

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 2
700 HEINZ AVE., SUITE 200
EMERYVILLE, CA 94710-2737

July 25, 1995

Commander
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
Attn: Mr. Stephen Chao, Project Manager
900 Commodore Drive, Bldg. 101
San Bruno, California 94066-2402

Dear Mr. Chao:

FINAL FEASIBILITY REPORT, PROPOSED PLAN, AND AIR QUALITY SOLID WASTE ASSESSMENT TESTING REPORT, OPERABLE UNIT 1, MOFFETT FEDERAL AIRFIELD

Enclosed please find comments prepared by the California Integrated Waste Management Board (CIWMB) on the subject documents. An interagency meeting was held on July 18, 1995 to discuss concerns from the community, state and local agencies regarding the presumptive remedy (Alternative 2) presented in the OU1 Proposed Plan and the OU1 public meeting. In the July 18 meeting, a consensus was reached by all the agencies that Alternative 2 should be modified to meet California Code of Regulations, Title 14 performance standards for landfill caps or final covers. A follow-up meeting is scheduled on August 4 to further discuss this issue with the U.S. EPA, the Navy, and community representatives. If you have any questions, please contact me at (510) 540-3830.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Joseph Chou".

C. Joseph Chou
Remedial Project Manager
Base Closure Unit
Office of Military Facilities

Enclosures

cc:

Mr. Michael Bessette
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

2283

Mr. Stephen Chao
July 25, 1995
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Mr. Michael D. Gill
U.S. Environmental Protection Agency
Region IX, Mail Stop H-9-2
75 Hawthorne St.
San Francisco, California 94105

Ms. Sandy Olliges
Assistant chief
Safety, Health and Environmental Services
National Aeronautics and Space Administration
Ames Research Center
Moffett Field, CA 94035-1000

Mr. Peter Strauss
MHB Technical Associates
1723 Hamilton Avenue, Suite K
San Jose CA 95125

Ms. Tamara Zielinski
Closure and Remediation Branch
California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, California 95826

Mr. John Dufresne, R.E.H.S.
Department of Environmental Health
Hazardous Material Compliance Division
P.O. Box 28070
San Jose, 95159-8070

Mr. Steven S. Chin
Enforcement Division
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

8800 Cal Center Drive
Sacramento, California 95826



JUL 20 1995

Mr. Joseph Chow
Remedial Project Manager
Department of Toxic Substances Control
Region No. 2, Office of Military Facilities
700 Heinz Ave., Suite 200
Berkeley, CA 94710-2737

Subject: Review of the Moffett Federal Airfield, Operable Unit 1, Final Feasibility Study Report, Proposed Plan and Air Quality Solid Waste Assessment Testing Report.

Dear Mr. Chow:

Staff of the California Integrated Waste Management Board (CIWMB) have reviewed the following documents:

Moffett Federal Airfield Operable Unit 1 (OU1), Final Feasibility Study (FS) Report, PRC Environmental Management, Inc., dated May 15, 1995.

Moffett Federal Airfield Superfund Site, Navy Proposes Remedy for Two Landfills (PP), dated May/June 1995.

Air Solid Waste Assessment Test Report NAS Moffett Field (Air SWAT), California, IT Corporation, dated August 1992.

Staff received these documents on June 26, 1995, and has performed an expeditious review to meet the remedial time-line. During the review the following comments were compiled regarding the Navy's proposed approach to closure and postclosure maintenance of the two landfills contained in OU1.

The PP and FS state, "Disposal records were not maintained for either landfill". CIWMB staff does not concur with this statement. Extensive documentation on the site was found in the CIWMB Solid Waste Facility File (SWFF), Number 43-AA-0005. This file contained a 1979 Solid Waste Facilities Permit for landfill 1 (LF1), Attachment A, and enforcement documentation for landfill gas and leachate violations, Attachment B. The Navy proposed to address these violations under the Comprehensive Environmental Response compensation Liability Act (CERCLA) process, Attachment C.

Under the CERCLA process two capping alternatives were proposed for the landfills, Alternative 2 a soil cap and Alternative 3 a Multilayered cap. The proposed plan states that Alternative 2 the soil cap is the chosen alternative "because of the climate at Moffett Field, the multilayer cap does not significantly reduce

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rainwater percolation below levels achieved by a single layer soil cap. Less material will be required to construct the soil cap and fewer truckloads of soil will be required. Also, material for soil caps (topsoil) is readily available, whereas large amounts of clay, gravel and sand are not accessible". CIWMB staff can not concur with the chosen alternative because it does not meet California Code of Regulations, Title 14 (14 CCR) performance standards for landfill caps or final covers.

Upon reviewing the CERCLA documents staff found that Alternative 2 does not meet the performance standards and Alternative 3 exceeds the prescriptive standards in 14 CCR. The FS did not consider the cap design that meet the requirements of the prescriptive standards. This design would provide a proven technology used for remediating landfill gas and leachate violations. To meet the minimum prescriptive standards alternative two could be modified with a low permeability layer and a landfill gas control system. Since on site soils meet the permeability requirements for the barrier layer, this alternative should be less costly than the multilayered layer cap. The following discussion is provided in support of these conclusions.

There are three performance standards that should be used to evaluate engineered alternative of the soil cap: a need to limit infiltration of water, to the greatest extent possible; a need to control landfill gas emissions; and the future reuse of the site. One of the justifications used for the soil cap is that there is no significant difference in the infiltration rates of the two caps. CIWMB staff questions this logic because, a cap with a barrier and drainage layer should limit infiltration more than a soil cap. Upon evaluation of the Hydrologic Evaluation of Landfill Performance (HELP) model that was used to evaluate the infiltration rates of the two alternatives, staff found that the slopes used in the model for the multilayer cap were 3 and 5 percent. These slopes were not adequate to drain the drainage layer, thus a head develops on the barrier layer producing infiltration. It appears that the side slopes of LF1 and LF2 exceed the slopes used in the model. Generally landfill side slopes are constructed at 33%. Therefore, staff does not concur with the parameters used in the HELP model and the resulting conclusion that the soil cap provides similar infiltration protection as the multilayered layer cap. Staff would like to discuss the use of this model with the Navy.

The main concept of the soil cap is that most of the precipitation falling on the site will be either evaporated or used by plants (transpiration), thus the cap is referred to as an evapotranspiration (ET) cap. Many studies on agricultural site conclude that in arid regions most of the precipitation does not

Mr. Chow
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infiltrate but, is diverted through evapotranspiration. This may be a valid conclusion for agricultural sites, however, most landfill sites produce landfill gas which contains methane, which poses an asphyxiant and explosive threat and carcinogenic trace gases. The Air SWAT shows that the landfills are producing methane and trace gasses such as vinyl chloride, a Class A carcinogen. Methane has been found to displace oxygen in the root zone of plants, thus killing the vegetative cover and reducing the transpiration capabilities of the cap. The need to control landfill gas emissions to ensure the integrity of the vegetative cover, and to protect human health and the environment against the potential health threats posed by landfill gas have not been adequately evaluated by the FS.

The third performance standard is to consider the reuse of the site. The FS states that NASA will continue to use the firing range on LF1. Since the chosen alternative allows landfill gas to flow through the cap and a venting system, staff is concerned that the landfill gas surface emissions pose a potential explosive and carcinogenic threat to the personal on the site.

From the information provided above it is clear that Alternative 2 does not meet the performance criteria established to ensure protection of public health and safety and the environment. Since the performance goals are applicable requirements as identified in the FS, CIWMB staff can not conclude that Alternative 2 adequately addresses applicable requirements. The FS should address proven technologies for landfill closures such as a composite cap. To reduce costs staff is willing to consider alternative composite cap materials such as a geosynthetic clay liner (GCL) and varying thicknesses of the clay and geosynthetic liners. Staff would like to meet as part of the Base Clean up Team to resolve this issue as soon as possible.

If I you have any question regarding the items discussed in this correspondence please contact me at (916) 255-1197.

Sincerely, -



Tamara Zielinski
Waste Management Engineer
Closure and Remediation Branch

Enclosures: Attachment A - Solid Waste Facilities Permit
Attachment B - 1988 Site Inspection
Attachment C - May 1989 Navy Letter

cc: Mr. Michael Bessette, Regional Water Quality Control Board
Mr. John Dufresne, R.E.H.S., Santa Clara County Local
Enforcement Agency

Attachment A

SOLID WASTE FACILITIES PERMIT

2025 01-31 (REV. 10/77)

ENFORCEMENT AGENCY: Santa Clara County Environmental Management Agency
 COUNTY: Santa Clara
 FACILITY NAME: Moffett Field Sanitary Landfill
 FACILITY LOCATION: Moffett Field, Public Works Department
 FACILITY LOCATION: Moffett Field, CA 94035

PAGE	1	OF	2
SOLID WASTE FACILITY PERMIT			
43-AA-005			
DATE	PROPOSED		
	BOARD APPROVAL 10-12-79		
	ENFORCEMENT AGENCY APPROVAL 10-24-79		

A. This facility is an existing (since 1965) 20 acre Class II sanitary landfill utilizing the sanitary landfill method of operation. Remaining site life is estimated to be 8 years. This facility receives 6.9 tons per day of Group II wastes and is operated from 8 a.m. to 4 p.m. Monday through Friday, 5 days/week (Salvage) (XXXXXX) operations are conducted. Types of wastes received at the site include:

1. cardboard
2. lawn cuttings, prunings, and wood waste
3. asbestos insulation wrapped in double plastic bags

Design and operation of this facility are as specified by the Report of Disposal Site Information dated June 28, 1979. There will be no significant changes in design or operation in the next five years (except...).

B. The following documents condition operation of this facility:

1. Rubbish Dump Permit No. not required
2. California Regional Water Quality Control Board, San Francisco Region: Waste Discharge Requirements No. discharge requirements are in process.
3. Santa Clara County land use permit No. not required.

This facility's design and operation are currently in substantial compliance with State Minimum Standards for Solid Waste Handling and Disposal as determined by physical inspection made on October 31, 1978

except that they violate Sections n/a, n/a, and n/a. The Conditions of this permit establish an appropriate schedule for compliance with those Sections:

This permit is consistent with the Santa Clara County Solid Waste Management Plan and with the State Minimum Standards for Solid Waste Handling and Disposal.

This permit is granted solely to the operator named above, and is not transferable. Upon a change of operator, this permit is subject to revocation. Upon a significant change in design or operation from that described in this permit or in attachments thereto for the existing design and operation of a facility operating immediately prior to August 15, 1977, or from the approved intended design and operation of a facility which was not operating prior to August 15, 1977, or which herein is granted a permit modification, this permit is subject to revocation, suspension, modification or other appropriate action.

This permit does not authorize the operation of any facility contrary to the State Minimum Standards for Solid Waste Handling and Disposal. This permit cannot be considered as permission to violate existing laws, ordinances, regulations, or statutes of other government agencies.

AGENCY: Santa Clara County Environmental Management Agency
 OPERATOR NAME: Paul Yarborough
 DATE: 10/24/79

CONDITIONS:

A. Requirements:

1. This facility must comply with the State Minimum Standards for Solid Waste Handling and Disposal.
2. This facility must comply with all federal, state, and local requirements and enactments.
3. Additional information concerning the design and operation of this facility must be furnished upon request of the enforcement agency.

B. Prohibitions:

The following actions are prohibited at the facility:

1. Disposal of hazardous and extremely hazardous waste
2. Open Burning
3. Scavenging, except by authorized personnel
- 4.

C. Specifications:

No significant change in design or operation from that described in Item A of the Findings is allowed, except for those changes which are required under the Conditions portion of this permit.

D. Provisions:

1. The following violations must be corrected by the dates indicated:

a. Daily covering of all wastes

b. This permit is subject to review by the enforcement agency and may be suspended, revoked or modified at any time for sufficient reason.

c. Provide water run off control for disposal area.

2. This permit is subject to review by the enforcement agency, and may be suspended, revoked, or modified at any time for sufficient cause.

E Monitoring Program:

The following items shall be monitored by the operator of this facility or his agent. Records including but not limited to these items shall be kept and made available to the enforcement agency upon request:

1. Quantity and types of wastes
- 2.
- 3.

- * Collection of household garbage and other putrescible waste materials is provided by the Bay Cities Refuse Service, Inc. These wastes are disposed of in Alameda County. None of the aforementioned materials are disposed of at the Moffett Field landfill.

STATE SOLID WASTE MANAGEMENT BOARD

Solid Waste Facility Permit

Decision #179-206

SUBJECT:

Proposed solid waste facility permit. Submitted by the Santa Clara County Environmental Mgmt./GSA Environmental Health Services as local enforcement agency.

FINDINGS:

The State Solid Waste Management Board makes the following finding of fact:

1. Proposed solid waste facility permit for the following existing facility in Santa Clara County has been submitted to this Board for concurrence with or objection to its issuance. The proposed permit is for the following facility:

NAS Moffett Field Sanitary Landfill

43-AA-005

2. The proposed solid waste facility permit is consistent with the applicable county solid waste management plans; and
3. The proposed solid waste facility permit is consistent with the State Minimum Standards for Solid Waste Handling and Disposal; and
4. The State Solid Waste Management Board and its staff have reviewed the proposed solid waste facility permit and concur with the form and content of the permit.

CONCLUSION:

The proposed solid waste facility permit complies with the requirements of Article 10, Chapter 3 of Title 7.3 of the Government Code, and with the requirements of the State Solid Waste Management Board. Consequently, the State Solid Waste Management Board concurs in the issuance of the subject proposed solid waste facility permit.

CERTIFICATION

The undersigned Executive Officer of the State Solid Waste Management Board hereby certify that the foregoing is a full, true and correct copy of a decision duly and regularly adopted at a meeting of the State Solid Waste Management Board held on October 11-12, 1979.

Date: OCT 12 1979



Albert A. Marino
Executive Officer

Attachment B

43-AA-0005

TK
GEORGE DEUKMEJIAN, Governor

STATE OF CALIFORNIA

CALIFORNIA WASTE MANAGEMENT BOARD

1020 NINTH STREET, SUITE 300
SACRAMENTO, CALIFORNIA 95814



NOV 14 1988

Mr. Michael Cain
Environmental Coordinator
NAS Moffett Field
Moffett Field, CA 94035

RE: NAS Moffett Field Landfill, Facility No. 43-AA-0005

Dear Mr. Cain:

California Waste Management Board (Board) staff conducted a state inspection of the NAS Moffett Field Landfill on June 21, 1988 pursuant to Government Code (GC), Sections 66796.38 and 66796.67(a). During the inspection it was discovered that there are actually two landfills at Moffett Field; the Runway site and the Golf Course site.

A Solid Waste Facilities Permit was issued to the Navy for the Runway site by the Santa Clara County Environmental Management Agency on October 24, 1979. The Golf Course site was never permitted. However, the California Waste Management Board is empowered by GC 66796.38(c) to investigate illegal, abandoned, or closed solid waste disposal sites to assure that public health and safety and the environment are adequately protected. To simplify matters, the enclosed State Inspection Report addresses both the Runway and Golf Course sites.

The following violations of Title 14, California Code of Regulations (CCR), Chapter 3 - State Minimum Standards were noted during the inspection:

- 17616 - Report of Disposal Site Information
- 17704 - Leachate Control
- 17705 - Gas Control
- 17709 - Contact with Water
- 17710 - Grading of Fill Surfaces
- 17734 - Completed Site Maintenance
- 17735 - Recording

The facilities were found to be in compliance with all other applicable standards.

We understand that the landfill is currently an Environmental Protection Agency Superfund site and that efforts are underway for its clean up. Nevertheless, we want to be sure that the above violations of State Minimum Standards are addressed as part of the clean up effort. We are particularly concerned that the Gas Control violation (Section 17705) be addressed as soon as possible and that the grading violation (Section 17710) be addressed as part of any interim mitigative work conducted at the site.

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Mr. Michael Cain

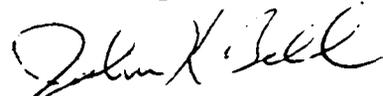
Page 2

Please consult with your Local Enforcement Agency (Santa Clara County Environmental Health Services) and work with them to develop a compliance agreement which sets forth the actions you will take to correct the above violations. The compliance agreement shall include specific deadlines by which the violations will be corrected.

The compliance agreement, as approved by your Local Enforcement Agency, should be received by this office for review on or before December 9, 1988. A follow-up inspection by Board staff will be scheduled to verify compliance. Failure to enter into or adhere to a compliance agreement may result in enforcement action.

If you have any questions regarding the facility investigation, please contact me at (916) 323-6520 or Jack Miller at (916) 322-1389. The contact person at the Santa Clara County Environmental Health Services is Tony Pacheco who can be reached at (408) 299-6930.

Sincerely,



John K. Bell, Manager
Monitoring and Compliance Section
Headquarters

JKB:JWM:tk

Enclosure

cc: Tony Pacheco, Santa Clara County Environmental Health
Services
Lila Tang, San Francisco Bay RWQCB
Tom Brennan, Bay Area AQMD

Attachment C

43-AA-0000

DEPARTMENT OF THE NAVY

NAVAL AIR STATION
MOFFETT FIELD CA 94035 5000

IN REPLY REFER TO

5090
Ser 189/PW 0127
04 MAY 1989



William Orr
Standards and Regulations Division
California Waste Management Board
1020 Ninth Street, Suite 300
Sacramento, CA 95814

MAY - 5 1989

Dear Mr. Orr:

In response to your letter of March 8, 1989, we have enclosed the the alternative certification form you requested.

NAS Moffett Field Landfill sites are under Remedial Investigation as required in section 120 of the Comprehensive Environmental Response Compensation Liability Act (CERCLA). Your agency will be given an opportunity to address state clean-up standards that qualify as Applicable or Relevant and Appropriate Requirements (ARARS) pursuant to section 121 of CERCLA.

A copy of our Solid Waste Assessment Test (SWAT) report was provided to your Monitoring and Compliance Section on 30 March 1989.

~~If you have any questions regarding this matter please contact our Environmental Coordinator, Mr. Michael Cain, code 189, telephone (415) 966-5744.~~

Sincerely,

G. E. REYNOLDS
CDR, CEC, USN
PUBLIC WORKS OFFICER
BY DIRECTION OF THE
COMMANDING OFFICER

Encl:
(1) Alternative Certification Form

Copy to:
Commander, Western Division, Naval Facilities Engineering Command
(Code 09C5)
Santa Clara County Health Department (John Dufresne)
California Regional Water Quality Control Board (Lila Tang)
Environmental Protection Agency, Region 9 (Lewis Mantani)

ENCLOSURE

ALTERNATIVE CERTIFICATION FORM

THIS ENCLOSURE WAS NOT SUBMITTED TO THE
ADMINISTRATIVE RECORDS.

FOR ADDITIONAL INFORMATION,
PLEASE CONTACT:

DIANE C. SILVA, RECORDS MANAGER
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 532-3676
E-MAIL: diane.silva@navy.mil