

Appendix E: References

**Reference
No. 1**



U.S. Environmental Protection Agency Superfund (CERCLIS)

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Query Results



Consolidated facility information (from multiple EPA systems) was searched to select facilities

Site EPA ID: Beginning With: CAD009688052

Results are based on data extracted on AUG-08-2006

Note: Click on the underlined CORPORATE LINK value for links to that company's environmental web pages.
 Click on the underlined MAPPING INFO value to obtain mapping information for the facility.
 Click on the underlined RECORD OF DECISION value for a RODS Site Report.
 Click on the underlined "View Facility Information" link to view EPA Facility information for the facility.

[Go To Bottom Of The Page](#)

CERCLIS EPA ID: CAD009688052	SITE NAME: HALACO ENGINEERING CO	
STREET ADDRESS: 6200 PERKINS	FACILITY INFORMATION	View facility information
CITY NAME: OXNARD		
STATE ABBR: CA	FEDERAL FACILITY:	N
ZIP CODE: 93033	NPL STATUS:	Not on the NPL
COUNTY NAME: VENTURA		
CORPORATE LINK: No	RECORD OF DECISION (ROD) INFO:	No
LATITUDE:	EPA REGIONAL LINK:	No
LONGITUDE:	MAPPING INFO:	MAP
SITE SMSA: 6000		

Enforcement and Cleanup Actions

Action	Action ID	Actual Start Date	Actual End Date	Responsibility	Planned Outcome	Urgency
REMOVAL ASSESSMENT	002	06/19/2006	07/05/2006	EPA Fund-Financed		
REMOVAL ASSESSMENT	001	04/20/2006	04/21/2006	EPA Fund-Financed		
EXPANDED SITE INSPECTION	001	09/18/1990	08/07/1992	EPA Fund-Financed	Recommended for HRS Scoring	
PRELIMINARY ASSESSMENT	001		04/01/1983	EPA Fund-Financed	Low	
SITE INSPECTION	001	11/01/1979	04/01/1983	State, Fund Financed	High	

DISCOVERY	001		11/01/1979	EPA Fund-Financed		
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Site Description

There were no Site Descriptions reported for this site.

[Go To Top Of The Page](#)

Total Number of Facilities Displayed: 1

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Last updated on Monday, September 18th, 2006
http://oaspub.epa.gov/enviro/fii_master.fii_retrieve

**Reference
No. 2**

MAR 23 1992



ecology and environment, inc.

160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811

International Specialists in the Environment

D49

LISTING SITE INSPECTION SUMMARY OF FIELD ACTIVITIES

SUBMITTED TO: Carolyn Douglas, Site Assessment Manager
EPA Region IX

PREPARED BY: Karen Johnson, Ecology and Environment, Inc. *KJ*

DATE: January 15, 1992

SITE: Halaco Engineering Company
Oxnard, California
Ventura County

TDD#: F9-9009-002

EPA ID#: CAD009688052

PROGRAM ACCOUNT#: FCA0090XAA

FIT REVIEW/CONCURRENCE: *Pittcock 1/15/92*

cc: FIT Master File

1. INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA) the U.S. Environmental Protection Agency (EPA) tasked Ecology and Environment, Inc.'s Field Investigation Team (FIT) to conduct a Listing Site Inspection (LSI) of Halaco Engineering Company in Oxnard, California.

As part of the LSI, FIT conducted field activities to provide additional data to help EPA make an appropriate response determination. This report summarizes FIT's field activities. Validated analytical results are attached to this report.

2. SCOPE OF WORK

A CERCLA Listing Site Inspection Sample/Work Plan (work plan) was prepared July 2, 1991 according to accepted EPA protocol. The plan was approved by the EPA Quality Assurance Management Section on July 17, 1991. Except where noted below, all field activities were conducted as described in the work plan.

3. SUMMARY OF FIELD ACTIVITIES

The field activities for this investigation were conducted from September 10 through September 13, 1991. There were five designated areas for sampling: the settling pond, the waste disposal area, the east wetlands, the Oxnard Industrial Drain, and reference locations. All sample locations except for the waste disposal area and the off-site wetlands are shown in Figure 1. Sample location numbers for the waste disposal area are shown in Figure 2.

Samples were collected from three types of sample media: water, soil, and sediment. The distinction between these media was made to identify different methods of sample collection rather than to define materials at a particular location. Due to the dryness of the east wetlands area, sediment samples M-5 through M-21, M-24 and M-25 (duplicates of M-9 and M-13), and M-31 were collected in the same manner as the soil samples.

At Halaco's request, the top 2 inches of material were removed before collecting any sediment or soil samples not covered with water (except in the settling pond). Halaco cited as its reason for the request the accessibility of the site to the public and that Halaco could not necessarily be responsible for any surface deposits. EPA agreed to this request, but directed FIT to collect two additional samples from the waste disposal area that would include only the top 2 inches of material so that a comparison could be made with the material below 2 inches.

Because Halaco and its neighbor each requested a set of split samples for all samples collected as part of this investigation, all soil and sediment samples were collected by placing the required amount of sample into a clean, dedicated paper bucket and homogenizing the sample thoroughly before filling the sample jars. Any excess sample was returned to the hole from which the sample had been collected.

3.1 SETTLING POND

Two water samples and four sediment samples were collected from within the settling pond. The interior of the settling pond was approximately 2 to 3 feet below the surface of the berms. Effluent flowed from a discharge pipe to a channel, approximately 20 feet wide and 2 feet deep, which bordered the western and northern sides of the impoundment. As the effluent flowed through the channel, it appeared to percolate through the sediments in the settling pond almost immediately and there was only a film of water less than 1 inch deep in any of the "wet" areas of the channel. For this reason, water samples P-1 and P-2 were collected directly from the effluent discharge pipe and P-3 was not collected. Sediment samples M-1 and M-2 were collected approximately 6 feet north of the discharge pipe. Although this area was not covered with water, the sediments were highly saturated. M-3 was collected approximately 25 feet south of the northern berm in an area with a thin film of water on top. M-4 was collected near the southeastern corner of the pond in a relatively dry area with a white powdery crust on the surface.

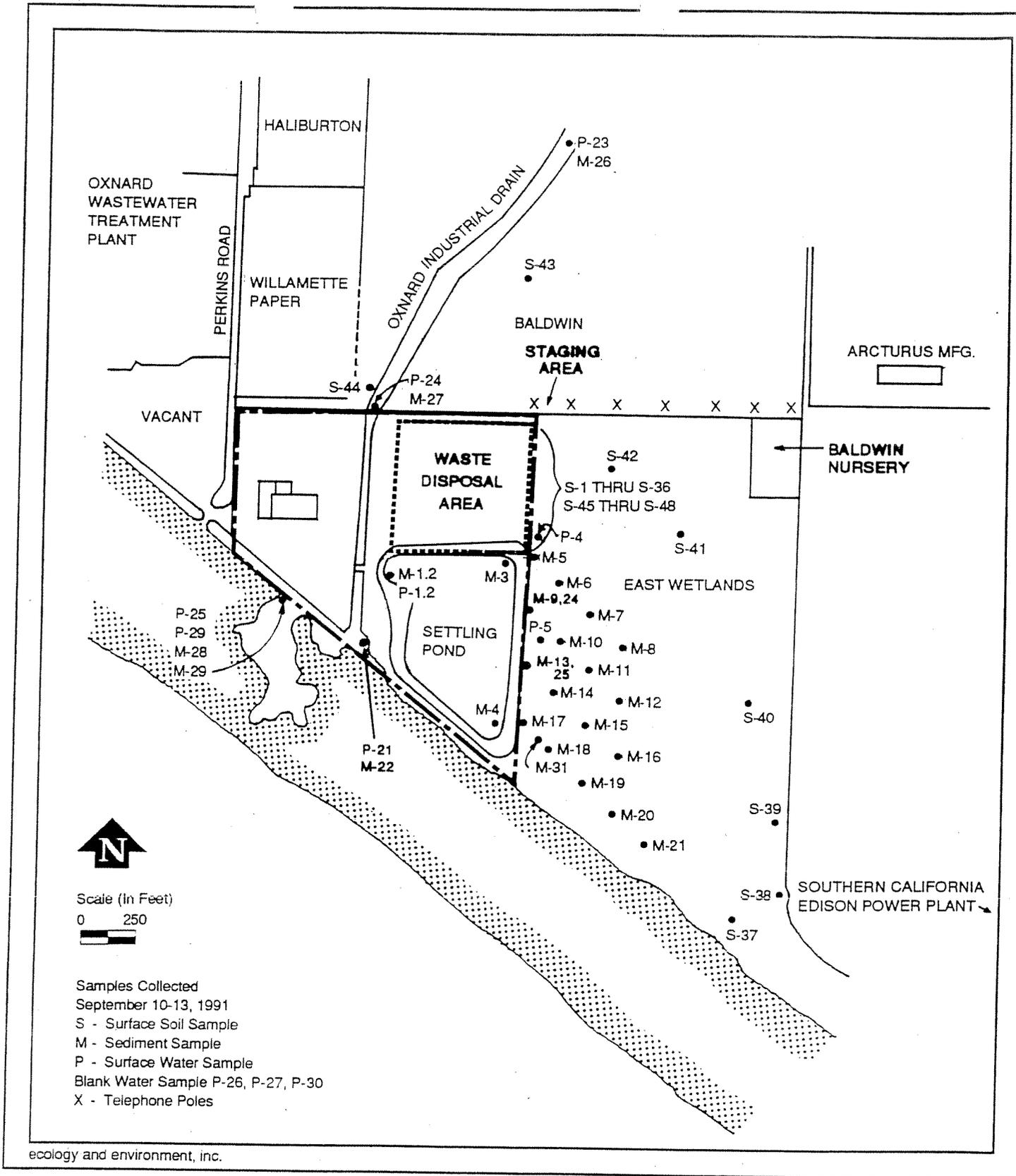
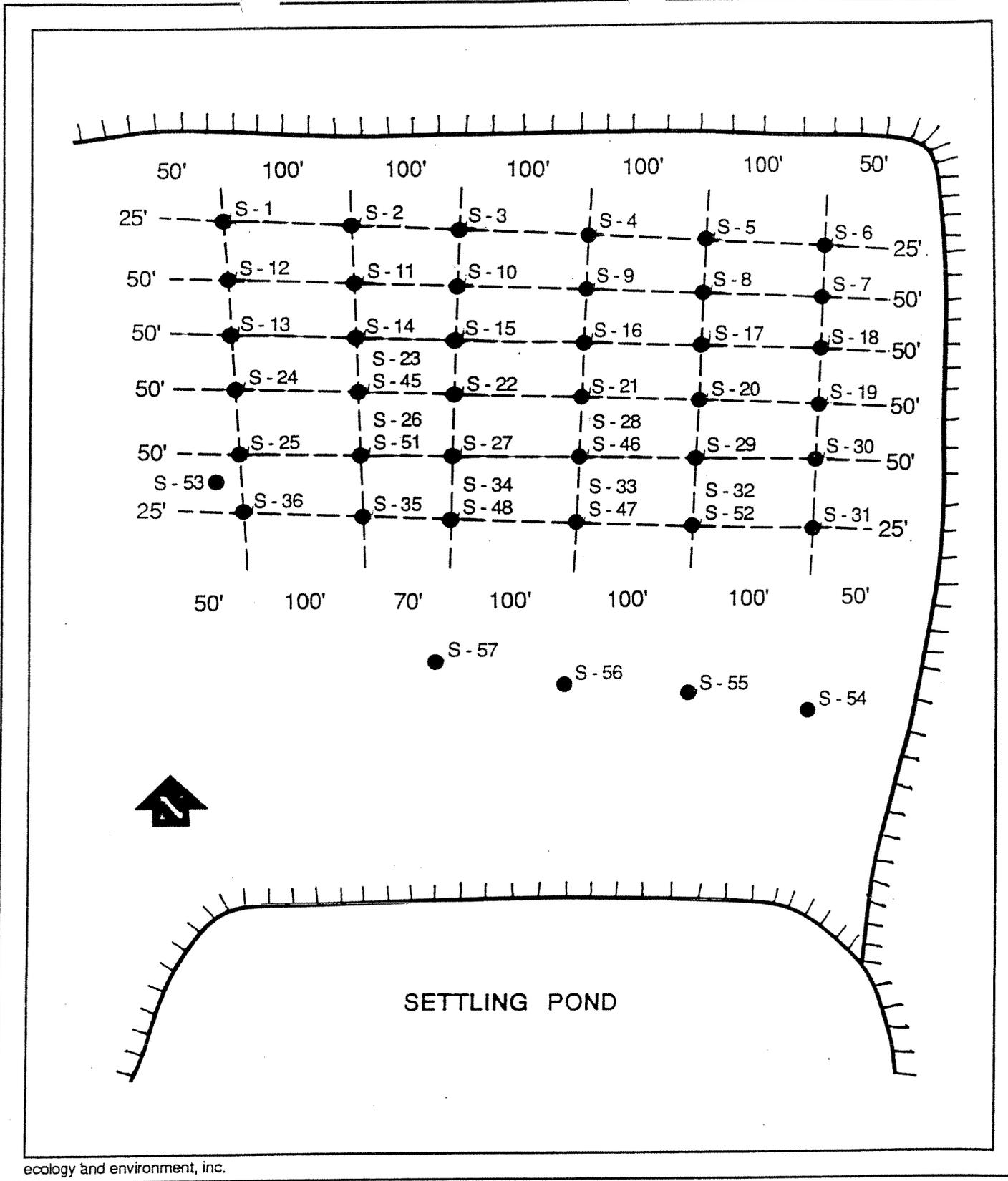


Figure 1

LSI SAMPLE LOCATIONS MAP
HALACO ENGINEERING CO.
OXNARD, CA



ecology and environment, inc.

Figure 2

WASTE DISPOSAL AREA
 LSI SAMPLE LOCATIONS
 HALACO ENGINEERING CO.
 OXNARD, CA

3.2 WASTE DISPOSAL AREA

The waste disposal area was relatively flat in approximately half of the area south of the McWane Road property line. Throughout the rest of the distance to the berm of the surface impoundment, wastes were located in uneven piles ranging up to approximately 10 feet in height. For safety reasons, only the flat area of the waste disposal area, approximately 300 feet by 600 feet in area, was included in the sampling grid. The centerpoints of 36 50-foot by 100-foot quadrates (quads) were measured out and sampled. Due to a waste pile jutting into the southwest corner of the gridded area, the grid was slightly skewed; however, precise sampling locations for all 36 quads were predetermined (see Figure 2).

A seventh row of samples was added to the grid so that samples could be collected from atop the piles of waste material between the flat area and the settling pond berm, referred to herein as the plateau. The first sampling location was lined up with the eastern sample locations in the flat area approximately half-way between the settling pond berm and the northern edge of the plateau. Three additional samples were collected 100 feet at 290 degrees from the first. These samples were designated S-54 through S-57. Approximately 75 feet west of S-56, the material comprising the plateau changed texture and the surface became much more uneven. For safety reasons, the fifth and sixth samples of this row were not collected.

Because of Halaco's request to remove the top 2 inches of material before collecting the soil samples, two additional soil samples, comprised only of material from the top 2 inches, were collected in the waste disposal area. These samples were collected at the centerpoints of quads 26 and 32 and were designated S-51 and S-52.

There were several small formations, of an unknown origin, appearing throughout the waste disposal area. These formations resembled small volcanoes that had erupted out of the surface. Two types of formations appeared. One type of formation was grayish white in color and appeared in several stages of development, from a slight bulge in the surface to 1-foot high piles of a friable material. Due to the unknown nature of this material, and the prevalence of these formations in the southern area of the grid, a sample, S-53, was collected of a formation approximately 15 feet west-northwest of the centerpoint of quad 36. This pile was grayish-white and approximately 1-foot high and 15 inches in diameter. The sample material was difficult to breakdown and homogenize before dividing into the sampling jars. The other type of formation present on the surface of the waste disposal area was a small, rust-colored, conical feature, 0.5 to 1 inch in height. Due to the small size of one of these formations, a sample was not collected.

3.3 EAST WETLANDS

Two water samples and twenty sediment samples were collected from the east wetlands area. The majority of the east wetlands area was dry so water samples could not be collected at the predetermined sampling locations. Two pools of water were present near the eastern berm of the settling pond. Water sample P-4 was collected from an apparently

man-made trough approximately 12 inches wide and 8 inches deep that was filled with standing water. Although water did not appear to be flowing through the trough, the trough appeared to have been designed to collect water seeping from the settling pond berm and drain it away from the berm. Water sample P-5 was collected from a much larger pool about 45 feet east of the edge of the settling pond berm. Water was visibly flowing out from the base of the berm into the pool. The sample was collected from one of the deepest areas of the pool, approximately 8 inches deep. Both water samples were collected by holding the 1-liter sample bottles at an approximately 45-degree angle and submerging the bottle being careful not to stir up bottom sediment.

Sediment sampling location M-5 was placed along the outside of the settling pond berm at the northeast corner of the settling pond. The sediment sample was collected at the break in slope between the berm and the flatter area extending east. Sampling locations M-9, M-13, and M-17 were measured out at 200-foot intervals south of M-5, also at the bottom of the berm. The other sediment samples in the east wetlands were collected along transects at a direction of 135 degrees from the samples along the berm. Each sample was measured along the transect 150 feet from the previous sample.

Sediment samples M-5 through M-7, M-9 through M-15, M-17, and M-21 (with M-24 and M-25 as duplicates of M-9 and M-13) were collected by removing the top two inches of sediment from the sample location. Sediment samples M-8, M-16, M-18, M-19, M-20 were collected after removing pickleweed vegetation from the sample location.

An additional sediment sample, M-31, was collected from a bare area approximately 10 feet by 10 feet square nestled in a large area of pickleweed approximately 25 feet northwest of M-18. The area appeared to have been dug out of the wetland with the removed soil piled around the area forming a berm approximately 3 feet high. The surface of the depression was cracked and desiccated and appeared as if the area had been used as an evaporation pond. Since the purpose of collecting a sample in this area was to try and determine what may have been placed in this depression and allowed to evaporate, the top 2 inches were included in the sample.

3.4 OXNARD INDUSTRIAL DRAIN

Five water samples and five sediment samples were collected from the Oxnard Industrial Drain (drain). Water sample P-23 was moved to approximately 0.5 miles upstream from the Halaco property line because the drain is tidally influenced and, at the time of sample collection, was flowing "upstream". Water sample P-24 was still collected from the north Halaco property line.

All water samples were collected by filling a 1-liter bottle that was attached to an extension rod and then transferring the water into the appropriate sample container. All samples locations were determined by measuring far enough from the side to have a 14-inch water column, and then collecting the sample at mid-depth, or approximately 7 inches from the top or bottom.

The sediment samples, M-22 and M-26 through M-29, were collected from the side of the channel beneath at least an inch of water. Due to access difficulties, sediment samples were not collected from the center, deeper portions of the channel where the finer-grained sediments were likely to have been deposited. There were many pebbles and small rocks in the drain sediment samples.

3.5 REFERENCE AREAS

Eight soil samples were collected from the northern and eastern perimeters of the wetlands to identify conditions uninfluenced by Halaco's activities. These samples can also identify possible contamination resulting from activities at neighboring facilities.

Water sample P-22 and sediment sample M-23 were collected from the southeast bank of the Las Posas Road crossing of Revlon Slough, a drainage channel approximately 6 miles east of the site. Although the drainage has been artificially channelized in this area, ample sediment build up and vegetation growth existed that FIT considered the channel an adequate reference wetlands location.

160 Spear Street, Suite 1380
San Francisco, California
94105-1535

415/957-0110

NOV 20 1991



ICF TECHNOLOGY INCORPORATED

DEC 13 1991
MEMORANDUM

DATE: December 12, 1991

SUBJECT: Review of Analytical Data

FROM: Victoria Taylor
ESAT Senior Organic Data Reviewer
ICF Technology, Inc.

THROUGH: Steve Remaley
Chemist
Quality Assurance Management Section
Environmental Services Branch, OPM (P-3-2)

TO: Carolyn Douglas
Site Assessment Manager
Site Evaluation Section (H-8-1)

Attached are comments resulting from Region 9 review of the following analytical data:

SITE: Halaco Engineering
EPA SITE ID NO: CAD009688052
CASE/SAS NO.: SAS 6544Y Memo #04
SDG NO.: 6544Y-79

LABORATORY: Versar Laboratories, Inc. (VERSAR)
ANALYSIS: SAS Metals

SAMPLE NO.: 6544Y-79 through 6544Y-93

COLLECTION DATE: September 10 and 11, 1991

REVIEWER: Margie D. Weiner
ESAT/ICF Technology, Inc.

TELEPHONE NUMBER: (415) 882-3061

If there are any questions, please contact the reviewer.

Attachment

cc: Edward Kantor, EMSL-LV, QAD
Stevie Wilding, TPO USEPA Region III

TPO: [] For Action [X] FYI

Data Validation Report

Case No.: SAS 6544Y Memo #04
 Site: Halaco Engineering
 Laboratory: Versar Laboratories, Inc. (VERSAR)
 Reviewer: Margie D. Weiner, ESAT/ICF Technology, Inc.
 Date: December 12, 1991

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: 6544Y-79 through 6544Y-83

COLLECTION DATE: September 10 and 11, 1991
 SAMPLE RECEIPT DATE: September 14, 1991

CONCENTRATION & MATRIX: 11 Low concentration and
 4 Medium concentration soil samples

FIELD QC: Field Blanks (FB): None
 Equipment Blanks (EB): None
 Background Samples (BG): None
 Duplicates (D1): 6544Y-79 and 6544Y-80

LABORATORY QC:

Matrix Spike, Duplicate
 and ICP Serial Dilution: 6544Y-79 (medium conc.) and 6544Y-83 (low conc.)

ANALYSIS: SAS Metals (Aluminum, Antimony, Arsenic,
 Barium, Beryllium, Cadmium, Calcium,
 Chromium, Cobalt, Copper, Iron, Lead,
 Magnesium, Manganese, Nickel, Potassium,
 Selenium, Silver, Sodium, Thallium, Vanadium,
 Zinc, Boron, Molybdenum and Silicon)

<u>Analyte</u>	<u>Sample Preparation and Digestion Date</u>	<u>Analysis Date</u>
ICP Metals	November 9, 1991	November 27, 1991
Percent Solids	NA	October 2, 1991

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program Inorganic Statement of Work for July 1988 and the EPA document "Laboratory Data Validation Functional Guidelines For Evaluating Inorganic Analyses" (1985).

II. Validation Summary

The data were evaluated based on the following parameters:

<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1. Data Completeness	Yes	
2. Sample Holding Times	Yes	G
3. Calibration	Yes	
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	F
7. Spiked Sample Analysis	No	B
8. Laboratory Duplicate Sample Analysis	No	C
9. Field Duplicate Sample Analysis	No	E
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
11. ICP Serial Dilution	No	D
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	H

III. Validity and Comments

A. The results reported in Table 1A for the following analytes are considered as estimates (J) and are usable for limited purposes only.

- All results above the Method Detection Limit but below the Contract Required Detection Limit (denoted with an "L" qualifier)

Results above the Method Detection Limit (MDL) but below the Contract Required Detection Limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are considered usable for limited purposes because of accuracy problems. The results are considered as estimates and are flagged "J" in Table 1A.

- Antimony, lead and nickel in sample numbers 6544Y-79 through 6544Y-82
- Silicon in all of the samples

The matrix spike recovery results for antimony, lead, nickel and silicon in QC sample numbers 6544Y-79 and 6544Y-83 did not meet the 75-125% criteria for accuracy as listed below. The possible percent bias for each analyte is also presented below.

<u>Analyte</u>	6544Y-79	6544Y-79	6544Y-79	6544Y-79
	Medium Conc.	Medium Conc.	Low Conc.	Low Conc.
	<u>% Recovery</u>	<u>% Bias</u>	<u>% Recovery</u>	<u>% Bias</u>
Antimony	70.8	-29.2	---	---
Lead	36.1	-63.9	---	---
Nickel	170	+70.0	---	---
Silicon	137	+37.0	469	+369

Results above the MDL are considered quantitatively questionable. The results for nickel in sample numbers 6544Y-79 through 6544Y-82 and silicon in all of the samples may be biased high and are the maximum concentrations at which nickel and silicon are present. The results reported for antimony in sample numbers 6544Y-81 and 6544Y-82 and lead in sample numbers 6544Y-79 through 6544Y-82 may be biased low and are the minimum concentrations at which antimony and lead are present. The detection limits reported for antimony in sample numbers 6544Y-79 and 6544Y-80 may be biased low and false negatives may exist.

C. The following results are considered usable for limited purposes because of precision problems. The results are considered as estimates and are flagged "J" in Table 1A.

- Arsenic, selenium and silicon in all of the samples
- Chromium, cobalt, nickel and molybdenum in sample numbers 6544Y-79 through 6544Y-82

Laboratory duplicate results did not meet the $\pm 35\%$ Relative Percent Difference (RPD) and $\pm 2 \times \text{CRDL}$ criteria for precision as listed below.

<u>Analyte</u>	6544Y-79	6544Y-83
	Medium Conc.	Low Conc.
	Lab. Dup.	Lab. Dup.
	<u>RPD</u>	<u>RPD</u>
Arsenic	200	73.7
Chromium	56.4	---
Cobalt	147	---
Nickel	39.0	---
Selenium	200	200
Molybdenum	47.1	---
Silicon	36.8	69.1

The results reported for arsenic, chromium, cobalt, nickel, selenium, molybdenum and silicon in the samples listed above are considered quantitatively questionable. The inconsistency of the results between laboratory duplicates may be due to sample inhomogeneity, poor sampling or laboratory technique, or method defects.

A 35.5% RPD was obtained for calcium in the laboratory duplicate analysis of QC sample number 6544Y-83. This calcium RPD, though marginally above the $\pm 35\%$ RPD criteria for precision, is not expected to affect the sample results.

D. The following results are considered usable for limited purposes because of a problem with the ICP serial dilution. The results are considered as estimates and are flagged "J" in Table 1A.

- Iron, nickel and silicon in sample numbers 6544Y-79 through 6544Y-82
- Zinc in all of the samples

The percent difference of the ICP serial dilution analysis of sample numbers 6544Y-79 and 6544Y-83 did not meet the 10% criteria for each of the analytes as shown below.

<u>Analyte</u>	6544Y-79 Medium Conc. <u>% Difference</u>	6544Y-83 Low Conc. <u>% Difference</u>
Iron	11.0	---
Nickel	11.2	---
Zinc	15.8	14.6
Silicon	10.6	---

The results reported for iron, nickel, zinc and silicon in the samples listed above are considered quantitatively questionable. Chemical and physical interferences may exist due to the sample matrix.

Percent differences obtained in the ICP serial dilution analysis of sample numbers 6544Y-79 and 6544Y-83 for the analytes listed below were marginally above the 10% criteria.

<u>Analyte</u>	6544Y-79 Medium Conc. <u>% Difference</u>	6544Y-83 Low Conc. <u>% Difference</u>
Calcium	---	10.1
Chromium	10.4	---
Cobalt	10.2	---
Iron	---	10.1
Manganese	10.1	---

Chemical and physical interferences may exist due to sample matrix but should not significantly affect the results reported for chromium, cobalt and manganese in sample numbers 6544Y-79 through 6544Y-82 and for calcium and iron in sample numbers 6544Y-83 through 6544Y-93.

- E. Field duplicate results did not meet the $\pm 35\%$ Relative Percent Difference (RPD) and $\pm 2 \times \text{CRDL}$ criteria for precision as listed below.

<u>Analyte</u>	6544Y-79 D1
	6544Y-80 D1
	<u>RPD</u>
Chromium	60.3
Cobalt	145
Lead	43.9
Manganese	55.9
Nickel	49.9
Vanadium	35.7

The inconsistency of the results in the analysis of the field duplicate pair may be due to sample inhomogeneity, poor sampling or laboratory technique, or method defects. The effect on the quality of the data is not known.

- F. Laboratory Control Sample (LCS) results were not reported for boron, molybdenum and silicon because these elements are not in the CLP solid LCS.
- G. The SW-846 6-month technical holding time for metals was not exceeded for any of the samples. There were no holding time problems.
- H. All of the other results are considered valid and usable for all purposes. All QC parameters, other than those discussed above, have been met and are considered acceptable.

Reference

No. 3

**Enforcement Confidential - Document Included In
Confidential Data Section**

**Reference
No. 4**

ABANDONED INDUSTRIAL WASTE DISPOSAL SITE SURVEY

We are conducting a survey to locate abandoned and/or inactive industrial waste disposal sites in California. As part of this effort, we are currently contacting industries which could produce industrial wastes to determine both current and past industrial waste disposal practices.

Below is a survey form to help collect information which will be used to locate and evaluate disposal sites. Your cooperation in completing this form is appreciated. If you are completing this form for several plants, please use a separate form for each plant your company has operated and/or currently operates in California; If you do not have adequate space, please use another sheet of paper and identify responses by a question number.

If you have any questions, please call or write to Department of Health Services, Hazardous Materials Management Section, 744 P Street, Sacramento, 95814; or phone (916) 322-2337. If necessary, trade secrets may be protected by indicating the number of the responses you wish to remain confidential:

HALACO ENGINEERING
6200 PERKINS RD
OXNARD, CA 93030

Please return completed form by:

9-4-84

ITEM I.

Location (If different from above): N/A

Number

Street

City

County

Zip

ITEM II.

A. Years of operation at this location: 19 65 to 19 present

B. Number of employees at this location: Approx. 75

C. List names and locations of any other plants your company operates or has operated in California since 1945:

Name

Location

Years of Operation

From: 19 ___ to 19 ___

Halaco Engineering Co.

18601 S. Main St., Los Angeles

1955 - 1965

11920 S. Alameda, Los Angeles

1950 - 1955

D. Was your current location previously occupied by a different company? Yes No Unknown
If yes, what was the company name or major type of product?

ITEM III.

List and explain your principle products, operations, and/or service, and percent of total production, or operation:

Smelter and recycler of non-ferrous metals principally aluminum and magnesium.

Presently 90% of production by weight is aluminum alloys and 10% is magnesium

alloys. From time to time, Halaco recycles 1-2 billion aluminum cans/yr. See

attachment from brief with the California Court of Appeal, Second Appellate

District

ITEM IV.

Please complete for all major industrial wastes produced at this location, using the key below. The list will give you an idea of the types of wastes in which we are interested. Indicate method of disposal used for each waste and whether disposed of on your plant's property or your plant's property. If you have submitted an application for a Hazardous Waste Facility Permit, indicate the submittal date in the section titled "Current Disposal Practices" and do not complete that section. Otherwise, complete the entire section. If you would like information about the Hazardous Waste Facility Permit program, please check here.

Key: A - disposed of on-site B - disposed of off-site

- | | | | |
|------------------|---------------------------------------|-------------------|----------------|
| 1 - Recycling | 4 - Containerized for storage/transit | 7 - Land disposal | 10 - Well |
| 2 - Treatment | 5 - Pour down sewer/storm drain | 8 - Ponds | 11 - Mineshaft |
| 3 - Incineration | 6 - Injection well | 9 - Pits | 12 - Unknown |

Name/Type of Waste	Disposal Method Pre 1972 Disposal Practice	Disposal Method Current Disposal Practice
Example: Rinsewater	A 7	B 7, A 5
Washer sediment consisting of salty dirt and determined by EPA not to be hazardous. See attachment.	A 7	A 7

COMMON INDUSTRIAL WASTES

- | | | | |
|---------------------------|---------------------------------|-----------------------------------|-----------------------------|
| Acetylene sludge | Caustic | Flux | Phenol waste |
| Acid sludge, solution | Centrifuge solids | Fly ash | Photo processing waste |
| Adhesives | Chemicals, sludge | Glaze sludge | Plating sludge, solution |
| AFU floc | Chemical spill residue, cleanup | Heavy metal solution, sludge | PCBs |
| Alkaline sludge, solution | Clarifier sludge | Hydrocarbon solid, chlorinated | Polymer, coating waste |
| Alum floc, sludge | Coke | Hydroxide sludge | Polystyrene |
| Aluminum dust | Coolants | Ink, sludge, rinse water | Polyvinyl chloride PVC |
| Asbestos, dust | Corrosion inhibitor | Kieselguhr clay | Sealant sludge |
| ASP filter cakes | Cyanide solution | Leaching and scrubbing residue | Solvent |
| Battery acid, sludge | Detergent, soap waste | Metal dust, machining wastes | Stretford solution |
| Bilge water | Drilling mud | Oils, emulsions | Sulfide sludge |
| Binder solids | Drugs, contaminated wastes | Organic chemicals, stripper | Tank, stills, sump sediment |
| Blasting sand | Epoxy | Oxidizer waste, sludge | Tanning sludge |
| Capacitor, electrical | FCC wastes | Paint sludge | Tetraethyl lead sludge |
| Catalyst | Filter cake sludge | Pesticide containers, rinse water | Wash water |

ITEM V.

Are there any inactive industrial waste disposal sites on the plant property? Yes No Unknown

If yes, indicate type(s) of disposal site(s).

- | | | | |
|-------------------------------------|---|------------------------------------|--|
| <input type="checkbox"/> Incinerate | <input type="checkbox"/> Ponds | <input type="checkbox"/> Pits | <input type="checkbox"/> Well |
| <input type="checkbox"/> Containers | <input type="checkbox"/> Injection Well | <input type="checkbox"/> Mineshaft | <input type="checkbox"/> Land Disposal |

ITEM VI.

Please complete for any wastes disposed of OFF your plant's property before 1972.

Location of Site	Name of Hauler	Approximate Time Period Used
None		

Department staff available to answer your questions: Sacramento (916) 322-2337

Arthur Fine, Esq.

Name of responsible company official to contact: MITCHELL, SILBERBERG & KNUPP
11377 W. Olympic Blvd. L.A. 91

Title: Legal counsel for Halaco Engineering

**Reference
No. 5**

D11

HAZARDOUS WASTE

SURVEILLANCE AND ENFORCEMENT REPORT

Hobie Houck

DATE October 5, 1979

FIRM NAME Ventura Sanitation District

SITE CLASSIFICATION I II-I II-2

ADDRESS 290 Maple Court, Suite 210

III

Ventura, CA 93001

Other _____

(805) 659-2130

SITE PERMIT NO. _____

ACTIVITY: Investigation of Halaco Engineering Compnay Site.

COMMENTS: Hobie Houck informed Glenn Takeoka and myself that the Halaco facility was indeed located on the former site of an open dump for the City of Oxnard. It was phased-out of operation after the Wagon Wheel Landfill opened in August 1962. Extensive burning was carried out at the Oxnard site during the year it was being closed. What was not burned was buried or hauled to the new sanitary landfill. To the best of his recollection, the site received a final cover of beach sand. His office did not have plot plans or any files on the old site. He said the City of Oxnard did not have any such information either. He had tried to get it from them at one time. He believes the Oxnard site had accepted lumber, sewer sludges and grits, and hospital wastes besides general household refuse. He does not think it received any drilling muds or other industrial wastes.

INSPECTOR Ned Therien, Glenn Takeoka

DATE Novemver 2, 1979

**Reference
No. 6**

D10

HAZARDOUS WASTE

SURVEILLANCE AND ENFORCEMENT REPORT

DATE October 4, 1979

FIRM NAME Halaco Engineering Company

SITE CLASSIFICATION I II-I II

ADDRESS 6200 Perkins Road

III

Oxnard, CA 93030

Other _____

SITE PERMIT NO. _____

ACTIVITY: Inspection of On-site Disposal Operation of Possibly Hazardous Waste.

COMMENTS: Glenn Takeoka and myself, met with Leslie Fine, Vice President of Halaco Engineering Company, on October 4, 1979, at his office at 6200 Perkins Road, Oxnard, California. Mr. Fine appeared to be annoyed with our request to inspect his facility and take samples of his waste. His annoyance waned somewhat after we explained the California Hazardous Waste Laws and Regulations and we assured him that we were there to determine if Halaco Engineering might be discharging hazardous wastes into their evaporation pond but were not trying to prove a preconceived notion that they were.

Mr. Fine was familiar with the State's Hazardous Waste Regulations. He contested the validity of listing a chemical as hazardous and then assuming that it was hazardous under all conditions. He questioned what conditions make something hazardous. Is it hazardous if you eat it, look at it, smell it, or swim in it? He made the point that magnesium is listed in the Regulations as a hazardous material without any mention of a concentration at which it is hazardous. We noted it was because of flammability. He said that would mean that when mixed with sand to a ten percent dilution that it would not be hazardous according to the metallurgical literature. Mr. Takeoka and myself, explained that HMMS had provisions to allow a waste material, listed as hazardous in the Regulations, to be demonstrated to be nonhazardous by reference to accepted literature or by laboratory means. We avoided debating with Mr. Fine on the propriety of the Regulations.

Mr. Fine explained that Halaco Engineering processes scrap material to recover and recycle aluminum and magnesium. They used to recycle zinc but no longer do so. The scrap aluminum or magnesium is mixed with flux consisting of sodium chloride, potassium chloride, and magnesium chloride. The metal is extracted by melting in furnaces and being poured into molds. The accumulated sludge with its salts from the flux material and residue from the scrap metal, is collected from the furnaces and tumbled with water in a large cylindrical washer-tumbler. This breaks up the sludge material. The salts, dirt, and other small particulate matter is discharged with the water into an evaporation pond. The metal aggregates are recovered and reprocessed through the furnaces with new scrap metal. See Attachment 1.

INSPECTOR Ned Therien, Glenn Takeoka

DATE November 2, 1979

The scrap metal accepted by Halaco Engineering was said by Mr. Fine to contain salt and other nonmetallic impurities plus various metallic impurities. The magnesium scrap metal contains copper, manganese, nickel, silver, and silicon. The aluminum scrap metal contains one to three percent copper plus silver, zinc, lead, chromium, titanium, tin, silicon, and minute quantities of many other impurities. The magnesium scrap is made up of such things as Volkswagen motor parts and aircraft wheels. The aluminum scrap consists of shredded cans, machine shop borings, aluminum-copper radiators, and blocks of partially processed scrap aluminum from other companies.

All of the industrial waste from the Halaco plant goes into their waste evaporation pond except for what is trapped on the air pollution control apparatus filters. The waste discharged to the pond is what is received in the washer-tumbler water and the water from the air pollution equipment scrubbers for the furnace stacks. Water from the waste evaporation pond is recycled back through the air pollution equipment scrubbers and redischarged to the pond. Halaco has applied to the Oxnard sewerage agency to discharge their industrial waste water to the industrial waste channel that runs through their property. They presently discharge nothing to the channel, but they used to discharge to the channel until the Regional Water Quality Control Board (RWQCB) made them quit.

Joshua Workman of the Los Angeles Region, RWQCB, arrived during the morning of the inspection to make his own inspection of the berm on the side of the waste evaporation pond next to the ocean. Dave Gable of Halaco accompanied him during his brief inspection. Mr. Fine made a comment that the RWQCB regularly inspected the pond but that the water under the Halaco facility was not of useful quality because it was so close to the ocean.

Mr. Fine requested that we note there were no dead birds or animals in or around the waste evaporation pond and indeed, there were live birds on it. He said that there are sometimes as many as 500 birds on the pond and Halaco is furnishing them a habitat. It was also noted, however, that except for a few shrubs on the south side of the pond, no vegetation was growing on the pond banks or on the sludge dredged from the pond. Mr. Fine said that was due to the high salt concentration of about six percent in the material. A heavy growth of vegetation was noted on the land adjacent to the area used for the waste disposal site.

Mr. Fine said he has had chemical analyses performed on the sediment in the waste evaporation pond. He stated that except for copper, zinc, and manganese, any constituents of concern in the waste sediment are in insignificantly low concentrations. He said that lead analysis results were suspicious but unreliable because of interference in the analysis with other constituents. He demanded to receive a copy of the analyses results on any samples we collected along with a listing of the procedures used in the analyses. He stated that comparison standards should

constantly be used during the analyses to prevent obtaining false results.

Mr. Fine wanted us to be sure we knew that the Halaco facility was constructed over the former site of the Oxnard open-burning dump. He didn't feel Halaco should be held responsible for any hazardous material discovered in analyses of samples we collected that were related to the old dump. Halaco purchased the property in 1965. They used local material to cover the dump area. They had problems with people sneaking in and dumping waste material after the dump had been closed and covered.

During our tour of the Halaco facility, Glenn Takeoka and I requested to take photographs of the operation. Mr. Fine gave us permission to take pictures only of areas where waste had been disposed. He particularly objected to having any pictures taken of the scrap metal storage areas and the washer-tumbler. He related his objection to having the washer-tumbler photographed to his assertion it was a proprietary apparatus.

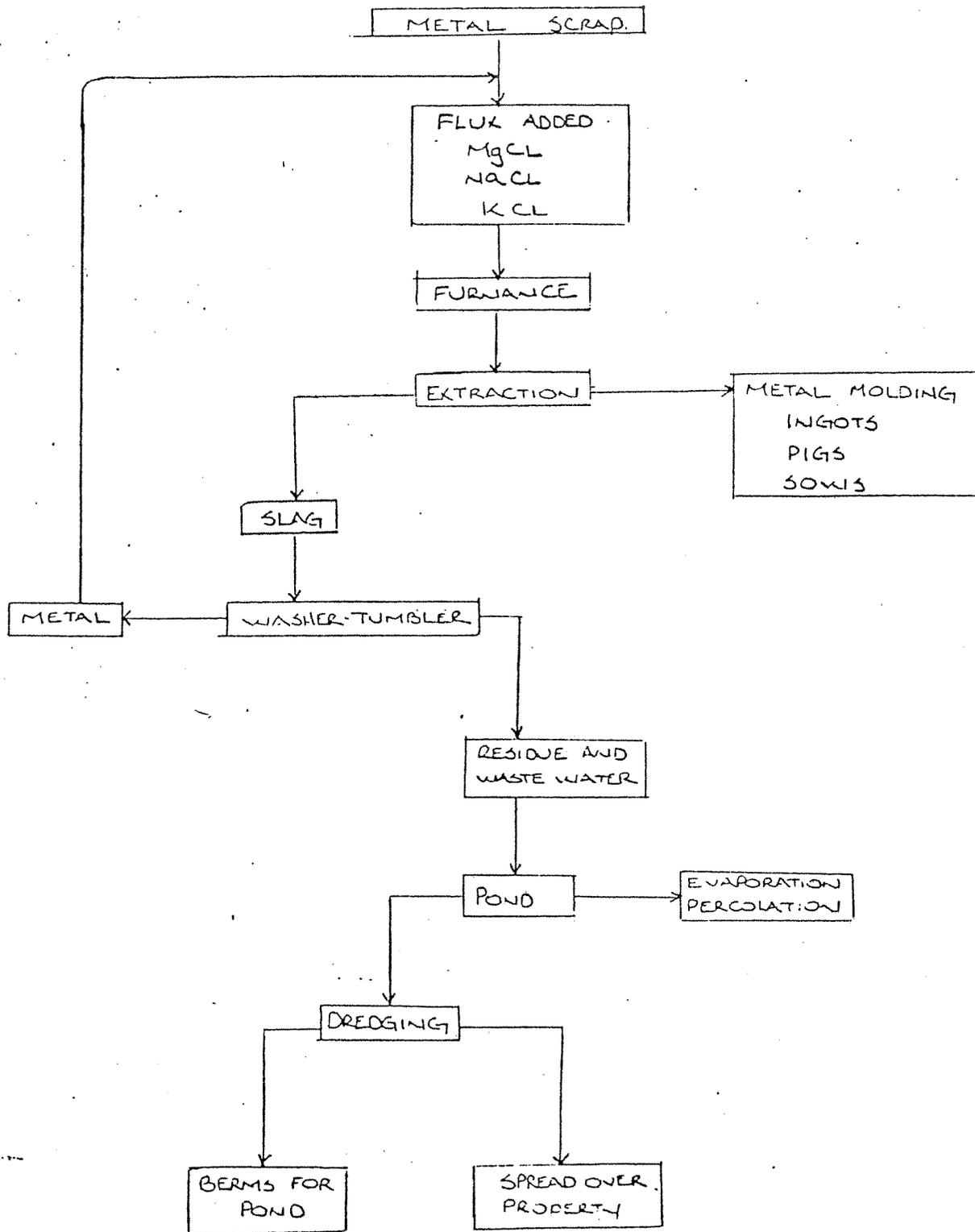
Glenn Takeoka and I, proceeded to take samples of waste material around the Halaco facility. Mr. Fine or Dave Gable were present during all of the sampling. Mr. Fine objected as we began to take the first sample of the liquid effluent at the washer-tumbler because he did not consider it waste until it ran down the approximately 200 feet of pipe into the pond. He finally decided it was all right. An ammonia odor was noticed coming from the washer-tumbler effluent. Mr. Fine would say no more than it was produced in the process and that it would show up in the analyses of the waste if it was of concern. The ammonia odor was noticed emanating from the pond and the sludge dredged from the pond. The pond was bubbling in the area of discharge of the washer-tumbler and the air pollution equipment furnace stack scrubber. The sludge pile of sediment dredged from the pond was noticed to "crackle" on its own.

Samples were collected as described in the following table with the location of sampling indicated on the diagram of the facility, Attachment 2. The location of the facility is demonstrated in Map Attachments 3, 4, 5, and 6.

Sample Number	Description of Sample
NT-80	Liquid effluent obtained at washer-tumbler.
NT-81	Liquid effluent of washer-tumbler obtained at pond discharge.
NT-82	Liquid effluent of air pollution equipment obtained at pond discharge. pH 7 by indicator paper.

Sample Number	Description of Sample
NT-83	Liquid from northeast side of pond. Ammonia odor very noticeable.
NT-84	Gray sediment from surface three inches from dry area in the middle of the pond.
NT-85	Gray sediment from surface three inches from berm on north side of pond.
NT-86	Gray sediment from surface two inches from dry bank of south side of pond four feet inside the berm.
NT-87	Gray sediment with bluish-green crust from surface three inches of sediment pile on north side of pond. Ammonia odor very noticeable. Popping, crackling sound from sediment pile.
NT-88	Gray sediment from surface three inches from fill area north of sediment piles north of pond.
NT-89	Gray material from surface three inches from unpaved holding area for furnace sediment before processing through the washer-tumbler. Mr. Fine stated this was not waste at this point.
NT-90	Section of leaf air pollution control unit filter with impinged particulate matter.
NT-91	Dry foam from around pond discharge pipe from washer-tumbler.
NT-92	Bluish-green surface sediment top half inch of sediment pile on north side of pond. Mr. Fine stated this bluish-green material represented only one thousandth of the total surface area of the disposal pond.
NT-93	Gray surface sediment top half inch of sediment pile on northeast side of pond.
NT-94	Soil from nine inches below surface of material on unpaved holding area for furnace sediment before processing through the washer-tumbler. This is soil from one to two inches below the overlying furnace sediment.

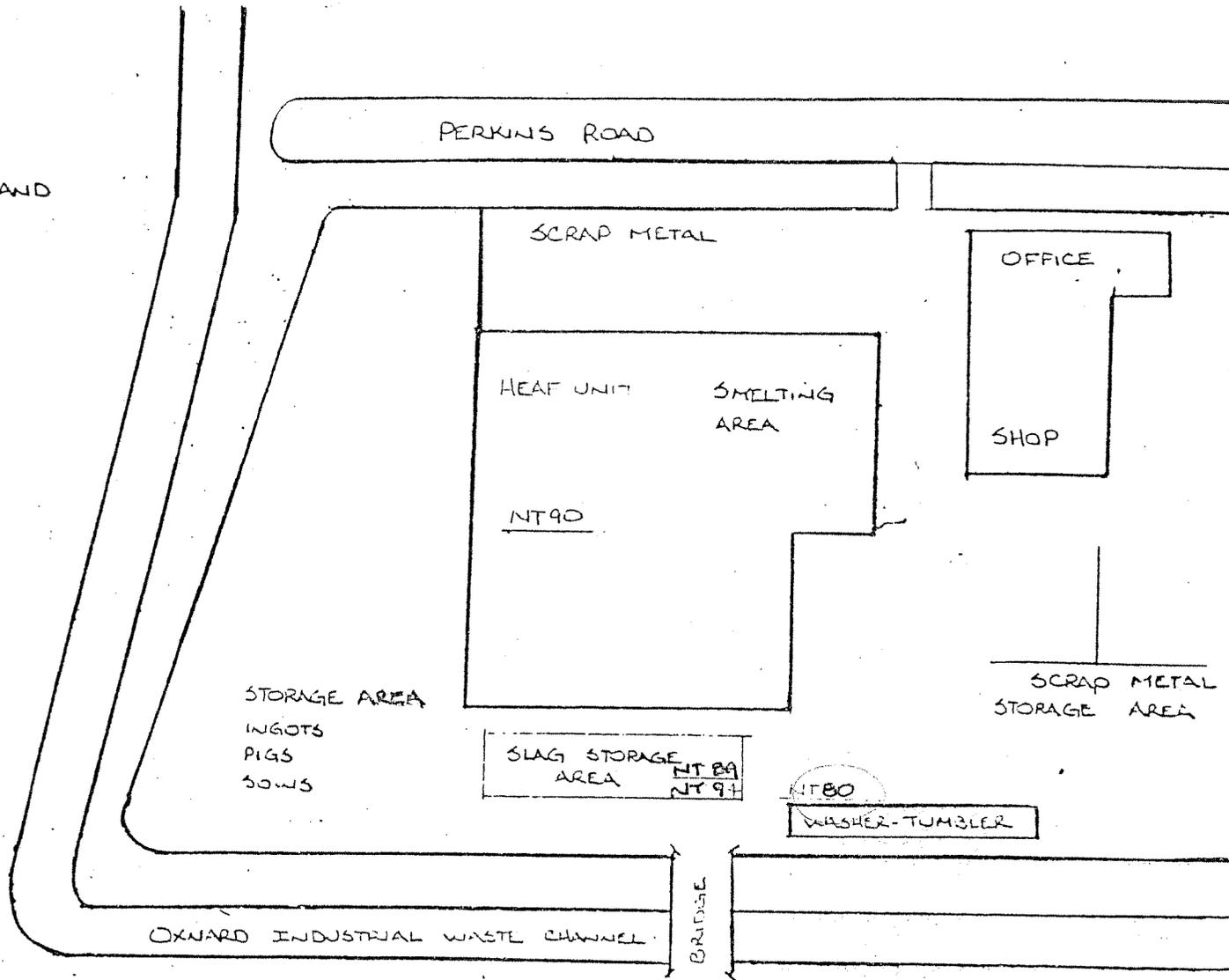
Duplicate of all samples were provided to Halaco. Dave Gable signed for the samples and requested copies of all data and photographs obtained during this inspection. See Attachments 7 and 8. I refused to provide them with a copy of my personal notes of the inspection written in my field book.



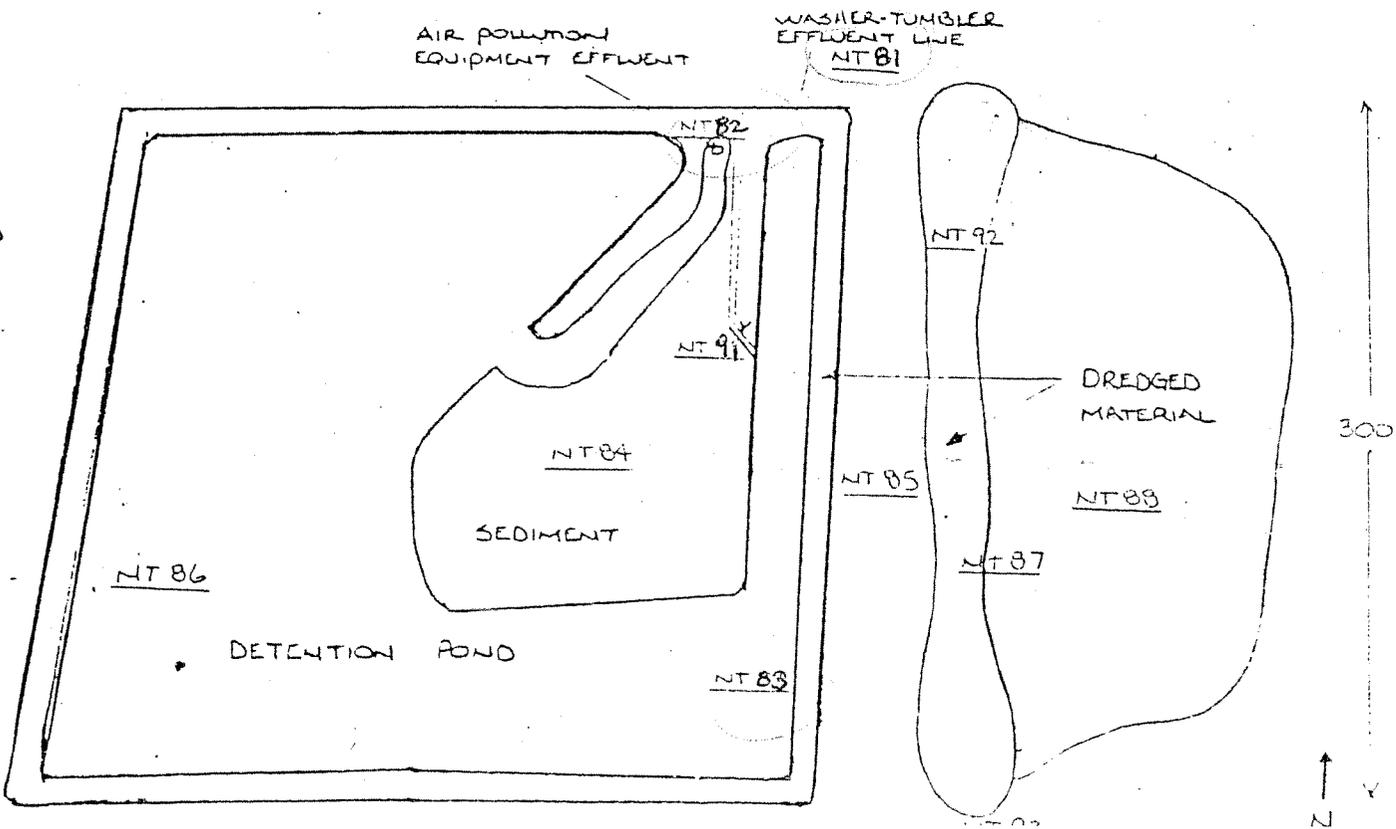
Attachment 1

FLOW CHART OF HALCO OPERATIONS

BEACH SAND
DUNES



BEACH SAND
DUNES



HALACO ENGINEERING COMPANY

Attachment 3

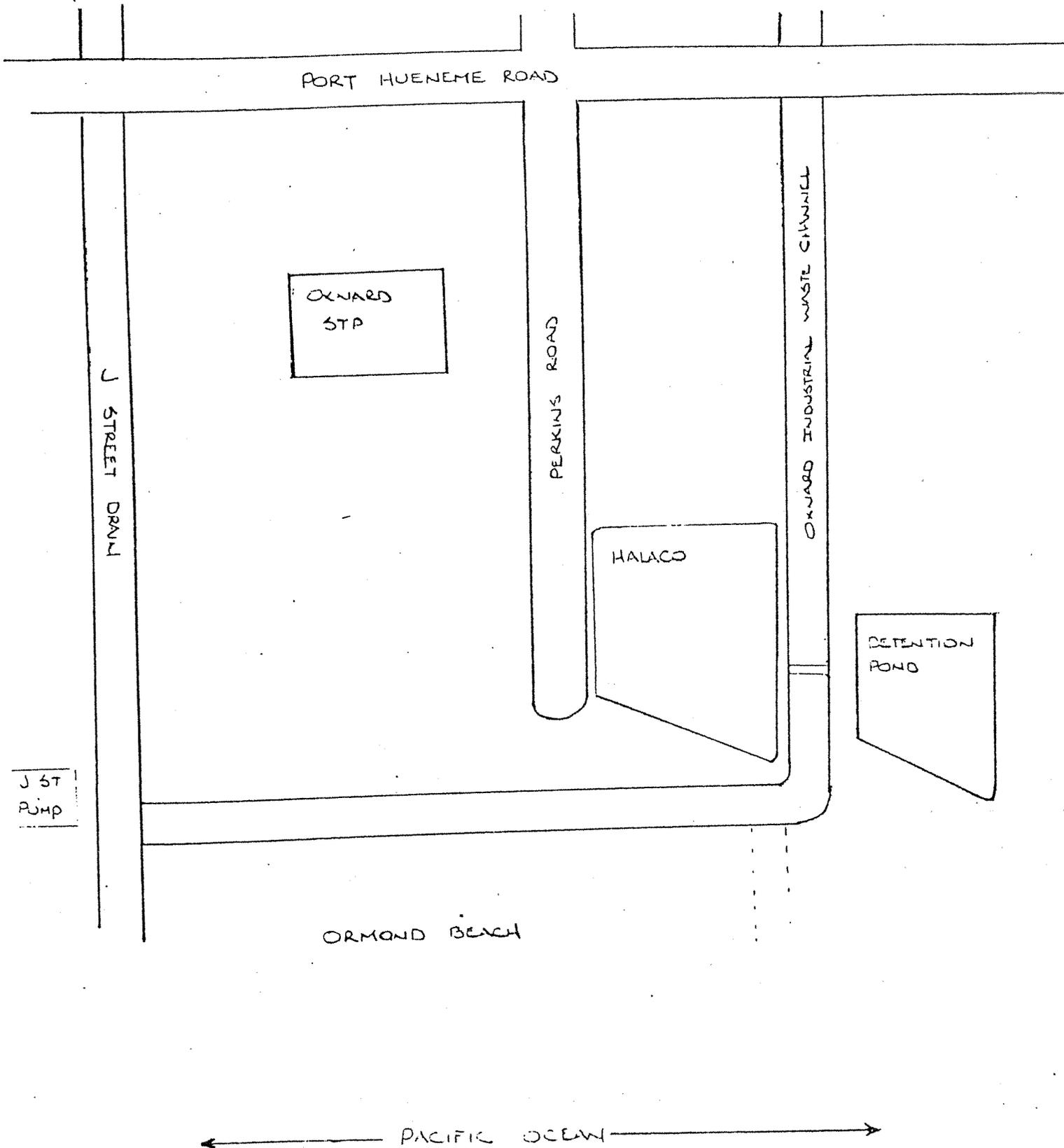




EXHIBIT III - AIR PHOTO TAKEN 1/14/74 NOTE COMPLETE BREAKTHROUGH OF BARRANCA WATERS AT POINTS A AND B. THESE BREAKTHROUGHS OCCURED DURING THE WINTER OF A DROUGHT YEAR. POND OF FRESHWATER IS STILL PRESENT NORTH OF SETTLING POND (C).

D E S A

ROAD

27

Elm St

Park

30

BM 32

ROAD

29

1110

W 1

BOUNDARY

CITY

RESERVATION

VENTURA ROAD

25

Hueneme High Sch

BM 24

SAVIERS ROAD

STREET

PLEASANT VALLEY ROAD

ROAD

ROAD

Port Hueneme

Santa Clara High Sch

BM 13

HUENEME

BOUNDARY

OXNARD

RAILWAY

13

VENTURA

COUNTY

HALL CO. ENGINEERING CO. PROCESSING FACILITIES

Sewage Disposal

OXNARD INDUSTRIAL DRAIN

APPROXIMATE EXTENT OF EVAPORATION POND

AREA OF TIDAL INFLOW TO DRAIN

OXNARD

GEORGE

Beach

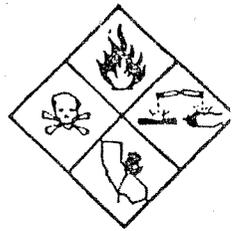
BOUNDARY

Attachment 5



HAZARDOUS MATERIALS
MANAGEMENT REPORT

Attachment 7



State of California
Department of Health Services
Hazardous Materials Management Section

744 - P St., Sacramento 95814
(916) 322-2337

2151 Berkeley Way, Berkeley 94704
(415) 540-2043

1449 W. Temple St., Los Angeles 9002
(213) 620-2380

Date 10/4/79

Firm Name Halaco Engineering, Company

Site Permit No. X

Address 6200 Perkins Road

Oxnard, CA 93030

Site Classification:

I ~~II-1~~ II-2 III

Other

Person Interviewed Leslie Fine and Dave Gable

On this date an inspection of your facility was conducted under authority of Section 25185, California Health & Safety Code and Section 66328, California Administrative Code. The collection of samples or other evidence, including the taking of photographs, was done under authority of Section 66328, California Administrative Code. The following conditions or practices observed this date are alleged to be violations of one or more sections of the California Health & Safety Code, Division 20, or California Administrative Code, Title 22, relating to the storage, handling, transportation, and disposal of hazardous and extremely hazardous waste or asbestos containing products.

Glenn Takeoka and myself, Ned Therian, took
samples NT-80, NT-81, NT-82, NT-83, NT-84, NT-85,
NT-86, NT-87, NT-88, NT-89, NT-90, NT-91,
NT-92, NT-93 and NT-94 in duplicate at
the above mentioned firm this day. Duplicate samples
labeled 2 of 2 were provided to Halaco Engineering.
Halaco Engineering personnel witnessed that the samples
labeled 2 of 2 are representative of material sampled
and labeled 1 of 2 for retention by HMMMS. The
attached map shows sampling locations

Your signature acknowledges receipt of a copy of this report and collection of any samples described above.

Authorized Representative of Firm

Name [Signature]
Title [Signature]

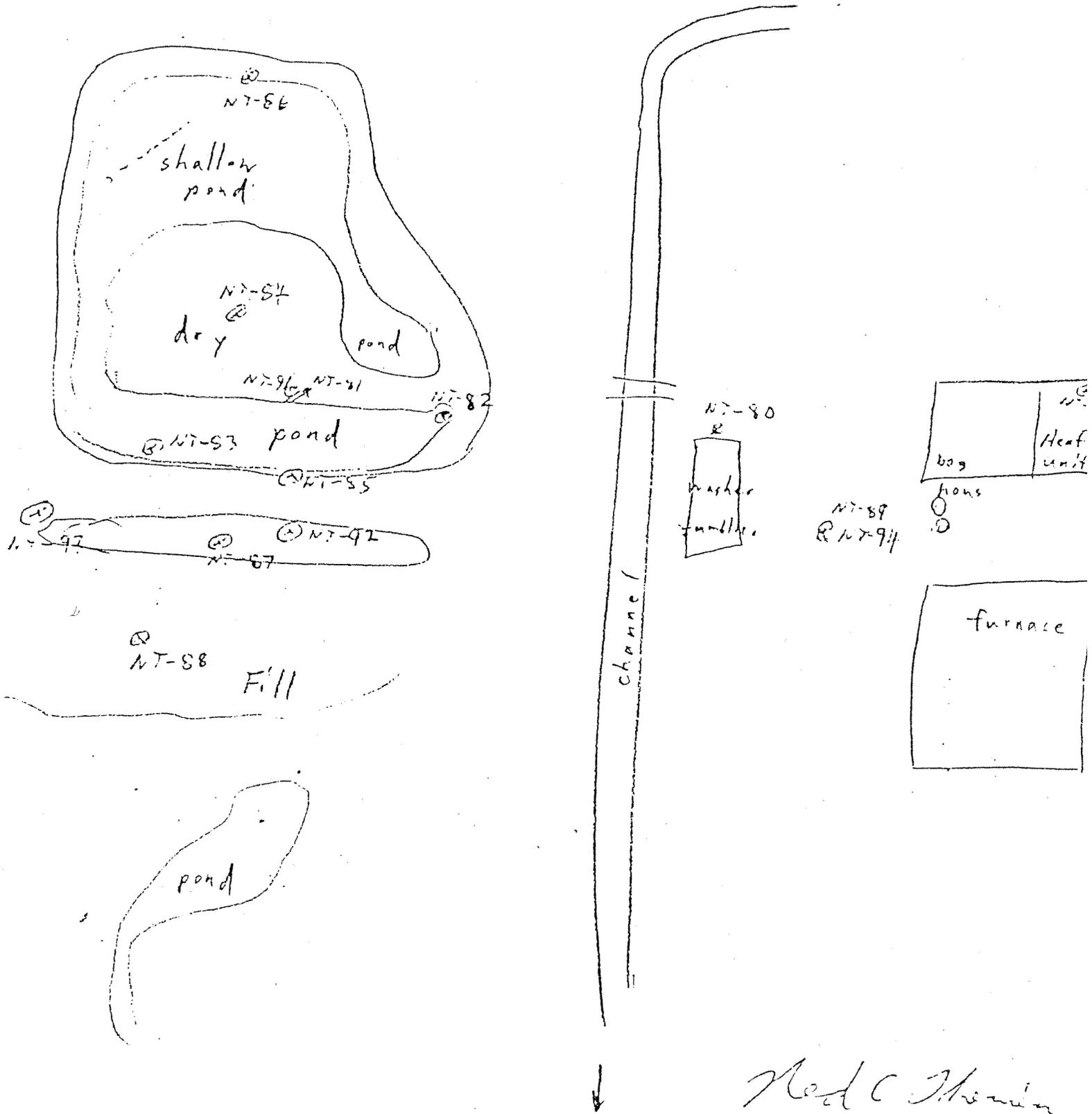
Halaco requests copies of all data and photographs obtained at time of sampling

Authorized Agent Ned C. Therian

Attachment 8

Samples collected 10/4/79 by Neil Thomson and Steve Takekita of the Hazardous Materials Management Section

S
↑



Neil C Thomson

PRIORITY
(explain) _____

HML NO. 385
SEL 386
387
388
389
390
391

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR NED C. THERIEN GLENN TAKEOKA DATE SAMPLED 10-4-79 TIME 1300 HOURS
LOCATION OF SAMPLING:
NAME HALACO ENGINEERING COMPANY TEL NO. 805 488-3684
ADDRESS 6200 PERKINS RD. OXNARD CA. 93030

SEL HML NO. (Lab only)	number COLLECTOR'S SAMPLE NO.	street TYPE OF SAMPLE*	state FIELD INFORMATION**	zip
<u>385</u>	<u>NT 80</u>	<u>LIQUID</u>	<u>LIQUID EFFLUENT FROM WASHER</u>	<u>(AT TUMBLE)</u>
<u>386</u>	<u>NT 81</u>	<u>LIQUID</u>	<u>WASHER INFLOW TO POND</u>	
<u>387</u>	<u>NT 82</u>	<u>LIQUID</u>	<u>AIR POLLUTION INFLOW TO POND</u>	
<u>388</u>	<u>NT 83</u>	<u>LIQUID</u>	<u>POND LIQUID N.E. SIDE</u>	<u>(AMMONIA ODOR)</u>
<u>389</u>	<u>NT 84</u>	<u>SEDIMENT</u>	<u>DRY AREA IN THE MIDDLE OF THE POND</u>	
<u>390</u>	<u>NT 85</u>	<u>SEDIMENT</u>	<u>BERM ON NORTH SIDE OF POND</u>	
<u>391</u>	<u>NT 86</u>	<u>SEDIMENT</u>	<u>SEDIMENT ON SOUTH SIDE OF POND</u>	

SPECIAL HANDLING AND/OR STORAGE _____

CHAIN OF CUSTODY:

1.	<u>Glenn Takeoka</u> signature	<u>W. M. S.</u> title	<u>10-4-79</u> - <u>10-9-79</u> inclusive dates
2.	_____ signature	_____ title	_____ inclusive dates
3.	_____ signature	_____ title	_____ inclusive dates
4.	_____ signature	_____ title	_____ inclusive dates

SPECIAL REMARKS DUPLICATE SAMPLES GIVEN TO COMPANY
(e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY Mary Willard TITLE PH Chem II DATE 10/9/79
SAMPLE ALLOCATION: HML LABL LBL OTHER _____ DATE 10/15/79

ANALYSIS REQUESTED HEAVY METALS SCAN, PH, AMMONIUM,
CHLORIDE, THORIUM

*Indicate whether sample is sludge, soil, etc.; **Use back of page for additional info.

PRIORITY
 (explain) _____

~~HML~~ NO. 392
 SCL 393
394
395
396
397
398

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR NED C. THERIEN
GLENN TAKEOKA DATE SAMPLED 10-4-79 TIME 1300 HOURS
 LOCATION OF SAMPLING:
 NAME HALCO ENGINEERING COMPANY TEL NO. 805 488-3684
 ADDRESS 6200 PERKINS RD. OXNARD CA. 93030
 SCL number street state zip

<u>HML NO.</u> (Lab only)	<u>COLLECTOR'S SAMPLE NO.</u>	<u>TYPE OF SAMPLE*</u>	<u>FIELD INFORMATION**</u>
<u>392</u>	<u>NT 87</u>	<u>SEDIMENT</u>	<u>SEDIMENT PILE ON NORTH SIDE OF POND</u>
<u>393</u>	<u>NT 88</u>	<u>SEDIMENT</u>	<u>FILL AREA ON NORTH SIDE OF POND</u>
<u>394</u>	<u>NT 89</u>	<u>SOIL AND SEDIMENT</u>	<u>UNPAVED STORAGE AREA FOR FURNACE MATERIAL</u>
<u>395</u>	<u>NT 90</u>	<u>FILTER</u>	<u>HEAF FILTER FOR AIR POLLUTION EQUIP</u>
<u>396</u>	<u>NT 91</u>	<u>SEDIMENT</u>	<u>SEDIMENT AT WASH OUT FALL INTO PO. NORTH SIDE</u>
<u>397</u>	<u>NT 92</u>	<u>SEDIMENT</u>	<u>BLuish-GREEN SURFACE MATERIAL (OF POND)</u>
<u>398</u>	<u>NT 93</u>	<u>SEDIMENT</u>	<u>SEDIMENT PILE ON NORTH EAST SIDE OF THE POND.</u>

SPECIAL HANDLING AND/OR STORAGE _____

CHAIN OF CUSTODY:

1.	<u>Glenn Takeoka</u> signature	<u>W.M.S.</u> title	<u>10-4-79 - 10-9-79</u> inclusive dates
2.	_____ signature	_____ title	_____ inclusive dates
3.	_____ signature	_____ title	_____ inclusive dates
4.	_____ signature	_____ title	_____ inclusive dates

SPECIAL REMARKS DUPLICATE SAMPLE GIVEN TO COMPANY
 (e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY Maryl O'Leary TITLE PH Chem II DATE 10/9/79
 SAMPLE ALLOCATION: HML LABL LBL OTHER _____ DATE 10/15/79

ANALYSIS REQUESTED HEAVY METALS SCAN, PH, AMMONIUM, CHLORIDE, THORIUM
504 sm #395 - report on H2SO4

PRIORITY
(explain) _____

~~HML~~ NO. 399
SEL _____

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR NED C. THERIEN
GLENN TAKEOKA DATE SAMPLED 10-4-79 TIME 1300 HOURS
LOCATION OF SAMPLING:
NAME HALACO ENGINEERING COMPANY TEL NO. 805 489-3684
ADDRESS 6200 PERKINS RD. OXNARD CA 93030
number street state zip

SEL NO. (Lab only)	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
<u>399</u>	<u>NT 94</u>	<u>SOIL</u>	<u>SOIL SAMPLE BELOW NT 89</u> <u>9" BELOW SURFACE OF PROCESS</u> <u>MATERIAL 1-2" INTO SOIL</u>

SPECIAL HANDLING AND/OR STORAGE _____

CHAIN OF CUSTODY:

1.	<u>Glenn Takeoka</u> signature	<u>W.M.S.</u> title	<u>10-4-79</u> - <u>10-9-79</u> inclusive dates
2.	_____ signature	_____ title	_____ inclusive dates
3.	_____ signature	_____ title	_____ inclusive dates
4.	_____ signature	_____ title	_____ inclusive dates

SPECIAL REMARKS DUPLICATE SAMPLES GIVEN TO COMPANY
(e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY Mary W. Clavidge TITLE PH Chemist DATE 10/9/79
SAMPLE ALLOCATION: HML LABL LBL OTHER _____ DATE 10/15/79

ANALYSIS REQUESTED HEAVY METALS SCAN, PH, AMMONIUM,
CHLORIDE, THORIUM

*Indicate whether sample is sludge, soil, etc.; **Use back of page for additional info.

SC LAB NO. 385-394
396-399

REQUEST FOR HAZARDOUS WASTES ANALYSIS

SAMPLING NO. : NT 80-NT 89, NT 91-NT 94 DATE SUBMITTED: 10/9/79
 SAMPLING LOCATION: Halaco Engineering Co. COLLECTED BY : Ned A. Sherien
 SAMPLING DATE : 10/4/79 TIME: _____ SUBMITTED BY : Glenn Takeoka
 HAULER : _____ MANIFEST NO. : _____
 TYPE OF PROCESS : _____ VOLUME : _____ Bbl./Gal.
 TYPE OF WASTE : _____
 PRODUCER : Halaco Engineering Co.
 ADDRESS AND PHONE: 6200 Perkins Rd., Concord CA 93030

SAMPLE DESCRIPTION:

ANALYSIS REQUESTED:

SOUTHERN CALIFORNIA LABORATORY ANALYSIS RESULTS

CHEMIST: Mary W. Claridge DATE COMPLETED: 10/31/79

SEL No.	Sampling No.	pH	Ammonium (calculated as NH ₄) ppm	Chloride ppm
385	NT 80	9.7	810	5,200
386	NT 81	9.8	980	5,000
387	NT 82	8.8	36	1,600
388	NT 83	9.7	650	1,400
389	NT 84	(10% solution) 8.5	660	11,000
390	NT 85	9.1	370	26,000
391	NT 86	9.6	250	78,000
392	NT 87	8.9	2,300	28,000
393	NT 88	9.0	450	25,000
394	NT 89	10.0	5,500	120,000
396	NT 91	9.6	5,300	16,000
397	NT 92	9.1	4,500	71,000
398	NT 93	9.6	360	83,000
399				

REQUEST FOR HAZARDOUS WASTES ANALYSIS

SAMPLING NO. : NT 90 DATE SUBMITTED: 10/4/79
 SAMPLING LOCATION: Halaco Engineering Co. COLLECTED BY : Ned C. Therien
 SAMPLING DATE : 12/4/79 TIME: _____ SUBMITTED BY : Deena J. Jurek
 HAULER : _____ MANIFEST NO. : _____
 TYPE OF PROCESS : _____ VOLUME : _____ Bbl./Gal.
 TYPE OF WASTE : _____
 PRODUCER : Halaco Engineering Co.
 ADDRESS AND PHONE: 6200 Perkins Rd, Alhambra CA 93030

SAMPLE DESCRIPTION:

ANALYSIS REQUESTED:

SOUTHERN CALIFORNIA LABORATORY ANALYSIS RESULTS

CHEMIST: Mary W. Clardge DATE COMPLETED: 10/31/79

pH (46.2 gm/300 ml) = 9.2

Ammonium (calculated as NH₄) = 50 ppm

Chloride = 49,000 ppm

Sulfate (calculated as H₂SO₄) = 490 ppm

**Reference
No. 7**

**Multi-Agency Radiation Site Survey and
Investigation Manual
(MARSSIM)
Appendix B Survey Report for the
Halaco Engineering Company Site**

Oxnard, California

October 2000



TETRA TECH NUS, INC.

INTRODUCTION

1.1 EXECUTIVE SUMMARY

Tetra Tech NUS performed a surface radiological characterization of the Halaco Engineering Company (Halaco) on October 17-19, 2000. This characterization was intended to assess the locations and levels of radioactive materials present in surface areas on the site. The survey protocol used is derived from Appendix B of Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM NUREG 1575).

All accessible areas east of the Oxnard Industrial Drain (OID) were surveyed and the area west of the OID along the drain bank was also surveyed. Background radiation levels were measured daily at a nearby location (shown on a map in Appendix A), outside the Halaco property. Results of the survey show that the highest radiation levels are along the OID on both the north-east and south-west sides of the bridge. Other areas of elevated readings were found on the bank between the two roads leading to the waste disposal area and areas that the State of California Department of Health Services – Radiological Health Branch identified during their last inspection of the site on March 9, 2000. These areas include the “Wet-2 Slope” area on the east side of the site at the bottom of the settling pond pile and an area on the south-east side of the settling pond pile. Maps of the radiological survey grids and elevated radiation level areas are presented in Appendix A of this report.

All survey readings are presented in Appendix C of this report. Readings that were twice above background are shown in bold type on the data sheet for each grid. Also, all elevated readings and their corresponding grids are presented on a map in Appendix A. The highest reading encountered was 15,000 counts per minute (cpm) along the bank of the OID north-east of the bridge. The reading of 15,000 cpm is approximately five times above the background radiation levels.

1.2 BACKGROUND

1.1.1 General History and Information

Note: The general history and information on Halaco provided in this section is based on Tetra Tech NUS’s review of documents provided by Halaco.

Halaco first moved to Oxnard, California in 1965. The facility consists of 40 acres. The office and foundry facilities are situated on the 12 acres west of the Oxnard Industrial Drain (OID) and a settling pond and waste disposal site are located on approximately 28 acres east of the OID.

Halaco variously purchased magnesium scrap and drosses and aluminum scrap (including specifically aluminum cans) and drosses. The magnesium scrap, aluminum scrap, the high-recovery magnesium drosses, and the high-recovery aluminum drosses were directly melted in a rotary furnace. The aluminum was cast into sows (large 2000-pound metal blocks) for sale and the magnesium was cast into sows for melting in another crucible for ingoting.

The low-recovery magnesium and low-recovery aluminum drosses were first processed with the washer. Recovered metals from the washer were then melted in the rotary furnace and the resulting magnesium sows were analyzed and then re-melted for appropriate alloying and transfer

**MARSSIM Appendix B Survey Report for the
Halaco Engineering Company Site**

to the ingot pot. The aluminum was directly cast into sows for sale. All of the rotary furnace melting operations generated additional low-recovery drosses which were in turn put into the washer to recover any remaining metal.

The washer crushes the drosses with water being added to solublize the salts and to separate the fine oxides and dirt from the recoverable metals. The resulting slurry was pumped to a settling impoundment, where the water evaporated and the dried solids were dredged and placed onto the berms of the settling pond and onto the disposal area.

Sometime between 1965 and 1977, Halaco received and processed limited magnesium thorium scrap. Halaco informed Tetra Tech that the average amount of magnesium thorium scrap received each year was 500 to 600 pounds, and the total amount received from 1965 to 1977 was approximately 7,000 pounds, except for a single purchase of 3,000 pounds of magnesium thorium scrap which was resold by Halaco as scrap metal. The 7,000 pounds of magnesium thorium scrap is the source of the radioactive material that presently exists on the Halaco site.

1.1.2 Radioactivity of Concern

The radionuclides of concern at Halaco are those radionuclides originated from the magnesium thorium scrap, including thorium-232 and its decay products and thorium-230 and its decay products. Thorium-232 has a long decay chain. It decays into thorium-228, then decays to radium-228, and then further decays to radon-220. The decay of thorium-232 into thorium-228 places these isotopes in equilibrium. That means if thorium-228 were present as a result of decay from thorium-232, the thorium-228 activity would be equal to the thorium-232 activity. Thorium-230, although a member of the uranium-238 decay chain, may also be present in the magnesium thorium scrap decays to radium-226.

1.2 PURPOSE OF THE RADIOLOGICAL SURVEY

Tetra Tech NUS performed the radiological survey at Halaco to assess the location and levels of radioactive materials present in surface areas on the site. All accessible areas (28 acres) on the east side of the OID were divided into a grid and a walk-through survey was performed with static measurements taken every 10 feet. The area immediately west and along the OID was also surveyed. Areas where radiation levels were found to be twice background radiation levels or above, were thoroughly characterized and marked in yellow paint. Photos of these areas appear in Appendix B.

This survey was intended to provide an aboveground characterization of the site. The information presented in this report is intended to provide a technical and visual representation of the areas containing surface radioactive materials at Halaco.

2.0 SUMMARY OF THE SURVEY PLAN

2.1 SCOPE

This survey was performed based on the assumption that Halaco falls into the category of a small quantity user of radioactive materials, and as such is subject to the simplified procedure to demonstrate regulatory compliance as presented in Appendix B of Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM NUREG 1575). The survey protocol was to

**MARSSIM Appendix B Survey Report for the
Halaco Engineering Company Site**

use typical grid sizes for radiological surveys of identified areas to be surveyed. However, it is recognized that specific sites vary in their sizes and configurations. Therefore, slight adjustments to grid sizes were required. When adjusting the grid sizes, efforts were made to ensure that the extent and symmetry to which the specific site is surveyed (that is, its *survey coverage*) was not changed. This is to preclude performing surveys, which are not representative of the specific site.

The following were the survey requirements for this project:

- a. Size of grids to be determined on site, if needed.
- b. No sub-grids required.
- c. Each grid identified with a unique designation.
- d. A narrow gamma energy range scintillation scan survey was not required unless survey readings require further investigation.
- e. A wide gamma energy range scintillation walk-through scan survey was performed over the specific site.
 - 1) Surveying was performed along paths approximately five to six feet apart such that representative measurements of potentially deposited surface contamination was obtained.
 - 2) At approximately ten-foot intervals along the survey path, wide gamma energy range scintillation point (static) measurements were taken.
 - 3) Point (static) measurements were required when sustained increases in count rates were observed.
 - 4) Walk-through surveys performed in high potential areas were supplemented by a more concentrated scan survey.

2.2 WALK-THROUGH SURVEY PLAN HIGHLIGHTS

The radiation survey that was conducted at Halaco consisted of the following steps:

1. Review and evaluate available historic information about the site and the radionuclides of concern.
2. Identify specific areas of the site that may contain surface radioactive materials.
3. Obtain the appropriate instruments and materials to conduct the survey.
4. Mark each specific site with a pre-determined grid pattern and survey in accordance with MARSSIM Appendix B.
5. Measure natural (background) radiation levels to distinguish residual radioactivity from that which is naturally-occurring or that, which is inherent to commercial or industrial processes.
6. Document the results in a reviewed final report that clearly and concisely details what was done and what results were obtained.

3.0 RELEASE CRITERIA

3.1 RADIOLOGICAL SURVEY RELEASE CRITERIA

The radiological release criteria for license termination, defined in 10 CFR 20, Subpart E, Section 20.1402, state that a site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a Total Effective Dose Equivalent (TEDE) to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year including that from groundwater sources of drinking water, and that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). To demonstrate compliance with the 25 mrem per year standard would require a site-specific dose assessment, including identification of future land use scenarios, receptors and exposure pathways, and specific parameter values for each receptor and exposure pathway.

3.2 ACTION LEVELS

During this surface survey, if walk-through survey measurements for point (static) measurements and scan surveys indicated radiation at levels equal to or greater than twice background radiation levels, additional measurements were taken to properly characterize the area in question. Section 4.3 describes the background radioactivity characterization effort.

4.0 SURVEY TECHNIQUES

4.1 EQUIPMENT USED FOR SURVEYS

Instruments were chosen that are most appropriate for measurement of thorium and radium radiation levels at the Halaco. These instruments provide a reliable indication that surface radioactive material is present at a given location. The specific details of each instrument is listed in Sections 4.11 and 4.1.2

4.1.1 Gamma Scintillation Survey Equipment: Ludlum Model 12 Count Rate Meter with a Model 44-2 Gamma Scintillation Probe

This instrument was used for walk-through surveys (static measurements) to detect gamma radiation over a broad energy range (from 0.1 MeV to approximately 8.0 MeV while in the GROSS mode). The Ludlum Model 12 has a linear scale ranging from 0 to 500 cpm; 50 to 500k cpm logarithmic scale. A scale multiplier of X1, X10, X100, X1,000 or LOG for logarithmic scale is selected based on the radiation levels being measured. The gamma scintillation detector probe consists of a cylindrical housing containing a 2-inch diameter by 2-inch long sodium iodide with thallium [NaI (Tl)] crystal. Typical detection characteristics of this gamma scintillation equipment are an accuracy of ± 10 percent and a sensitivity of 200 cpm/ μ R/hr. The Ludlum Model 12 was calibrated using a cesium-137 source. This instrument was checked daily prior to use to verify proper operation by performing a cesium-137 source check and a battery check to verify meter response.

4.1.2 Beta-Gamma Survey Equipment: Ludlum Model 3 Count Rate Meter with a Model 44-9 Pancake Geiger-Muller (GM) Detector

This instrument was used for scan surveys to detect both fixed and loose surface beta/gamma radiation. The Ludlum Model 3 has a linear scale of 0 to 500 cpm. A scale multiplier of X0.1, X1, X10 and X100 was selected based on the radiation levels being measured. The halogen-quenched pancake G-M detector has a 1.7 mg/cm² mica window with an active area of 15 cm². This instrument detects a high percentage of low energy beta particles (less than 200 keV). This instrument was checked daily prior to use to verify proper operation by performing a cesium-137 source check and a battery check to verify meter response.

4.2 SURVEY TECHNIQUES

Walk-through surveys (static measurements) were performed with a gamma scintillation instrument (Ludlum Model 12 Count Rate Meter with a Model 44-2 Gamma Scintillation Probe) and a beta-gamma instrument (Ludlum Model 3 Count Rate Meter with a Model 44-9 Geiger-Meuller probe) by either carrying the instrument by hand or pushing a hand cart with the instrument attached. Walk-through surveys were performed by walking slowly through the specific site, maintaining the gamma detector probe approximately three feet above the area surface, and stopping approximately every 10 feet to take static measurements. The beta-gamma probe was used to perform static measurements at the surface level when radiation levels were twice the levels of background radiation.

Since the presence or absence of various naturally-occurring radioisotopes and the equilibrium state of thorium and radium was unknown, beta-gamma scans were used for detection purposes only. The scanning detector (Model 44-9 probe) was held within one-quarter inch of the surface for beta-gamma survey scans with its most sensitive portion parallel to the surface and approximately a 100 cm² area was surveyed at each location.

Survey practices include using the audible response of the instrument for gross detection and, after stabilization, using the meter response for static measurements. The speed of the walk-through surveys was no more than 1 foot per second.

Walk-through surveys were designated such that all accessible portions of the site's areas of concern (AOCs) were surveyed. Any reading exceeding twice background was investigated by a more detailed survey.

4.3 NATURAL BACKGROUND DETERMINATION AND CRITICAL LEVEL

Natural background radiation levels (in cpm) were determined by taking background radiation measurements at areas unaffected by Halaco operations and representative of the soil type of the AOCs. Background radiation measurements were taken in at least three different representative areas, with the results averaged for a single daily background reading.

Determining the presence or absence of radioactivity at levels above background generally requires accounting for fluctuations inherent in the normal background radiation dose rate. The approach requires counting statistics, whereby multiple measurements are made with the same instrument over an extended period of time to determine the average background rate. This is

**MARSSIM Appendix B Survey Report for the
Halaco Engineering Company Site**

determined based on the standard deviation of the mean and the 95 percent confidence level above which it would be judged that radioactivity is present above background levels.

For field investigations, however, this rigid approach is not practical for several reasons as listed below:

- Variations in background rate may occur throughout the day, which would necessitate a different critical level as a function of time.

- Movement of equipment and other items near the area being surveyed could cause increases in the measured background radiation due to naturally occurring radioactive material present in the materials or decreases in the measured background radiation due to shielding provided by the equipment or item.

These obstacles have been eliminated by setting a threshold for declaring the presence of radioactivity that is a multiple of the background rate measured at any given time. A common value used by nuclear facilities (and accepted by NRC and EPA) is two times the background rate. If a survey shows a measured dose rate that is twice the background rate measured just before surveying the item, then the item would be assumed to be contaminated. The logic is that the background follows a statistical distribution centered about the mean value. If the distribution is roughly symmetrical, the distribution from 0 to the mean should be almost a mirror image of the distribution from the mean to twice the background. If the threshold level is set at twice the background, the value is consistent with the critical level (L_c) that would be calculated using standard formulas for determining that activity above background. The measured background readings are presented in Appendix C of this report.

5.0 SURVEY RESULTS

All accessible areas east of the Oxnard Industrial Drain (OID) were surveyed and the area west of the OID along the drain bank was also surveyed. Background radiation levels were measured daily at a nearby location (shown on a map in Appendix A), outside the Halaco property. Results of the survey show that the highest radiation levels are along the OID on both the north-east and south-west sides of the bridge. Other areas of elevated readings were found on the bank between the two roads leading to the waste disposal area and areas that the State of California Department of Health Services – Radiological Health Branch identified during their last inspection of the site on March 9, 2000. These areas include the “Wet-2 Slope” area on the east side of the site at the bottom of the settling pond pile and an area on the south-east side of the settling pond pile. Maps of the radiological survey grids and elevated radiation level areas are presented in Appendix A of this report. Photos of the Halaco are presented in Appendix B of this report.

All survey readings are presented in Appendix C of this report. Readings that were twice above background are shown in bold type on the data sheet for each grid. Also, all elevated readings and their corresponding grids are presented on a map in Appendix A. The highest reading encountered was 15,000 counts per minute (cpm) along the bank of the OID north-east of the bridge. The reading of 15,000 cpm is approximately five times above the background radiation levels.

Tetra Tech
October 2000

MARSSIM

Appendix A-D

APPENDIX A

SURVEY and AREA MAPS

MARSSIM Appendix B Survey Report for the
Halaco Engineering Company Site



GRAPHICS\Misc Projects 2000\HALACO\1 Halaco elev rad.ai

Figure 1 Halaco Engineering Company
Site Map

MARSSIM Appendix B Survey Report for the
Halaco Engineering Company Site

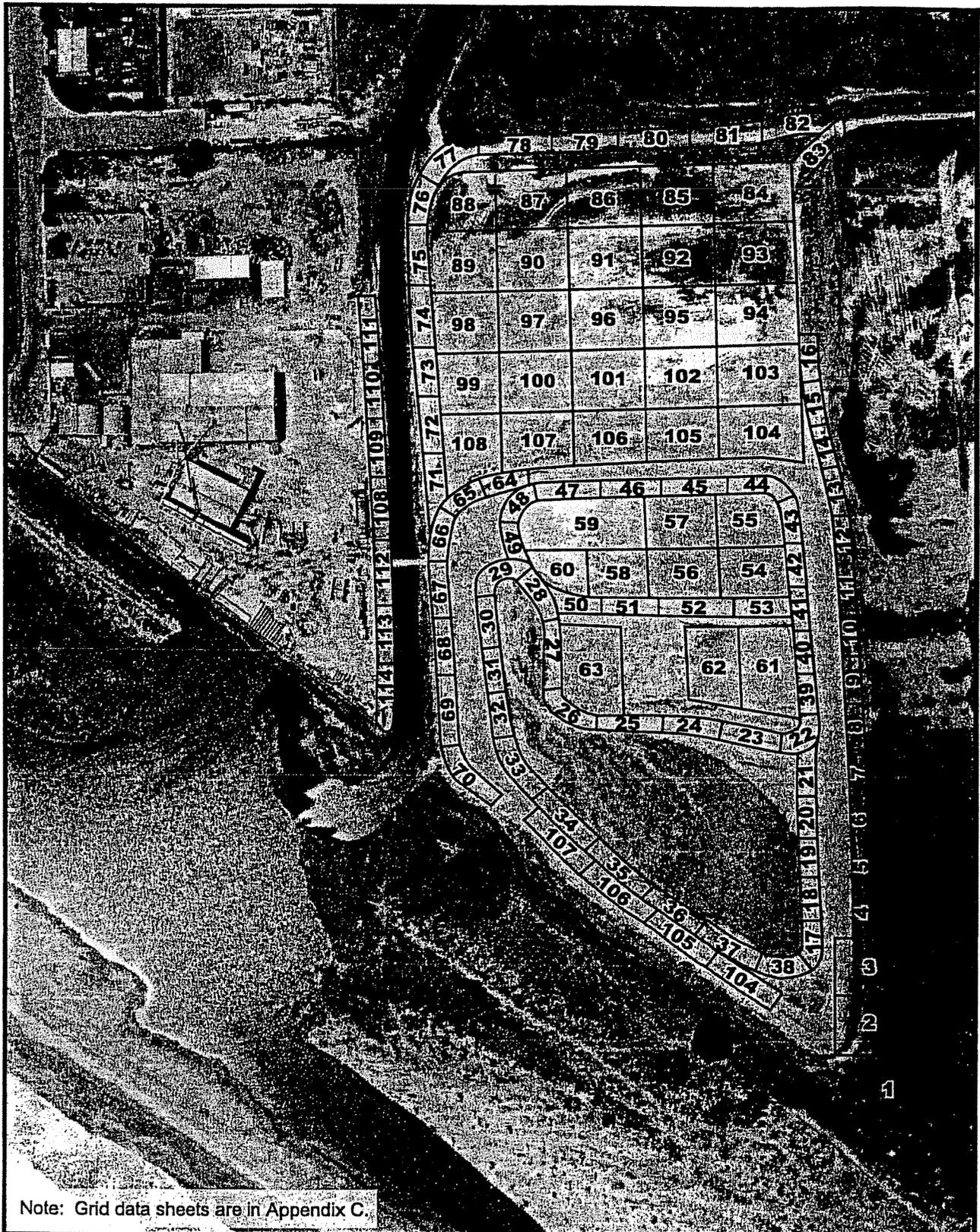


Figure 2 Halaco Engineering Company
Radiological Survey Grids

MARSSIM Appendix B Survey Report for the
Halaco Engineering Company Site



**Figure 3 Halaco Engineering Company
Areas with Elevated Radiation Levels**

APPENDIX B

AREA PHOTOS

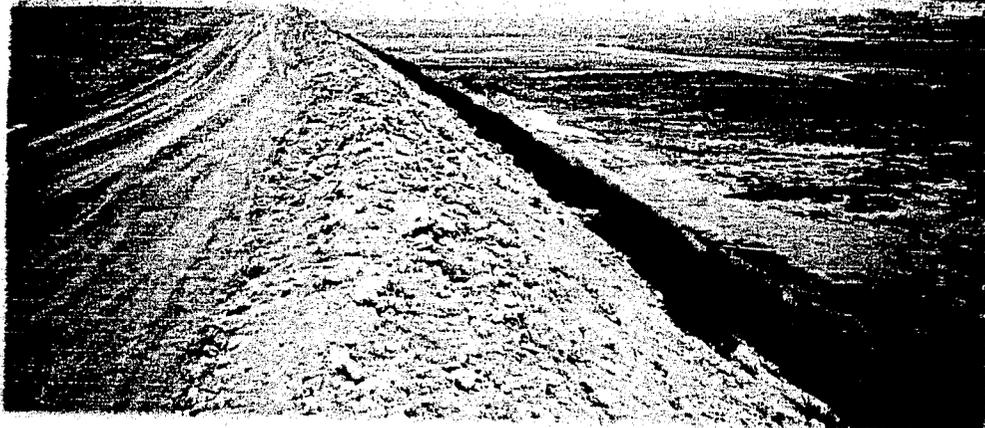
Settling Pond "A"
(Gamma Scintillation Survey Meter is shown on hand cart)



Settling Pond "B"



Road near Settling Pond "C"



Settling Pond "C"
(Unable to survey)



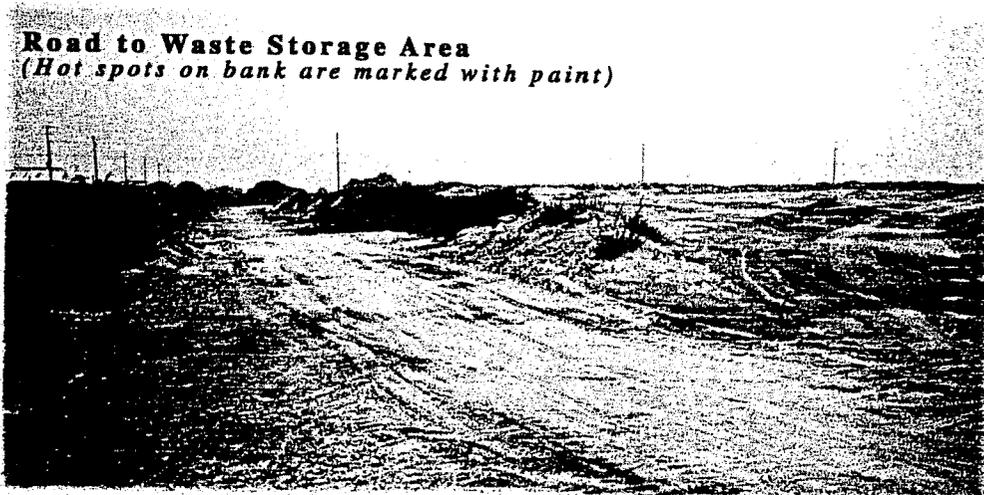
**Oxnard Industrial Drain
south of bridge**
*(Hot spots exist on
bank near the mixer)*



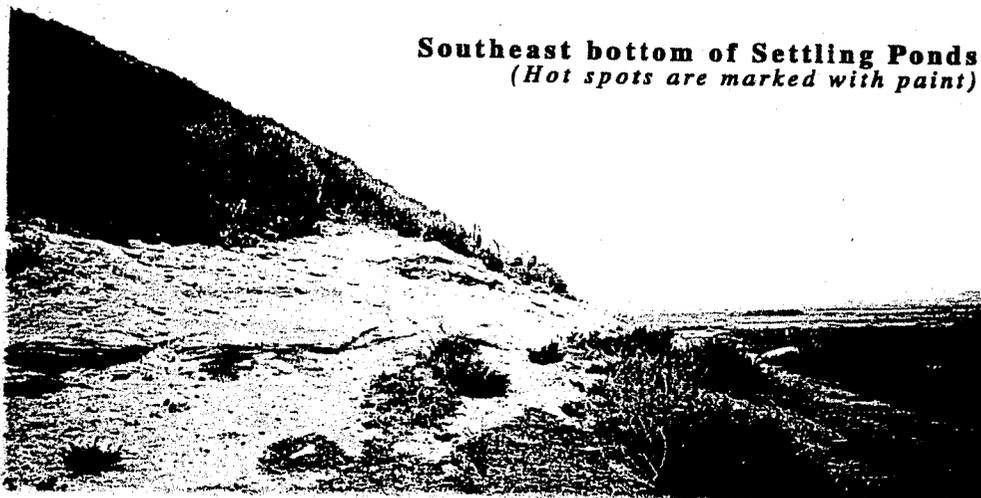
**Oxnard Industrial Drain
north of bridge**
*(Hot spots are marked with
paint near drain bank)*



WET-2 Slope Sampling Area
eastside of settling ponds
(Hot spots are marked with paint)



Road to Waste Storage Area
(Hot spots on bank are marked with paint)



Southeast bottom of Settling Ponds
(Hot spots are marked with paint)

**Reference
No. 8**

D10

HAZARDOUS WASTE

SURVEILLANCE AND ENFORCEMENT REPORT

DATE October 4, 1979

FIRM NAME Halaco Engineering Company SITE CLASSIFICATION I II-I II
 ADDRESS 6200 Perkins Road III
Oxnard, CA 93030 Other _____

SITE PERMIT NO. _____

ACTIVITY: Inspection of On-site Disposal Operation of Possibly Hazardous Waste.

COMMENTS: Glenn Takeoka and myself, met with Leslie Fine, Vice President of Halaco Engineering Company, on October 4, 1979, at his office at 6200 Perkins Road, Oxnard, California. Mr. Fine appeared to be annoyed with our request to inspect his facility and take samples of his waste. His annoyance waned somewhat after we explained the California Hazardous Waste Laws and Regulations and we assured him that we were there to determine if Halaco Engineering might be discharging hazardous wastes into their evaporation pond but were not trying to prove a preconceived notion that they were.

Mr. Fine was familiar with the State's Hazardous Waste Regulations. He contested the validity of listing a chemical as hazardous and then assuming that it was hazardous under all conditions. He questioned what conditions make something hazardous. Is it hazardous if you eat it, look at it, smell it, or swim in it? He made the point that magnesium is listed in the Regulations as a hazardous material without any mention of a concentration at which it is hazardous. We noted it was because of flammability. He said that would mean that when mixed with sand to a ten percent dilution that it would not be hazardous according to the metalurgical literature. Mr. Takeoka and myself, explained that HMMS had provisions to allow a waste material, listed as hazardous in the Regulations, to be demonstrated to be nonhazardous by reference to accepted literature or by laboratory means. We avoided debating with Mr. Fine on the propriety of the Regulations.

Mr. Fine explained that Halaco Engineering processes scrap material to recover and recycle aluminum and magnesium. They used to recycle zinc but no longer do so. The scrap aluminum or magnesium is mixed with flux consisting of sodium chloride, potassium chloride, and magnesium chloride. The metal is extracted by melting in furnaces and being poured into molds. The accumulated sludge with its salts from the flux material and residue from the scrap metal, is collected from the furnaces and tumbled with water in a large cylindrical washer-tumbler. This breaks up the sludge material. The salts, dirt, and other small particulate matter is discharged with the water into an evaporation pond. The metal aggregates are recovered and reprocessed through the furnaces with new scrap metal. See Attachment 1.

INSPECTOR Ned Therien, Glenn Takeoka DATE November 2, 1979

The scrap metal accepted by Halaco Engineering was said by Mr. Fine to contain salt and other nonmetallic impurities plus various metallic impurities. The magnesium scrap metal contains copper, manganese, nickel, silver, and silicon. The aluminum scrap metal contains one to three percent copper plus silver, zinc, lead, chromium, titanium, tin, silicon, and minute quantities of many other impurities. The magnesium scrap is made up of such things as Volkswagen motor parts and aircraft wheels. The aluminum scrap consists of shredded cans, machine shop borings, aluminum-copper radiators, and blocks of partially processed scrap aluminum from other companies.

All of the industrial waste from the Halaco plant goes into their waste evaporation pond except for what is trapped on the air pollution control apparatus filters. The waste discharged to the pond is what is received in the washer-tumbler water and the water from the air pollution equipment scrubbers for the furnace stacks. Water from the waste evaporation pond is recycled back through the air pollution equipment scrubbers and redischarged to the pond. Halaco has applied to the Oxnard sewerage agency to discharge their industrial waste water to the industrial waste channel that runs through their property. They presently discharge nothing to the channel, but they used to discharge to the channel until the Regional Water Quality Control Board (RWQCB) made them quit.

Joshua Workman of the Los Angeles Region, RWQCB, arrived during the morning of the inspection to make his own inspection of the berm on the side of the waste evaporation pond next to the ocean. Dave Gable of Halaco accompanied him during his brief inspection. Mr. Fine made a comment that the RWQCB regularly inspected the pond but that the water under the Halaco facility was not of useful quality because it was so close to the ocean.

Mr. Fine requested that we note there were no dead birds or animals in or around the waste evaporation pond and indeed, there were live birds on it. He said that there are sometimes as many as 500 birds on the pond and Halaco is furnishing them a habitat. It was also noted, however, that except for a few shrubs on the south side of the pond, no vegetation was growing on the pond banks or on the sludge dredged from the pond. Mr. Fine said that was due to the high salt concentration of about six percent in the material. A heavy growth of vegetation was noted on the land adjacent to the area used for the waste disposal site.

Mr. Fine said he has had chemical analyses performed on the sediment in the waste evaporation pond. He stated that except for copper, zinc, and manganese, any constituents of concern in the waste sediment are in insignificantly low concentrations. He said that lead analysis results were suspicious but unreliable because of interference in the analysis with other constituents. He demanded to receive a copy of the analyses results on any samples we collected along with a listing of the procedures used in the analyses. He stated that comparison standards should

October 4, 1979

constantly be used during the analyses to prevent obtaining false results.

Mr. Fine wanted us to be sure we knew that the Halaco facility was constructed over the former site of the Oxnard open-burning dump. He didn't feel Halaco should be held responsible for any hazardous material discovered in analyses of samples we collected that were related to the old dump. Halaco purchased the property in 1965. They used local material to cover the dump area. They had problems with people sneaking in and dumping waste material after the dump had been closed and covered.

During our tour of the Halaco facility, Glenn Takeoka and I requested to take photographs of the operation. Mr. Fine gave us permission to take pictures only of areas where waste had been disposed. He particularly objected to having any pictures taken of the scrap metal storage areas and the washer-tumbler. He related his objection to having the washer-tumbler photographed to his assertion it was a proprietary apparatus.

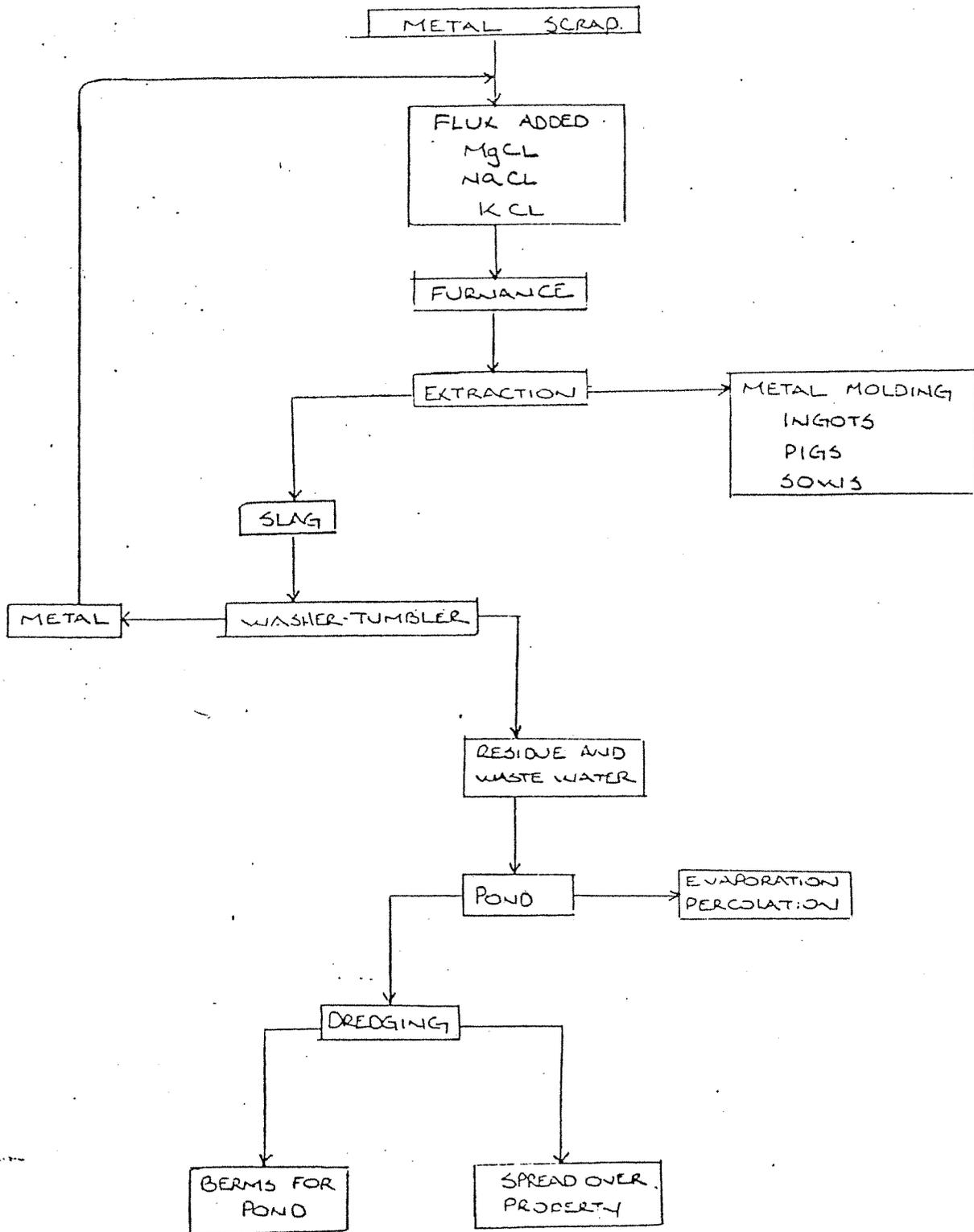
Glenn Takeoka and I, proceeded to take samples of waste material around the Halaco facility. Mr. Pine or Dave Gable were present during all of the sampling. Mr. Fine objected as we began to take the first sample of the liquid effluent at the washer-tumbler because he did not consider it waste until it ran down the approximately 200 feet of pipe into the pond. He finally decided it was all right. An ammonia odor was noticed coming from the washer-tumbler effluent. Mr. Fine would say no more than it was produced in the process and that it would show up in the analyses of the waste if it was of concern. The ammonia odor was noticed emanating from the pond and the sludge dredged from the pond. The pond was bubbling in the area of discharge of the washer-tumbler and the air pollution equipment furnace stack scrubber. The sludge pile of sediment dredged from the pond was noticed to "crackle" on its own.

Samples were collected as described in the following table with the location of sampling indicated on the diagram of the facility, Attachment 2. The location of the facility is demonstrated in Map Attachments 3, 4, 5, and 6.

Sample Number	Description of Sample
NT-80	Liquid effluent obtained at washer-tumbler.
NT-81	Liquid effluent of washer-tumbler obtained at pond discharge.
NT-82	Liquid effluent of air pollution equipment obtained at pond discharge. pH 7 by indicator paper.

Sample Number	Description of Sample
NT-83	Liquid from northeast side of pond. Ammonia odor very noticeable.
NT-84	Gray sediment from surface three inches from dry area in the middle of the pond.
NT-85	Gray sediment from surface three inches from berm on north side of pond.
NT-86	Gray sediment from surface two inches from dry bank of south side of pond four feet inside the berm.
NT-87	Gray sediment with bluish-green crust from surface three inches of sediment pile on north side of pond. Ammonia odor very noticeable. Popping, crackling sound from sediment pile.
NT-88	Gray sediment from surface three inches from fill area north of sediment piles north of pond.
NT-89	Gray material from surface three inches from unpaved holding area for furnace sediment before processing through the washer-tumbler. Mr. Fine stated this was not waste at this point.
NT-90	Section of leaf air pollution control unit filter with impinged particulate matter.
NT-91	Dry foam from around pond discharge pipe from washer-tumbler.
NT-92	Bluish-green surface sediment top half inch of sediment pile on north side of pond. Mr. Fine stated this bluish-green material represented only one thousandth of the total surface area of the disposal pond.
NT-93	Gray surface sediment top half inch of sediment pile on northeast side of pond.
NT-94	Soil from nine inches below surface of material on unpaved holding area for furnace sediment before processing through the washer-tumbler. This is soil from one to two inches below the overlying furnace sediment.

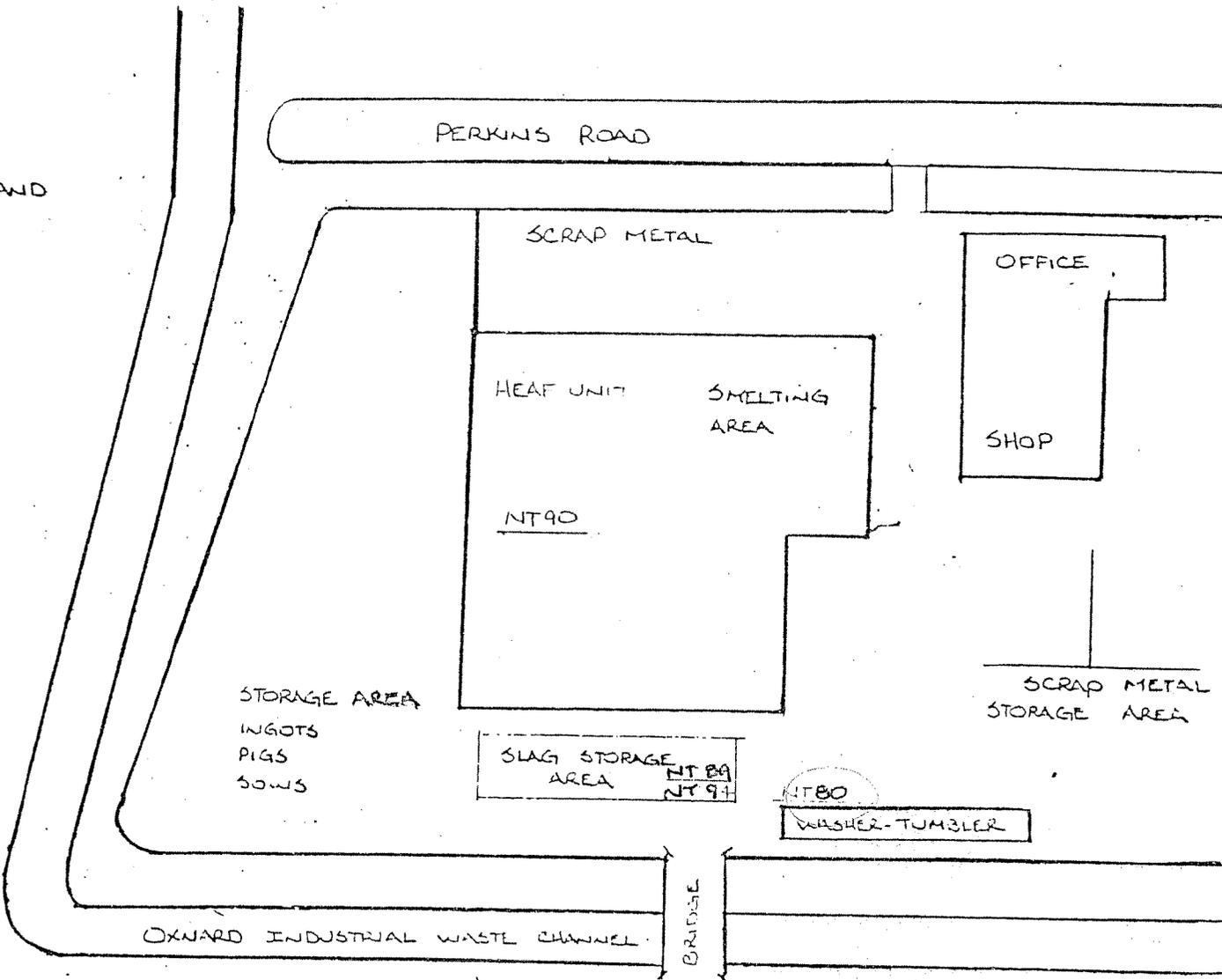
Duplicate of all samples were provided to Halaco. Dave Gable signed for the samples and requested copies of all data and photographs obtained during this inspection. See Attachments 7 and 8. I refused to provide them with a copy of my personal notes of the inspection written in my field book.



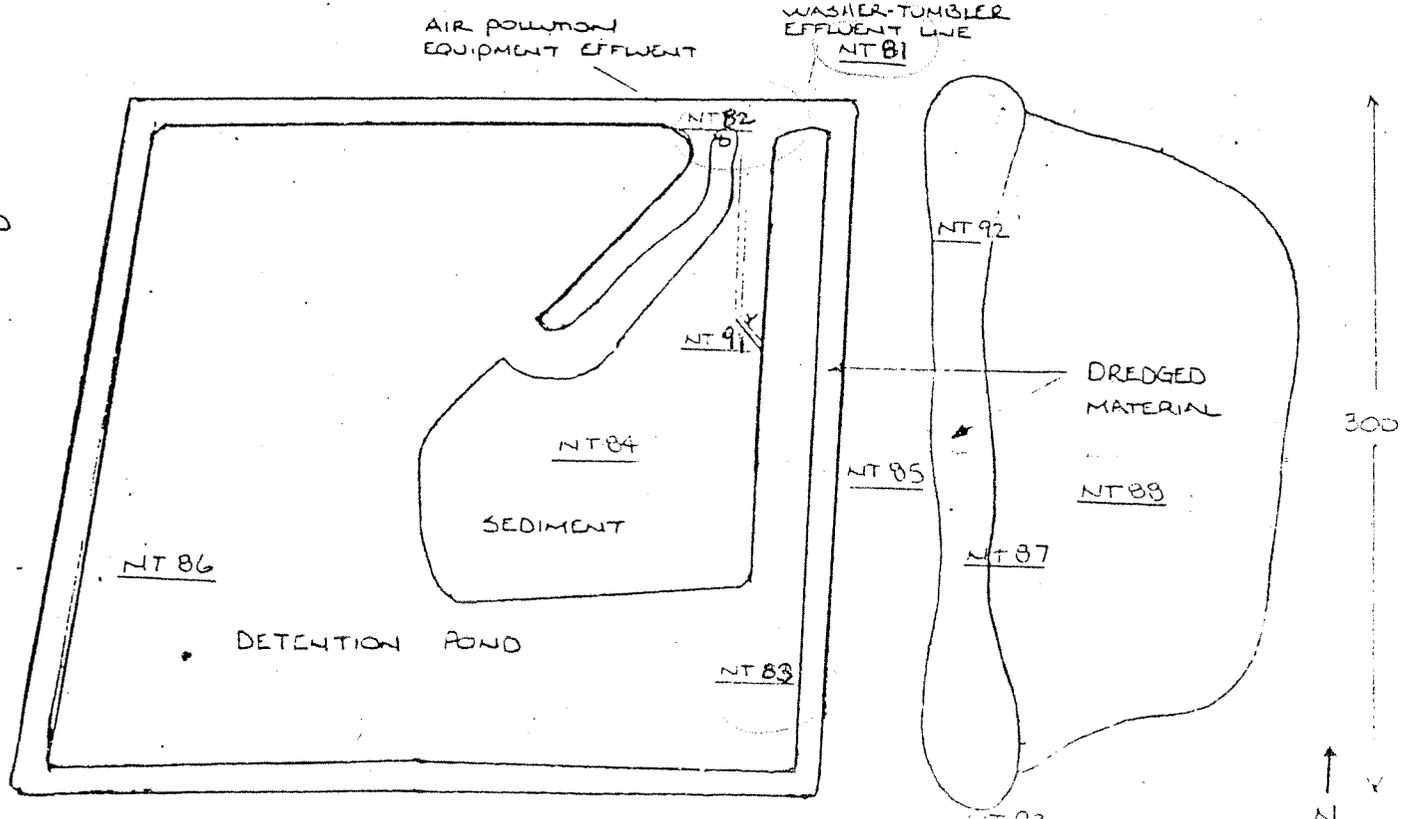
Attachment 1

FLOW CHART OF HALCO OPERATIONS

BEACH SAND
DUNES

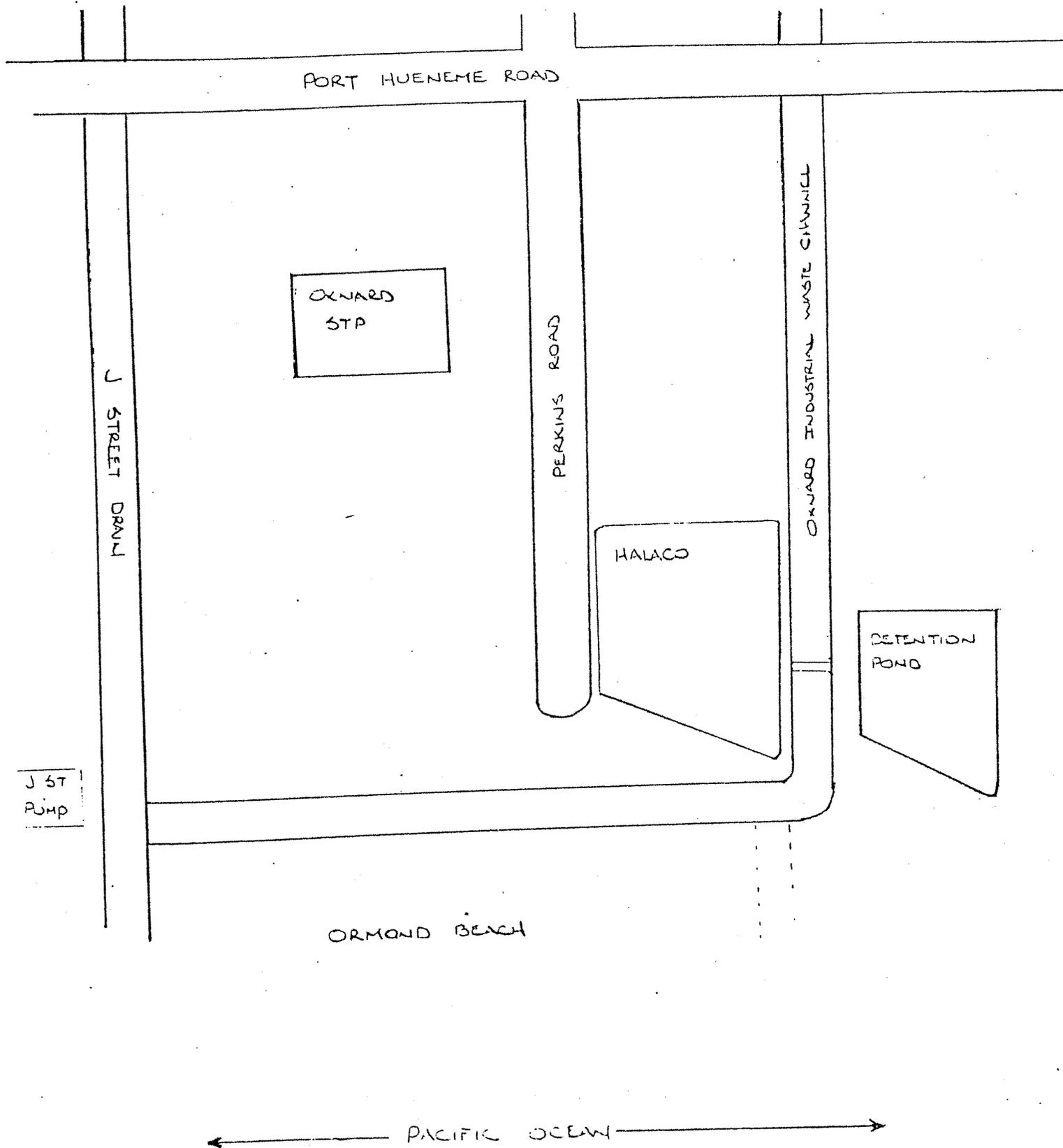


BEACH SAND
DUNES



HALACO ENGINEERING COMPANY

Attachment 3



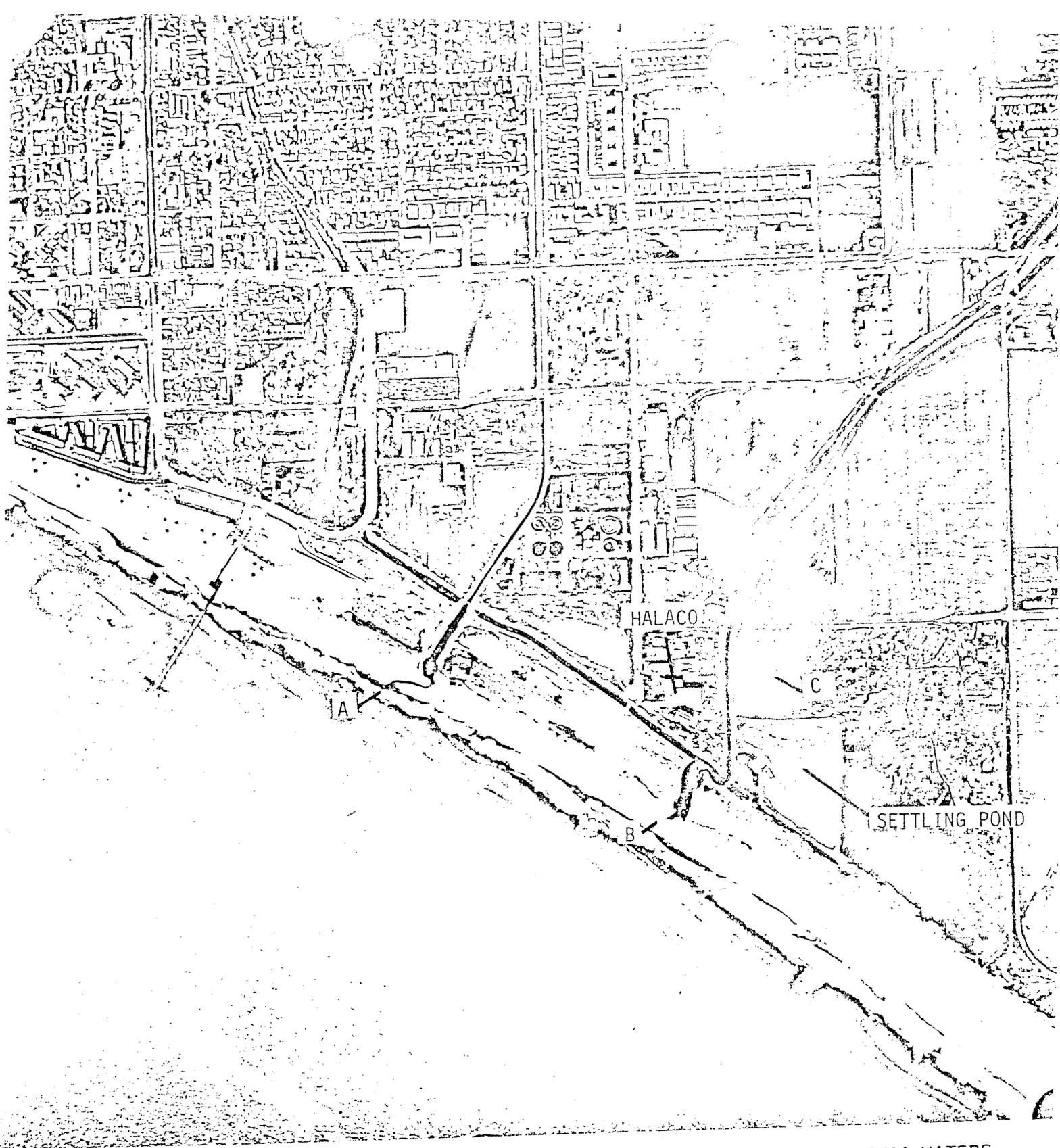
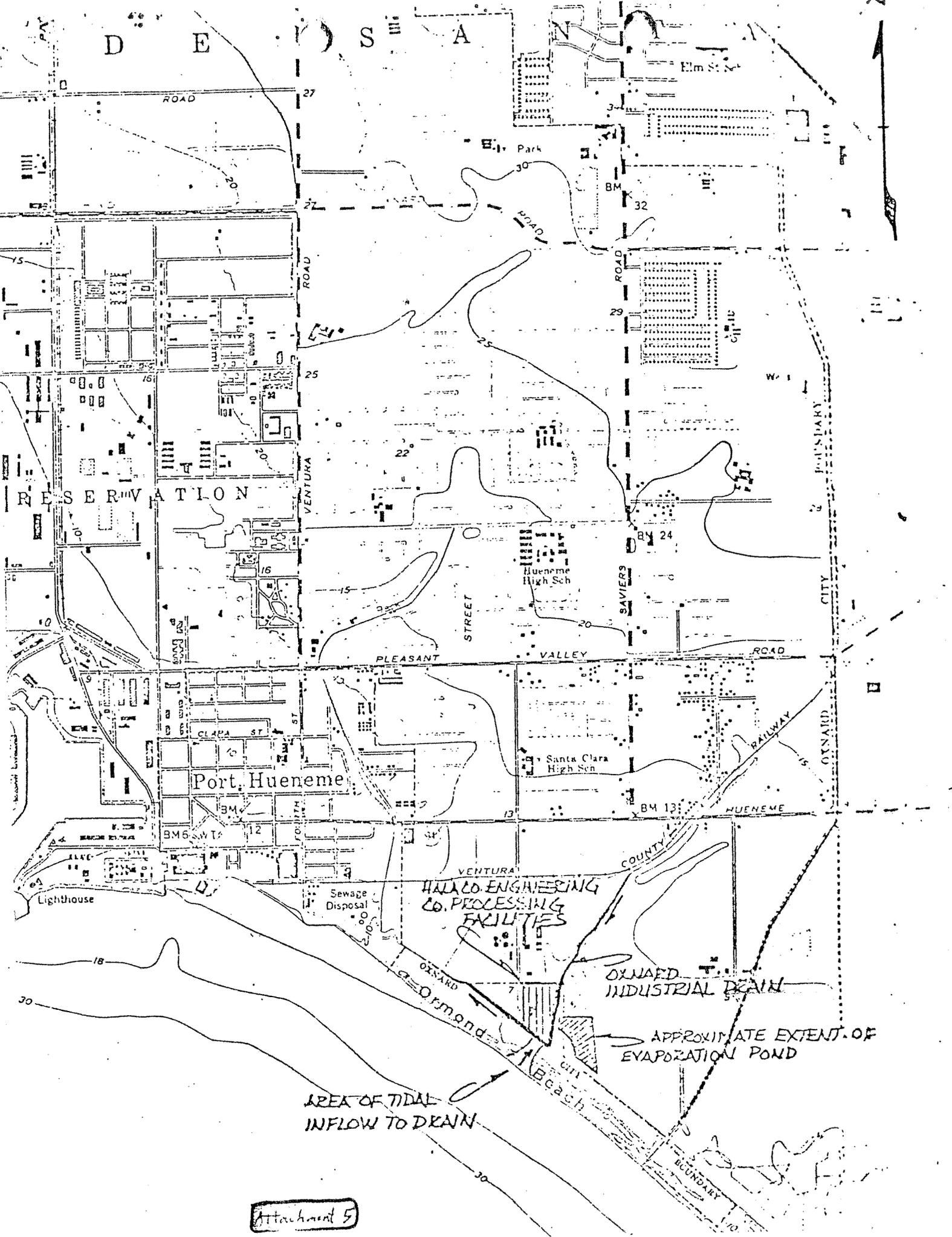


EXHIBIT III - AIR PHOTO TAKEN 1/14/74 NOTE COMPLETE BREAKTHROUGH OF BARRANCA WATERS AT POINTS A AND B. THESE BREAKTHROUGHS OCCURED DURING THE WINTER OF A DROUGHT YEAR. POND OF FRESHWATER IS STILL PRESENT NORTH OF SETTLING POND (C).

D E S A

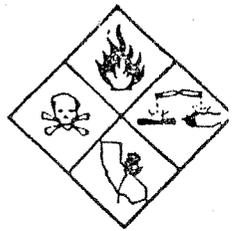


Attachment 5



HAZARDOUS MATERIALS
MANAGEMENT REPORT

Attachment 7



State of California
Department of Health Services
Hazardous Materials Management Section

744 - P St., Sacramento 95814
(916) 322-2337

2151 Berkeley Way, Berkeley 94704
(415) 540-2043

1449 W. Temple St., Los Angeles 9002
(213) 620-2380

Date 10/4/79

Firm Name Haluco Engineering, Company

Site Permit No. X

Address 6200 Perkins Road
Oxnard, CA 93030

Site Classification:
 I II-1 II-2 III
 Other

Person Interviewed Leslie Fine and Dave Gable

On this date an inspection of your facility was conducted under authority of Section 25185, California Health & Safety Code and Section 66328, California Administrative Code. The collection of samples or other evidence, including the taking of photographs, was done under authority of Section 66328, California Administrative Code. The following conditions or practices observed this date are alleged to be violations of one or more sections of the California Health & Safety Code, Division 20, or California Administrative Code, Title 22, relating to the storage, handling, transportation, and disposal of hazardous and extremely hazardous waste or asbestos containing products.

Glenn Takeoka and myself, Ned Therian, took
samples NT-80, NT-81, NT-82, NT-83, NT-84, NT-85,
NT-86, NT-87, NT-88, NT-89, NT-90, NT-91,
NT-92, NT-93 and NT-94 in duplicate at
the above mentioned firm this day. Duplicate samples
labeled 2 of 2 were provided to Haluco Engineering.
Haluco Engineering personnel witnessed that the samples
labeled 2 of 2 are representative of material sampled
and labeled 1 of 2 for retention by HMMMS. The
attached map shows sampling locations

Your signature acknowledges receipt of a copy of this report and collection of any samples described above.

Authorized Representative of Firm

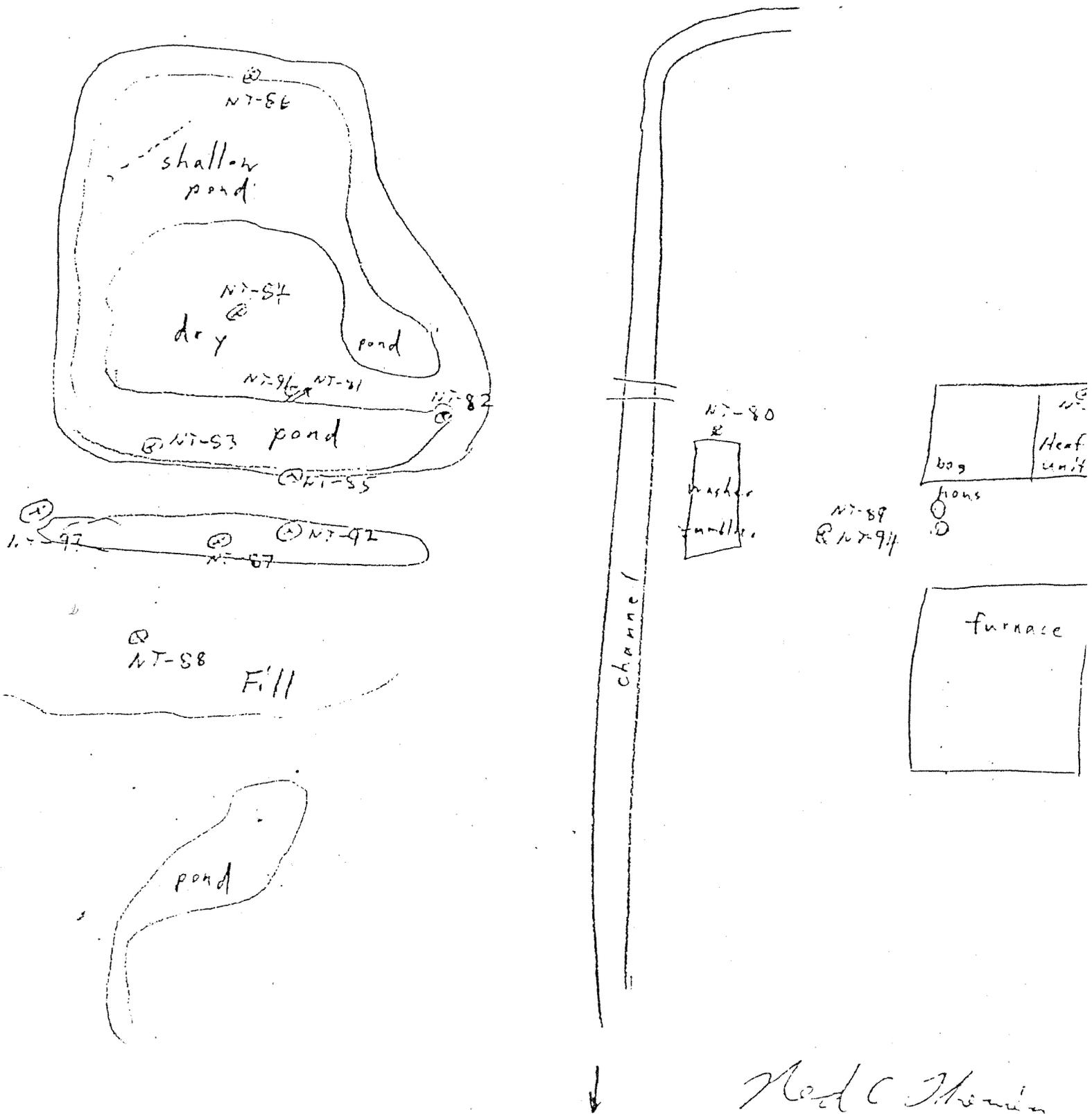
Name [Signature]
Title [Signature]

Haluco requests copies of all data and photographs obtained at time of sampling

Authorized Agent
Ned C. Therian
Waste Management Spec. HMMMS

Attachment 8

Samples collected 10/4/79 by Neil Therman and
Stenn Takeika of the Hazardous Materials Management Section



Neil C Therman

PRIORITY
(explain)

HML NO. 385
SEL 386
387
388
389
390
391

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR NED C. THERIEN DATE SAMPLED 10-4-79 TIME 1300 HOURS
LOCATION OF SAMPLING:
NAME HALACO ENGINEERING COMPANY TEL NO. 805 488-3684
ADDRESS 6200 PERKINS RD. OXNARD CA. 93030

SEL NO. (Lab only)	number	street	state	zip	COLLECTOR'S TYPE OF SAMPLE*	FIELD INFORMATION**
<u>385</u>	<u>NT 80</u>	<u>LIQUID</u>	<u>LIQUID EFFLUENT FROM WASHER (AT TUMBLE</u>			
<u>386</u>	<u>NT 81</u>	<u>LIQUID</u>	<u>WASHER INFLOW TO POND</u>			
<u>387</u>	<u>NT 82</u>	<u>LIQUID</u>	<u>AIR POLLUTION INFLOW TO POND</u>			
<u>388</u>	<u>NT 83</u>	<u>LIQUID</u>	<u>POND LIQUID N.E. SIDE (AMMONIA ODOR)</u>			
<u>389</u>	<u>NT 84</u>	<u>SEDIMENT</u>	<u>DRY AREA IN THE MIDDLE OF THE POND</u>			
<u>390</u>	<u>NT 85</u>	<u>SEDIMENT</u>	<u>BERM ON NORTH SIDE OF POND</u>			
<u>391</u>	<u>NT 86</u>	<u>SEDIMENT</u>	<u>SEDIMENT ON SOUTH SIDE OF POND</u>			

SPECIAL HANDLING AND/OR STORAGE _____

CHAIN OF CUSTODY:

1.	<u>Glenn Takeoka</u> signature	<u>W. M. S.</u> title	<u>10-4-79 - 10-9-79</u> inclusive dates
2.	_____ signature	_____ title	_____ inclusive dates
3.	_____ signature	_____ title	_____ inclusive dates
4.	_____ signature	_____ title	_____ inclusive dates

SPECIAL REMARKS DUPLICATE SAMPLES GIVEN TO COMPANY
(e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY Mary Willard TITLE PH Chem II DATE 10/9/79
SAMPLE ALLOCATION: HML LABL LBL OTHER _____ DATE 10/15/79

ANALYSIS REQUESTED HEAVY METALS SCAN, PH, AMMONIUM, CHLORIDE, THORIUM

*Indicate whether sample is sludge, soil, etc.; **Use back of page for additional info.

PRIORITY (explain) _____

~~FILE~~ NO. 392
SCL 393
394
395
396
397
398

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR NED C. THERJEN DATE SAMPLED 10-4-79 TIME 1300 HOURS
LOCATION OF SAMPLING:
NAME HALACO ENGINEERING COMPANY TEL NO. 805 488-3684
ADDRESS 6200 PERKINS RD. OXNARD CA. 93030
number street state zip

<u>SCL</u> <u>FILE NO.</u> (Lab only)	<u>COLLECTOR'S</u> <u>SAMPLE NO.</u>	<u>TYPE OF</u> <u>SAMPLE*</u>	<u>FIELD INFORMATION**</u>
<u>392</u>	<u>NT 87</u>	<u>SEDIMENT</u>	<u>SEDIMENT PILE ON NORTH SIDE OF POND</u>
<u>393</u>	<u>NT 88</u>	<u>SEDIMENT</u>	<u>FILL AREA ON NORTH SIDE OF POND</u>
<u>394</u>	<u>NT 89</u>	<u>SOIL AND SEDIMENT</u>	<u>UNPAVED STORAGE AREA FOR FURNACE MATERIAL</u>
<u>395</u>	<u>NT 90</u>	<u>FILTER</u>	<u>HEAF FILTER FOR AIR POLLUTION EQUIP</u>
<u>396</u>	<u>NT 91</u>	<u>SEDIMENT</u>	<u>SEDIMENT AT WASH OUT PAIL INTO PON</u>
<u>397</u>	<u>NT 92</u>	<u>SEDIMENT</u>	<u>BLuish-GREEN SURFACE MATERIAL (NORTH SIDE OF POND)</u>
<u>398</u>	<u>NT 93</u>	<u>SEDIMENT</u>	<u>SEDIMENT PILE ON NORTH EAST SIDE OF THE POND.</u>

SPECIAL HANDLING AND/OR STORAGE _____

CHAIN OF CUSTODY:

1.	<u>Glenn Takeoka</u> signature	<u>W.M.S.</u> title	<u>10-4-79 - 10-9-79</u> inclusive dates
2.	_____ signature	_____ title	_____ inclusive dates
3.	_____ signature	_____ title	_____ inclusive dates
4.	_____ signature	_____ title	_____ inclusive dates

SPECIAL REMARKS DUPLICATE SAMPLE GIVEN TO COMPANY
(e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY Mary W. Curdiger TITLE PH Chem II DATE 10/9/79
SAMPLE ALLOCATION: HML LABL LBL OTHER _____ DATE 10/15/79

ANALYSIS REQUESTED HEAVY METALS SCAN, PH, AMMONIUM,
CHLORIDE, THORIUM Sox in #395 - report on H₂SO₄

*Indicate whether sample is sludge, soil, etc.; **Use back of page for additional info.

PRIORITY
(explain) _____

~~FILE~~ NO. 399
SEC _____

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR NED C. THERIEN
GLENN TAKEOKA DATE SAMPLED 10-4-79 TIME 1300 HOURS
LOCATION OF SAMPLING:
NAME HALACO ENGINEERING COMPANY TEL NO. 805 489-3684
ADDRESS 6200 PERKINS RD. OXNARD CA 93030
number street state zip

FILE NO. (Lab only)	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
<u>399</u>	<u>NT 94</u>	<u>SOIL</u>	<u>SOIL SAMPLE BELOW NT 89</u> <u>9" BELOW SURFACE OF PROCESS</u> <u>MATERIAL 1-2" INTO SOIL</u>

SPECIAL HANDLING AND/OR STORAGE _____

CHAIN OF CUSTODY:

1.	<u>Glenn Takeoka</u> signature	<u>W.M.S.</u> title	<u>10-4-79 - 10-9-79</u> inclusive dates
2.			
3.			
4.			

SPECIAL REMARKS DUPLICATE SAMPLES GIVEN TO COMPANY
(e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY Mary W. Clardge TITLE PH Chemist DATE 10/9/79
SAMPLE ALLOCATION: HML LABL LBL OTHER DATE 10/15/79

ANALYSIS REQUESTED HEAVY METALS SCAN, PH, AMMONIUM,
CHLORIDE, THORIUM

*Indicate whether sample is sludge, soil, etc.; **Use back of page for additional info.

SC LAB NO. 385-394
396-399

REQUEST FOR HAZARDOUS WASTES ANALYSIS

MPLING NO. : NT 80-NT 89, NT 91-NT 94 DATE SUBMITTED: 10/9/79
 SAMPLING LOCATION: Halaco Engineering Co. COLLECTED BY : Ned A. Sherwin
 SAMPLING DATE : 10/4/79 TIME: _____ SUBMITTED BY : Glenn Jakubka
 HAULER : _____ MANIFEST NO. : _____
 TYPE OF PROCESS : _____ VOLUME : _____ Bbl./Gal.
 TYPE OF WASTE : _____
 PRODUCER : Halaco Engineering Co.
 ADDRESS AND PHONE: 6200 Perkins Rd, Concord CA 93030

SAMPLE DESCRIPTION:

ANALYSIS REQUESTED:

SOUTHERN CALIFORNIA LABORATORY ANALYSIS RESULTS

CHEMIST: Mary W. Claridge DATE COMPLETED: 10/31/79

SEL No.	Sampling No.	pH	Ammonium (calculated as NH ₄) ppm	Chloride ppm
385	NT 80	9.7	810	5,200
386	NT 81	9.8	980	5,000
387	NT 82	8.8	36	1,600
388	NT 83	9.7	650	1,400
389	NT 84	<u>(10% solution)</u> 8.5	660	11,000
390	NT 85	9.1	370	26,000
391	NT 86	9.6	250	78,000
392	NT 87	8.9	2,300	28,000
393	NT 88	9.0	450	25,000
394	NT 89	10.0	5,500	120,000
396	NT 91	9.6	5,300	16,000
397	NT 92	9.1	4,500	71,000
398	NT 93	9.6	360	83,000
399				

REQUEST FOR HAZARDOUS WASTES ANALYSIS

SAMPLING NO. : NT 90 DATE SUBMITTED: 10/9/79
 SAMPLING LOCATION: Halaco Engineering Co. COLLECTED BY : Ned O Therien
 SAMPLING DATE : 10/4/79 TIME: _____ SUBMITTED BY : Deena Juberka
 HAULER : _____ MANIFEST NO. : _____
 TYPE OF PROCESS : _____ VOLUME : _____ Bbl./Gal.
 TYPE OF WASTE : _____
 PRODUCER : Halaco Engineering Co.
 ADDRESS AND PHONE: 6200 Perkins Rd, Alhambra CA 93030

SAMPLE DESCRIPTION:

ANALYSIS REQUESTED:

SOUTHERN CALIFORNIA LABORATORY ANALYSIS RESULTS

CHEMIST: Mary W Clardge DATE COMPLETED: 10/31/79

pH (46.2 gm/300 ml) = 9.2

Ammonium (calculated as NH₄) = 50 ppm

Chloride = 49,000 ppm

Sulfate (calculated as H₂SO₄) = 490 ppm

Reference

No. 9

**Enforcement Confidential - Document Included In
Confidential Data Section**

**Reference
No. 10**

Background Summary from RWQCB

D17

HALACO

Halaco Engineering Company (Halaco) operates a metal reclaiming facility on a 40-acre site in the City of Oxnard (see Location Map). Halaco began operations at this location (moving from Gardena) about 1965. They recover non-ferrous metals from metal drosses, scrap metal and aluminum cans. The recovery process is essentially by smelting the scrap and adding a flux of magnesium, sodium, and potassium chlorides to effect separation of the metals from the oxides and dirt. After this initial main recovery operation, the residual slag-like material is run through a washing process for additional metals recovery. The washing results in a liquid waste containing substantial quantities of suspended solids (dirt, metals, metal salts etc.). In addition, scrubber water from an air scrubber in the plant is added to the washer waste liquid. This combination liquid suspended solid is the waste discharge which is the subject of concern to this Board.

The liquid waste is piped across the Oxnard Industrial Drain (OID) and discharged into a 10-acre settling pond (see Halaco Pictorial). The solids settle out into the pond and the clarified water is pumped back to the plant for reuse in the washing process. Makeup water for evaporation and other losses is taken from the OID.

Periodically, the settled waste residue is excavated from the pond. Through most of the years the excavated waste has been used for building the pond berms (heightening and widening). However in recent years most of the wastes have been applied to the north berm; and in the last year or so the waste has been spread from the north berm onto the approximately 15-acre area north of the berm. On this 15-acres there is an area of depressed elevation (a former flow line) into which water sometimes flows, entering from a ponded area on the property to the north. When water flows into this depression it forms a vernal or annual pond (see Halaco Pictorial). The water flowing onto the property is made up of irrigation return, OID leakage and rainfall runoff. During the last couple

1985 were collected to determine the background or normal level of metals in the soils surrounding the Halaco site. All soil samples meet the criteria listed in the above article 11 as being in a friable, powdered or finely divided state. This means the test was/is not performed on a solid chunk of metal. The results of the background samples are very low. In most cases the background is 100 and 1000 times lower than the DFG samples found just offsite Halaco's property.

These results lead the DOHS to believe that offsite migration of hazardous substances has occurred at the Halaco site. Such migration leads the DOHS to believe that hazardous waste disposal onsite has occurred. Facilities which dispose of hazardous waste onsite are required to have a hazardous waste facility permit. A review of DOHS files reveals no such permit or application for a permit for Halaco.

I have probable cause to believe that Halaco has violated and continues to violate sec 25189.5 of the Calif Health & Safety Code. Said sec states in pertinent part, "disposal of any hazardous waste, ... is prohibited when the disposal is at a facility which does not have a permit from the dept. ..."

Linda D. Hogg, WMS

of years the vernal pond has been decreased in size due to the spreading of the excavated wastes onto the area and perhaps lower than normal rainfall conditions.

Historical Chronology, including other agency involvement

In May 1970 a Report of Waste Discharge was filed by Halaco at our request. On August 26, 1970 the Board adopted Resolution No. 70-63 prescribing discharge requirements for the Halaco operation. At that time waste was discharged into the OID and into a small lagoon (pond) on the plant property west of the drain. Besides setting discharge parameters, the requirements also stated that "solid wastes shall be confined to the company's property...." This operation continued for a few months after which time the clarified (after settling) water was discharged to the Oxnard sewer. This operation continued for about a year or so until the existing pond was built and discharge to the sewers ended and the existing operation begun.

June 9, 1977 - U.S. Army Corps of Engineers (Corps) served a Cease and Desist Order on Halaco to stop dumping solid waste material (discharge of dredged or fill material) into the wetlands area north of the settling pond without a permit per Section 404 of the FWPCA.

May 1978 - Corps rescinds C&D, stating property not subject to their (Sec. 404) permit requirements (U.S. District Court ruled that the area was not "navigable waters" of U.S.).

Oct. 19, 1978 - Letter from Halaco attorney demanding retraction of statements in an October 6 letter from SCCRC. *South Central Coast Regional Commission*

Nov. 28, 1978 - Comprehensive response to Oct. 19 letter from Halaco attorney "clarifies" jurisdiction of Coastal Commission jurisdiction over Halaco site as a wetland. cc to Regional Board.

- Nov. 28, 1976 - Stop Work notice to Halaco from SCCRC.
- Jan. 8, 1979 - Regional Board reply to SCCRC letter of Nov. 28. In essence indicates no problems with Halaco discharge.
- Jan. 12, 1979 - City of Oxnard - Request Halaco to file application for permits to operate waste disposal sites.
- Jan. 26, 1979 - City of Oxnard letter chronolizing actions regarding Halaco property to show no permission or permit to discharge waste on property east of industrial drain.
- Feb. 26, 1979 - City of Oxnard letter to Carla Bard, RWQCB, indicating problems expected regarding Halaco situation and asking assistance (by Environmental Coalition) to get review by City Council.
- May 10, 1979 - Tentative Revised (State) Waste Discharge Requirements to Halaco. Scheduled for Board meeting June 25. - Taken off schedule June 12.
- Jun. 20, 1979 - A.G. report to SCCRC: Concludes Halaco's settling pond and waste disposal area are not entitled to claims of exemption.
- Sept. 28, 1979 - SCCRC approved Halaco's "vested right" in settling pond as it was planned in 1969. No "right" to area north of pond.
- Oct 4, 1979 - DOHS sample/inspect*
- Dec. 4, 1979 - Regional Board letter to Halaco stating discharge was to wetlands therefore subject to NPDES permit - Enclosed NPDES application to be filed.
- Dec. 18, 1979 - CCC upholds Regional Commission (SCCRC) action of 9-28-79, confirming that Halaco has no "vested right" beyond the confines of north berm of pond. Permit required.

QR

- Dec. 18, 1979 - Department of Health Services (DOHS) letter to Halaco that wastes are hazardous and requested Halaco to submit application for Hazardous Waste-Facility permit.
- Dec. 19, 1979 - DOHS press release announcing that Halaco wastes had been determined to be hazardous waste materials.
- Dec. 27, 1979 - Letter from Halaco rejecting our wetlands - NPDES Dec. 4 letter Rejection based on Corps of Engineers "decision" of May 1978.
- Jan. 7, 1980 - CCC staff counsel letter to Halaco advising deposit of pond material beyond north pond berm without permit is subject to Commissions enforcement powers. Enclosed copy of permit application for submission to SCCRC.
- Jan. 10, 1980 - Halaco reply to DOHS rejecting "hazardous waste" findings.
- Mar. 10, 1980 - DFG memo to EPA stating their belief the Halaco site is a wetland subject to EPA jurisdiction under Sec. 404 of Clean Water Act. Requests EPA investigate and take action.
- Mar. 25, 1980 - DFG memo to SCCRC stating they had observed Halaco spreading grey slag material onto land north of pond.
- Mar. 27, 1980 - DFG memo to LA Regional Board notifying that a pollution exists in Ormond Beach wetlands due to Halaco's waste disposal operations. States DFG has identified area north of pond as a wetland.
- Apr. 10, 1980 - SCCRC memo to Attorney General regarding Halaco continued spreading of slag material north of pond in violation of Regional and State Coastal Commission decisions.

May 7, 1980 - New Tentative Revised (State)* Waste Discharge Requirements to Halaco.
Scheduled for Board meeting May 19. * Non-NPDES

May 19, 1980 - Temp. Restraining Order prevented Board from hearing Revised WDRs
at May 19 meeting; (Based upon insufficient time).

Jun. 9, 1980 - Telecon DFG to Regional Board...Dale Watkins(DFG) on June 4 observed
from aircraft that material spread by Halaco now covers about 50%
of area north of pond.

June 24, 1980 - Special Board meeting in Ventura to hear Revised WDRs. Not completed
at meeting, continued to July 28, 1980.

June 26, 1980 - SCCRC & CCC file cross-complaint against Halaco in L.A. Superior
Court to restrain Halaco from discharging wastes north of pond -
also asked for civil fines.

June 30, 1980 - Letter to Regional Board from U.S. Fish & Wildlife Service defining
Halaco site a wetlands and that our contemplated permit is inappropriate

July 18, 1980 - EPA letter to Halaco with Findings of Violations of Clean Water Act
(CWA), and commanding Halaco to terminate discharge or file for NPDES
permit per Section 402, CWA.

July 22, 1980 - Halaco item removed from July 28 Board agenda.

Aug. 14, 1980 - EPA letter to Arthur Fine denying continuance of compliance date
for EPA order (see July 18, 1980).

Aug. 14, 1980 - EPA letter to Regional Board indicating that State requirements
would not be adequate to substitute for an NPDES permit.

*Aug 22, 1980 Halaco filed complaint for declaratory judgment
& injunctive relief*

af

Oct. 6, 1980 - Tentative Revised Requirements mailed to Halaco with notice of Board consideration at meeting to be held October 27.

Oct. 21, 1980 - EPA Answer and Counterclaim filed in U.S. District Court for Central California asking for an order to (a) and (b) immediately and permanently enjoining Halaco from discharging north of the settling pond and to remove pollutants from area north of pond, (c) restore to natural condition the area north of the pond, or if not (a) and (b) then (d) submit an application for an NPDES permit and (e) and (f) pay civil fines.

October 27, 1980 - Board adopted Revised Waste Discharge Requirements in Board Order No. 80-58. At the meeting the Department of Fish & Game requested that the Board find Halaco's wastes were hazardous and prohibit any discharge to the present waste pond and dikes. The Board did not take that action but adopted Order 80-58 which contains requirements to control the discharge. The Department of Fish and Game requested that the Board find that the area north of the waste pond was a wetland and prohibit any discharge thereto. The Board did not address this issue as the question was the subject of a court action and the Board felt it important to revise the old requirements in order to exercise control of the discharge. No written comments on the tentative requirements were submitted by either the Coastal Commission or the Department of Health Services. Both agencies were specifically invited to have representatives at the meeting. No representatives from Coastal Commission attended, and the representative from the Department was not directly involved with the Halaco situation so did not have any very pertinent comments on the matter.

RS

The DFG and Halaco filed petitions for review by the State Water Resources Control Board of Order No. 80-58. DFG contended that the requirements should have said the wastes were hazardous and that the requirements failed to protect wetlands on the northern portion of the site. Halaco questioned the authority of the Regional Board to adopt requirements.

In considering the petition's, the State Board largely upheld the Regional Board's requirements but made several revisions for clarification and directed the Regional Board to reconsider the question of the northern portion. A copy of the State Board's order is attached.

Upon review questions were raised concerning Order No. 80-58. One of the main questions concerned waters of the State in relation to the discharge site. At the State Boards direction, Board Order No. 80-58 was reviewed along with the records and information in our files. Some minor revisions have been made in the discharge requirements to clarify the issues at question. These revised requirements are those which were to be considered at the Board meeting on November 23. On November 19 Halaco obtained in Superior Court, L.A., a Writ of Mandate and Stay preventing the Board from considering the revised requirements.

ERR

**Reference
No. 11**

TRUESDAIL LABORATORIES, INC.



CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH - DEVELOPMENT - TESTING

4101 N. FIGUEROA ST
LOS ANGELES 90
AREA CODE 213 • 225-
CABLE: TRU E L

CLIENT Helaco Engineering Company
6977 Parkins Road
Oxnard, California 93030
Attn: Mr. Les Pine

DATE February 15, 1980

RECEIVED December 27, 19

SAMPLE 15 split samples from the State and one
composite sample from site

LABORATORY NO. 30472

INVESTIGATION

Analysis as requested

RESULTS

On December 27, 1979, two representatives, of Truesdail Laboratories, Inc. met Mr. Les Pine of Helaco Engineering Company at the Helaco facility located at 6977 Parkins Road, Oxnard, California. At the meeting, Mr. Pine discussed the recent sampling and analysis that the State of California Hazardous Materials Laboratory had conducted. Mr. Pine asked these Laboratories to conduct some further chemical testing on the State samples as well as take a composite sample from the dredged material area of the facility.

The composite sample of dredged material was taken in the following way: Approximately a pound of material was shoveled from ten different sections of the dredged area, as shown in the diagram of the Helaco facility. Five samples (1-5) were taken at the surface from the area of the freshest dredging, i.e. the eastern section. The other five samples were taken from area inside the detention pond. Samples 6, 7, and 8 were taken 1 foot below the surface in the middle section of the dry area of the pond. The ninth sample was taken 5 feet from the edge of the water and the tenth sample was taken from the muddy material about 2 feet into the water.

The composite sample and the split samples (as shown in table A) from the State were taken to the Laboratories, and analyzed as requested.

WILSON, BELSTON, BURNS & WIGHTMAN
B.H.
RECEIVED
APR 14 1980
COPY TO _____
CALENDARED _____
REFERRED TO _____

Analysis

Selected split samples were analyzed for the metals as shown in table B. The samples were dried and then powdered. Approximately, 0.5 grams of material was weighted into a platinum dish, digested with a combination of perchloric acid-hydrofluoric acid, dissolved in hydrochloric acid, filtered, and made to volume. Metals were analyzed by atomic absorption spectroscopy. The results are in table B.

The sample of heat-treated material (NT-99) was leached with dilute nitric acid and analyzed by hydride-generation for arsenic. The results are at the bottom of table B.

The composite sample was also analyzed for leachability using the California Assessment Manual For Hazardous Wastes. Also, a make-up composite containing the equivalent contents of copper, zinc, lead, barium, nickel, and chromium made up in aluminum was leached in the same way. The results for both the composite and make-up sample are shown in table D.

A portion of the composite were given to Fomeroy, Johnson and Bailey for analysis for radioactivity. The results of radioactivity are in table C. Another portion of the composite was given to Applied Biological Science for Biological studies.

Conclusion

The metallic analysis for the split State samples and the composite sample show appreciable concentrations of copper, zinc, lead, chromium, nickel, barium and arsenic. The split samples confirm the analysis done by the State Laboratory.

The soluble fractions of the metals, as indicated by the citric acid leachability testing, is less than 5% of the total metal concentration. The water soluble fraction is much less than 1% of total metal concentration. It should be noted that even the most reduced form of the metals is leached in citric to some extent.

The radioactivity testing indicated that there was no measurable radioactivity present in the composite sample. This means that the sample contained no radioactive elements that could be measured.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

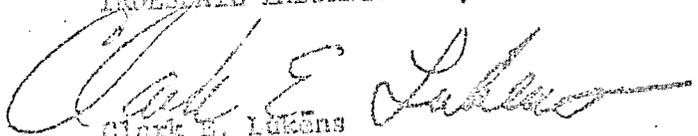

Clark E. Lukens
Senior Water Chemist

Table A
Sample Locations

<u>Sample Label</u>	<u>Sample Description</u>
MT80	Liquid effluent of washer
MT81	Washer inflow to pond
MT82	Air pollution equipment liquid inflow to pond
MT83	Pond liquid northeast side
MT84	Dry area middle of pond
MT85	Beem on north side of pond
MT86	Sediment south side of pond
MT87	Sediment piles north of pond
MT88	Fill north of pond
MT89	Process material on unproved storage area for furnace sediment before washing
MT90	East filter
MT91	Sediment of wash effluent into pond
MT92	Bluish green surface material on sediment pile on north side of pond
MT93	Sediment pile surface northeast of pond
MT94	Soil below sample #MT89

Table B

ELEMENT	1125	1126	1127	1128	1129	1131	1132
Copper	2171	-	1038	3080	-	7440	5740
Zinc	2100	-	743	1420	-	2120	2530
Lead	78	-	68	47	-	425	577
Chromium	310	506	351	103	-	290	640
Nickel	314	71	91	97	-	230	176
Barium	3240	137	55	28	4020	27	192

Hand filter (IT - 90) - Arsenic; 335 ppm

Table C

Synovita Asbestos
Analysis

Copper	2415
Zinc	2080
Lead	75
Chromium	172
Nickel	116
Barium	365
Arsenic	4
Mercury	< 0.1
Radioactivity, Gross alpha	picocuries/g < 10
Gross Beta	< 10

**Reference
No. 12**

Samples

D35 9-11-85

A-1	3281	✓	
A-2	3282	✓	
A-3	3283	✓	wetlands MSWang Rd
A-4	3284	✓	beach
A-5	3285	✓	beach

discharge pipe into Pond

Pa	
Pa-1	✓
Pa-1B-C	
Pa-2	✓

Pond Pond

Ps 1	✓	
Ps 2	✓	discharge pipe
Ps 3	✓	
Ps 4	✓	

East side of Birch

SN1	✓
SN2	✓
SN3	✓
SN4	✓
SN5	✓
SN6	✓
SN7	✓
SN8	✓

Water from drain canal

W1	✓	N.W. side of bridge
W2	✓	blank
W3	✓	
W4	✓	
W5	✓	
W6	✓	15 m up stream
W7	✓	
W8	✓	

Water

F1	✓	Animal Soil
F2	✓	1/4 from Birch
F3	✓	drum
F4	✓	gate
F5	✓	Powder
F5B	✓	Cyanide
F6	✓	Packets
F7	✓	Soil on bank of drain
F8	✓	Liquid by washers

Site Background

Sc 1	✓
Sc 2	✓
Sc 3	✓
Sc 4	✓

Sa 3

✓

Sa 4

✓

Sa 7

✓

Sa 8

✓

Pq VOA₁

✓

Pq VOA₂

✓



Hallaco

10-17-85

California Department
of Health Services

LOS ANGELES

Supplers

Greg Smith (log)
Mary Osborne,
(photographer)

(samples)
Peter Wood
Brian Clark
(aid)

S_f - Off site background samples

S_{f1} - at RR tracks intersection on Perkins Rd
Soil sample, 1 foot square 1 inch deep
soil mixed in bag and dispensed to 3 can
bottles. Photo

S_{f2} - ^{adjacent to} ~~along~~ Oxward Industrial Drain, east
side, approx. 1/4 mile from Hucneme
Road. Soil sample taken on fallow field
adjacent to drain. Photo

S_{f3} - 30 yards east of drain. Same sampling techni
Soil, ^{south} west of end of McWane Rd, 30
yards. Photo. Same sampling technique.

S_{f4} - Beach, 50 yards south of parking
lot. Photo

S_{f5} - Beach, 100 yards south of Hake
plant, 20 yards SE of lagoon.
Photo

Dead seagull found at northeast
corner, top of berm.

G. Smith, P. Wood, M. Osborne, B. Clark

Page 2 Halaco 10-17-85

- pen
- S_n - on site sludge spreading area & east face toe of berm
- S_{n1} - piles of material approx 20 yards north west of pond. gray gravelly material, blue green material and rounded balls. Photo mislabeled S#4
- S_{n2} - dark gray slag, crumbly. 50 yards north of ~~berm~~ to the west north west corner of berm. Photo.
- S_{n3} - mound of silver gray material middle of North 1/3 of dried sludge area, in middle. Photo. Halaco Representative taking pictures.
- S_{n4} - 100 yards north of pond berm. ~~soil sample~~ 50 yards from east property line. soil sample. Bird eggs found here. (3) Taken. Photo. 1 foot sq x 1" deep. Odeq noted - possible nitrogen.
- S_{n5} - East side about 20 yards north of berm along east boundary. dried clay like textured soil
- S_{n6} - North east corner, toe of berm. wet soil, appears to be drainage from berm.
- S_{n7} - Toe of berm approx middle of East face, noting leachate coming from berm. Sample taken at points of leaching
- S_{n8} - ~~at~~ blue green crystal sampled which are about 3 feet from toe of berm.
- ~~S#~~ ~~S#~~ ~~S#~~

MEMO TO FILE/CONTACT REPORT

PERSON CONTACTED: Dennis Regen, Steve Koyosako DATE: _____

REPRESENTING: _____ TIME: _____

ADDRESS: _____ PERSON TAKING OR MAKING CALL: D. Stueck

PHONE NO: 8-492-6996

SUBJECT: _____

MESSAGE: _____

Alert the EPA that this number (75) got out. Steve Lavenger can tell the EPA, when he talks about going Halaco back to the EPA

LABORATORY REPORT
Hazardous Materials Unit
Southern California Laboratory Section

To : Barbara Coler SCL No. : 3397, 3399, 3402
Sampling No : Sa7, Sn7, Date : 5/8/87
Sample Location : Halaco Engineering Inc.
6200 Perkins Rd. Oxnard, Ca.

Analytical Procedures Used : Acid digestion , analysis by ICP

Analysis Results

SCL 3397 (SN2)	Beryllium	4.5 mg/kg
SCL 3399 (SN4)	Beryllium	10 mg/kg
SCL 3402 (SN7)	Beryllium	3.4 mg/kg
SCL 3408 (SN8)	Beryllium	5.2 mg/kg
SCL 3413 (F5)	Beryllium	9.5 mg/kg

*Halaco
File
Site
Mitigation
Section C*

RECEIVED
'87 MAY 12 AM 3 00
SECTION
SER.

Analyst's Signatures:

Monina Ligao
Monina Ligao

3/8/87
Date

Date

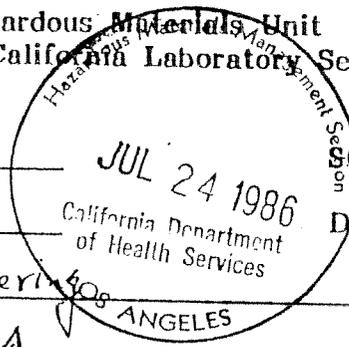
Supervising Chemist's Signature:

Janice Wakakuwa
Janice Wakakuwa

5/8/87
Date

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section



To : Linda Hogg

3413, 3417, 3

Sampling No : (see below)

SCL No. : 3885, 3886

Sample Location: Halaco Engineering Co.
Oxnard, CA

Date of Report: 7/22/86

Analytical Procedures Used: Distillation and measured by specific ion electrode

Analysis Results:

SCL #	Collector's sample #	Cyanide
3413	F5	_____
3417	F9	49 ^{mg} / _L
3418	Pa 1	< 8 ^{mg} / _L
3885	Pa	< 8 ^{mg} / _L
3886	Pa 1B-U	< 8 ^{mg} / _L
3888	F5B	120 ^{mg} / _L

Analysts' Signatures:

Scott Y. Lee 7/21/86
Date

Supervising Chemist's Signature:

F.J. Bonnamy

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Peter Wood, Linda Hogg SCL No. : 3281 to 3285
 Sampling No : A-1, A-2, A-3, A-4, A-5 Date of Report: 9/11/85
 Sample Location: Ormond Beach, near Halaco Eng.
End of Perkins Rd. (6200 Blk.); Oxnard, Ca.

Analytical Procedures Used: Metals: Samples digested in conc. nitric acid and analyzed by ICP Emission Spectroscopy. NH₃ distillation then titrated with H₂SO₄.

Analysis Results:

SCL#	sample #	unit	Cd	Cr	Cu	Ni	Pb	Zn	NH ₃
3281	A-1	mg/kg	5.4	26	23	23	70	72	<1
3282	A-2	"	4.5	21	17	17	53	50	<1
3283	A-3	"	5.2	32	26	32	140	530	<1
3284	A-4	"	2.6	16	20	12	32	44	<1
3285	A-5	"	2.2	11	<7	7.0	23	15	<1
TtLC			100	2500	2500	2000	1000	5000	
STLC			1	560	25	20	5	250	

Analysts' Signatures:

Worberto P. Pautasuj
Norma T. Castell

9/11/85
Date
9/11/85
Date

Supervising Chemist's Signature:

Mary W. Claxton

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg

Sampling No : Sn-8, F-5, F-9, PS-2
Sn-8, F-5 PS-2

Sample Location: Holaco Engineering
Oxnard, CA

SCL No. : 3403, 3413, 3417, 3424

3884, 3887, 3888

Date of Report: 7/22/86

Analytical Procedures Used: Samples were digested with 11N HCl. Metal concentrations were measured by flame AA on PL 3030. Samples 3403, 3424, 3413, 3417 were removed from refrigerator after original analysis. Samples 3884, 3887, and 3888 have been refrigerated since received.

T.T.L.C.

Analysis Results:

All in μg

SCL No.	3403	3884	3424	3887	3413	3888	3417
Collector's No.	Sn-8	Sn-8	PS-2	PS-2	F-5	F-5	F-9
* Aluminum	120,000	100,000	240,000	270,000	280,000	250,000	260,000
Cadmium	26	20	15	18	52	58	58
* Chromium	520	340	540	770	500	460	440
* Copper	6,900	5,800	4,400	6,400	2,800	2,800	3,000
Magnesium	31,000	34,000	48,000	31,000	46,000	42,000	45,000
Nickel	300	240	200	340	150	160	140
Lead	140	170	300	420	360	440	410
* Zinc	4,000	900	3,000	3,700	3,000	3,200	3,200

X = trace amounts suspected that were not tested originally

Analysts' Signatures:

Maria Sigro
V. M. [Signature]

6/24/86
Date
6/22/86
Date

Supervising Chemist's Signature:

Mary W. [Signature]

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg SCL No. : 3396 - 3434
 Sampling No : S_n1 - S_n8, F1 - F9, Pa. 2, B1 - B4 Date of Report: First 11/13/85
 Sample Location: Halaco Engineering, Inc
6200 Perkins Rd, Oxnard, CA

Analytical Procedures Used: Ammonia was distilled from the samples into boric acid then being titrated with H₂SO₄. PH was measured by PH-meter
For CN, sample was distilled before measuring potentiometrically.

Analysis Results:

SCL#	Sampling #	NH ₃	PH At 50% Dilution	SCL#	Sampling #	NH ₃	PH At 50% Dilution	SCL#	Sampling #	NH ₃	PH without dilution
3396	S _n 1	980 ^{mg} / _{kg}	8.0	3412	F.4	13 ^{mg} / _{kg}	9.2	3429	W3	0.38 [%]	11.5
3397	S _n 2	190 "	8.9	3413	F.5	8100 "	8.3	3430	W4	X	0.5
3398	S _n 3	None found at < 0.2 "	9.4	3414	F.6	3000 "	8.8	3431	W5	3.0 "	7.6
3399	S _n 4	120 "	7.9	3415	F.7	200 "	7.5	3432	W6	2.0 "	7.7
3400	S _n 5	18 "	8.4	3416	F.8	650 [%] / _L	9.5 ^{No. dilution}	3433	W7	1.4 "	7.7
3401	S _n 6	76 "	7.8	(dup F-5) 3417	F.9	11000 ^{mg} / _{kg}	8.3	3434	W8	1.6 "	7.7
3402	S _n 7	240 "	7.2	3418	Pa.1	200 ^{mg} / _L	9.2 ^{No dilution}	* Not applicable because of low PH			
3403	S _n 8	410 "	7.3	3421	Ps 1	2500 ^{mg} / _{kg}	8.5	total CN			
				3423	Pa 2	50 [%] / _L	8.2 ^{No dilution}				
3404	S _f 1	21 "	7.7	3424	Ps 2	770	8.5	3398	S _n 3	< 2 ^{mg} / _{kg}	
3405	S _f 2	None found at < 4 "	8.1	3425	Ps 3	730	8.5	3406	S _f 3	< 2 "	
3406	S _f 3	17 "	8.1	3426	Ps 4	300	9.4	3413	F.5 ^{solid}	820 "	
3407	S _f 4	None found at < 4 "	8.1	3427	W1	30 ^{mg} / _L	7.5 ^{No dilution}	3420	Pa. CYANIDE	110. [%] / _L	
3408	S _f 5	22 "	8.1	3428	W2	None found at < 0.2 ^{mg} / _L	8.6 ^{No dilution}	3429	W.3 (black)	< 0.3 [%] / _L	
3409	F1	68 "	9.4								

Analysts' Signatures: Scott Y. Lee

11/13/85
Date

Date

Supervising Chemist's Signature: Mary W. Claudzi

F-8-7
Pa1 - } bioassay.

also see
F-5

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg SCL No. : 3404 to 3408
 Sampling No : Sf 1 to Sf 5 Date of Report: 1/13/86
 Sample Location: Halaco Engineering, Inc.
Orland, CA

Analytical Procedures Used: Metals: TTLC - digestion with HNO₃ and analysis by I.C.P. Spectrophotometer; STLC - extraction for 48 hours with pH 5 Citrate buffer, filtration thru 0.45 μ filter and analysis by flame AA.

Analysis Results:

TTLC - mg/kg

SCL No.	Sampling No.	Cd	Cr	Cu	Ni	Pb	Zn	Al	Mg
3404	Sf 1	4.2	24	25	23	77	96	12,000	7,600
3405	Sf 2	3.0	29	11	16	38	46	9,900	14,000
3406	Sf 3	3.4	25	20	28	62	140	12,000	14,000
3407	Sf 4	<2	13	9.2	7.8	23	28	3,000	2,500
3408	Sf 5	<2	9.4	<7	<7	14	11	2,200	1,500

STLC - mg/l

		Cd	Cr	Cu	Pb	Zn	Al	Mg
3404	Sf 1	<0.1	<0.5	<0.5	0.8	2.6	19	86
3405	Sf 2	<0.1	<0.5	<0.5	<0.5	0.5	17	690
3406	Sf 3	<0.1	<0.5	<0.5	0.8	6.2	32	800
3407	Sf 4	<0.1	<0.5	<0.5	<0.5	1.2	23	96
3408	Sf 5	<0.1	<0.5	<0.5	<0.5	0.2	5.4	27

Analysts' Signatures:

Norman Pustilli (mu) 1/13/86
 Date
Norberto C. Tufassi 1/13/86
 Date

Supervising Chemist's Signature:

Mary W. Claudge

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg SCL No. : 3403, 3884
 Sampling No : see below Date of Report: 7/13/80
 Sample Location: Halaco Engineering
Ronald, CA

Analytical Procedures Used: STLC for metals; WET for solid sample -
extracted with pH 5 citrate buffer & analyzed by flame AA. Sample 3403 had been removed from the
refrigerator after original analysis. 3884 has been held in
the refrigerator since received.
 Analysis Results:

SCL No.	3403	3884
Sampling No	5m8	5m8
STLC, mg/l.		
Aluminum	1200	1100
Barium	<0.2	<0.2
Chromium	3.2	2.2
* Copper	430	210
Manganese	1,800	1,800
Nickel	6.4	5.7
Lead	6.2	8.0
Zinc	190	230 ← close

Analysts' Signatures:

J.M. DeFouch

7/27/80
Date

Supervising Chemist's Signature:

Mary W. Claugie

Date

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg

SCL No. : 3409, 3411, 3413

Sampling No : F-1, F-3 to F-5

Date of Report: 1/13/86

Sample Location: Halaco Engineering, Inc
Orland, CA

Analytical Procedures Used: Metals: TTLC - digestion with HNO₃ and analysis by ICP Spectrophotometer and flame AA Spectrophotometer; STLC: W.E.T. for solid samples and analysis by flame AA Spectrophotometer.

Analysis Results:

TTLC

SCL No	Sampling No	Units	Cd	Cr	Cu	Ni	Pb	Zn	Al	Mg
3409	F-1	mg/kg	22	470	1,400	290	470	3,300		
3411 (upper layer)	F-3	mg/l	<3	<9	<9	<9	<9	16		
3411 (lower layer)	F-3	mg/kg	<20	<70	170	<70	130	3,600		
3412	F-4	mg/kg	34	3.4	63	13	560	69		
3413	F-5	mg/kg								

STLC - mg/l

		Cd	Cr	Cu	Pb	Zn	Al	Mg
3409	F-1	<0.1	0.6	<0.5	<0.5	32	310	1,600
3412	F-4	<0.1	<0.5	<0.5	<0.5	0.8	640	47
3413	F-5	1.1	2.0	1.4	3.9	61	3,900	520

Analysts' Signatures:

Norma T. Castilla (MWD) 1/13/86
Date
Noberto B. Pauluzzi 1/13/86
Date

Supervising Chemist's Signature:

Margaret Claridge

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg SCL No. : 3446 341
 Sampling No : F-6 to F-9 Date of Report: 1/13/86
 Sample Location: Halaco Engineering, Inc.
Orland, CA

Analytical Procedures Used: Metals: TTLC - digestion with HNO₃ and analysis by ICP Spectrophotometer and AA flame spectrophotometer.
STC: 3414, 3415, 3417 - WET for solid samples and analysis by flame AA; 3416 - WET for liquid with greater than 1% solids and analysis by AA Spectrophotometer.
Analysis Results:

TTLC - mg/kg

SCL No.	Sampling No.	Cd	Cu	Co	Ni	Pb	Zn	Al	Mg
3414	F-6	18	360	1,600	180	640	2,400		
3415	F-7	14	150	840	50	250	1,200		
3417	F-9	94	390	2,600	180	990	4,800	200,000	32,000

STC - mg/l

SCL No.	Sampling No.	Cd	Cu	Co	Ni	Pb	Zn	Al	Mg
3414	F-6	<0.1	<0.5	<0.5	<0.5	5.1	<10	3,900	
3415	F-7	<0.1	0.0	<0.5	<0.5	13	470	1,200	
3416	F-8	<0.1	0.8	15	<0.5	2.2	440	510	
3417	F-9	0.2	2.0	3.6	1.4	56	340	680	

Analysts' Signatures:

Norma T. Castillo/MWD 1/13/86
[Signature]

Supervising Chemist's Signature:

[Signature]

LABORATORY REPORT

**Hazardous Materials Unit
Southern California Laboratory Section**

To : Linda Hogg SCL No. : 3396-3403
 Sampling No : Sn 1 to Sn 8 Date of Report: 1/13/86
 Sample Location: Halaco Engineering, Inc
Orland CA

Analytical Procedures Used: Metals - TLC - digestion with HNO₃
and analysis by ICP Spectrophotometer and
Atomic Absorption Spectrophotometer

Analysis Results:

TLC - mg/kg

Sc No.	Sampling No.	Cd	Cr	Cu	Ni	Pb	Zn	Al	Mg
3396	Sn 1	27	390	1,400	190	540	1,400	250,000	14,000
3397	Sn 2	16	240	1,400	120	420	2,000	140,000	68,000
3398	Sn 3	7.5	20	360	20	120	2,500	*	190,000
3399	Sn 4	11	130	530	33	300	870	*	53,000
3400	Sn 5	6.1	57	350	17	190	510	40,000	46,000
3401	Sn 6	13	74	430	26	210	730	43,000	76,000
3402	Sn 7	8.3	88	410	90	160	1,000	*	7,400
3403	Sn 8	16	2,400	5,700	1,300	420	5,600	*	19,000

* Samples inadvertently discarded before results for Aluminum were finalized. They will be rerun.

Analysts' Signatures:

Roberto C. Paulosig 1-13-86
 Date

Supervising Chemist's Signature:

Mary W. Claridge

Date

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg SCL No. : 3396 to 3403
 Sampling No : Sn 1 to Sn 8 Date of Report: 1/13/86
 Sample Location: Halaco Engineering, Inc
Orlando, FL

Analytical Procedures Used: STLC - extracted with
pH 5 citrate buffer for 48 hours, filtered thru
0.45 μ filter and analyzed by flame Atomic Absorption
Spectrophotometer

Analysis Results:

STLC - mg/l.

<u>SCL No.</u>	<u>Sampling No.</u>	<u>Cd¹</u>	<u>Cr⁵⁶⁰</u>	<u>Cu²⁵</u>	<u>Pb⁵</u>	<u>Zn¹⁵⁰</u>	<u>Al</u>	<u>Mg</u>
3396	Sn 1	<0.1	1.7	9.6	0.7	13	970	560
3397	Sn 2	<0.1	0.5	1.4	<0.5	14	380	1,700
3398	Sn 3	<0.1	<0.5	1.2	<0.5	1.9	<10	3,900
3399	Sn 4	0.1	<0.5	7.9	<0.5	6.3	360	1,600
3400	Sn 5	<0.1	0.5	6.4	<0.5	5.4	340	1,200
3401	Sn 6	0.8	0.6	11	1.6	6.5	260	2,900
3402	Sn 7	0.2	1.0	30	2.0	38	660	310
3403	Sn 8	0.2	1.8	650	2.2	82	800	940

Analysts' Signatures:
Norma T. Castillo (Muc) 1/13/86
 Date

Supervising Chemist's Signature:
Mary W. Clardge

Date

LABORATORY REPORT
 Hazardous Materials Unit
 Southern California Laboratory Section

To : Linda Hogg SCL No. : 3418, 3421, 3423
 Sampling No : Pa-1, Ps-1, Pa-2 Date of Report: 1/13/86
 Sample Location: Halaco Engineering, Inc
Orland, CA

Analytical Procedures Used: Metals: TTLC - digestion with HNO₃ and analysis by ICP Spectrophotometer and flame AA Spectrophotometer; STLC - 3418-WET for liquid with greater than 1/2 3421 - WET for solid sample; 3423 - WET for liquid sample with less than 1/2 % solids.

Analysis Results:

TTLC - mg/kg

SCL No	Sampling No.	Cd	Cr	Cu	Ni	Pb	Zn	Al	Mg
3421	Ps-1	39	370	1,900	150	930	1,700	110,000	12,000

STLC - mg/l

SCL No	Sampling No.	Cd	Cr	Cu	Pb	Zn	Al	Mg
3418	Pa-1	<0.1	0.6	18	1.3	8.5	490	3,100
3421	Ps-1	<0.1	1.9	0.6	<1	14	960	950
3423	Pa-2	<0.1	<0.5	<0.5	<1	<0.1	<10	150

Analysts' Signatures:
Norma T. Castelli (Muc) 1/13/86
PS/17/86 Date 1/13/86

Supervising Chemist's Signature:
Mary W. Claudge

LABORATORY REPC

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hagg SCL No. : 3424 to 3429
 Sampling No : P5 2 to P5 4 and W1 to W3 Date of Report: 1/13/86
 Sample Location: Halaco Engineering, Inc
Opnaid, CA.

Analytical Procedures Used: Metals: TTLC - digestion with HNO₃ and analysis by ICP Spectrophotometer and flame AA Spectroscopy.
STLC + 3424 to 3426 - WET. for solids, 3427 to 3429 - WET. for liquids with less than 1% solids.

Analysis Results:

TTLC - mg/kg

SCL No.	Sampling No.	Cd	Cr	Cu	Ni	Pb	Zn	Al	Mg
3424	P5 2	51	450	3,900	200	320	3,400	160,000	32,000
3425	P5 3	15	110	690	22	350	610	89,000	28,000
3426	P5-4	9.6	72	420	20	240	680	43,000	32,000

STLC - mg/l

		Cd	Cr	Cu	Pb	Zn	Al	Mg
3424	P5 2	<0.1	0.6	2.5	<1	16	740	1,200
3425	P5 3	<0.1	<0.5	1.9	<1	1.8	640	1,200
3426	P5 4	<0.1	<0.5	8.8	<1	2.5	340	1,300
3427	W1	<0.1	<0.5	<0.5	<1	<0.1	<3	140
3428	W2	<0.1	<0.5	<0.5	<1	<0.1	<3	<0.1
3429	W3	<0.1	<0.5	<0.5	<1	<0.1	<3	<0.1

[Signature]
 Date: 1/13/86
[Signature]
 Date: 1/13/86
[Signature]
 Date: 1/13/86

LABORATORY REPORT
Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg SCL No. : 3430 to 3434
 Sampling No : W-4 to W-8 Date of Report: 1/13/86
 Sample Location: Halaco Engineering, Inc
Orland, CA

Analytical Procedures Used: Metals: - STLC only - W.E.T. W
liquids with less than 1% solids.

Analysis Results:

STLC - mg/l

<u>SCL No.</u>	<u>Sampling No.</u>	<u>Pb</u>	<u>Cd</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Al</u>	<u>Mg</u>
<u>3430</u>	<u>W-4</u>	<u><0.1</u>	<u>4.8</u>	<u>4.8</u>	<u>19</u>	<u>0.9</u>	<u><3</u>	<u><0.1</u>
<u>3431</u>	<u>W-5</u>	<u><0.1</u>	<u><0.5</u>	<u><0.5</u>	<u><1</u>	<u><0.1</u>	<u><3</u>	<u>120</u>
<u>3432</u>	<u>W-6</u>	<u><0.1</u>	<u><0.5</u>	<u><0.5</u>	<u><1</u>	<u><0.1</u>	<u><3</u>	<u>120</u>
<u>3433</u>	<u>W-7</u>	<u><0.1</u>	<u><0.5</u>	<u><0.5</u>	<u><1</u>	<u><0.1</u>	<u><3</u>	<u>140</u>
<u>3434</u>	<u>W-8</u>	<u><0.1</u>	<u><0.5</u>	<u><0.5</u>	<u><1</u>	<u><0.1</u>	<u><3</u>	<u>130</u>

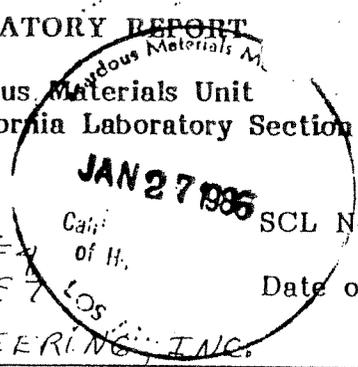
Analysts' Signatures:

Norma T Castillo (MCA) 1/13/86
 Date
Glenn R Cmy 1/13/86
 Date

Supervising Chemist's Signature:

Mary W Clauze

LABORATORY REPORT
 Hazardous Materials Unit
 Southern California Laboratory Section



To : Linda Hogg
 Sampling No : SA3, SA4 F-1, F-3, F-4
SA7, SA8 F-5, F-6, F-7
 Sample Location: HALACO ENGINEERING, INC.
6200 PERKINS RD. OXNARD, CA.

3398, 3399, 3402, 3403
 : 3409, 3411, 3412, 3413
 Addendum 3414, 3415
 SCL No. _____
 Date of Report: 1-24-86

Analytical Procedures Used: Metals. Samples were digested in nitric acid and analyzed by A.A. spectrophotometry and ICP spectrometry.

Analysis Results:

SCL#	Sample#	unit	Cd	Cr	Cu	Ni	Pb	Zn	AL	Mg
3398	SA 3	mg/Kg						29,000		
3399	SA 4	mg/Kg						57,000		
3402	SA 7 ^{sup}	mg/Kg						38,000		
3403	SA 8 ^{sup}	mg/Kg						90,000		
3409	F-1	mg/Kg						88,000	59,000	
3411	upper Layer F-3	mg/Kg						75	5,500	
3411	lower Layer F-3	mg/Kg						55,000	500,000	
3412	F-4	mg/Kg						250,000	1,400	
3413	F-5	mg/Kg	66	370	2,800	132	440	4100	250,000	34,000
3414	F-6	mg/Kg						120,000	110,000	
3415	F-7	mg/Kg						59,000	50,000	

Analysts' Signatures:

Roberto B. Paulsen
 Date 1-24-86

 Date _____

Supervising Chemist's Signature:

Mary W. Claudgi

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg

SCL No. : 3410

Sampling No : F-2

Date of Report: 1/28/86

Sample Location: Halaco Engineering, Inc

Analytical Procedures Used: G.C.M.S. Head space

Analysis Results:

Found Trace / Small amount of :

Ethyl Benzene

Xylenes

Cumene

Trimethyl benzene

Tetra methyl benzene isomers

Petroleum hydrocarbons : C₁₁ - C₁₄

Analysts' Signatures:

Jay King

1/15/86
Date

Date

Supervising Chemist's Signature:

Mary W. Clardge

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Linda Hogg SCL No. : 3419, 3422
Sampling No : PqVOA 1 & PqVOA 2 Date of Report: 1/29/86
Sample Location: Halaco Engineering, Inc

Analytical Procedures Used: G.C.M.S. (Purge & Trap)

Analysis Results:

SCL: 3419, PqVOA 1 : Acetone : 339 $\mu\text{g}/\text{L}$
Methylene Chloride : 47 $\mu\text{g}/\text{L}$
Trimethyl Silanol (no std.)

SCL: 3422 PqVOA 2 : Nothing detected
Detection limit : 40 $\mu\text{g}/\text{L}$

Analysts' Signatures:

Jay By

1/15/86
Date

Date

Supervising Chemist's Signature:

Mary W. Claridge

LABORATORY REPORT

Hazardous Materials Unit
Southern California Laboratory Section

To : Jeff Heath

SCL No. : 3409

Sampling No : F-1

Date of Report: 1/13/86

Sample Location: Halaco Engineering
6200 Perkins Rd. Oxnard Ca

Analytical Procedures Used: G.C.M.S. Head Space

Analysis Results:

Nothing detected

Analysts' Signatures:

Jeff Heath

1/22/86
Date

Date

Supervising Chemist's Signature:

Mary W. Clendy

HAZARDOUS MATERIALS SAMPLE ANALYSIS REPORT

Department of Health Services
SCL
No. 3396
To 3401

PRIORITY
(Explain)

I: FIELD SECTION

Collector G. Smith, P. Wood, M. Osborne, B. Clark Date Sampled 10-17-85 Time _____ Hour _____

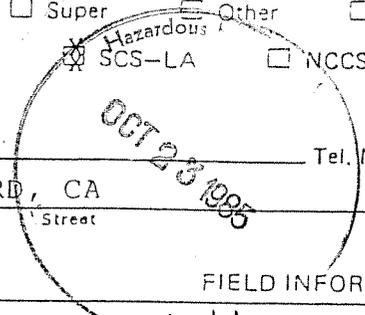
Activity: Enforcement ASP H.W. Property Super Other RCRA OPT Code

Region: PMS-SAC NCS-SAC NCS-FRESNO SCS-LA NCCS-BERK

LOCATION OF SAMPLING:

Name HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address 6200 PERKINS RD OXNARD, CA City _____ Zip _____



HML No. (Lab Only)	Collector's Sample No.	Type Of Sample*	Description
3396	Sa1	Soil	gray gravel, blue rocks,
3397	Sa2	Soil	dark gray slag & gray soil
3398	Sa3	Soil	silver gray slag & gray soil - (CN)
3399	Sa4	Soil	(aden) grayish brown soil.
3400	Sa5	Soil	gray soil, dried clay like.
3401	Sa6	Soil	wet soil toe of berm.

FIELD INFORMATION

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL
CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

Chain of Custody	Signature	Title	Inclusive Dates
1	<u>Gregory K. Smith</u>	<u>WMSI Sanitarian</u>	<u>10-17-85</u>
2	<u>Amida D. Noye</u>	<u>WMS-I</u>	<u>10-17-85</u>
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____

Special Remarks Halaco took sample A, lab will test sample C
(e.g., duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

Received By Mary W. Claudge Title PH Chem II Date 10/17/85
Sample Allocation: HML SCBL LBL Other

Analysis Required _____

*Indicate whether sample is sludge, soil, etc. Orig.-Lab. Dup.-File Trip.-Inspector

HAZARDOUS MATERIALS SAMPLE ANALYSIS REPORT

Department of Health Services

PRIORITY
(Explain) _____

SEL
HML No. 3402
To
3403

I: FIELD SECTION

Collector G. Smith, P. Wood, M. Osborne, B. Clark Date Sampled 10-17-85 Time _____ Hour _____

Activity: Enforcement, ASP, H.W. Property, Super, Other, RCRA OPT Code

Region: PMS-SAC, NCS-SAC, NCS-FRESNO, SCS-LA, NCCS-BERK

LOCATION OF SAMPLING:

Name HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address 6200 PERKINS RD OXNARD, CA
Street City Zip

HML No. (Lab Only)	Collector's Sample No.	Type Of Sample*	FIELD INFORMATION
3402	SA7 (Sn ⁷)	soil	wet soil
3403	SA8 (Sn ⁸)	soil	leachate coming from berm of the green crystals blue green crystals & wet soil

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL
CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

Chain of Custody:

1	<u>Gregory B. Smith</u> Signature	<u>WMS I</u> Sanitarian Title	<u>10-17-85</u> Inclusive Dates
2	<u>Andrea D. Hogg</u> Signature	<u>WMS-I</u> Title	<u>10-17-85</u> Inclusive Dates
3	_____ Signature	_____ Title	_____ Inclusive Dates
4	_____ Signature	_____ Title	_____ Inclusive Dates
5	_____ Signature	_____ Title	_____ Inclusive Dates

Special Remarks Halaco took sample A, lab will test sample C
(e.g., duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

Received By Margaret Clardge Title PH Chem III Date 10/17/85
Sample Allocation: HML, SCBL, LBL, Other Date _____

Analysis Required _____

Indicate whether sample is sludge, soil, etc.

Orig.-Lab. Dup.-File Trip.-Inspector

PRIORITY (Explain)

HAZARDOUS MATERIALS SAMPLE ANALYSIS REPORT

Department of Health Services

HML No. 3404 To 3408

I: FIELD SECTION

Collector: G. Smith, P. Wood, M. Osborne, B. Clark Date Sampled 10-17-85 Time 8:30-12:30 Hours

Activity: Enforcement ASP H.W. Property Super Other RCRA OPT Code PMS-SAC NCS-SAC NCS-FRESNO SCS-LA NCCS-BERK

LOCATION OF SAMPLING:

Name HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address 6200 PERKINS RD OXNARD, CA Number Street City ZIP

FIELD INFORMATION

Table with 4 columns: HML No. (Lab Only), Collector's Sample No., Type Of Sample, and FIELD INFORMATION. Rows include samples 3404, 3405, 3406, 3407, and 3408 with descriptions like 'soil vacant lot adjt to RR tracks' and 'beach sand'.

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

Chain of Custody:

Chain of Custody table with columns for Signature, Title, and Inclusive Dates. Includes entries for WMS I Sanitarian and WMS-I.

Special Remarks Halaco took sample A, lab will test sample C (e.g., duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

Received By Mary W. Clardge Title PA Chem III Date 10/17/85 Sample Allocation: HML SCBL LBL Other

Analysis Required

Indicate whether sample is sludge, soil, etc. Orig.-Lab. Dup.-File Trip.-Inspector

HAZARDOUS MATERIALS SAMPLE ANALYSIS REPORT

DEPARTMENT OF HEALTH SERVICES

PRIORITY

HMT No. 3409

(Explain) _____

To 3413

I: FIELD SECTION

Collector Jeff Heath Date Sampled 10-17-85 Time 8:30-12:30

Activity: Enforcement ASP H.W. Property Super Other RCRA OPT Code 111

Region: PMS-SAC NCS-SAC NCS-FRESNO SCS-LA NCCS-BERK

LOCATION OF SAMPLING:

Name HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address 6200 PERKINS RD OXNARD, CA

ScL HMT No. (Lab Only) Collector's Sample No. Type Of Sample* FIELD INFORMATION

ScL HMT No. (Lab Only)	Collector's Sample No.	Type Of Sample*	FIELD INFORMATION
<u>3409</u>	<u>F-1</u>	<u>soil</u>	<u>dark black damp, possible diesel contaminant</u>
<u>3410</u>	<u>F-2</u>	<u>liquid</u>	<u>light brown, oily (VOA)</u>
<u>3411</u>	<u>F-3</u>	<u>metal turning</u>	<u>black silver color from drum (on top)</u>
<u>3412</u>	<u>F-4</u>	<u>solid</u>	<u>gray chunky - charcoal</u>
<u>3413</u>	<u>F-5</u>	<u>solid</u>	<u>gray dusty from furnace (N)</u>

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL
CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

F-1 - diesel H.C. also ; F-5 = bioassay - 11-18-85 per d.A.

Chain of Custody:

2. <u>[Signature]</u>	<u>WMS-I</u>	<u>10-17-85</u>	
1. <u>[Signature]</u>	<u>High-Mat Spec</u>	<u>10-17-85</u>	<u>10-17-85</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

Special Remarks Halaco took sample "A", lab will test sample C.
(e.g., duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

Received By Mary W Cloridge Title PH Chem III Date 10/17/85
Sample Allocation: HML SCBL LBL Other

Analysis Required _____

*Indicate whether sample is sludge, soil, etc. Orig.-Lab. Dup.-File Trip.-Inspector

PRIORITY

(Explain)

HAZARDOUS MATERIALS SAMPLE ANALYSIS

Department of Health Service

Sec 3414
HML No. 3417

I: FIELD SECTION

Collector Jeff Heath Date Sampled 10-17-85 Time 8:30 A - 12:30 P

Activity: Enforcement ASP H.W. Property Super Other RCRA OPT Code

Region: PMS-SAC NCS-SAC NCS-FRESNO SCS-LA NCCS-BERK

LOCATION OF SAMPLING:

Name HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address 6200 PERKINS RD OXNARD, CA

HML No. 3414 Collector's Number F-6 Type Of Sample solid Street 6200 PERKINS RD City OXNARD, CA Zip

FIELD INFORMATION

HML No. (Lab Only)	Collector's Sample No.	Type Of Sample*	FIELD INFORMATION
3414	F-6	solid	dusty, gray color, coarse
3415	F-7	solid/soil	on bank near channel
3416	F-8	liquid	from washer
3417	F-9	solid	grey dusty material

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL
CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

F-8 - fish + game - bioassay

Chain of Custody:

72	<u>Jinda D. Hogg</u> Signature	<u>WMS-7</u> Title	<u>10-17-85</u> Inclusive Dates
26	<u>Jeffery C. Heath</u> Signature	<u>Hazardous Mat. Spec.</u> Title	<u>10-17-85</u> <u>10-17-85</u> Inclusive Dates
3	Signature	Title	Inclusive Dates
4	Signature	Title	Inclusive Dates
5	Signature	Title	Inclusive Dates

Special Remarks Halaco took sample "A" lab will test sample C
(e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

Received By Margy W. Clardge Title PH Chem III Date 10/17/85
Sample Allocation: HML SCBL LBL Other

Analysis Required

* Indicate whether sample is sludge, soil, etc.

Orig.-Lab. Dup.-File Trip.-Inspector

PRIORITY (Explain) _____

HAZARDOUS MATERIALS SAMPLE ANALYSIS

Department of Health Services

HML No. 3418

To 3423

I: FIELD SECTION

Collector: Dwayne Maxwell Date Sampled: 10-17-85 Time: 8:30A-12:30P

Activity: Enforcement ASP H.W. Property Super Other RCRA

Region: PMS-SAC NCS-SAC NCS-FRESNO SCS-LA NCCS-BEAK OPT Code:

LOCATION OF SAMPLING:

Name: HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address: 6200 PERKINS RD OXNARD, CA Street City Zip

HML No. (Lab Only)	Collector's Sample No.	Type Of Sample	FIELD INFORMATION	
3418	Pa-1 (Pa-1C)	WATER	DRK GRY LIQUID	POND DISCH
3419	Pa VOA 1	WATER	" " "	" "
3420	Pa CYANIDE (Pa-1C-C)	WATER	" " "	" "
3421	Pa 1	SOIL	GRY/WHITE GRANULAR	POND
3422	Pa VOA 2 (Pa VOA 2C)	WATER	LIQUID	POND DISCH
3423	Pa 2 (Pa 2-C)	WATER	LIQUID	" "

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL
CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

Pa-1C-C - DFG - bioassay

Chain of Custody:

1	<u>Dwayne C. Maxwell</u> Signature	<u>ASSOC. WATER QUAL BIOL.</u> Title	<u>10-17-85 - 10-17-85</u> Inclusive Dates
2	<u>Andrea D. Hogg</u> Signature	<u>WMS-T</u> Title	Inclusive Dates
3	Signature	Title	Inclusive Dates
4	Signature	Title	Inclusive Dates
5	Signature	Title	Inclusive Dates

Special Remarks: Halaco took sample "A" ; lab will test sample "C"
(e.g., duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

Received By: Mary W Clardge Title: PH Chem III Date: 10/17/85
Sample Allocation: HML SCBL LBL Other

Analysis Required: _____

Indicate whether sample is sludge, soil, etc.

Orig.-Lab. Dup.-File Trip.-Inspector

PRIORITY

Hazardous Materials Sample Analysis

Department of Health Services
SEL
HML No. 3424
To 3429

(Explain) _____

I: FIELD SECTION

Collector: Dwayne Maxwell Date Sampled: 10-17-85 Time: 830A-1230P
Activity: Enforcement ASP H.W. Property Super Other RCRA
Region: PMS-SAC NCS-SAC NCS-FRESNO SCS-LA NCCS-BERK OPT Code:

LOCATION OF SAMPLING:

Name: HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address: 6200 PERKINS RD OXNARD, CA
HML No. (Lab Only) _____ Collector's Sample No. _____ Type Of Sample _____ Street _____ City _____ Zip _____

FIELD INFORMATION

HML No. (Lab Only)	Collector's Sample No.	Type Of Sample	Soil	Water	Other
3424	Ps 2	SOIL	GRANULAR GRAY & WHITE		POND
3425	Ps 3	SOIL	WHITE CRUST DAMP		POND
3426	Ps 4	SOIL	GRANULAR		POND
3427	W 1	WATER	L/OUDO		CHANNEL bridge
3428	W 2	"	"		" upstream
3429	W 3	"	"	(blank)	" upstream

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL
CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

Ps-3 - DFG - bioassay

Chain of Custody:

1	<u>Dwayne A. Maxwell</u> Signature	<u>ASSOC. WATER QUAL. BLOC</u> Title	<u>10/17/85 - 10/17/85</u> Inclusive Dates
2	<u>Arinda D. Nogg</u> Signature	<u>WMS-J</u> Title	
3	_____ Signature	_____ Title	_____ Inclusive Dates
4	_____ Signature	_____ Title	_____ Inclusive Dates
5	_____ Signature	_____ Title	_____ Inclusive Dates

Special Remarks: Halaco took sample A, lab will test sample "C"
(e.g., duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

Received By: Mary W. Claidge Title: PH Chemist Date: 10/17/85
Sample Allocation: HML SCBL LBL Other

Analysis Required _____

Indicate whether sample is sludge, soil, etc. Orig.-Lab. Dup.-File Trip.-Inspector

HAZARDOUS MATERIALS SAMPLE ANALYSIS REPORT

Department of Health Services

PRIORITY

SCC
HML No. 3430

(Explain) _____

3434

I: FIELD SECTION

Collector Dwayne Maxwell Date Sampled 10-17-85 Time 8:30A-12:30P

Activity: Enforcement ASP H.W. Property Super Other RCRA OPT Code

Region: PMS-SAC NCS-SAC NCS-FRESNO SCS-LA NCCS-BERK

LOCATION OF SAMPLING:

Name HALACO ENGINEERING, INC Tel. No. (805) 488-3684

Address 6200 PERKINS RD OXNARD, CA

HML No. (Lab Only)	Collector's Sample No.	Type Of Sample*	Number	Street	City	Zip	FIELD INFORMATION
3430	W-4	WATER					Liquid (spilled) upstream on
3431	W-5	"					" upstream off
3432	W-6	"					" upstream off
3433	W-7	"					" 20' downstream
3434	W-8	"					" near J street

Analysis Requested: METALS: (STLC & TTLC) CR, CU, MG, ZN, CD, PB, AL
CN on jars marked

OTHER: AMMONIA, PH, VOLATILE ORGANICS (on jars marked)

Chain of Custody:

1	<u>Dwayne C. Maxwell</u> Signature	<u>Assoc. WATER QUAL - BIOL.</u> Title	<u>10/17/85 - 10/17/85</u> Inclusive Dates
2	<u>Randa D. Nogg</u> Signature	<u>WMS-I</u> Title	
3	_____ Signature	_____ Title	_____ Inclusive Dates
4	_____ Signature	_____ Title	_____ Inclusive Dates
5	_____ Signature	_____ Title	_____ Inclusive Dates

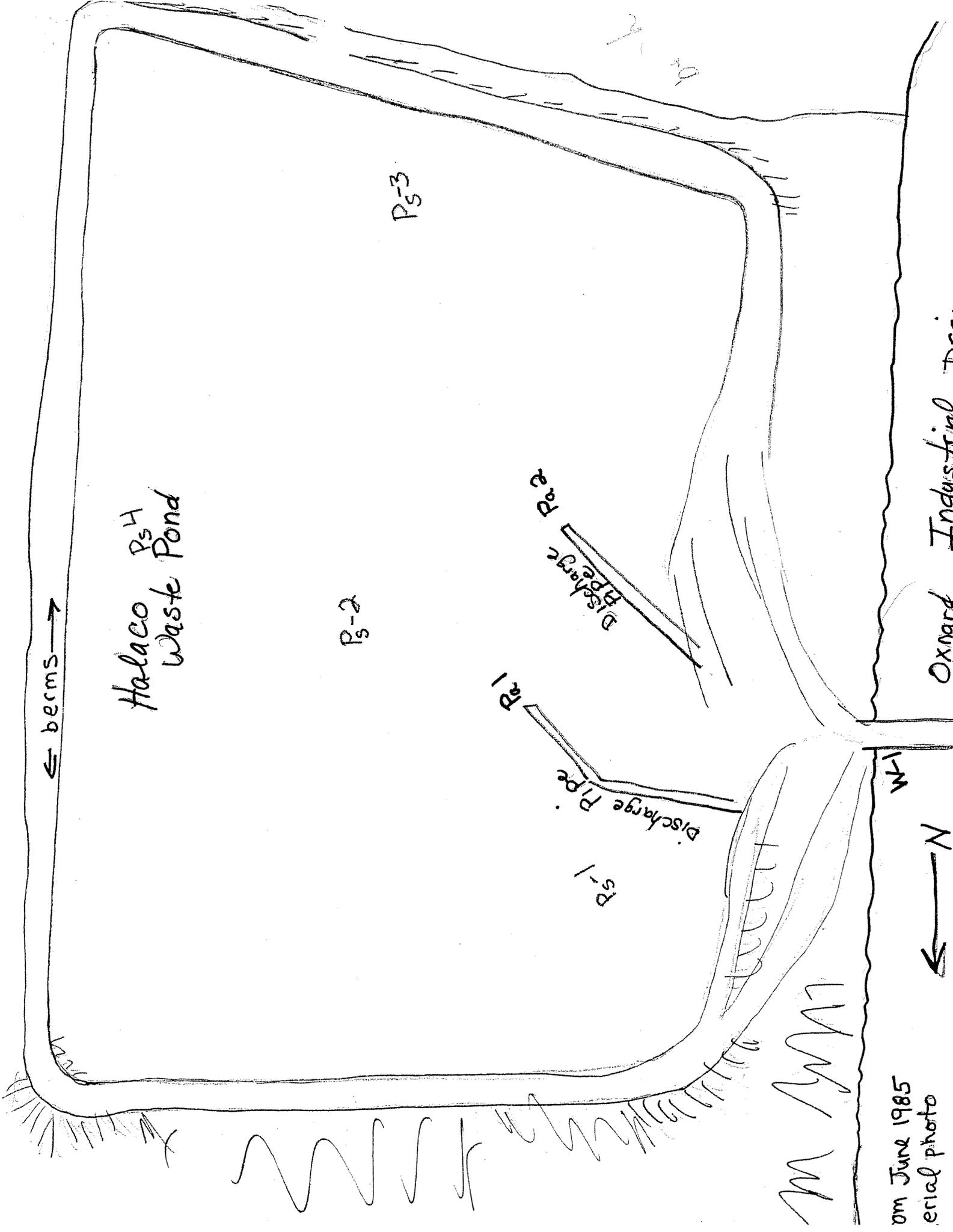
Special Remarks Halaco took sample "A", lab will test sample C
(e.g., duplicate sample given to company, etc.)

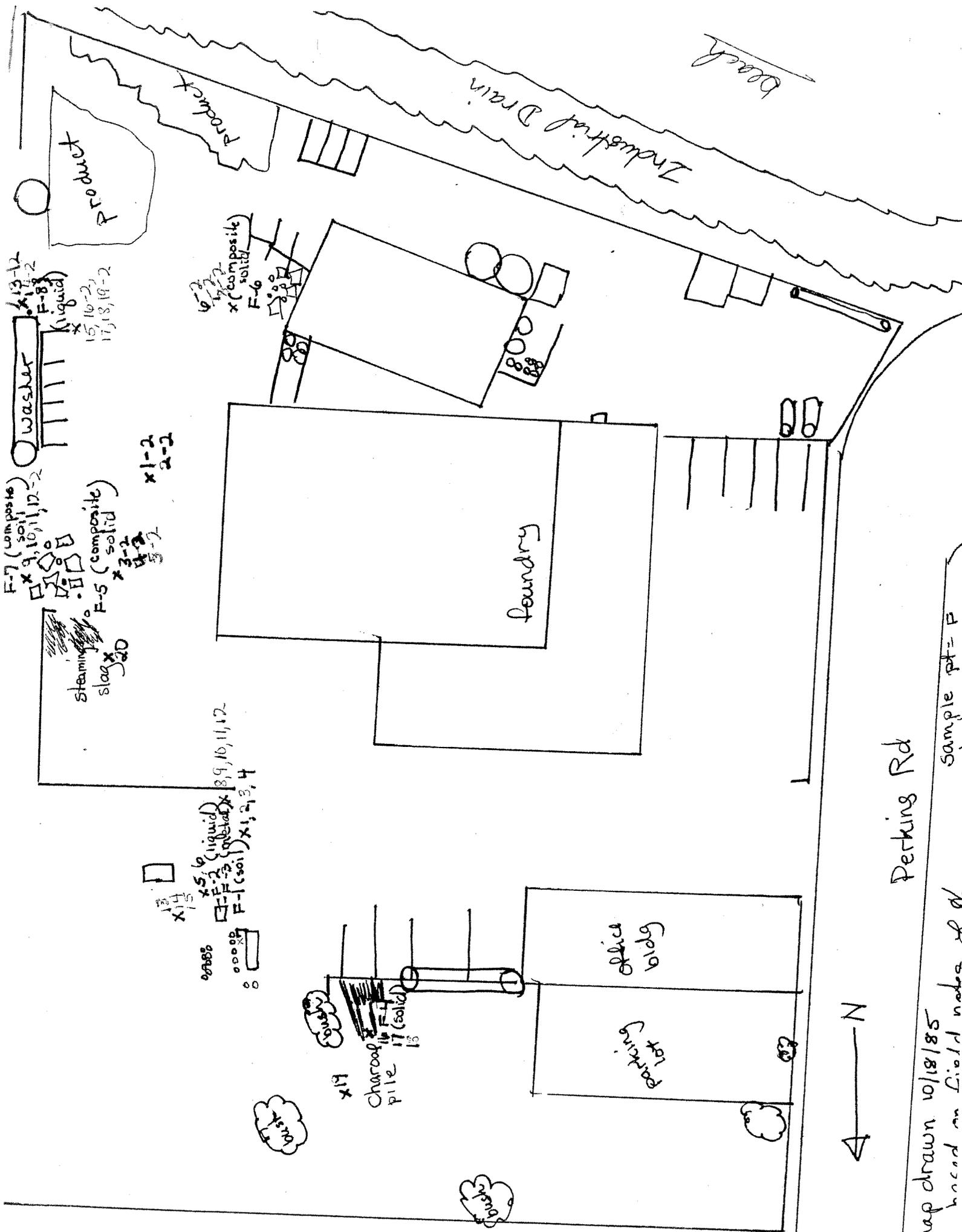
PART II: LABORATORY SECTION

Received By Mary W. Clardige Title PA Chem III Date 10/17/85
Sample Allocation: HML SCBL LBL Other

Analysis Required _____

Indicate whether sample is sludge, soil, etc. Orig.-Lab. Dup.-File Trip.-Inspector





up drawn 10/18/85
 based on field notes of [unclear] Sample pt = F

**Reference
No. 13**

D36

DEPARTMENT OF HEALTH SERVICES

107 SOUTH BROADWAY, ROOM 7011
LOS ANGELES, CA 90012
(213) 620-2380



October 17, 1985

Clarence Haack, President
Halaco Engineering, Inc.
6200 Perkins Road
Oxnard, CA

Dear Mr. Haack:

NOTICE OF VIOLATION AND DIRECTIVE TO COMPLY - HALACO ENGINEERING, INC.

Investigation by this Department reveals violations of the Hazardous Waste Control Act (Health and Safety Code, Section 25150 et seq.) by the subject firm. Specifically, evidence reveals violations of the following Sections of the Health and Safety Code associated with Halaco's handling of their recycling waste:

<u>Section</u>	<u>Violation</u>
25201	Failing to have a permit to treat, store, or dispose of hazardous waste on site.
25189.5(a)	Disposing of hazardous waste at a nonpermitted facility (Halaco).

You are directed to immediately cease the unlawful disposal of hazardous waste. You are further directed to initiate steps to correct the subject violations by submitting to the Department a plan for the removal of the wastes and clean up of the site and restoration of the wetlands. This plan should be submitted to the Department by November 18, 1985. All waste must be handled and redispensed in accordance with applicable laws and regulations.

If you have any questions, please contact Linda D. Hogg of my staff.

Sincerely,

Angelo Bellomo, Chief
Southern California Section
Toxic Substances Control Division

AB:LDH:ls

S-B-B-1

**Reference
No. 14**

DEPARTMENT OF HEALTH SERVICES

107 SOUTH BROADWAY, ROOM 7011
LOS ANGELES, CA 90012
(213) 620-2380



March 17, 1986

Mr. Clarence Haack, President
Halaco Engineering, Incorporated
6200 Perkins Road
Oxnard, CA 93030

Dear Mr. Haack:

NOTICE OF VIOLATION AND SCHEDULE FOR COMPLIANCE
HALACO ENGINEERING, OXNARD, CALIFORNIA

On October 17, 1985, this Department conducted an investigation of the subject facility. As a result of that investigation, violations of hazardous waste laws and regulations were identified.

Specified violations and required corrective actions are listed below. Failure to correct the identified violations within the schedule provided will result in this Department taking appropriate actions as provided for by law.

VIOLATIONS

1. Section 25189.5(a), Chapter 6.5, California Health and Safety Code (H&SC)

"The disposal of any hazardous waste, or the causing thereof, is prohibited when the disposal is at a facility which does not have a permit from the Department issued pursuant to this chapter, or at any point which is not authorized according to this chapter."

Halaco Engineering does not have a permit from this Department for the disposal of hazardous waste. Samples of onsite soils show contaminant concentrations above regulated levels. Specifically, samples Sn8, F-5 and duplicates F-9, and Ps2, have levels of copper and zinc above the regulated levels provided under Article 11, Title 22, California Administrative Code (CAC). The contaminant concentrations also exceed background levels (Samples Sf1-Sf5). The samples were also analyzed for ammonia and cyanide. The results show levels exceeding background concentrations. Ammonia and cyanide are hazardous waste within the meaning of Article 11, Title 22, CAC and Section 25117, H & SC.

2. Section 25201, H & SC:

"No operator of a storage facility, treatment facility, waste transfer station, resource recovery facility, or waste disposal site shall accept, treat, store, or dispose of a hazardous waste at the facility, station, area, or site, unless the operator holds a hazardous waste facilities permit from the department to use and operate the facility, station, area, or site."

Halaco Engineering does not have a hazardous waste facilities permit from the Department.

3. Section 25143.2(a), H & SC:

"A recyclable material is subject to the requirements of this chapter which apply to hazardous waste unless the department waives the provision of this chapter pursuant to Section 25143, or except as provided otherwise in subdivision (b) or the regulations adopted by the department pursuant to Sections 25150 and 25151." (See Article 12, Title 22, CAC)

Department records do not indicate that Halaco has applied for nor obtained either a Hazardous Waste Facility Permit or a Resource Recovery Facility Permit for the lawful handling of recyclable hazardous wastes.

SCHEDULE OF COMPLIANCE

1. Halaco Engineering is hereby directed to:
 - a. Submit an application for a hazardous waste facility permit or a Series A Resource Recovery facility permit within 30 days of receipt of this notice. Filing an application for a hazardous waste facility permit, does not in itself authorize Halaco Engineering, Inc. to operate a hazardous waste facility.
 - b. Submit a site characterization workplan in order to define the nature and extent of contamination in on-site and off-site areas, and to allow identification and implementation of remedial actions. This workplan shall be submitted within 30 days of receipt of this notice.
2. Halaco Engineering is further directed to provide this Department a written confirmation of its intention to comply with the above directive within 10 days of receipt of this notice.

The issuance of this Notice of Violation and Schedule of Compliance does not preclude the Department from taking administrative, civil or criminal action as a result of the violations, nor does it preclude the Department from identifying additional violations and initiating appropriate enforcement or remedial action. This notice is not an Order pursuant to Section 25187, Health and Safety Code.

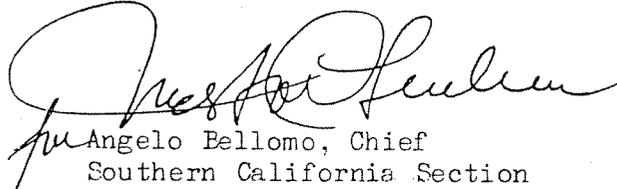
Mr. Clarence Haack, President

- 3 -

March 17, 1986

If you have questions or wish to schedule a conference, please contact Linda D. Hogg or Jim Smith of this office.

Sincerely,



Angelo Bellomo, Chief
Southern California Section
Toxic Substances Control Division

AB:LDH:jba

Enclosure

cc: Richard Ross
Enforcement Coordinator
Toxics Substances Control Division
714 "P" Street
Sacramento, CA 95814

Susan Durbin
Deputy Attorney General
Public Rights Division
Environmental Law Section
3580 Wilshire Blvd., Suite 800
Los Angeles, CA 90010

Greg Eröse
Deputy District Attorney
Consumer Fraud Division
800 S. Victoria Avenue
Ventura, CA 93009

Certified Mail
Return Receipt Requested
P 659 352 121
R R R

PS Form 3800, Feb. 1982 * U.S.G.P.O. 1983-403-517

Sent to Mr. Clarence Haack, Pres. Halaco Eng'g, Inc. Street and No. 6200 Perkins Road Oxnard, CA 93030 P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	3-17-86 JBA

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

P 659 352 121

(See Reverse) AB/LDH/jba

DEPARTMENT OF HEALTH SERVICES

107 SOUTH BROADWAY, ROOM 7011
 LOS ANGELES, CA 90012
 (213) 620-2380



*not handed out
 on this day -
 wait till
 results*

October 17, 1985

Clarence Haack, President
 Halaco Engineering, Inc.
 6200 Perkins Road
 Oxnard, CA

Dear Mr. Haack:

NOTICE OF VIOLATION AND DIRECTIVE TO COMPLY - HALACO ENGINEERING, INC.

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<u>Section</u>	<u>Violation</u>
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25189.5(a)	Disposing of hazardous waste at a nonpermitted facility (Halaco).

You are directed to immediately cease the unlawful disposal of hazardous waste. You are further directed to initiate steps to correct the subject violations by submitting to the Department a plan for the removal of the wastes and clean up of the site and restoration of the wetlands. This plan should be submitted to the Department by November 18, 1985. All waste must be handled and redispensed in accordance with applicable laws and regulations.

If you have any questions, please contact Linda D. Hogg of my staff.

Sincerely,

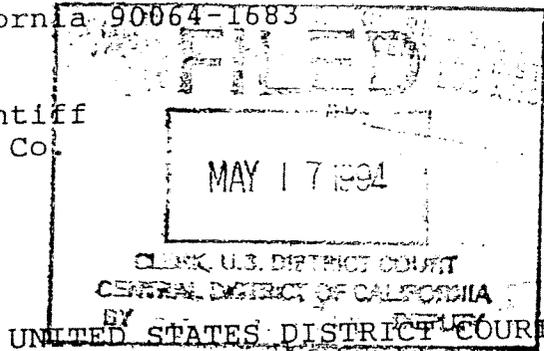
Angelo Bellomo, Chief
 Southern California Section
 Toxic Substances Control Division

AB:LDH:ls

**Reference
No. 15**

1 ARTHUR FINE (State Bar No. 42461)
2 DOUGLAS W. BORDEWIECK (State Bar No. 115468)
3 MITCHELL, SILBERBERG & KNUPP
4 11377 West Olympic Boulevard
5 Los Angeles, California 90064-1683
6 (310) 312-2000

7 Attorneys for Plaintiff
8 Halaco Engineering Co.



9 CENTRAL DISTRICT OF CALIFORNIA

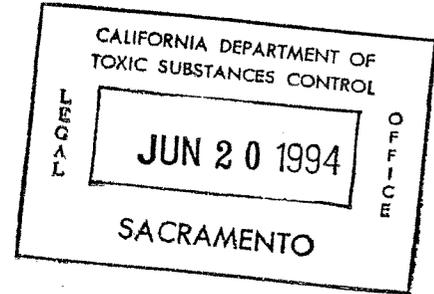
10
11 HALACO ENGINEERING CO., a
12 California corporation,
13 Plaintiff,

14 v.

15 WILLIAM SOOHOO, Executive
16 Director, California Department
17 of Toxic Substances Control,
18 Defendant.

19 CASE NO. CV-93 5600 R

20 STIPULATION OF DISMISSAL WITH
21 PREJUDICE SIGNED BY ALL PARTIES
22 WHO HAVE APPEARED IN THE ACTION
23 (FRCP Rule 41(a)(1)(ii))



24 Plaintiff Halaco Engineering Co. ("Halaco") and
25 defendant William F. Soo Hoo, Director of the California
26 Department of Toxic Substances Control ("Department") constitute
27 all of the parties who have appeared in the above-entitled action
28 ("Action"). Halaco and the Department have entered into a
settlement agreement settling the Action as of April 29, 1994
("Agreement"). Pursuant to the Agreement, Halaco and the
Department were to cause their counsel to file a Stipulation of

1 Dismissal with Prejudice of the Action, pursuant to FRCP Rule
2 41(a)(1)(ii). This Stipulation is being signed by counsel for
3 Halaco and the Department pursuant to the Agreement and by so
4 executing this Stipulation Halaco and the Department have
5 stipulated and agreed that the above-entitled Action shall
6 forthwith be dismissed with prejudice.

7
8 Dated: May 5, 1994. MITCHELL, SILBERBERG & KNUPP

9
10 By: Arthur Fine
11 Arthur Fine
12 Attorneys for Plaintiff
13 Halaco Engineering Co.

14 Dated: May 9, 1994. CALIFORNIA DEPARTMENT OF JUSTICE

15 By: Donald A. Rob
16 Donald A. Robinson
17 Deputy Attorney General
18 Attorneys for Defendant
19 William F. Soo Hoo

20 IF IS SO ORDERED.

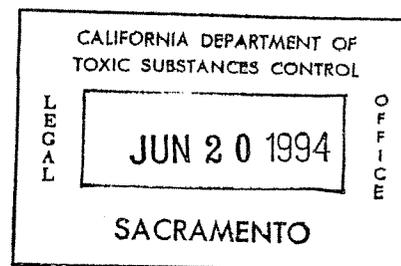
21 DATED 5-16-94

22 DICKRAN TEVRIZIAN
23 UNITED STATES DISTRICT JUDGE
24 FOR MANUEL L. REAL

SETTLEMENT AGREEMENT

This Settlement Agreement (hereafter "Agreement") is entered into by and between Halaco Engineering Co. ("Halaco") and State of California Department of Toxic Substances Control as of April 29, 1994, and shall be deemed to be entered into in Los Angeles County, California.

RECITALS



1. Halaco, a California corporation, operates an aluminum and magnesium scrap metal recycling plant located at 6200 Perkins Road in Oxnard, California. At the Site, Halaco recycles alloys of aluminum and magnesium scrap metal and drosses into various usable materials. Such recycling generates waste consisting of water, dirt, fluxing salts, and some residual non-recoverable alloys of aluminum and magnesium. Halaco disposes of its waste to its settling pond and its adjacent waste disposal site. The settling pond and waste disposal site consist of approximately 28 acres (collectively the "Site") and are located immediately east of Halaco's approximately 12 acre smelter site.

2. William F. Soo Hoo ("Soo Hoo") is the Director of the State of California Department of Toxic Substances Control, successor-in-interest to the Toxic Substances Control Division of the State of California Department of Health Services (collectively, the "Department").

3. In September 1993, Halaco instituted an action against Soo Hoo, in his capacity as Director of the Department, in the United States District Court for the Central District of California, Case No. 93-5600 R (the "Action"), seeking declaratory and injunctive relief. In November 1993, and pursuant to a Stipulation between the parties, Halaco filed its First Amended Complaint ("FAC") in the Action. The FAC asserts claims for violations of the Supremacy Clause and the Commerce Clause of the Federal Constitution, of the Due Process Clause contained in the Fourteenth Amendment to the Federal Constitution, and under California law. The Department's Answer to the FAC, filed in December 1993, denies material allegations thereof and asserts affirmative defenses thereto.

4. Halaco's FAC challenges the application to it of two discrete aspects of a regulation promulgated by the Department pursuant to the California Hazardous Waste Control Law, Cal. Health & Safety Code § 25100 et seq. The regulation in question is found at Title 22, Cal. Code Reg. § 66261.24, and is entitled "Characteristic of Toxicity" (hereafter the "California Toxicity Regulation"). The California Toxicity Regulation includes a Table II (§ 66261.24(a)(2)(A)) which lists 20 substances, and for each such substance, specifies a Soluble Limit Threshold Concentration ("STLC") and a Total Threshold Limit Concentration ("TTLC").

5. Under the California Toxicity Regulation (§ 66261.24(a)(2)(A)), a waste is generally deemed to be a hazardous waste if (a) an appropriate sample of the waste contains a substance listed in Table II therein at a concentration in milligrams per kilogram which equals or exceeds the TTLC value listed in Table II for that

substance; and (b) the sampling methods and procedures specified in EPA Manual SW-846 have been properly followed and applied. Title 22, Cal. Code Reg. §§ 66261.24(a)(2); 66694.

6. Other regulations promulgated by the Department under the California Hazardous Waste Control Law authorize the Department, on a case-by-case basis, to determine that the waste of a particular entity is non-hazardous, even though such waste contains a substance listed in Table II of the California Toxicity Regulation in a concentration exceeding the TTLC concentration listed in Table II. For example, Title 22, Cal. Code Reg. § 66260.200(f) states that the Department may determine, on a case-by-case basis, that a waste is non-hazardous "because it has mitigating physical or chemical characteristics which render it insignificant as a hazard to human health and safety, livestock, and wildlife." And § 25143 of the California Health & Safety Code specifically empowers the Department, in an appropriate case, to grant a variance from application of the regulations promulgated by it pursuant to the California Hazardous Waste Control Law, when what would otherwise be a hazardous waste is "insignificant or unimportant as a potential hazard to human health and safety, and the environment."

7. The twenty substances listed in Table II of the California Toxicity Regulation include "copper and/or copper compounds," and "zinc and/or zinc compounds." The TTLC values stated in Table II for those substances are as follows: for copper and/or copper compounds, 2500 mg/kg (the "Copper TTLC"); and for zinc and/or zinc compounds, 5000 mg/kg (the "Zinc TTLC").

8. The FAC asks for (a) a judicial declaration and determination that the Copper TTLC and Zinc TTLC regulations may not be enforced by Soo Hoo against Halaco, and (b) an order enjoining the Department, and its successors, from enforcing the Copper TTLC and Zinc TTLC regulations against Halaco. The FAC does not challenge any other aspect or provision of the California Toxicity Regulation.

9. During formal and informal discovery, the parties produced substantial numbers of documents and furnished significant information to one another. The Department produced more than 25,000 pages of documents, including much of the publicly available file for the rulemaking proceeding which culminated in the adoption of regulations including the California Toxicity Regulation. Halaco produced more than 4,400 pages of documents, and provided by way of those documents and communications with the Department detailed information and explanation as to the reasons why it believes that the presence of copper and zinc compounds in its alkaline waste from processing alloys of magnesium and aluminum, in concentrations above the Copper TTLC and Zinc TTLC values specified by Table II of the California Toxicity Regulation, will not pose any meaningful threat to human health or welfare or to the environment. The Department followed up on the information from Halaco, by making site inspections of Halaco's waste, meeting with Halaco's environmental consultant, and requesting Halaco to have certain tests conducted on its waste. The requested tests were performed and the results were submitted to and analyzed by the Department.

10. Halaco alleges in the FAC and the Department, without admitting the relevancy thereof, acknowledges that (a) copper and zinc are essential nutrients to human and animal life, and indeed that health food stores and pharmacies routinely sell vitamin pills and dietary supplements containing zinc and copper compounds; (b) copper and zinc are especially prone to immobilization in soils and insolubilization in water; (c) copper and zinc form insoluble species in neutral to alkaline natural waters and tend to precipitate with other sedimentary materials; and (d) the immobilization of copper and zinc in alkaline soils is of such magnitude that copper and zinc deficiencies may occur in plants grown on soils which contain otherwise nutritionally adequate traces of copper and zinc.

11. Halaco's testing results by independent consulting/testing firms of its waste as submitted to the Department show that, at all pertinent times, the waste at the Site contained quantities of zinc, copper, and compounds thereof at concentrations less than the Copper TTLC and Zinc TTLC concentrations. The FAC alleges that Halaco has had and continues to have the opportunity to purchase and process alloys of aluminum and magnesium drosses which on the average will contain higher copper and zinc content than the alloys of aluminum and magnesium drosses it has been purchasing and processing to date, and which if processed will cause waste on the Site to include concentrations of copper, zinc, and/or compounds thereof in excess of the Copper TTLC and/or the Zinc TTLC values ("High Copper/Zinc Drosses"). In addition, the FAC alleges that Halaco has declined to purchase and process such High Copper/Zinc Drosses because of its concern that doing so would cause it to have waste

with TTLC values for copper, zinc, or the compounds thereof in excess of the Copper TTLC and/or Zinc TTLC values.

12. Based on the information provided by Halaco, if in fact Halaco purchases and processes such High Copper/Zinc Drosses, there is a substantial likelihood that waste streams therefrom and the waste on the Site thereafter will contain concentrations of copper, zinc, and/or compounds thereof in excess of the Copper TTLC and/or the Zinc TTLC values.

13. Based on the Department's review of the detailed information furnished to it by Halaco including test results requested by the Department, and of various materials from the rule-making file referred to above, and based upon the Department's site inspections of Halaco's waste, and consultation with Halaco's environmental consultant, and subject to the conditions specified in the provisions of this Agreement, the Department has concluded that the alkaline waste at the Site may and should be regarded as non-hazardous as to total threshold limit concentration for copper, zinc, and/or compounds thereof provided it contains total threshold limit concentrations of copper, zinc, and/or compounds thereof less than 25,000 mg/kg (in the case of copper and copper compounds) and 50,000 mg/kg (in the case of zinc and zinc compounds). It also appears to the Department that there exist mitigating physical and chemical characteristics in the waste at the Site (particularly including its markedly alkaline pH, and the extremely high likelihood that copper and zinc will be present in the waste in insoluble compounds and that over time the compounds will become even more stable and less soluble) which will render it insignificant and

unimportant as a potential hazard to human health, welfare, safety, livestock, wildlife, and land based organisms, providing the concentrations of copper and compounds thereof in such waste are less than 25,000 mg/kg, and the concentrations of zinc and compounds thereof in such waste are less than 50,000 mg/kg.

14. Halaco is currently subject to Waste Discharge Requirements issued by the California Regional Water Quality Control Board, Los Angeles Region (Order No. 80-58). Order No. 80-58 applies to the discharge of Halaco's solid and liquid wastes into its settling pond and onto its waste disposal site, and includes requirements designed to protect against lateral migration and surface runoff of Halaco's wastes.

15. The parties hereto wish to resolve this particular dispute between them without the expense of further litigation and, except as set forth herein, without admissions of law or fact related to the Action.

TERMS

NOW, THEREFORE, intending to be legally bound, and in consideration of the promises and representations made herein, Halaco and the Department agree as follows.

1. Copper TTLC For Halaco's Waste. With respect to copper and copper compounds contained in any waste at the Site generated from processing

alloys of aluminum and magnesium including specifically High Copper/Zinc Drosses, the Department agrees that a TTLC of 25,000 mg/kg shall apply, rather than the TTLC of 2,500 mg/kg specified by Table II of Title 22, Cal. Code Reg. § 66261.24(a)(2).

2. Zinc TTLC For Halaco's Waste. With respect to zinc and zinc compounds contained in any waste at the Site generated from processing alloys of aluminum and magnesium including specifically High Copper/Zinc Drosses, the Department agrees that a TTLC of 50,000 mg/kg shall apply, rather than the TTLC of 5,000 mg/kg specified by Table II of Title 22, Cal. Code Reg. § 66261.24(a)(2).

3. Non-Hazardous Waste As to TTLC For Copper and Zinc. The Department agrees that the waste at the Site is non-hazardous as to total threshold limit concentrations for copper, zinc, and/or compounds thereof provided it contains total threshold limit concentrations of copper, zinc, and/or compounds thereof less than the TTLC values set forth in paragraphs 1 and 2 hereof. The Department has made no determination in this Agreement with respect to constituents in Halaco's waste other than copper, zinc, and/or compounds thereof.

4. Possible Federal TTLC Regulations. Should the United States Environmental Protection Agency ("EPA") adopt regulations which deem a waste to be hazardous because of total metal concentrations for copper and copper compounds and/or zinc and zinc compounds ("Federal TTLC Regulations"), which Federal TTLC Regulations --

(a) are lower than those set forth in paragraphs 1 and/or 2 of this Agreement, but higher than then-existing California TTLC values; and

(b) Federal law requires that the Department enforce those Federal TTLC Regulations as to Halaco's waste in lieu of the provisions of paragraphs 1 and/or 2 of this Agreement,

then those Federal TTLC Regulations will be applicable to Halaco's waste and not the TTLC values set forth in paragraphs 1 and/or 2 herein. Nothing in this Agreement shall prevent, bar, or estop Halaco from challenging or otherwise contesting the validity, applicability, or any other aspect of those Federal TTLC Regulations. Nothing in this Agreement shall prevent, bar, or estop Halaco from seeking any variance, exemption, or determination as may be available under the Federal TTLC Regulations, that those Federal TTLC Regulations should not be applicable to Halaco's waste.

5. New Evidence Re TTLCs and This Agreement. Should new scientific evidence become available, subsequent to the execution of this Agreement, that the TTLC values for copper and copper compounds, and/or zinc and zinc compounds should be significantly higher than as provided for in paragraphs 1 and/or 2 of this Agreement, including evidence that the EPA has adopted such higher TTLC values ("New Scientific Evidence"), such New Scientific Evidence shall not affect the provisions of paragraphs 1 and/or 2 of this Agreement, except if the following conditions occur:

(a) Halaco in good faith and on a reasonable scientific basis determines that the New Scientific Evidence demonstrates that such higher TTLC values are more appropriately applicable to Halaco's waste than the provisions of paragraphs 1 and/or 2 of this Agreement;

(b) Halaco in writing informs the Department as to its determination in (a) above, including the specific scientific basis for that determination;

(c) If Halaco and the Department are unable to resolve any differences regarding the applicability of such higher TTLC values to Halaco's waste, Halaco may elect to seek modification of this Agreement as to paragraphs 1 and/or 2 upon a showing of good cause in an appropriate judicial proceeding. Good cause shall consist of a showing by Halaco that it has complied with the provisions of subparagraphs (a) and (b) above and that a preponderance of New Scientific Evidence supports the appropriateness of such higher TTLC values being applicable to Halaco's waste in lieu of the provisions set forth in paragraphs 1 and/or 2 of this Agreement, and Halaco shall have the burden of so demonstrating that to the Court. The parties agree that (i) the issue to be decided in any such judicial proceeding shall be the appropriateness of modifying the provisions of paragraphs 1 and/or 2 of this Agreement with respect to Halaco's wastes, and (ii) in any such judicial proceeding to modify the provisions of this Agreement, neither the Department nor Halaco shall seek a determination as to the validity or invalidity of the Department's then-existing

TTLC values. This does not affect Halaco's rights under paragraph 10 of this Agreement.

6. New California TTLC Regulations and This Agreement. Should the Department modify, adopt, amend, or otherwise change its existing regulations for TTLC for copper and copper compounds and/or zinc and zinc compounds such that the newly adopted, amended, or otherwise changed regulations become effective in lieu of presently existing regulations ("New California TTLC Regulations"), those New California TTLC Regulations shall not affect the provisions of paragraphs 1 and/or 2 of this Agreement, and shall not be effective as to Halaco, unless Federal law requires that the Department enforce those New California TTLC Regulations as to Halaco's waste in lieu of the provisions of paragraphs 1 and/or 2 of this Agreement, or if the following conditions occur:

(a) The Department in good faith and on a reasonable scientific basis determines that the New California TTLC Regulations are more appropriately applicable to Halaco's waste than the provisions of paragraphs 1 and/or 2 of this Agreement;

(b) The Department in writing informs Halaco as to its determination in (a) above, including the specific scientific basis for that determination;

(c) If the Department and Halaco are unable to resolve any differences regarding the applicability of the New California TTLC Regulations to Halaco's waste, the Department may elect to seek a modification of this Agreement as to paragraphs 1 and/or 2 upon a showing of good cause in an appropriate judicial proceeding. Good cause shall consist of a showing by the Department that it has complied with the provisions of subparagraphs (a) and (b) above and that a preponderance of scientific evidence supports the appropriateness of the New California TTLC Regulations being applicable to Halaco's waste in lieu of the provisions set forth in paragraphs 1 and/or 2 of this Agreement, and the Department shall have the burden of so demonstrating that to the Court. The parties agree that (i) the issue to be decided in any such judicial proceeding shall be the appropriateness of modifying the provisions of paragraphs 1 and/or 2 of this Agreement with respect to Halaco's wastes, and (ii) in any such judicial proceeding to modify the provisions of this Agreement, neither the Department nor Halaco shall seek a determination as to the validity or invalidity of the Department's then-existing TTLC values. This does not affect Halaco's rights under paragraph 10 of this Agreement.

7. Applicability of California Toxicity Regulation. This Agreement only concerns the TTLC for copper, zinc, and/or the compounds thereof, and no other provisions of the California Toxicity Regulation, which other provisions continue to be applicable to Halaco's waste. Except as expressly set forth in this Agreement, nothing in this Agreement shall affect the authority of the Department or any other agency to enforce any provision of law which it is authorized to enforce.

8. Dismissal with Prejudice. Promptly after this Agreement has been signed by the parties and approved as to form by their counsel, the parties will cause their counsel to file a stipulation of dismissal with prejudice of the Action pursuant to Federal Rules of Civil Procedure Rule 41(a)(1)(ii).

9. No Implied Admissions by the Parties. The parties agree that neither has made any admissions of fact or law other than as expressly set forth herein. In particular, Halaco has not admitted that, if waste at the Site hereafter exceeds or to the extent the Department has ever previously contended the waste ever exceeded any STLC or TTLC value established by the California Toxicity Regulation, such waste has been, will be, or may properly be regarded as, hazardous. Nor has Halaco admitted that the California Toxicity Regulation, or any part thereof, is rational, scientifically justified, and/or legal. Nor has the Department admitted that the California Toxicity Regulation, or any part thereof, is not rational, scientifically justified, and/or legal.

10. Halaco Free to Challenge California Toxicity Regulation. The parties agree that, notwithstanding Halaco's willingness to settle the Action as set forth herein, Halaco remains free to challenge all or any portion of the California Toxicity Regulation, including without limitation the inclusion therein of any TTLC values, for any substances, except that Halaco agrees that it will not challenge the Copper TTLC and Zinc TTLC as presently set forth in paragraphs 1 and 2 hereof (as contrasted to what the Copper TTLC and/or Zinc TTLC may become as a result of

paragraphs 4 and/or 6 hereof), unless the Department or other environmental agency contends that Halaco is in violation of either or both of those TTLC values.

11. Waste Management. As a condition subsequent to this Agreement and for purposes of waste management, Halaco upon the conditions precedent set forth below will construct a six foot chain link fence around the Northern, Eastern, and Southern outside perimeter of its settling pond and waste disposal site, at Halaco's property line, and shall maintain that fence by making such repairs as may from time to time be reasonably necessary. If the conditions precedent do not occur, Halaco will have no obligation to construct and/or maintain the fence. The conditions precedent are as follows:

(a) the obtaining of all necessary permits and consents from all governmental authorities and agencies with jurisdiction over such fence;

(b) the obtaining of all necessary consents from all governmental authorities, agencies, and private parties necessary to be permitted to construct the Northern, Eastern, and Southern portions of the fence by using construction equipment on the property adjacent to the settling pond and waste disposal site;

(c) the Department will cause the Attorney General's Office to cooperate and the Department will cooperate with Halaco in obtaining the foregoing permits and consents by providing a copy of this Agreement, upon request, to the

applicable authorities, agencies, and private parties (collectively "Fence Parties"). In addition, the Department and the Attorney General's Office will provide further cooperation by confirming to such Fence Parties as may be interested that the construction and maintenance of the fence was at the request of the Department for management purposes and by providing such further information as may be requested by the Fence Parties regarding this Paragraph 11 of the Agreement. For purposes of providing the foregoing cooperation, the contact person at the Department will be _____ and at the Attorney General's Office, Donald Robinson. The Department and the Attorney General's Office represent that the construction and maintenance of the fence is not being requested by the Department because the Department made any determination of hazardousness or non-hazardousness of Halaco's waste;

(d) the construction and maintenance of the fence must not be inconsistent with the requirements of the Regional Water Quality Control Board, Los Angeles Region as to Halaco ("Waste Discharge Requirements"), and if so, the Waste Discharge Requirements shall be applicable to Halaco and not the provisions of this paragraph.

12. No State Liability. Halaco agrees that the execution or implementation of this Agreement by the Department shall not be alleged by Halaco as the basis for any liability of the State, or any officer, employee, or instrumentality thereof under state or federal law.

13. Representation by Counsel. Each of the parties represent and warrant that he or it was represented by counsel in this matter, and that he or it has been advised by counsel that this is a binding and legal Agreement and that both parties may properly enter into it.

14. Authority to Enter. Each of the parties represent and warrant that he or it is fully authorized to enter into this Agreement and to bind his or its respective successors, affiliates, assignees, and representatives to its terms. More particularly, Soo Hoo represents and warrants that he is entering into this Agreement (and is authorized to do so) in his capacity as Director of the State of California Department of Toxic Substances Control, and that in entering into this Agreement he is acting on behalf of and binding the Department to its terms, from and after the Effective Date.

15. No Reliance. Each of the parties represent and warrant that, except for statements, representations and promises expressly set forth in this Settlement Agreement, no party hereto has made any statement, representation, or promise to any other party regarding a fact relied upon by the other party in entering into this Settlement Agreement, and no party hereto has relied upon any statement, representation, or promise, of the other party, or of any representative or attorney for the other party, in executing this Settlement Agreement, or in making the settlement provided for herein.

16. Investigation of the Facts. Each of the parties represent and warrant that he or it has made such investigation of the facts pertaining to this Settlement Agreement, the settlement provided for herein, and all matters pertaining hereto as he or it deems necessary or desirable.

17. Costs and Expenses. Each of the parties has incurred costs and legal fees in connection with the Action. The parties agree that each of them will be responsible for their own costs and legal fees so incurred.

18. Integration. This Agreement constitutes the entire understanding between the parties with respect to the subject matter hereof, and supersedes any prior written or oral agreements pertaining thereto.

19. Binding Effect. This Agreement shall be binding upon and inure to the benefit of each of the parties, and to their respective successors, affiliates, assignees, and representatives.

20. No Drafter. The parties agree and state that each of them and their respective independent counsel have reviewed this Agreement, and each specifically agrees that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not apply to the interpretation of this Agreement.

21. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, and all of which together shall be deemed to be one and the same instrument.

22. Amendment Must Be Written. No modification, amendment, or waiver of any of the terms or provisions of this Agreement shall be binding upon any party hereto, unless made in writing and signed by such party or by a duly authorized officer, representative, or agent of such party.

23. Headings. All headings in this Agreement are for convenience only, not a part of this Agreement, and shall not be used to interpret any part of this Agreement.

IN WITNESS WHEREOF, the parties hereto and their counsel have executed this Agreement as of the date first written above.

HALACO ENGINEERING COMPANY STATE OF CALIFORNIA DEPARTMENT
OF TOXIC SUBSTANCES CONTROL

By: _____
Its _____

By: William R. Soo Hoo
William R Soo Hoo
Director of State of California
Department of Toxic Substances
Control

21. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, and all of which together shall be deemed to be one and the same instrument.

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HALACO ENGINEERING COMPANY STATE OF CALIFORNIA DEPARTMENT
OF TOXIC SUBSTANCES CONTROL

By:
Its



Secretary

By: _____

William F. Soo Hoo
Director of State of California
Department of Toxic Substances
Control

APPROVED AS TO FORM:

MITCHELL, SILBERBERG & KNUPP
11377 West Olympic Boulevard
Los Angeles, CA 90064

CALIFORNIA DEPT. OF JUSTICE
300 South Spring Street
Los Angeles, CA 90013

By: Arthur Fine
Arthur Fine
Attorneys for Halaco
Engineering Co.

By: Donald A. Robinson
Donald A. Robinson
Deputy Attorney General
Attorneys for William E.
Soo Hoo

ABF_D003.SOO

DECLARATION OF SERVICE

Case Name: Halaco Engineering Co. v. William SNOHOO CV-93 5600 R

I declare:

I am employed in the Office of the Attorney General, which is the office of a member of the Bar of this Court at which member's direction this service is made. I am familiar with the business practice at the Office of the Attorney General for collection and processing of correspondence for mailing with the United States Postal Service. In accordance with that practice, correspondence placed in the internal mail collection system at the Office of the Attorney General is deposited with the United States Postal Service that same day in the ordinary course of business.

On May 10, 1994, I placed the attached

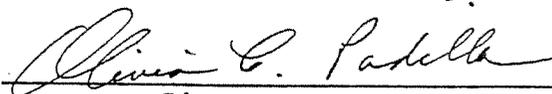
Stipulation of Dismissal With Prejudice Signed By All Parties Who Have Appeared in the Action (FRCP Rule 41(a)(1)(ii)

in the internal mail collection system at the Office of the Attorney General, 300 South Spring Street, Los Angeles, California, for deposit in the United States Postal Service that same day in the ordinary course of business, in a sealed envelope, postage fully postpaid, addressed as follows:

Arthur Fine
Douglas W. Bordewieck
Mitchell, Silberberg & Knupp
11377 West Olympic Boulevard
Los Angeles, California 90064-1683

I declare under penalty of perjury the foregoing is true and correct and that this declaration was executed on May 10, 1994 at Sacramento, California.

Olivia C. Padilla



Signature

**Reference
No. 16**

R41

EDMUND F. SOTELO
City Manager



CITY MANAGER'S OFFICE
305 West Third Street • Oxnard, CA 93030 • (805) 385-7430 • Fax (805) 385-7595

July 10, 2003

CERTIFIED MAIL
7002 0860 0004 1542 1811

Mr. David Gable
Halaco Engineering Company
6200 Perkins Road
Oxnard, CA 93033

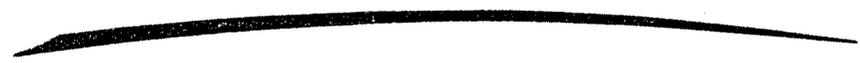
RECEIVED
2003 JUL 21 PM 2:06
OXNARD REGIONAL WATER
QUALITY CONTROL BOARD
LOS ANGELES REGION

Subject: **TERMINATION OF INDUSTRIAL PERMIT – HALACO ENGINEERING
(formerly Industrial Wastewater Discharge Permit No. 806)**

Dear Mr. Gable:

We have received your letter of June 26, 2003, recapping a meeting between City of Oxnard and Halaco Engineering staff that took place on June 24, 2003. The letter describes Halaco's views on the history of permit issues over the life of the Industrial Waste Discharge Permit (IWDP). As these views are sufficiently different from the City's views, staff will require additional time to evaluate and fully respond to your letter. The purpose of this letter, however, is to remind Halaco Engineering that their IWDP has expired, and that any further discharge of industrial waste to the City's collection system would be in violation of the Oxnard City Code.

The termination of Halaco's IWDP was taken to mitigate potential health and safety concerns in the City's collection system from Halaco's discharge and to prevent Halaco's discharge from causing the City's effluent from exceeding performance goals contained in its National Pollutant Discharge Elimination System (NPDES) permit, Regional Water Quality Control Board Order R4-2002-0129. Staff have verified that the cessation of Halaco's industrial process flow no longer creates a health and safety concern in that portion of the collection system that formerly received the Halaco discharge. The effect of the cessation on the City's effluent performance goals will take longer to emerge.

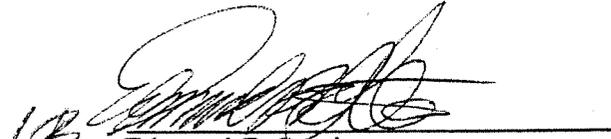


Mr. David Gable

Page 2

Should you have any questions regarding the City's Source Control Program, please feel free to call Mr. Mark Pumford at (805) 271 - 2220.

Sincerely,


Edmund F. Sotelo
City Manager

 cc: Karen Burnham, Assistant City Manager
Keith Silva, U.S. EPA Region 9
Dennis Dickerson, RWQCB - Los Angeles
Dan Radulescu, RWQCB - Los Angeles

**Reference
No. 17**

D8



DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2711
LOS ANGELES, CALIFORNIA 90053

SPLOC

26 May 1978

Halaco Engineering Company
6200 Perkins Road
Oxnard, California 93030

Re: Corps of Engineers' Cease and Desist Order of
9 June 1977; and, Halaco Engineering Co., etc. v.
Clifford L. Alexander, etc., et al., Civil No.
77-4750-AAH, U.S.D.C., C.D., Calif.

Gentlemen:

This letter pertains to the above-referenced matters in
controversy.

The Corps of Engineers (Corps) has re-evaluated the facts
relating to the above-referenced case and the Halaco Engineering
Company's (Halaco) property, involved in this litigation, which
is the subject of that case, and has concluded that that property
is not subject to the Corps' regulations requiring a permit for
the discharge of dredged or fill material. Thus, no Corps'
permit is required by Halaco, and the Corps hereby revokes and
rescinds its above-referenced cease and desist order.

This re-evaluation, revocation and rescission is to be considered
the Corps' final determination as to the property in question,
and hereafter the Corps will make no further or different
determination as to that property. Accordingly, Halaco may rely
in full on the re-evaluation, revocation and rescission set forth
in this letter. The position in this letter relates only to the
Corps and not other Government agencies.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Hugh G. Robinson".

HUGH G. ROBINSON
Colonel, CE
District Engineer

CF:
Stephen D. Petersen, AUSA
Arthur Fine, Esq.

**Reference
No. 18**

HALACO



Since 1965, Halaco Engineering Company operated a scrap metal salvage facility located adjacent to the Ormond Beach wetland in Oxnard. The facility melted millions of pounds of magnesium and aluminum into ingots for use in manufacturing and die-casting, and discharged over one million gallons of wastewater from its smelting operations into unlined settling ponds every month. The wastewater was contaminated with copper, lead and other heavy metals, ammonia, and several radioactive isotopes. Solids that settled out of the wastewater were piled onto a slag heap that grew to tower 40 feet above the wetland.

According to the Regional Water Quality Control Board, the slag heap emitted ammonia and radioactive elements such as thorium and uranium-238. The unlined ponds leaked contaminated wastewater into the wetland, the ocean, and groundwater. The Ventura County Air Pollution Control District found significant cancer and chronic health risks from Halaco's air emissions, which were violating the Clean Air Act. The District received hundreds of complaints from community members who suffered headaches, sore throats and other ailments from the fumes emitted by Halaco.

The company had been cited repeatedly by regulatory agencies for releasing carcinogens into the air, leaking contaminated water into the nearby wetland, and dumping radioactive material into the slag heap. In 1980, the Environmental Protection Agency (EPA) determined that Halaco was violating the Clean Water Act by, among other things, discharging waste to the Ormond Beach Wetlands. However, Halaco continually failed to develop appropriate compliance plans and delayed installation of less polluting technology and practices.

In January 2001, Channelkeeper and the Environmental Defense Center (EDC) stepped in and filed lawsuits against Halaco in state and federal court in an effort to force Halaco to clean up its mess. Halaco tried everything to evade our lawsuit, including attempting to have our suit dismissed, filing a bogus trespass lawsuit against Channelkeeper's Executive Director, and filing for bankruptcy. These efforts failed to deter us.

Regulatory agencies jumped on the bandwagon. In February 2002, the Regional Water Board issued a Cease and Desist Order prohibiting Halaco from discharging any more wastewater and requiring them to remove all wastewater contained in the settling ponds. In October 2002, the Ventura County District Attorney and the California Department of Toxic Substances Control filed a complaint against Halaco in state court for illegally burning

hazardous waste and dumping it to settling ponds that leaked into the ocean. In April 2003, the District Attorney also filed criminal charges against Halaco for unlawful emissions of air pollutants.

After years of haggling, Halaco finally agreed to a settlement with Channelkeeper and EDC, under which Halaco was required to cease discharging contaminated wastewater to the ponds and to stop adding solid waste to the slag heap. The settlement also required Halaco to install measures to ensure that polluted stormwater did not run off the site and to install air pollution monitoring and control technology. Halaco was also required to remove a portion of the waste pile over a 30-year period, or else pay up to \$500,000 into a fund to be used for environmental enhancement efforts in the area. The settlement agreement further required Halaco to pay \$50,000 for a consultant to monitor the company's compliance and to submit to random sampling of its air emissions.

The latter point proved to be Halaco's death knell. Random air emissions testing conducted in April and September 2004 revealed that the notorious polluter was violating its probation by exceeding the limits of its air pollution permit. Because the company was in bankruptcy, it could not afford to take the measures necessary to come back into compliance with its permit, and Halaco was forced to permanently cease operating the smelter in September 2004. While this was a major victory for the community as well as the Ormond Beach Wetland in that Halaco would no longer continue to actively pollute the air and water, its legacy unfortunately lives on in the 40-foot high, 15-acre mountain of toxic slag Halaco built up over the years.

Channelkeeper will continue our efforts to ensure that the property is cleaned up and the wetland is restored and brought back to a healthy state.



Close Window



Press Release

October 2, 2003

Contact:

Linda Krop, EDC (805) 963-1622

Drew Bohan, Channelkeeper (805) 455-2396

ENVIRONMENTAL GROUPS AND HALACO SETTLE POLLUTION LAWSUITS

OXNARD, CA - Today, environmental groups and Halaco Engineering Co. announced a settlement agreement that will end the lawsuits filed by Environmental Defense Center and Santa Barbara Channelkeeper in 2001. Instead of continuing to spend money to fight in court, Halaco, EDC and Channelkeeper agreed to settle the cases so Halaco can focus on remediating the site. Halaco's agreement is due in large part to new leadership that has emerged at Halaco. John Haack, son of the company's founder, has taken the lead in beginning the process of turning Halaco around. For example, under Haack's leadership, last year Halaco stopped its decades-old practice of discharging over a million gallons per month of wastewater effluent into a waste pile built near the Ormond Wetland.

The settlement agreement requires Halaco to install measures to ensure that polluted stormwater does not run off the site, and polluted air is not released into the environment from the facility. In addition, Halaco must install vegetation and matting on the waste pile before the start of this year's rainy season. In the coming years, Halaco must also install a barrier throughout the rest of the facility to prevent polluted storm water from entering waters of the state.

Under the settlement agreement, Halaco is also given an incentive to remove the waste pile. Over a 30-year period, Halaco must remove a portion of this waste material or pay a penalty that goes into a fund that can be used for environmental enhancement projects in the area. If Halaco fails to remove the waste, it will pay \$25,000 into this fund in the early years, and a total of \$500,000 over the 30-year term of the Agreement.

Halaco must also clean up its air discharges. The Settlement requires that Halaco install an air leak detection technology in its air pollution equipment. To ensure compliance with Prop 65, the Settlement requires Halaco to post signs within its facility warning that the area contains chemicals known to cause cancer and birth defects or reproductive harm. In addition, Halaco must publish quarterly warnings in the Los Angeles Times.

Under the Settlement, Halaco will also pay an additional \$60,000 to fund environmental projects that reduce or eliminate the impact of pollutants in the Oxnard area. And, the Settlement requires Halaco to pay \$50,000 for a consultant to monitor Halaco's compliance with the Settlement. If Halaco

fails to comply, EDC and Channelkeeper can go back to federal court to enforce the Settlement.

EDC is the only nonprofit environmental law firm between Los Angeles and San Francisco. Since 1977, EDC has been working with community groups on environmental issues such as protecting water quality, preserving open spaces, saving species from extinction and guarding public health. Website: www.edcnet.org.

Santa Barbara Channelkeeper's mission is to protect and restore the Santa Barbara Channel and its watersheds through enforcement, citizen action, and education. Website: www.sbck.org.

For more information, please contact:

Linda Krop, Environmental Defense Center: (805) 963-1622 or lkrop@edcnet.org

Drew Bohan, Santa Barbara Channelkeeper: (805) 455-2396 or drew@sbck.org

John Haack, Halaco CFO: (805) 488-3684

(###)

**Reference
No. 19**



California Regional Water Quality Control Board

Los Angeles Region



Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Alan C. Lloyd, Ph.D.
Agency Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 - FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

October 14, 2005

D76

Interested Parties

**SITE ASSESSMENT PLAN/REMEDIATION PLAN, HALACO ENGINEERING FACILITY
WASTE MANAGEMENT UNIT, 6200 PERKINS ROAD, OXNARD, CALIFORNIA (FILE NO. 70-24)**

On September 19, 2005, this Regional Board received from Chickadee Remediation Co. a technical report entitled *Site Assessment Plan/Remediation Plan, Halaco Engineering Facility Waste Management Unit, Oxnard, CA*, dated August 2005 and prepared for Chickadee Oxnard, LCC. The cover letter of the report indicates that you were provided a copy the document.

Regional Board staff is currently reviewing the report and, before we formally respond to Chickadee Oxnard, we would like to consider any comments you may have on the assessment and remediation activities proposed in the report. Please submit any comments you may have by November 14, 2005. Comments should be submitted to:

Mr. David Bacharowski, Assistant Executive Officer
Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

If you have any questions concerning this letter, please call Rodney Nelson at (213) 620-6119.

Sincerely,


Jonathan Bishop
Executive Officer

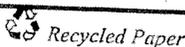
Mailing List:

Marc Luzzatto, The Welk Group
Dan Persha, Frank Crystal & Co.
Kira Schmidt, Santa Barbara Channel Keeper
Denise Klimas, NOAA, Natl. Ocean Services
Denise Steurer, US Fish & Wildlife
Glenn Forman, Dept. Toxic Substances Con.
Richard Horner, Ph.D., Seattle, Washington

Barbara Hamrick, State Dept. of Health
Marilyn Levin, Deputy Attorney General
Peter Band, State Coastal Conservancy
Mitch Disney, Deputy Dist. Atty., Ventura
Mark Pumford, City Oxnard
Daniel Cooper, Lawyers for Clean Water

Cc: R. L. Sloan, Chickadee Remediation Co.

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

**Reference
No. 20**



California Regional Water Quality Control Board

Los Angeles Region



Terry Tamminen
Secretary for
Environmental
Protection

Over 51 Years Serving Coastal Los Angeles and Ventura Counties
Recipient of the 2001 Environmental Leadership Award from Keep California Beautiful

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.swrcb.ca.gov/rwqcb4>

Arnold Schwarzenegg
Governor

D65

April 26, 2004

Mr. Arthur Fine
Registered Agent for Service of Process
Halaco Engineering Co.
Mitchell Silberberg & Knupp LLP
11377 W. Olympic Boulevard
Los Angeles, CA 90064-1683

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO. 7002 2030 0006 2095 4891

By Facsimile and Mail

Mr. Dave Gable
Halaco Engineering Co.
6200 Perkins Road
Oxnard, CA 93033

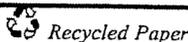
Dear Mr. Fine and Mr. Gable:

TECHNICAL MONITORING INVESTIGATION PURSUANT TO SECTION 13267 OF CALIFORNIA WATER CODE, CLEANUP AND ABATEMENT ORDER NO. R4-2003-0135 - HALACO ENGINEERING CO., 6200 PERKINS ROAD, OXNARD, CALIFORNIA (FILE NO. 70-24, WDR ORDER NO. 80-58, CI NO. 5673)

On March 24, 2004, representatives from Halaco Engineering Co. (Halaco), Halaco's consultant (URS Corporation), the State of California Radiologic Health Branch, the National Oceanic and Atmospheric Administration (NOAA), and the Los Angeles Regional Water Quality Control Board (Regional Board), met to discuss Halaco's efforts and investigation workplans required by Cleanup and Abatement Order No. R4-2003-0135 (CAO) issued on October 30, 2003. In the interagency meeting, Board Staff expressed concerns relating to the past smelting and washing processes and the discharges to the WMU. Board Staff concerns are based on information obtained after the issuance of the CAO: in the Deposition of Mr. Gable taken on September 18, 2003, in the matter of The People of the State of California v. Halaco, two points were discussed that warrant investigation. On page 87 of the deposition, it was stated that bag house dust was put into the washer. (This practice of disposing bag house dust to the washer is not authorized under Halaco's Waste Discharge Requirements Order No. 80-58.) On page 196 of the deposition, it was also stated that waste oils were placed on washed metal or dross prior to being placed in the furnace for smelting. As was explained in the meeting, both practices noted above could expand the environmental concerns with the Waste Management Unit. Consequently, the Regional Board Executive Officer (EO), pursuant to section 13267 of the California Water Code, Division 7, hereby directs Halaco to investigate and furnish a technical report(s) to the Regional Board.

Technical literature confirms that furnace operations which include mixtures of chlorine, organics, and metals can create furnace incineration byproducts such as dioxins and furans. Due to the nature of Halaco's operations (SIC 3341- Secondary Smelting and Refining of Nonferrous Metals) there is a high probability of the formation of these incineration byproducts. Staff believe that the mixture ingredients would have been present in Halaco's smelter furnace

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations

operations to generate incineration byproducts: 1) high temperatures with metal catalysts; 2) organic material, e.g. grease, dirt, oils, plastics like PVC, wood, lacquers and paints, and soil-contaminating the feed stock; and 3) chlorine- plastics like PVC, lacquers and paints. Halaco also uses older rotary furnaces where high air levels of dioxins are found. Consequently, these byproducts could end up in air emissions and in the baghouse dust and washwater that was discharged to the WMU. Baghouse dust can also include "tramp metals" in particulate. These past practices at the Halaco foundry and the standard operating procedures could have resulted in the following categories of pollutants to be discharged to the WMU:

1. Incineration byproducts (dioxins, furans, polyaromatic hydrocarbons, etc.);
2. Tramp metals (cadmium, chromium, mercury, nickel, tin, etc.); and
3. Contaminant wastes (PCBs from transformers, mercury from switches, etc.).

Halaco is currently subject to the requirements of Waste Discharge Requirements Order No. 80-58, Cease and Desist Order No. R4-2002-0064(CDO), and the CAO. Though there has been some environmental monitoring and waste pile monitoring done at the WMU in conjunction with the Order No. 80-58 and the CDO, there has not been any monitoring to evaluate the concerns associated with the pollutant categories noted above. Because of the potential for these pollutants to have been discharged to the WMU and to be released to groundwater, surface waters, stormwater, and to soils from the WMU, investigation is needed. Furthermore, any reuse or disposal activities proposed for waste in the WMU would require sampling and analyses. Consequently, Halaco is directed, pursuant to section 13267 of the California Water Code, Division 7, to conduct an investigation for the pollutants noted above and complete the following activities:

1. Submit to the Regional Board by May 21, 2004, for EO approval, a sampling plan and schedule for Halaco's waste in the WMU. It must be consistent with the sampling plan provisions in U.S. EPA Manual SW 846 (October 1996) and must include any specific protocols for sampling procedures that require approval by the EO. All testing and analysis shall be conducted by a State of California Environmental Laboratory Accreditation Program (ELAP) certified testing laboratory, include all associated quality assurance/quality control (QA/QC) data, and sampling shall be conducted under strict chain-of-custody requirements. Halaco will submit a report of the characterization to the Regional Board within three months of initiating its characterization as set forth above of the remaining WMU solid waste.
2. Submit to the Regional Board by May 21, 2004, for EO approval, a sampling plan and schedule for evaluating Halaco's stormwater disposal/storage practices on the foundry side in the pond adjacent to the Administration Building. All testing and analysis shall be conducted by an ELAP certified testing laboratory, include all associated QA/QC data, and sampling shall be conducted under strict chain-of-custody requirements. Halaco will submit a report to the Regional Board within three months of initiating its sampling as set forth in the sampling plan and schedule approved by the EO.
3. Halaco shall, to the satisfaction of the EO, adequately address the pollutant categories noted herein for CAO Provisions A (iii), (iv), and (v). CAO Provision A (iii) required Halaco to submit to the Regional Board by November 20, 2003, a workplan and schedule to assess and investigate the nature and extent of existing and threatened pollution of groundwater, surface

water, soil, and stormwater associated with past disposal practices and the existing conditions and configuration of the WMU". Provision A. (iv) required Halaco to "Submit the Regional Board by January 31, 2004, a workplan and schedule for short-term and long-term measures to remediate existing and threatened pollution of groundwater, surface water, soil, and stormwater associated with past disposal practices and the existing conditions and configuration of the WMU". Provision A. (v) required Halaco to "Submit to the Regional Board by February 28, 2004, a workplan and schedule setting forth Halaco's short-term and long-term measures to reconfigure the WMU". The initial assessment and investigation workplan submitted by Halaco on October 23, 2003, was deemed by Regional Board staff to be incomplete and unacceptable in correspondence dated December 19, 2003. Draft workplans submitted by Halaco on February 19, 2004, were withdrawn by Halaco in correspondence dated March 19, 2004. Halaco has yet to submit a workplan that meets the EO's approval. In the meeting of March 24, Board staff directed Halaco to address the concerns related to the pollutants noted above in the workplans. Halaco is hereby directed to develop a supplemental workplan and schedule for the CAO workplans to address the pollutant categories identified herein if they have not already been addressed by HALACO in the CAO workplans. The supplemental workplan and schedule required to address the pollutant categories herein is not a substitute for the original CAO workplans previously required, nor does it constitute an extension of time for the prior CAO workplans.

Please note that the sampling required for the workplans noted above does not substitute for the sampling and analyses required by the State of California Department of Health Services Radiologic Health Branch (DHS/RHB).

Halaco shall confirm in writing by May 4, 2004, that the investigative activities noted above will be implemented and completed. Non-compliance with this directive is subject to criminal (misdemeanor) charges and civil liability monetary penalties pursuant to section 13268 of the California Water Code, Division 7.

If you have any questions concerning this letter, please call Gary Schultz at (213) 620-2264.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: See Attached Mailing List



MAILING LIST

Mr. Tom Hutteman, US EPA, Region 9, Clean Water Act Compliance Office (WTR-7)
Mr. Tim Vendlinski, US EPA, Region 9, Wetlands Regulatory Office (WTR-8)
Mr. Tom Yokum, USEPA, Region 9, Wetlands Regulatory Office (WTR-8)
Mr. Bill Carter, Assistant United States Attorney
Ms. Denise Klimas, NOAA, National Ocean Services, OR&R
Mr. Michael Lauffer, Office of Chief Counsel, State Water Resources Control Board
Mr. Robert Sams, Office of Chief Counsel, State Water Resources Control Board
Mr. Brett Morris, Deputy Attorney General, Office of the Attorney General, Oakland
Ms. Marilyn Levin, Deputy Attorney General, Office of Attorney General, Los Angeles
Mr. Kurt Souza, Cal. DHS, Region 5 - So. Cal. Branch, Drinking Water Field Operations
Ms. Barbara Hamrick, Radiologic Compliance, State Department of Health Services
Ms. Frieda Taylor, Licensing Section, Radiologic Health Branch, California State DHS
Mr. Glen Foreman, Department of Toxic Substances Control
Mr. Tom Donohue, Department of Toxic Substances Control
Mr. Mitch Disney, Deputy District Attorney, Ventura County
Ventura County, Department of Public Works
Mr. Lawrence Jackson, Ventura County Flood Control District
Mr. Doug Beach, Environmental Health Division, RMA, Ventura County
Dr. Manuel Lopez, Mayor, City of Oxnard
Mr. Mark Pumford, City of Oxnard
Mr. Jeff Wynn, Metropolitan Water District of Southern California
Mr. John Haack, Halaco Engineering Co.
Mr. D. Gilbert Fates, URS Corporation
Mr. Marvin Sachse, P.E., Brash Industries
Mr. Jeffrey Damron, P.E., Padre Associates, Inc.
Mr. Daniel Cooper, Lawyers for Clean Water

**Reference
No. 21**

State of California—Health and Human Services Agency
Department of Health Services



ARNOLD SCHWARZENEGGER
Governor

California
Department of
Health Services

October 14, 2004

D70

Mr. Jonathan Bishop
Executive Officer
Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

SUBJECT: Halaco Engineering, Inc. – Oxnard, CA

Dear Mr. Bishop:

The California Department of Health Services, Radiologic Health Branch (the Department) was provided the following documents for review:

1. "Technical Work Plan – Supplemental Waste Management Unit Characterization Investigation," May 2004
2. "Technical Work Plan – Additional Site Characterization Investigations," April 2004
3. "Technical Report Conceptual Closure Plan – Waste Management Unit," August 2004

In addition, the Department received supplemental correspondence between the Los Angeles Regional Water Quality Control Board (LARWQCB) and Halaco Engineering, Inc. (Halaco) regarding the above listed technical documents. The listed documents generally respond to Cleanup and Abatement Orders (CAOs) issued by LARWQCB, but do not specifically address those issues of concern for the Department relating to residual radioactive materials at the Halaco site.

The Department's concerns and requirements with respect to the characterization of the residual radioactive materials at the Halaco site have been enumerated in various letters to Halaco since the issuance of the Department's March 29, 2001 Order to characterize residual radioactive materials at Halaco. These concerns and requirements are not changed by the current financial situation of the corporation; however, in recognition of the financial constraints, the Department would like to continue to work cooperatively with the LAWQCB, and other interested agencies, to prioritize the characterization and remedial activities at the Halaco site, in order to minimize any future impact to the surrounding environment, if we cannot achieve a final resolution on these issues in the short term.

From the Department's perspective, the highest priority of the proposed site characterization efforts is the Waste Management Unit (WMU). The WMU poses the greatest future threat for off-site releases, so should be the first area addressed by any remedial efforts. In order to make an appropriate decision with respect to the final disposition of the wastes in the WMU, the

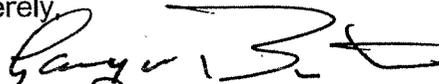
wastes must be properly characterized. In addition, a full characterization of these wastes will also guide additional on-site and off-site investigations.

In part, the scope and extent of the characterization of residual radioactive materials is driven by the proposed final disposition of the materials. The two primary options for the disposition of the materials appear to be 1) removal to an off-site disposal facility, and 2) capping in place, with continued monitoring and licensure by the Department. The characterization appropriate to each of these options is discussed in detail in attachments to this letter.

In addition to the characterization of the materials in the WMU, the Department has concerns regarding residual radioactive contamination at the Halaco site beyond the WMU. For example, the Department identified elevated levels of radioactive thorium along the northern bank (the foundry side) of the Oxnard Industrial Drain, which bisects the Halaco site; and, samples taken by the City of Oxnard of Halaco's wastewater indicated there may be a source of cesium-137 contamination present at the site, but this has not been confirmed. In addition, it may be necessary for Halaco to present a plan to survey equipment (particularly, the washers, the air handling system, and the process and wastewater systems) prior to the removal of that equipment, or its disposal or release for unrestricted use; however, the Department considers these concerns are secondary to the characterization of the WMU materials.

If you have any questions in this regard, please contact Ms. Barbara Hamrick at 714-257-2031.

Sincerely,


GARY W. BUTLER, Chief, Radioactive Materials Section
Edgar D. Bailey, PE, CHP, Chief
Radiologic Health Branch
Department of Health Services

Encl: Characterization Requirements

cc: Ms. Paula Rasmussen
Section Chief
Regional Water Quality Control Board
Los Angeles Region

Mr. Gary Schultz, PE
Associate Water Resources Control Engineer
Regional Water Quality Control Board
Los Angeles Region

Mr. Kwangil Lee
Unit Chief
Regional Water Quality Control Board
Los Angeles Region

Ms. Tracy Woods
Environmental Specialist
Regional Water Quality Control Board
Los Angeles Region

cc: Mr. Rodney Nelson
Unit Chief
Regional Water Quality Control Board
Los Angeles Region

Mr. Peter Raftery
Engineering Geologist
Regional Water Quality Control Board
Los Angeles Region

Ms. Marilyn Levin
Deputy Attorney General
Department of Justice
300 South Spring Street, 5th Floor
Los Angeles, CA 90013

Mr. Eric Bates
Deputy Attorney General
Department of Justice
300 South Spring Street, 5th Floor
Los Angeles, CA 90013

Ms. Sayareh Amirebrahimi, Branch Chief
Site Mitigation Program
Department of Toxic Substances Control, Region 3
1011 North Grandview Avenue
Glendale, CA 91201

Mr. Glenn Forman ✓
Hazardous Substances Scientist
Department of Toxic Substances Control, Region 3
1011 North Grandview Avenue
Glendale, CA 91201

Mr. Mitch Disney
Senior Deputy District Attorney
Consumer and Environmental Protection Division
Ventura County District Attorney's Office
4245 Market Street, Suite 205
Ventura, CA 93003

Mr. Mark Pumford
City of Oxnard
Wastewater Programs
Technical Services – Source Control
6001 South Perkins Road
Oxnard, CA 93033

cc: Ms. Denise M. Klimas
NOAA Coastal Resource Coordinator
State of California
c/o California Department of Toxic Substance Control
Human and Ecological Risk Division
8800 Cal Center Drive
Sacramento, CA 95826

Mr. Victor Anderson, CHP
Supervising Health Physicist
Radiologic Health Branch

Mr. Gary Butner
Supervising Health Physicist
Radiologic Health Branch

Ms. Barbara Hamrick, JD, CHP
Associate Health Physicist
Radiologic Health Branch

Mr. Michael Lumbard
Staff Counsel
Department of Health Services

Characterization Requirements

Removal to an Off-Site Disposal Facility

In order to release these materials for disposal at a Class I or Class III landfill, as discussed in the September 30, 2004 meeting regarding the Halaco site, the only criterion for release that may be considered is that the material is indistinguishable from background.

To establish that the materials are indistinguishable from background, an adequate workplan must include procedures that will:

1. Establish an appropriate background against which to compare the materials in the WMU. Background should be determined:
 - a. Pursuant to the guidance in the Multi-Agency Radiation Survey and Site Investigation Manual (NUREG 1575), Rev. 1, section 4.5;
 - b. Pursuant to the guidance in "A Nonparametric Statistical Methodology for the Design and Analysis of Final Status Decommissioning Surveys" (NUREG 1505), Rev. 1, Chapter 13;
 - c. Pursuant to guidance in "Decommissioning Health Physics, a Handbook for MARSSIM Users" (EW Abelquist, 2001, IOP Publishing, Philadelphia, PA), Chapter 7.4;
 - d. Using a minimum of three background reference areas, with at least fifteen samples collected randomly in each area; and,
 - e. Using the Kruskal-Wallis non-parametric test of the data generated from the analyses of your background reference area samples, with a Type 1 error of no greater than 0.2 to demonstrate that sufficient variability exists in your background reference areas to proceed with a statistically justifiable demonstration that the materials in the WMU are (or are not) indistinguishable from background.
2. Establish appropriate sample selection procedures for both the background reference area and WMU samples, including a demonstration that the number of proposed samples, and other sample selection procedures will result in a statistically sound representation of the materials.
3. Establish appropriate analytical procedures for the samples, pursuant to NUREG 1575, capable of identifying natural background levels of thorium-232 and progeny in background samples and WMU material samples, and of adequate scope to determine the equilibrium status of the thorium-232 and its progeny.
4. Establish appropriate procedures to make decisions with respect to the indistinguishability from background of the materials in the WMU, including procedures that:
 - a. Use the Wilcoxon-Rank Sum (WRS) test;
 - b. Use a Derived Concentration Guideline Level appropriate to the WRS test ($DCGL_w$) and equivalent to the Upper Boundary of the Gray Region, as defined in NUREG 1575, Rev. 1 that is no greater than three standard deviations above the mean of your background reference areas, using a type II error of 0.05; and,
 - c. Use the Quantile Test, pursuant to NUREG 1575, Rev. 1 to assess the level of spotty contamination that may be present.

Capping in Place – Continued Monitoring and Licensure by the Department

Halaco has previously proposed, and the regulatory agencies agreed to consider, closing the WMU in place. The Department is also willing to entertain such a proposal, but would require continued licensure of the facility, and continued monitoring of the site, compatible with LARWQCB monitoring requirements, as a condition of the license. This option would preclude Halaco from transferring the WMU land, unless the subsequent transferee applied for and received a radioactive materials license from the Department.

Under this option, it is possible that no additional radiological characterization would be required for as long as the site remained licensed. Ideally, however, the Department would prefer that some limited characterization be performed in accordance with the following:

1. All procedures (as applicable) described in the preceding option, "Removal to an Off-Site Disposal Facility."
2. The characterization work plan should be of limited scope and focus on the biased sampling of those areas identified in an October 2000 survey by Tetra Tech as having significant radiation emissions above normal background levels.
3. Biased sampling should include trenching along the elevated seep pathways to the source of the contaminated seep, with trenched areas to be divided into one cubic meter grid volumes along axes perpendicular to (in both the horizontal and vertical directions) the seep pathway for the length of the pathway.
4. In situ measurements should be made of each one cubic meter volume, and samples should be collected at intervals of at least five cubic meters, or at places where in situ measurements indicate a significant change in concentration relative to the surrounding volumes.

**Reference
No. 22**

Complaints

Over 18 complaints and violations noted up to 1/9/70

- 2/12/70 City of P. H. - numerous complaints
- 2/17/70 Inspection by APCD
- 2/19/70 Inspection by APCD - 5 ppm HCl outside building
- 4/23/70 APCD Inspection
- 5/5/70 Francis Oliver - excessive fumes
- 5/8/70 Mr. P. Brucker Farms 2 mi. E. of plant - excess smoke & irritating fumes
- 5/12/70 APCD inspection
- 5/13/70 APCD inspection

PCD
a/

Chronology of Violations Halaco Engineering Co.

- 11/21/68 Anonymous telephone complaint to Supervisor Laubacher's office regarding acrid smoke discharge in the vicinity of Arcturus or Western Kraft Paper Co. occurring daily from 1:30 P.M. to 3:00 P.M.
- 11/22/68 Investigation by APCD revealed fumes coming from Halaco Engineering Co. at 6200 Perkins Rd. Co. officials stated that half of fumes will be controlled after 1st year of construction of new bldg. They also mentioned they may have to request a variance. They feel they probably will not be able to comply with District Rules.
- 1/21/69 Mr. & Mrs. Snively complained about heavy fumes being emitted by Halaco.
- 1/22/69 Investigation by APCD revealed heavy fumes coming from Halaco had 80% opacity.
- 1/28/69 Investigation by APCD showed 80% opacity---appeared like plant was burning.
- 2/17/69 Mr. Miller reported that strong fumes from Halaco made worker in adjacent Western Kraft plant sick.
- Upon contacting Les Fine, VPRES of Halaco, he stated that the fumes don't make anyone sick; his employees have no problems. Fumes are hydrogen chloride but too diluted to harm. He also stated that Western Kraft & a nearby sewer plant emit foul odors that could have caused Western Kraft employee's illness. He attributed the complaints to "kooks & bppy attitudes" concerning his plant and that he has had similar complaints in the L.A. area.
- 4/1/69 Complaint rec'd from City of Port Hueneme re; Halaco
- 4/11/69 Complaint rec'd from Pete Ridgeway--affected his breathing at night while working next door at Western Kraft. He said that "Halaco is belching the stuff at night".
- 6/17/69 Several complaints registered in Supervisor Laubacher's office regarding objectionable fumes from the magnesium plant.
- 6/27/69 Francis Oliver who farms nearby complained to Supvr. Laubacher regarding the very dense and annoying fumes from Halaco.
- 7/1/69 Supervisor Laubacher reported heavy fumes being emitted from Halaco.
- 7/1/69 Mal Austin complained of very dense fumes from Halaco.
- 7/3/69 Pat Kelley, Camarillo City Clerk reported that Mrs. Siela could see Halaco's fumes in Camarillo. Her husband called her about the fumes while he was working near Halaco.
- 7/24/69 APCD observed white fumes or smoke of 40% opacity from Halaco.
- 9/18/69 Ray B. McMullin, Manager of Sales & Mfg. of Kaiser Aluminum wrote C. W. Haak of Halaco that production superintendent had to remove many of their workers from their work stations on September 15 between 2 and 4 P.M. because of noxious gas & eye irritation.
- 11/10/69 Supervisor Laubacher reported that a Western Kraft foreman complained of distress to workers caused by fumes & smoke from Halaco.

Page Two
Chronology of Violations Halaco Engineering Co.

12/23/69

During plant inspection, APCD observed black smoke emitted from outdoor magnesium melting pot.

1/9/70

APCD observed smoke & fumes from Halaco rising above building and also dark smoke rolling at ground level along beach towards Dennis the Menace Park.

Chronology of Action Halaco Engineering Co.

- 11/22/68 Haack, president, Les Fine, Vice president, Halaco said
1/2 of fumes under control after first year of construction of
new building. Second year after building permit received be-
fore all fumes could be controlled.
- 2/6/69 ^{LETTER FROM LES FINE:}
Expect building constructed to be in use 8 months after re-
ceiving approval of building plans from City of Oxnard. At
this time, ca. end of 1969, expect to control 90% of emissions.
- 4/18/69 Les Fine's letter - VP, Halaco. Requested for variance ~~from~~
dist. staff: ^{90% fume} controlled by end of 1969
- 5/1/69 Planning Commission meeting, City of Oxnard
- 5/22/69 Approval of Planning Commission, Oxnard
- 8/21/69 Proposal of Venturi scrubbing system for furnaces from Design/
Contr. Co. to Halaco indicating
1. 3 weeks for preparation of drawing
2. 16-20 weeks shipment of equipment
3. Services & equipment to be supplied by Halaco
Erection & installation
foundation, structural steel, ladders, platform, etc.
piping, valve, fitting, for water & drain lines
connecting duct work & support
fans, pumps, motors
instrumentation, controls, elec. work
- 11/20/69 Solid scale model of ventur~~a~~ scrubber received
- 11/11/69 Halaco requested forms for petition for variance
- 11/24/69 Clerk of Hearing Board sent copies of petition for a hearing
- 12/8/69 Petition for variance received by Hearing Board clerk.
- 12/16/69 Les Fine said during telephone conversation that he expects the
scrubbers to have capacity of controlling only two furnaces,
and would need one or two more scrubbers. He expected scrubber
delivered in February
- 1/28/70 APCD Hearing on Halaco's variance petition
- 2/11/70 APCD Hearing Board's decision
- 4/28/70 Halaco's petition for another variance
- 4/23/70 APCD Plant Inspection

Chronology of Correspondence with Halaco

- Jan. 27, 1969 APCD requested written schedules for installation of control equipment.
- ✓ Feb. 6, 1969 Les Fine of Halaco replied that on March 1, 1969, they will submit to Oxnard Bldg. Dept. for approval the bldg. plans to house portions of their operations that create violations of APCD Rules. They expect the new bldg. constructed & in use in 8 months after receiving approval & permit "at this time (approximately the end of 1969) we expect to control not less than 90% of our air pollution problem." He expects to meet all the APCD Rules & Regulations by July 31, 1970. On May 21, 1970 Bldg. Plans approved by Oxd. Bldg. Dept. (when permit was available.) Bldg. permit issued by Oxnard Bldg. Dept. on May 22 (this is the date when fees were paid).
- ✓ April 18 Les Fine applied for APCD Permit to Operate. Also mentioned that cost of bldg will be \$58,000.00 plus \$46,000.00 for ducting, smoke stack, and air pollution control equipt. He also requested for a variance.
- Nov. 6 APCD wrote to Clarence Haak Pres. of Halaco that because of lack of signature on application, Permit cannot be issued.
- ✓ Nov. 11 Les Fine, VPRES. of Halaco wrote Clerk of Hearing Bd. for form for APCD Variance.
- ✓ Nov. 20 Rec'd solid model of APC Equipt for Halaco
- Nov. 24 Clerk of Bd sent 3 copies of petition to APCD Hearing Bd.
- ✓ Dec. 8 Clerk rec'd petition from Haak.

PCN

**Reference
No. 23**



Ventura County
Air Pollution
Control District

669 County Square Drive
Ventura, California 93003

tel 805/645-1400
fax 805/645-1444
www.vcapcd.org

Michael Villegas
Air Pollution Control Officer

August 14, 2006

Ben Castellana
Project Manager
Weston Solutions, Inc.
14724 Ventura Blvd. Suite 1000
Sherman Oaks, CA 91403

Subject: Halaco Summaries

Dear Mr. Castellana:

As a follow up to your email request regarding Halaco Engineering, attached are two printouts: (1) A complaint history from January 1, 1995 to present and (2) a Notice of Violation history from January 1, 1995 to present. I have emailed you a number of photos of the facility.

If you have any questions regarding this matter, please contact me at 805/645-1410.

Sincerely,

A handwritten signature in black ink, appearing to read "Keith Duval", with a long horizontal line extending to the right.

Keith Duval, Manager
Compliance Division

NOV History for Facility No. 00022
Halaco Engineering Company
between 1/ 1/1995 and 8/10/2006

NOV	Date	Rule No	Comment	Penalty	Closed
018903	03/18/1998	29.C	Permit Condition Not Met - Particulate Matter Emissions	1,000.00	10/06/1998
019220	02/02/2000	HSC 41700	Public Nuisance - Emitting Offensive Odors	0.00	05/15/2000
019587	06/07/2001	HSC 41701	Excess Visible Emission-Furnace	0.00	12/13/2002
020137	01/21/2003	29.C	Permit Condition Not Met - Failure To Meet Condition Requirements	0.00	08/19/2003
019938	04/08/2003	29.C	Permit Condition Not Met - Failure To Meet Condition Requirements	0.00	08/19/2003
020675	03/18/2004	10.B	Operating Without A Permit - Baghouse	0.00	09/07/2004
020444	07/01/2004	29.C	Permit Condition Not Met - Exceed Particulate Matter Emissions. See Doc. Court # 2003010170	0.00	09/07/2004

1,000.00

Grand Total: 7

Complaint History for P/O 00022
Halaco Engineering Company
between 1/ 1/1995 and 8/10/2006

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>11/04/2004</u>	<u>0915</u>	<u>096490</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Anonymous caller states that this morning on her way to Oxnard college she noticed that Halaco which is located on Hueneme Rd released something into the air and it gave me a pretty bad headache. Are they suppose be operating? We need to have someone check it out.				
<u>09/17/2004</u>	<u>1100</u>	<u>096409</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reported ammonia odor coming from Halaco. Ammonia odor noticed at Perkins and McWane. Ammonia odor noticed 10:45 am today.				
<u>08/18/2004</u>	<u>1027</u>	<u>096336</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant called up and left message stating that Halaco was "putting up purple smoke again." They have been at it for about 15 minutes, it started at about 10:15.				
<u>07/08/2004</u>	<u>1351</u>	<u>096256</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant works at Oxnard Waste Water plant located at 6001 S. Perkins Road in Oxnard next to the Halaco plant. Reports that a large cloud with ammonia odor is drifting in the air. The cloud started about 1:15p.m.				
<u>06/02/2004</u>	<u>1305</u>	<u>096201</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant is at the corner of Saviers Road and Hueneme Road in Oxnard and reports that a big cloud of stinky smoke is coming from the Halaco plant. It smells like burnt rubber, don't know what they are doing over there. Thank you.				
<u>06/02/2004</u>	<u>1203</u>	<u>096200</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports that a large cloud is coming from Halaco Company, it is drifting on the south part of Saviers Road. There is an odor of ammonia also, this started about 11:30.				
<u>05/19/2004</u>	<u>1225</u>	<u>096181</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports that a very large gaseous cloud is being emitted from Halaco. There is an odor of ammonia associated with the cloud. Complainant stated that he noticed the cloud at about 12:15 while driving on Hueneme Road.				
<u>04/20/2004</u>	<u>1415</u>	<u>096134</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works at Oxnards Waste Water Treatment plant located across the street from Halaco. Reports a large white puffy cloud of smoke in the air coming from Halaco, difficult to see, the cloud has a faint odor of ammonia.				
<u>04/07/2004</u>	<u>1436</u>	<u>096123</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports that Halaco is discharging a large cloud into the air from their facility. The cloud/odor is floating, going toward the east down the back of the plant.				
<u>03/25/2004</u>	<u>0812</u>	<u>096106</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant works for Oxnard Waste Water Plant in Oxnard. Reports Halaco is very close to us and there is smoke coming from their business. It's so terrible that I can taste the metal in my mouth.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>03/04/2004</u>	<u>1449</u>	<u>096078</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reports smoke and ammonia odor coming from Halaco				
<u>03/04/2004</u>	<u>1446</u>	<u>096077</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works for Oxnard Waste Water Plant in Oxnard. Reports smoke from Halaco rolling down the street, it started after lunch and is ongoing.				
<u>03/04/2004</u>	<u>1445</u>	<u>096076</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works for Oxnard Waste Water Division in Oxnard. Reports that a large plume of smoke is coming from Halaco. The smoke is coming right into our plant, its being blown by the wind, looks like fog is rolling in.				
<u>03/04/2004</u>	<u>1440</u>	<u>096075</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works at Weyerhaeuser plant located at 5936 Perkins Rd. Oxnard. Reports that Halaco is spewing nasty stuff out again. It started about 1:45, its pretty thick, a blue gray haze.				
<u>03/04/2004</u>	<u>1420</u>	<u>096074</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works at Oxnard Waste Water Treatment plant in Oxnard. Reports that they are experiencing some blue smoke out front on Perkins Rd. Not sure where it is coming from possible Halaco.				
<u>02/25/2004</u>	<u>1548</u>	<u>096067</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works for Oxnard Waste Water Plant located at 6001 S. Perkins Rd. Oxnard. Reports that Halaco is emitting a cloud of smoke, this causes headaches, eyes water, has a taste of metal.				
<u>02/25/2004</u>	<u>1410</u>	<u>096065</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works for Oxnard Waste Water Plant. states that Halaco is releasing a large white cloud. It smells like ammonia, smoke & fumes are being blown into their facility.				
<u>02/25/2004</u>	<u>1410</u>	<u>096064</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works at Oxnard WWTP, reports Halaco is emitting a thick white smoke from its building. Smells like metal, pretty heavy right now and it been going on for over 1 hour.				
<u>02/25/2004</u>	<u>1405</u>	<u>096063</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works for City of Oxnard WWTP, reports that Halaco is releasing a large white acid cloud. It smells real bad.				
<u>02/25/2004</u>	<u>1355</u>	<u>096062</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reports that Halaco is emitting a large cloud of smoke into their building.				
<u>02/25/2004</u>	<u>1345</u>	<u>096061</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works for the City of Oxnard Waste Water Plant located at 6001 S. Perkins Rd. States that Halaco is releasing a white metallic cloud of smoke into to the air. It smells real bad, difficult to breath.				
<u>02/11/2004</u>	<u>1220</u>	<u>096043</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports that Halaco is putting lots of smoke, huge cloud is going all the way to Hueneme Road. The smoke started about 12:00pm.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>02/11/2004</u>	<u>1152</u>	<u>096042</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant works at Weyerhaeuser facility located next door to Halaco plant. States that since about 7:00 this morning they have been releasing large amounts of smoke. It looks like the building is on fire, and smells like sulfur. It's really bad now.				
<u>01/06/2004</u>	<u>1520</u>	<u>096004</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant lives off Pleasant Valley Road, reports a gray haze coming Halaco. It started about 3 o'clock. The plant has shutdown now.				
<u>12/23/2003</u>	<u>0849</u>	<u>095993</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reported "Halaco is at it again dosing us, there's a cloud in the air and can taste it".				
<u>12/09/2003</u>	<u>0959</u>	<u>095980</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant lives at Surfside II which is north of the Halaco facility. Complainant states again this morning smelling that very metallic smell that used to come out of the plant all the time. Does not see any smoke or anything coming out of the building but it smells very acidic metallic metal smell that we can hardly stand.				
<u>11/18/2003</u>	<u>1220</u>	<u>095955</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works at Oxnard Wastewater Treatment plant on Perkins Rd. and reports that Halaco is releasing a large cloud of smoke again. He noticed the cloud at about 11:30 this morning.				
<u>11/17/2003</u>	<u>1620</u>	<u>095956</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: We received a call from Oxnard Wastewater treatment Plant, complaining about Halaco. Stated that a plume from Halaco was traveling northwesterly from Halaco, and was engulfing their plant. Looks like the plant is on fire.				
<u>11/13/2003</u>	<u>1107</u>	<u>095952</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant reported smoke coming from Halaco.				
<u>11/13/2003</u>	<u>1235</u>	<u>095950</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant works at 5936 Perkins Road next door to Weyerhaeuser plant. States that Halaco is putting out a large cloud of smoke from their facility. States that several employees complained of sore and burning throat.				
<u>09/10/2003</u>	<u>1335</u>	<u>095862</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant is out at the end of McWane just off Arcturus. The effluent from halaco is really noxious at the _____, by the railroad tracks. Reporting potential violations, hopefully someone can get out here and verify whats going on. Hugh blue plume of effluent is visible coming out of Halaco.				
<u>09/10/2003</u>	<u>1315</u>	<u>095861</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant is working on project restoration, and reports again today at 1:15 there is a plume of smoke thats crossing from Halaco. Looks like its coming from the smoke stack coming across to the wetland area, following McWane towards the foundry.				
<u>09/05/2003</u>	<u>0650</u>	<u>095853</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant reported a brown smoke/haze coming from Halaco.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>09/04/2003</u>	<u>1534</u>	<u>095852</u>	<u>Dust</u>	<u>Unable to Verify Problem</u>
Comment: Complainant is working on project Restoration Cleanup which is across the street from Halaco. States that both last Thurs. 8/28 and today large clouds of powder/dust being created due to bulldozer pushing around slag heap. Noticed the dust at 10:00 am and throughout most of the day.				
<u>08/28/2003</u>	<u>1553</u>	<u>095846</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: In the vicinity of Halaco I noticed a gray cloud coming from the plant yard. Also, there is some odor associated with it.				
<u>08/16/2003</u>	<u>0100</u>	<u>095841</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant lives off Lighthouse Way in Port Hueneme, and reports smelling a burning odor sort of smelled like a smelter? Didn't see anything in the air, but at one o'clock in the morning, I could think of no one else except Halaco pulling this stunt. I am hoping I am wrong.				
<u>07/03/2003</u>	<u>0850</u>	<u>095773</u>	<u>Miscellaneous</u>	<u>Unable to Verify Problem</u>
Comment: Complainant is working at City of Oxnard Waste Water Plant located at 6001 S. Perkins Rd. Oxnard. States that Halaco is releasing a very big cloud that probably contains ammonia. Is concerned about health effects.				
<u>06/16/2003</u>	<u>2209</u>	<u>095753</u>	<u>Miscellaneous</u>	<u>Unable to Verify Problem</u>
Comment: Complainant is an Weyerhaeuser employee, which is downwind from the Halaco plant. States they (Halaco) are not scrubbing their emissions. Last night he had little white spots on his car and windows, everywhere; and they were not there prior to coming to work. This is criminal - not scrubbing emissions, there are homes and a elementary school in the area, Halaco has no common sense.				
<u>05/14/2003</u>	<u>0900</u>	<u>095709</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: complainant speaking in behalf of staff of field workers downstream from emissions coming from Halaco. Says very bad looking stuff coming out right now. Would like it investigated to ensure it's not harmful.				
<u>04/17/2003</u>	<u>1100</u>	<u>095660</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant reported a purple plume coming from Halaco, has been going on for 40 minutes.				
<u>04/08/2003</u>	<u>1205</u>	<u>095636</u>	<u>Visible</u>	<u>NOV Issued</u>
Comment: Complainant reported a plume of smoke from Halaco.				
<u>04/01/2003</u>	<u>1115</u>	<u>095619</u>	<u>Miscellaneous</u>	<u>Problem Not a Violation</u>
Comment: Complainant is complaining on behalf of his fellow co-workers. states Halaco has smoke coming out of the building, and out of the stacks. They are being exposed and so is the high school, jr high and the 2 elementary schools in the area. Please come out to investigate.				
<u>03/31/2003</u>	<u>1549</u>	<u>095612</u>	<u>Miscellaneous</u>	<u>Unable to Verify Problem</u>
Comment: Complainant is at Halaco and Perkins Rd. States it looks like a forrest fire/brush fire out here. Today we have good air quality but tomorrow we will have poor air quality due to Halaco burning. There is no ocean breeze or fog. It's really irritating that no one does anything about this. I know its late, they probably will stop burning about 7pm.				
<u>03/25/2003</u>	<u>1219</u>	<u>095600</u>	<u>Miscellaneous</u>	<u>No Further Action</u>
Comment: City of Oxnard Wastewater Treatment plant employee called to complain about a large plume of smoke coming from Halaco. Plume was traveling in a northeast direction.				

Date	Time	Number	Complaint Type	Outcome
<u>02/10/2003</u>	<u>1400</u>	<u>095535</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant was visiting parents home on Evergreen Square Pt. Hueneme. Complaint against Halaco has problems with having to smell their pollution. Smells like aluminum difficult to describe but has smelled it before and it caused her to become ill. The odor started about 20 minutes ago. Complainant also lives in the same neighborhood of her parents & Halaco on Willowbrook Dr. and has smelled the same odor there too.				
<u>01/09/2003</u>	<u>1422</u>	<u>095437</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant reported a cloud of smoke over the area.				
<u>01/08/2003</u>	<u>1530</u>	<u>095435</u>	<u>Visible</u>	<u>NOV Issued</u>
Comment: SEE COMPLAINT #095434. Complainant called to report Halaco creating smoke everywhere that you can taste. Complainant reported, "When it's like this, they'll be burning all night".				
<u>01/08/2003</u>	<u>1450</u>	<u>095434</u>	<u>Visible</u>	<u>NOV Issued</u>
Comment: Complainant called to report there are fumes coming out of Halaco's building, drifting from the south to the northwest. You can see it all Port Hueneme. You can taste & smell it.				
<u>12/16/2002</u>	<u>1028</u>	<u>095400</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant works at 5936 Perkins Road about 100 ft from the Halaco facility, and states he and others are choking/gagging from the ammonia gases they are emitting. This started about 6:00 a.m. this morning. Concerned about the health of the school kids at the nearby school.				
<u>10/15/2002</u>	<u>1530</u>	<u>095238</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports that on Wed. 10/09/02, from 10:00 to about 11:30 a.m. Halco released some type of unknown substance into the air which left spotting on their vehicle.				
<u>10/15/2002</u>	<u>1510</u>	<u>095237</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports on Wed. 10/09/02 from 10:00 -11:30 a sticky substance (white & orange) on car.				
<u>09/17/2002</u>	<u>1135</u>	<u>095170</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports Halaco facility is emitting pollution into to the air, it's a white substance larger than powder. It started about 10 minutes ago (9:30), this stuff is everywhere on the cars on the ground. Has concerns that it may be toxic other workers are working outside.				
<u>05/24/2002</u>	<u>1010</u>	<u>094997</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reported white smoke coming from Halaco today starting at approx. 4 am. The wind was from the south and affected the complainant at home. The wind veered to the southwest later in the morning that blew the smoke away from the complainant's house. By mid morning there was no smoke or odor.				
<u>02/22/2002</u>	<u>1110</u>	<u>094920</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report nauseating odor from Halaco during walk along beach this morning. Also smelled it last night between 0930 and 1030 pm. Odor bad enough had to close doors and windows. "Hope something will be done soon".				
<u>02/08/2002</u>	<u>1004</u>	<u>094908</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reported "a lot of smoke and stuff" coming from Halaco right now, impacting the complainant, just letting the District know.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>01/11/2002</u>	<u>1054</u>	<u>094892</u>	<u>Odor/Unknown</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reported the terrible stench coming from the Halaco Plant yesterday, last night and today also.				
<u>11/16/2001</u>	<u>1315</u>	<u>094842</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called to report that emissions from Halaco have been bad for last few days but are worst right now. Complainant wanted to call District to lodge complaint.				
<u>11/09/2001</u>	<u>1002</u>	<u>094835</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: I received a complaint about smoke and odor coming from Halaco. I visually verified the wind was blowing from the southeast. I observed that looking into the sun at Halaco at this time of day there appeared to be visible smoke. A few minutes later I placed the sun at my back and observed 5 % opacity coming from non-point sources at Halaco.				
<u>10/05/2001</u>	<u>1144</u>	<u>094798</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reported visible smoke and a metallic taste coming from Halaco today while at a market on Clara St near South Winds Park, knows the nearby elementary school was getting the same exposure.				
<u>07/20/2001</u>	<u>2202</u>	<u>094686</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that at 6 pm on Friday (7/20/01), noticed a lot of smoke coming from the dross pile at Halaco. Reports seeing the smoke while driving along Hueneme Rd., @ Arcturus Rd. (while heading West). Complainant reports it was really bad and wishes to know why APCD does not set up some kind of "sniffer station" downwind to monitor what kind of heavy metals are going on our food. Complainant reports they would be glad to bear witness to what they experienced today.				
<u>07/12/2001</u>	<u>2059</u>	<u>094678</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reported a black plume coming up from Halaco and drifting through Reliant Ormond Beach Generating Plant making the operators nauseous. Complainant reported the black plume to the fire department to check out. Complainant wanted to go on record that it's happening again and that it's making us sick over here.				
<u>06/22/2001</u>	<u>1027</u>	<u>094644</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that on Thursday night around 9:45 pm, they could smell Halaco odors inside their house. Reports the odor smelled like rotten egg.				
<u>06/15/2001</u>	<u>0731</u>	<u>094634</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Visible emission going on since 7:10 am.				
<u>06/13/2001</u>	<u>1245</u>	<u>094632</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report smoke, not steam, blowing out from Halaco facility. Also NH3 odor as well. Problem lasting 2-3 days when fog rolls in. Happening right now. Complainant left no phone number.				
<u>05/24/2001</u>	<u>0108</u>	<u>094598</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Strong metallic odor. Worst it's ever been at Halaco.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>05/15/2001</u>	<u>2046</u>	<u>094581</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report being affected by odors from Halaco on April 10, 2001. Complainant reports the odor had a chemical smell to it and was unpleasant to experience. Complainant lives in the Surfside III Complex.				
Note - explained to complainant that because the date they were reporting was over a month ago there was nothing we could do at this time. Encouraged complainant to contact APCD again when the odor is actually present. Complainant had called to report complaint based on information in a local community newsletter.				
<u>05/03/2001</u>	<u>0930</u>	<u>094549</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports odors coming from Halaco this morning. Reports observing brown smoke coming from the Halaco Plant.				
<u>05/03/2001</u>	<u>0917</u>	<u>094548</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report suffering effects from the pollution emanating from Halaco at this time. Reports when the wind blows from the East like today, the residents in the Surfside Three area are exposed to the odors.				
<u>04/20/2001</u>	<u>1830</u>	<u>094542</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that when going by Halaco down the street you can hardly breathe out there. Reports this was at 6:30 PM on Friday, 4/20/2001. Complainant reports they are unsure what is being put out but it's pretty bad.				
<u>04/04/2001</u>	<u>1317</u>	<u>094520</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that Halaco is polluting "big time". Complainant works next to Halaco and is finding it difficult to breathe.				
<u>04/04/2001</u>	<u>1158</u>	<u>094519</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that truck drivers near to Halaco have been experiencing toxic smoke all morning. The smoke is making it difficult to breathe.				
<u>03/27/2001</u>	<u>2125</u>	<u>094504</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report coming back from dinner tonight at 8:45 PM and experiencing a "real ammonic" odor. There was also a metallic taste associated with the odor. Complainant reports being able to see a grey cloud coming in from over Halaco and the cloud was very visible against the night sky. Reports it has affected complainant's eyes and people feel bad.				
<u>03/27/2001</u>	<u>1433</u>	<u>094503</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a visible emission from Halaco's stack. Going on now.				
<u>03/02/2001</u>	<u>1019</u>	<u>094484</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Visible emission from Halaco's stack.				
<u>02/28/2001</u>	<u>1346</u>	<u>094482</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a "blue, hazy plume" coming from Halaco again. Reports the plume has only been present for the last hour or so and it is beginning to dissipate now.				
<u>02/28/2001</u>	<u>1345</u>	<u>094481</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a strong plume coming from Halaco at this time. Reports that people are complaining of eye irritation as a result.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>02/27/2001</u>	<u>1121</u>	<u>094479</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report odors coming from Halaco this morning. Complainant reports trying to go for a walk on the beach and having to turn back because the odors were so bad. Complainant located in Surfside Three complex.				
<u>02/26/2001</u>	<u>2130</u>	<u>094477</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a smell in the air coming from Halaco. Reports it's a metallic, acidic smell which has left a bad taste in complainant's mouth. Reports it is very unpleasant and has a headache as a result. Began to notice it at 7:30 PM. Reports the odor appears when the wind comes from the east, particularly when the air is heavy.				
<u>02/25/2001</u>	<u>1544</u>	<u>094474</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complianant called to report caustic odors coming from the Halaco Factory in Oxnard. Reports living in the Surfside Three Complex and being affected by the odors.				
<u>02/13/2001</u>	<u>1530</u>	<u>094459</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant stated that vissible emissions and odor is coming from Halaco at this time.				
<u>02/13/2001</u>	<u>1514</u>	<u>094458</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report smoke and odors emanating from Halaco at this time. Reports they have been emitting odors and smoke for the last three days. Complainant reports suffering headaches as a result.				
<u>01/31/2001</u>	<u>0930</u>	<u>094451</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report seeing visible emissins coming from Halaco this morning. Reports the emissions appear to be coming from between the Halaco Plant and the slag pile. Complainant was walking on beach and with the east winds was affected by the smoke. Reports nose running and experiencing a scratchy throat.				
<u>01/11/2001</u>	<u>1613</u>	<u>094368</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called to report seeing visible white smoke emanating from Halaco engineering at this time.				
<u>01/02/2001</u>	<u>1520</u>	<u>094342</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report smelling the bad "metox" odor in the air again. Reports husband also smelled the odor 2 hours ago. Complainant reports having a weird taste in her mouth, sore throat, burning nose and eyes.				
<u>12/25/2000</u>	<u>1251</u>	<u>094337</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that on Christmas Day can smell the "burning, metallic scent in the air again." Reports that the Santa Ana winds are blowing and Halaco is too. Reports eyes are starting to sting, nose is burning, and headache is starting.				
<u>12/15/2000</u>	<u>1630</u>	<u>094315</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report being on the beach on 12/15/2000 from 4:30 - 5:30 PM and seeing a plume of black smoke going up from the stack at Halaco. Complainant also reports there appeared to be black smoke coming from "all along the roof" and the wind was blowing toward Surfside Three. Complianant reports a really bad metal smell and taste in the air.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>11/08/2000</u>	<u>1034</u>	<u>094191</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report excessive smoke coming from Halaco Engineering right now. Reports that they are spewing toxic smoke into the air. Complainant reports employees complaining of eye irritation, burning eyes, upset stomachs, and it makes it hard to breathe.				
<u>11/05/2000</u>	<u>2335</u>	<u>094184</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: 11/5/2000 @ 2335 - Report that at 1135pm the air was smelling fine and then just a few minutes ago husband and complainant noticed a smell like a garbage dump. Complainant doesn't know if it's coming from the water treatment plant or what but it is very sickening.				
11/6/2000 @ 0015 - Reports it's 0013am on Nov 6th and the smell has went from a garbage type smell to a dull metallic smell. It's too the point where I can't sleep. Reports one of my neighbors in the same bldg. had their glass door open and they closed it.				
Report that all we want is to have at least air we can breathe but apparently we can't because of what we are smelling from the factories. I hope Mr. Scott gets some other inspector's out there at night so they can enjoy the smell that we have to deal with at night.				
<u>11/02/2000</u>	<u>0926</u>	<u>094176</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report smelling odors coming from the Halaco Plant this morning. Reports the odors to be metallic/chemical in nature. Complainant reports smelling the odors at home and also when jogging on the beach. Complainant usually notices the odors in the morning and believes the plant only releases emissions when the wind blows toward the ocean.				
*Complainant was also concerned about emissions from Halaco into the ocean. Reports seeing bubbles in water. Referred complainant to Regional Water Quality Board regarding that issue.				
<u>11/01/2000</u>	<u>1016</u>	<u>094173</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report odors and seeing blue smoke in air as a result of emissions from Halaco. Reports whenever the weather conditions are like this, with the wind blowing from the east, they are affected by the emissions. Reports family suffering headaches as a result.				
Complainant also asked if it was possible to view the Halaco Permit. Referred complainant to Sue Magdalik in Permitting/Engineering section.				
<u>10/29/2000</u>	<u>1051</u>	<u>094164</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report odors coming from Halaco. It's been from around 10 to 11am. Reports that it's been raining today and since early morning there has been no real winds so this is when we can smell it most. We think today it smells like it's from the dross pile. Doesn't appear to be any actual emissions from any of the stacks.				
*Complainant also called on Thursday 10/26/2000 @ 1649 (See Comp# 094163).				
<u>10/26/2000</u>	<u>1658</u>	<u>094163</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report experiencing the "Halaco odor" again at residence in the Surfside Three are of Hueneme. Reports smelling a heavy, metallic odor and when the air is heavy like today with the east winds the odor seems much worse. Reports the odor leaves a bad taste in the mouth.				
*Informed complainant that District Inspector Eric Wetherbee was out at Halaco this afternoon regarding another complaint. Complainant asked if Eric could call when he gets back to the office after vacation.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>10/26/2000</u>	<u>1037</u>	<u>094162</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that Halaco engineering "is just spewing it out like there's no tomorrow." Complainant reports that they currently have about 150 contractors onsite as well as 100 regular employees being affected by these emissions. Please check out Halaco and see what they are doing there.				
<u>10/24/2000</u>	<u>0843</u>	<u>094150</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant lives in the "Surfside Three Condominiums" and reports experiencing a lot of odor problems in the last week. Reports the odors appear to be coming from the "Oxnard Waste Disposal System" next to us. Complainant is unsure exactly what the place is.				
<u>10/23/2000</u>	<u>2319</u>	<u>094149</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a smoky, aluminum odor at this time. Reports the odor appears to be coming with the East winds. Complainant reports the smell is very toxic and is affecting complainant's nose & throat. (See previous COMP# 094145).				
<u>10/22/2000</u>	<u>1655</u>	<u>094146</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a concern about air pollution coming from the Easterly winds. Complainant is located in the Surfside III area.				
<u>10/22/2000</u>	<u>1406</u>	<u>094145</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report nose has been bothering them for the past two days due to the winds coming from the east. Reports family have been sick with sinus problems. Complainant believes the cause is odors they have been smelling coming from the factories to the east.				
<u>10/22/2000</u>	<u>1402</u>	<u>094144</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report health concerns as a result of the east wind today. Reports having a bad headache, a sore throat, dry mouth and generally not feeling well. Complainant would like to know what is making them sick. Complainant lives in the "Surfside Tree" area.				
<u>10/22/2000</u>	<u>1355</u>	<u>094143</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant lives in the "Surfside Tree Complex" in Port Hueneme and called to report an ongoing odor problem. Reports getting a severe headache from the odors coming from the Halaco Plant east of us. Reports it is a beautiful day out but has had to keep all doors closed because of the odor. Reports that other people are also being affected.				
<u>10/22/2000</u>	<u>1350</u>	<u>094142</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report living next door to the Halaco Plant and with the wind's blowing east, everyone inside complainant's home is getting sick. Reports symptoms such as sinus problems, headaches and nausea for the whole weekend. The wind is blowing the pollution into our area. Reports usually being upwind of it.				
<u>10/22/2000</u>	<u>1127</u>	<u>094141</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a "strong sulfur" odor coming from the east of the "Surfside III" Condo's. Complainant reports that they believe there may be some illegal burning going on over at the plant to the east.				
<u>10/20/2000</u>	<u>0703</u>	<u>094140</u>	<u>Odor/Unknown</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a weird odor in the air at the moment. Complainant lives in the "Surfside Tree Condo's". Complainant reports smelling the odor on Sunday also.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>09/25/2000</u>	<u>1744</u>	<u>094103</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report seeing a "brown smoke" coming out of the factory, blowing south toward the power plant. Complainant was walking out on the Ormond Beach. Complainant reports seeing this often and decided it was time to call and leave a complaint. Complainant was unable to detect an odor as it was blowing to the south, but it was definately coming from "that plant". I would appreciate you checking it out.				
<u>09/22/2000</u>	<u>1250</u>	<u>094098</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainat reports lots of blue smoke coming from Halaco directly at his work station.				
<u>09/21/2000</u>	<u>1132</u>	<u>094094</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report "unbelievable" odors coming from Halaco at this time. Reports the odor smell like "ammonia" and would like someone to check it out.				
<u>09/13/2000</u>	<u>1725</u>	<u>094073</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a choking odor coming from the Halaco Plant. Reports the cloud smells like an "Ammonia Phosphorus" mixture. Complainant works nearby and reports the cloud has been present since 3pm.				
<u>09/01/2000</u>	<u>1616</u>	<u>094043</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report walking down on the beach by the Halaco "dross pile" at 4pm. Reports seeing black smoke bellowing out from their Smoke Stacks.				
<u>09/01/2000</u>	<u>1130</u>	<u>094042</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Visible Emission from Halaco stack.				
<u>08/30/2000</u>	<u>1705</u>	<u>094040</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant stated was walking along Hueneme beach when observed white smoke at the Halaco plant coming from dross piles causing the sky to be white as a result of the smoke rising. Couldn't see exactly where the smoke was coming from but could see it was not coming from their smoke stack.				
<u>07/24/2000</u>	<u>1442</u>	<u>093942</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant telephoned to let the District know that Halaco was really pumping out the smoke lately, including Friday night at midnight, and each night. The winds have been blowing the Halaco sulfur smell down Perkins as well as blowing the smoke parallel to Hueneme Road, depending on the wind. The complainant stated the call was to let the District know of Halaco's nightly activities, a return phone call was not necessary.				
<u>06/28/2000</u>	<u>1023</u>	<u>093908</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that Halaco is belching out emissions at this time. Also complainant reports emissions were being released yesterday. Complainant has asthma and the emissions cause complainant to cough and wheeze into the late afternoons and evenings.				
<u>06/27/2000</u>	<u>1729</u>	<u>093905</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report while driving home from work at about 4:40 - 4:45pm began noticing a reaction of Halaco emissions at the corner of Arnold Rd. and Hueneme Rd. Reports when lots of fog and moisture is coming in from the coast Halaco seems to be cranking up. Reports suffering burning eyes, mouth watering, and can still taste the odor in his mouth.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>06/14/2000</u>	<u>0944</u>	<u>093889</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that Halaco Engineering for the last 3 days has been emitting dark soot and a metallic smell again. Reports the odors and soot get worse after 5pm and are really bad at 2am.				
<u>06/13/2000</u>	<u>1720</u>	<u>093886</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a concern over emissions coming from Halaco Engineering. Upset regarding being inundated by the smoke more often than ever. Reports when driving through the smoke that by the time complainant gets home can't taste dinner. Complainant previously called on 4/12/2000 (COMP# 093825).				
<u>06/08/2000</u>	<u>1020</u>	<u>093877</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a metallic smell and the usual smog emanating from Halaco Engineering at this time. Reports the odor can be detected anywhere to the east of Halaco. Reports that whenever the weather is like this (overcast) Halaco emissions seem worse.				
<u>05/25/2000</u>	<u>1824</u>	<u>093867</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant, while driving along Hueneme Road, could see "smoke" coming from what appeared to be Halaco's slag piles. According to complainant, the piles appeared to be on fire. Smoke filled the Oxnard Plain.				
<u>05/23/2000</u>	<u>1630</u>	<u>093865</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report odors and smoke emanating from Halaco Engineering on Perkins Rd. Reports for the last 3 days the smoke has been especially bad. Problem is usually at it's worst at night. Complainant believes that children's allergies may be linked to emissions from Halaco.				
<u>05/19/2000</u>	<u>1116</u>	<u>093862</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called in stating that the odors from Halaco were really bad today. It haze is coming in through the plant and traveling down Perkins Road to a school located north of Hueneme Road.				
<u>04/21/2000</u>	<u>1238</u>	<u>093833</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report a purple haze coming from Halaco Engineering at 1238pm on 4/21/2000.				
<u>04/12/2000</u>	<u>1721</u>	<u>093825</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report being able to taste a metallic substance in mouth as a result of emissions from Halaco Engineering. Complainant is at work while experiencing this taste and also smells the odor on the commute. Reports that it is really foggy at this time and that Halaco "must be going crazy burning". Complainant is concerned that nothing is being done to prevent Halaco from doing this and wants to know if they will be put out of business. Reports that the odor occurs maybe once or twice a week at work. Often can see a cloud generated at Halaco coming toward them.				
<u>03/07/2000</u>	<u>1331</u>	<u>093790</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a concern about Halaco Engineering. Reports that everytime the wind comes from the South and they have the background of cloud that they "just pour their emissions right out of the plant". The emissions don't appear to be coming out of the stack but there is a plume coming from the plant. Reports that the plume has to be unhealthy.				
<u>03/07/2000</u>	<u>1323</u>	<u>093789</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to complain about Halaco Engineering again. Reports that they are being "dozed" again at the Oxnard WWTP.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>03/07/2000</u>	<u>1322</u>	<u>093788</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report complaint regarding Halaco Engineering. Complainant located at Oxnard WWTP.				
<u>03/07/2000</u>	<u>1318</u>	<u>093787</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report being bombarded by Halaco emissions.				
<u>03/07/2000</u>	<u>1146</u>	<u>093786</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report getting the smell again from Halaco Engineering at the moment. Reports observing a cloud coming from Halaco Engineering. Complainant and family are having problems with headaches. Odor described as obnoxious.				
<u>03/03/2000</u>	<u>1351</u>	<u>093782</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a plume of acrid smoke coming from the Halaco Facility on Perkins Rd. Smoke is going Northwest and is actually crossing Hueneme Rd. at the intersection with Surfside Dr. Complainant estimates that this is a half mile to a mile away from Halaco.				
<u>03/01/2000</u>	<u>1342</u>	<u>093780</u>	<u>Odor/Unknown</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report a chemical odor in the air around residence. Reports that odor has been really bad the last couple of days. Reports the odor smell almost like permanent marker. The smell is particularly bad in the alley way behind the house but is in the Saviers Rd., Hueneme Rd & Pleasant Valley Rd. area.				
<u>03/01/2000</u>	<u>1320</u>	<u>093779</u>	<u>Odor/Unknown</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report a strange smell down in the South Saviers area of Oxnard. Reports that for the last 2 weeks noticed a lot more hazy smoke in the area also. Last 2 days the odor has really smelled bad. Complainant is concerned the odor may be coming from the old superfund site nearby, or the metal smelter, or the paper mill.				
<u>02/25/2000</u>	<u>1401</u>	<u>093775</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that Halaco Engineering has been emitting a white fog today that comes out when it is overcast. Today's fog has been particularly nasty.				
<u>02/23/2000</u>	<u>0913</u>	<u>093770</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report a steady cloud of visible emissions coming from Halaco Engineering at the moment. Reports the smoke is making people sick in the area and the last 3 days it has been worse than normal. Complainant is reporting people are getting nauseous from the odors. Complainant believes the smoke is coming from the plant and also their dross piles. Complainant also indicates that when he walks on the beach around 3-5am that he sees emissions coming from Halaco. Reports he used to work in an Aluminium Smelting Plant for 10 years and they would release emissions at night to avoid detection.				
<u>02/14/2000</u>	<u>1030</u>	<u>093762</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a complaint about emissions coming from Halaco this morning. Reports being able to smell, taste and see the smoke. First noticed the odor around 08:30am this morning. Problem is ongoing at this time. Have been working with Jay Nicholas on this issue.				
<u>02/02/2000</u>	<u>1447</u>	<u>093753</u>	<u>Visible</u>	<u>NOV Issued</u>
Comment: Complainant calling from Oxnard WWTP. Reports that a cloud of smoke is covering the Plant and it is coming from Halaco. Reports that the smoke is causing a health problem and people are coughing. Plant is really foggy as a result.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>01/18/2000</u>	<u>0933</u>	<u>093734</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a brown plume coming from Halaco on Perkins Rd. Reports the plume is heading south and going out over the ocean, where the brown color seems to get heavier as it gets closer to the water. Was extremely heavy about 30-40 minutes ago but is still visible now. Complainant concerned when the atmospheric conditions are right and the smoke inundates Oxnard Waste Water Plant the employee's suffer health effects from this plume.				
<u>12/21/1999</u>	<u>1025</u>	<u>093717</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report white smoke coming from Halaco Engineering this morning. Reports the smoke is coming from the stack, and bellowing from the sides of the building.				
<u>11/16/1999</u>	<u>1001</u>	<u>093678</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report seeing grey smoke emanating from Halaco Engineering this morning. Reports the wind in onshore and is pushing the smoke toward a nearby school.				
<u>11/01/1999</u>		<u>093657</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report black smoke coming from Halaco. The smoke was coming down Perkins Rd. and affecting his business and the nearby elementary school.				
<u>08/20/1999</u>	<u>1014</u>	<u>093544</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called to report visible emissions coming from Halaco Engineering this morning. Please see written log for additional information.				
<u>08/12/1999</u>	<u>0954</u>	<u>093543</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report visible emissions coming from Halaco Engineering this morning. Please see written log for additional information.				
<u>08/09/1999</u>	<u>1119</u>	<u>093523</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Visible emission from Halaco today. Going on now.				
<u>07/20/1999</u>	<u>1424</u>	<u>093495</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant has complained on 3 previous occasions (093236, 093240, 093262). Reports that it is impossible to go for a walk or run by the beach close to Halaco Engineering without getting "soot" on you. Reports that you can't breathe down there. Complainant also reports that when the wind changes the soot and odor also can be found at his residence and it gets all over the cars. Complainant will also be contacting other agencies regarding his concerns.				
<u>05/19/1999</u>	<u>1951</u>	<u>093436</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to complain about "the Halaco Refinery on Perkins Rd.". Reports every night when staff come into work the graveyard shift at Edison's Power Plant on Edison Rd. (Ormond Beach) they are subjected to "clouds and clouds of fumes" coming from Halaco. Reports it makes everyone sick at work by drying out sinuses, giving people headaches, and everyone is always coughing.				
<u>05/19/1999</u>	<u>1933</u>	<u>093435</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report experiencing smoke problems emanating from "The Halaco Plant". Complainant works for Edison at Ormond Beach Generating Station. Reports that while working the graveyard shift, for the last week and a half, they see a ton of smoke. The smoke is making complainant sneeze and his throat hurt. Complainant contends whenever he is down in the area during the daytime you never see any smoke, only when APCD is closed at night does the smoke become a problem.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>05/11/1999</u>	<u>0930</u>	<u>093423</u>	<u>Dust</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a concern about Halaco located on Perkins Rd., Oxnard. Complainant is located on Blue Dolphin and reports "Grey ash like stuff blows constantly over this way" from a big pile located at Halaco. Pile is described as being about an acre and 2-3 stories high. Also reports some grey smoke coming out of pipes at Halaco which is polluting the air. Complainant reported this to be most urgent.				
<u>03/29/1999</u>	<u>1614</u>	<u>093378</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report that the Halaco Plant is putting out "their afternoon smog".				
<u>03/19/1999</u>	<u>1400</u>	<u>093376</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Anonymous complainant called in claiming that Halaco was emitting a large cloud of visible emissions from facility. Complainant works near by. He also complained about history of problems with facility and other related matters, saying that emission problems are worse on nights and weekends.				
<u>03/18/1999</u>	<u>1001</u>	<u>093371</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report the Oxnard WWTP is being "heavily dosed" by a thick cloud coming from Halaco at the moment. Complainant report's there is a conference going on at the Oxnard WWTP today. Would appreciate it if you would please respond.				
<u>03/16/1999</u>	<u>1619</u>	<u>093368</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report Halaco off of Perkin's Rd. is "putting out their afternoon smog once again". Complainant is anonymous.				
<u>02/03/1999</u>	<u>0330</u>	<u>093330</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant states that he is in a fog from smoke emissions coming from Halaco. He stated that he followed the trail of the smoke back to the Halaco plant in Port Hueneme, that's why he knows it's Halaco. He says it happens quite often.				
<u>01/25/1999</u>	<u>1157</u>	<u>093323</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report smoke coming from Halaco Engineering. Reports that the smoke is all coming from out the front of the building and none appears to be coming from the stack.				
<u>01/11/1999</u>	<u>1656</u>	<u>093312</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called to report that Halaco Engineering at the end of Perkins road is "burning". Reports they started at 1 o'clock with Magnesium. Complainant is three miles away and can still see smoke bellowing out. Complainant also believes the plant will "burn heavy tonight" because they have been unloading Magnesium off of the Railroad truck and will burn it tonight "while your gone". Complainant reports also being an employee at Willamette Paper Mill.				
<u>01/11/1999</u>	<u>1038</u>	<u>093310</u>	<u>Odor/Source Specific</u>	<u>No Further Action</u>
Comment: Complainant called to report that Halaco is putting out a lot of smoke this morning which is making it hard to breathe around the area.				
<u>12/30/1998</u>	<u>1546</u>	<u>093300</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report seeing a "smouldering smoke" cloud coming from Halaco at the moment. Reports the smoke is covering the whole South East End of the County and is becoming a nusiance.				
<u>12/18/1998</u>	<u>1429</u>	<u>093291</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant was calling on behalf of Willamette Industries employees. Reports concern over emissions coming from Halaco Engineering. Complainant reports receiving complaints from people working in the yard related to breathing difficulties.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>11/25/1998</u>	<u>0935</u>	<u>093267</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant calling from neighboring Oxnard WWTP. Reports a large white smoke plume emanating from Halaco. Smoke is coming out the side of the building and from the roof. Has been ongoing all morning.				
<u>11/19/1998</u>	<u>1045</u>	<u>093262</u>	<u>Dust</u>	<u>No Further Action</u>
Comment: Complainant reports that the beach was "closed" today because there was so much dust blowing off of the slag heap at Halaco Engineering. Complainant also reports that six out of seven days a week there is a soot emitted from the facility that causes people to choke and have breathing problems.				
<u>10/29/1998</u>	<u>1015</u>	<u>093244</u>	<u>Odor/Source Specific</u>	<u>No Further Action</u>
Comment: Complainant called to report driving down Perkins Rd. this morning and there was so much smoke coming from Halaco Engineering that complainant could barely see the company. Complainant reports being barely able to breathe when she opened the car windows. Smoke is coming from the sides of the building as well as through the top of the building.				
<u>10/26/1998</u>	<u>1030</u>	<u>093240</u>	<u>Odor/Source Specific</u>	<u>No Further Action</u>
Comment: Complainant called to report "smog" and a sulfur odor emanating from the Aluminium Plant on Perkins Rd. Complainant had previously called on 10/19/98 with another complaint about the same facility (# 093236). Report the "smog" was bad all this weekend at night as well as in the daytime. The smog is blowing very thick this morning (10/26/98) at 10:30am across Hueneme Rd. and all across Hueneme.				
<u>10/21/1998</u>	<u>1400</u>	<u>093238</u>	<u>Miscellaneous</u>	<u>No Further Action</u>
Comment: Complainant called to report a pollution problem emanating from Halaco Engineering at the moment. Complainant reports some kind of "soot" is falling at Willamette Industries and is being released by Halaco. Reports it is very difficult to breathe at the moment.				
<u>09/03/1998</u>	<u>0828</u>	<u>093183</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reports that at about 8am Halaco released a large, odorous cloud. The cloud traveled up Perkin's Road and employees at Willamette are unable to see the Wastewater plant across the street.				
<u>09/02/1998</u>	<u>0901</u>	<u>093179</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report the odor coming from the Halaco Plant on Perkins Rd. this morning is terrible. Reports that the last few months the problems have been worse. Concerned about odors going up and down the beach and over the "elementary school" in the area. Wants to know what can be done about the plant. Complainant will call back later.				
<u>08/13/1998</u>	<u>0950</u>	<u>093156</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report an ongoing concern about pollution emanating from Halaco Engineering. Pollution takes the form of a low lying cloud which sits over the whole area. Has been bad the last few days and seems to be more of a problem in general recently. Complainant reports farm workers in adjacent fields are being affected by the cloud and he wishes to know what Halaco are releasing.				
<u>07/23/1998</u>	<u>0935</u>	<u>093134</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report a concern with smoke and odors coming from Halaco Engineering on Perkins Rd. Complainant reports people at Willamette Paper Mill are experiencing difficulty breathing as a result of the smoke/odors. Problem began about 8am today and is ongoing.				
<u>02/03/1998</u>	<u>1715</u>	<u>092951</u>	<u>Visible</u>	<u>NTC Issued</u>
Comment: Complainant reports seeing smoke and particulates coming from the Halaco facility.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>02/02/1998</u>	<u>0945</u>	<u>092943</u>	<u>Visible</u>	<u>NTC Issued</u>
Comment: Complaint rec'd by E. Wetherbee. Complainant called to report a concern regarding a cloud emanating from Halaco Engineering today. Complainant reports the cloud makes it difficult to breath. Complainant located at Willamette (see also COMP# 092938).				
<u>01/30/1998</u>	<u>1500</u>	<u>092939</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called in about a "huge cloud of smoke" with a metallic odor, emanating from the area of Halaco. Cloud is up as high as 100 feet, as well as low to the ground and is going on right now.				
<u>01/28/1998</u>	<u>1225</u>	<u>092938</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called to report a large cloud emanating from Halaco at the moment. Reports this began around 10am and it's making it difficult to breathe and see. Complainant is located at Willamette.				
<u>12/30/1997</u>	<u>1320</u>	<u>092912</u>	<u>Odor/Source Specific</u>	<u>No Further Action</u>
Comment: Complaint called in by City of Oxnard Fire Dept. Batallion Chief requested a representative of the APCD to meet with him at the plant. Just prior too the Fire Dept call, two anonymous complainants called reporting a large cloud of smoke with a really bad smell emanating from the smelting plant.				
<u>12/02/1997</u>	<u>1242</u>	<u>092870</u>	<u>Dust</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports Oxnard Wastewater Treatment Plant is being bombarded by particulates coming from Halaco at the moment (for about 20 - 30 minutes). Reports it is very odoriferous and is making it difficult to breath.				
<u>10/31/1997</u>	<u>1301</u>	<u>092845</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Rec'd call at 11:29am, "Halaco is spewing a white cloud out the back door, which is traveling in an easterly direction. Irritating to the throat and eyes."				
<u>08/19/1997</u>	<u>0830</u>	<u>092726</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called to report Halaco is putting out a large plume this morning. The plume is going all the way to Surfside (Condo Complex). Plume has an odor to it.				
<u>03/13/1997</u>	<u>0814</u>	<u>092564</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report a strong odor coming from Halaco this morning. The odor is described as having an egg smell. Complainant is concerned about workers at Willamette and a local school yard.				
<u>02/18/1997</u>	<u>0945</u>	<u>092545</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant lives in the hills above Ventura. Claims to see a large cloud of smoke coming from area around Halaco, first thing in the morning.				
<u>10/30/1996</u>	<u>0830</u>	<u>092437</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reports a odor coming from Halaco Engineering this morning. Reports the odor is becoming progressively worse.				
<u>03/27/1996</u>	<u>1630</u>	<u>092190</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report an "Ammonium Chloride" plume near Ormond Beach.				
<u>03/27/1996</u>	<u>1525</u>	<u>092189</u>	<u>Visible</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report a "light bluish" smoke bellowing from the plant. Complainant wants a call back after the inspection.				

<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Complaint Type</u>	<u>Outcome</u>
<u>01/16/1996</u>	<u>0930</u>	<u>092139</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant called to report smoke/ammonium odor from Halaco. Going on at the moment.				
<u>12/18/1995</u>	<u>1151</u>	<u>092108</u>	<u>Odor/Source Specific</u>	<u>No Further Action</u>
Comment: Complainant called to report a purple mist and odor associated with Halaco. Reports not being able to keep his eyes open.				
<u>12/13/1995</u>	<u>1030</u>	<u>092101</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Anonymous complainant called to report smoke and ammonia gas from 4:00 PM on December 12 to 7:30 AM on December 13 at the back door of the Halaco plant. Says that the plant regularly emits this smoke at night, and he is complaining about the health effects as well as the damage to personal cars in the area.				
<u>12/12/1995</u>	<u>1130</u>	<u>092099</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reports clouds of greyish smoke coming from Halaco all morning. Complainant located at City of Oxnard's Wastewater Plant. Reports an odor also. Has been an ongoing problem. Please call complainant back after inspection.				
<u>11/30/1995</u>	<u>1331</u>	<u>092087</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant reports a odor coming from the Halaco property at the moment. Describes it as an Ammonia/Sulfur odor. Reports difficulty breathing while outside. Complainant works as an independent contractor at Willamete.				
<u>11/07/1995</u>	<u>0906</u>	<u>092069</u>	<u>Odor/Source Specific</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called to report Halaco Engineering putting out a purple mist. Reports having difficulty breathing.				
<u>10/05/1995</u>	<u>0728</u>	<u>092017</u>	<u>Odor/Source Specific</u>	<u>Problem Not a Violation</u>
Comment: Complainant reports a "burning/metallic odor" coming from Halaco. Please call complainant back after investigation.				
<u>02/22/1995</u>	<u>1657</u>	<u>091749</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called in to report emissions emanating from the Halaco facility.				
<u>02/21/1995</u>	<u>1300</u>	<u>091746</u>	<u>Visible</u>	<u>No Further Action</u>
Comment: Complainant called in to report a foul metallic odor and "fog" coming from the Halaco Plant. He said that the discharge was irritating his throat.				
<u>02/02/1995</u>	<u>1038</u>	<u>091726</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called in to report a smoke/fog-like emission coming from the Halaco plant and slowly drifting toward her home. Paged DS on 02/02/94 at 1045 hours.				
<u>01/24/1995</u>	<u>1255</u>	<u>091715</u>	<u>Visible</u>	<u>Unable to Verify Problem</u>
Comment: Complainant called in to report a white cloud emanating from inside the facility. Paged DS at 1258, same date.				
<u>01/05/1995</u>	<u>1430</u>	<u>091686</u>	<u>Odor/Source Specific</u>	<u>No Further Action</u>
Comment: Complainant called in to report a foul odor and smoke emissions emanating from the Halaco Plant.				

Date	Time	Number	Complaint Type	Outcome
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Number of Complaints: 187

**Reference
No. 24**



Mon., December 04, 12:32 pm

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Did you know?

In 1989, the Ventura County District Attorney's Office became the first office in California to successfully introduce D.N.A. "genetic fingerprinting" evidence in a criminal case.

Release Date: September 3, 2004
 Contact:
 Mitchell Disney , Senior Deputy District Attorney
 (805) 289-1985

District Attorney Gregory D. Totten announced today that Halaco Engineering Co. ("Halaco"), of Oxnard , admitted to violating its probation. Judge Donald Coleman ordered Halaco to refrain from normal smelting operations until Halaco can demonstrate compliance with its Air Pollution Control District ("APCD") operating permit. Halaco's probation was also modified to include terms and conditions as follows: Requiring random testing for a variety of toxic air contaminants; suspending smelting if limits are exceeded; testing of its raw materials for heavy metals, PCB's and dioxin; limiting smelting activities to weekdays during standard business hours; ensuring that its pollution-control system is clean before beginning each new smelting operation; reimbursing APCD for the costs of overseeing all testing; and keeping APCD and the District Attorney apprised of the progress of Halaco's anticipated relocation out of Ventura County.

The actual terms and conditions are set forth in full below:

1. Conduct no smelting operations until compliance with condition 3 (particulate emissions) of your Ventura County Air Pollution Control District ("VCAPCD") Permit to Operate No. 00022 is demonstrated, or unless approved in writing by VCAPCD for purposes of conducting a source test to demonstrate compliance.
2. Submit to random source testing upon 24 hours' telephonic notice (given by 8:00 a.m.), not to exceed once a month. Sampling and analysis conducted at Halaco's expense, by consultant selected by VCAPCD. Test results submitted to VCAPCD, with a simultaneous copy to Halaco. Testing must be completed within three consecutive business days of the date notice is given. The first test analysis will be for all air emissions set forth in Halaco's permit to operate (Reactive Organics, Nitrogen Oxides, Particulate Matter, Sulfur Oxides, Carbon Monoxide, Ammonia, and Hydrogen Chloride), plus Hydrogen Sulfide. If the first random monthly test demonstrates compliance with permit limits, subsequent testing need only be for Particulate Matter. You must cooperate fully with testing personnel by providing adequate staffing, safe and reasonable access to areas required, and conducting operations as needed to permit such testing. If the test demonstrates a failure to comply with any permit condition, conduct no smelting operations until compliance is demonstrated, or unless approved in writing by VCAPCD for purposes of conducting a source test to demonstrate compliance.
3. Conduct no smelting operations without having a sufficient quantity of raw material onsite at all times as necessary to be able to comply with a request for the random source testing required by these terms and conditions of probation.
4. Submit raw materials for sampling and testing upon request of VCAPCD, not to exceed once a month. Sampling and analysis conducted at Halaco's expense, by consultant selected by VCAPCD. Test results submitted to VCAPCD, with a simultaneous copy to Halaco. The first test analysis will be for metal composition, PCB's and dioxins. Subsequent tests shall be limited to metal composition only.

5. Conduct no more than two heats per day.
 6. Smelting operations to be limited to Monday through Friday, between the hours of 7:00 a.m. and 5:00 p.m.
 7. Provide a schedule of smelting operations (to the extent known or reasonably anticipated) for each forthcoming week to VCAPCD, via facsimile, by 5:00 p.m., each Friday afternoon.
 8. Not smelt whole commercial castings unless disassembled, drained, and cleaned to remove plastic and rubber parts and oily film. Not otherwise smelt scrap metal having an oily film, or containing other than small, incidental and not readily removable, pieces of plastic or rubber.
 9. Comply with condition 7 of Permit to Operate No. 00022, and paragraph 9 of associated Pollution Control System Operation Manual by waiting until all smelting and pouring of ingots is completed and dross emissions <10% before turning off blower and commencing bag-cleaning procedures.
 10. Contemporaneously prepare and maintain accurate daily production records showing source, composition, type and quantity of materials smelted in each heat; time of start/finish of each step of the smelting process (furnace fill/pours; ingot pot fill/pours; and dross removal), and bag-cleaning procedures. Submit proposed form to be used for this purpose to VCAPCD for approval by 5:00 p.m. today.
 11. Reimburse VCAPCD forthwith for staff costs associated with source tests of 4/1/04 and 8/17/04, and for future source tests within 30 days of receipt of invoice, in accordance with VCAPCD Rule 47.
 12. Comply with VCAPCD Rule 10.
 13. Provide monthly status reports to the VCAPCD and District Attorney on the status of your progress in conducting a planned relocation of smelting operations to a new location outside of Ventura County . The reports shall be signed under oath by a representative of Halaco with personal knowledge of the facts.
- 

**Reference
No. 25**

CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD
LOS ANGELES REGION

2002 NOV 21 PM 2:52

RECEIVED

REPORT OF FINDINGS

**CHARACTERIZATION / WASTE SAMPLING OF
WASTE MANAGEMENT UNIT,
HALACO ENGINEERING CO. FACILITY
LOCATED AT 6200 PERKINS ROAD
OXNARD, VENTURA COUNTY, CALIFORNIA**

Prepared for:
HALACO ENGINEERING CO.

November 2002

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CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD
LOS ANGELES REGION

November 15, 2002
Project No. 0201-0593

California Environmental Protection Agency
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Attention: Mr. Dennis Dickerson
Executive Officer

Subject: Report of Findings, Characterization / Waste Sampling of Waste Management Unit,
Halaco Engineering Co. Facility Located at 6200 Perkins Road, Oxnard, Ventura
County, California, dated November 2002

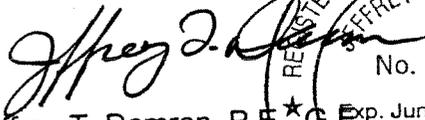
Dear Mr. Dickerson:

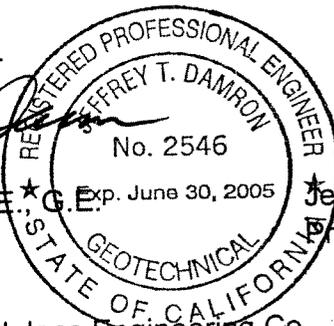
Padre Associates, Inc. (Padre), on behalf of Halaco Engineering Co. (Halaco), is pleased to present the attached document, which presents the methods of assessment, findings, results, conclusions and recommendations documenting the collection of waste samples for characterization at randomly determined locations of the Waste Management Unit at the subject Halaco facility. The scope of work documented herein was developed in response to the written directive issued by the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) in Cease and Desist Order No. R4-2002-0064, dated March 7, 2002.

The WMU characterization activities were performed under the direction of a California-registered geologist / California-certified engineering geologist. If you have any questions or require additional information, please contact me.

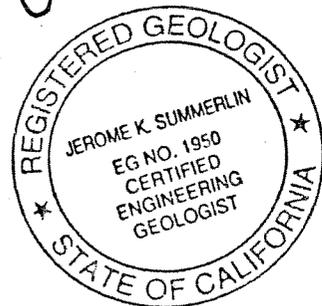
Sincerely,

Padre Associates, Inc.


Jeffrey T. Damron, P.E., G.E.
Principal




Jerome K. Summerlin, C.E.G., C.Hg.
Principal



c: Mr. Dave Gable, Halaco Engineering Co.
Mr. Arthur Fine, Mitchell, Silberberg & Knupp LLP

TABLE OF CONTENTS

	Page
INTRODUCTION.....	1
PURPOSE.....	1
REVIEW OF HISTORICAL WMU WASTE SAMPLING DATA.....	1
GEOLOGIC AND HYDROGEOLOGIC SETTING.....	2
REGIONAL GEOLOGIC CONDITIONS.....	2
REGIONAL AND LOCAL HYDROGEOLOGIC CONDITIONS.....	2
METHODS OF ASSESSMENT.....	3
PREPARATION OF TECHNICAL WORK PLAN / SITE HEALTH AND SAFETY PLAN.....	3
PERMITTING, UTILITY CLEARANCE, AND PRE-FIELD NOTIFICATIONS.....	3
DETERMINATION OF RANDOM SAMPLE COLLECTION LOCATIONS AND DEPTHS.....	3
DRILL HOLE ADVANCEMENT AND WASTE SAMPLE COLLECTION.....	4
LABORATORY ANALYTICAL PROGRAM.....	4
FINDINGS.....	5
SUMMARY OF FIELD ASSESSMENT ACTIVITIES.....	5
SUMMARY OF LABORATORY ANALYTICAL RESULTS.....	5
STLC Analyses Using Standard Citric Acid Buffer.....	5
STLC Analyses Using Deionized Water Buffer.....	6
Ammonia Analyses.....	6
Moisture Content.....	6
Thorium Isotopes.....	6
CONCLUSIONS.....	7
RECOMMENDATIONS.....	9
LIMITATIONS.....	10

TABLE OF CONTENTS (Continued)

Page

TABLES

1	Laboratory Analytical Results, Moisture, Ammonia, and STLC and DI-WET Analyses.....	11
2	Laboratory Analytical Results, Thorium Isotopes.....	13
3	Statistical Analyses	14
4	Arcsine Transformation Calculation.....	15

PLATES

Site Location Map	1
Site Plan	2

APPENDIX

- APPENDIX A: DRILL HOLE LOGS
- APPENDIX B: LABORATORY ANALYTICAL REPORTS

INTRODUCTION

PURPOSE

This document describes the field procedures and protocols followed during the Waste Management Unit (WMU) waste sampling and characterization activities completed on August 28, 2002 at the Halaco Engineering Co. (Halaco) facility located in Oxnard, California (Site). The location of the Site is illustrated on Plate 1 - Site Location Map, and the ten drill hole locations utilized for the collection of 20 supplemental samples are presented on Plate 2 - Site Plan.

The subject WMU waste sampling and characterization activities were completed to comply with Provision d) of the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Cease and Desist Order No. R4-2002-0064 (CDO) dated March 7, 2002. Provision d) required that Halaco submit a workplan for the collection of waste samples for characterization purposes at various locations of the WMU consistent with the sampling plan provisions in U.S. EPA Manual SW 846 (October 1996), which includes the specific protocols for soil sampling procedures, to be approved by the RWQCB. Provision d) required that the workplan include the laboratory analysis of twenty waste samples representative of the WMU, and that the workplan be submitted to the RWQCB for review and approval by May 6, 2002. In addition, Provision d) required that waste sample analysis be conducted by a ELAP certified testing laboratory for the following analytes: barium, copper, lead, and zinc by standard methods using the soluble threshold limit concentrations (STLC) procedures with a deionized water buffer rather than citric acid; ammonia by U.S. EPA Method 4500-Ammonia; for the presence of Thorium isotopes 228, 230, and 232 using standard methods; barium, copper, lead, and zinc by STLC procedures with the standard citric acid buffer; and for water content. Provision d) also required that a report documenting the waste sampling results be submitted to the RWQCB within three months of initiating the foregoing WMU waste assessment activities.

REVIEW OF HISTORICAL WMU WASTE SAMPLING DATA

Padre's review of the available waste sampling data for the WMU indicates that waste sampling was completed in the vicinity of the existing WMU in October 1980. The referenced report, prepared by James M. Montgomery, Consulting Engineers Inc. (JMM), includes limited text, analytical results for waste samples collected, and a map illustrating the waste sample collection locations. However, the document did not indicate the estimated volume of waste material onsite at the time of sampling, or a description of the sample collection methodology. The waste samples were analyzed for concentrations of arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. JMM concluded that the subject analytes were present at concentrations below the U.S. EPA Toxicity Limits. A summary of these analytical results are presented as Table 1 - Summary of Available Soil Analytical Results. The report also refers to preliminary waste sampling activities at the WMU performed by State of California representatives. The State of California waste sample chemical analytical results were not available to Padre for review.



→ not incl. table 1 is summary of padre results

GEOLOGIC AND HYDROGEOLOGIC SETTING

REGIONAL GEOLOGIC CONDITIONS

The Site is situated on the Oxnard Plain located within the southwest portion of the Ventura Basin, south of the Santa Ynez Mountains in the western Transverse Ranges Geomorphic Province of southern California. The Transverse Ranges Geomorphic Province is an east-west-trending geomorphic province within southern California bounded on the north by the Santa Ynez fault, on the east by the San Bernardino Mountains, on the south by the Transverse Ranges Frontal Fault Zone, and on the west by the Pacific Ocean. The province contains igneous, volcanic, metamorphic and sedimentary rocks ranging in age from Cretaceous to Holocene (recent). Major east-west-trending folds and reverse faults reflect regional north-south compression, and are characteristic of the basin.

REGIONAL AND LOCAL HYDROGEOLOGIC CONDITIONS

The Santa Clara-Calleguas Creek groundwater basin is located within the Santa Clara River basin. The drainage is located approximately 60 miles northwest of Los Angeles and encompasses approximately 2,000 square miles. The main water bearing units of the Santa Clara-Calleguas Creek basin are: unconsolidated alluvial and fluvial deposits of Holocene age, unconsolidated to partly consolidated alluvial and marine deposits, and continental and marine deposits of Pleistocene age. Tertiary age consolidated sedimentary rocks underlie the groundwater throughout most of the basin.

The Oxnard plain is one of ten groundwater subbasins within the coastal valleys and plains of the Santa Clara-Calleguas basin in Ventura County, California. The Oxnard plain subbasin is bound in the north by the Mound and Oxnard Forebay subbasins, in the east by the Pleasant Valley subbasin, and to the south and west by the Pacific Ocean, offshore, along the edge of the continental shelf. The Site is situated on the Oxnard Plain on a surface of Holocene beach, floodplain, and marsh deposits, and is underlain by a complex system of aquifers to a depth of approximately 1,200 feet below ground surface. Aquifers in descending order from ground surface are; unnamed semi-perched; Oxnard; Mugu; Hueneme; and Fox Canyon/Grimes Canyon.

The near surface semi-perched groundwater body beneath the Site, which is believed to be approximately 50 feet thick, is thought to contain localized discontinuous units of low permeability earth materials, and groundwater flow beneath the Site is believed to be to the south toward the adjacent Pacific Ocean. The semi-perched groundwater historically contains water of poor mineral quality. Because of its very poor mineral quality, waters from the semi-perched aquifer were not used for domestic, agricultural, or industrial water supply in any significant quantity. Groundwater levels in the semi-perched zone have reportedly been measured at a depth of approximately three feet below ground surface and may be influenced by tidal fluctuation.

METHODS OF ASSESSMENT

PREPARATION OF TECHNICAL WORK PLAN / SITE HEALTH AND SAFETY PLAN

Padre prepared a Technical Work Plan (TWP) / Site Health and Safety Plan (HSP) for this project, which was dated April 30, 2002. The TWP presented the planned scope of work to complete the subject characterization of the WMU, and the HSP included procedures, equipment, and materials/supplies employed to protect worker and community health and safety during the course of the soil assessment activities. The HSP also included provisions for daily tailgate safety meetings, and the procedures required for daily general work permit issued by Halaco.

The TWP/HSP was submitted to the RWQCB for review and approval, and was approved by the RWQCB in a letter dated July 23, 2002.

PERMITTING, UTILITY CLEARANCE, AND PRE-FIELD NOTIFICATIONS

Upon approval of the TWP by the RWQCB, Halaco contracted the services of a State of California licensed drilling contractor (C-57) for the required drill hole advancement and soil sampling services.

Halaco and Padre marked the Site at the proposed drill hole locations for utility clearance prior to the advancement of the Geoprobe drill holes. Underground Service Alert was notified a minimum of 72-hours prior to the initiation of drilling activities to provide utility clearance for the Site. Additionally, Halaco worked with personnel familiar with the utilities at the Site to provide specific Halaco utility and pipeline clearance.

Padre notified the RWQCB via telephone a minimum of 72-hours prior to initiation of the WMU waste assessment activities.

DETERMINATION OF RANDOM SAMPLE COLLECTION LOCATIONS AND DEPTHS

The random sample collection method used for the subject WMU soil characterization program was developed using the three-dimensional sampling strategy described by the U.S. EPA for random sample collection within landfills and lagoons. The first step of this method was to establish a two-dimensional grid of equally sized sections on a topographic map of the Project Area. The sections were then assigned whole numbers in sequential order starting with one. The numbers assigned to the sections were then entered into a program used to generate randomly selected numbers. For this project Padre used the program Random Number Generator Pro created by Segobit Software. Using Random Number Generator Pro, ten numbers were randomly selected to determine the locations of the ten drill holes to be advanced at the Site. The actual drill hole location for each section was placed at the closest currently accessible area from the center of the grid section. In the case of drill hole locations DH-4 and DH-10 where access within the randomly selected grid section was limited, the drill hole locations were repositioned to the nearest adjacent section where drill rig access could be

achieved. Access is limited at these selected grid sections due to the current discharge of the waste stream, which currently results in these areas either being under water or saturated. The grid utilized for the sample collection strategy and the randomly selected drill hole locations are presented on Plate 2 - Site Plan.

Next, the soil sample collection depths were determined within each of the ten drill holes. Random depths were calculated by taking the total depth of the WMU at each drill hole location and dividing those depths into 1-foot intervals. The intervals were then sequentially numbered with increasing values from the existing surface of the WMU to the total depth of the WMU at each drill hole location. The vertical sampling depths were selected using the Random Generator Pro program as described above. Two sample collection depths were selected at each drill hole location for a total of twenty randomly collected samples at the Site.

DRILL HOLE ADVANCEMENT AND WASTE SAMPLE COLLECTION

On August 28, 2002, a California C-57 licensed drilling contractor (Cascade Drilling, Inc. of Norwalk, California), using Geoprobe direct push drill rig, and under the direction of a California registered geologist / certified hydrogeologist, advanced the required drill holes for the subject waste characterization program. At each of the 10 drill hole locations the Geoprobe direct push drill rig hydraulically advanced approximately 2-inch OD sample cores, which were be advanced in 4-foot sections, to the target depths for purposes of waste characterization. Waste encountered within each drill hole was logged by a geologist similar to the Unified Soil Classification System (USCS). The drill holes were advanced to total depths of 13- to 30 feet. Following the completion of the drill hole advancement activities and the collection of the required samples, the WMU waste cuttings were be placed back into the open drill holes and the drill hole sealed with hydrated bentonite chips.

At each drill hole location two undisturbed waste samples were collected for chemical analyses from specified depths using the Geoprobe sampler containing stainless steel sample sleeves. Following the collection of each waste sample, the sample sleeves were sealed with Teflon sheets and plastic end caps, and sealed with tape and labeled. Following the preparation of the samples, they were stored on-site prior to delivery to the laboratory. Appropriate chain-of-custody documentation was utilized to maintain a continuous record of the samples' custody, beginning with the collector of the sample, and all recorded transfers of custody including date and time of each transfer.

LABORATORY ANALYTICAL PROGRAM

The twenty waste samples were chemically analyzed to determine if the material contained within the WMU is water soluble in regards to barium, copper, lead, and zinc. The characterization for the presence of barium, copper, lead, and zinc was performed using soluble threshold limit concentrations (STLC) procedures using both citric acid and deionized water as the leaching agents using U.S. EPA method 6010/7000 series.

Additionally, the twenty waste samples were also chemically analyzed for the presence of ammonia using U.S. EPA method 4500-Ammonia, for the presence of Thorium isotopes 228, 230, and 232 using standard methods, and for moisture content determination using standard test method ASTM D 2216.

All chemical analyses were performed by Capco Analytical Services, Inc. (Capco) of Ventura, California and General Engineering Laboratories, Inc. (GEL) of Charleston, South Carolina. Both Capco and GEL are ELAP certified testing laboratories. *

FINDINGS

SUMMARY OF FIELD ASSESSMENT ACTIVITIES

The waste materials encountered within the ten drill holes advanced within the WMU consisted of artificial fill materials comprised of fine grained, silty sand and clayey waste debris. This silty material was generally dark greenish gray to dark gray, damp to moist, and soft to moderately dense throughout the depth of the WMU. At several of the drill hole locations metallic flakes and mineralization were observed within the sand and clayey matrix, and an ammonia odor was observed. Free-flowing water was not encountered within any of the drill holes advanced within the WMU.

SUMMARY OF LABORATORY ANALYTICAL RESULTS

The 20 waste samples were chemically analyzed to determine if the material contained within the WMU is water soluble in regards to barium, copper, lead, and zinc. The characterization for the presence of barium, copper, lead, and zinc was performed using soluble threshold limit concentrations (STLC) procedures using both citric acid and deionized water (DI-WET) as the leaching agents using U.S. EPA method 6010/7000 series.

The 20 waste samples were also chemically analyzed for the presence of ammonia using U.S. EPA method 4500-Ammonia, for the presence of Thorium isotopes 228, 230, and 232 using standard methods, and for moisture content determination using standard test method ASTM D 2216.

The analytical results are summarized in Table 1 - Laboratory Analytical Results, Moisture, Ammonia, and STLC and DI-WET Analyses, and Table 2 - Laboratory Analytical Results, Thorium Isotopes.

STLC Analyses Using Standard Citric Acid Buffer

The analytical results of the STLC analyses using the standard citric acid buffer for barium, copper, lead, and zinc indicated the following. STLC results for barium ranged from 1.6 to 9.1 milligrams per liter (mg/l). None of the twenty samples indicated STLC barium results in excess of the applicable STLC value of 100 mg/l.

STLC results for copper ranged from 5.3 to 140 mg/l. Eight of the twenty samples indicated STLC copper results in excess of the applicable STLC value of 25 mg/l.

STLC results for lead ranged from not detected at or in excess of the analytical method practical quantitation limit to 6.3 mg/l. One of the twenty samples indicated STLC lead results in excess of the applicable STLC value of 5 mg/l.

STLC results for zinc ranged from 1.7 to 23 mg/l. None of the twenty samples indicated STLC zinc results in excess of the applicable STLC value of 250 mg/l.

STLC Analyses Using Deionized Water Buffer

The analytical results of the STLC analyses using deionized water buffer for barium, copper, lead, and zinc indicated the following. STLC results for barium ranged from not detected at or in excess of the analytical method practical quantitation limit to 6.9 mg/l. None of the twenty samples indicated STLC barium results in excess of the applicable STLC value of 100 mg/l.

STLC results for copper, lead, and zinc were not detected at or in excess of the analytical method practical quantitation limits.

Ammonia Analyses

The analytical results for ammonia analyses performed on the twenty samples indicated ammonia concentration values ranging from 91 to 250 milligrams per kilograms (mg/kg).

Moisture Content

The analytical results for moisture content analyses performed on the twenty samples indicated moisture content values ranging from 15.7% to 56.8%.

Thorium Isotopes

Radiological analyses for the presence of Thorium isotopes 228, 230, and 232 in the 20 samples indicated the following. The presence of Thorium-228 isotopes was indicated at concentrations ranging from 0.235 to 9.17 pico curies per gram (pCi/g). The presence of Thorium-230 isotopes was indicated at concentrations ranging from 0.358 to 4.52 pCi/g. The presence of Thorium-232 isotopes was indicated at concentrations ranging from 0.190 to 6.92 pCi/g.

The analytical results did not indicate that the concentrations of Thorium isotopes 228, 230, and 232, collectively, exceeded 0.05% by weight in any of the twenty samples.

CONCLUSIONS

Because the waste pile is considered to be randomly heterogeneous with regards to its chemical characteristics, and because the random chemical heterogeneity is believed to have remained constant from waste batch discharge to waste batch discharge, it is believed that accuracy and appropriate precision was achieved using simple random sampling techniques as presented within U.S. EPA Manual SW-846.

Soluble Copper. The analytical results of the twenty samples collected and chemically analyzed from randomly selected areas and depths within the WMU indicates that individual sample soluble concentrations of copper in excess of the applicable STLC hazardous threshold concentration of 25 mg/l using the standard citric acid buffer are present within the WMU. As summarized in Table 1, STLC extraction results for samples DH-1-23', DH-3-11', DH-4-3', DH-4-12', DH-6-4', DH-6-19', DH-8-14', and DH-9-24' were indicated to contain soluble concentrations in excess of the 25 mg/l hazardous threshold concentration.

The STLC soluble copper data from all 20 samples were statistically analyzed following the guidelines provided in U.S. EPA Manual SW-846, version 2.0, update III. The results of the analysis indicate that the mean of all sample data is 24.9 mg/l with a standard deviation of 31.6 and a standard error of 7.1. The resulting upper limit of the confidence interval (mean plus the product of standard error and "t" value) is calculated to be 34.3. However, because the standard deviation exceeds the mean, the data set does not meet the criteria for a normal distribution and therefore the confidence interval would not be considered valid. Following the SW-846 guidelines we proceeded to statistically analyze the data using the arcsine transformation. The results of the arcsine transformation statistical analyses result in a mean of 29.0, a standard deviation of 47.1 and a standard error of 10.7. Again, the standard deviation exceeds the mean and the data set transformed does not result in a normal distribution.

Graphical examination, pursuant to SW-846, of the data set indicates that the STLC results for sample DH-4-12' of 140 mg/l and sample DH-9-24' of 76 mg/l are significantly different from the other 18 data points, and therefore are considered abnormal to the data set (the other 18 results range from concentrations of 5 mg/l to 32 mg/l making the result of 76 mg/l two times as high as the highest result of the remaining 18 samples). Based on that conclusion we performed the statistical analysis on the remaining 18 results. That statistical analysis resulted in a mean of 15.7, a standard deviation of 9.7, a standard error of 2.3, and an upper confidence interval of 18.7. The standard deviation is less than the mean value, therefore the data set meets the criteria for a normal distribution.

Also pursuant to SW-846, we performed the statistical analysis on the data set after eliminating only the 140 mg/l result from sample DH-4-12' as abnormal. The results of that statistical analysis yielded a mean of 18.9, a standard deviation of 16.7, a standard error of 3.8, and an upper confidence interval of 24.0. This data set also meets the criteria for a normal distribution.

The results of the statistical analyses, performed in accordance with the guidelines presented in U.S. EPA SW-846, on the sample sets eliminating either one or two abnormal sample results indicate that the upper confidence interval is less than the applicable hazardous threshold concentration of 25 mg/l. Therefore, based upon the results of the statistical analyses performed in accordance with SW-846, it is Padre's conclusion that STLC soluble copper is not present within the WMU at a concentration in excess of the applicable hazardous level of 25 mg/l. The results of the statistical analyses are presented in Table 3 - Statistical Analyses, and Table 4 - Arcsine Transformation Calculation.

It should be noted that the analytical results of the same 20 samples using the deionized water buffer to perform the solubility analyses did not indicate detectable STLC concentrations in excess of the analytical method practical quantitation limit (PQL). Additionally, it is our understanding that recent laboratory analyses of the filter press discharge waste water indicates that concentrations in excess of the analytical method PQL have not been detected for soluble copper.

Soluble Lead. The analytical results of the twenty samples collected and chemically analyzed from randomly selected areas and depths within the WMU indicate that only one individual waste sample indicated a soluble concentration of lead in excess of the applicable STLC hazardous threshold concentration of 5 mg/l using the standard citric acid buffer. However, it should be noted that the analytical results of this same sample using the deionized water buffer to perform the solubility analyses did not indicate detectable STLC concentrations in excess of the analytical method PQL.

The STLC soluble lead data from all 20 samples were statistically analyzed as discussed in the *Soluble Copper* section above. For the twelve samples with STLC lead results below the analytical method PQL of 0.9 mg/l we used one-half of that value, or a value of 0.45 mg/l for the statistical analysis. The results of that statistical analysis yielded a mean soluble lead concentration of 1.3 mg/l with a standard deviation of 1.5, and a standard error of 0.3. The resulting upper limit of the confidence interval (mean plus the product of standard error and "t" value) is calculated to be 1.7. Because the standard deviation exceeds the mean (although only slightly), technically the data set does not meet the criteria for a normal distribution, and therefore the confidence interval would not be considered reliable. However, because the mean and the upper limit of the confidence level are substantially below the STLC hazardous threshold concentration of 5 mg/l, we do not believe that the failure of the data set to satisfy the normal distribution criteria is significant for these results.

Graphical examination, pursuant to SW-846, of the data set indicates that the STLC result for sample DH-4-12' of 6.3 mg/l could be considered significantly different from the other 19 data points, and therefore considered abnormal to the data set (the other 19 results range from concentrations of below the PQL to 3.1 mg/l making the result of 6.3 mg/l two times as high as the highest result of the remaining 19 samples). Based on that conclusion we performed the statistical analysis on the remaining 19 results. That statistical analysis resulted in a mean of 1.0, a standard deviation of 0.9, a standard error of 0.2, and an upper confidence interval of 1.3. The standard deviation is less than the mean value, therefore this data set of 19

data points meets the criteria for a normal distribution. The results of the statistical analyses are summarized in Table 3.

The results of the statistical analyses, performed in accordance with the guidelines presented in U.S. EPA SW-846, on both the entire sample set and the sample set eliminating the one abnormal sample result indicate that the upper confidence interval is less than the applicable hazardous threshold concentration of 5 mg/l. Therefore, based upon the results of the statistical analyses performed in accordance with SW-846 it is Padre's conclusion that STLC soluble lead is not present within the WMU at a concentration in excess of the applicable hazardous level of 5 mg/l.

RECOMMENDATIONS

Per the provisions of U.S. EPA SW-846, if the upper confidence interval is less than the applicable STLC hazardous threshold value, then additional sample collection is not required. As implied above it is Padre's opinion that the statistical analyses discussed herein, performed in accordance with SW-846, support a conclusion that the upper confidence interval of STLC values of copper and lead in the WMU are not in excess of the applicable STLC hazardous threshold levels for those heavy metals.

Accordingly, based on statistical analyses of STLC results, no additional sample collection and STLC analyses are necessary for copper and lead in accordance with U.S. EPA SW-846. However, interpreting the Agreed CDO as requiring Halaco to collect additional waste samples at locations where sample STLC results were detected at concentrations in excess of the applicable hazardous levels, a more stringent requirement than set forth in SW-846, and subject to the comment made below, Padre recommends additional testing as set forth below.

It should be noted that the Agreed CDO also requires that the reconfiguration of the WMU be initiated by December 31, 2002, and subsequent to the approval of the characterization of the WMU study. Given the time remaining from the submittal of this report until December 31, we are concerned that there may be inadequate time to complete additional sampling, lab testing, report preparation/submittal and RWQCB review and approval prior to that date. Nonetheless, Padre makes the following recommendations in accordance with the requirements of the Agreed CDO.

- Based on the presence of elevated concentrations of soluble copper indicated at the locations of Geoprobe drill holes DH-1, DH-3, DH-4, DH-6, DH-7, DH-8, and DH-9, Padre recommends that additional assessment activities be completed at these areas of the WMU to assess the lateral and vertical distribution of elevated concentrations of soluble copper.
- Padre recommends that the additional drill holes advanced at the area of drill hole DH-4 also be utilized to define the vertical and lateral distribution of elevated concentrations of soluble lead indicated at the location of drill hole DH-4 at a depth of 12 feet.

The proposed additional drill hole locations are presented on Plate 2.

LIMITATIONS

This report has been prepared for the sole benefit of Halaco Engineering Co. No other persons may rely on the findings of this report without the expressed written consent of the Halaco Engineering Co. and Padre Associates, Inc. In performing our professional services, we have attempted to apply present engineering and scientific judgment and use a level of effort consistent with the standard of practice measured on the date of work and in locale of the project site for similar type studies. Padre Associates, Inc. makes no warranty, express or implied.

The analyses and interpretations presented within this report have been developed based on the results of sampling at discrete subsurface locations within the WMU, and on the laboratory analytical results of the samples collected. It should be recognized that concentrations of contaminant constituents within the WMU can vary between sample collection locations.

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Table 1. Laboratory Analytical Results,
Moisture, Ammonia, and STLC and DI-WET Analyses

Soil Sample I.D.	Depth (feet)	Moisture Content (%)	Ammonia (mg/kg)	STLC Extraction Method			DI-WET Extraction Method				
				Barium	Copper	Lead	Zinc	Barium	Copper	Lead	Zinc
DH-1-4'	4	15.7	330	4.1	12	ND	2	4.7	ND	ND	ND
DH-1-23'	23	22.1	280	4.6	32	ND	1.7	5.1	ND	ND	ND
DH-2-25'	25	36.9	230	2	12	1.7	3	5.3	ND	ND	ND
DH-2-30'	30	22.1	150	9.1	7.2	ND	8	1.2	ND	ND	ND
DH-3-11'	11	26.7	120	4.6	26	3	2.2	3.6	ND	ND	ND
DH-3-30'	30	42.5	91	1.6	3.8	ND	2.4	6.5	ND	ND	ND
DH-4-3'	3	22.5	290	5	31	ND	3.4	3.9	ND	ND	ND
DH-4-12'	12	24.2	550	6.7	140	6.3	54	2.2	ND	ND	ND
DH-5-5'	5	22.5	520	3.9	14	ND	3	2.9	ND	ND	ND
DH-5-16'	16	24.8	180	4.9	11	ND	2.8	1.8	ND	ND	ND
DH-6-4'	4	27.2	270	3.7	10	ND	2.4	6.9	ND	ND	ND
DH-6-19'	19	33.1	720	2.9	25	1.4	4.1	ND	ND	ND	ND
DH-7-19'	19	34.9	170	4.3	26	2.5	6.3	ND	ND	ND	ND
DH-7-28'	28	45.9	270	2.4	8.6	ND	3.4	2.3	ND	ND	ND
DH-8-2'	2	31.2	240	4.4	13	ND	2.2	4.8	ND	ND	ND
DH-8-14'	14	41.1	250	3.8	30	1.2	6.4	1.9	ND	ND	ND

Table 1. (Continued)

Soil Sample I.D.	Depth (feet)	Moisture Content (%)	Ammonia (mg/kg)	STLC Extraction Method			DI-WET Extraction Method				
				Barium	Copper	Lead	Zinc	Barium	Copper	Lead	Zinc
DH-9-10'	10	38.9	93	1.8	5.3	ND	0.8	5.9	ND	ND	ND
DH-9-24'	24	21.5	130	4.1	76	3.1	23	1.2	ND	ND	ND
DH-10-6'	6	43.1	14	2.7	6.4	ND	2	8	ND	ND	ND
DH-10-17'	17	56.8	9.7	2.6	9.1	1.1	2.1	2	ND	ND	ND
Method Blank	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
PQL	NA	NA	10	1	2	0.9	0.6	1	2	0.9	0.6
STLC Value	NA	NA	NA	100	25	5	250	100	25	5	250

Notes:

All results are reported in milligrams per liter (mg/l) unless noted

ND Not detected at or above the analytical method practical quantitation limit

NA Not applicable

STLC Soluble Threshold Limit Concentration

DH-1-4' Soil sample collected from Drill Hole #1 at a depth of 4 feet

DI Deionized water

PQL Practical Quantitation Limit

mg/kg Milligrams per kilogram

% Percent

— Value in excess of applicable STLC value

**Table 2. Laboratory Analytical Results,
 Thorium Isotopes**

Soil Sample I.D.	Depth (feet)	Thorium 228 (pCi/g)	Thorium 230 (pCi/g)	Thorium 232 (pCi/g)	Total Thorium (pCi/g)
DH-1-4'	4	0.365	0.990	0.496	1.851
DH-1-23'	23	0.235	0.625	0.169	1.029
DH-2-25'	25	9.17	9.52	6.92	25.61
DH-2-30'	30	1.19	1.37	0.903	3.463
DH-3-11'	11	0.374	0.490	0.248	1.112
DH-3-30'	30	2.03	1.78	1.90	5.71
DH-4-3'	3	0.289	0.358	0.190	0.837
DH-4-12'	12	0.545	0.486	0.356	1.387
DH-5-5'	5	0.394	0.435	0.344	1.173
DH-5-16'	16	1.05	1.33	1.04	3.42
DH-6-4'	4	0.721	0.569	0.349	1.639
DH-6-19'	19	0.268	0.726	0.204	1.198
DH-7-19'	19	0.264	0.423	0.291	0.978
DH-7-28'	28	5.83	3.25	5.44	14.52
DH-8-2'	2	0.768	1.15	0.976	2.894
DH-8-14'	14	0.403	0.682	0.219	1.304
DH-9-10'	10	0.730	0.722	0.500	1.952
DH-9-24'	24	0.385	0.442	0.714	1.541
DH-10-6'	6	0.864	1.11	0.820	2.794
DH-10-17'	17	0.499	0.587	0.209	1.245

Notes:

DH-1-4' Soil sample collected from Drill Hole #1 at a depth of 4 feet
 pCi/g Pico curies per gram

Table 3. Statistical Analyses

Sample No.	STLC Copper	STLC Lead
DH-1-4	12	0.45
DH-1-23	32	0.45
DH-2-25	12	1.7
DH-2-30	7.2	0.45
DH-3-11	26	3
DH-3-30	3.8	0.45
DH-4-3	31	0.45
DH-4-12	140	6.3
DH-5-5	14	0.45
DH-5-16	11	0.45
DH-6-4	10	0.45
DH-6-19	25	1.4
DH-7-19	26	2.5
DH-7-28	8.6	0.45
DH-8-2	13	0.45
DH-8-14	30	1.2
DH-9-10	5.3	0.45
DH-9-24	76	3.1
DH-10-6	6.4	0.45
DH-10-17	9.1	1.1
SUM	498.4	25.7
Mean (x)	24.9	1.3
SUM x^2	31,404.1	74.5
(SUM x)^2	248,402.6	660.5

Sample No.	STLC Copper	STLC Lead
DH-1-4	12	0.45
DH-1-23	32	0.45
DH-2-25	12	1.7
DH-2-30	7.2	0.45
DH-3-11	26	3
DH-3-30	3.8	0.45
DH-4-3	31	0.45
DH-4-12	140	6.3
DH-5-5	14	0.45
DH-5-16	11	0.45
DH-6-4	10	0.45
DH-6-19	25	1.4
DH-7-19	26	2.5
DH-7-28	8.6	0.45
DH-8-2	13	0.45
DH-8-14	30	1.2
DH-9-10	5.3	0.45
DH-9-24	76	3.1
DH-10-6	6.4	0.45
DH-10-17	9.1	1.1
SUM	358.4	19.4
Mean (x)	18.9	1.0
SUM x^2	11,804.1	34.8
(SUM x)^2	128,450.6	376.4

Sample No.	STLC Copper	STLC Lead
DH-1-4	12	0.45
DH-1-23	32	0.45
DH-2-25	12	1.7
DH-2-30	7.2	0.45
DH-3-11	26	3
DH-3-30	3.8	0.45
DH-4-3	31	0.45
DH-4-12	140	6.3
DH-5-5	14	0.45
DH-5-16	11	0.45
DH-6-4	10	0.45
DH-6-19	25	1.4
DH-7-19	26	2.5
DH-7-28	8.6	0.45
DH-8-2	13	0.45
DH-8-14	30	1.2
DH-9-10	5.3	0.45
DH-9-24	76	3.1
DH-10-6	6.4	0.45
DH-10-17	9.1	1.1
SUM	282.4	16.3
Mean (x)	15.7	0.9
SUM x^2	6,028.1	74.5
(SUM x)^2	79,749.8	265.7

For Copper using all data:

n	t.20	s^2	s	sx	t.20*sx	Confidence Interval
20	1.328	999.2	31.6	7.1	9.4	15.5 34.3

For Copper after eliminating 140

n	t.20	s^2	s	sx	t.19*sx	Confidence Interval
19	1.330	280.2	16.7	3.8	5.1	13.8 24.0

For Copper after eliminating 140 and 76

n	t.20	s^2	s	sx	t.18*sx	Confidence Interval
18	1.333	94.0	9.7	2.3	3.0	12.6 18.7

For Lead using all data

n	t.20	s^2	s	sx	t.20*sx	Confidence Interval
20	1.328	2.2	1.5	0.3	0.4	0.8 1.7

For Lead using all data

n	t.20	s^2	s	sx	t.19*sx	Confidence Interval
19	1.330	0.8	0.9	0.2	0.3	0.7 1.3

n = number of data points in sample
t.20 = Student's "t" value from SW-846, Table 9-2
s^2 = variance of sample
s = standard deviation
sx = standard deviation(s) divided by square root of number of data points(n)
Confidence Interval = Average +/- t.20 * sx

Table 4. Arcsine Transformation Calculation

Sample No.	STLC	Arcsine Transformation
	Copper	
DH-1-4	12	0.085819591
DH-1-23	32	0.230610011
DH-2-25	12	0.085819591
DH-2-30	7.2	0.051451269
DH-3-11	26	0.186798744
DH-3-30	3.8	0.027146191
DH-4-3	31	0.223279164
DH-4-12	140	1.570796327
DH-5-5	14	0.100167421
DH-5-16	11	0.078652497
DH-6-4	10	0.07148945
DH-6-19	25	0.179534351
DH-7-19	26	0.186798744
DH-7-28	8.6	0.06146727
DH-8-2	13	0.092991106
DH-8-14	30	0.215960499
DH-9-10	5.3	0.037866191
DH-9-24	76	0.573835453
DH-10-6	6.4	0.045730223
DH-10-17	9.1	0.065045858

All 20 Data Points

		Sine Backtransformation	Convert from %age
Mean	0.208563	0.207054252	28.98759531
Standard Error	0.076744	0.076668243	10.73355397
Median	0.089405	0.089286288	12.50008036
Mode	0.08582	0.085714286	12
Standard Deviation	0.343208	0.336509348	47.11130871
Sample Variance	0.117791	0.117519254	16.45269554
Kurtosis	14.51121	0.930857633	130.3200686
Skewness	3.674252	-0.507825644	-71.09559022
Range	1.54365	0.999631565	139.9484191
Minimum	0.027146	0.027142857	3.8
Maximum	1.570796	1	140
Sum	4.17126	-0.85712766	-119.9978724
Count	20		

**Reference
No. 26**

METAR KOXR 231851Z 24008KT 7SM OVC007 17/14 A3004 RMK AO2 SLP170
T01670139

METAR KOXR 231751Z 27009KT 5SM HZ OVC007 17/14 A3002 RMK AO2 SLP163
T01720144 10172 20150 58003

METAR KOXR 231651Z 27004KT 5SM BR OVC005 17/15 A3002 RMK AO2 SLP164
T01720150

SPECI KOXR 231604Z 00000KT 5SM BR OVC005 16/14 A3003 RMK AO2 CIG
003V006

METAR KOXR 231551Z 32003KT 4SM BR OVC003 16/15 A3003 RMK AO2 SLP167
T01610150

SPECI KOXR 231543Z 30003KT 3SM BR OVC003 16/15 A3003 RMK AO2

METAR KOXR 231451Z 28004KT 2SM BR OVC003 15/14 A3003 RMK AO2 SLP167
T01500144 51015

METAR KOXR 231351Z 23004KT 2 1/2SM BR OVC003 15/14 A3003 RMK AO2 SLP166
T01500144

SPECI KOXR 231335Z 28004KT 2 1/2SM BR OVC003 15/14 A3002 RMK AO2

SPECI KOXR 231323Z AUTO 00000KT 3SM BR OVC003 15/14 A3002 RMK AO2

METAR KOXR 231251Z AUTO 00000KT 2 1/2SM BR OVC003 15/14 A3000 RMK AO2
SLP159 T01500144

SPECI KOXR 231208Z AUTO 28003KT 2SM BR OVC003 16/14 A2999 RMK AO2

METAR KOXR 231151Z AUTO 27005KT 3SM BR OVC003 15/14 A2998 RMK AO2 SLP152
T01500144 10172 20150 55002

METAR KOXR 231051Z AUTO 28006KT 2SM BR OVC003 16/14 A2997 RMK AO2 SLP146
T01560144

METAR KOXR 230951Z AUTO 29008KT 2SM BR OVC003 16/15 A2996 RMK AO2 SLP145
T01610150

SPECI KOXR 230901Z AUTO 27007KT 2 1/2SM BR OVC003 16/15 A2998 RMK
AO2

METAR KOXR 230851Z AUTO 28006KT 2 1/2SM BR OVC005 16/15 A2999 RMK AO2
SLP154 T01610150 58006

METAR KOXR 230751Z AUTO 27004KT 4SM BR OVC005 17/15 A3000 RMK AO2 SLP156
T01670150 402110156

METAR KOXR 230651Z AUTO 24005KT 5SM BR OVC005 17/15 A3000 RMK AO2 SLP158
T01670150

METAR KOXR 230551Z AUTO 00000KT 4SM BR OVC005 17/16 A3001 RMK AO2 SLP160
T01720156 10200 20167 53012

METAR KOXR 230451Z AUTO 00000KT 6SM BR OVC005 17/16 A2999 RMK AO2 SLP156
T01720156

SPECI KOXR 230433Z AUTO 17004KT 6SM BR BKN005 18/16 A2999 RMK AO2

METAR KOXR 230351Z 17003KT 7SM FEW007 18/16 A2997 RMK AO2 SLP148
T01780156

SPECI KOXR 230336Z 19004KT 7SM FEW007 18/15 A2997 RMK AO2

METAR KOXR 230251Z 21006KT 8SM CLR 18/14 A2997 RMK AO2 SLP148 T01780139
55003

METAR KOXR 230151Z 18005KT 8SM CLR 19/14 A2996 RMK AO2 SLP144
T01890139

METAR KOXR 230051Z VRB06KT 8SM CLR 19/14 A2996 RMK AO2 SLP144
T01940139

METAR KOXR 222351Z 21007KT 8SM CLR 20/14 A2998 RMK AO2 SLP151 T02000139
10211 20189 58006

SPECI KOXR 222258Z 21010KT 7SM SCT014 19/14 A2999 RMK AO2

METAR KOXR 222251Z 23009KT 7SM BKN014 20/14 A2999 RMK AO2 SLP154
T02000144

METAR KOXR 222151Z 23006KT 5SM HZ BKN014 20/15 A2999 RMK AO2 SLP156
T02000150

METAR KOXR 222051Z 24009KT 5SM HZ SCT015 21/15 A3000 RMK AO2 SLP156
T02060150 51002

SPECI KOXR 222027Z 23008KT 5SM HZ SCT015 21/15 A3000 RMK AO2

METAR KOXR 221951Z 17006KT 5SM HZ CLR 21/14 A3000 RMK AO2 SLP157
T02110144

METAR KOXR 221851Z 23008KT 5SM HZ FEW012 20/14 A3000 RMK AO2 SLP157
STRATUS ONSHORE SE-NW T02000144

METAR KOXR 221751Z VRB05KT 5SM HZ FEW015 20/14 A2999 RMK AO2 SLP155
STRATUS ONSHORE SE-NW T02000144 10200 20161 50005

SPECI KOXR 221730Z VRB04KT 4SM HZ SCT015 19/14 A2999 RMK AO2 STRATUS
ONSHORE SE-NW

METAR KOXR 221651Z 00000KT 4SM HZ OVC013 18/14 A2999 RMK AO2 SLP156
T01830144

METAR KOXR 221551Z 23003KT 4SM HZ OVC011 17/14 A2999 RMK AO2 SLP153
T01720139

SPECI KOXR 221539Z 18003KT 4SM HZ OVC011 17/14 A2998 RMK AO2
METAR KOXR 221451Z 00000KT 5SM HZ OVC009 17/14 A2997 RMK AO2 SLP149
T01670139 53010
METAR KOXR 221251Z AUTO 06004KT 5SM BR OVC009 16/14 A2995 RMK AO2 SLP142
T01610139
METAR KOXR 221151Z AUTO 12005KT 6SM BR OVC007 16/14 A2995 RMK AO2 SLP139
T01610139 10161 20156 53002
METAR KOXR 221051Z AUTO VRB03KT 5SM BR OVC007 16/14 A2994 RMK AO2 SLP137
T01610139
METAR KOXR 220951Z AUTO 15003KT 5SM BR OVC007 16/14 A2994 RMK AO2 SLP139
T01610139
METAR KOXR 220851Z AUTO 22003KT 5SM BR OVC007 16/14 A2994 RMK AO2 SLP137
T01610139 50003
METAR KOXR 220751Z AUTO 00000KT 6SM BR OVC007 16/14 A2994 RMK AO2 CIG
007V010 SLP138 T01610139 401940133
SPECI KOXR 220721Z AUTO 00000KT 6SM BR BKN009 16/14 A2994 RMK AO2 CIG
007V011
METAR KOXR 220651Z AUTO 00000KT 6SM BR CLR 16/14 A2994 RMK AO2 SLP139
T01610139
METAR KOXR 220551Z AUTO 25003KT 5SM BR CLR 16/13 A2993 RMK AO2 SLP134
T01560133 10183 20156 53012
METAR KOXR 220451Z AUTO 32003KT 7SM CLR 16/14 A2992 RMK AO2 SLP130
T01610139
METAR KOXR 220351Z AUTO 24003KT 7SM CLR 17/13 A2990 RMK AO2 SLP125
T01670133
METAR KOXR 220251Z 25005KT 7SM CLR 17/13 A2990 RMK AO2 SLP123 T01670133
55003
METAR KOXR 220151Z 23006KT 7SM CLR 17/13 A2989 RMK AO2 SLP122
T01720133
METAR KOXR 220051Z 18005KT 7SM FEW012 18/14 A2990 RMK AO2 SLP122
T01830139
METAR KOXR 212351Z 21006KT 7SM SCT012 18/14 A2990 RMK AO2 SLP126 STRATUS
ONSHORE SE-NW T01830139 10194 20178 56016
METAR KOXR 212251Z 22007KT 6SM HZ SCT013 18/14 A2992 RMK AO2 SLP131
T01830139
METAR KOXR 212151Z VRB06KT 6SM HZ SCT012 19/14 A2994 RMK AO2 SLP136
STRATUS ONSHORE SE-NW T01890139
METAR KOXR 212051Z 23008KT 6SM HZ BKN012 19/14 A2995 RMK AO2 SLP142
T01890139 58007
METAR KOXR 211951Z VRB06KT 6SM HZ BKN012 19/14 A2996 RMK AO2 SLP146
T01890139
METAR KOXR 211851Z 18007KT 150V210 6SM HZ BKN012 19/14 A2997 RMK AO2
SLP148 T01890144
METAR KOXR 211751Z 15006KT 6SM HZ OVC010 18/14 A2997 RMK AO2 SLP149
T01780139 10178 20139 51005
SPECI KOXR 211704Z 14005KT 6SM HZ OVC010 17/14 A2997 RMK AO2
METAR KOXR 211651Z 12005KT 5SM HZ OVC008 17/13 A2997 RMK AO2 SLP147
T01670133
METAR KOXR 211551Z 13006KT 5SM BR BKN006 OVC009 16/14 A2997 RMK AO2 CIG
005V008 SLP146 T01560139
SPECI KOXR 211528Z 15006KT 3SM BR OVC004 16/14 A2996 RMK AO2
METAR KOXR 211451Z 17003KT 2 1/2SM BR OVC004 15/14 A2996 RMK AO2 SLP143
T01500139 53015
METAR KOXR 211351Z 15003KT 2SM BR OVC004 14/13 A2994 RMK AO2 SLP137
T01440133
SPECI KOXR 211329Z AUTO 13004KT 3SM BR OVC004 14/13 A2993 RMK AO2 CIG
002V006
SPECI KOXR 211323Z AUTO 12004KT 1 3/4SM BR OVC002 14/13 A2993 RMK
AO2
METAR KOXR 211251Z AUTO 05004KT 2SM BR OVC002 14/13 A2992 RMK AO2 SLP132
T01390133
SPECI KOXR 211203Z AUTO 08003KT 1 3/4SM BR OVC002 14/13 A2991 RMK
AO2
METAR KOXR 211151Z AUTO 00000KT 2SM BR OVC002 14/13 A2991 RMK AO2 SLP128
T01390128 10139 20133 50000
SPECI KOXR 211116Z AUTO 00000KT 1 3/4SM BR OVC002 14/13 A2991 RMK
AO2
SPECI KOXR 211102Z AUTO 35003KT 2 1/2SM BR OVC002 14/13 A2991 RMK
AO2
METAR KOXR 211051Z AUTO 01003KT 3SM BR OVC002 14/13 A2991 RMK AO2 SLP128

T01390128
 SPECI KOXR 211022Z AUTO 18003KT 3SM BR OVC002 13/13 A2992 RMK AO2
 SPECI KOXR 211010Z AUTO 00000KT 2SM BR OVC002 13/13 A2992 RMK AO2
 METAR KOXR 210951Z AUTO 00000KT 3SM BR OVC002 13/13 A2991 RMK AO2 SLP129
 T01330128
 SPECI KOXR 210935Z AUTO 00000KT 3SM BR OVC002 13/13 A2991 RMK AO2
 SPECI KOXR 210925Z AUTO 00000KT 2 1/2SM BR OVC002 13/12 A2991 RMK
 AO2
 SPECI KOXR 210901Z AUTO 00000KT 1 1/4SM BR OVC002 13/13 A2991 RMK
 AO2
 METAR KOXR 210851Z AUTO 00000KT 2SM BR OVC002 13/13 A2991 RMK AO2 SLP128
 T01330128 58001
 METAR KOXR 210751Z AUTO 27005KT 2 1/2SM BR OVC002 13/13 A2992 RMK AO2
 SLP129 T01330128 401940128
 SPECI KOXR 210721Z AUTO 26004KT 2 1/2SM BR OVC002 13/13 A2992 RMK AO2
 VIS 1 3/4V3
 METAR KOXR 210651Z AUTO 27005KT 4SM BR OVC002 14/13 A2992 RMK AO2 SLP129
 T01390128
 METAR KOXR 210551Z AUTO 29007KT 4SM BR OVC002 14/13 A2992 RMK AO2 SLP129
 T01390128 10167 20139 53002
 SPECI KOXR 210539Z AUTO 28006KT 4SM BR OVC002 14/13 A2992 RMK AO2
 METAR KOXR 210451Z AUTO 29007KT 5SM BR OVC004 14/13 A2991 RMK AO2 SLP127
 T01390128
 METAR KOXR 210351Z AUTO 28009KT 6SM BR OVC004 14/13 A2991 RMK AO2 SLP126
 T01390128
 SPECI KOXR 210309Z 27009KT 3SM BR OVC004 14/12 A2991 RMK AO2
 METAR KOXR 210251Z 28009KT 4SM BR OVC006 14/12 A2991 RMK AO2 SLP127
 T01440122 55006
 METAR KOXR 210151Z 29009KT 5SM HZ OVC006 15/12 A2991 RMK AO2 SLP126
 T01500122
 METAR KOXR 210051Z 26010KT 6SM HZ OVC006 15/12 A2991 RMK AO2 SLP129
 T01500122
 SPECI KOXR 210002Z 25011KT 6SM HZ BKN008 16/12 A2993 RMK AO2
 METAR KOXR 202351Z 27012KT 6SM HZ SCT008 16/12 A2993 RMK AO2 SLP132
 STRATUS ONSHORE SE-NW T01610122 10194 20161 56012
 SPECI KOXR 202342Z 26012KT 6SM HZ SCT008 17/12 A2993 RMK AO2 STRATUS
 ONSHORE SE-NW
 METAR KOXR 202251Z 27009KT 8SM BKN008 17/12 A2993 RMK AO2 SLP136
 T01670122
 SPECI KOXR 202240Z 28010KT 6SM HZ BKN008 17/12 A2993 RMK AO2
 METAR KOXR 202151Z 28013KT 6SM HZ BKN010 18/13 A2995 RMK AO2 SLP140
 T01830133
 METAR KOXR 202051Z 27012KT 6SM HZ BKN012 19/13 A2996 RMK AO2 SLP144
 T01890133 58010 \$
 METAR KOXR 201951Z 27012KT 9SM BKN012 19/13 A2997 RMK AO2 SLP149
 T01890133
 METAR KOXR 201851Z 28010KT 8SM BKN010 18/13 A2999 RMK AO2 SLP153
 T01830133
 SPECI KOXR 201725Z 27008KT 5SM HZ OVC010 16/13 A2999 RMK AO2 CIG
 007V013
 SPECI KOXR 201101Z AUTO 26003KT 5SM BR BKN008 14/12 A2993 RMK AO2
 SPECI KOXR 200209Z 27007KT 6SM HZ SCT010 17/13 A2991 RMK AO2
 SPECI KOXR 200103Z 29009KT 6SM HZ OVC010 18/14 A2991 RMK AO2
 SPECI KOXR 200006Z 27010KT 6SM HZ OVC008 18/14 A2992 RMK AO2 CIG
 005V010
 SPECI KOXR 192315Z 26010KT 6SM HZ BKN010 19/15 A2993 RMK AO2
 SPECI KOXR 192011Z 28013KT 6SM HZ SCT009 BKN017 20/16 A2995 RMK AO2
 \$
 SPECI KOXR 191604Z 00000KT 3SM BR OVC005 17/16 A2994 RMK AO2 CIG
 002V007
 SPECI KOXR 191532Z 00000KT 1 3/4SM BR OVC003 17/16 A2994 RMK AO2
 SPECI KOXR 191418Z 32003KT 1SM BR OVC001 16/15 A2992 RMK AO2
 SPECI KOXR 191322Z AUTO 31003KT 1/2SM FG OVC001 16/15 A2990 RMK AO2
 SPECI KOXR 191201Z AUTO 28004KT 1 1/2SM BR OVC001 16/14 A2988 RMK
 AO2
 SPECI KOXR 191140Z AUTO 25004KT 2 1/2SM BR OVC001 15/14 A2988 RMK
 AO2
 SPECI KOXR 191126Z AUTO 28004KT 1 3/4SM BR OVC001 15/14 A2988 RMK
 AO2
 SPECI KOXR 191110Z AUTO 25003KT 2SM BR OVC001 15/14 A2988 RMK AO2

SPECI KOXR 191040Z AUTO 23004KT 2SM BR OVC001 15/14 A2988 RMK AO2
SPECI KOXR 190935Z AUTO 15004KT 3/4SM BR OVC001 16/14 A2987 RMK AO2
SPECI KOXR 190927Z AUTO 13004KT 1 3/4SM BR OVC004 16/14 A2987 RMK AO2
CIG 001V006
SPECI KOXR 190922Z AUTO 16004KT 3SM BR OVC004 16/14 A2988 RMK AO2 CIG
001V006
SPECI KOXR 190840Z AUTO 00000KT 4SM BR OVC006 16/14 A2988 RMK AO2 CIG
003V007
SPECI KOXR 190806Z AUTO 00000KT 4SM BR BKN004 16/14 A2988 RMK AO2
SPECI KOXR 190303Z 28011KT 5SM BR OVC004 16/14 A2990 RMK AO2 CIG
002V006
SPECI KOXR 190228Z 27012KT 6SM BR BKN008 17/14 A2990 RMK AO2
SPECI KOXR 190112Z 27012KT 7SM FEW008 18/15 A2990 RMK AO2
SPECI KOXR 190021Z 27013KT 6SM HZ SCT007 19/16 A2991 RMK AO2
SPECI KOXR 182356Z 27013KT 6SM HZ BKN009 21/16 A2991 RMK AO2
SPECI KOXR 182326Z 24010KT 7SM FEW014 21/16 A2991 RMK AO2
SPECI KOXR 181538Z 08005KT 6SM HZ OVC010 19/16 A2995 RMK AO2
SPECI KOXR 181258Z AUTO 05003KT 6SM BR OVC006 18/16 A2992 RMK AO2
SPECI KOXR 181103Z AUTO 08004KT 4SM BR OVC004 17/16 A2990 RMK AO2
SPECI KOXR 181024Z AUTO 00000KT 3SM BR OVC002 17/16 A2990 RMK AO2
SPECI KOXR 181011Z AUTO 00000KT 2SM BR OVC002 17/16 A2991 RMK AO2
SPECI KOXR 180931Z AUTO 18003KT 1 1/2SM BR OVC002 17/16 A2991 RMK
AO2
SPECI KOXR 180900Z AUTO VRB03KT 2 1/2SM BR OVC002 17/16 A2991 RMK
AO2
SPECI KOXR 180627Z AUTO 00000KT 4SM BR OVC004 15/14 A2992 RMK AO2 CIG
001V008
SPECI KOXR 180617Z AUTO 31003KT 2SM BR OVC004 15/14 A2992 RMK AO2 VIS
1V4 CIG 001V008
SPECI KOXR 180610Z AUTO 33003KT 1 3/4SM BR BKN002 15/14 A2993 RMK AO2
VIS 1V3
SPECI KOXR 180556Z AUTO 00000KT 3SM BR BKN002 15/14 A2993 RMK AO2
SPECI KOXR 180504Z AUTO 27003KT 6SM BR SCT002 16/14 A2993 RMK AO2
SPECI KOXR 180318Z 29004KT 3SM BR OVC002 16/14 A2992 RMK AO2
SPECI KOXR 180311Z 26005KT 1 1/2SM BR OVC002 16/14 A2992 RMK AO2 VIS
3/4V3

Count Date: 06/27/06
 Count Time: 1 Minute
 Check Source: Thorium 230
 Check Source Activity: 104,828 DPM

Sample No.	CPM
Starting Efficiency: 36.2%	37947
Background	1
Filter Blank	0
Air-1-200606-1750	1
Air-2-200606-1738	0
Air-3-200606-1743	2
Air-4-200606-1800	0
Air-5-200606-1809	2
Air-1-210606-1721	2
Air-2-210606-1727	1
Air-3-210606-1733	0
Air-4-210606-1740	0
Air-5-210606-1747	1
Background	2
Filter Blank	2
Air-6-210606-1729	1
Air-1-220606-1719	2
Air-2-220606-1725	3
Air 3-220606-1730	1
Air -4-220606-1736	2
Air-5-220606-1741	0
Air-6-220606-1728	2
Background	0
Filter Blank	1
Air-1-230606-1658	0
Air-2-230606-1658	4
Air-1-240606-1741	1
Air-2-240606-1752	0
Background	1
Filter Blank	4
Ending Efficiency: 36.45%	38210

Sample Point	Depth (bgs)	Counts per 10 seconds	Background
SW-2-1	19'	149	35
SW-2-1	18'7"	131	35
SW-2-1	15'	70	35
SW-2-2	9'	80	30
SW-2-2	14.5'	91	30
SW-2-2	17'	154	30
SW-2-2	18.5'	208	30
SW-5-2	15.5'	67	18
SW-5-2	16.5'	79	18
SW-5-3		<2x Background	10
SW-5-5	14'	535 cpm	250 cpm
SW-5-5	19.6'	662cpm	250 cpm
SW-5-5	20'	1180 cpm	250 cpm
SW-5-4	14'	58	21
Sw-5-4	15.5'	100	21
SW-5-4	18.5'	150	21
SW-5-4	20'	500	21
SW-2-6	19'	75	27
SW-2-6	20'	200	27
SW-2-7		<2X Background	30
SW-5-1(boring collapsed)	4'	56	24
SW-2-4	15.5'	70	34
SW-2-4	17.5'	130	34
SW-2-5		<2X Background	37
SW-4-5		<2X Background	29
SW-4-2	16.5'	100	28
SW-4-2	17.5'	210	28
SW-4-2	19'	325	28
SW-4-2	20'	410	28

Unedited Surface Weather Observations (METAR/SPEC)										Latitude		Longitude		Station Elev. (ft)		Time Conversion		Day Mon.		Year		SID		Station (Type, Name, State)	
										34° 12'		-119° 13'		65				24 06		2006		OXR		ASOS OXNARD, CA	
										VISIBILITY		PRESENT WEATHER		SKY CONDITIONS		TEMP °C		DEW POINT °C		ALTI-METER INS.		REMARKS AND SUPPLEMENTAL CODED D/			
TIME (LST)	DIR (TRUE)	SPD KTS	GUST KTS	VARIABILITY TRUE	SURFACE STATUTE MILES	RUNWAY VISUAL RANGE (FT)	WIND		SURFACE STATUTE MILES		PRESENT WEATHER		SKY CONDITIONS		TEMP °C		DEW POINT °C		ALTI-METER INS.		REMARKS AND SUPPLEMENTAL CODED D/				
1	2	3	4	5	6	7	8		9		10		11		12		13		14		14				
S0051	290	6			1 1/4		BR		OVC001		OVC001		A2995		A2995		SLP142		T01440133		56007				
S0151	280	9			1 1/4		BR		OVC001		OVC001		A2994		A2994		SLP136		T01390133						
S0203	280	9			3		BR		OVC001		OVC001		A2994		A2994										
S0211	270	10			2		BR		OVC001		OVC001		A2994		A2994										
S0236	270	6			3		BR		OVC001		OVC001		A2995		A2995										
S0243	250	8			2 1/2		BR		OVC001		OVC001		A2995		A2995										
S0251	260	7			3		BR		OVC001		OVC001		A2995		A2995										
S0351	290	4			4		BR		OVC001		OVC001		A2995		A2995		SLP141		T01390128						
S0411	280	3			2 1/2		BR		OVC001		OVC001		A2996		A2996		SLP145		T01390128		10150 20139 53002				
S0421	280	4			3		BR		OVC001		OVC001		A2995		A2995										
S0438	000	0			2		BR		OVC001		OVC001		A2996		A2996										
S0451	000	0			3		BR		OVC001		OVC001		A2997		A2997		SLP146		T01390133						
S0520	280	3			1 3/4		BR		OVC001		OVC001		A2997		A2997										
S0551	280	3			2 1/2		BR		OVC001		OVC001		A2998		A2998		SLP151		T01390133 (AJ)						
S0627	VRB	3			2		BR		OVC003		OVC003		A2999		A2999		(AJ)								
S0651	260	5			2		BR		OVC003		OVC003		A3002		A3002		PRESRR		SLP163		T01440133 53018 (AJ)				
S0725	190	4			3		BR		OVC003		OVC003		A3005		A3005		(AJ)								
S0751	VRB	3			3		BR		OVC003		OVC003		A3006		A3006		SLP178		T01440133 (AJ)						
S0815	180	4			5		BR		OVC005		OVC005		A3007		A3007		(AJ)								
S0851	260	3			4		BR		OVC005		OVC005		A3005		A3005		SLP175		T01500133 (AJ)						
S0951	270	4			6		HZ		OVC007		OVC007		A3002		A3002		SLP163		T01670139		I0167 20139 50000 (AJ)				
S1024	270	8			6		HZ		SCT009		SCT009		A2999		A2999		(AJ)								
S1051	270	9			6		HZ		SCT009		SCT009		A3000		A3000		SLP158		T01780133 (AJ)						
S1151	300	15			9		BKN007		BKN007		BKN007		A2998		A2998		SLP149		T01830139 (AJ)						

Unedited Surface Weather Observations (METAR/SPEC)		Latitude	Longitude	Station Elev. (ft)	Time Conversion	Day	Mon.	Year	SID	Station (Type, Name, State)				
WIND		VISIBILITY		Station Elev. (ft)	Time Conversion	Day	Mon.	Year	SID	Station (Type, Name, State)				
TIME (LST)	DIR TRUE	SPD KTS	GUST KTS								VARIABILITY TRUE	SURFACE STATUTE MILES	PRESENT WEATHER	Runway Visual Range (ft)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	REMARKS AND SUPPLEMENTAL CODED DATA
S	0020	270	5			7		9	10	11	12	13	14	
S	0051	240	5			8			FEW005	15	13	A2991		
S	0151	VRB	4			7			FEW005	15	13	A2991		LIG DSNT S SLP126 T01500133 50001
S	0218	280	14			6		VCTS BR	CLR	15	13	A2984		LIG DSNT SW SLP132 T01440133
S	0227	250	12			6		BR	SCT004	15	13	A2985		LIG DSNT N AND NW TSB12
S	0251	280	14			6		BR	SCT004	14	13	A2985		LIG DSNT N AND NW TSB12E27
S	0317	120	8	100V180		8			BKN004	15	13	A2991		WSHFT 1030 TSB12E27 SLP106 T01440133
S	0327	VRB	5			8			BKN006	15	13	A2991		
S	0339	230	5			8			SCT006	15	13	A2991		CIG 004V008
S	0351	270	7			8			FEW006	15	13	A2990		SLP126 T01500133 10156 20144 55000
S	0425	310	5			7			BKN006	15	13	A2990		
S	0451	230	3			6		BR	SCT006	14	13	A2992		SLP132 T01440133
S	0551	000	0			4		BR	CLR	15	13	A2992		SLP131 T01500133 (AC)
S	0651	150	7			7			CLR	17	14	A2994		SLP136 T01720139 51011 (AC)
S	0751	360	6			9			CLR	19	14	A2990		SLP125 T01940139 (AC)
S	0851	280	10			10			CLR	20	14	A2991		SLP128 T02000139 (AC)
S	0951	270	12			8			SCT012	18	14	A2991		SLP129 T01830139 10228 20144 55008 (AC)
S	1051	280	15			8			CLR	19	14	A2989		SLP122 T01940139 (AC)
S	1151	270	13			9			CLR	18	14	A2989		SLP121 T01830139 (AC)
S	1228	270	10			6		-RA BR	FEW006 SCT040 BKN120	16	14	A2989		RAB17 P0000 (AC)
S	1251	290	11			6		BR	FEW006 SCT050 OVC120	17	14	A2987		RAB17E32 SLP114 P0000 60000 T01670144 5
S	1351	260	9			8			SCT050 OVC140	17	14	A2989		SLP119 T01720139 (AC)
S	1451	VRB	6			8			SCT042 BKN050 OVC140	18	14	A2986		SLP112 T01780139 (AJJ)
S	1551	290	8			6		HZ	CLR	18	14	A2984		SLP103 60000 T01830139 10194 20161 5801

Unedited Surface Weather Observations (METAR/SPEC)		Latitude		Longitude		Station Elev. (ft)		Time Conversion		Day Mon.		Year		SID		Station (Type, Name, State)		
		34° 12'		-119° 13'		65				27		2006		OXR		ASOS OXNARD, CA		
		VISIBILITY		PRESENT WEATHER		SKY CONDITIONS				TEMP °C		DEW POINT °C		ALTI-METER INCHES		REMARKS AND SUPPLEMENTAL CODED DATA		
TIME (LST)	DIR (TRUE)	SPD KTS	GUST KTS	VARIABILITY TRUE	SURFACE STATUTE MILES	RUNWAY VISUAL RANGE (FT)												
1 2 3		4	5	6	7	8	9				11	12	13				14	
S0051	290	5			2 1/2		BR	OVC001			14	13	A2984	VIS 1 3/4V4	SLP103	T01390133	56001	
S0115	270	6			1 1/4		BR	OVC001			14	13	A2984					
S0126	300	5			3/4		BR	OVC001			14	13	A2984					
S0151	280	4			1/2		FG	VV001			13	13	A2984	SLP103	T01330133			
S0251	300	3			1/2		FG	VV001			14	13	A2985	SLP106	T01390133			
S0344	260	3			1 1/2		BR	OVC001			14	13	A2987	VIS 3/4V2	1/2			
S0351	270	4			2		BR	OVC001			14	13	A2987	VIS 1 1/2V3	SLP114	T01390133	10150 2013	
S0419	310	5			1 1/2		BR	OVC001			14	13	A2987	VIS 1V2	1/2			
S0451	350	4			3/4		BR	VV001			14	13	A2989	SLP120	T01390133			
S0503	000	0			1 1/4		BR	OVC001			14	13	A2990					
S0551	000	0			1 3/4		BR	OVC001			14	13	A2991	SLP127	T01440133	(AC)		
S0600	000	0			2 1/2		BR	OVC001			14	13	A2992	(AC)				
S0612	280	4			3		BR	OVC003			15	13	A2992	(AC)				
S0627	280	3			2 1/2		BR	OVC003			15	13	A2992	(AC)				
S0651	290	5			2 1/2		BR	OVC003			14	13	A2991	SLP129	T01440133	51014	(AC)	
S0705	320	7			3		BR	OVC003			14	13	A2991	(AC)				
S0728	VRB	4			3		BR	SCT003			16	14	A2991	(AC)				
S0751	290	7			4		HZ	CLR			17	14	A2990	SLP124	T01670139	(AC)		
S0814	280	8			2 1/2		BR	SCT003			16	13	A2990	(AC)				
S0823	290	10			1 1/2		BR	BKN003			16	13	A2989	(AC)				
S0851	290	12			3		HZ	BKN008			16	13	A2989	SLP119	T01610133	(AC)		
S0925	280	14			8			SCT004			17	13	A2988	(AC)				
S0951	260	9			7			CLR			17	13	A2991	SLP127	T01720133	10172 20139	55002	(AC)
S0958	260	11			8			SCT005			17	13	A2991	(AC)				

**Reference
No. 27**

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

Bull 104.8

COMPILATION OF TECHNICAL INFORMATION RECORDS FOR THE
VENTURA COUNTY COOPERATIVE INVESTIGATION

-Prepared by-

VENTURA COUNTY PUBLIC WORKS AGENCY
Flood Control and Drainage Department
As Part of Its Contribution

VOLUME I

July 1975

VENTURA COUNTY DEPARTMENT OF PUBLIC WORKS
FLOOD CONTROL DISTRICT

VENTURA COUNTY WATER RESOURCES MANAGEMENT STUDY
AQUIFER DELINEATION IN THE OXNARD-
CALLEGUAS AREA, VENTURA COUNTY

By

JOHN M. TURNER - HYDROLOGIST

This Technical Information Record was prepared to document pertinent information as it was developed during the Ventura County Water Resources Management Investigation.

January 1975

TABLE OF CONTENTS

	<u>Page Number</u>
INTRODUCTION	1
OXNARD PLAIN FOREBAY BASIN (MONTALVO BASIN)	2
MUGU UNCONFINED AREA	4
OXNARD PLAIN PRESSURE BASIN	7
SEMIPERCHED AQUIFER AND CLAY CAP	8
UPPER AQUIFER SYSTEM	10
OXNARD AQUIFER ZONE	12
MUGU AQUIFER	14
LOWER AQUIFER SYSTEM	16
HUENEME AQUIFER ZONE	16
FOX CANYON AQUIFER ZONE	18
GRIMES CANYON AQUIFER ZONE	20
PLEASANT VALLEY BASIN	22
RECENT AND UPPER PLEISTOCENE ALLUVIUM	23
SAN PEDRO FORMATION (FOX CANYON AQUIFER ZONE)	25
GRIMES CANYON AQUIFER ZONE	27
NORTH LAS POSAS BASIN	28
RECENT AND UPPER PLEISTOCENE ALLUVIUM AND TERRACE DEPOSITS	30
SAN PEDRO FORMATION (EPWORTH GRAVELS AND FOX CANYON AQUIFER ZONE)	31
EPWORTH GRAVELS	31
FOX CANYON AQUIFER ZONE	32
GRIMES CANYON AQUIFER ZONE	35

TABLE OF CONTENTS

PLATES

7	GEOLOGIC SECTION A-A'		
8	"	"	B-B'
9	"	"	C-C'
10	"	"	D-D'

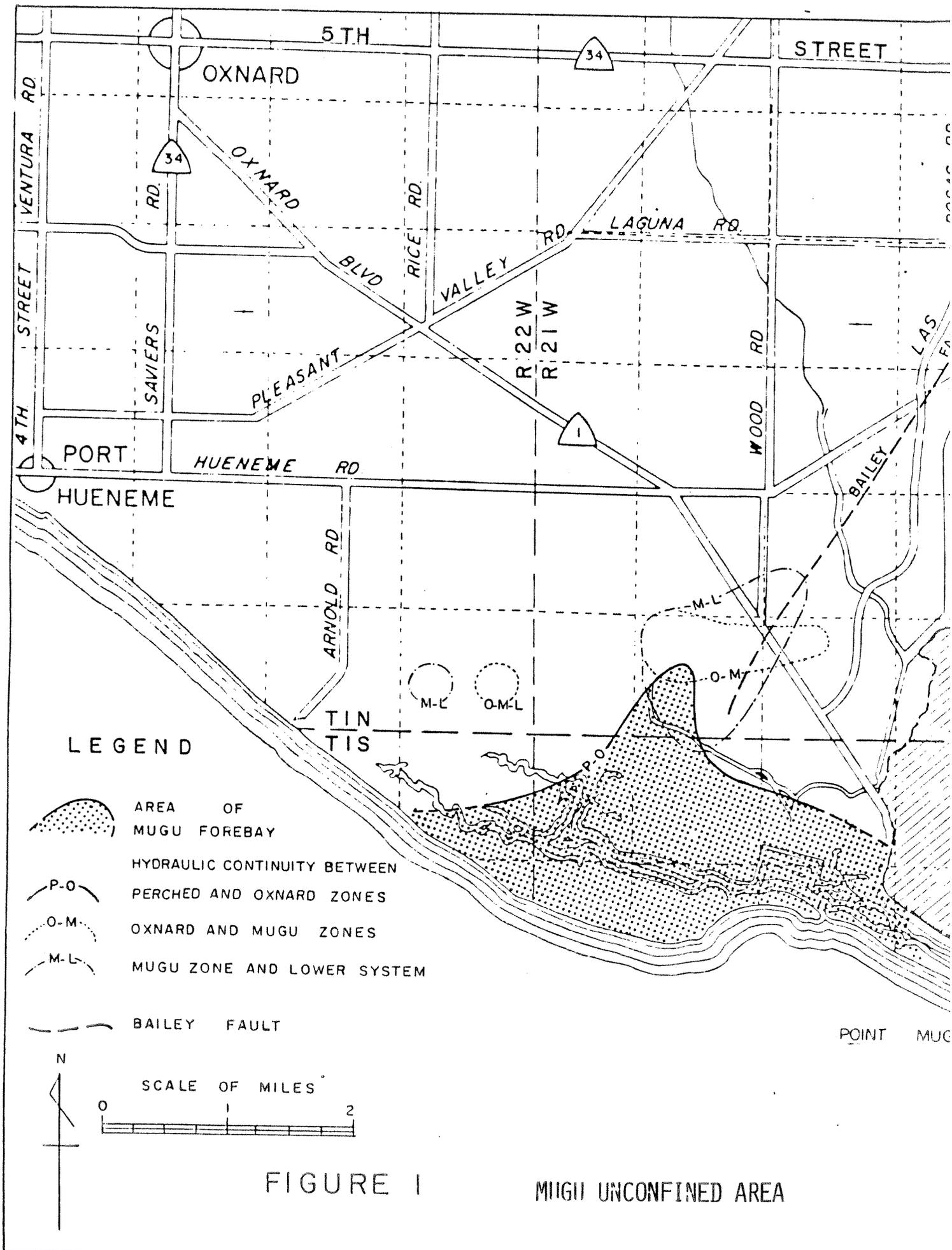
INTRODUCTION

The purpose of this Technical Information Record (T.I.R.) is to document findings of geohydrologic studies conducted to define the vertical and areal extent of water-bearing units within ground water basins of the Oxnard-Calleguas area of Ventura County. Important ground water basins within the study area include the: Oxnard Plain Pressure, Oxnard Plain Forebay, Pleasant Valley, North and South Las Posas and Santa Rosa Valley Basins and the Mugu unconfined area. A major portion of this report describes the Oxnard Plain, an area of complex, but related multiple aquifer zones. During the initial stages of the investigation, all previous studies of the area pertaining to ground water resources were reviewed. A list containing reports utilized during the study appears at the end of this report as "References Cited".

Data to determine the extent and configuration of important aquifer zones was obtained, primarily from existing subsurface records of wells drilled for water, oil and gas. The principal and most reliable sources of subsurface data were electrical logs of water and petroleum wells. These records are invaluable since they constitute a physical record of formations penetrated adjacent to the borehole. The availability of these records allows qualitative determination of subsurface lithology

of ground water recharge within the Oxnard Plain. The areal extent of the Oxnard Plain Forebay Basin is shown in Plate 1. The principal criteria used for delineation of the extent of this basin was lack of a low permeability confining member from ground surface to the top of the initial major aquifer zone. The northwest boundary of the basin is generally contiguous with the north bank of the present Santa Clara River channel. Northwest of this boundary numerous subsurface records indicate a predominance of low permeability materials and an absence of the Oxnard aquifer zone. The northerly limit of the Oxnard Plain Forebay Basin coincides with the location of the McGrath fault, a branch of the Oak Ridge fault zone. Remaining boundaries are coincident with a thickening of the "clay cap" which effectively confines the Oxnard aquifer zone over most of the Oxnard Plain. Within the boundaries of the Oxnard Plain Forebay Basin, artificial and natural ground water recharge is a source of replenishment to the Upper and Lower Aquifer Systems.

Geologic Section C-C' indicates the generalized subsurface relationships from ground surface to the effective base of the ground water reservoir within the Oxnard Plain Forebay Basin. Within this basin the Oxnard aquifer zone consists almost entirely of permeable sand and gravel. Although the underlying Mugu aquifer contains a significantly greater percentage of low permeability material than the Oxnard zone, the lenticular nature of these materials allows relatively unimpeded replenishment to the entire Mugu aquifer.



Active sea-water intrusion combined with hydraulic continuity and downward hydraulic gradient, which exist within and adjacent to the Mugu Forebay, poses a serious threat to all major aquifer zones of the Oxnard Plain Basin.

OXNARD PLAIN PRESSURE BASIN

The bases for delineating the extent of the Oxnard Plain Basin are the areal limits of the Oxnard aquifer zone and the Mugu aquifer. This basin differs from the Oxnard Forebay Basin and Mugu Forebay in that it contains a "clay cap" over the Oxnard aquifer zone.

The Oxnard Plain Basin encompasses an area of approximately 75.2 square miles and is bounded by the Mound and Oxnard Forebay Basins to the north, the North Las Posas and Pleasant Valley Basins to the east, and the Mugu Forebay and nonwater-bearing rocks of the Santa Monica Mountains to the south. Although the Oxnard aquifer zone extends offshore, the westerly basin boundary is arbitrarily assigned at the coastline because this study was confined to the onshore area. The offshore extent and configuration of various aquifer zones is contained in a report being prepared by the United States Geological Survey in Menlo Park, California. The Oxnard Plain Basin is a relatively flat alluviated area which ranges in elevation from sea level to approximately 100 feet. It is underlain by numerous important aquifer zones, which, in the center of the basin beneath El Rio, extend to depths of greater than 2,100 feet below sea level (Plate 5).

local effectiveness of aquicludes and aquitards within and above permeable portions of the semiperched zone. These materials prevent substantial downward migration of degraded applied and surface water under present extraction conditions. The depth to water within this zone is normally only several feet below ground surface.

Highest water levels are found in heavily irrigated areas where, without tile drains, water level rises high enough to adversely affect the growth of plantings. The maximum depth to water in this zone is approximately 10 feet. This occurs in the fall of dry years in nonirrigated areas where the depth to water is controlled by limits of evaporation from the water table.

The "clay cap" underlies the semiperched aquifer zone and extends to the top of the Oxnard aquifer zone. Plate 1 indicates that the clay cap extends to greater than 180 feet below sea level at two locations near the ocean. The clay cap consists of Recent silty clay, silt and clay with lenses of sand and silt. In results of earlier water resources studies, it was theorized that the clay cap contains areas where downward leakage occurs to the Oxnard aquifer zone. A recent cooperative investigation between the Department of Water Resources and the University of California indicated that the clay cap is an aquitard through which significant quantities of water can migrate vertically under conditions of differential head.

Because of generally poor water quality and limited quantity of recoverable storage within the semiperched aquifer zone

Prior to deposition of the Mugu aquifer, sea level dropped considerably causing extensive erosion of previously deposited materials on the Oxnard Plain.

The major source of erosive force during this period was the Santa Clara River which meandered over the entire Plain. Of secondary importance was the erosive energy provided by Calleguas Creek and numerous small tributary drainages. The result of this extensive period of erosion was surface exposure of numerous previously folded underlying water-bearing zones. Following this period, sea level rose inundating most or all of the Oxnard Plain. During this time, deposition of the Mugu aquifer occurred upon the previously developed unconformity in a shallow marine inland sea. The result of the sequence of erosion is extensive hydraulic continuity between the Mugu aquifer zone and important aquifer zones of the Lower Aquifer System. Recent overdraft of the Oxnard and Mugu aquifer zones has resulted in serious inland sea-water intrusion at Port Hueneme and Point Mugu. At Port Hueneme sea-water intrusion is known to occur only in the Oxnard aquifer zone where the most recent information indicates an onshore affected area of approximately 8 square miles. A far more serious condition is found at Point Mugu where the Oxnard and Mugu aquifer zones are both intruded. Here onshore intrusion of the Oxnard zone now covers an area greater than 9 square miles. The areal extent of sea-water intrusion in the Mugu aquifer is at this time undetermined. Active intrusion into exposed suballuvial materials of the Lower Aquifer System is also indicated in Sections 28 and 32 adjacent to the Mugu unconfined area.

intrusion near the ocean. In some areas water-bearing materials are segregated into two or three zones as indicated in Plates 7 and 9. Because of this feature, the term Oxnard aquifer used in previous investigations has been revised to Oxnard aquifer zone.

The top of the Oxnard zone is an irregular surface ranging from greater than 20 feet above sea level east of Saticoy-El Rio to greater than 180 feet below sea level northwest of Port Hueneme (Plate 1). The irregularity of the top of this zone results primarily from differential erosion and sedimentation of the Santa Clara River rather than structural warping. An exception is found in the northwest Oxnard Plain near the ocean where the top of this zone appears to have been upwarped and/or faulted. South of this location near 5th Street, downwarping, probably related to the Las Posas syncline, is apparent. The base of the Oxnard aquifer zone occurs as a more regular surface, ranging from an elevation of sea level just east of the Saticoy Spreading Grounds to greater than 300 feet below sea level near Point Mugu. It is less irregular because it was deposited upon a relatively smooth erosional unconformity. The base of this zone was previously contoured and published in Department of Water Resources Bulletin 74-9, "Water Well Standards, Ventura County", and is recommended for use during the current investigation. In the northwest Oxnard Plain, the base of this zone exhibits the same structural features as the top. In addition, land surface subsidence in the vicinity of Point Mugu Naval Air Station is indicated. In the northern half of the Oxnard Plain the base of this zone has the appearance of a large alluvial fan.

at Port Hueneme and in the Oxnard Plain and Mugu Forebays where well data indicates that water-bearing portions of the Mugu aquifer merge with the Oxnard zone.

Over most of the Oxnard Plain the top of the Mugu aquifer is relatively flat and slopes toward the ocean. The greatest irregularities of this surface are thought to be depositional rather than structural. Mild downwarping of this surface is indicated in the vicinity of the Las Posas syncline, while greater upwarping is indicated near the Santa Clara River. A contour map depicting the top of this zone was not prepared during this study because the Oxnard aquifer zone and Mugu aquifer are to be modeled as one unit.

The base of the Mugu aquifer is a more irregular surface, which ranges in elevation from less than 50 feet below sea level near the tip of South Mountain to almost 500 feet below sea level 3 miles north of Port Hueneme (Plate 2). This greater irregularity is caused by more intensive folding and sporadic nonmarine deposition. The area of greatest downwarping is coincident with the northeast-southwest trending Las Posas syncline which enters the Oxnard Plain from the Las Posas Valley and extends across the basin into the ocean. Upwarped areas include the nose and westerly extension of the Camarillo Hills and the northerly portion of the basin paralleling the present course of the Santa Clara River.

Features due primarily to deposition of fine materials are found just east of Port Hueneme.

The Hueneme aquifer zone has been subjected to considerable folding, faulting and erosion since deposition, as indicated on Geologic Sections A-A' and C-C'. This activity has largely affected the areal distribution and occurrence of this unit on the Oxnard Plain. North of the Oxnard Plain this unit cannot be readily correlated. East of the Oxnard Plain, in the Las Posas Valley, water-bearing portions are extremely lenticular or absent and as a result wells do not produce much water from this zone. In Pleasant Valley some water is produced; however, most is extracted from deeper zones.

Much of the Hueneme zone has been removed by erosion of upwarped areas since deposition. On the south Oxnard Plain all of this unit has apparently been removed generally south of Hueneme and Etting Roads. In the north Oxnard Plain, just south of the Santa Clara River, much of it has also been removed by erosion since deposition due to upwarping and possibly faulting followed by erosion.

The map depicting contours on top of the Lower Aquifer System (Plate 4) has a very similar configuration to that on the base of the Upper Aquifer System over much of the Oxnard Plain. Exceptions are found within the southerly portion of the Oxnard Plain Basin where numerous irregularities occur between the two surfaces. The two most prominent features occur between Port Hueneme and Mugu Lagoon where two deep depressions ranging from 400 to 550 feet are apparent. These occur in areas where coarse water-bearing materials of the Hueneme aquifer zone are very thin or absent. This condition is also prevalent here in deeper zones

become finer toward the present coastline because they were deposited farther from the ancient shoreline. The Fox Canyon aquifer zone is present throughout almost the entire Oxnard Plain. An exception is found at the tip of South Mountain where subsurface records indicate that nonwater-bearing portions of the Santa Barbara formation are penetrated beneath the Mugu aquifer. The lack of the Fox Canyon zone in this area may be attributed to upwarping and subsequent removal by erosion of the Santa Clara River as shown in Geologic Section C-C'. Another area where this zone is thought to be lacking is in the south coastal area. Here limited subsurface information indicates that an approximate one-mile band along the ocean extends from about 0.5 mile north of Arnold Road southerly to and beyond the Bailey fault where it changes trend to a northeasterly direction for about four miles and terminates against the Bailey fault zone about 0.5 mile west of Round Mountain. The apparent lack of occurrence in this area is attributed primarily to uplift and erosion in middle Pleistocene time prior to deposition of overlying zones.

The Fox Canyon aquifer zone constitutes the effective base of fresh water in north and westerly portions of the basin where the Grimes Canyon aquifer zone is absent. The most prominent structural features here are the Las Posas syncline and the Montalvo anticline which have warped this zone into its present east-west trending configuration.

Basal members of this zone may be correlated over almost the entire Oxnard Plain by use of electric logs. A key horizon is the basal sand or gravel of quite uniform thickness. Another key horizon lies above this marker zone and is separated from it

The Grimes Canyon aquifer zone is the uppermost member of the Santa Barbara formation. On the Oxnard Plain, it is composed primarily of sand with only minor amounts of gravel deposited in a near-shore marine environment. It is present only in the southerly and easterly portions of the Oxnard Plain where it underlies about 35 percent of the total basin area. Approximate northerly and westerly limits are shown in Plate 5. From this location the Grimes Canyon aquifer zone extends southeasterly to and beyond the Bailey fault zone and easterly into the Pleasant Valley Basin. Here it is the basal water-bearing unit and generally overlies nonwater-bearing portions of the Santa Barbara formation.

Lack of the permeable Grimes Canyon aquifer zone in the north Oxnard Plain is attributed primarily to a facies change caused by relatively deep water deposition of fine-grained materials seaward of the defined limits of this zone.

The offshore limits of this zone in the south Oxnard Plain are unknown. Here, preliminary results of the United States Geological Survey-State Department of Water Resources cooperative offshore sparker survey do not indicate subsea stratigraphic units correlative with the onshore occurrence of the Grimes Canyon aquifer zone. This may indicate an offshore facies change to fine-grained materials like that which occurs on the north Oxnard Plain. If this is the case, offshore intrusion of sea water into this zone is not a threat. However, if permeable portions of this zone are exposed in the Mugu or Hueneme submarine canyons or the steeply sloping sea floor between them, then sea-water intrusion is actively moving landward because of long-time water level conditions below sea level.

the San Pedro formation consist of an upper series probably equivalent to the Hueneme aquifer zone of the Oxnard Plain and the underlying Fox Canyon aquifer zone. The Santa Barbara formation contains the Grimes Canyon aquifer zone which is the basal water-bearing unit within the Pleasant Valley Basin.

These formations are underlain by the Pico and Santa Margarita formations, Modelo shale and volcanics of Miocene age which are considered to be nonwater-bearing. The volcanic rocks are exposed along the southeast edge of the basin in the Santa Monica Mountains.

The following is a more complete description of water-bearing units in the Pleasant Valley Basin with emphasis upon their application to modeling studies.

RECENT AND UPPER PLEISTOCENE ALLUVIUM

Recent and upper Pleistocene alluvium of variable thickness occurs in all low-lying areas of the Pleasant Valley Basin. These materials consist of yellow and blue clay and gray sand and gravel which generally reach a thickness of 300 to 400 feet. Throughout most of the westerly Pleasant Valley Basin these materials are very lenticular and do not constitute a large, reliable source of water. The lenticular nature of these deposits is such that extensive hydraulic continuity with equivalent zones (Oxnard aquifer zone and Mugu aquifer) is very unlikely. The large quantity of low permeability materials indicates that these

present here are thought to be fines produced by weathering and erosion of volcanic rocks in the Santa Monica Mountains. The quality of water derived from these materials is generally inferior to that extracted from deeper zones. The poor quality combined with sporadic and doubtful sustained yield make these deposits quantitatively unimportant for modeling purposes.

SAN PEDRO FORMATION (FOX CANYON AQUIFER ZONE)

The San Pedro formation underlies all of the Pleasant Valley Basin except that area southeast of the Bailey fault zone. It is exposed in the Camarillo and Las Posas Hills where it has been uplifted by anticlinal forces and fault movement. The upper portion of the San Pedro formation consists of sand, clay and gravel equivalent to the Hueneme aquifer zone found on the Oxnard Plain. It differs from the Hueneme zone in that it is more lenticular in nature and contains a large percentage of low permeability layers. The occurrence of permeable zones seems to closely coincide with occurrences of permeable zones in Recent and upper Pleistocene deposits. The upper San Pedro formation is not found on the southeast side of the Bailey fault.

The Fox Canyon aquifer zone is the major water-bearing unit within the Pleasant Valley Basin. It is in hydraulic continuity with the Oxnard Plain Basin and present in all water-bearing areas of the basin, except southeast of the Bailey fault. It consists of, more or less, continuous layers of marine gravels, sands and clays which are confined in most areas and range from

structural activity has resulted in the lowering of equivalent rock units relative to those on either side. Vertical relative movement has been greatest along the Bailey fault zone where the Fox Canyon and other lower Pleistocene aquifer zones are in fault contact with Miocene volcanic rocks of the Santa Monica Mountains.

Some wells penetrating the Fox Canyon aquifer zone yield greater than 2,000 gallons per minute; however, the average yield is in the vicinity of 1,000 gallons per minute. The quality of water derived from this zone is generally acceptable for most beneficial uses. The large storage capacity, yield and generally acceptable quality of water derived from the Fox Canyon aquifer zone indicate its importance in modeling studies. The generally confined nature of the San Pedro formation combined with its equivalence and hydraulic continuity with deposits on the Oxnard Plain indicate that it should be modeled as a portion of the Lower Aquifer System.

GRIMES CANYON AQUIFER ZONE

This zone is present throughout much of the Pleasant Valley Basin and, where present, constitutes the basal water-bearing unit. The Grimes Canyon aquifer zone constitutes the uppermost member of the Santa Barbara formation and in this area consists primarily of rusty brown sand with some gravel and clay. Over most of its area of occurrence, well logs indicate hydraulic continuity with the overlying Fox Canyon zone. Like the Fox Canyon

about 1.5 miles west of Somis. The presence of this drainage divide is thought to be quite arbitrary with regard to the occurrence, movement or quality of ground water and, therefore, a new subdivision of this area is proposed. For data storage and retrieval purposes use of the previous designations may be necessary.

The North Las Posas Basin is differentiated from the Oxnard Plain Basin because of a lack of the Upper Aquifer System at or near the basin boundary and from the Pleasant Valley Basin by distinct structural barriers. The delineation of the subdivision between the North and South Las Posas Basins is based primarily upon structural features and distinct water quality differences.

The North Las Posas Basin covers an area of about 58 square miles and has a drainage area of some 73 square miles. It is bounded on the north by nonwater-bearing rocks of the South Mountain Oak Ridge area which extends from the Oxnard Plain Forebay Basin to and beyond Happy Camp Canyon. It is bounded on the west by the Oxnard Plain Basin and on the south by the Pleasant Valley and South Las Posas Basins. The drainage divide of the Camarillo Hills approximates an anticlinal axis and provides the boundary separating this basin from the Pleasant Valley Basin. The boundary between the North and South Las Posas Basins is formed by the anticlinal structure of the Moorpark hills and distinct water quality differences between these hills and the Camarillo Hills. The easterly boundary is formed by the nonwater-bearing rocks east of Happy Camp Canyon Wash.

The elevation of the drainage area ranges from less than 200 feet at the boundary of the Oxnard Plain to more than 2,800 feet on Oak Ridge.

and are believed to reach depths of 200 to 400 feet. The thickness of these materials is difficult to determine because of the difficulty in distinguishing these deposits from the underlying Epworth Gravels of the San Pedro formation. Historically, numerous wells have been completed within this zone and have extracted excellent quality water for various beneficial uses. Mining of ground water from these materials has resulted in a severe lowering of water levels throughout the subbasin, necessitating abandonment of most wells. Prior to lowering of water levels, average well yield was about 500 gallons per minute.

Because of low-sustained yield, poor water quality or severe dewatered conditions, Recent and upper Pleistocene materials are considered unimportant in modeling studies.

SAN PEDRO FORMATION (EPWORTH GRAVELS AND FOX CANYON AQUIFER ZONE)

The San Pedro formation is the major water-bearing unit within the North Las Posas Basin. It reaches a maximum thickness of about 2,000 feet north of the Camarillo Hills and underlies almost the entire water-bearing portion of the basin. It is absent only in the northeast portion of the basin where the Grimes Canyon aquifer zone is the principal water-bearing unit.

EPWORTH GRAVELS

The Epworth Gravels are the major water-bearing unit within the upper portion of the San Pedro formation.

Throughout most of basin portions of the San Pedro formation which lie above the Fox Canyon aquifer zone consist of blue,

gravel with minor silt and clay lenses and interbeds. Although the Fox Canyon aquifer zone extends over almost the entire North Las Posas Basin, well data indicates that it is thickest in the central portion of the basin where coarse sands are present. Along the South Mountain-Oak Ridge exposure it is of variable thickness and consists of gravel and sand which grades into fine sand near Happy Camp Canyon where it pinches out. It was first named the Fox Canyon aquifer because of its excellent surface exposure in Fox Canyon which is located approximately one mile west of Bradley Road. This zone is exposed almost continuously along the south flank of the South Mountain-Oak Ridge area from the Oxnard Plain to Happy Camp Canyon Wash, a distance of some 15 miles. Along its outcrop trend it is not exposed in canyons because it is buried by shallow Recent alluvium. Paleontological evidence indicates that this zone was deposited under shallow water marine conditions. Where exposed, this zone is easily differentiated from the Grimes Canyon aquifer zone because of a distinct color difference. In the subsurface, delineation of the contact between these zones is very difficult.

From its area of exposure on South Mountain, the Fox Canyon zone dips to the south where it is down and upfolded by synclinal and anticlinal structures. Geologic Section D-D' indicates the degree of folding between South Mountain and the South Las Posas Basin. Here this unit has been folded by the Long Canyon syncline and anticline and the Las Posas syncline. In the eastern

however, extensive permeable outcrops of this zone provide excellent areas for artificial replenishment if and when water becomes available for spreading.

The extensive nature of this unit combined with good to excellent water quality makes it an important computer modeling unit. Because it is almost entirely confined and equivalent to deeper zones on the Oxnard Plain, it should be modeled as a portion of the Lower Aquifer System. Near outcrop areas and under parts of the Camarillo Hills this zone is dewatered beneath the confining layer and should be treated as an unconfined system in the model.

GRIMES CANYON AQUIFER ZONE

The Grimes Canyon aquifer zone is present throughout much of the North Las Posas Basin where it constitutes the base of water-bearing materials. It is the upper member of the Santa Barbara formation which consists of up to 2,000 feet of clay, silt, sand and gravel. Along South Mountain, west of Bradley Road, surface exposures of this formation consist of low permeability clay or silt. Subsurface data also indicates nonwater-bearing materials below the Fox Canyon zone under the Camarillo Hills. Based upon this data and the lack of occurrence in the north Oxnard Plain, the Grimes Canyon zone is thought to be absent or of only limited extent west of Bradley Road.

East of Bradley Road outcrops of permeable sand and gravel materials become more and more prominent until in Happy Camp Canyon they make up almost the entire Santa Barbara formation. Here

SOUTH LAS POSAS BASIN

The South Las Posas Basin has an area of about 19.4 square miles and a total drainage area of about 39.1 square miles. It is located in the southeasterly portion of the study area and is delineated from other basins because of water quality differences and structural barriers. Its northerly boundary coincides with the axis of the Moorpark anticline and distinct water quality differences between this basin and the North Las Posas Basin. It is bounded on the south by the Las Posas Hills and on the east by the Simi Basin and nonwater-bearing rocks of the Simi Hills. The Pleasant Valley Basin forms the westerly boundary in an area near the possible extension of the Springville fault.

The North Las Posas Basin is an east-west trending basin formed by downfolding of the Moorpark syncline in the vicinity of Arroyo Simi and uplift by the Moorpark anticline to the north and Las Posas anticline and Santa Rosa fault to the south.

Water-bearing units include Recent and upper Pleistocene alluvium and the San Pedro formation. The Grimes Canyon aquifer zone is not believed to be present in the South Las Posas Basin.

Nonwater-bearing rocks include low permeability portions of the Santa Barbara formation, the Pico and Sespe formations and some Miocene volcanic rocks.

RECENT AND UPPER PLEISTOCENE ALLUVIUM

Recent and upper Pleistocene alluvium fills channels tributary to Arroyo Las Posas. In these channels it is usually less than 100 feet thick and consists of sand and silt with some clay and gravel. The most extensive alluviated area lies beneath

UPPER SAN PEDRO FORMATION

Within the South Las Posas Basin the upper San Pedro formation has variable lithology. Throughout most of the basin it consists primarily of low permeability clay and silt materials with included sand and gravel lenses which effectively confine the Fox Canyon aquifer zone. However, in the vicinity of Moorpark and westerly from there, a distance of some four miles adjacent to Arroyo Las Posas, subsurface records indicate hydraulic continuity between ground surface and the Fox Canyon aquifer zone indicating the presence of extensive permeable materials in the upper San Pedro formation.

Here the upper San Pedro formation should be modeled as an unconfined water-bearing unit. In other portions of the basin, it should be considered a confining member overlying the Fox Canyon aquifer zone.

FOX CANYON AQUIFER ZONE

This zone is present throughout most of the South Las Posas Basin where it constitutes the effective base of the ground water reservoir. It is exposed only along the north flank of the Las Posas Hills where it provides some replenishment from rainfall and limited runoff.

The Fox Canyon aquifer zone consists primarily of sand and gravel layers with clay and silt lenses. It is not believed to be present in extreme eastern portions of the basin. From its first easterly occurrence, it gradually thickens to a maximum of

bordered on the south and east by volcanic rocks of the Santa Monica Mountains, on the north by the Las Posas Hills and on the west by the Pleasant Valley Basin. The westerly boundary is somewhat arbitrary and may have to be altered in the future.

The Santa Rosa Basin ranges in elevation from about 200 feet at its westerly terminus to about 600 feet at the northerly limits of the San Pedro formation. The maximum elevation of the drainage area reaches about 1,200 feet above sea level in the Santa Monica Mountains.

Major water-bearing units within the Santa Rosa Basin include Recent alluvium and Quaternary terrace deposits and the San Pedro and Santa Margarita formations. Nonwater-bearing formations include the Santa Barbara, Topanga and Sespe formations and Tertiary volcanic rocks.

The Santa Rosa Basin is an east-west trending downfolded and faulted area as indicated in Geologic Section D-D'. Major folds include the Santa Rosa syncline and the Las Posas anticline. Major faults include the Santa Rosa and Bailey fault zones which have undergone considerable displacement since deposition of water-bearing materials. The Santa Rosa fault zone is part of an extensive system which extends through the Simi Valley and into Los Angeles County. Where present in water-bearing materials, it probably forms an effective barrier to north-south subsurface flow. The Bailey fault zone provides a substantial barrier to east-west underflow

Quaternary terrace deposits consist of boulders, gravels, sands, and clays which are exposed along the south slopes of the Las Posas Hills and extend to the valley floor. They are also present as eroded remnants beneath Recent alluvial deposits. These deposits have a wide range of thickness; however, their maximum thickness is believed to be no greater than 250 feet. The greatest thickness of these materials occurs on the northwest side of the easterly Bailey fault branch. Alluvium and terrace materials should be modeled as an unconfined aquifer system.

SAN PEDRO FORMATION (FOX CANYON AQUIFER ZONE)

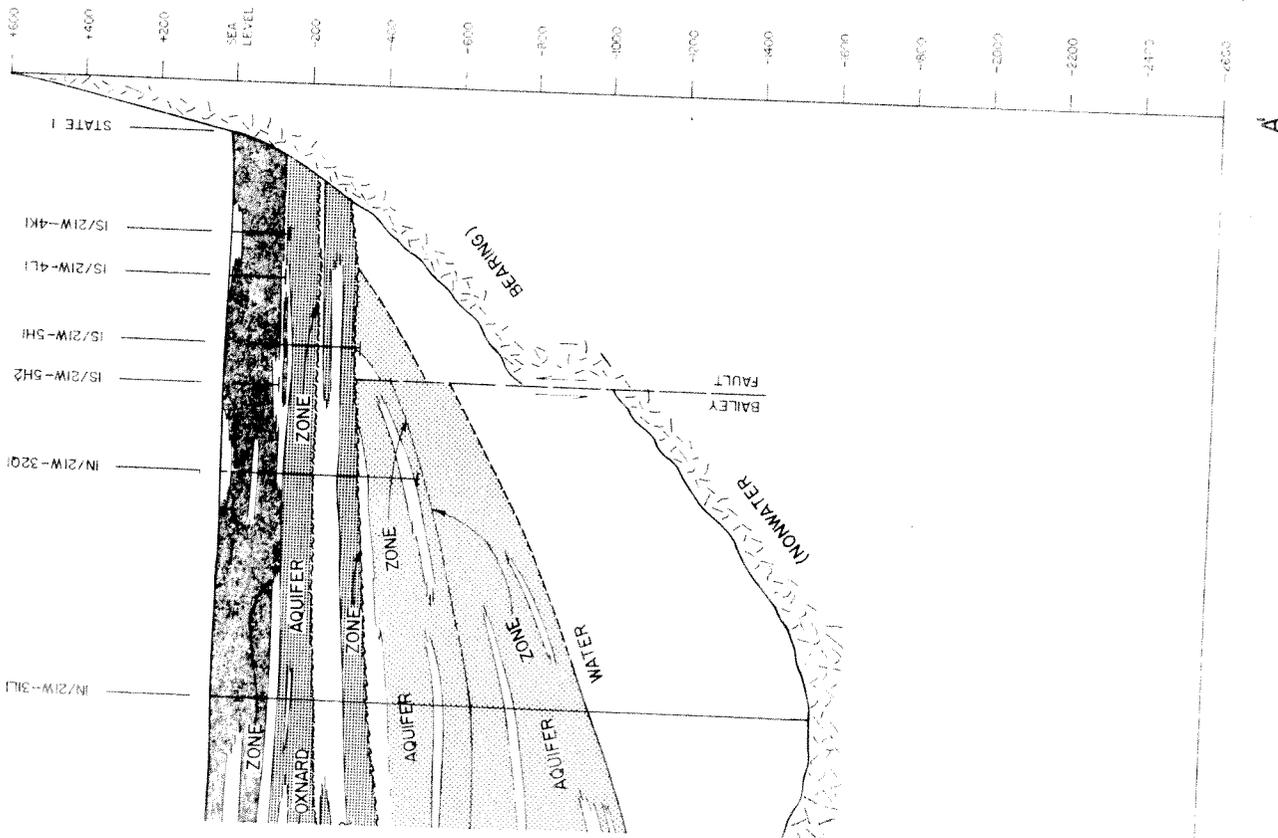
The San Pedro formation is exposed along the south flank of the Las Posas Hills for almost the entire length of the Santa Rosa Basin. East of the Bailey fault zone the San Pedro formation is not believed to contain the basal Fox Canyon member. Here it is composed of lenticular beds of sand, gravel, silt and clay which are probably semi-confined. West of the Bailey fault well logs indicate presence of the Fox Canyon aquifer zone which is composed of sand and gravel layers about 100 feet thick. Above this zone the presence of low permeability materials indicates confined conditions except on the Las Posas Hills where the Fox Canyon aquifer zone may be near ground surface. This zone is the basal water-bearing unit on the west side of the easterly Bailey fault branch.

SANTA MARGARITA FORMATION

The Santa Margarita formation of upper Miocene age was derived from erosion and deposition of the Conejo volcanics. It

REFERENCES CITED

- California Department of Public Works, Division of Water Resources. "Ventura County Investigation." Bulletin No. 46-Report. Bulletin No. 46A-Basic Data. 1933.
- California Department of Water Resources. "Sea-Water Intrusion Oxnard Plain of Ventura County." Bulletin No. 63-1. October, 1965.
- California Department of Water Resources. "Oxnard Basin Experimental Extraction Type Barrier." Bulletin No. 147-6. September, 1970.
- , and University of California, Berkeley. "Aquitards in the Coastal Ground Water Basin of Oxnard Plain, Ventura County." Bulletin No. 63-4. September, 1971.
- California Water Resources Board. "Ventura County Investigation." Bulletin No. 12. Volumes I and II. October, 1953.
- Geotechnical Consultants, Inc. "Hydrogeologic Investigation Proposed Marina Development near Oxnard, California." April, 1969.
- Mann, John F., Jr. "Overdraft on the Deep Aquifer in Pleasant Valley and Possibilities of Recharge by Spreading." Report to Board of Directors, United Water Conservation District. July 3, 1952.
- . "Supplement to a Plan for Ground Water Management-United Water Conservation District." February, 1968.
- Mann, John F., Jr., and Associates. "A Plan for Ground Water Management-United Water Conservation District." September, 1959.
- Ventura County Public Works Agency, Flood Control District. "Las Posas Area Ground Water Quality and Quantity Investigation." August, 1971.
- . "Moorpark Planning Area-Ground Water Hydrology." February, 1972.
- . Ventura County Resources Plan; Surface and Ground Water Resources January, 1973.
- . "Revolon-Beardsley Project Environmental Study-Geohydrology." April, 1974.
- . "Preliminary Geohydrology Study; Santa Rosa Valley." September, 1974.
- . "1974 Seawater Intrusion Study; Oxnard Plain of Ventura County." January, 1975.



LEGEND

-  SEMIPRECIPITATED AQUIFER ZONE
-  UPPER AQUIFER SYSTEM, OXNARD AND MUGU AQUIFER ZONE
-  LOWER AQUIFER SYSTEM, HUENE, FOX CANYON AND GRIMES CANYON AQUIFER ZONES
-  SEMIPERMEABLE MATERIALS
-  AQUICLUDE - MATERIALS OF LOW PERMEABILITY
-  VOLCANIC ROCKS - NONWATER-BEARING

UNCONFORMITY

FAULT - ARROWS INDICATE RELATIVE MOVEMENT

⊖ WATER WELL ELECTRIC LOG

○ WATER WELL DRILLERS LOG

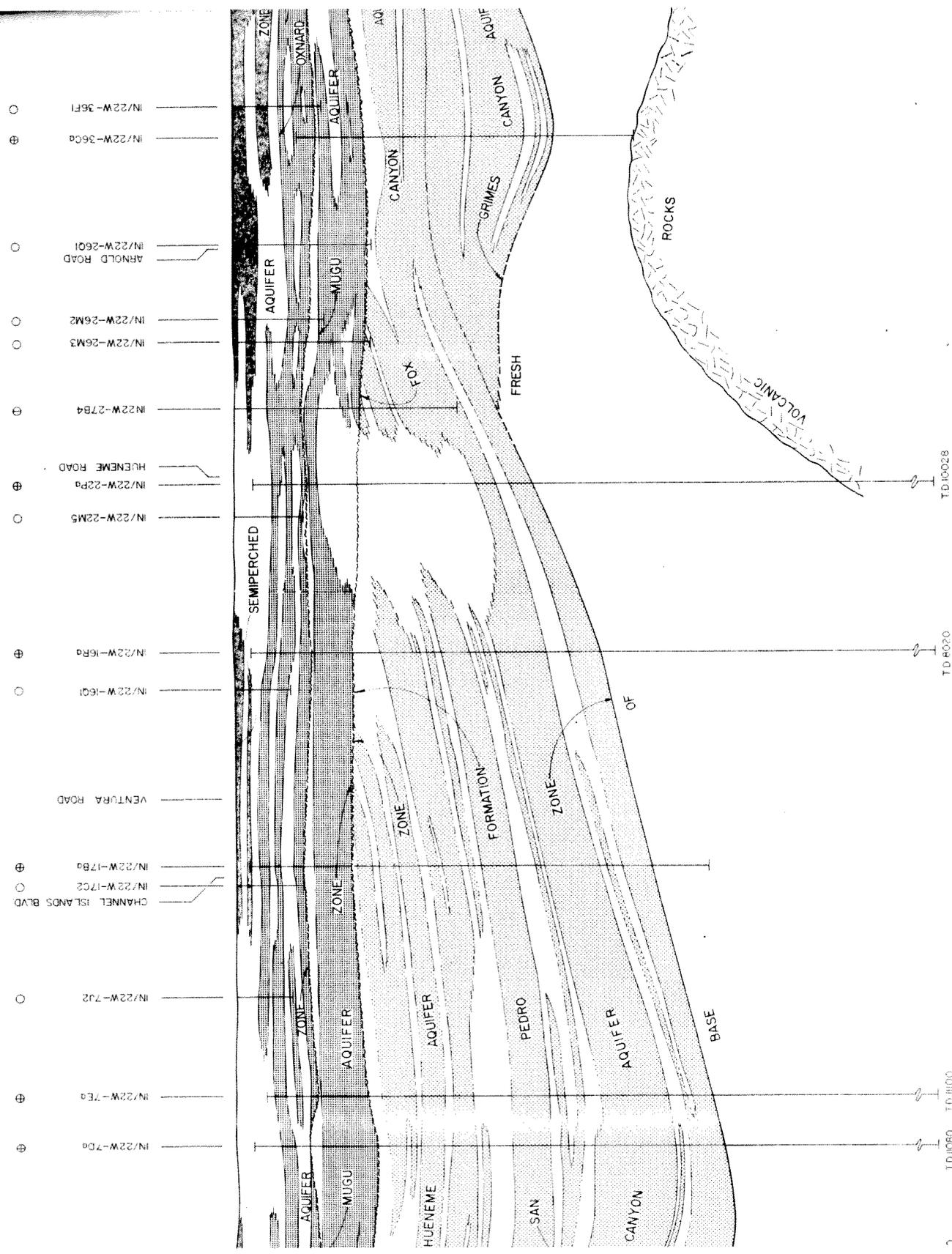
⊕ OIL WELL ELECTRIC LOG

NOTE: LOCATION OF AQUIFER SECTIONS SHOWN ON PLATE 6

STATE OF CALIFORNIA
 THE RESOURCES AGENCY
 DEPARTMENT OF WATER RESOURCES
 SOUTHERN DISTRICT
 WATER RESOURCES MANAGEMENT
 VENTURA COUNTY

GEOLOGIC SECTION A-A'





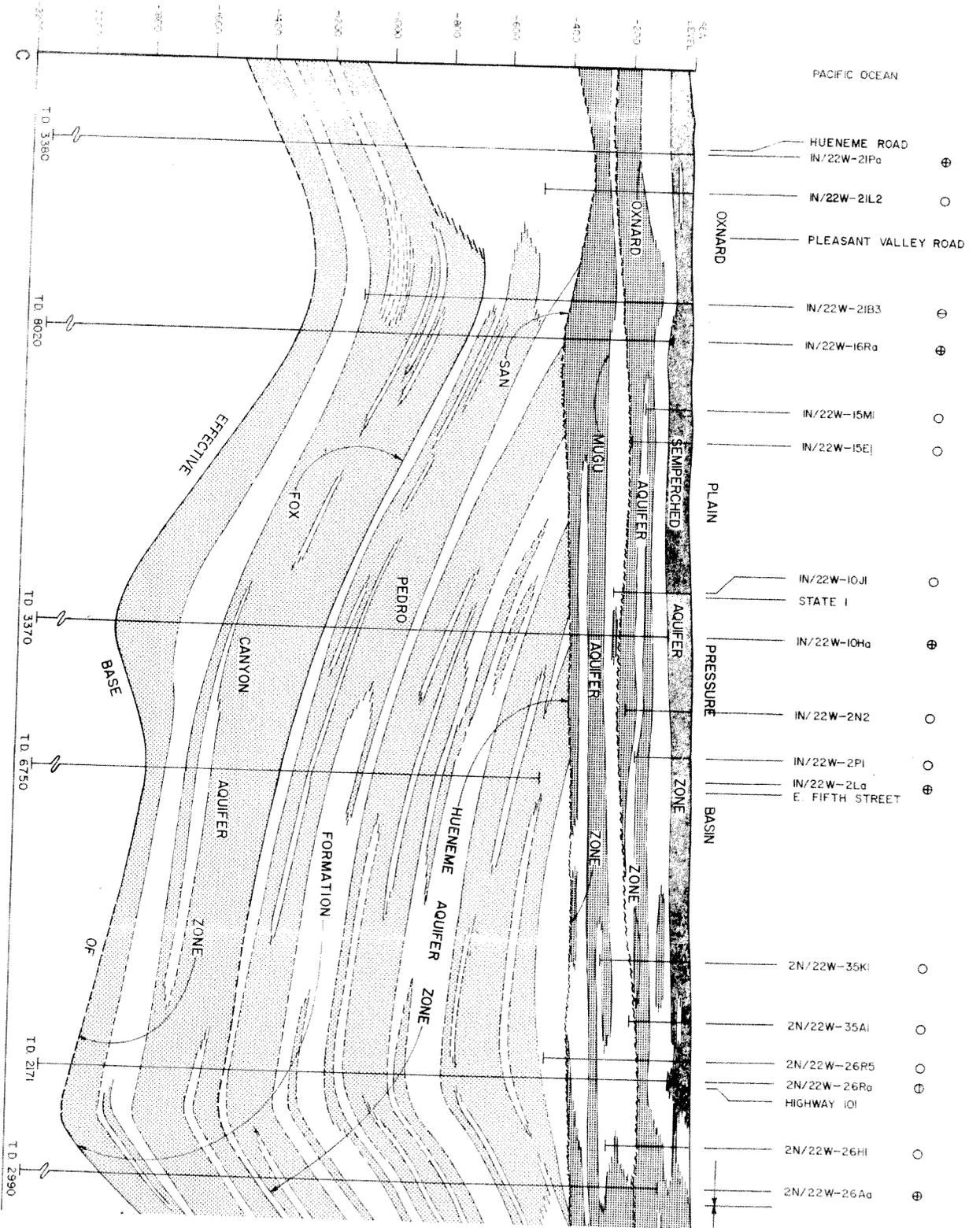
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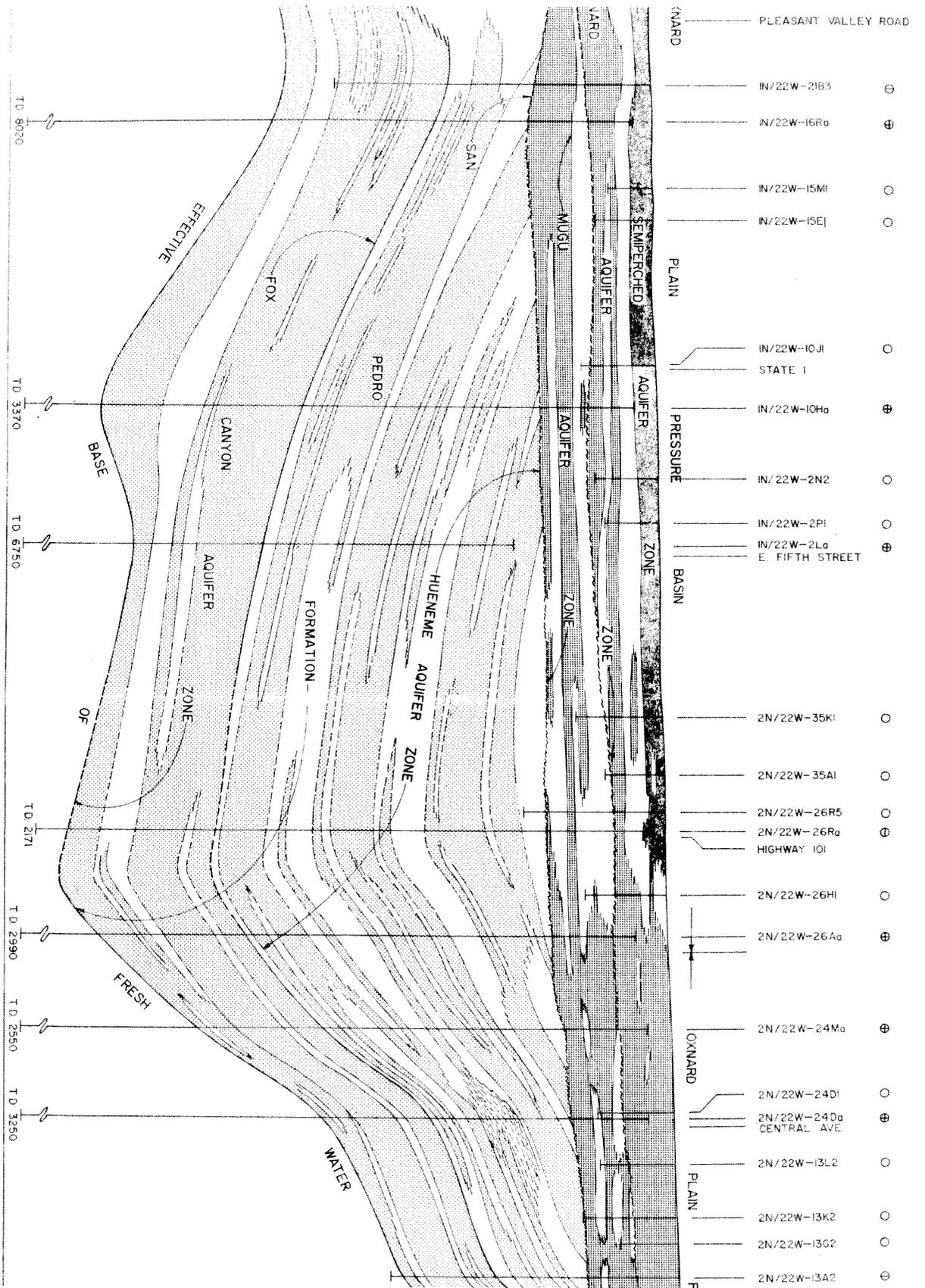
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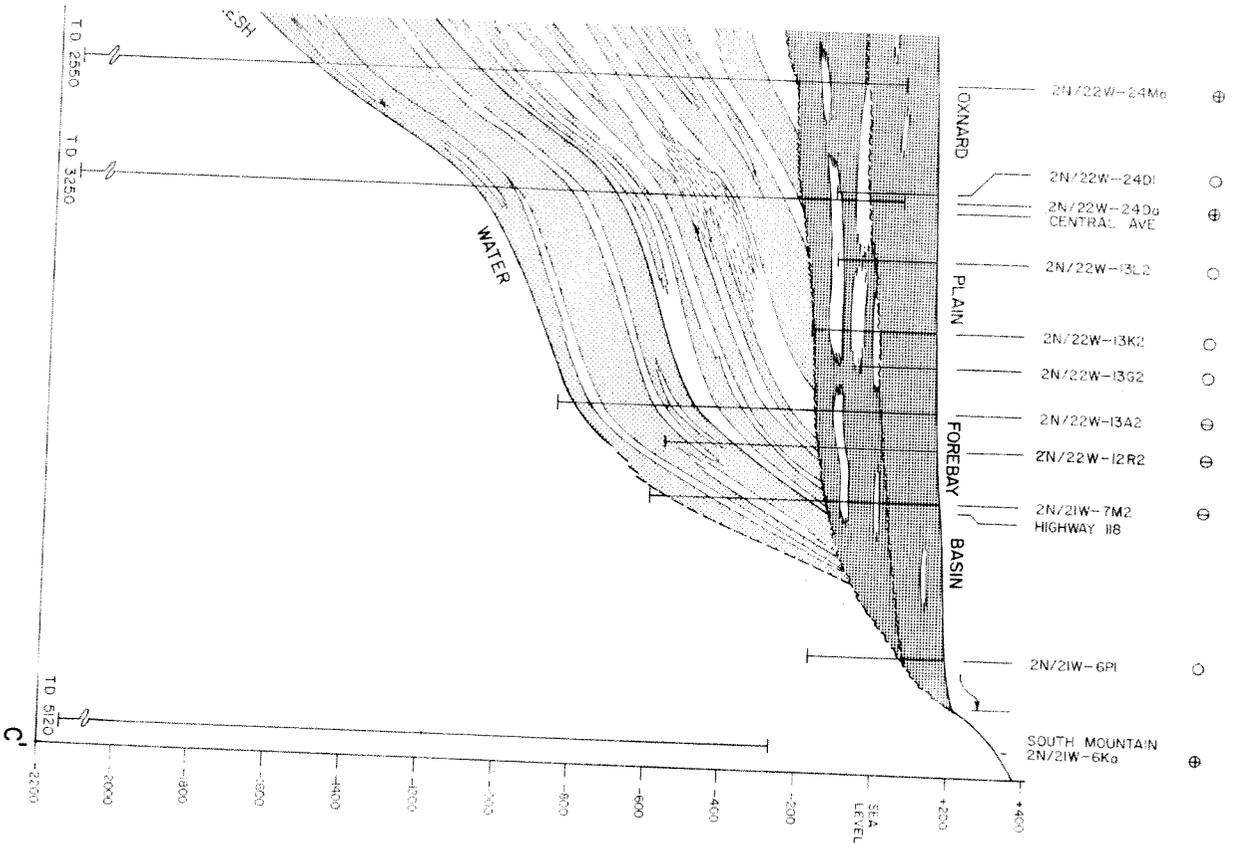
TD 11000

TD 11000

ELEVATION IN FEET







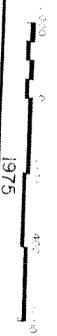
LEGEND

- SEMIPERCHED AQUIFER ZONE
 - UPPER AQUIFER SYSTEM, OXNARD AND MUGO AQUIFER ZONES
 - LOWER AQUIFER SYSTEM; PRIMARILY HUENEME AND FOX CANYON AQUIFER ZONES
 - SEMIPERMEABLE MATERIALS
 - AQUICLUDE MATERIALS OF LOW PERMEABILITY
 - UNCONFORMITY
 - WATER WELL ELECTRIC LOG
 - WATER WELL DRILLERS LOG
 - OIL WELL ELECTRIC LOG
 - OIL WELL DRILLERS LOG
- NOTE LOCATION OF AQUIFER SECTIONS SHOWN ON PLATE 6

STATE OF CALIFORNIA
 THE RESOURCES AGENCY
 DEPARTMENT OF WATER RESOURCES
 SOUTHERN DISTRICT

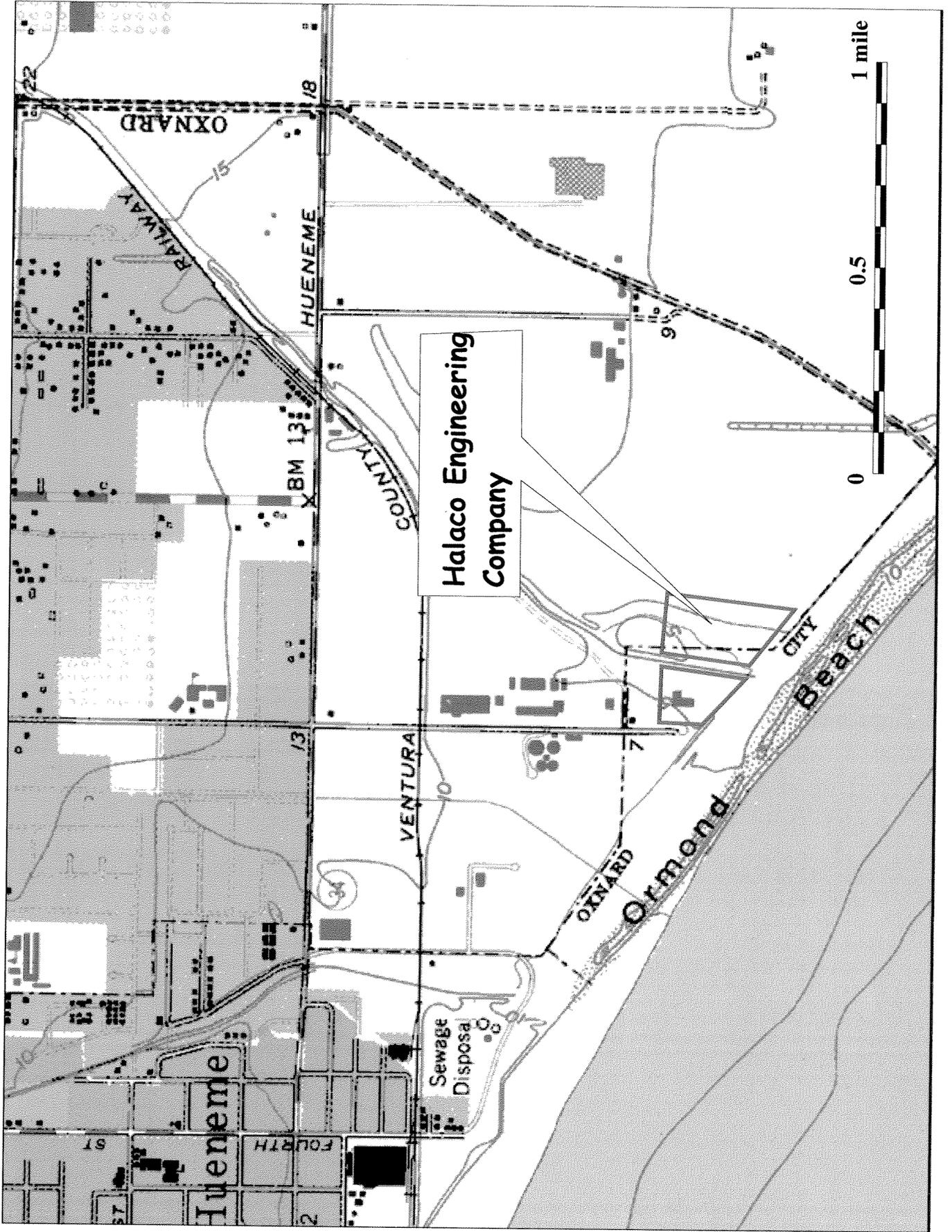
WATER RESOURCES MANAGEMENT
 VENTURA COUNTY

GEOLOGIC SECTION C-C'



**Reference
No. 28**

**Reference
No. 29**



**Reference
No. 30**

Marquis, Christina

From: Cohan, Amanda
Sent: Wednesday, September 20, 2006 7:49 PM
To: Marquis, Christina
Subject: FW: Fishing at Ormond Beach Lagoon- Halaco Engineering Site

-----Original Message-----

From: Mitguard.Matt@epamail.epa.gov [mailto:Mitguard.Matt@epamail.epa.gov]
Sent: Wednesday, September 20, 2006 5:23 PM
To: Richmond.Dawn@epamail.epa.gov
Cc: Cohan, Amanda
Subject: Fishing at Ormond Beach Lagoon- Halaco Engineering Site

During the weeks of June 19th and 26th I conducted was at the Halaco Engineering site in support of the Integrated Assessment. During that time I noted people fishing in the lagoon adjacent to the site. On one occasion I took a photo of two men fishing in the lagoon and provided that to the NPL coordinator for documentation.

Signed,

Matt Mitguard
Site Assessment Manager - Halaco Engineering Integrated Assessment

MATT MITGUARD
US Environmental Protection Agency
Superfund Division SFD 9-1
Response, Planning, & Assessment Branch
75 Hawthorne Street
San Francisco, CA 94105
Voice: 415-972-3096
Fax: 415-947-3518 or 415-947-3520

**Reference
No. 31**

**U.S. Environmental Protection Agency, Region IX,
Wetlands Regulatory Office (WTR-8)**

Subject: Summary of Site Inspection to Verify the Presence of Wetlands and Other Waters of the United States for a Portion of the Ormond Beach Specific Plan Area and Halaco Engineering Company Site, Oxnard Ventura County, California

Inspection Date: June 26-27, 2006

Conducted by: Robert A. Leidy, PhD
U.S. Environmental Protection Agency, Region IX
Wetlands Regulatory Office (WTR-8)
75 Hawthorne Street
San Francisco, CA 94105
(415) 972-3463

Conducted for: Matt Mitguard, EPA Site Assessment Manager
U.S. Environmental Protection Agency Superfund Division (SFD 9-1), Region IX
Response, Planning & Assessment Branch
75 Hawthorne Street
San Francisco, CA 94105
(415) 972-3096

Summary by: Robert A. Leidy
(date) (July 12, 2006)

Introduction

On June 26-27, 2006, I inspected portions of the Halaco Engineering Company site (known as the Site) and adjacent parcels within the Ormond Beach Specific Plan Area (known as the Area or Areas), within the City of Oxnard, Ventura County, California. A primary purpose of the visit was to verify the presence of jurisdictional waters of the United States, including wetlands, subject to regulation by the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (ACOE) under Section 404 of the federal Clean Water Act (Act), on parcels within the Areas immediately adjacent to the Site. These Areas are depicted on Figure 2-1: Site Location and Site Areas Map contained within the document titled Halaco Engineering Co., Oxnard, Ventura County, California, Integrated Assessment Sampling and Analysis Plan (IASAP) prepared for the EPA, Region 9, by Weston Solutions, Inc., and dated May 2006. The Areas subject to my inspection are referred to on Figure 2 of in the IASAP as the: (1)

Nature Conservancy Land, generally bordering the Site on the east; (2) Northern Wetlands, bordering the Site to the north; (3) Oxnard Industrial Drain (OID), which drains in a southerly direction from the Northern Wetlands, bisecting the Site, into a coastal lagoon referred to, in part, as the OID Outfall Area; and (4) lagoon within, and adjacent to the OID Outfall Area.

Methodology

I identified the presence of jurisdictional waters of the United States, including wetlands, within the Areas based on the following:

(1) Field verification of wetlands as identified in the report titled Wetlands Delineation for a Portion of the Ormond Beach Specific Plan Area (hereafter referred to as OBSPA Delineation), prepared for the City of Oxnard, by Impact Sciences, Inc., and dated November 2000. The OBSPA Delineation identifies, in part, wetlands regulated by the ACOE as identified by the 1987 ACOE Wetlands Delineation Manual (Environmental Laboratory 1987) that lie with the Areas immediately adjacent to the Site. The OBSPA Delineation contains data sheets 1-61 and C-L completed in 1998 and 1999, respectively, at various sampling plots within the Areas. I walked the Northern Wetlands and Nature Conservancy parcels, identified as Sub-areas 2 and 3, and Sub-area 4, respectively, in the OBSPA Delineation, and verified the presence/absence of wetlands using the ACOE Wetlands Delineation Manual at the OBSPA Delineation sampling points 1-61. Verification included observations of the vegetation, hydrology and soils near the sample plots, as described in the 1987 ACOE Wetlands Delineation Manual. In addition, I also observed vegetation, hydrology and soils at various other points within the Northern Wetlands and nature Conservancy parcels in order to verify the presence/absence of wetlands.

(2) Field and aerial photographic verification of surface tributary connections between the OID, OID Outfall Area, and additional channels bordering the southern boundary of the Site, to the lagoon area and Pacific Ocean.

(3) Field verification of the presence of wetlands adjacent to the OID, OID Outfall Area, additional channels bordering the southern boundary of the Site, and the lagoon area.

Results: Review and Analysis of Sampling Data Plots

I reviewed the findings contained within the report titled Wetlands Delineation for a Portion of the Ormond Beach Specific Plan Area (November 2000), for overall consistency with my field observations.

My field review is consistent with the findings for data plots 1-4, 6-13, 22-34, and 36-42, that lie within the Northern Wetlands parcel northwest and southeast of OID. The Northern Wetlands parcel supports freshwater/brackish and salt marsh wetlands and is typically dominated by hydrophytes such as *Scirpus acutus* (OBL), *Typha latifolia* (OBL), *Aster subulatus* (FACW), *Rumex crispus* (FACW), *Ambrosia psilostachya* (FAC), *Distichlis spicata* (FACW), *Spergularia marina* (OBL), *Cotula coronopifolia* (FACW+), *Atriplex triangularis* (FACW), *Polypogon monspeliensis* (FACW+), *Xanthium strumarium* (FAC+), *Juncus bufonius* (FACW+), *Frankenia salina* (FACW+), *Cressa truxillensis* (FACW), *Jaumea carnosa* (OBL), and *Salicornia virginica* (OBL). During my inspection areas at and surrounding data plots 1-2, 6-7, 28, 30-31, 33-42 were either inundated up to a maximum to a depth of up to 8 inches, or exhibited saturation to the soil surface. Inundation appears to be caused by flooding from the OID. Saturated soils within these areas are typically silty loam or silty clay loam with a matrix color of 10YR 2/1, 3/1, 3/2 without mottles, or 10 YR 3/2 or 4/2 with mottles. The wettest portions of the area were near data plot 6 which exhibited organic and silty clay loam soils with low chroma or gleyed matrix colors. Because data plot 35 did not have positive indicators of wetland hydrology during November 1998 (but did meet the hydrophytic vegetation and hydric soils criterion for wetlands), the sampling point was considered non-wetland at that time. However, during my field inspection the area at and surrounding data plot 35 was inundated, and also contained hydrophytic vegetation and hydric soils; therefore, I concluded that the sampling plot was within a wetland.

Data plots 3-4, 12-13, 22-27, and 43-44 were considered non-wetlands during 1998, and my field observations generally supported these findings.

My field observations also supported the wetland, or other water findings for data plots 45-46, 48, 50-57, and 60-62 within the Nature Conservancy Land. The Nature Conservancy Land supports salt marsh wetlands and mudflats. I observed that dominate wetland vegetation typically included *Salicornia virginica* (OBL), *Spergularia marina* (OBL), *Cressa truxillensis* (FACW), *Suaeda californica* (FACW), *Scirpus maritimus* (OBL), *Heliotropium curassavicum* (OBL), *Bassia hyssopifolia* (FAC), *Polypogon monspeliensis* (FAW+), *Parapholis incurva* (OBL), *Distichlis spicata* (FACW), *Phalaris minor* (FACW*), and *Atriplex triangularis* (FACW). Mudflats that occur throughout the area are unvegetated and typically form mosaic with salt marsh wetlands.

Ponding was observed within those portions of the Nature Conservancy Land bordering the Halaco Waste Management Unit and Halaco Waste Disposal Area during the Winter and early-Spring periods of 2006 (Robert Wise, EPA Federal On-Scene Coordinator, personal communication, June 27, 2006). I observed ponding along the southeastern portion of the Nature Conservancy Land immediately opposite the Halaco Waste Management Unit. The ponded area was connected, through a flooded channel that runs along the entire southern boundary of the Halaco Waste Management Unit, to the lagoon near the OID Outfall Area.

The channel supported wetlands along its entire length from the Nature Conservancy Land to the OID Outfall Area. I also observed that other portions of the Nature Conservancy Land had evidence of recent surface water, including sediment deposits, debris lines, silt skins, and dried algal crusts. Soils within the wetland portion of the Nature Conservancy Land are typically silty clay loam or silty loam with a matrix color of 10YR 2/1, 3/1, 3/2, 3/3 without mottles, or 10 YR 3/2 or 4/2 with mottles.

Conclusions: Summary of Findings

- (1) My field review of the Areas adjacent to the Site is consistent with the findings of the report titled Wetlands Delineation for a Portion of the Ormond Beach Specific Plan Area. I was able to verify the presence of jurisdictional wetlands within the Nature Conservancy Land and Northern Wetlands parcels consistent with the 1987 ACOE Wetlands Delineation Manual. There are wetlands immediately adjacent to the eastern boundary of the Halaco Waste Management Unit and Halaco Waste Disposal Area (refer to Figure 2-1, in the IASAP). In addition, there are wetlands adjacent to the northern boundary of the Halaco Waste Disposal Area on the northern edge of the earthen road that borders the Site. I observed that a broad geographic area of the southwest corner of the Northern Wetlands parcel where it borders the OID and Halaco Waste Disposal Area (adjacent to the road) was inundated. There was physical evidence that floodwater from the OID flows onto the Northern Wetlands parcel when the water holding capacity of the canal is exceeded. I also observed physical evidence that water had flowed from the OID onto other locations of the Northern Wetlands parcel adjacent to the OID. Thus, there is a direct surface water connection from the OID to portions of wetlands lying within in the Northern Wetlands parcel. In addition to flooding and ponding, I observed soils saturated to the surface over a broad geographic area immediately adjacent to the flooded areas. The flooded and saturated areas were dominated by hydrophytes and contained hydric soils.

Ponding was observed within those portions of the Nature Conservancy Land bordering the Halaco Waste Management Unit and Halaco Waste Disposal Area during the Winter and early-Spring periods of 2006 (Robert Wise, EPA Federal On-Scene Coordinator, personal communication, June 27, 2006). I observed ponding along the southeastern portion of the Nature Conservancy Land immediately opposite the Halaco Waste Management Unit. The ponded area was connected, through a flooded channel that runs along the entire southern boundary of the Halaco Waste Management Unit, to the lagoon near the OID Outfall Area. The channel supported wetlands along its entire length from the Nature Conservancy Land to the OID Outfall Area. I also observed that other portions of the Nature Conservancy Land had evidence of recent surface water, including sediment deposits, debris lines, silt skins, and dried algal crusts.

- (2) My field observations verified that there are surface tributary connections between the OID, OID Outfall Area, and additional channels bordering the southern boundary of the Site, to the lagoon area and Pacific Ocean. In addition, I have viewed aerial historical and recent aerial photography that shows that the lagoon has a direct, seasonal, surface water connection to the Pacific Ocean. This connection typically occurs when winter rains cause runoff in the OID and other channels to fill the receiving lagoon and breach sand bars in the Beach/Strand Area. During drier summer months when surface water levels subside, the dunes form block outflow. However, my observations indicate that even during drier months waves periodically breach the sand dunes and deposit debris and driftwood in the lagoon.

Further evidence for a tidal connection between the lagoon and the Pacific Ocean is my observation and collection of several euryhaline-marine fishes in the lagoon, including the federally-endangered tidewater goby (*Eucyclogobius newberryi*), topmelt (*Atherinopsis affinis*), staghorn sculpin (*Leptocottus armatus*), longjaw mudsucker (*Gillichthys mirabilis*), and California killifish (*Fundulus parvipinnis*). Topmelt typically spawn and rear in coastal estuaries and are omnivores that forage throughout the water column. Topmelt are known to be consumed by humans in coastal California. Predators on topmelt include piscivorous birds and fishes, including the federally-endangered California least tern (*Sterna antillarum browni*). I observed several (between 3-5 individuals) adult, California least terns foraging for fish within the lagoon. California least terns are known to commonly forage on topmelt and California killifish, two fish species that we collected from the lagoon. In addition, topmelt are regularly consumed by other estuarine and near-shore fish species (e.g., croaker species from the family Sciaenidae) that are caught and consumed by humans.

- (3) I field verified the presence of wetlands adjacent to the OID, OID Outfall Area, additional channels bordering the southern boundary of the Site, and the lagoon area. Portions of the Northern Wetlands parcel have a direct, seasonal surface hydrologic connection to the OID. In addition, portions of the Nature Conservancy Land also have a direct surface water connection to the OID Outfall Area and lagoon through a channel that runs along the southern boundary of the Halaco Waste Management Unit. This southern channel, and another channel that runs along the southern boundary of the Halaco Foundry, the OID, OID Outfall Area, and the lagoon all support adjacent wetlands.

**Reference
No. 32**

August 24, 2006

MATT MITGUARD
US Environmental Protection Agency
Superfund Division SFD 9-1
Response, Planning, & Assessment Branch
75 Hawthorne Street
San Francisco, CA 94105

Dear Mr. Mitguard,

The following are documented references to use of the J-Street Estuary, adjacent to the Halaco site in Oxnard, CA by Western Snowy Plovers (*Charadrius alexandrinus nivosus*) and California Least Terns (*Sterna antillarum browni*). I have surveyed Snowy Plovers on Ormond Beach for 8 years and Least Terns for 5 years. Much of this work has been under contract with the California Department of Fish and Game as a contract biologist.

California Least Terns nest in an area of the beach off of the south east corner of the Halaco slag heap. They nest on the dry sand between the J-Street Estuary and the Reliant Energy power plant. On arrival in mid-May the birds forage in the J-Street Estuary during courtship and continue to do so after nests are established. Once the chicks hatch they forage in the estuary to obtain fish to feed to the chicks. Once the young birds fledge they move to the sand between the estuary and the surf line to be close to the adults' foraging area. After a couple of weeks the juvenile birds join the adults in foraging in the estuary for about 1 month prior to departing to their wintering grounds along the Central and South American coast. (Personal observation 2001-2006 nesting seasons.)

~170 California Least Terns documented as nesting on the east edge of the J-Street Estuary for 1997, 1998 and 1999. "The J-Street Estuary is the prime foraging area for California Least Terns."; Miner, A. California Least Tern Breeding Survey, 1999, Ormond Beach, Ventura County. California Department of Fish and Game Report.

~120 California Least Terns documented as nesting on the east edge of the J-Street Estuary. The estuary is mapped as the primary foraging area in: O'Connell, K., 2001, California Least Tern Breeding Survey, 2001, Ormond Beach, Ventura County. California Department of Fish and Game Report.

~100 California Least Terns documented as nesting on the east edge of the J-Street Estuary. The estuary is identified as a foraging area. A foraging survey showed least tern fish catch rates up to 3.7 fish per minute in the estuary. Perry, L. 2002, California

Least Tern Breeding Survey, 2002, Ormond Beach, Ventura County. California Department of Fish and Game Report. (I participated in a foraging survey of Least Terns in the J-Street estuary this year and my results are included in the report.)

~86 Least Terns nested in the nesting area to the east of the J-Street Estuary in 2003 “The J Street estuary remained filled through the season and adult terns were observed foraging in it...from ~17 May through ~20 August.” Radasky, K. 2003. California Least Tern Breeding Survey, 2003, Ormond Beach, Ventura County. California Department of Fish and Game Report.

~40 Least Terns nested in the nesting area to the east of the J-Street Estuary between May 29, 2004 and August 8, 2004. Krolak, J. 2004. California Least Tern Breeding Survey, 2003, Ormond Beach, Ventura County. California Department of Fish and Game Report.

~54 Least Terns nested in the nesting area to the east of the J-Street Estuary in 2005. The J-Street Estuary was the primary foraging area for Least Terns. Smith, R. 2005. California Least Tern Breeding Survey, 2003, Ormond Beach, Ventura County. California Department of Fish and Game Report.

~42 Least Terns nesting in the nesting area to the east of the J-Street Estuary in 2006. One California Least Tern pair successfully nested this year on the sand bar between the J-Street Estuary and the surf line. Ormond Beach had another 31 pairs nesting at the east end of the beach near Arnold Road. Smith, R. 2006. California Least Tern Breeding Survey, 2003, Ormond Beach, Ventura County. (In preparation) California Department of Fish and Game Report.

Western Snowy Plovers forage in the area of the J-Street estuary. They feed on invertebrates on the surface of the sand from the edge of the estuary water to the water's edge at the surf line. The use of the area from the south east corner of the Halaco waste pile to the Port Hueneme beach parking lot was documented by me during the 2005 and 2006 nesting season. (April 1 to September 15, annually) During the 2005 season Snowy Plovers were present in that area on 93.8% of the bi-weekly surveys and accounted for 15.4% of all Snowy Plovers observed between Port Hueneme and Pt. Mugu naval base. During the 2006 season Snowy Plovers were present in that area on 82.4% of the surveys and represented 22.8% of all the Snowy Plovers from Port Hueneme to Pt. Mugu naval base.

East of the Halaco slag pile, and contiguous with it, is a Pickleweed (*Salicornia*) marsh. The area supports breeding Belding's Savannah Sparrows (*Passerculus sandwichensis beldingi*). This species is a State of California listed Endangered Species. Part of the life cycles of this species includes eating the pickleweed plant itself. Since the plant takes up ground water and contamination of the groundwater from adjacent sources could adversely impact the Belding's Savannah Sparrow. Though no formal survey has been conducted to determine the population of this species I have personally seen these birds set up nesting territories east of the Halaco slag pile every year for the last 15 years.

Please feel free to contact me at (805)652-0706 if I can be of any additional assistance.

Reed V. Smith, Field Biologist
104 N. Evergreen Drive
Ventura, CA 93003

Picture of Juvenile Least Tern foraging in the J- Street Estuary, August 23, 2006.



Nest Locations as of June 17, 2006 Nest numbers increased after this somewhat.

