was revised as follows: TSCA regulations govern the management and disposal of PCBs contained within the siding, structural steel, and other materials used to build Hangar 1. Because the PCBs are integral to the manufacture of the product and their presence is not the result of a spill or release from another source, the siding is defined as PCB bulk product waste. Regulations in 40 CFR, Part 761.60(e) and 761.62(a) govern the disposal of bulk product waste and allow for disposal through a variety of methods. Only those methods specified in 761.62(a) are permissible at the site due to the fact that the siding is also considered RCRA-regulated because of the lead content of the paint. **The requirements of 40 C.F.R. Parts 761.40, 761.50, and 761.65 govern the storage and disposal of PCBs and are potentially applicable. All TSCA waste will be managed in accordance with TSCA regulations. Waste that is also considered hazardous waste will be managed under both TSCA and RCRA requirements. 761.180 governs the required recordkeeping and monitoring that apply to PCBs. It is considered potentially applicable.** 40 CFR, Part 761.79 provides expanded decontamination procedures. It is potentially applicable to the **decontamination of** TSCA waste, as well as the decontamination of tools and equipment that contact PCBs during the removal action. **The regulation of 40 C.F.R., Part 61(a)(5)(v) provides disposal requirements for personal protective equipment (PPE) and non-porous**

	surfaces that have been decontaminated. These requirements are applicable to wastes generated during cleaning activities, which may occur as a result of removal and reuse of man-cranes. Table 3-3 has been revised to reflect the changes made to the text in the revised EE/CA. **Response 23:** (4C.23) The Navy agrees that the use of Galbestos is not authorized under TSCA. 760.30(p) authorizes the coating of surfaces contaminated with liquid PCBs to prevent human contact; therefore, coating of surfaces that have been impregnated with PCBs as a result of the manufacturing process provides a reasonable alternative to complete demolition of the structure while achieving the stated Remedial Action Objective (RAO). **Response 24:** (4C.24) The revised EE/CA evaluates alternatives to address contamination on the interior and the exterior of the Hangar. **Response 25:** (4C.25) Alternative 10 no longer includes sandblasting; it includes coating of the exposed structural steel. Pressure washing is being used to remove the accumulated dust only. Cleaning to Visual Standard No. 2 is not a feasible or cost-effective way to remove loose dust from the surface of the painted structure. Pressure washing will continue to be used as part of Alternative 10, because it is not being used to decontaminate, but simply to clean the surface in order to obtain a good bond between the coating and the steel. **Response 26:** (4C.26) Costs are included for utilizing wet methods to safely remove the contaminated building material (i.e. siding, interior buildings, etc.). For Alternative 11, the structural steel would be dismantled using specialized shear cutting techniques. All the demolition debris will be contained within the curtain wall footprint. To further protect the public, continuous air

	monitoring will be conducted during all phases of the project to monitor any fugitive dust that escapes the exclusion zone. The air monitoring will comply with the substantive requirements of the BAAQMD. **Response 27:** (4C.27) The revised EE/CA does not consider the recycling of the structural steel since cleaning/decontaminating all the surfaces of the riveted structural members to recycling standards, outweigh the costs of disposal. This based on analytical results from the structural steel paint. In addition, studies by ISSI in 2005 indicated lead levels as high 200,000 mg/Kg and total PCBs at concentrations between 65 and 214 mg/Kg within the structural steel paint, which further limits the recycling possibilities of the steel.

Written on: June 2006	**Received on**: July 3, 2006
From: John S. Cupples, DDS, San Jose, CA	**Submitted Via**: Written Comment
Affiliation/Agency: Public Member	
GENERAL COMMENTS (5C)	
Comment 1: I sincerely hope you will not demolish Hangar 1, and will maintain it for its historical significance.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 14, 2006	**Received on**: July 3, 2006
From: Marie Christine Kloeti, Palo Alto, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (6C)	
Comment 1: Please save the Hangar at Moffett Field. Since 1940 we don't have a world exposition. It will be a dream come true for everybody with a lot of fun and learning experience and peace under one roof <<it will bring money>>	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 28, 2006	**Received on**: July 3, 2006
From: Jack Daniel Nadeau, San Jose, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public Member	
GENERAL COMMENTS (7C)	
Comment 1: I am in favor of Alternative Ten. I fully agree with the twelve members of Congress who stated their views on the EE/CA. A copy is attached. I attended the June 15th meeting of the Santa Clara County Historical Heritage Commission, where they unanimously voted to issue a strong statement of support for the retention of Hangar 1. A copy of page one is attached. On June 20th, the Santa Clara County Board of Supervisors voted to endorse this letter opposing Alternative eleven. Also, the City of Sunnyvale and the City of Mountain View have each sent letters of comment supporting preservation of the hangar – as did the Mt. View Chamber of Commerce. The comments of standing-room-only crowd	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

at the Navy's public meeting on May 23rd made it abundantly clear to everyone attending that Alternative eleven-demolition and removal – totally fails community acceptance.	

Written on: June 2006	**Received on**: July 3, 2006
From: Victoria Smith, San Jose, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (8C)	
Comment 1: The reason Hangar 1 should be saved (repaired and restored vs. demolished) is because it is a HISTORIC structure! I understand there is only one other blimp hangar left in the entire country and that one is somewhere in the eastern U.S. The cost of the repair of Hangar 1 is irrelevant (and there apparently is some question about the accuracy/honesty of the comparative estimates which favor demolition over repair). Because of the Hangar's landmark status, age, and historic significance to the residents of the Bay area, the costs should not be the sole factor in determining its fate. IT SHOULD BE SAVED!! Too many structures have fallen to the wrecking ball in the name of "progress." Let's not make that irreversible mistake here.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The EE/CA was revised based on public comments received and updated cost information. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance.

Written on: June 2006	**Received on**: July 3, 2006
From: Howard Glaser, San Jose, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (9C)	
Comment 1: I was horrified when I heard the Navy was considering demolishing Hangar 1. The hangar is a national landmark; once it is gone it will never be again. It, along with the Golden Gate Bridge, Fisherman's Wharf, and Telegraph Hill, is well recognized as a National landmark; no one has to be convinced of this fact nor denies it… I understand the pollution concerns with PCBs, but tearing down the structure and moving it somewhere else spreads the pollution in the Bay area as well as moving the pollution problem wherever the mess is deposited. I do know a good spot for the waste if you cannot be dissuaded about the destruction of Hangar 1: Crawford, Texas. With the prevailing winds off the Bay, it will be impossible to contain the contaminants. Be prepared for health related lawsuits if the structure is demolished and if certain attorneys get wind of what is in the air. The current plans do not explain how the interior hardware and electrical wiring will be handled and the cost of doing so. I would imagine removing the interior material will spread additional PCBs and asbestos in the air. The best plan is containment rather demolishing the structure. It will be cheaper in the long run and will give the public what they want. By the way, did I mention the government represents *We the People* and the people want to keep the structure? With all the government waste, 11 billion unaccounted for in Iraq, the cost to save the structure is nothing and helps the Navy with public relations.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: July 3, 2006
From: Barb and Jim Fitzgerald, Ann Arbor, Michigan	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (10C)	
Comment 1: As long-time believers in historic preservation for traditions, cultures and building of the United States history, we strongly believe this hangar should be preserved. As suggested by the County, we also believe the facilities could provide a beneficial, profitable purpose for the area and for the maintenance of the facilities themselves. Please, please give serious consideration to this preservation not only for all current generations of Americans, but for all those to follow	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 29, 2006	**Received on**: July 3, 2006
From: Judith Semas, San Jose, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (11C)	
Comment 1: I would like to lend my support in helping the committee keep Hangar 1 from being destroyed. I grew up in Santa Clara and have lived in the Bay Area most of my life. Riding along the Bayshore Freeway, both as a child and as an	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate

adult, I pass Moffett Field and Hangar 1 and marvel at its size and structure. As a youngster I remember being told that the hangar was so tall it made its own weather inside – that it could actually be raining inside the hangar even when, outside, the weather was clear. That old hangar is an important part of this valley's history, long before folks knew what silicon was. It is a nationally recognized symbol of the history of aviation on the West Coast. As an historic structure listed on the National Register of Historic Places, Hangar 1 is the centerpiece of the Sunnyvalle Historic District, Moffett Field. A marvel of architectural and engineering design, Hangar 1 is of the largest free-standing structures in the world. It should be refurbished or at least be brought up to code and maintained as some sort of historic landmark or museum. It could easily be a future educational and economic asset such as Smithsonian West or a conference center to attract tourists, educators and local businesses. I agree with The Palo Alto Weekly that "DESTROYING HANGAR ONE WOULD BE A TRAVESTY," and urge that the Navy clean up toxic materials and restore the magnificent structure.	consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 2006	**Received on**: June 2006
From: Georganna Hymes, Palo Alto, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: Public member	
GENERAL COMMENTS (12C)	
Comment 1: I have been working with the Save the Hangar Group since the beginning of Save the Hangar started. I am a widow of a deceased, retired Navy man. I came to Moffett in 1947. I traveled a lot after that. One stay was in Kodiak, Alaska and another in Glenview, Illinois. We returned to northern California in 1957 after my husband retired from the military. I visited the base often for all services provided for dependents including air shows. I still shop there. The hangar is a very valuable building. It will provide us with many services. All	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

of those mentioned by others such as having Scout Arama, museums, and most of all a shelter in times of disaster. We have no bases here, as you know. The nearest base to protect us is in Nevada. We need a fighting unit on Moffett also. I can't think of another state in America with no protection. You have closed all bases in Northern California. Now you want to take away our last historical landmark. Please stop for a moment and think. The Alameda Naval Air Station closed. Treasure Island closed. Moffett Field closed. Letterman Army Base closed and several more. Please save our Hangar. There are only a few things left on the base. Each day we have less service even though we were promised a lot more. We travel miles away to get our identification card. Please save the Hangar. The hangar cost will be only a fraction of what we spend elsewhere. I did express my opinion at the meeting held here last month. I pray that you take time out to think of the impact this demolition will have on the entire Bay Area. If you need further information, please call (408) 891-2768.	

Written on: June 29, 2006	**Received on**: July 3, 2006
From: Susan Phillips, San Jose, Calif.	**Submitted Via**: Written comment form
Affiliation/Agency: Public Member	
GENERAL COMMENTS (13C)	
Comment 1: I am writing to express my hope that a way can be found to save Hangar 1 in Mountain View, California from demolition. I grew up in the San Francisco Bay Area and this structure has been an icon and a monument to an important part of our area's history. So many reminders of our past are gone forever. It would be a shame if our children and grandchildren were denied this small piece of our history, too.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

I understand that it will be more costly to abate the toxic substances in the structure than to demolish it. While the additional millions spent on this endeavor are a significant cost, surely we must consider this as a long-term investment in our community. It will be a difficult decision in cash-strapped times, but it is a worthwhile investment. The right way is frequently more difficult than the easy way. Please allow the Navy to take the right way in this instance.	

Written on: June 30, 2006	**Received on**: July 3, 2006
From: San Jose Parlor No. 81, Native Daughters of the Golden West	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (14C)	
Comment 1: The Native Daughters of the Golden West (NDGW) is a fraternal and patriotic organization. We have approximately 7,000 California-born members who value our State history and honor the people of this State who have labored to make it a thriving place to live and work. We help restore and preserve tangible historic sites in an effort to instill, both now and in the future, appreciation of California's unique history. We strongly oppose demolishing Moffett Field Hangar 1 because it is a valuable symbol of our Country's and State's history. Hangar 1 is a visual reminder and beacon for anyone returning to the San Francisco Bay area, as is the Golden Gate Bridge, or the Statue of Liberty on the East coast. Moffett Field and its Hangar 1 are of historical significance. The people who worked or were stationed there contributed significantly to the building of our great State and Country. The destruction of this unique and wondrous structure would be a huge loss to future generations. We question the accuracy of the cost estimates for contamination removal	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA

compared to the estimates for total destruction of the structure. We favor having the outer shell of Hangar 1 "contained" or removed and then replaced. Revenue derived from the future use of a "renewed Hangar 1" could help defray part of the clean up expenditures and provide a service to the community.	guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

Written on: July 1, 2006	**Received on**: July 3, 2006
From: Mary Ellen Wolders, Mountain View, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (15C)	
Comment 1: Save Hangar 1 in Mountain View, CA- Moffett. The Navy has a proud heritage and the Navy needs to keep its heritage and history alive.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 30, 2006	**Received on**: July 3, 2006
From: Gary V. Plomp	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (16C)	
Comment 1: Hangar #1 (One) at Moffett Field is a historical icon and engineering marvel that must be saved and preserved for future generations. I support the efforts of those who wish to keep this symbol of Naval Aviation intact.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate

	consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 30, 2006	**Received on**: July 3, 2006
From: Robert C. Schick, Mountain View, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (17C)	
Comment 1: The preservation of Moffett Field's Hangar 1 is important to maintaining the historic and cultural identity of the Bay Area. The Hangar is an engineering work of art, and is the last reminder of the large dirigibles (not seen for decades) that it once housed. Our national aviation history is important to our country's proud legacy, and to the Bay Area which contributed to it. Please don't let Hangar 1 fade from our memories like the dirigibles it once housed.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: July 3, 2006
From: George Edge, Mountain View, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public member	
GENERAL COMMENTS (18C)	
Comment 1: Please do not tear down Hangar 1 because airborne toxins could fly all over and around in the air. Also, it could cause a lot of very serious cancer deaths to a lot of people who live and work near the hangar. That is why that Hangar 1 should never be torn down.	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: July 3, 2006
From: Carol Murolen, Palo Alto, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public Member	
GENERAL COMMENTS (19C)	
Comment 1: The demolition of Hangar 1 would be a great loss to the community and to those locally and nationally, who are interested in the history of aviation. Hangar 1 has long been an impressive landmark in this area, visually reminding those who saw it of an era of America's aviation history. Viable users have been suggested for One. The cost of retaining it is estimated to be $35 per square foot above the cost of demolition. A new building on the site would cost about $200 per a square foot to build in north Santa Clara County. Please consider carefully the replacement cost of a new building, the use of which Hangar 1 could be put, and	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

the loss of an outstanding landmark before proceeding with a demolition decision. There are other better alternatives than the destruction of the building.	The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: July 3,2006
From: Dustin Demarta, Petaluma, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public Member	
GENERAL COMMENTS (20C)	
Comment 1: Hangar 1 at Moffett Field is one of the few last remaining items from the short but significant Airship Era. There are no more zeppelins, only by standing next or inside of the hangar can you fully appreciate just how massive the giant airships were built. No DVD or book can describe the experience. The hangar and the most technically advanced zeppelin ever built, the Macon shows what the Navy was able to accomplish even in the Depression Era. Please don't take away from future generation the unique experience of Hangar 1. Why erase forever such an important part of aviation and most importantly Naval history.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: July 3, 2006
From: Diane Farrer, Moffett Field, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: NASA Research Park	
GENERAL COMMENTS (21C)	
Comment 1: Please consider stripping (removing) the entire shell from the frame. Please consider reconstructing the black portion with Building Integrated Photovolatics. These are new materials offered by ATLAMB Energy Systems in Sacramento CA that are actually construction materials embedded with PV. This would make Hangar 1 a monument to good sense. Attached letter to Congresswoman Eschoo and a US Department of Energy Federal Energy Management Program's Technical Assistance Report titled: "US NASA Ames Research Center Study of Photovoltaic Power System for Hangar 1"	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 2006	**Received on**: July 3, 2006
From: Michael Buhler, Regional Attorney Milford Wayne Donaldson, FATA, California Office of Historic Preservation Steve Mikesell, California Office of Historic Preservation Don Klima, Advisory Council on Historic Preservation Christopher Cora, U.S. Environmental Protection Agency, Region IX Judy Huang, Regional Water Quality Control Board, San Francisco Bay Region The Honorable Anna G. Eshoo, U.S. House of Representatives Cindy Heitzman, California Preservation Foundation Megan Bellue, Preservation Action Council of San Jose Lenny Siegel, Save Hangar 1 Committee	**Submitted Via**: Written comment
Affiliation/Agency: Public Member	

GENERAL COMMENTS (22C)	
Comment 1: On behalf of the National Trust for Historic Preservation, thank you for the opportunity to comment on the Engineering Evaluation/Cost Analysis for Installation Restoration Site 29, Hangar 1 Former Naval Air Station Moffett Field, Santa Clara County, California (EE/CA). We greatly appreciate the Navy's willingness to grant a one-day extension for submission of these comments. The National Trust supports Alternative 10 as the only alternative evaluated in the EE/CA that will remove contaminants and retain Hangar 1 for future use. Constructed in 1932, Hangar 1 is the centerpiece of the U.S. Naval Air Station Sunnyvale, California, Historic District. The hangar was central to the function and purpose of the base and provided the visual focus for the 1933 NAS Sunnyvale master plan, with smaller administrative buildings arranged symmetrically along a central plaza extending from its base. It is undeniably Silicon Valley's most prominent landmark, visible to thousands of commuters each day as they pass nearby on Highway 101. Demolition of Hangar 1 would have impacts far beyond the loss of a single building, potentially jeopardizing the eligibility of the entire NAS Sunnyvale Historic District. A. The EE/CA's recommendations are based on incomplete and inconsistent cost estimates. The EE/CA appears to reject Alternative 10 based on cost alone, citing a $12 million differential between demolition and re-siding the hangar. However, a recently-discovered NASA engineering study suggests that the cost differential between Alternative 10 and Alternative 11 may be much lower. While the EE/CA pegs demolition costs at $12.2 million, the NASA estimate is double that amount at over $30 million, citing safety concerns related to demolishing a building of this size. Although the Navy has since promised to put the two alternatives out for bid to clarify costs, the results will not be released until after the Navy has made its decision, precluding public scrutiny and meaningful discussion of alternative funding sources. B. The EE/CA is not responsive to community input. Although the Navy has made a good faith effort to keep the public informed regarding the fate of Hangar 1, there is little evidence that community input was	**Response 1A:** Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. **Response 1B:** The EE/CA was revised based on public comments received and updated cost information. **Response 1C:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. **Response 1D:** While the recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

actually considered in formulating the EE/CA's recommendations. The Navy frequently touts its commitment to meaningful public process, noting that its community involvement requirements are more comprehensive than the minimum CERCLA requirements: Community involvement is an essential and integral component of the [Navy's] Environmental Restoration Program. [The Navy] recognizes the importance of early involvement and responsive interaction with affected communities to ensure a timely progression through the environmental restoration process while maintaining a safe and healthy environment. Consistent with this policy, the EE/CA states that "community acceptance" is an important factor in evaluating the implementability of alternatives. Yet, despite overwhelming and passionate community opposition—83% of 2,000 respondents to a local poll voted to save Hangar One 2—the EE/CA recommends demolition and off-site disposal although a viable alternative is available. C. The Navy has yet to comply with Section 106 of the National Historic Preservation Act. The EE/CA asserts that documentation and demarcation of Hangar 1 will satisfy the Navy's responsibilities under Section 106 of the National Historic Preservation Act. As an "Applicable or Relevant and Appropriate Requirement" for CERCLA removal actions, Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties, and mandates consultation with the State Office of Historic Preservation (SHPO) and other interested parties for projects with adverse effects. In most cases, the consultation process will result in a Memorandum of Agreement (MOA) between the parties outlining agreed-upon measures that the agency will take to avoid, minimize, or mitigate the adverse effects. If the federal agency and SHPO cannot agree on how to resolve adverse effects, either party may terminate consultation and request written comments from the Advisory Council on Historic Preservation. Until the Council issues its comments, the agency is precluded from taking or sanctioning any action that could either result in an adverse effect on the historic property or foreclose the consideration of modifications to the undertaking that would avoid or mitigate adverse effects. It is our understanding that Section 106 consultation between the Navy, NASA and SHPO is still in process. Nonetheless, the EE/CA boldly asserts that the proposed	

mitigation "complies with" the Navy's responsibilities under the NHPA. This claim was repeated by a Navy spokesman at a May 10 meeting of the Moffett Field Restoration Advisory Board meeting, who suggested that the SHPO had endorsed the Navy's proposed mitigation package. These statements are premature and misleading as Section 106 review is still underway, with no Memorandum of Agreement in place with agreed- upon measures to resolve adverse effects. In our view, the proposed mitigation is woefully inadequate to compensate for the loss of Hangar 1.5 To the extent that ARARs include "more stringent state environmental standards,"6 the recommended mitigation measures also fall short of acceptable preservation practice under California law. Under the California Environmental Quality Act, it is well-established that a "large historical structure, once demolished, normally cannot be adequately replaced by reports and commemorative markers."7 In other words, "As drawing a chalk mark around a dead body is not mitigation," documentation and commemorative markers "cannot normally reduce destruction of an historic resource to an insignificant level."8 D. Potential new uses for Hangar 1. Dirigible and airplane hangars across the country have been converted into myriad new uses, including gyms, office space, movie sets and museums, among other possibilities. According to NASA's Historic Resources Protection Plan for Moffett Field, Hangar 1 is an "obvious candidate for reuse and public benefit" as the future home of the California Air & Space Center (also referred to as SpaceWorld).9 Indeed, just before the discovery of PCBs on site, NASA and CASC signed a formal agreement to realize this vision. Another promising new concept was introduced last week by members of the California congressional delegation to reuse Hangar 1 as a center for disaster relief operations. Whatever the preferred use, the hangar has proven to be remarkably versatile over time and will remain so if given the opportunity. Hangar 1 is an irreplaceable icon of the San Francisco Bay Area. Every effort should be made to avert its loss, starting with thorough consideration of alternatives to demolition based on complete and accurate information. Please don't hesitate to contact me at (415) 947-0692 or Mike Buhler (nthp.org) should you have any questions.	

Written on: July 2, 2006	**Received on**: July 3, 2006
From: Pria Graves, Palo Alto, Calif.	**Submitted Via**: Written comment
Affiliation/Agency: Public Member	
GENERAL COMMENTS (24C)	
Comment 1: I find the Comparative Analysis to be unconscionably weak with respect to the Alternatives 10 and 11. Both alternatives are "technically and administratively feasible, comply with the ARARs, [and] use standard construction services, equipment and materials." Both provide a permanent solution by removing the containments, leaving the site ready for reuse without further monitoring. Both are based widely available and proven approaches. Both provide a high degree of protection of the public and the (natural) environment. The only real difference is that Alternative 11 permanently and irreparably removes a rare and valuable historic resource, while Alternative 10 protects this precious example of the built environment. Documenting the hangar before it is demolished fails to adequately mitigate the destruction of such an important resource. The loss of the structure will have a permanent and drastic impact on views from all around the south bay. It will reduce to one the number of remaining dirigible hangars. Perhaps if there were dozens of examples, one could accept that we could afford to lose this one. But under the circumstances, we simply cannot afford to have this piece of our history wiped out. It seems clear to me that the real reason behind the choice is the Navy's desire to have land unencumbered by an historic building when considering future uses! Blank land available for housing or commercial development is far easier to market to a developer than an amazing hangar, which would require a creative approach to adaptive reuse. While I'm sure this is why the EE/CA report reaches the conclusion that it does, such wishes are NOT a valid excuse for demolishing this important resource which the taxpaying public clearly wants saved. The document fails to	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

provide any valid reason for the choice of Alternative 11 over Alternative 10 and is therefore unacceptable.	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Melvin Cobb, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (25C)	
Comment 1: Decision Management I am very concerned about your apparent total disregard for well-established and universally-used decision management techniques that are normally used to demonstrate that an impartial decision has been reached. I have worked on 40-50 military and NASA projects during my engineering career, and also taught graduate project management and decision management courses. The subject EE/CA document is without doubt the worst document that I have ever reviewed in terms of blatantly disregarding conventional, well-established and universally-used methods of reaching an impartial decision. Its greatest weakness is that although the word "criteria" appears on most pages of the document, the document itself provides no traceability nor ever broad clues as to how much weight each criterion carries in reaching the final decision. Many of those criteria are mentioned in the document only because they are required by government mandates, but not assigning weight seems to be an attempt to completely neutralize the impact such mandates. From the decisions that are reached, I have to conclude that many of the criteria described in the document had a negligible weighting in reaching a final decision. A fully-documented and detailed weighted decision analysis is universally used in the military for all project decisions. I don't see how providing such criterion weights and resulting scores can be avoided in a decision as controversial as this	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

one. There really needs to be some sort of numerical scoring using classical decision analysis, KTA analysis, or cost-benefits ratio analysis to show that the chosen approach is truly in the best interest of the American people. Demolition is Unprecedented Demolition of Moffett Hangar 1 would be a totally unprecedented action. There is not one single precedent where a historically significant building has ever been demolished based solely due to the presence of toxic substances. To the contrary, there are countless examples in which public buildings that have had very dangerous amounts of toxic substances have been successfully rehabilitated or otherwise treated so that continuing public access was provided. Virtually all well-known historic buildings that are older than Moffett Hangar 1 are known to contain toxic materials that can potentially pose a health threat. Famous historic buildings and structures such as the Pentagon, the most famous US government buildings in the District of Columbia and around the nation, the Statue of Liberty, state capitol buildings, city halls, university buildings, libraries, research laboratories, museums and bridges have all been successfully treated for significant toxic hazards such as lead, asbestos, arsenic, metallic mercury, mercury compounds, and radioactive materials. Even in cases of severe contamination problems, rehabilitation, not demolition, has been the universal treatment of choice.	

Written on: July 6, 2006	**Received on**: July 6, 2006
From: Bret Quinn	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (26C)	
Comment 1: Dear Mr. Weissenborn, I would like to express my desire to see Hangar 1 kept open at Moffett Field for future persons to enjoy. My father served at Moffett Field in the late 50s, I travel to Moffett with him each year to visit the base and to enjoy the sites. One of our favorite sites is Hangar 1, a marvel. Thank you for your time sir, Bret Quinn 4103 Idaho Avenue, Nashville, TN 37209-3678	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 6, 2006	**Received on**: July 6, 2006
From: Terry Spreiter, Orick, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (27C)	
Comment 1: I urge you to restore and preserve Hangar 1 at Moffett Field, California. My father worked for many years at Ames Research Center, in flight research. Hangar 1 is an incredible building, and I have been in it many, many times. Years ago as a child, my dad took us there for special occasions/events; these were incredibly memorable events for a child, to be able to see the planes and	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

shuttle capsules up close, and even to be allowed to sit in them. After many years away from the bay area, several years ago I had the opportunity to attend an air show at Moffett Field, and the hangar was open to the public. To walk into this immense building that contains so much history of cutting edge flight research, is an absolutely amazing and humbling experience. To me, it rivals the finest cathedrals, castles or palaces in Europe. It made the hair on the back of my neck stand up, and brought tears to my eyes. There is no way that photos can do the place justice. You simply have to stand in it to appreciate it. I felt privileged to be able to be in Hangar 1 again, especially now when I am at an age where I understand its significance more fully. This structure is a memorial of an age gone by. It must be preserved. Cost should not be an issue when one has such an incredible resource hanging in the balance. There is nothing like it. Perhaps it could be turned over to the National Park Service after the toxics are contained, and managed as a historic and cultural monument. Hangar 1 could be an incredible museum. I suspect you could get a lot of the preservation funds from private donations from people in the aerospace and technology industries. Please don't destroy this building. It truly is part of our national heritage. I request that the Navy seek the additional funds and approvals needed to restore and preserve this incredible asset for the benefits of education, for not only ourselves, but to our future generations as well. Please keep me informed of future decisions and plans, including any Environmental Impact Reports. My mailing address is: Terry Spreiter, P.O. Box 333, Orick, CA 95555 Thank you. I look forward to hearing that Hangar 1 will be safely with us for a long time yet to come! Terry Spreiter	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: John Pfister	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (28C)	
Comment 1: Hello Mr. Weissenborn Please find my comments below and attached. 1. Since 1966, Hangar 1 has been on the National Register of Historic Places. This building has already been identified for many years as an important structure. Minimum disturbance to the structure to achieve contamination mitigation should be a major factor in deciding the option of choice. 2. At the May 23, 2006 public meeting, the EPA representative stated he disputes that demolition of Hangar 1 is necessary. It seems as though the Navy should be able to achieve a reasonable mitigation alternative with EPA and the community to preserve Hangar 1 and meet cleanup levels. 3. According to Table 4-1, Evaluation of Removal Action Alternatives, Alternative 10 meets the same goal criteria as the Navy's recommended Alternative 11. 4. Table 5-1 shows there is only a $350,000 difference in cost between Alternatives 10 and 11. It came to my attention at the public meeting on May 23, 2006 that some disposal costs may not have been included (i.e. pillars, electrical conduit, etc.) for Alternative 11. The cost difference between the two alternatives is not significant (<5%). 5. Alternative 11 would likely generate more waste for off-site disposal than Alternative 10. This action would be in violation of California AB939 PRC §40051, parts (1) and (2). 6. With cost and cleanup goals being essentially the same, the option of choice should rely in part on community input and acceptance. It appears that Alternative 10 should be the option of choice considering these equalities.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA is Alternative 10 which leaves the hangar's steel frame standing.

7. Alternative 11, as stated, would destroy Hangar 1's character-defining historic and architectural features that make this building so distinctive. In the over-developed San Francisco Bay Area, there is value in retaining historic buildings and the ideas that shaped the region. Alternative 10 should be closely considered as the option of choice by the Navy to support community acceptance and the preservation of historic Navy activities in the Bay Area. Thank you for this opportunity Regards, John Pfister	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Peter Gillahan, Australia	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (29C)	
Comment 1: Dear Sir, I visited Moffett Field museum in 2005. I was in awe of Hangar 1. I one day wish to stand in there and look up and imagine those great air ships that were based there. This mammoth building is a tribute to the ingenuity of the American people and the US service Men and Women who served at Moffett Field. This building must be preserved at all costs, would you turn Mt Rushmore into a quarry? I don't think so. Save Hangar 1 Regards, Peter Gillahan By the way I am from Australia	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Michael Horrillo and family	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (30C)	
Comment 1: Dear Mr. Weissenborn, Thank you for the opportunity to comment on an issue of such importance and permancy. I am a Mountain View native, my father owned a dairy just north of Moffett Naval Air station. I grew up with the sounds of early jets breaking the sound barrier over our heads a youth. We always knew when a carrier was about to come into port when they would off load the jets which flew into Moffett. Hangar 1 has been an integrals part of life in this area since that intrepid group of civic minded citizens purchased the land that the Air Station is on now. As a child we went to Boy Scout expositions in the hangar and every Navy open house, which featured the hangar for the past 45 years. I have raised my four children at these events with full support of the mission that the Navy is entrusted to do. Now as an adult with experience in the Historic Restoration Field, I have looked upon this endeavor to remove the United States Navy from operational control of this Historic Air Field with total shock and dismay. I understand that this is being portrayed by the Navy as a dollars and cents decision and I understand that environmental clean up is being handled in a typical bureaucratic manner of zero "pollution". What is missing from the equation is a compassion and care of our precious Historic legacy. The basic tenant of my field is to do no harm to historic treasures; our only lasting legacy is what we pass on to future generation. As a preserver of history do you want to be known for the person that destroyed a structure of this magnitude or do you want to have your hard work stand for something In my	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria.

occupation I have jumped threw many a hoop, both regulatory and governmental to save structures that pale to the grandeur of this structure. It would be a great waste of your talent, the Navy's long history of protecting and serving our community and a great loss to future generations if your plans come to fruitions. I understand that the Navy is on a short budget and is trying to remove excess inventory from their budget. I also understand(from having worked with them) that the environmental bureaucracy cares little for anything that does not conform to their regulatory bible of removing anything that they think is a polluting effect on the environment. If this includes the destruction of community heritage or an increase of pollution in the long run for short term gains. These are lawyers with no science back ground or degrees from poor schools. They have polluted the state by the mandating of Methyl ethyl tertiary butyrate in our fuel supply. Caused millions of dollars in damages by demanding that gas stations go threw a costly process to remove leaking fuel tanks when the best scientist told them that soil microbes would clean up the problem once the tank leak was fixed. They are the same ones that have caused a total of reformulation of all paints just to remove a small percentage of VOCs. When asked about these new products lasting a fraction of this life of the original, they respond that their computer model cannot figure in longevity. I have worked with non and low VOC products to remove coatings. I believe that your structure is exempt from the VOC restrictions since it is a historic restoration. The sad part of this whole issue is that the US Navy job is to protect the citizens of this great country, who pay very dearly for that support. San Francisco Bay Regional Water Quality Control Board job is to protect the citizens of this area, who pay very dearly for that protection. So these two agency's idea of protecting this area and its citizens is to get into a turf war whose only out come is the destruction of a National Landmark. The citizens of this great country need your protection from foreign enemy, the protection of our environment and finally protection of our national heritage. Sincerely, Michael Horrillo and family	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Lisa Bakke, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (31C)	
Comment 1: Dear Mr. Weissenborn: Please do all you can to preserve Hangar 1. It is a very special historical landmark that is treasured by both locals and visitors. Thank you. Sincerely, Lisa Bakke 393 Covington Rd, Los Altos, CA 94024	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Bob Dunton, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (32C)	
Comment 1: Dear Mr. Weissenborn, I think it is a bad idea to remove Hangar 1. Some people think it is an ugly thing or a monument to a failed program. As teen, who went to the Blue Angels air shows at Moffett in the late '70s, I thought it was and still is a cool building.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

It is something that tells people when they see it, that they are in the Silicon Valley. It should be preserved as an historic landmark. Perhaps if 30 million people (or what ever it costs) were to each give one dollar, maybe it could be saved. Just a thought. Thank you for your time, Bob Dunton, Mountain View, CA	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Curtis Ching	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (33C)	
Comment 1: Save Hangar 1.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Kathleen Hall, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (34C)	
Comment 1: Dear Mr. Weissenborn, We received the information on the July 13 meeting. We are hoping that the Navy listened to the community and will save the Hangar. We frequent Moffett Field several times per week (dad is retired military), and always bring our out-of-town visitors to see the Hangar and to visit the Museum. My cousin, a history buff and TV Anchorman from Virginia was absolutely amazed by Hangar 1 and wished he had many hours to spend in the museum library. It is a piece of history that should not be lost. I was quite upset to read that the bids to the Navy on demolition vs preservation were to be kept secret until after a decision was made. I hope that was a misunderstanding because it was unclear why this decision, paid by the taxpayers should not be made in an open forum. It is unfortunate that this project cannot be put on the ballot; I think it would be a clear cut decision in favor of preservation. There are so many bad decisions made by the government these days, let's do something right for a change, save Hangar 1. Thanks for your time. Best regards, Kathleen Hall 580 Tahoe Terrace, Mountain View CA 94041, 650-969-2723	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Natalie P. Wells, Palo Alto, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Board member, Palo Alto Stanford Heritage (PAST)	
GENERAL COMMENTS (35C)	
Comment 1: Dear Mr. Weissenborn: My name is Natalie Wells, 3259 Alma St., Palo Alto, CA. I spoke at the public hearing on Hangar 1 on May 23, 2006 held at NASA in Mtn. View, CA. My testimony supported Option 10. I talked about the huge financial benefits of historic preservation, specifically referring to the high number of cities choosing to restore, renovate and rehab historic theatres just within Northern California. These activities are no longer just the result of private historic preservation groups but are now funded and run by local city government entities. In most cases, these old theatres have asbestos and part of the restoration includes asbestos removal. Today I am writing to support the preservation of Hangar 1 (option 10) because of new information that has come to my attention regarding your BRAC study. In particular, I have learned that the Regional Water Quality Board has formally stated in a letter to the Navy that they do NOT agree with the nine options the Navy has proposed in the BRAC study. It is also known that other government agencies have formally rejected your options. Please do a fuller and more complete analysis and provide adequate comparison for options 10 and 11. Respectfully yours, Natalie P. Wells 3259 Alma Street, Palo Alto, CA 94306 Board member, Palo Alto Stanford Heritage (PAST)	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Steve Williams	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (36C)	
Comment 1: These are my formal comments to the EE/CA for Site 29 Hangar 1 at the former Moffett Naval Air Station. The EE/CA as published contains many flaws, and the process for public comment was marked by confusion and misleading statements by the Navy. The EE/CA must be significantly revised or withdrawn and a more comprehensive process followed to inform the community of the alternatives, so that together we can find a realistic action that satisfies the Navy's CERCLA and BRAC obligations and meet's with the approval of the community. Even if taken at face value, the EE/CA itself makes a strong argument against the Navy's recommendation to demolish Hangar 1. The difference between the Navy's cost estimates for demolition vs. re-siding is modest in terms of the overall Moffett clean-up costs. The difference certainly is far less than the opportunity cost that would be lost forever if the hangar were demolished. In my opinion, the Navy must cover the cost of preservation, but, even if the Navy somehow escapes that obligation, the Navy must give the community much more time and information--unpolluted by the Navy's apparent cost-saving agenda--to help us determine the true cost of preservation and find a way to pay for it. The Navy has repeatedly attempted to take a fast track to demolition. The community has worked hard to resist being railroaded, and it's time for the Navy to finally commit to investing the time and money to cooperate with the community to preserve Hangar 1. Flaws in the EE/CA: The cost estimates for coating or covering the hangar are understated by an unknown amount, because the Navy failed to fulfill its commitment to address the	**Response 1:** Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. In doing so, the cleanup alternatives are evaluated against the established Removal Action Objective and National Oil and Hazardous Substances Pollution Contingency Plan criteria. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors as well as the costs to address the interior of the hangar. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. Replacing the siding is a historic mitigation option considered in the revised EE/CA. However, it is not recommended as a historic mitigation option for the recommended removal action. Silicone coatings produced by the Lord Corporation and Illinois Institute of Technology Research Institute (IITRI) were researched as potential exterior coating options. Typically, silicone coatings are applied to smooth surfaces, not a coarse substrate such as asphalt emulsion, which is on the exterior of the hangar. Upon review of the exterior condition of Hangar 1, the silicone coating vendors determined that the features of the

clean-up of the interior of the hangar. The Navy entered into that commitment only under pressure from EPA in March, 2005. By failing to include those costs in the EE/CA, the Navy appears to have lost site of the goal of the BRAC: To return assets like Hangar 1 to the community in a way that allows for the anticipated reuse. All proposed reuse of Hangar 1 includes use of the interior of the hangar. The omission of interior clean-up essentially invalidates the EE/CA. EPA and the California Water Quality Control Board said publicly that the omission of interior clean-up is unacceptable. By underestimating the cost of coating the hangar, the Navy makes preserving the hangar appear to be one of the most expensive alternatives. In fact, it's in the middle. Replacing the siding and cleaning the interior, has an estimated similar to the three coating estimates. In fact the coating alternatives would cost much more. The Navy won't say clearly whether Alternative 10 includes replacing the siding. The Navy has publicly said both that it does and does not. It is impossible for the public to meaningfully comment on the EE/CA when it’s meaning us unclear. The Navy promised clarification of this point at the public meeting, but no such clarification was made. I understand that the cost estimate includes replacing the siding, but nobody, including, apparently, the BRAC office, knows whether the siding would be replaced if Alternative 10 is selected. Again, this makes the EE/CA invalid as an instrument for informing the public and for making a decision. I agree with RAB Community Co-Chair Bob Moss that two coating processes not considered in the EE/CA should have been covered. The Navy said that those coatings were considered and found ineffective, but that analysis is missing from the report. This fails to meet the promise of a "robust" EE/CA. I agree with RAB Member Peter Strauss that the report must include much more supporting scientific data to show that the hangar is actually the source of contamination. By not including this data in the EE/CA itself, the Navy has failed its promise to provide a "robust" EE/CA. The cost estimate for demolition is understated, because it does not include the cost of re-engineering and rebuilding the Moffett Field and Ames infrastructure provided by the hangar. The Navy may try to argue that it is not obligated to fund those costs, but that would amount to shifting Moffett clean-up costs to other federal agencies and to the community, which violates the intent of CERCLA. The cost estimates for demolition now	exterior are not a compatible substrate for silicone coatings, and recommended the Navy remove silicone paints from further evaluation. A drawback of using epoxy as an exterior coating for the hangar is the curvature and flexible properties of the hangar siding. As the epoxy coating weathers, these properties will accelerate cracking and peeling, and will result in areas of exposed original siding. As a result epoxy coatings were removed from the exterior alternatives evaluation.

appears to be wildly understated, in light of the 2003 NASA cost estimate that came to light in May. The Navy has not explained the discrepancy. Problems in the Public Comment Process: Prior to the public meeting, on May 21, the Navy ran a paid advertisement in a local paper advocating for the Navy's recommendation. This was wholly inappropriate: The BRAC office is charged with evaluating alternatives and making an impartial decision, based partly on community acceptance. It is absolutely unacceptable that the Navy would spend public money attempting to influence public opinion. Worse, the advertisement contained several incorrect statements that I'm sure misled many members of the public: "Removing the hangar provides the highest degree of protection ... contaminants are embedded in the inner and outer layers of the siding's composition, and in the hangar's interior structure ..." The EE/CA makes no mention of contaminants "embedded" in the hangar's interior structure. On the contrary, the EE/CA says cleaning the superstructure is practical. "... the Navy cannot cost-effectively clean the hangar or rebuild its parts." That is a value judgment which assumes the outcome of the decision making process. The Navy has no business stating as fact the outcome of the EE/CA process. "(Demolition) provides the best solution because the contaminant source (the hangar siding and structure) would be completely controlled by removing the source from the site." Alternative 10 provides precisely the same protection. That means demolition is not the "best" solution, just the cheapest--and not even the cheapest, given the inaccuracies described above. By making these incorrect public statements, the Navy made it impossible to gather valid public opinion. We do not know how many more members of the public would have been moved to comment in favor of preservation absent the Navy's false reassurances. Many members of the public were turned away from the single public meeting held by the Navy to gather public comment. I heard no response to community requests for a second public meeting in a more suitable venue. By shutting out an unknown number of concerned citizens, the Navy has lost an unknown number of comments from the public.	

At the public meeting, the Navy's representative inaccurately cited cost estimates for development and re-use entirely unrelated to the clean-up process as if they were arguments against preservation. Members of the public were obviously confused by these statements, as evidenced by questions which followed. The Navy represented repeated these inaccurate and irrelevant statements in press interviews following the meeting. In doing so, the Navy further misled the public regarding the costs of cleaning up and preserving Hangar 1. The press has reported that the Navy plans to seek bids for Alternatives 10 and 11, but I have not received any information on this action, despite being on the Site 29 mailing list. It is not clear why the Navy feels cost estimates beyond those in the EE/CA are required, or how these estimates will be different. The press has reported that the terms and conditions of these bids will not be disclosed to the public, making it impossible for us to verify their accuracy and inspect the terms for rigging. The Navy also has not said formally how these bids will affect their decision on Site 29, making it impossible for the public to comment on them. The Navy hasn't said why only Alternatives 10 and 11 are out for bid. This decision must be made in the open, not through back-door bids and press leaks. I appreciate the opportunity to comment on the EE/CA. I urge the Navy to withdraw the EE/CA and enter into a more meaningful decision making process with the community.	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Ken McEldowney, Jr.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (37C)	
Comment 1: Sir: Please do whatever you can to preserve this piece of naval aviation history where my father served! Thank you... Ken McEldowney, Jr.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Christine Linthacum	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (38C)	
Comment 1: I just wanted to share my support for saving Hangar 1 -- I am a bit disappointed that I only heard that public comment was being accepted today or I would have helped recruit more support! Please save this outstanding landmark in the Bay Area -- the opportunity to have an Air & Space museum would be outstanding for the community. Let me know how I can help! Christine	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Edith Sasaki	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (39C)	
Comment 1: To all concerned, Preserve Hangar 1 as a twentieth century monument of space technology and history. Cherish all the good that has resulted from the research and studies to further the advancement of civilization. Demolishing Hangar 1 reinforces the wastefullness of a throw-away society. How long can such a civilization last? Thank you for the opportunity to express my opinion. Edith Sasaki	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Libby Lucas	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: RAB member	
GENERAL COMMENTS (40C)	
Comment 1: (40C.1) Richard, Perhaps I should have included this background information on Dr. Bill Wolverton in comment PS "In a landmark 1984 NASA study, initially commissioned to find ways to clean air in space bases and vehicles, researcher Bill Wolverton found that some common houseplants actually cleaned polluted indoor air. He found that philodendrons and golden pothos excelled in stripping formaldehyde from the air, gerbera daisies and chrysanthemums wiped out excessive amounts of indoor benzene, and pot mums and peace lilies absorbed a toxic degreasing solvent known as TCE. A later NASA study, also conducted by Wolverton, saw houseplants removing up to 87 percent of toxic indoor air within 24 hours..." Hope this makes my point that there are some fascinating options out there for Hangar 1. Libby Lucas **Comment 2:** (40C.2) Richard, In my PS to comment letter on preservation of Hangar 1 at Moffett Airfield please correct 'pease lilies" to 'peace lilies'.....haste makes waste. Libby Lucas	**Response 1** (40C.1)**:** Thank you for your input. The Navy is not evaluating phytoremediation as an alternative for the hangar due to the nature of the contamination. The Navy has evaluated technologies to remove or encapsulate Hangar 1 building materials since the contaminant of concern from these materials is PCBs. The PCBs from the hangar are found in dust and particulates from the deteriorating and flaking building materials. **Response 2** (40C.2)**:** Correction made to comment.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Hersh Brown, San Jose, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (41C)	
Comment 1: I hope there is some way to preserve Hangar 1. The way it exists, it only serves as a reminder on the commute to work: I need to pass it by 7:15 to get to work on time. But I remember taking my son (now 27) on a hot-air balloon ride inside the hangar fifteen or so years ago. Some thirty five years ago I remember visiting friends who were serving in the Navy. I always viewed Mt. View as a Navy town (although my service was with the Army). It seems fitting to somehow have the Hangar serve as some sort of Military/Space Museum. As I understand it, the Navy turned a large chunk of land into a toxic waste dump. As such, the Navy needs to clean the place up. Then - a museum with something like the old St. James: "St. James Infirmary was frequented regularly by U.S. Navy personnel from Moffett Field Naval Air Station located just up the road. With recent base closures, Moffett Field no longer has a high amount of military personnel to bring their families to the restaurant..." Los Altos Tow Crier - 1996 Hersh Brown San Jose, CA.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Winnifred B. Makinen	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (42C)	
Comment 1: Dear Sir: This letter is in support of maintaining the existence of Hangar 1 at Moffett Field. This building is the quintessential US Navy icon and is a unique reminder of a special part of US Navy history. As an environmental chemist, I understand the challenges of dealing with the mitigation of hazardous materials, but let's not throw the baby (Hangar 1) out with the bath water! Tearing down the building will make the problem worse because it will result in dispersion of the material. Careful encapsulation and treatment in place could be the preferred solution. There has been some work done on chemically modifying this type of material to render it safe. The shear size of this building makes it worth saving. I am sure that adaptive reuse of this huge space is a viable alternative and that a need for this space currently exists. By the way, did the recent fire at the hangar in Akron, OH impact the Lockheed DARPA Project? Generations of Bay Area citizens as well a generations Navy families and personnel expect that this building will be standing tall for many more years. Sincerely, Winnifred B. Makinen	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Keith F. Greenberg	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (43C)	
Comment 1: I have just started working in out East Palo Alto office and was awe struck when I first saw Hangar 1. I did not have a clue as to what it was or what type of ship would be housed in it. My boss explained it was the old Air Ship hangar. I am unaware of any other structure that would allow future generations to see apiece of what was at one time, a vital part of our coastline defense during World War 2. The old saying "Time Marches On" is quite true. The building probably no longer has a military use and I read where it is contaminated and needs a costly clean up to even be inhabited. I am also quite aware of our struggling economy and all of the military budget cuts you and other branches have been forced to live with. Given that, something with this much historic value should be saved. The Navy has several World War 2 vessels sitting in several cities so people today can remember what it took to maintain our freedom. I believe Hangar 1 is in the same category. I just today read the newspaper article about the possible destruction of this landmark. I was saddened to think I would not have an opportunity some day to bring my grandkids here and show them a part of what their Great grandpa was a part of. Today is important, tomorrow is important, but we can not lose sight of what yesterday offered. I urge you to find the money to restore this building so everyone can remember what was involved in protecting our shores. Thank You, Keith F. Greenberg	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Jon Linthacum	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (44C)	
Comment 1: Hello Mr. Weissenborn, I am a native of San Jose and Hangar 1 has always been a well recognized south bay landmark. I recall enjoying many an airshow in the shadows of the hangar. As I got older, I also remember getting hot air balloon rides in the hangar. It was also in this hangar during an airshow that I learned about POW's, and efforts to try to get them home. I also recall seeing the departure and return of what seemed like an endless stream of P3 Orions from the ball fields where I played as a child. I understand that due to budget restraints, the Navy needed to relocate their mission to other bases. My feeling is that Hangar 1 is one of the last remaining landmarks of the United States Navy's prescience in this wonderful valley. Please help keep a piece of history in place. Thank you for your consideration. Jon Linthacum	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Allan Gjovig, Arizona	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (45C)	
Comment 1: Mr. Weissenborn, I strongly urge you to support the effort to save Hangar 1. My first airplane trip originated in front of that historic structure. Years later I would see it every morning on my way to work at Lockheed and later at NASA. Thousands of Bay Area commuters see it twice daily and recognize it as a part of history as they drive by on Bay Shore Freeway. Too often we Americans have demolished historic buildings rather than proudly preserving them. I would like my grandchildren to have the opportunity to tour this unusual structure. The additional cost to preserve Hangar 1 will be well worth it. Allan Gjovig Arizona	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Dave Nugent, Cupertino, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (46C)	
Comment 1: Mr. Weissenborn, I am writing you today to express my support for the preservation of Hangar 1 on Moffett Field. There is no other structure so ubiquitous in photographs of the South Bay as Hangar 1. As a South Bay resident myself I see Hangar 1 often; you only need to get a couple dozen feet up in the air to see the Hangar, so flat is the valley. I was awed by its vast, cavernous interior during an air show some years ago, and it is unfortunate that such a majestic, inspiring, and useful landmark should be torn down. I encourage the Navy to refurbish Hangar 1, so that future generations in our community can use and appreciate it. Dave Nugent Cupertino, CA, (408) 605-2551	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: George L. Holtzinger	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: SFC USA Ret.	
GENERAL COMMENTS (47C)	
Comment 1: It is my feeling that this building should be saved even if it take many years to get the money built up to do it. If it is to be torn down I feel that there will be many suits that will make the cost 50 mil. or better as all the metal parts will have to be cleaned and sent to a metal salvage depot all the other items will have to be placed in rail cars located next to the building and sealed in to be taken to a hazards waste dump. And from the way the labor unions are working in this area all labor and equipment operators will have to be union people. I remember as a very small child watching the airship going in that hangar and I have been in it many times since 1969 and would go in it now if it was open. Sincerely Yours George L. Holtzinger SFC USA Ret.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Rich Fischer, Preeti Piplani, Mountain View, CA	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Chamber of Commerce Mountain View	
GENERAL COMMENTS (48C)	
Comment 1: (48C.1)Hi Rick, Thank you so much for the update this afternoon about Hangar 1. As you may recall, in December 2005, the Chamber expressed its support for the preservation and clean-up of Hangar 1. Attached, please find a copy of our organization's position letter. I hope it can be included in the Navy's action memo to represent the position of the Mountain View business community. Along with our Business Issues and Public Policy Committee, I look forward to tracking this issue as it develops. Best, Preeti Piplani Government Affairs Assistant Chamber of Commerce Mountain View ppiplani@chambermv.org, 650.714.9848 (Mobile)	**Response 1:** (48C.1) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Comment 2 (attached letter): (48C.2) January 26, 2006 City of Mountain View City Council c/o City Clerk Angee Salvador 500 Castro Street P.O. Box 7540 Mountain View, CA 94041 RE: FUTURE OF HANGAR ONE – Support clean up and preservation of Hangar 1 Dear Mayor Galiotto and Members of the City Council: On behalf of the Chamber of Commerce Mountain View, we are writing to express our support for the preservation and cleanup of Hangar 1 at Moffett Federal Airfield. Since 1933, this regional landmark has been a distinctive symbol for the Mountain View community and the Bay Area as a whole. Hangar 1 is an irreplaceable community monument and its preservation is vital for future generations to understand our area's rich history and specifically its connection to naval aviation. Hangar 1 occupies a special place in the history of our organization. The hangar itself is a product of a regional fundraising and lobbying effort coordinated by several local chambers of commerce in the early 1930s, including the Mountain View Chamber. The involvement of the business community in helping locate Moffett Field as the Pacific Coast location to serve as the Navy's storage hangar reveals just one facet of Hangar 1's importance. In keeping with the efforts of our organization's predecessors, we believe Hangar 1 has an indescribable value to our community and must therefore be preserved in the most environmentally sound way possible. As the voice of local business, we value the opportunity to support the preservation of this monument and the necessary cleanup by the Navy to ensure its place in Mountain View's past, present and future.	**Response 2:** (48C.2) Please refer to Response 1.

Please let us know if there is any way our organization may be of assistance to you in considering and promoting the preservation and cleanup of Hangar 1. Sincerely, Rich Fischer S. Carol Olson Chair of the Board President/CEO cc: Mr. Rick Weissenborn BRAC Environmental Coordinator, former NAS Moffett Field Base Realignment and Closure, Program Management Office West 1455 Frazee Road, Suite 900 San Diego, CA 92108-4310 Save Hangar 1 Committee Mr. Valerie Bunnell PO Box 170 Moffett Field, CA 94035-0170 The Honorable Congresswoman Anna G. Eshoo 698 Emerson Street Palo Alto, California 94301 City of Sunnyvale City Council Attn: City Clerk's Office P.O. Box 3707 Sunnyvale, CA 94088-3707 NASA Ames Research Center Historic Preservation Office Attn: Keith Venter keith.venter@nasa.gov	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Valerie Bunnell	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (49C)	
Comment 1: Dear Mr. Weissenborn, I would like to express my deep concerns over the future of Hangar 1 at Moffett Federal Airfield. I know that to the current Navy Hangar 1 represents a problem that needs resolutions, but to us, the residents of the area; Hangar 1 represents our past struggles and triumphs, our belief in our future, our Country, our Government and the Navy. We believed so strongly in these things that in the height of the depression, this community of small town farmers, and Mom and Pop shops raised $476,000.00 to purchase the land to make Moffett Field and Hangar 1 possible. As you know, we sold the property to the US Navy for $1. We also lost over one thousand acres of our riches soil in the area. It was a double sacrifice! We did it because we saw our hopes dreams and future in Moffett Field and Hangar 1. We were right! Over the years the Santa Clara Valley has changed and changed again, but not Hangar 1. It sit there as a monument of our sacrifice, our struggles and our triumphs. Hangar 1 is more than an old building it is who we are and where we came from. I have lived in the area my entire life, and I have watched it change from an agricultural community to technological giant. I credit this to both Stanford University and Moffett Field. The combination of the two industries has brought the brightest most talented people in the world here. With our many successes, we have also experienced great wealth. We have hundreds of thousand millionaires that live in this area, which means that Billions of tax dollars have come from this community. The same community that when polled, 85% of residents want the Hangar 1 saved and restored. These companies and residents are highly taxed; 40%-50% of their wealth is tax right off the top. We	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

haven't asked for much in return, but this community is requesting that Hangar 1 be saved and restored. Our community has paid for so many other projects in other communities. This is our project, and we would like the Navy and the Government to consider our contributions as well as the historical value of restoring this structure. We are asking that you do whatever you need to do to preserve this magnificent structure. Please preserve Hangar 1, for both its past and it great future it. Sincerely, Valerie Bunnell	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Diana F. Chou	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (50C)	
Comment 1: Please SAVE HANGAR ONE!	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Bill and Sue Vlach, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (51C)	
Comment 1: Dear Sir: We lived on Piazza Drive (across the freeway from Moffett Field) for 9½ years. We visited the hangar on the wonderful air show days that we used to attend at Moffett (Blue Angels!). What an awesome building!! Both my husband and I are native born Californians--I was born in the old Palo Alto Hospital and raised in Menlo Park; my husband was born in San Francisco. We have lived in Mountain View for 40+ years and consider Hangar 1 a very important part of the Bay Area's history. There are not enough items from the past saved for our children and grandchildren. Please do not destroy yet another one! Bill & Sue Vlach Mountain View CA	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Bud Norris, Columbus, OH	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (52C)	
Comment 1: Sir: Although I'm an Air Force vet, I have always been interested in lighter than air craft and their hangars. We have the giant Goodyear airdock here in Ohio, and I have collected airship items for 40 years. Upon learning of plans to demolish Hangar 1, I wanted to write and express my disappointment that such a unique and one of a kind structure may be demolished. Once these historic buildings are gone, there is no bringing them back, and another part of U.S. aviation history is lost forever. I hope some way can be found to save the hangar, and I am sending a donation in to help. Bud Norris Columbus OH	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Eileen Burnett	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (53C)	
Comment 1: It is important that we save Hangar 1. It is an important historical landmark and could be an important resource for the communities surrounding it, and for the Bay Area as a whole. Please spend the necessary costs to rehabilitate the facility. Thank you.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Mariko Gjovig	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (54C)	
Comment 1: Dear Mr. Weissenborn, I am sending you this email showing my support for saving Hangar 1 at Moffett Field. It's a historical landmark and a unique and special building that deserves to be saved, not torn down. I lived in California when I was a little girl and one of the things that I associated with my daddy's job with and the part of the country we lived in is that hangar. It's a wonderful building with such history, and I love visiting it when we attend air shows at the Field in the summertime. Please, please, allow the Navy to preserve this piece of history. Thank you for reading. Sincerely, Mariko Gjovig	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Jack Gale, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: RAB member	
GENERAL COMMENTS (55C)	
Comment 1: To whoever is the Officer in Charge of the Moffett Field Cleanup, Among other discrepancies in the EE/CA I still do not know exactly who is in charge or responsible for the ultimate decision on the destiny of Hangar 1 so am not sure who to address this to other than Mr. Weissenborn. I spent 3 tours of duty in Hangar 1 as a student, instructor, and ultimately Command Master Chief of VP-31. My retirement ceremony was in the hangar, so I am somewhat attached to it and would personally hate to see it destroyed. I think the public input has adequately addressed the aesthetic and historic opinions so I would like to focus my comments on the business prospects of this project. My concern is that the government, not just the US Navy, has not researched the value of the hangar as a resource in time of disaster, for commercial use, or even as an industrial warehouse that could generate revenue. The hangar is not only a historic monument but also a potential asset. The issue being addressed by the Navy is strictly the contamination of the hangar siding and no one is looking into the potential reuse of the hangar. NASA is not in the property management business, but someone from the government or contractually associated with the government, should review the cost of restoration against the potential use of the hangar as either a museum or other revenue generating resource. Once an accurate cost of restoration has been determined, a feasibility study should be conducted to determine the potential use and return on investment of the restored hangar. As a taxpayer, I expect my dollars to be spent wisely, and believe that it would be wise to restore the hangar as an investment for the future, as well as preservation of an important part of U.S. and Bay Area history. The discovery and the treatment of	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

the contamination are an issue for the Navy, however the ultimate decision on the hangar needs to be based on sound business practices not simply environmental factors, or ease of destruction vs. restoration. Respectfully, Jack Gale 524 Thompson Ave., Mountain View, CA 94043	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Michael Dean	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (56C)	
Comment 1: Richard, Does everything have to come down to money? This hangar is the one and only item in Silicon Valley that has the beauty, history, and uniqueness of this landmark. I ask you what else in the entire area compares favorably to it? I enjoy glancing at it every time I drive by it; also I admire it out the window of where I work. You have the opportunity to save our heritage. I am sick and tired of watching the good things that used to be disappear replaced by an increasingly lower quality of life. Please respond to this e-mail. Sincerely, Michael Dean	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: N. John DiCicco, Palo Alto, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (57C)	
Comment 1: Dear Sir, I am adamantly opposed to the destruction of "Hangar 1" at Moffett Field. It is a landmark that helps define the Bay Area and its heritage. There are several uses for the hangar and I'm sure you are aware of all of them. It would be a crime to destroy something that has helped define the Navy presence on the Peninsula most of the last century. It would be tantamount to razing Coit Tower to build condos. Please reconsider. Sincerely, N. John DiCicco Captain, United Air Lines - retired 860 University Ave., Palo Alto, Ca. 94301	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Nik Djordjevic, Menlo Park, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (58C)	
Comment 1: I am writing to you as a resident of the SF Bay Peninsula. I am also an employee of Lockheed Martin in Sunnyvale. I want to voice my strong opposition to the destruction of Hangar 1. It is a part of our national scientific and technological heritage, and everything should be done to preserve it. Those of us who are long time residents of this area know the wonder and awe it inspires in everyone who sees it passing by on Freeway 101. I have talked to many individuals about the possible demise of Hangar 1, and to a person everyone I talked to agrees that it should be saved. I am also sure that only a minority will take the time to write to you, but the voice of the residents of this are is clearly to save Hangar 1. Thank you Nik Djordjevic 1070 Lemon Street, Menlo Park, CA 94025, 650-814-7026	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Martin Bernstein	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (59C)	
Comment 1: Please do not demolish hangar one in California.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Moira Fulton	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (60C)	
Comment 1: Dear Sir, I would like to be added to the list of people who are interested in saving Hangar 1. Thank you, Moira Fulton	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Martin Celusnak	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (61C)	
Comment 1: My wife sent me your E-mail address; I gather she saw it in a news item. I assume from her E-mail that you must be compiling notes of support for preserving the old hangar at Moffett. I strongly support efforts to renovate and preserve the historic blimp hangar at Moffett Field. It is an iconic structure for the Bay Area. It can be seen from miles around and provides a strong visual tie to the history of the area. I would like to see it preserved and used as a museum, or other function. The Bay Area would be poorer without the Moffett Hangar. Martin Celusnak	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Kathy Kramer	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (62C)	
Comment 1: Hi, Please count me among those who wish to preserve this San Francisco Bay Area landmark. Not only is the renovation less costly than the destruction of the beloved hangar, but a landmark would be preserved for future generations. I grew up on the bay area, and remember when that hangar could be seen for miles, helping me orient myself in the south bay. Many antique stores exist to preserve goods and keepsakes from past times, but the public as a whole must act to preserve this large structure. Thank you for your efforts, Kathy Kramer	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Sue Holmes, Menlo Park, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (63C)	
Comment 1: Hello- I don't know why it's taken me so long to voice my opposition to the demolition of Hangar 1. I guess I just thought the Hangar would always be there; it always has been! I grew up in Sunnyvale. My family settled down there in 1955. I have taken it for granted that this part of "Silicon Valley" wouldn't change. Yes, the orchards are gone and the open space is less open and the old haunts have been replaced with newer and better(?) strip malls....but Hangar 1 is more than just a building. It is the closest thing to history that we have here in the Bay Area. So, here is my vote to Please Save Hangar 1.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Susan Culazzo and family	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (64C)	
Comment 1: Mr. Rick Weissenborn, Please add me to the list of people interested in saving Hangar 1. We have lived in Mountain View for over 30 years and have always identified Moffett Field and Hangar 1 as the same. Other than an entry sign beside Highway 101 showing the	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Moffett Field entrance, nothing stands out like HANGAR ONE! The history alone is reason to keep Hangar 1 as original as possible. My husband's grandfather helped hang the giant doors; we have photos that open this immense structure. In the past, our family has enjoyed seeing the air shows and enjoyed going inside the hangar and trying to imagine seeing a blimp housed inside. It is an experience that everyone should be able to experience. PLEASE SAVE HANGAR ONE!!!!!!!! Future children would thank you for giving them the same chance to enjoy a taste of History. The Culazzo Family	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Scott Kinder, San Jose, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (65C)	
Comment 1: Hello, I want to impress upon the Navy that Hangar 1 is a vital part of Mountain View. I have lived here all of my life and agree with many other native citizens of Mountain View that the hangar should not be torn down, but rather re-furbished for other uses if at all possible. Please save Hangar 1 from demolition. Scott Kinder San Jose, CA 95128, 408-551-5314	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Bob Beck, StSauveur, Quebec	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (66C)	
Comment 1: Re: www.savehangarone.org Hello, I have recently become aware of the effort to save Hangar 1 (and of the problems, challenges and opinions surrounding it), and just this morning read the LA Times article concerning the possible demolition of this Historic Landmark building. I grew up in Sunnyvale, and for a period of more than 20 years, watched the P3 Orions fly past my home and into Moffett Field. From infancy, I attended the Moffett Field Airshow annually and always spent a good deal of time wandering inside the Hangar, viewing the exhibits and standing in constant amazement at the scope of the construction, impregnating me with wonder and awe at early 20th century man's limitless imagination. As one of the world's largest free standing structures, this building helped to create a belief in me that anything is possible - an inspiration that millions of visitors and passerbys I'm sure share. Losing that would be tragic. I wholeheartedly agree with the statement on the website, that Hangar 1 is a true monument to innovation and service, and should be preserved and repurposed rather than demolished. It is a testament to the marvels of construction and demonstrates significant historical importance for the fields of aviation and architecture. While attending SJSU, I acquired my first job in my profession (Graphic Design), working at Ames Research Center on the Moffett Campus, and spent lunches and after work time relaxing aside the structure. My Grandfather, Marshall Biggs, was a Navy architect stationed at Moffett Field and complemented Moffett Airbase with several of his building designs, including	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

supersonic wind tunnels and administration buildings, having settled in the Bay Area after serving in Pearl Harbor during and after its attack. Marshall passed away earlier this year at the age of 91, and I retained several of his sketches and blueprints for these structures, as well as documentary construction photos which include Hangar 1 from the 1940s - through the 80s in the background or prominently aside these buildings. Although most of these images are probably duplicates of those in the Moffett Field/NASA Archives, I would be happy to gather them and share them with your organization if they would be at all helpful or useful in preservation or documentation of the Hangar. Each time I return to the Bay Area with my family, as it becomes more and more dense with population and the landmarks that were once part of my life slowly disappear, this single structure is the icon that reminds me of the idea of home. Sincerely, Bob Beck	

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Brad Anderson	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (67C)	
Comment 1: Mr. Weissenborn, I would like to add my voice to the citizens who have already voiced their opinions against the destruction of hangar one, at Moffett field. This building is a true milestone in the evolution of flight and deserves to be preserved. Thank you, Brad Anderson	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 5, 2006	**Received on**: July 5, 2006
From: Bob Hobbs	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (68C)	
Comment 1: Mr. Richard Weissenborn I'm not sure how much you are aware of the attempt to save Hangar 1 @ Moffett field, but a lot of people think that this is a very worthy cause. The structure itself is an amazing feat of engineering done @ time the Empire State Building & the Golden Gate Bride were constructed. It is another great example of America's CAN DO ATTITUDE. It was home to the airship The SS Malcum that was one of the greatest blimps ever constructed. It also is a reminder to us all when lighter than air flight was a very important part of aeronautics. Some of our early high altitude exploration was achieved though gas balloons. Some of these early pioneers died through their efforts but the data that was documented was important for development of high altitude flight. Hangar 1 is a building that should be preserved for future generations to see for themselves. Space Camp has already expressed interest in using it if we can save it from being demolished, which is what the Navy wants to do. Please let me know if we can get the Navy to endorse the efforts to save Hangar 1. Help us to Pressure the Navy to complete a toxic clean up of outdated materials & replace the exterior siding with environmentally friendly material so future generation can see this amazing landmark. Once this is demolished there is no turning back. Please Seriously Consider. Bob Hobbs PS Show us some of that CAN DO ATTITUDE!	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 4, 2006	**Received on**: July 5, 2006
From: Barry W. Smith, San Jose, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (69C)	
Comment 1: 1650 McGregor Way San Jose, CA 95129 July 4, 2006 Mr. Rick Weissenborn BRAC Environmental Coordinator 1455 Frazee Road, Suite 900 San Diego, CA 92108 Dear Mr. Weissenborn, I am writing to request the United States Navy to take a path that will lead towards preservation of Hangar 1 at Moffett Field. There is no question that an overwhelming majority of local residents and citizens throughout the country would applaud the Navy for performing a noble act to save what is truly a unique, man-made structure. My parents, sister and I moved to Mountain View in 1956. My mom continues to reside in the family home in the Blossom Valley area of the city. Hangar 1 has been a "constant" to an area that transformed from a fruit orchard, agricultural capital to a high tech capital over the past 50 years. Returning from day trips or vacations, and traveling along Highways 101 or 237, Hangar 1 has always been there to "welcome us home" to Mountain View. Hangar 1 and the Blue Angels were always the "stars" of the many air shows held at Moffett Field. Tours of Hangar 1 and the Museum dedicated to educating visitors about the history of the dirigible airship era always left memorable impressions. Our out-of-town relatives and friends considered the tour a highlight of their visit to the area.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

It would be such a shame, a true tragedy, to lose Hangar 1 to full demolition. I urge you and others in the decision-making position to join forces with the many who are dedicated to preserving the Hangar 1 structure. Everyone recognizes the importance in resolving the toxic waste and environmental issues associated with the situation. However, I know I am not alone in hoping that Hangar 1 will be here for future generations to marvel at and enjoy, as well as learn of the amazing engineering feats involved with the construction and of the personnel who proudly served aboard the USS Macon and at the Moffett Field facility. Sincerely yours, Barry W. Smith	

Written on: July 4, 2006	**Received on**: July 4, 2006
From: Jeff Segall	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (70C)	
Comment 1: 655 California Street, Mountain View, CA 94041 July 4, 2006 Mr. Rick Weissenborn, BRAC Environmental Coordinator Navy BRAC Program Management Office West 1455 Frazee Road, Suite 900, San Diego, CA 92108-4310 Dear Mr. Weissenborn, This letter provides comments and questions in addition to my previous verbal comments on the Engineering Evaluation and Cost Analysis (EE/CA) for Site 29, Hangar 1 at Moffett Field. In addition, I would like to associate myself with comment letters from the Center For Public Environmental Oversight (CPEO),	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

the Silicon Valley Toxics Coalition (SVTC), as well as Congressperson Anna Eshoo and 11 other members of California's congressional delegation. Rather than reiterate the points already well stated in those letters, I will focus on three issues that are not raised or fully addressed in those other letters; 1) the costs for repairing the infrastructure at Moffett Field if Hangar 1 is destroyed, 2) the previous estimates for the costs associated with remediation of Hangar 1, and 3) the potential for reuse of Hangar 1 if it is restored. At the May 11, 2006 meeting of the Restoration Advisory Board (RAB), I raised the issue of the costs of repairing the infrastructure at Moffett Field, and stated that the public is entitled to know the true costs to all public agencies for each alternative. According to the draft minutes of that meeting, you stated that "each step of the EE/CA process will present more detail, and detailed cost information will be available. The Navy will have more information on infrastructure costs as the project proceeds." I have two comments on this issue. First, I question the Navy's position that the infrastructure costs that would be created by Hangar 1's demolition would not be the Navy's responsibility but rather NASA's. I know it is the Navy's position that these would be "facility improvements" and therefore not the Navy's responsibility but this appears to be a stretch. I grant that the facilities that NASA would likely put in would be more modern and perhaps better than the infrastructure facilities that may date from the 1930's, but the fact remains that those costs would not be needed if the Navy does not destroy the Hangar. Thus, it appears that this is an environmental impact cost that is created by a Navy action and therefore the Navy's responsibility. I am aware that at least one NASA official agrees that the facility costs would be NASA's, and I am not particularly interested in fighting NASA's battles with the Navy, especially if NASA is not interested in protecting its own interests. But this does bring me to my second comment on the infrastructure issue. As I stated at the May 11 RAB meeting, it is the total costs of the alternatives for dealing with Hangar 1 that is relevant to the public. And while I appreciate that we "will have more information on infrastructure costs as the project proceeds," as the EE/CA process is currently structured, this is the last opportunity for any public comment. As public acceptance is one of the key criteria for the Navy's decision, and the only justification provided by the Navy for destroying Hangar 1 is cost, I	

request that bids for the necessary infrastructure work for Moffett Field, as well as the bids for the work in Alternatives 10 and 11 made public and the process be reopened to public comment at that time. This is the only way that the public can make informed comments on the true costs to its public agencies of the two alternatives and weigh it against the benefits of the preserving the Hangar. If there are legal requirements that forbid making the bids public, I ask that the method described in the CPEO letter be used to get as much information to the public as possible. My next set of questions has to do with the 2003 DMJMH+N cost estimate for dealing with the contamination of Hangar 1 done at the request of NASA. Was the Navy aware of this document when preparing the EE/CA? If it was aware of this detailed cost estimate, why did the Navy start from scratch in making its cost estimates, especially for Alternatives 10 and 11, which are two of the three alternatives in the 2003 study? The Navy has stated that although the EE/CA estimates are thought to be good to only +50% to –30%, the relative ordering of the costs is reliable. However, the 2003 DMJMH+N cost estimates showed the cost of demolition (Navy Alternative 11) at just over $30 million while the cost of removal of the siding and replacing it with a safe alternative at $27 million. While the value of the steel frame as scrap has changed in the intervening 3 years, this is estimated at $4 million, bringing the estimates roughly to party. Can the Navy explain this disparity and its apparent faith in its estimates over the apparently more detailed estimates given in the 2003 DMJMH+N document? Finally, I have a question concerning the possible reuse of Hangar 1. Although the reuse issue does not appear to be addressed in the EE/CA documents itself, it has come up in the public meetings regarding the EE/CA and I believe it is reasonable to raise the issue here. On a few occasions, most recently at the public comment meeting on May 23, 2006, you have stated that even if the Hangar were restored and made safe, by, for example, residing as in Alternative 10, the public would still not be able to use Hangar 1 because it does not comply with safety codes. You further stated that NASA has estimated the costs of bringing Hangar 1 up to safety codes, thereby allowing public use, at approximately $50 million. While it is difficult to ascribe motives to others, in context of the Navy's public position in favor of destruction of Hangar 1 and the public's overwhelming opposition to it, it appears that these remarks were designed to	

dampen enthusiasm for preservation and possible reuse of Hangar 1. However, immediately before it was sealed because of the PCB contamination issue in 2003, Hangar 1 was in public use, specifically by the Moffett Field Historical Society as well as other for other uses such as air shows. I have contacted members of the Historical Society and they are not aware of any special dispensation or waiver for their use of the Hangar and were not told that they would be forbidden to reoccupy Hangar 1 if the contamination issue were addressed. Given this, my question is: if the PCB and other hazardous contaminants of Hangar 1 addressed under Alternative 10, for example, would it not be possible for the Moffett Field Historical Society to reoccupy Hangar 1, absent any additional work for code compliance? If it is the restoration in the historic mitigation of Alternative 10 that triggers the requirements for code compliance, could these requirements be waived for emergency use, as in the disaster relief scenario discussed in the Eshoo letter? Thank you for consideration of my comments. Sincerely, Jeff Segall	

Written on: July 4, 2006	**Received on**: July 4, 2006
From: Michael D. Makinen	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Chairman, City of Palo Alto Historic Commission	
GENERAL COMMENTS (71C)	
Comment 1: TO: Richard Weissenborn, BRAC Environmental Coordinator, I am opposing the Navy's proposal to demolish Hangar 1 at Moffet Field as the Navy's preferred EE/CA approach to solving the PCB contamination problem. The Navy has failed to take into consideration that viable reuse opportunities have recently developed including FEMA's interest in developing a regional FEMA	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

Center at Moffett Field. This plan would result in rental income from FEMA that would be available to NASA Ames through leasing authority recently given to NASA and also by way of the National Historic Preservation Act. In addition, the benefits to the Bay Area in terms of disaster readiness that would be provided by Hangar 1 as a FEMA Center are incalculable. FEMA already has a strong presence at Moffett Field in terms of utilization of Building 144 for FEMA warehouse stocking and other areas that are used for emergency vehicle and equipment storage. Other factors not taken into consideration by the Navy include the loss of income to the local communities that would derive from heritage tourism. If Hangar 1 was cleaned-up and resided, then it could be put back into service and could serve as a historic site that the public could visit and plan vacation trips around. The long term economic benefit to the community, in the form of heritage tourism, has been totally neglected in the analysis undertaken by the Navy. These benefits would in the long term greatly exceed any minor additional costs required to clean the structure and re-side the hangar. As a historic icon and a reminder of the Navy's long service at Moffett Field, it would be a great disservice for the Navy to destroy a strong reminder of naval history in the Bay Area. The Hangar could serve as a Naval recruiting site in addition to the other factors mentioned above. I implore the Navy to act with respect to this historic icon of the Bay area and to correct the environmental deficiencies that affect the hangar so that others can reutilize this structure in an appropriate and sensitive manner. Sincerely, Michael D. Makinen Chairman, City of Palo Alto Historic Commission	The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 10, 2006	**Received on**: July 10, 2006
From: Milton Chris Carris	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (72C)	
Comment 1: I just opened this email to find that there was a way to voice my support to, "KEEP HANGAR ONE!" It is very important to keep "HANGAR ONE", FOR THE THOUSANDS OF MEN AND WOMEN THAT WERE IN THE NAVY AND CIVIL SERVICE! My Father and Mother were both there during WWII. My father in the Navy as a First Class Air Mechanic on the blimps and my mother in the fabric shop as a Civil Servant. They were there from 1941 to around 1946 or 1947. Mountain View City and the whole surrounding area owes its existence to the Navy base. I am one vote for keeping the hangar and the base. The Bay Area must recognize what purpose the base and Hangar 1 meant to all of us and the sacrifices made. Do not let some mundane developer get a hold of the property and start putting up condos! We need to keep our history and historical artifacts intact for education of all those who come after the generation that saved it for all of us. Sincerely, Milton Chris Carris	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: June 29, 2006	**Received on**: June 29, 2006
From: Margaret Turner, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (73C)	
Comment 1: Dear Mr. Weissenborn, I am an ex-Brit who has lived in Mountain View for 40 years. During this time many landmarks have disappeared, among them the train station which was burned down for practice by the Fire Brigade. After realizing that this was an historic landmark it has been rebuilt, exactly the same, at a cost of several million dollars. I understand that Mountain View purchased the whole 1,000 acres on which the base sits and gave it to the Navy for $1 in 1931. This is history and the City and its citizens deserve to know the totals of the bids prior to a final decision. Hangar 1 is an important landmark to the Bay Area and I hope the Navy will agree to the Historic Preservation Act regarding the hangar. Sincerely, Margaret Turner 1270 Bonita Avenue, Mountain View, CA 94040	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

Written on: June 29, 2006	**Received on**: June 29, 2006
From: Robert Burns, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (74C)	
Comment 1: I urge you to seriously consider repairing the Moffett Field Hangar #1 and retaining it as the important part of aviation history which it is. I am especially disturbed by the proposal to keep secret the financial estimates for the construction/demolition alternatives. The current use of secrecy to blunt public review and criticism seriously damages the credibility of the Navy in yet another project. Robert Burns 1667 Springer Road, Mountain View, CA 94040	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

Written on: June 30, 2006	**Received on**: June 30, 2006
From: Silicon Valley Toxics Coalition (Lenny Siegel, Peter Strauss)	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Silicon Valley Toxics Coalition	
GENERAL COMMENTS (75C)	
Comment 1: Dear Mr. Weissenborn: Enclosed are the Silicon Valley Toxics Coalition's (SVTC) comments on the EE/CA for Hangar 1. They are organized into General Comments, Specific Comment and Questions. The latter section are questions that we believe need to be answered or resolved based on the numerous background documents that we have read, and do not believe are answered by the EE/CA. Thank you. Lenny Siegel	**Response 1:** See responses to General and Specific comments below.
Comment 2 (attached letter): (75C.1) <u>General Comments</u> 1. (75C.1.1) The Silicon Valley Toxics Coalition (SVTC) strongly supports the position that Hangar 1 should be retained, in a form much like it exists. The tremendous public outcry against demolition of the Hangar has convinced us that retaining Hangar 1 is well worth the extra costs for restoring the Hangar. We call on the Navy to assume responsibility for making the Hangar safe and suitable for public use. This would include both exterior and interior remediation. 2. (75C.1.2) We are disappointed with the EE/CA and the process which concluded that Hangar 1 should be demolished. We are not satisfied that the Navy has sufficiently demonstrated that the Hangar will pose a future risk. We believe that the Navy must do so before it can begin to speak of taking down a building that is an icon of much of the South Bay community. We had expected that the EE/CA would be "robust". That is, while the Navy was allowed to transform what was to be a focused Remedial Investigation/Feasibility Study (RI/FS) into an EE/CA, it made commitments at Restoration Advisory Board meetings and a public meeting	**Response 2:** (75C.1.1, 75C.1.3 and 75C.1.21) The Navy has revised the EE/CA based on public and agency comments to include both exterior and interior remediation. The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. (75C.1.2) Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the deteriorating building materials. At sites where results indicate that a threat exists to human health or the environment, a removal action may be warranted to, "abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of a release" (40 CFR Section 300.415). The US EPA categorizes removal actions in three way: (1) time critical removal

that it would that it would be comprehensive. We now believe that the community was shortchanged when the EPA agreed to the substitute the RI/FS process with an EE/CA process. Not only is it unclear how the Navy will measure "community acceptance", but with the change in process, EPA has little say in the Action Memoranda following the EE/CA, and it cannot compel the Navy to include information – because it does not have to agree in writing with it. We are also disappointed in the economic analysis. The large uncertainty factors provide the public with little faith that the option chosen is in fact the least expensive. The Navy's commitment to address the uncertainties by putting two alternatives out to bid speaks volumes about the poor economic analysis. Unfortunately, the community will not be able to comment on these "new bids," which will be a substitute for good economic analysis. Furthermore, as has been discussed at the last RAB meeting, the Navy did not consider in its evaluation the concept of "opportunity costs". That is, the true cost of something is what you give up to get it. This includes the potential economic benefits that the community does without (i.e., the opportunity to use the Hangar at some other time) because it is no longer standing. "Economics is primarily about the efficient use of scarce resources, and the notion of opportunity cost plays a crucial part in ensuring that resources are indeed being used efficiently." The EE/CA is flawed in another, more fundamental way. It is premised on the fact that no alternative is viable unless the entire source is removed. The Navy quickly eliminated all but two alternatives that meet this criterion. That is like saying that all houses built prior to 1978 (when lead paint was used) must be demolished because weathering will eventually expose these contaminants. In order to make this presumption, it is crucial then that the EE/CA firmly establishes that PCBs and other contaminants will pose a substantial risk to humans and/or ecological receptors unless the sources are fully removed. SVTC believes that the Navy has not put forth the hard evidence to show that the Hangar presents a risk to human or ecological health, as would have been required by an RI/FS. 3. (75C.1.3) Except for Alternatives 10 and 11, the interior of Hangar 1 is not addressed. It is our understanding that the informal dispute negotiations with the regulatory agencies led to an agreement that the Navy would address the interior of the Hangar. Each alternative, particularly alternatives 1 through 9, in this document should address this fact. This is of major importance because as of now, under the	actions (TCRAs), (2) emergency removal actions, and (3) non-time critical removal actions (NTCRAs) These catagories are based on the type of situation, the urgency of the threat of the release, and the planning period that exists in which the action is initiated. TCRAs are those for which the planning period is six months or less before field work is initiated. Emergency removal actions are necessary when there is a release that requires on-site activities to begin in hours or days. NTCRAs are taken when a removal action is determined to be appropriate, but a planning period of at least six months is available before on-site activities shall begin. The Navy has already undertaken a TCRA in 2003 to mitigate the migration of contaminants from the hangar by applying a coating to the exterior of the hangar. This coating has a warranty of 3 to 5 years, so it was only a temporary solution while the Navy evaluated and selected a permanent solution to mitigate the threats posed by the hangar. The NTCRA process is appropriate for the evaluation and selection of a permanent source removal/source control alternative for Hangar . The EE/CA was revised based on public comments received and updated cost information. Cost estimates are developed following U.S. EPA guidance documents and are based on standard commercial bidding practices and include estimates from potential subcontractors. The evaluation of alternatives in the EE/CA does consider the permanence of alternatives. Those alternatives that permanently address the source of contamination are rated higher in the "effectiveness" criterion. (75C.1.3) The revised EE/CA includes a comprehensive evaluation of alternatives in Section 4.7 to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). In addition, the Navy consulted extensively with technical personnel responsible for the remediation at the Akron Hangar. The information from this consultation was valuable in the evaluation of Alternative 2 (Cover with Rubberized Material), the coatings

Toxic Substance Control Act, EPA has prohibited the use of the interior for public use and has restricted the interior to essential maintenance, abatement or cleanup personnel. For example, concerning the draft RI/FS Work Plan (no longer needed because of the EE/CA strategy), NASA made the following comment: "NASA requests, in the strongest possible language, that the Navy fully characterize in the Site 29 RI/FS Work Plan the interior of the Hangar, including the structure and interior environment, for PCBs and lead, and in addition characterize the exterior of the Hangar for lead as well as the analytes included in the Plan."

We take note that the Navy has argued that the Airdock facility in Akron Ohio (a sister facility) has comparable problems to Hangar 1. It has said that even after attempted remediation of the outside, the EPA requires that the occupant vacuum the interior surface routinely; a daunting task that neither the Navy nor NASA wanted to be responsible for. However, research and a conversation with EPA Region 5 indicates the following:

- The Airdock facility, formerly owned by Lockheed-Martin, is being renovated and returned to service to make high-altitude dirigibles. Most of the exterior was coated with a rubberized composite. The panels that are within 30 feet of the ground will be replaced, as will windows and some roofing materials. The interior will be coated with two coats of epoxy primer and covered by a coat of acrylic. This method has already undergone testing and has been approved.
- The facility is now owned by the Summit County Port Authority. It has been awarded a "Brownfields" grant of $3 million for the renovation. Lockheed has a large DoD contract to build the new high-altitude dirigibles, and we assume that some of the remediation costs will be borne by it. Renovation is supposed to be complete by March 2007.
- The EPA regulates occupancy of interior of Airdock. Because it has an industrial use, EPA has allowed industrial personnel to occupy the building, so long as there is "periodic" vacuuming of surfaces. After the interior is coated this requirement will most likely be removed, so long as there is an inspection and monitoring plan in place. The monitoring plan will consist of air monitoring to meet the Toxic Substance Control Act (TSCA) standard that there is "no unreasonable risk". EPA defines this as one in one million excess cancers (1 x 10-6). It also uses the NIOSH air standard for industrial workers

for internal steel and the removal of the RPM, since all of these items were part of the remediation at that site. This information was included during the preparation of the revised EE/CA.

(75C.1.4) There is no evidence that the first time the trench around Hangar 1 was cleaned out was in March 2003. It is likely that to maintain effective stormwater control the trench was cleaned out periodically to prevent material build up. Sampling results from NASA's stormwater settling basin prove that contaminants can, and have, migrated from the hangar to the settling basin. There is no indication that periodic cleaning of the trench would eliminate the contaminants movement to the stormwater settling basin and as the existing asphalt emulsion coating breaks down, PCBs, may be released and reach Site 25. As a result, NASA has identified Hangar 1 as the source of PCB contamination (Aroclor 1268). Due to the risks Hangar 1 poses to human health and the environment the Navy must evaluate ways to safely address the contamination in the building materials. At sites where results indicate that a threat exists to human health or the environment, a removal action may be warranted to, "abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of a release" (40 CFR Section 300.415).

(75C.1.5) The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

(75C.1.6) Alternative 11 does take into account the presence of basewide utilities. Utility disconnect costs ($780,000) include isolation and/or rerouting of basewide utilities within Hangar 1. See Section 1.1.4 in Appendix C.

(75C.1.7) Robertson Protected Metal siding panels have been successfully removed in a similar project utilizing wet methods or other appropriate and safe methods. The siding panels at Hangar 1

of 1 mg per cubic meter as a threshold to determine whether occupants must be equipped with respirators. So far, this threshold has not been exceeded. • Prior to a fire that partially damaged the exterior rubber composite, the regional Technical Rescue Operations Team used the catwalks to practice high rope skills. Because of this training, the fire fighters reportedly had an easier time fighting the fire. 4. (75C.1.4) The PCB that is unique to Hangar 1 siding (Aroclor-1268) was found at high levels in the Eastern Diked Marsh and Stormwater Retention Pond (SWRP), areas of ecological concern and those where the Navy has been required to clean up to levels of 200 – 210 parts per billion (ppb). We have read in detail several NASA studies identifying PCB sources, and the various iterations of the RI/FS, as well as the Time Critical Removal Action (TCRA) for coating Hangar 1 and the NASA TCRA for cleaning perimeter drains. We have spoken informally with NASA and the EPA about this issue. These are our basic findings: • In March 2003, under the auspices of a TCRA, NASA cleaned out the perimeter drains surrounding Hangar 1. These drains feed into a subsurface system that empties into a settling basin constructed by NASA in 1991. It detected levels of Aroclor-1268 from 65,000 – 72,000 ppb, surely a matter of great concern. (At the same time, rainwater from the siding and the Hangar 1 downspout detected levels between non-detect and 6.7 ppb.) Yet this may have been the first time that these drains were cleaned since Hangar 1 was built in 1933. We would expect such an accumulation of contaminants over 60 years. There are no recent samples available since the trench was cleaned and very little reason to expect that these sediments would migrate approximately one-half mile to the settling basin. It would be relatively inexpensive to have an ongoing operations and maintenance plan to clean the perimeter trench periodically to prevent the buildup of sediment. Since there is going to be a Navy presence at Moffett for some time to come (until the groundwater contamination issue is fully resolved), it is likely that the Navy will have contract workers on-site that can do the required O&M. • In 1991, NASA constructed a settling basin for stormwater from the western side of Moffett. The settling basin was constructed to "collect any possibly contaminated sediment" before it was discharged to the EDM. Even with the	would be removed using the same protocols. All the demolition debris will be contained within the curtain wall footprint. To further monitor the protection of the public continuous air monitoring will be conducted during all phases of the project to monitor any fugitive dust that escapes the exclusion zone. The air monitoring will comply with the requirements of the Bay Area Air Quality Management District (BAAQMD). Similar projects have been completed safely and with limited fugitive dust emissions. (75C.1.8) The manufacturer's warranty is 3 to 5 years. (75C.1.9) The Navy has reviewed the alternatives in the previous version of the EE/CA and has made modifications based on public comment and technical analysis. Alternatives 12 and 13 are not considered permanent solutions, so they are not as effective as more permanent measures. Allowing discharges to continue from the structure and collecting them for treatment is not a permanent solution. (75C1.10) This cost is considered a direct construction cost for each removal action. Operations and maintenance costs consists of routine inspections, touch-ups and recoating/repairing the coatings and cover material. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. (75C1.11) A present worth analysis was performed on the revised EE/CA for O&M based on a nominal discount rate of 5.2 percent for 30-years in accordance with OMB Circular A-94, and costs were normalized to 2007 dollars. (75C1.12) It is unknown, prior to the Navy transferring the base to NASA, how often the drains were cleaned out. (75C1.13) As part of O&M and a Stormwater Pollution Prevention Plan NASA cleans out the stormwater settling basin once a year and collects samples from the excavated sediment for proper disposal.

high levels of PCBs found in the perimeter drains, in 1997, during routine cleanout and sampling of the settling basin sludge, "low concentration s (0.05 to 0.8 parts per million [ppm]) " were detected. Samples of sediment in 1999 also indicated relatively concentrations of Aroclor 1268 (i.e., 0.028 to 1.2 ppm).While there is little doubt that these samples detected sediments emanating from the perimeter drains at Hangar 1, it also indicates that contaminated sediment movement from the drains at Hangar 1 has a relatively low contribution to the stormwater settling basin. Since the perimeter drains were fully cleaned in 2003, it is unlikely that there will be a large buildup of contaminated sediments in the settling basin. More importantly, in 2003 the Navy stated that there is no existing pathway for sediments that are leached off of Hangar 1 to make their way to the EDM and SWRP - the NASA settling basin "precludes the potential for future contaminated sediments from reaching the Eastern Diked Marsh and the Stormwater Retention Basin." Therefore, the only ecological risk from Hangar 1 would be from infrequent strong rain surges that entrain the PCBs in the stormwater. The good means of preventing future contamination of the wetlands is to clean the perimeter drains periodically, flush the sediments that are held up in the one-half mile underground drain system, and clean the settling basin on a routine basis. • Prior to the TCRA to encapsulate the Hangar, NASA's sampling indicated that Aroclor 1268 was not detected in ambient air outside of Hangar 1, although it was detected at a maximum concentration of 0.1115 ppb inside the Hangar. During the encapsulation in 2003, air sampling was also performed. The highest levels were detected during pressure washing and coating. In some cases the readings were higher upwind than downwind, lending support to the argument that ere may be other unidentified sources of Aroclor-1268. However, during the final 16 hour sample conducted on November 11, 2003 there were no detections of PCBs. Therefore, we assume that there are no current indications that Hangar 1 presents a health risk via the air pathway, unless the building is occupied. • After completion of the final Station-wide RI, Hangar 1 was identified as "a potential source of Aroclor-1268 that was detected in the settling basin. NASA also identified surface soils as a potential source. In June 2004, NASA prepared a report identifying PCB sources at NASA Ames Research Center. It	(75C1.14) The Navy is not involved in NASA's storm water system O&M efforts and therefore is unaware of the frequency of sediment removal. Because of the 2003 TCRA conducted on the hangar, large amounts of contaminated sediments containing PCBs from the hangar are not expected. (75C.1.15) NASA has detected Aroclor 1268 in the stormwater settling basin sediments since 1997, when they first analyzed for it. In 2002, NASA detected Aroclor 1268 in the stormwater basin effluent. In 2003, the Navy sampled in the areas surrounding the stormwater settling basin in the EDM and found Aroclor 1268 in sediments from ground surface to one foot below ground surface. In 2005 and 2006 as part of a two phased approach, NASA, removed the contaminated sediment around the settling basin. (75C.1.16) The contamination at AOI-6, which is also known as the Lindbergh Ditch, was identified by NASA. Prior to 1991, when the stormwater settling basin was built, AOI 6 was part of the stormwater drainage path to Site 25. As such this area received stormwater runoff from Hangar 1. NASA conducted a soil removal to address the contamination at AOI 6 in 2001. (75C.1.17) The contamination at Building 454 was identified by NASA. The Navy has no knowledge of how the contamination came to be there or the current status of that investigation/remediation. (75C.1.18) NASA has completed an investigation for PCBs at Moffett Field. The result of this investigation has identified Hangar 1 as the source of Aroclor 1268. (75C.1.19) Effectiveness of Alternative 6 is discussed in Section 4.5.6.3 of the revised EE/CA. This alternative would be effective as long as the integrity of the siding is maintained. The siding would need to be inspected biannually to maintain protectiveness. (75C.1.20) US EPA's comments on the draft EE/CA as it was originally written, along with responses, are included within these RTCs.

found five Aroclor species (1248, 1254, 1260, 1262 and 1268 in soil at "NASA Ames," the most common being 1254, 1260, and 1268. There were four detections of Aroclor 1268 near B-942 (adjacent to Hangar 1), and 1 detect of Aroclor 1268 near B-454. However, a PAI Report near in 2001 detected Aroclor-1268 19 times at AOI6 (North of the ORF Road. 5. (75C.1.5) Hangar 1 is individually eligible for the National Register of Historic Places (NRHP) and is a contributing element of the United States NAS Sunnyvale Historic District, which is listed on the NRHP. The NRHP lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering and culture. Hangar 1 is also a Civil Engineering Landmark of Northern California. When the Navy performed its initial encapsulation in 2003, it was done so in Accordance with the "Secretary of Interior's Standards for Rehabilitation Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring or Reconstructing Historic Buildings. The Standards (codified in 36 CFR 67 for use in the Federal Historic Preservation Tax Incentives program) address the most prevalent treatment. There are Standards for four distinct, but interrelated, approaches to the treatment of historic properties--preservation, rehabilitation, restoration, and reconstruction These all have the common property of "returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values." The Standards may be applied to all properties listed in the National Register of Historic Places: buildings, sites, structures, objects, and districts. SVTC believes that the Navy should adhere to these Guidelines and Standards when dealing with Hangar 1. 6. (75C.1.6) Alternative 11 does not take account of the station-wide infrastructure components located in the interior of Hangar 1. The construction of Hangar 1 preceded the construction of the rest of the base, which began in 1933. The hangar was the first building constructed at the station and was central to the overall function and purpose of NAS Sunnyvale. The Navy operates an extraction and treatment system that is located to the west of Hangar 1. For example, a recent Work Plan for a Supplemental RI/FS reports that a sump also pumps groundwater from a tunnel beneath Hangar 1 and from an electrical vault located on the eastern side of Hangar 1. Other sources have stated that Hangar 1 is a nexus for much of	(75C.1.21) The revised EE/CA includes the evaluation of alternatives to address contamination on the interior components of the hangar (interior surface of the siding, redwood ceiling, structural steel, and catwalks). As part of this evaluation, the Navy has followed up with technical personnel responsible for the remediation of the Akron Hangar. The interior of the Akron hangar was coated with an acrylic coating, as described in Section 4.7.1 of the revised EE/CA. This was one of the options evaluated for mitigation of the interior of Hangar 1. An acrylic coating would be effective as long as it continues to be touched up and maintained. The epoxy-coating evaluated in the revised EE/CA requires less O&M and therefore is less expensive than the other options evaluated..

the electric utility infrastructure at Moffett, and any demolition of the building would have to take into consideration how this would be replaced. 7. (75C.1.7) For alternatives that propose to removal of the shell (10 and 11), we think that it is a difficult task that should be handled with great care. Demolition has the potential to spread the materials in that make up the shell to the wetlands (Sites 25 and 27) and to other areas of the air station. If this is eventually decided upon, a great deal of planning and coordination will have to be done prior to mobilization. We think that these additional planning costs must be factored into the estimates. <u>Specific Comments</u> 1. (75C.1.8) On p- ES-2, it states that the "The asphalt-emulsion coating has a limited life span of 3 to 5 years. The Navy's objective is to mitigate the threat from Hangar 1 and to complete a removal action while the interim coating is still effective." However, the Final Action Memorandum for the TCRA (November 12, 2003) Appendix C, Response 2 to EPA's Comments, states that there was a guarantee of 3 to 5 years. Has the Navy gone back to the manufacturer to recover funds due to failure of the encapsulation? 2. (75C.1.9) Referring to Table 4-1 it is not at all clear that alternatives 12 and 13 would not be protective health and the environment, especially in conjunction with any option that contains the PCBs within the existing shell. We believe that these alternatives should be analyzed in conjunction with containment options. 3. (75C.1.10) The cost estimates for all of the options include cleaning of the perimeter and stormwater trench. This cost is approximately $1.2 million. This cost item, although necessary, should be a normal part of the O&M for this Hangar and should be removed from the cost estimates. 4. (75C.1.11) The O&M costs are not discounted for each alternative. It is a common principle in economics that today's dollar is not worth as much as a dollar next year. Discounting reflects the time value of money. Benefits and costs are worth more if they are experienced sooner. The higher the discount rate, the lower is the present value of future cash outlays. Virtually every economic analysis that is done in the private sector converts costs to present value to compare costs. Many government agencies also use present value costs to compare alternatives, including the Army Corps of Engineers (flood control projects) and even the	

Department of Energy (see Yucca Mountain, for example). To make decisions based on nominal estimates going out several decades serves no purpose, except to inflate the costs of alternatives that take longer to complete, or have an O&M component. The approach used in this EE/CA skews the evaluation of the remedies that have a large O&M component. We believe that the comparative cost analysis of remedies needs to be translated to present value if it is going to be useful. Furthermore, OMB Circular A-94 states that "The standard criterion for deciding whether a government program can be justified on economic principles is net present value -- the discounted monetized value of expected net benefits (i.e., benefits minus costs). Net present value is computed by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits." We also believe that EPA supports this method of calculating the future costs of remedies. Specific Questions 1. (75C.1.12) Prior to 2003, were the perimeter drains cleaned out? If so at what frequency. 2. (75C.1.13) How often does the settling basin undergo routine maintenance to sample and remove sediment? 3. (75C.1.14) Has the subsurface system leading from Hangar 1 to the settling basin been cleaned to remove sediments? If so, how frequently is this done? Would you expect that this approximately ½ mile system contains a large amount of contaminated sediment? 4. (75C.1.15) Has NASA or the Navy detected Aroclor-1268 traveling to the EDM since 1991? Have there been tests of stormwater during heavy rainfall leaving the settling basin to the EDM? 5. (75C.1.16) How did Aroclor-1268 find its way to AOI6 North of OARF Road, and what is the assumed source/ 6. (75C.1.17) How did Aroclor -1268 find its way to B-454? 7. (75C.1.18) Are there other sources of Aroclor-1268 at NASA/Moffett?	

8. (75C.1.19)If the Navy covered the outside of Hangar 1 (Alternative 6) and sealed the Hangar so that there would be no interaction between the interior and the exterior (no pathways), would that option present a risk? 9. (75C.1.20) Please provide EPA's comments on the draft EE/CA as it was originally written. 10. (75C.1.21) Has the Navy investigated the remedy for the interior of the facility that is proposed for the Airdock facility? If yes, what where the conclusions and why was it rejected? If no, will the Navy investigate the interior remedy proposed for the Airdock? 1. http://www.economist.com/research/Economics/ 2. Phone call between Peter Strauss and Seth Dibblee, EPA Region 5, June 26, 2006 3. It's worthwhile to note that the Akron community believes that the Airdock is a landmark that must be preserved. 4. Response # 7 to Libby Lucas on the Draft ROD, Site 25, Eastern Diked Marsh 2/21/2003 5. Locus Technologies, Work Plan for Supplemental Remedial Investigation and Feasibility Study for Vapor Intrusion Middlefield-Ellis-Whisman Area and Moffett Field, California, May 12, 2006	

Written on: June 30, 2006	**Received on**: June 30, 2006
From: Center for Public Environmental Oversight (Lenny Siegel)	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Center for Public Environmental Oversight	
GENERAL COMMENTS (76C)	
Comment 1: Dear Mr. Weissenborn: The following are the formal comments of the Center for Public Environmental Oversight on the draft Engineering Evaluation/Cost Analysis for Site 29 (Hangar 1) at the former Moffett Naval Air Station. As I understand the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Historic Preservation Act (NHPA), and their implementing regulations, the Navy is required to preserve Hangar 1 at Moffett Field as it addresses environmental contamination there, unless it has a very good reason not to. The Navy is not required to follow NHPA procedures because this is a CERCLA action, but it must comply with its substantive provisions because the NHPA and state historic preservation laws are applicable or relevant and appropriate requirements (ARARs) under CERCLA. That means that the Navy is responsible for making the formal determination of compliance, but that its judgment must not be arbitrary. The Navy itself, in the Engineer Evaluation/Cost Analysis (EE/CA) makes a strong case that Hangar 1 is a unique structure both architecturally and historically, and that it forms the linchpin of a National Historic District. Historic preservation experts appear unanimous: Mitigation through documentation and markers is not equivalent to retention of the building. I do not see how the Navy or any court of valid jurisdiction would find otherwise. In lay terms, I think of the monumental structures of early eras. For example, the value today of the Egyptian or Mayan pyramids is immeasurable to both archaeologists, historical tourists, and the descendants of the people who built them. Learning about the long-since demolished Colossus of Rhodes or the Hanging Gardens of Babylon from historical accounts does not compare.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing and the Navy will hold a public comment period of at least 30 days from the date the revised EE/CA is distributed. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

In more recent memory, it was possible to re-create the Lewis and Clark expedition's Fort Clatsop settlement, near the mouth of Columbia River, at significant expense, but that re-creation contained serious historical uncertainties. More important, it will never be possible to build a replacement of Hangar 1 that embodies the original structure. Thus, demolition—or any other removal of contamination without restoration of the building—would be an adverse effect. The EE/CA explains that the Navy must avoid that adverse effect "to the extent practicable considering the exigencies of the situation." If indeed it were not practicable to remove contamination and preserve Hangar 1, then the Navy would have a case for demolition. However, the EE/CA finds Alternative 10—contaminant removal followed by replacement of the siding—environmentally acceptable. Thus, the only real practical impediment to preservation is financial. At some level, the cost of complying with historic preservation requirements would become impracticable. I think the Navy would easily agree that spending $100,000 to restore the hangar is not a practical obstacle to compliance, and that preservationists—at least I personally—would agree that spending $100,000,000 on preservation, absent any direct benefit to the Navy, is impracticable. But I believe that additional expenses of $20 million, or even more, are not prohibitive, given the Navy's station-wide life-cycle environmental remediation cost of about $200 million at Moffett Field. While I understand why the Navy doesn't want to spend that much money of a building it no longer owns, I don't believe that the $12 million estimated difference between alternatives makes compliance with historic preservation requirements impracticable. The Navy, in the EE/CA, found the extra costs associated with preservation after contaminant removal to be about $12 million. Opponents of demolition pointed out that the Navy excluded demolition costs that must be borne by others, such as NASA, and we noted that a NASA contractor's more detailed 2003 estimates found that the difference between the two alternatives—even after adjustments in salvage value—was much lower. In response, a Navy spokesman promised to send both Alternative 10 and Alternative 11—demolition—out for bid. I appreciate this concession, but such detailed estimates should have been made available as part of the EE/CA. Unfortunately, under the currently announced Removal Action process, there will be no opportunity for the public to evaluate the accuracy and completeness of the proposals. So	

my first request is to modify the process to re-open the proposed remedy for comment, at least on the quality of the estimates. This should help overcome the inadequacy of the EE/CA. If Navy lawyers conclude that disclosure of the estimates' monetary figures would violate federal contracting rules, then there may be a way to disclose descriptions of the tasks associated with both alternatives. That way, the public can at least review the sufficiency of the proposed work. Second, in seeking two sets of bids, the Navy hasn't explained what it will do once the proposals are in. Will it automatically go with the lowest, validated bid? Or will it be willing to spend $100,000 extra, if necessary, to meet the preservation requirement? $1,000,000? $10,000,000? Though I am not convinced that a fair comparison will lead to a substantial difference, I believe that the Navy is obligated to establish, up front, a monetary threshold, for the difference between alternatives, beyond which it thinks ARAR compliance is impracticable. Finally, a Navy spokesman has stated that the Navy would have no problem restoring Hangar 1 if some other entity were to fund that difference. It should be clear, by now, that I don't think that should be legally necessary, but I believe that proponents of preservation would attempt to raise the money—the difference between the best estimate for demolition and the best estimate for restoration—elsewhere if the Navy's current position prevails. That is, if the Navy finds that demolition is sufficiently less expensive to select that alternative, then before implementation it should convene a meeting of interested parties to consider ways to obtain the difference—based on the new estimates. Hangar 1 is unique. It's irreplaceable. Demolition would clearly violate the spirit and arguably violate the legal requirements built into the laws designed to preserve such structures. Sincerely, (submitted electronically) Lenny Siegel Executive Director	

Written on: June 30, 2006	**Received on**: June 30, 2006
From: Donald P. Baumann, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (77C)	
Comment 1: Dear Mr. Weissenborn, I am adding my name and support to save Hangar 1 at Moffett Field in California. We have lived in the area most of our lives and we enjoy the special place in history that is given to us by this famous hangar. Please do not tear it down. Keep it as a historical site or even use it for military plane storage etc. We appreciate whatever you can do to save this wonderful hangar. Sincerely, Donald P. Baumann 91 Church Street, #11, Mountain View, CA 94041, Tel: 650-965-7393 Cell: 650-868-2417, Email: donbaum@pacbell.net	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: June 30, 2006	**Received on**: June 30, 2006
From: Dave Solarsick, Campbell, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (78C)	
Comment 1: When I first came to the south bay area, I was given a tour of the area by some friends. As we drove up Hwy 101 and Hangar 1 came into my view for the first time, my comments were, "WOW, what is that?" The massive size of the	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate

structure, even from Hwy 101, was an awesome spectacle. And probably the most impressive landmark in the south bay area. Years later, when I finally had an opportunity to enter Moffett Field and drive up next to Hangar 1, I was even more impressed with the size and construction details. During my employment at NASA Ames RC, I had many friends and family members visit there. And almost all of them echoed my initial comments: "Wow, we didn't realize how big that thing is until we drove up next to it!" And then to realize that this enormous structure housed ONE airship is mind boggling. We cannot recreate the airship that was housed here. But we can and should preserve the structure that housed it, so that generations in the future can experience and appreciate the engineering marvels of this amazing period in our history. This experience could never be created by pictures, posters, video or chalk outlines. Plus this will not be just something to look at. It can become a world class center for education, history and entertainment. That of course will be done by a joint commercial and local government enterprise. The Navy's funding will not be needed to develop it past the point of preservation. But the Navy's compassion and judgment is needed to prevent the destruction of this historical icon. The World Trade Center was taken from us by terrorists who hate this country and the people in it. The US Navy is supposed to help protect and preserve this country and its proud heritage. Hangar 1 is a unique, priceless monument to a part of our country's history and proud heritage. I hope the Navy chooses to act in a manner befitting the proud service that it is. 1 that wants to protect our heritage. And not in a manner more similar to a force that wants to destroy it. Please Save and preserve Hangar 1. Thank you. Dave Solarsick 34 La Paloma, Campbell, CA 95008	consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Bob Jacobsen, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (79C)	
Comment 1: Dear Rick, I have to add my support to the effort to save Hangar 1 at Moffett. The structure, as has been said many times, is a reminder of our area's important role in aviation and technology, and is a landmark that provides visual continuity between generations. In addition to the already proposed uses (headquarters for the Peninsula Community Foundation and Community Foundation for Silicon Valley, and others), I would like to suggest a few more: -The Hiller Aviation Museum (now in San Carlos) could be housed or expanded to Hangar 1. -Retail hardware (specialized aviation or automotive, similar to Olander Company in Sunnyvale) shops could be housed there. -General aviation aircraft could use it as a hangar. -Secure storage space for vintage aircraft and vintage automobiles (of which there are many in the area looking for shelter). All of the above, especially if ALL uses were accomplished, would bring in income to support the maintenance and energy costs. Hangar 1 could become an aviation/technology based and community service based development - 8 acres will hold a lot!	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

I hope the Navy considers all these plans for the ongoing vitality of our Landmark. Best regards, Bob Jacobsen Los Altos (Secretary, Pierce-Arrow Society; Director, Nor-Cal Region, Pierce-Arrow Society; Vice-President, Mission Trail Region, Early Ford V-8 Club of America; member, Palo Alto Concours Committee)	

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Donna L. Semelmaker, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (80C)	
Comment 1: Dear Mr. Weissenborn, Please add my vote to the thousands pushing to save Hangar 1 at Moffett Field. In 1981, I came to the Bay area for a job interview at Ames Research Center. It was August, the sky blue, the hills on both sides of the valley visible. And as I drove North up 101, I saw Hangar 1 and knew immediately that this is where I wanted to work. And I did work at Moffett Field -- as a Contracting Officer -- for 15 years. Now that I am semi-retired (part-time work in San Jose), I commute every day up and down Highway 101. Hangar 1 is a still landmark for me, telling me I'm home. Sentimental drivel aside, the hangar is too important a historical legacy to tear down. Sometimes, the cost of doing something (in this case, cleaning up the toxicity) is important in-and-of itself, and then there are times when there are add-on benefits and value. There are myriad uses to which the Hangar could be put, as outlined in various reports. Please consider the Historic Preservation Act when deciding about the hangar. And prior to taking any final decision on Hangar 1,	**Response 1:** The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

please release the totals of the bids to the public. Sincerely, D. L. Semelmaker Former Contracting Officer NASA-Ames Research Center Moffett Field, CA	Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Don & Marie Anthony, Palo Alto, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (81C)	
Comment 1: Dear Mr. Weissenborn, Please allow access to data regarding the disposition of Moffett Field and Hangar 1 to local organizations and government. This property is vital to those of us who live and work here. It affects all of us, who are its neighbors. Thank you. Don & Marie Anthony Palo Alto	**Response 1**: Navy Installation Restoration documents related to Moffett Field and Hangar 1 are available to the public at the Moffett Field Information Repository. The Repository is located at the Mountain View Library on 585 Franklin Street, Mountain View, CA 94041.

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Mike Midgett, Brown Water Navy, RVN 67-68	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	

GENERAL COMMENTS (82C)	
Comment 1: Hangar 1 at Moffett has been a trade mark for many years. It holds some good memories for me as well as many other VETERANS that served this great country of OURS. I believe we should do what ever it takes to maintain, and preserve HANGAR ONE. Thank You For Your Help.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Jerry Hightower, Fresno, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (83C)	
Comment 1: I strongly urge you to do everything you can to preserve Hangar 1 at Moffett Field. I served at NAS Moffett Field in the early 60's and have been inside this hangar. It is a wonderful and unique piece of architecture and should be preserved as part of our history. Thank you for your consideration.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 3, 2006	**Received on**: July 3, 2006
From: John Cowan, San Jose, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn

Affiliation/Agency: Public member	
GENERAL COMMENTS (84C)	
Comment 1: As a south bay Bay Area native I implore the Navy to Save Hangar 1. Not only is this of historic value, it is part of the larger community here in the south bay and it's residence's memories & consciousness. I personally remember going out there for scouting events and other school tours. My brother remembers climbing with his best friend to the top of the hangar (way back in the 60's) to watch the 4th of July fireworks, sitting next to the blinking light perched on top. There is much more to this hangar than just the almighty dollar, it is part of our heritage.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 2, 2006	**Received on**: July 2, 2006
From: Timothy Peck, WA0PSQ, Vice Commander/Net Control	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Amateur Radio Post 380, District 13 California, Santa Clara Co., The American Legion	
GENERAL COMMENTS (85C)	
Comment 1: I am writing in support of saving Hangar 1. I do this at the request of and for the members of Post 380 of the American Legion as well as myself. We as veterans view the hangar as an extremely valuable part of America's Aviation History. It serves as a reminder of the valiant efforts of the men and women of the Army Air Corps and the US Navy's contributions to the advance of aviation and their service to America. As we pass on we wish to leave to our children and grandchildren, our Nation this magnificent legacy to our service and sacrifice. Like us this Hangar has served its country well; it is a tribute to its designers and builders. But unlike us it can and should survive the ravages of time. In a world where each Vet must fight for his and her medical and retirement benefits in a	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action.

system that questions worthiness for saving our aged and infirmed the Hangar becomes even more important. What price do you put on our history, our legacy, OUR SERVICE? Save the Hangar for future generations Signed for and at the request of the membership of the Post	

Written on: July 2, 2006	**Received on**: July 2, 2006
From: J.R. Boye, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (86C)	
Comment 1: Please make your best effort to save our historic airship hangar. It is one of the wonders of the Bay Area, large enough to be seen from miles away and an important reminder of our colorful past and the proud heritage of the Navy. All of the surrounding communities would be the poorer if it were to be destroyed. I'm hoping to be able to take my grandchildren to see its huge interior for themselves and not be reduced to just showing them photos. There is no other monument to the Naval airship era in the western United States. If it were to be lost, future generations would surely look upon us as fools, and the Navy itself as heartless.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 1, 2006	**Received on**: July 1, 2006
From: Tom Foxen, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (87C)	
Comment 1: I am writing this message to support the position that Hangar 1 at Moffett Field should NOT be demolished but appropriate remediation should take place to maintain this landmark. I'm sure you have heard all of the reasons so I will not fill your in-basket with duplicates of that material. Simply said, I strongly feel that the Navy owes the community a lasting memorial to the time the Navy spent in the area. Please record my position as anti demolition and pro restoration.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

Written on: July 1, 2006	**Received on**: July 1, 2006
From: Cynthia Sievers, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (88C)	
Comment 1: Please add my voice to those who support retention of Hangar 1. Not only does the Navy have a proud history at Moffett, but the siting of the base in its Mountain View-Sunnyvale location is one of the building blocks that led to be development of what became "the Silicon Valley". Every effort should be made to preserve Hangar 1 and find an appropriate use for this historic structure. A critical step in that direction will be understand the details of the Navy's cost estimates for removal of any toxic materials associated with the structure as well as the estimates for demolition of the structure. There may well be sources of financial assistance	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts. The EE/CA was revised based on public comments received and updated cost information. Cost estimates are based on standard

identified once the details of the Navy's estimates are made public and certainly no move to demolish the structure should be made until all the cost estimates are made public and explored for various options. Thank you for your work on this important issue.	commercial bidding practices and include estimates from potential subcontractors. This approach helps ensure that the cost estimate for each alternative evaluated is accurate in accordance with EPA guidance. Summaries of the cost estimates and assumptions are included in Appendix C of the revised EE/CA.

Written on: July 1, 2006	**Received on**: July 1, 2006
From: Allan and Judy Bakke, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (89C)	
Comment 1: We strongly urge that the historic landmark "Hangar 1" from the days of lighter-than-air flying machines be preserved. The value in this preservation is not captured by economic analyses; its value to the area as an historic and well-known monument and landmark is very great. You should follow the Historic Preservation Act regarding this treasure. The citizens of this region bought the entire 1000 acres the base occupies and gave it to the Navy in 1931 for $1. Please preserve it for us now.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 1, 2006	**Received on**: July 1, 2006
From: Peter Phares, Mountain View, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (90C)	
Comment 1: As a lifelong resident of the area- growing up in Los Altos and now living in Mountain View- I ask you to please agree to the Historic Preservation Act re: Hangar 1. The Hangar is a local landmark- one which deserves to be preserved. Moffett Field and the Navy were instrumental in Mountain View's history- and Hangar 1 is a testament to this history. While many see it as an environmental liability. I see Hangar 1 as an incredible opportunity to house a museum dedicated to the military, air and space. A museum could inspire generations to get involved in science, aviation, space, and serve our country in the military. And a museum in an awe inspiring setting- taking advantage of this incredible facility we have with Hangar 1 - would be one of a kind. Let's give the Hangar a stay of execution and create a local commission to raise funds and design the future of this historic structure as a center for inspiration. Thank you for your consideration.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Written on: July 4, 2006	**Received on**: July 4, 2006
From: Libby Lucas, Los Altos, Calif.	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: RAB member	
GENERAL COMMENTS (91C)	
Comment 1: As a follow-up to my e-mail of May 23 in regards clean-up and reuse of Hangar 1, I have attempted to contact a Dr. Bill Wolverton who did studies for NASA on closed ecological life support systems for long-term space habitation and the absorption of contaminants in the air by plants. I have had no response from a June 24 e-mail but perhaps you or regulatory agencies would have better luck. The e-mail address I used is wesinc1@hotmail.com. As his type of research probably had scientists working in space suits, toxic air conditions within Hangar 1 would not pose a problem? Depending on the vegetation mass that would be needed to bring air in Hangar 1 within low-level guidelines for exposure, there could be benefit in researching just how effective different species of plants are. Then, this could be accompanied by research in regards reversal of global warming effects for which certain properties of plants might lend themselves. (Seem to remember there is some flower that changes color when exposed to radiation and so it is planted around power plants in Japan as early warning system. Research was originally done in U.S. on this but no one was interested in using it.) This field appears to be generally ignored as we take our atmosphere for granted. If global warming is as imminent as scientists fear, then such an avenue of research is long overdue. I commented earlier that quonset hut shape of Hangar 1 rates very favorably as a structure that will ride through a severe earthquake intact. With FEMA and airfield next door it would be an asset for any such State, San Francisco Bay Area or local emergency.	**Response 1:** Thank you for the updated contact information. The Navy is not evaluating phytoremediation as an alternative for the hangar due to the nature of the contamination. Capturing and treating the stormwater that washes off the exterior of the hangar was considered as Alternatives 12 and 13 in Section 4.0 of the revised EE/CA. Reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.

Also, in the light of any consideration as a think tank for global warming research, it presents an ideal logo. It instantly brings to mind 'lighter than air space travel", and one would have far to go to come up with a logo more concise and recognizable. (It is in class with Johnnie Walker?) Would it be possible to filter contaminants that continue to wash off the exterior shell of Hangar 1 by catching them in an outside drainage system and routing them for routine treatment with groundwater plume pollutants brought up from the West Side Aquifer? It is very reassuring that Congresswoman Anna Eshoo is gathering support in Congress for a remediation plan for Hangar 1. This is a public resource of inestimable appeal and value. Thank you for giving these suggestions serious consideration.	

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Judy Bakke, Rochester, MN	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (92C)	
Comment 1: "Hangar 1" is such an important landmark to residents of the Bay area and visitors from around the world. We view it as we do the Golden Gate Bridge, the Statue of Liberty, & other such impressive landmarks. This important structure should be preserved. The people want it saved! We urge those making the decisions about "Hangar 1" to consider the historical value.	**Response 1:** The Navy is working closely with the Office of Historic Preservation, the Advisory Council on Historic Preservation and other interested parties to properly integrate consideration of cultural resource issues in the planning and implementation of the cleanup action. The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing.

RESPONSIVENESS SUMMARY FOR THE ENGINEERING EVALUATION/COST ANALYSIS

Written on: July 3, 2006	**Received on**: July 3, 2006
From: Robert Bergstrom	**Submitted Via**: E-mail comment to Mr. Weissenborn
Affiliation/Agency: Public member	
GENERAL COMMENTS (93C)	
Comment 1: I am writing this email to add my support to the "save hangar one" campaign. I lived on base at Moffett field from 1962 to 1965. My father was the Squadron commander for VR-7 (C-130 transport aircraft) and he retired from the Navy in that capacity. Hangar 1 is an icon from a time long ago and needs to be saved. Besides being a one of a kind building it is also an important part of the history of our country. I am sure you are well informed as to its unique and colorful past. The only other blimp hangar I am aware of on the west coast is the one located at Tillamook Oregon. Due to its wood construction only one of the two is still present (the other burned down). This hangar contributes a lot of money to the local economy due to its high tourist draw. If the hangar is saved, it too can generate money to the local economy (it would be a great air museum, entertainment site (i.e. filming movies)). I am sure there are many other money generating uses for the hangar which are not yet thought of. Besides the economic impact hangar one has the potential to generate it is a one of a kind building which can never be duplicated. To tear it down would be a very unwise and short sighted thing to do. Please consider the past when determining its future. Future generations will thank you for saving it.	**Response 1:** The recommended removal action alternative in the revised EE/CA leaves the hangar's steel frame standing. However, reuse of Hangar 1 is the responsibility of the Federal property owner, which is a separate federal action from the Navy's environmental restoration efforts.