8/8/89

Underground Gasoline Storage Tank Removal Report Del Monte Plant No. 35 Emeryville, California

Prepared for
Del Monte, USA

by
CH2M HILL

August 1989

P.O. Box 3575
San Francisco, CA 94119-3575
Cable: Delmonte

Del Monte Foods, USA

July 31, 1989

Mr. Dennis Byrne
Hazardous Materials Specialist
Alameda County Health Agency
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Byrne:

Subject: Underground Gasoline Storage Tank Removal Report
Del Monte Plant No. 35, 1250 Park Avenue, CA

Attached is the report for the removal of the underground gasoline tank that you witnessed. As explained in the introduction, separate reports will be prepared for the removal of the gasoline tank and the four fuel tanks. This latter report will be submitted shortly.

This report summarizes some existing information on Plant No. 35, documents the gasoline tank removal activities, and recommends a follow-up plan. The recommended plan includes monitoring the groundwater well for one year, of which two sampling events (two quarters) have been completed. At the end of the one year, the data will be evaluated. If the data indicate that continued monitoring is not necessary, we will submit a letter to you and the RWQCB requesting that continued monitoring no longer be required and that the Plant 35 gasoline tank case be closed.

If you have any questions or comments about this report and the recommended follow-up plan, please contact me as soon as possible.

Sincerely,

Bharat M. Shah

Bharat M. Shah
Sr. Project Engineer

cc: Lester Feldman/Regional Water Quality Control Board
San Francisco Region
Wilbur Sprague/for Del Monte
Susan Colman/CH2M Hill
V. P. Rode - SFO
W. G. Riker - SFO

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Section 1
INTRODUCTION

OBJECTIVES

The objective of this report is to summarize the underground gasoline storage tank removal and sampling activities conducted at Del Monte's Plant No. 35 located at 1250 Park Avenue, Emeryville, Alameda County, California. The activities conducted at Plant No. 35 include:

- Removal of one underground gasoline storage tank
- Soil sampling beneath the tank after removal
- Installation of one groundwater monitoring well
- Groundwater sampling

Section 1 of this report describes the background of the Plant No. 35 property including a previous tank removal and a groundwater sampling effort. Section 2 describes the removal of the gasoline tank, and documents the methods and procedures for soil sampling, monitoring well installation, and groundwater sampling. The soil and groundwater sample results are discussed in Section 3 and a recommended follow-up plan is presented in Section 4.

Four fuel oil tanks were also removed from the southwest corner of the property which has been leased for over 10 years. Because the property will be subdivided for sale, the removal of these four tanks will be described in a separate report.

BACKGROUND

The main portion of Del Monte's Plant No. 35 is located on approximately 13 acres in Emeryville, California (Figure 1-1). Del Monte acquired the property in 1928 and operated a fish oil processing facility on the western portion of the property and a fruit cannery on the remaining property until the early 1950s. After that time, the fruit cannery operations were conducted on the entire property. Previous activities conducted at the Plant No. 35 property are described in this section including removing a 550-gallon gasoline tank and groundwater sampling and analysis.

PREVIOUS TANK REMOVAL

A 550-gallon gasoline tank previously located near the general offices on Park Avenue (Figure 1-2) was removed on

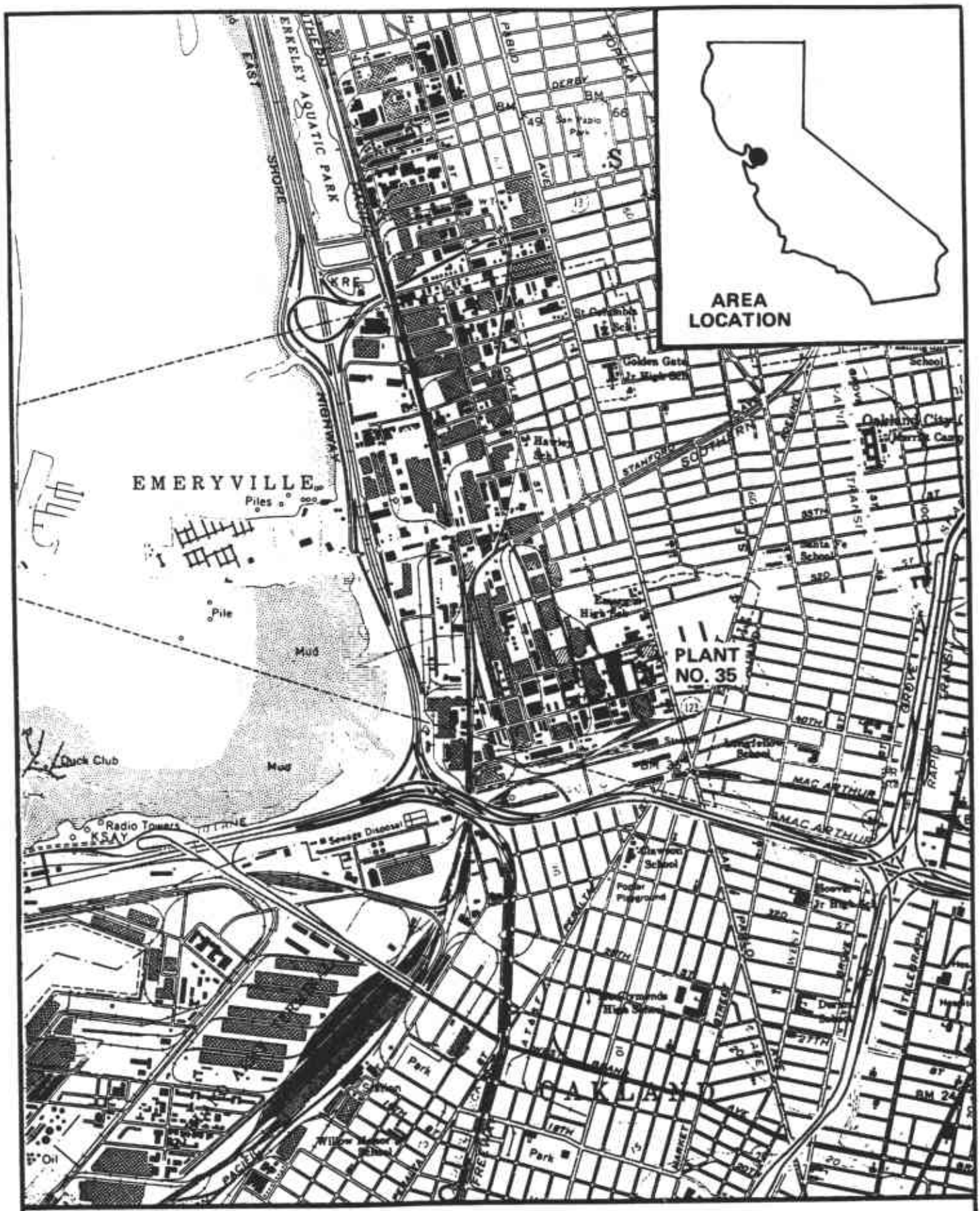

FIGURE 1-1

DEL MONTE PLANT NO.35 LOCATION MAP

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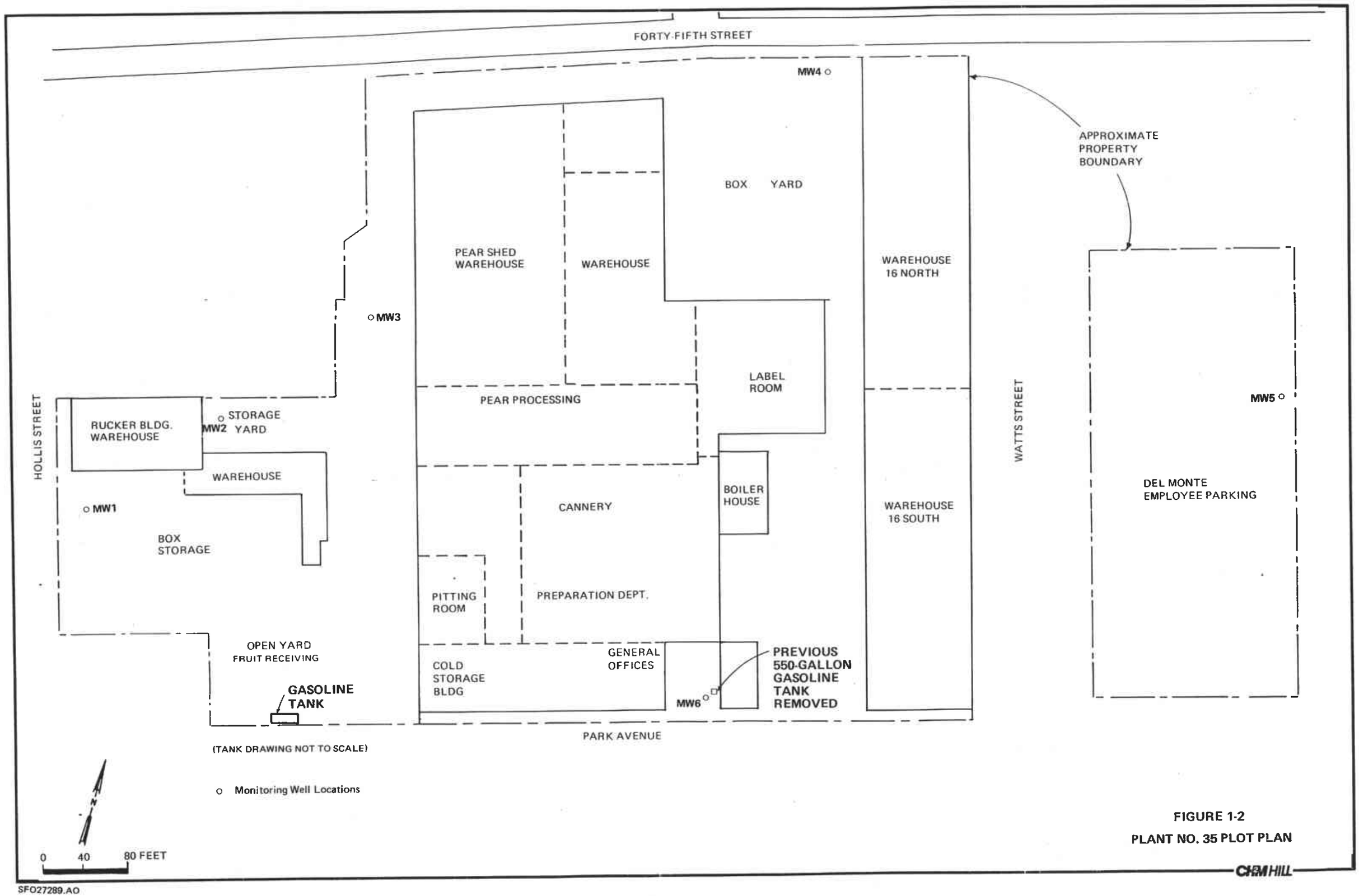

FIGURE 1-2

PLANT NO. 35 PLOT PLAN

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January 28, 1986, and a soil sample was collected from 3 feet below the bottom of the tank (Exceltech, Inc., 1986). Because of inclement weather and because the excavation was near a building, the excavation was backfilled pending laboratory results. The soil sample data are presented in Table 1-1. On February 7, 1986, one soil boring was drilled next to the backfilled area, and another about 13 feet away in the down-gradient direction. Soil samples were collected from the first boring, and groundwater which accumulated in the boreholes was collected from both locations. (These borings were not completed wells.) The report is unclear, but it appears that the boring 13 feet from the tank was backfilled (material unknown) and covered with an asphalt patch, and a monitoring well was installed in the boring adjacent to the tank excavation. The monitoring well was sampled in August 1987; these data are also shown in Table 1-1 (Exceltech, Inc., 1987).

Table 1-1
EXISTING DATA FROM 550-GALLON UST CLOSURE

Sample Type	Date of Sample	Depth of Sample (feet)	Total Volatile Hydrocarbons[a] (ppm)	Benzene (ppm)	Toluene (ppm)	Xylene (ppm)	Ethyl-benzene (ppm)
Soil	1/28/86	10[b]	1,500	46	45	22	-
	2/07/86	7[c]	150	0.54	1.5	0.94	-
	2/07/86	10[c]	17	0.13	0.098	0.063	-
	2/07/86	13[c]	1.3	0.014	0.064	0.048	-
	2/07/86	16[c]	0.10	0.018	0.033	0.031	-
Water	2/07/86	16[d]	6.2	0.044	0.04	0.025	-
	2/07/86	13[e]	1.9	0.033	0.024	0.020	-
	8/07/87	16[f,g]	<0.05	<0.0005	0.0012	0.0006	-
	12/06/88	16[f,g]	<1	<0.001	<0.002	<0.003	<0.001
	5/12/89	16[f,g]	0.910	<0.0003	<0.0003	0.011	<0.0003
	7/10/89	16[f,g]	0.210	<0.0003	<0.0003	0.006	<0.0003

[a]Equivalent to total petroleum hydrocarbons as gasoline (personal communication with Trace Analysis Laboratories, Inc., February 1, 1989).
[b]Soil sample collected from the tank excavation, 3 feet below the tank bottom.
[c]Soil samples collected from a boring located adjacent to excavated tank location.
[d]Water sample collected from a soil boring located adjacent to excavated tank location. It does not appear that this was a completed monitoring well.
[e]Water sample collected from a soil boring 13 feet from excavated tank location.
[f]Water sample collected from completed monitoring well at same location as in d.
[g]Samples collected by CH2M HILL.

Note: ppm = parts per million in mg/kg for soil and mg/l for water.

Sources: Letter from Michael Hansen, Exceltech, Inc. to Mr. Todd Simon, Del Monte Corporation, dated February 25, 1986. Property Assessment Report, Del Monte Plant No. 35, by CH2M HILL, dated June 1989.

On December 6, 1988, and May 12 and July 7, 1989, additional groundwater samples were collected from the monitoring well (designated MW6 in Figure 1-2) near this tank. As seen in Table 1-1, the 1986 through 1989 data show that the concentrations in the groundwater have decreased over time with some fluctuation in total petroleum hydrocarbons (TPH) as gasoline and xylene concentrations.

GROUNDWATER SAMPLING

As part of a property assessment conducted in December 1988, five groundwater monitoring wells were installed around the Plant No. 35 property (Figure 1-2). Water levels were measured in the wells to determine the groundwater flow direction. Shallow groundwater exists beneath the property at a depth of approximately 11 feet below ground surface (bgs) in MW1 and MW2, and approximately 7 feet bgs in MW3, MW4, MW5, and MW6. This shallow groundwater flows horizontally from the northeast to west southwest under a horizontal hydraulic gradient of about 0.015 feet/foot.

Groundwater quality data collected from beneath Plant No. 35 during the property assessment are shown in Table 1-2 for comparison to California secondary drinking water standards (Table 1-3). As seen in these tables, the groundwater beneath the Plant No. 35 property exceeds the recommended secondary maximum contaminant level (MCL) for total dissolved solids and electrical conductivity, and as such, would probably not be recommended for a drinking water supply.

Table 1-2
EXISTING GROUNDWATER DATA

	Concentration (ppm)		
Well No.	Total Dissolved Solids	Electrical Conductivity (umohs/cm)	Chloride
MW1	532	1,010	24.8
MW2	516	886	30.3
MW3	610	972	29.5
MW4	570	849	34.5
MW5	668	1,100	27.7
MW6	453	683	20.6

Table 1-3
CALIFORNIA SECONDARY DRINKING WATER STANDARDS

Constituent	Maximum Contaminant Levels (MCLS) (ppm)		
	Recommended	Upper	Short-Term
Total Dissolved Solids	500	1,000	1,500
Electrical Conductivity (umhos/cm)	900	1,600	2,200
Chloride	250	500	500

Source: CCR, Title 22, Section 64473.

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Section 2
INVESTIGATION METHODS AND PROCEDURES

In the following subsections, the methods and procedures for the tank removal activities conducted in 1989 and the associated soil and groundwater sampling are described.

INITIAL SOIL SAMPLING

Soil samples were collected on February 8, 1989, prior to tank removal, to assess whether a potential release had occurred. One soil boring (EMS-3) was drilled near the anticipated location of the gasoline tank (Figure 2-1).

Before sampling, equipment was decontaminated by washing with Alconox, rinsing twice with clean water, and rinsing once with distilled water. The brass sleeves used for soil sampling were also rinsed with isopropanol and allowed to dry.

The soil boring was drilled using 8-inch outer diameter hollow stem augering equipment operated by Exploration Geoservices, Inc. Soil samples were collected by driving a 2.5-inch-diameter, 18-inch-long Modified California sampler containing three 6-inch brass sleeves ahead of the augers. The sampler was advanced so that the middle sleeve was at the desired sample depth. A sample was collected between 6 and 6.5 feet bgs and between 8 and 8.5 feet bgs.

The samples were analyzed for TPH as gasoline and diesel, and for BTEX compounds (benzene, toluene, ethylbenzene, and xylene). The analytical results are shown in Table 2-1. The laboratory data sheets and chain-of-custody records are provided in Appendix A.

The soil cuttings were stored in a 55-gallon drum on the Plant No. 35 property until laboratory results were available. In March 1989, the soil was spread on a plastic sheet and aerated with the soil removed during excavation of the gasoline tank. Sampling and disposal of the aerated soil are described in the next subsection.

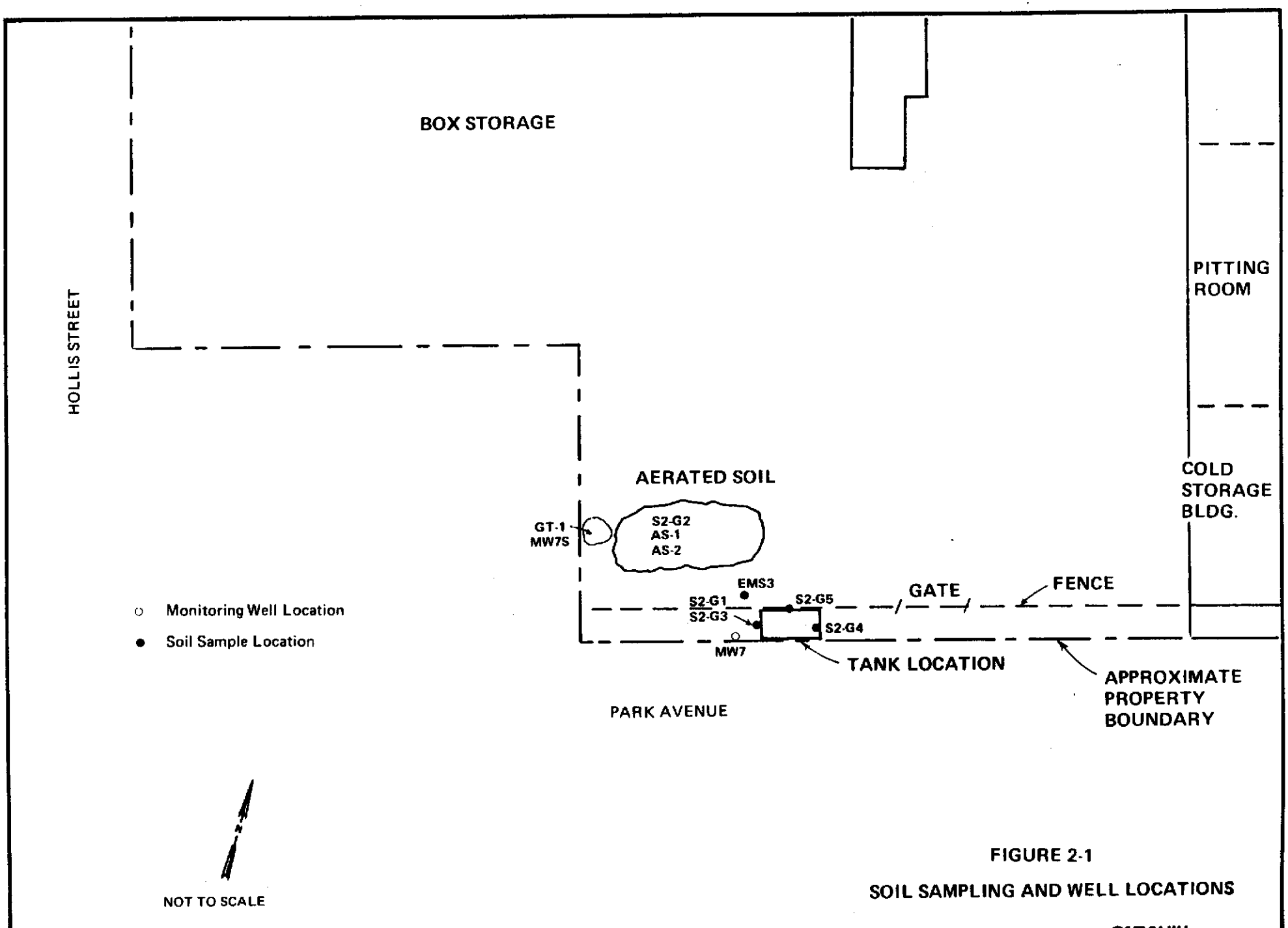

FIGURE 2-1

SOIL SAMPLING AND WELL LOCATIONS

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Table 2-1
LABORATORY RESULTS OF INITIAL SOIL SAMPLING

Compounds Detected	Soil Sample EMS-3 6 ft.	8 ft.
TPH as diesel	<10	<10
THP as gasoline	1.5	0.9
Benzene	<0.005	<0.005
Ethylbenzene	<0.005	<0.005
Toluene	<0.005	<0.005
Xylenes, total	<0.005	<0.005

Notes:

Laboratory analyses performed on samples: Total Petroleum Hydrocarbons (TPH) as diesel: Preparation by EPA Method 3550 (sonication), analysis by modified EPA Method 8015 (GC/FID)

Total Petroleum Hydrocarbons as gasoline: Preparation by EPA Method 5030, analysis by modified EPA Method 8015 (GC/FID)

Benzene, toluene, ethylbenzene, xylene: Preparation by EPA Method 5030, analysis by EPA Method 8020

UNDERGROUND STORAGE TANK

TANK REMOVAL

An underground gasoline storage tank with a capacity of about 550 gallons was removed from the Plant No. 35 property on March 22, 1989. The removal activities followed California Regional Water Quality Control Board (RWQCB) Leaking Underground Fuel Tank (LUFT) guidelines (RWQCB, 1988). The Bay Area Air Quality Management District was notified in writing one week prior to removing the tanks as required by Regulation 8, Rule 40. The gasoline pumps were removed over 10 years ago and, at about that time, the contents of the tanks were also pumped out.

Prior to removal, the tank was rinsed with water until the explosimeter indicated that the lower explosive limit (LEL) was at a safe level. Approximately 15 pounds of dry ice was then added to the tank. After about 45 minutes to one hour, the LEL was approximately 40 percent and oxygen was at zero percent. The tank was removed and placed on a flat-bed truck. Mr. Jim Eversole, Assistant Chief Fire Marshall,

City of Emeryville, was present to witness the removal. No large holes were apparent in the tank. Some vapor from the dry ice was escaping from some small holes at the bottom of the fill end of the tank. The rinsewater and tank were transported and disposed by H&H Ship Service Corp. Copies of the manifests are included in Appendix B.

The soil backfill surrounding the tank consisted of sandy silt. Silty clay was encountered at about 0.5 foot below the bottom of the tank or at about 6.5 feet below ground surface.

SOIL SAMPLING

Soil samples were collected from 3 sides of the excavation as shown in Figure 2-1 by bringing a shovel full of soil up with a backhoe, removing the top layer of soil, and quickly driving a clean 6-inch brass tube into the soil with a hammer. The brass tubes were decontaminated before coming on the property by washing with Alconox, rinsing with clean water, rinsing with distilled water, then rinsing with isopropanol, allowed to dry, and stored in sealed plastic bags.

The samples were labeled, sealed with aluminum-lined caps and electrical tape, placed in plastic bags, and stored in a cooler. Chain-of-custody records were completed and the coolers were delivered to the laboratory the same day. All samples were analyzed for TPH as gasoline (Modified EPA Method 8015) and BTEX compounds (EPA Method 8020). Laboratory data sheets and chain-of-custody records are provided in Appendix A.

Mr. Dennis Byrne, Hazardous Materials Specialist, Alameda County Health Agency, was present to witness soil sampling. Per concurrence by Mr. Byrne, soil was not removed and a sample was not collected on the south side of the excavation because of potential structural damage to a 12 kilovolt power line that rested in loose gravel backfill beneath the sidewalk. A sample (S2-G1) was collected from the west end (downgradient end) of the excavation from about 6 feet below ground surface. An organic vapor meter (OVM) was used to assess the extent of TPH as gasoline contamination in the field. The OVM indicated about 350 ppm volatile organics in this sample. The analytical results showed the sample contained 280 ppm TPH as gasoline and 1.5 ppm xylene (Table 2-2). The silty clay beneath the tank contained approximately 1 to 2 ppm volatile organics based on the OVM. It appeared that the gasoline had migrated only a limited extent into the silty clay. A small amount of water was present in the excavation, but not enough to collect a sample.

Table 2-2
SOIL SAMPLING RESULTS FROM TANK REMOVALS

Sample ID[a]	Field OVM	Concentration (ppm) TPH Gasoline	TPH Diesel	BE[b]	Toluene	Xylene	Lead TTLC	Lead STLC
Gasoline Tank Removal								
S2-G1	350	280	<10	<0.1	<0.1	1.5	NA	NA
S2-G3	22	<10	<10	<0.1	<0.1	<0.1	NA	NA
S2-G4	ND	<10	<10	<0.1	<0.1	<0.1	NA	NA
S2-G5	465	470	<10	<0.1	<0.1	5.4	NA	NA
Soil Stockpile								
S2-G2	NA	220	<10	<0.1	0.14	0.72	NA	NA
AS-1	NA	18	NA	NA	NA	NA	NA	NA
AS-2	NA	NA	NA	NA	NA	NA	140	3.8
Well Cuttings								
GT-1	NA	52	NA	NA	NA	NA	NA	NA
MW7S	NA	<10	NA	NA	NA	NA	NA	NA
S-2	NA	NA	NA	NA	NA	NA	36	0.5

NA: Not analyzed
ND: Not detected
<10: Not detected at the detection limit shown
[a]Sampling Locations (refer to Figure 2-1 in text):
S2-G1: West end of gasoline tank excavation before soil removal
S2-G3: West end of gasoline tank excavation after soil removal
S2-G4: East end of gasoline tank excavation
S2-G5: Fence (north) side of gas tank excavation
S2-G2: Soil removed from gasoline tank excavation--before aeration
AS-1: Soil removed from gasoline tank excavation--after aeration
AS-2: Soil removed from gasoline tank excavation--after aeration (for lead analysis)
GT-1: Well cuttings from MW7--before aeration
MW7S: Well cuttings from MW7--after aeration
S-2: Well cuttings from MW7--after aeration (for lead analysis)
[b]Benzene, Ethylbenzene

As much of the contaminated soil as possible was removed from the excavation. After additional soil was removed from the west end, a second sample (S2-G3) was collected. The OVM indicated about 22 ppm volatile organics. The laboratory analysis showed that the sample did not contain detectable concentrations of TPH as gasoline or BTEX compounds (Table 2-2) indicating that most of the gasoline-contaminated soil was removed from the west end.

Soil was removed from the east end of the excavation until the level of organic vapors was below the detection limit of the OVM. A soil sample (S2-G4) was then collected from the backhoe bucket of soil taken from about 6 feet below the

ground surface (Figure 2-1). The laboratory analysis (Table 2-2) showed that the sample did not contain detectable concentrations of TPH as gasoline or BTEX compounds indicating that most of the contaminated soil was removed from the east end.

Only a few inches could be removed from the north side of the excavation because of potential structural damage to the fence. A sample was collected (S2-G5) and the OVM indicated about 465 ppm volatile organics. The laboratory results showed the sample contained 470 ppm gasoline and 5.4 ppm xylene (Table 2-2). Per concurrence by Mr. Byrne, after the laboratory data were available, no additional soil excavation was conducted.

After the sampling results were received, the excavation was filled with pea gravel, and the sidewalk was replaced and inspected by the City of Emeryville Building Department.

SOIL AERATION AND DISPOSAL

During excavation of the tank, soil containing TPH as gasoline was encountered as discussed in the previous section. Thereafter, each backhoe bucket of soil was monitored with the OVM. As seen by the data presented in the previous section, there was a good correlation between the OVM concentrations measured in the field and the laboratory results. The OVM appears to yield conservative results to assess TPH as gasoline contamination in soil at this site, and therefore, the OVM was a reliable indicator. The soil containing TPH as gasoline was separated and stored on a plastic sheet on the property, and the clean soil was used as backfill in the excavation where the 4 fuel oil tanks were removed (to be described in another report, as mentioned in Section 1).

A composite soil sample (S2-G2) was collected from the pile of contaminated soil before aeration. The sample was collected from an area of the pile that contained a representative mixture of visibly contaminated and clean soil. The soil was then spread on plastic and aerated. As shown in Table 2-2, the soil contained gasoline, xylene, and toluene before aeration. A composite sample (AS-1), which contained 18 ppm TPH as gasoline (Table 2-2), was collected on May 4, 1989, after aeration. Another composite sample (AS-2) was collected on May 25, 1989, to be analyzed for lead as required prior to disposal in a landfill. The soil contained 140 mg/kg of total lead (TTLC method) and 3.8 mg/l soluble lead (STLC method) (Table 2-2). The laboratory data sheets and the chain-of-custody records are provided in Appendix A.

The soil was transported by Kern Backhoe Services, Inc. to Liquid Waste Management's Class II landfill, in McKittrick, California. A copy of the nonhazardous waste hauler record is provided in Appendix B.

MONITORING WELL INSTALLATION AND SAMPLING

A groundwater monitoring well (MW7) was installed approximately 6 feet downgradient of the tank excavation as shown in Figure 2-1. The well installation, development, and sampling activities are described in this section.

WELL INSTALLATION

CH2M HILL developed well construction specifications following California RWQCB guidelines and retained Exploration Geoservices, Inc. of San Jose, California to drill and install the monitoring well. The absence of underground utilities in the vicinity of the well locations was verified first by contacting Underground Utilities Alert and subsequently by contacting specific utility companies. Clearance from overhead powerlines was verified with Pacific Gas and Electric. Prior to drilling, a 16-inch wide square hole was cut through the existing concrete.

The well was installed on May 3, 1989. Before installation, the drilling equipment was decontaminated by steam cleaning.

The borehole for the monitoring well was drilled using a Mobile B-24 drill with 6-inch outside diameter flight augers. Flight augers were suitable for well installation because of the cohesiveness of the soil. The borehole was drilled to about 25 feet bgs, which is about 15 feet below the bottom of the tank as required by the California RWQCB LUFT Manual. Once total depth was reached, the augers were withdrawn from the borehole and the monitoring well was installed within the open 6-inch diameter boring.

The monitoring well was constructed with 2-inch outer diameter, flush threaded, schedule 40 PVC casing and 0.020-inch slot screen. Threaded caps were placed on the bottom of the casings. The screen extended from about 5 feet to about 25 feet bgs.

Clean, washed Monterey sand (Lone Star No. 3, 8 x 20 sieve size) was used for sand pack. The elevation of the sand pack was continually sounded as the sand was being added. The sand pack was installed from the bottom of the borehole upward to approximately 1.5 to 2 feet above the top of the screen.

After the sand pack was in place, a 1-foot-thick bentonite pellet seal was placed on top of the gravel pack. Water was added to the borehole and the bentonite pellets were allowed to hydrate for 15 to 30 minutes to form a seal before well construction continued.

An annular seal of portland cement concrete was installed from the top of the bentonite (2.5 feet bgs) to the traffic box at ground surface. The well was completed below grade with a water-tight traffic box. The top of the traffic box protrudes approximately 0.5 inch above the top of the existing pavement ("ground surface") to promote drainage. A locking, watertight well cap and lock were placed in the top of the PVC casing upon completion of the well.

During drilling, the subsurface lithology was logged from drill cuttings. The well log is provided in Appendix A. The elevation of top of the well casing was surveyed to the nearest 0.01 foot. The survey data are also provided in Appendix A.

WELL DEVELOPMENT

The well was developed on May 4, 1989, both by bailing and pumping with a bilge pump and gas-powered centrifugal pump until the water appeared to be free of fine-grained particles. A total of approximately 77 gallons was purged from MW7.

Water from steam cleaning drilling equipment, from cleaning development and sampling equipment, and from well development was temporarily stored in 55-gallon drums on the property.

While drilling the well, the odor of gasoline was evident in soil cuttings from MW7. The drill cuttings were stored in a 55-gallon drum and a sample of the cuttings was collected. The sample of MW7 cuttings (GT-1) contained 52 ppm TPH as gasoline (Table 2-2). The soil was then spread on a plastic sheet and aerated. After aeration, a sample of MW7 cuttings (MW7S) did not contain detectable concentrations of TPH as gasoline (Table 2-2). A sample was also collected (S-2) for lead analysis. The sample contained 36 mg/kg of total lead (TTLC method) and 0.5 mg/l of soluble lead (STLC method) (Table 2-2). The laboratory data sheets and chain-of-custody records are provided in Appendix A. The soil from MW7 was transported with the soil removed from the tank excavation by Kern Backhoe Services, Inc. to Liquid Waste Management's Class II landfill, in McKittrick, California.

GROUNDWATER SAMPLING

MW6 and MW7 were sampled on May 12, 1989, at least 24 hours after MW7 was developed, and on July 10, 1989. Prior to sampling at each well, the well sounder, clear bailer, rope, and plastic hose used for purging the wells were decontaminated with an Alconox and tap water wash followed by a tap water rinse. The sampling bailer was also rinsed with isopropanol then distilled water. MW6 was sampled first because it was assumed to be the least contaminated well, followed by MW7.

Before collecting groundwater samples, the water elevation was measured to the nearest 0.01 inch with an electric well sounder, and free-floating petroleum product thickness was measured using a clear, acrylic bailer. No free product or petroleum sheen was observed on the surface of the water standing in the wells; the odor of gasoline, however, was noted in MW7.

Standing water was purged from the wells using a hand-powered suction pump with a clean plastic hose. Approximately 12 gallons (about 7 well volumes) were purged from MW6 and about 13 to 18 gallons (about 4 well volumes) were removed from MW7. While evacuating the water from the well, the specific conductance was measured. A water sample was then collected using a Teflon bailer and transferred to the appropriate sample containers. The 40-ml VOA bottles were carefully filled to prevent any aeration or formation of air bubbles within the containers after sealing. Sample containers were labeled, decontaminated with Alconox and clean water, placed in zip-lock plastic bags, and stored in an ice-filled cooler. Chain-of-custody records were completed and samples were delivered to the laboratory the same day. All discarded groundwater was stored in 55-gallon drums on the property.

The groundwater samples collected from MW6 and MW7 were analyzed for TPH as gasoline (Modified EPA Method 8015) and BTEX compounds (EPA Method 8020). Laboratory data sheets and chain-of-custody records are provided in Appendix A. The groundwater sampling results for MW6 and MW7 are shown in Table 2-3 and are discussed in Section 3.

Table 2-3
GROUNDWATER SAMPLING RESULTS (ppm)

Well	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylene
MW6[a]	5/12/89	0.91	<0.0003	<0.0003	<0.0003	0.011
	7/10/89	0.21	<0.0003	<0.0003	<0.0003	0.006
MW7	5/12/89	1.00	0.049	0.0016	0.0045	0.0059
	7/10/89	0.50	0.0052	0.0006	<0.0003	0.0056

[a]See Table 1-1, in Section 1, for earlier sample data.
<0.0003: Not detected at detection limit shown.

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Section 3
DISCUSSION OF RESULTS

This section discusses the results of the soil and groundwater sampling conducted at the Plant No. 35 property.

SOILS

It appears that most of the gasoline-contaminated soil was associated with the sandy silt backfill and only minimal contamination extended into the silty clay beneath the tank. Most of the soil contaminated with TPH as gasoline was removed prior to backfilling the excavation, thus reducing a continuing source of gasoline contamination to the groundwater. The extent of remaining contamination is addressed below.

The initial soil sample collected from the west end of the excavation contained 280 ppm TPH as gasoline and 1.5 ppm xylene. Soil was removed from the excavation until the sample did not contain detectable concentrations of TPH as gasoline. The soil cuttings from MW7, about 6 feet downgradient of the west end, contained 52 ppm of TPH as gasoline.

On the north side of the excavation, as much soil as possible was removed without causing damage to the property fence. A sample of the soil on this side contained 470 ppm of TPH as gasoline. Per concurrence with Dennis Byrne, Alameda County Health Agency, removal of soil at this concentration was not required. The extent of gasoline contamination on this side appears to be limited, however, based on samples collected at EMS3 to the northwest (Figure 2-1). This sample contained 1.5 ppm TPH as gasoline at 6 feet below ground surface (bgs) and 0.9 ppm at 8 feet bgs (Appendix A).

Soil was also removed from the east end of the excavation until a sample did not contain detectable concentrations. On the south side of the excavation, however, soil was not removed and samples were not collected because of potential problems with the 12 kilovolt electrical line in the sidewalk. This was also with concurrence with Dennis Byrne.

GROUNDWATER

Groundwater was encountered at about 8 feet bgs in MW6 and at approximately 7 feet bgs in MW7. There was no free-floating product or sheen evident on the water table in

either well. As seen in Table 2-3, concentrations of benzene, toluene, and ethylbenzene are below detection in MW6 and TPH as gasoline and xylene concentrations have decreased. In MW7, all concentrations have decreased in the 2 month period between May and July.

According to the Water Quality Control Plan for the San Francisco Bay Basin (California RWQCB, San Francisco Region, 1982, 1986), potential beneficial uses of groundwater applicable to the main groundwater basins are municipal supply, industrial process water supply, industrial service supply, and agricultural supply. The Emeryville area is above the northern East Bay Area of the Santa Clara Valley groundwater basin. The lack of attention to the northern area of this basin tends to indicate a low level of groundwater use (RWQCB, 1982 and 1986; DWR, 1963 and 1975; USGS, 1972 and 1988). This may be because of limited groundwater yield due to the extensive area covered by the bay mud, and because the northern area of Alameda County is highly developed and industrialized. In addition, the groundwater beneath Plant No. 35 is above the recommended California secondary drinking water standards for total dissolved solids and electrical conductivity (Tables 1-2 and 1-3 in Section 1).

State and federal drinking water standards and aquatic toxicity levels for organic chemicals are provided in Table 3-1 as a point of reference only. These standards do not specifically apply to the groundwater at Plant No. 35 because this water is not a source of drinking water and aquatic wildlife is not directly exposed to it.

Table 3-1
COMPARISON TO STATE AND FEDERAL CRITERIA

	Concentration (ppm)[a]		Calif. Action Level[b]	Calif. MCL[c]	Fed. MCL[d]	Lowest Reported Effects Level (ppm)[e]	
Compound	MW6	MW7	(ppm)	(ppm)	(ppm)	Freshwater	Saltwater
TPH as Gasoline	0.21	0.5	--	--	--	--	--
Benzene	<0.0003	0.0052	--	0.001	0.005	5.3	5.1
Toluene	<0.0003	0.0006	0.1	--	--	17.5	6.3
Ethylbenzene	<0.0003	<0.0003	--	0.680	--	32	0.43
Xylene	0.006	0.0056	--	1.750	--	--	--

[a]From Table 2-3, in Section 2.
[b]California ALs are nonpromulgated guidance levels developed by the California DHS Water Supply Branch.
[c]California MCLs were promulgated in early 1989, CRC, Title 22, Section 64444.5.
[d]Safe Drinking Water Act MCLs listed in 40 CFR 141.
[e]Not enough data were available to derive national water quality criteria for the protection of freshwater and saltwater aquatic life. The values reflect the lowest reported acute toxicity effects level; from 40 FR 79318, November 28, 1980.

As shown in Table 3-1, toluene, ethylbenzene, and xylene in groundwater samples collected from the shallow groundwater zone beneath Plant No. 35 are all below the California and/or federal criteria. The benzene concentration in MW7 is above the California and federal maximum contaminant level (MCL) for drinking water. The groundwater beneath the Plant No. 35, however, is not currently used for drinking water. In addition, it does not appear that future beneficial uses would be impaired as seen by the reduction in concentrations between May and July (Table 2-3).

Potential receptors of the shallow groundwater may be aquatic life because the groundwater flows westward towards the San Francisco Bay. The benzene, toluene, and ethylbenzene concentrations currently beneath Plant No. 35, however, are below the lowest reported acute toxicity effects level for freshwater and saltwater aquatic life, and further attenuation would be expected before this shallow groundwater migrates to the Bay.

SF034/015.50

Section 4
RECOMMENDED FOLLOW-UP PLAN

The recommended follow-up plan is continued monitoring and no further soil or groundwater remediation. This is recommended for the following reasons:

1. The tank and probably most of the contaminated soil have been removed from the property. Therefore, the source of groundwater contamination has been reduced.

2. The concentrations of toluene, ethylbenzene, and xylene in the shallow groundwater do not exceed federal or California criteria.

3. Although the concentration of benzene in MW7 exceeds the California drinking water MCL, the groundwater is not currently used as a drinking water source. Because of decreasing concentrations in MW7, it does not appear that future beneficial uses would be impaired.

4. Potential receptors may be aquatic life in the San Francisco Bay. The concentrations currently beneath Plant No. 35 do not exceed the lowest reported acute toxicity effects level for freshwater and saltwater aquatic life, and further attenuation of contaminants would be expected before the groundwater migrates to the Bay.

The groundwater in MW6 and MW7 will be monitored quarterly for TPH as gasoline and BTEX compounds. Monitoring will be conducted for two more quarters. The monitoring data will be submitted in monitoring reports to the Alameda County Health Agency, Division of Hazardous Materials, Department of Environmental Health, and the California RWQCB, San Francisco Region. At the end of one year, the data will be evaluated. If the data indicate that continued monitoring is not necessary, a letter will be submitted to both agencies requesting that continued monitoring no longer be required and the Plant No. 35 gasoline tank closure case be closed. Notification to future owners of the property will include these requirements.

Section 5
REFERENCES

California Regional Water Quality Control Board. Leaking Underground Fuel Tank Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure. May, 1988.

California Regional Water Quality Control Board. San Francisco Region, Water Quality Control Plan for the San Francisco Bay Basin. 1982, 1986.

Department of Water Resources. California's Ground Water, Bulletin No. 118. September, 1975.

Department of Water Resources. Bulletin No. 13, Alameda County Investigation. March, 1963.

Exceltech, Inc. Letters from Michael Hansen to Mr. Todd Simon, Del Monte Corporation, dated January 30, 1986, February 5, 1986, and February 25, 1986.

Exceltech, Inc. Letter from Sharon Beldon to Mr. John Upmyer, Del Monte Corporation. March 8, 1988.

U.S. Department of the Interior, Geological Survey, Water Resources Division. A Summary View of Water Supply and Demand in the San Francisco Bay Region, California. July 14, 1972.

U.S. Department of the Interior, Geological Survey, Water Resources Data. California, Water Year 1988 (Water-Data Report CA-88-A). April, 1989.

SFO34/010.50

Appendix A
FIELD AND LABORATORY DATA SHEETS

This appendix contains the following:

- Soil Data Sheets
- Groundwater Data Sheets
- Monitoring Well Boring Log
- Surveying Data

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-02-248

Received: 08 FEB 89
Reported: 22 FEB 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SFO 27289.AD.FW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-248-1	EMS 1-6	08 FEB 89
02-248-2	EMS 1-9	08 FEB 89
02-248-3	EMS 2-6	08 FEB 89
02-248-4	EMS 2-9	08 FEB 89
02-248-5	EMS 3-6	08 FEB 89

PARAMETER	02-248-1	02-248-2	02-248-3	02-248-4	02-248-5
C18-C30 Hydrocarbons, mg/kg	<10	<10	<10	<10	<10
Fuel Hydrocarbons, Volatile (Low Level), mg/kg	<0.1	<0.1	0.3	<0.1	1.5

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-02-248

Received: 08 FEB 89
Reported: 22 FEB 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SFO 27289.AD.FW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-248-1	EMS 1-6	08 FEB 89
02-248-2	EMS 1-9	08 FEB 89
02-248-3	EMS 2-6	08 FEB 89
02-248-4	EMS 2-9	08 FEB 89
02-248-5	EMS 3-6	08 FEB 89

PARAMETER	02-248-1	02-248-2	02-248-3	02-248-4	02-248-5
EPA Method 8020					
Date Extracted	02/15/89	02/15/89	02/15/89	02/15/89	02/16/89
1,2-Dichlorobenzene, ug/kg	<5	<5	<5	<5	<5
1,3-Dichlorobenzene, ug/kg	<5	<5	<5	<5	<5
1,4-Dichlorobenzene, ug/kg	<5	<5	<5	<5	<5
Chlorobenzene, ug/kg	<5	<5	<5	<5	<5
Benzene, ug/kg	<5	<5	<5	<5	<5
Ethylbenzene, ug/kg	<5	<5	<5	<5	<5
Toluene, ug/kg	<5	<5	<5	6	<5
Total Xylene Isomers, ug/kg	---	---	---	---	---
Other EPA Method 8020					

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-02-248

Received: 08 FEB 89
Reported: 22 FEB 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SFO 27289.AD.FW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-248-6	EMS 3-9	08 FEB 89

PARAMETER	02-248-6
C18-C30 Hydrocarbons, mg/kg	<10
Fuel Hydrocarbons, Volatile (Low Level), mg/kg	0.9
EPA Method 8020	
Date Extracted	02/16/89
1,2-Dichlorobenzene, ug/kg	<5
1,3-Dichlorobenzene, ug/kg	<5
1,4-Dichlorobenzene, ug/kg	<5
Chlorobenzene, ug/kg	<5
Benzene, ug/kg	<5
Ethylbenzene, ug/kg	<5
Toluene, ug/kg	<5
Total Xylene Isomers, ug/kg	<5
Other EPA Method 8020	---

Preliminary results were transmitted to you by facsimile on 02.22.89.
Invoice amount adjusted to correct for discrepency with original price quote
(shared difference = $225.00)
TB 02.23.89

Sim D. Lessley, Ph.D., Laboratory Director

CHM Hill CHAIN OF CUSTODY RECORD

LOG # 8902248

PROJECT NUMBER	PROJECT NAME
SFO 17289.A0.FW	Plant 35 Tanks

CLIENT NAME: Del Monte

REPORT TO: Susan Colman

COPY TO:

REQUESTED COMPLETION DATE: 2/22/89

LABORATORY: Brown & Caldwell

STA NO	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION	NUMBER OF CONTAINERS	TPH as gas - 5030	TPH as diesel - sonication	BTEX - EPA 8020	Solvents - 8010
1	2/8/89	10:10		✓	EMS1-6	1	✓	✓	✓	✓
1		10:30		✓	EMS1-9	1	✓	✓	✓	✓
2		10:40		✓	EMS2-6	1	✓	✓	✓	✓
2		11:05		✓	EMS2-9	1	✓	✓	✓	✓
3		11:55		✓	EMS3-6	1	✓	✓	✓	
3	↓	12:05		✓	EMS3-9	1	✓	✓	✓	

ANALYSES REQUESTED

FOR LAB USE ONLY

LAB # _____

PROJ # _____

ACK _____ VERIFIED _____

DATE INVOICED _____

NO. OF SAMPLES _____ pg _____ of _____

DISPOSITION: D R _____ DATE

REMARKS

Note methods -

TPH as gas → 5030

TPH diesel → sonication

fuel smell

↓

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME
1	2/8/89 12:30	2	2/8/89 12:40	3 Monika Scott	2/9/89 12:43

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY LAB: (SIGNATURE)	DATE/TIME
4		5		6		7	

REMARKS _____

SAMPLING PROGRAM: SDWA ☐ NPDES ☐ RCRA ☐ OTHER _____ (SPECIFY)

SAMPLE SHIPPED VIA: ☐ UPS ☐ BUS ☐ FED-EX ☐ HAND OTHER _____

AIR BUS BILL NUMBER

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-03-551

Received: 22 MAR 89
Reported: 07 APR 89

Ms. Susan Coleman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF027289.AD.FW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-551-1	S1-G1	22 MAR 89

PARAMETER	03-551-1
C18-C30 Hydrocarbons, mg/kg	<10
Fuel Hydrocarbons + BTX	
Date Analyzed	04.03.89
Dilution Factor, Times	1
Benzene, mg/kg	<0.1
Ethylbenzene, mg/kg	<0.1
Toluene, mg/kg	<0.1
Total Xylene Isomers, mg/kg	1.5
Fuel Characterization, .	GAS
Volatile Fuel Hydrocarbons, mg/kg	280
Other Fuel Hydrocarbons + BTX	---

This fuel characterization is a qualitative identification based upon a visual comparison of sample chromatograms with those from authentic standards.

Sim D. Lessley, Ph.D., Laboratory Director

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-03-552

Received: 22 MAR 89
Reported: 07 APR 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF027289.AD.FW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-552-1	S2-S4	22 MAR 89
03-552-2	S2-S2	22 MAR 89
03-552-3	S2-G2	22 MAR 89

PARAMETER	03-552-1	03-552-2	03-552-3
C18-C30 Hydrocarbons, mg/kg	<10	<10	<10
Fuel Hydrocarbons + BTX			
Date Analyzed	04.03.89	04.03.89	04.03.89
Dilution Factor, Times	1	1	50
Benzene, mg/kg	<0.1	<0.1	<0.1
Ethylbenzene, mg/kg	<0.1	<0.1	<0.1
Toluene, mg/kg	<0.1	<0.1	0.14
Total Xylene Isomers, mg/kg	<0.1	<0.1	0.72
Fuel Characterization, .	---	---	GAS
Volatile Fuel Hydrocarbons, mg/kg	<5.0	<5.0	220
Other Fuel Hydrocarbons + BTX	---	---	---

This fuel characterization is a qualitative identification based upon a visual comparison of sample chromatograms with those from authentic standards.

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-03-550

Received: 22 MAR 89
Reported: 28 MAR 89

REVISED 4/13/89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF027289.AD.FW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-550-1	S2-G3	22 MAR 89
03-550-2	S2-G4	22 MAR 89
03-550-3	S2-G5	22 MAR 89

PARAMETER	03-550-1	03-550-2	03-550-3
C18-C30 Hydrocarbons, mg/kg	<10	<10	<10
Fuel Hydrocarbons + BTX			
Date Analyzed	03.22.89	03.22.89	03.22.89
Dilution Factor, Times	1	1	1
Benzene, mg/kg	<0.1	<0.1	<0.1
Ethylbenzene, mg/kg	<0.1	<0.1	<0.1
Toluene, mg/kg	<0.1	<0.1	<0.1
Total Xylene Isomers, mg/kg	<0.1	<0.1	5.4
Carbon Range, .	C4-C12	C4-C12	C4-C12
Total Fuel Hydrocarbons, mg/kg	<10	<10	470
Other Fuel Hydrocarbons + BTX	---	---	---

Carbon range refers to volatile fuel hydrocarbons reported as gasoline which is a qualitative identification based upon a visual comparison of sample chromatograms with those from authentic standards.
Report revised to correct xylene result for sample S2-G5. TB 04.13.89

S. D. Lessley

Sim D. Lessley, Ph.D., Laboratory Director

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-03-550

Received: 22 MAR 89
Reported: 28 MAR 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF027289.AD.FW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-550-1	S2-G3	22 MAR 89
03-550-2	S2-G4	22 MAR 89
03-550-3	S2-G5	22 MAR 89

PARAMETER	03-550-1	03-550-2	03-550-3
C18-C30 Hydrocarbons, mg/kg	<10	<10	<10
Fuel Hydrocarbons + BTX			
Date Analyzed	03.22.89	03.22.89	03.22.89
Dilution Factor, Times	1	1	1
Benzene, mg/kg	<0.1	<0.1	<0.1
Ethylbenzene, mg/kg	<0.1	<0.1	<0.1
Toluene, mg/kg	<0.1	<0.1	<0.1
Total Xylene Isomers, mg/kg	<0.1	<0.1	<0.1
Carbon Range, .	C4-C12	C4-C12	C4-C12
Total Fuel Hydrocarbons, mg/kg	<10	<10	470
Other Fuel Hydrocarbons + BTX	---	---	---

Carbon range refers to volatile fuel hydrocarbons reported as gasoline which is a qualitative identification based upon a visual comparison of sample chromatograms with those from authentic standards.

L. D. Lessley

Sim D. Lessley, Ph.D., Laboratory Director

CH2M HILL CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
SFD27289.A0.FW	Del Monte Plant 35 Tanks

CLIENT NAME: CH2M HILL

REPORT TO:	COPY TO:
Susan Colman	

REQUESTED COMPLETION DATE	LABORATORY
	Brown & Caldwell

ANALYSES REQUESTED

NUMBER OF CONTAINERS

STA NO	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION field	TPH as gasoline (3550) (5030)	BTEX (5030)	8010	8270	HOLD							
1	3/22	11:15		✓	S2-G1* high	1	1			X	8903551						
2		12:00		✓	S2-S4 low	1	1	1	1								
3		12:05		✓	S2-S2 low	1	1	1	1								
4		13:10		✓	S2-G2 high	1	1										
5		13:25		✓	S2-G3 ~20 ppm	1	1										
6		13:30		✓	S2-G4 ~20 ppm	1	1										
7		13:45		✓	S2-G5 (high)	1	1										

FOR LAB USE ONLY

LAB #

PROJ #

ACK _____ VERIFIED _____

DATE INVOICED

NO. OF SAMPLES _____ pg _____ of _____

DISPOSITION: D R _____ DATE

REMARKS

normal TAT - hold

24 hr RUSH 8903550 -1

24 hr RUSH -2

24 hr RUSH -3

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME
1 Susan Colman	3/22/89	2 Susan Colman	3/22/89 14:35	3	

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY LAB: (SIGNATURE)	DATE/TIME
4		5		6		7 Jerry Blake	03/22/89 14:45

REMARKS

SAMPLING PROGRAM: SDWA ☐ NPDES ☐ RCRA ☐ OTHER _____ (SPECIFY)

SAMPLE SHIPPED VIA: ☐ UPS ☐ BUS ☐ FED-EX ☐ HAND OTHER _____

AIR BUS BILL NUMBER

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-143

Received: 04 MAY 89
Reported: 08 MAY 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF027289.A0.GW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
05-143-1	AS-1, Aerated Soil From Gas Excavation	04 MAY 89
05-143-2	GT-1, Well Cuttings From Gas Tank	04 MAY 89

PARAMETER	05-143-1	05-143-2
TPH - Volatile Hydrocarbons		
Date Analyzed	05.04.89	05.04.89
Dilution Factor, Times	1	1
C4 to C12 Hydrocarbons, mg/kg	18	52
Other TPH - Volatile Hydrocarbons	---	---

CHAIN OF CUSTODY RECORD

BC Log Number [redacted]

Client name: CH2M HILL	Project or PO#: SF027289.A0.GW
Address: 6425 Christie Ave	Phone #: 652-2426
City, State, Zip: Emeryville CA	Report attention: Susan Colman

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by / Sample description	Number of containers	TPH-gasoline 5030	TPH-diesel 3550	8010	NH3	Hazardous sample Special handling required	Remarks
AS-1	5/4/89	0800	SO	Aerated soil from gas excavation	1	X					24 hr Rush (TB)
GT-1	5/4/89	0820	SO	well cuttings from gas tank	1	X					
ST-1	↓	0830	SO	well cuttings from silver tanks	1			X	X		

Analyses required

	Signature	Print Name	Company	Date	Time
Relinquished by	Susan Colman	Susan Colman	CH2M HILL	5/4/89	9:15
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	Tony Blake	Tony Blake	BCAL	5/4/89	09:15

BROWN AND CALDWELL LABORATORIES

☒ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

☐ 1200 Pacific [illegible] nue, Anaheim, CA 92805

Note:
Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil C [illegible]her PE—Petrolen

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-594

Received: 19 MAY 89
Reported: 23 MAY 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF027289.A0.GW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
05-594-1	DM-MW7S-589	19 MAY 89

PARAMETER	05-594-1
TPH - Modified 8015	
Date Analyzed	05.19.89
Dilution Factor, Times	1
Total Fuel Hydrocarbons, mg/kg	<10
Other TPH - Modified 8015	---

Verbal results were reported to you on 05.23.89.
TB 05.23.89

Sim D. Lessley, Ph.D. / Laboratory Director

CH2M HILL CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
SFO27289.A0.GW	Plant 35 Groundwater

CLIENT NAME: Del Monte

REPORT TO: Sue Colman/SFO | COPY TO: Jeff Heglie/SFO

REQUESTED COMPLETION DATE: See remarks. | LABORATORY: B&C/Emeryville

STA NO	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION	NUMBER OF CONTAINERS	TPH-Gas - Solvent Extr.	EPA8010=Hal. VOCs
1	0519	13:00	X		DM-MW7S-589 Soil	1	X	
2	0519	13:03	X		DM-MW8S-589 Soil	1		X

ANALYSES REQUESTED

FOR LAB USE ONLY

LAB # _____

PROJ # _____

ACK _____ VERIFIED _____

DATE INVOICED _____

NO. OF SAMPLES _____ pg _____ of _____

DISPOSITION: D R _____ DATE

REMARKS

Analyze ASAP-24-48hr
Normal Turn-Around Time

NOTE Homogenize Samples
Mix contents of each jar (separately) before extraction.

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME
1 [signature] Hydrogeologist	051989 13:15	2		3	

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY LAB: (SIGNATURE)	DATE/TIME
4		5		6 [signature]	051489 13:55	[signature] Bellon	5/19/89 1354

REMARKS: LOG # 8905590 NORMAL
8905594 RUSH

SAMPLING PROGRAM: SDWA ☐ NPDES ☐ RCRA ☐ OTHER _____ (SPECIFY)

SAMPLE SHIPPED VIA: ☐ UPS ☐ BUS ☐ FED-EX ☒ HAND OTHER _____

AIR BUS BILL NUMBER

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-732

Received: 25 MAY 89
Reported: 31 MAY 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SFO27289.A0.GW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
05-732-1	AS-2	25 MAY 89
05-732-2	S-2	25 MAY 89

PARAMETER	05-732-1	05-732-2	
Lead, mg/kg	140	36	
Nitric Acid Digestion, Date	05.25.89	05.25.89	

Sim D. Lessley, Ph.D., Laboratory Director

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-06-004

Received: 25 MAY 89
Reported: 08 JUN 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SFO27289.AO.GW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, CALIF WASTE EXTRACT, WASTE SAMP	DATE SAMPLED
C6-004-1	AS-2	25 MAY 89
C6-004-2	S-2	25 MAY 89

PARAMETER	06-004-1	06-004-2
Lead, mg/L	3.8	0.5
CAM WET Extraction, Date	06.05.89	06.05.89

Results were transmitted by facsimile to you on 06.08.89.
TB 06.08.89

L. D. Lessley

Sim D. Lessley, Ph.D., Laboratory Director

CHAIN OF [redacted]TODY [redacted]ORD

BC [redacted]mber [redacted] 277 153 [redacted]

Client name: CH2M HILL	Project or PO#: SF027289.A0.GW
Address: 6425 Christie Ave	Phone #: 652-2426
City, State, Zip: Emeryville CA 94608	Report attention: Susan Colman

Sampled by:

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Lead							Hazardous sample Special handling required	Remarks
AS-2	5/25	11:47	SO	Aerated soil-gas excavation	1	X								Rush-24hr
S-2	5/25	11:49	SO	Aerated soil-gas well cuttings	1	X								↓

Analyses required

	Signature	Print Name	Company	Date	Time
Relinquished by	Susan Colman	Susan Colman	CH2M HILL	5/25	12:01
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	Ulysses Bellon	Ulysses Bellon	BCAL	5/25	12:01

BROWN AND CALDWELL LABORATORIES

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805

Note:
Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SF027035.A0.FW
ATTENTION: SUSAN COLMAN
SAMPLE DESCRIPTION: WATER-DMEMR
DATE OF SAMPLE: 12-20-88

REFERENCE NUMBER: 21905

DATE: 1-20-89
PHONE:
SAMPLED BY: SANDI MADSON
DATE RECEIVED: 12-21-88

TEST	GW-1	GW-2	GW-3	GW-8	UNITS	DETECT LIMIT	DATE ANALYZED	METHOD NUMBER
CHLORINE	<0.1	<0.1	<0.1	<0.1	mg/l	0.1	12-21-88	330.5
CHLORIDE	24.8	30.3	29.5	27.6	mg/l	1	12-23-88	325.3
ELECTRICAL CONDUCTIVITY	1010	886	972	1010	umhos/cm	10	1-3-89	120.1
pH	6.79	6.76	6.88	6.92	units	-	12-21-88	150.1
TOTAL DISSOLVED SOLIDS	532	516	610	647	mg/l	3	12-22-88	160.1

COMMENTS: mg/l = milligrams per liter

The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

ANALYST: RCW APPROVED BY: L A Hanly

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SF027035.A0.FW
ATTENTION: SUSAN COLMAN
SAMPLE DESCRIPTION: WATER
DATE OF SAMPLE: 12-21-88

REFERENCE NUMBER: 21925

DATE: 1-17-89
PHONE:
SAMPLED BY: ALEX COATE
DATE RECEIVED: 12-21-88

TEST	DMEMR GW-4	DMEMR GW-5	UNITS	DETECT LIMIT	DATE ANALYZED	METHOD NUMBER
CHLORIDE	34.5	27.7	mg/l	1	12-23-88	325.3
pH	6.91	7.1	units	-	12-22-88	150.1
TOTAL DISSOLVED SOLIDS	570	668	mg/l	3	12-28-88	160.1
ELECTRICAL CONDUCTIVITY	849	1100	umhos/cm	10	1-3-89	120.1
CHLORINE	<0.1	<0.1	mg/l	0.1	12-22-88	330.5

COMMENTS: mg/l = milligrams per liter
cc: A. Coate/sfo
S. Coleman/SFO
The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

ANALYST: RLW APPROVED BY: L J Hardy

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SF027035.A0.FW
ATTENTION: SUSAN COLEMAN
SAMPLE DESCRIPTION: WATER
DATE OF SAMPLE: 12-6-88

REFERENCE NUMBER: 21759
PAGE 1 OF 4
DATE: 1-17-89
PHONE:
SAMPLED BY: SANDI MADSON
DATE RECEIVED: 12-7-88

TEST	DMEMRGW-6	UNITS	DETECT LIMIT	DATE ANALYZED	METHOD NUMBER
TOTAL FUEL HYDROCARBONS(GAS)	<1	PPM	1	12-20-88	DHSLUFT
TOTAL FUEL HYDROCARBONS(DIESEL)	<200	ug/l	200	12-28-88	CALUFT
CHLORINE	<0.1	mg/l	0.1	12-8-88	330.5
CHLORIDE	20.6	mg/l	1	12-15-88	325.3
pH	7.04	units	-	12-8-88	150.1
ELECTRICAL CONDUCTIVITY	683	umhos/cm	10	12-19-88	120.1
TOTAL DISSOLVED SOLIDS	453	mg/l	3	12-9-88	160.1

COMMENTS: ug/l = micrograms per liter
mg/l = milligrams per liter

The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

ANALYST: RLW APPROVED BY: L Hanby

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SFO27035.A0.FW
ATTENTION: SUSAN COLEMAN
SAMPLE DESCRIPTION: WATER-DMEMRGW-6
DATE OF SAMPLE: 12-6-88

REFERENCE NUMBER: 21759

DATE: 1-17-89
PHONE:
SAMPLED BY: SANDI MADSON
DATE RECEIVED: 12-7-88
DATE ANALYZED: 12-16-88

VOLATILE TOXIC
ORGANIC POLLUTANTS
EPA METHOD: 624

CONSTITUENT	RESULT	DETECT LIMIT	CONSTITUENT	RESULT	DETECT LIMIT
Chloromethane	ND	5.0	Hexane	10	5
Bromomethane	ND	5.0	Methyl-pentene	35	5
Vinyl chloride	ND	5.0	Cyclohexane	15	5
Chloroethane	ND	5.0	Methyl-cyclohexane	30	5
Methylene chloride	ND	2.0	2-Butanone	6.1	5
Trichlorofluoromethane	ND	2.0	2-Hexanone	5.3	5
1,1-Dichloroethene	ND	2.0			
1,1-Dichloroethane	ND	2.0			
1,2-Dichloroethene (total)	ND	1.0			
Chloroform	ND	1.0			
1,2-Dichloroethane	8.8	1.0			
1,1,1-Trichloroethane	ND	1.0			
Carbon tetrachloride	ND	1.0			
Bromodichloromethane	ND	1.0			
1,2-Dichloropropane	ND	2.0			
trans-1,3-Dichloropropene	ND	2.0			
Trichloroethene	1.6	1.0			
Dibromochloromethane	ND	1.0			
1,1,2-Trichloroethane	ND	1.0			
Benzene	ND	1.0			
cis-1,3-Dichloropropene	ND	2.0			
2-Chloroethylvinyl ether	ND	5.0			
Bromoform	ND	2.0			
Tetrachloroethene	ND	1.0			
1,1,2,2-Tetrachloroethane	ND	2.0			
Toluene	*	2.0			
Chlorobenzene	ND	1.0			
Ethyl benzene	ND	1.0			
Styrene	ND	1.0			
Xylenes(Total)	ND	3.0			
1,2-Dichlorobenzene	ND	1.0			
1,3-Dichlorobenzene	ND	1.0			
1,4-Dichlorobenzene	ND	1.0			

COMMENTS: Results are in micrograms per kilogram. ND = none detected.

The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

APPROVED BY: Brenda J Tyson

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SFO27035.BO.FW
ATTENTION: SUSAN COLMAN
SAMPLE DESCRIPTION: WATER
DATE OF SAMPLE: 12-6-88

REFERENCE NUMBER: 21759

DATE: 1-20-89
PHONE:
SAMPLED BY: SANDI MADSON
DATE RECEIVED: 12-7-88
DATE EXTRACTED: 12-13-88

TEST METHODS: EPA-625/8270

	BLANK RB-12-13	DMEMRGW-6	DETECT LIMIT
ACID COMPOUNDS			
Phenol	ND	ND	1
2-chlorophenol	ND	ND	1
2-methyl phenol	ND	ND	1
4-methyl phenol	ND	ND	1
2-nitrophenol	ND	ND	1
2,4-dimethylphenol	ND	ND	1
2,4-dichlorophenol	ND	ND	1
4-chloro-3-methylphenol	ND	ND	1
2,4,5-trichlorophenol	ND	ND	1
2,4,6-trichlorophenol	ND	ND	1
2,4-dinitrophenol	ND	ND	5
4-nitrophenol	ND	ND	5
2-methyl-4,6-dinitrophenol	ND	ND	1
pentachlorophenol	ND	ND	1
BASE/NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	ND	ND	5
bis(2-Chloroethyl)ether	ND	ND	1
1,3-Dichlorobenzene	ND	ND	1
1,4-Dichlorobenzene	ND	ND	1
1,2-Dichlorobenzene	ND	ND	1
bis(2-Chloroisopropyl)ether	ND	ND	1
N-Nitroso-di-n-propylamine	ND	ND	1
Hexachloroethane	ND	ND	1
Nitrobenzene	ND	ND	1
Isophorone	ND	ND	1
bis(2-Chloroethoxy)methane	ND	ND	1
1,2,4-Trichlorobenzene	ND	ND	1
Naphthalene	ND	ND	1
Hexachlorobutadiene	ND	ND	1
2-Chloronaphthalene	ND	ND	1
2-Methyl Napthalene	ND	ND	1

COMMENTS: Results are in micrograms per liter.
ND=Not detected at or above limit of detection.
The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

APPROVED BY: Bennett J Tyson

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SF027035.A0.FW
ATTENTION: SUSAN COLMAN
SAMPLE DESCRIPTION: WATER
DATE OF SAMPLE: 12-6-88

REFERENCE NUMBER: 21759

DATE: 1-20-89
PHONE:
SAMPLED BY: SANDI MADSON
DATE RECEIVED: 12-7-88
DATE EXTRACTED: 12-13-88

TEST METHODS: EPA-625/8270

BASE-NEUTRAL EXTRACTABLES CONT.	BLANK RB-12-13	DMEMR GW-6	DETECT LIMIT
4-chloroaniline	ND	ND	5
2-nitroaniline	ND	ND	5
3-nitroaniline	ND	ND	5
4-nitroaniline	ND	ND	5
hexachlorocyclopentadiene	ND	ND	1
dimethyl phthalate	ND	ND	10
acenaphthylene	ND	ND	1
acenaphthene	ND	ND	1
2,4-dinitrotoluene	ND	ND	1
2,6-dinitrotoluene	ND	ND	1
diethyl phthalate	ND	ND	1
4-chlorophenylphenylether	ND	ND	1
fluorene	ND	ND	1
N-nitrosodiphenylamine	ND	ND	1
4-bromophenylphenylether	ND	ND	1
hexachlorobenzene	ND	ND	1
Phenanthrene	ND	ND	1
Anthracene	ND	ND	1
Di-N-Butyl phthalate	ND	ND	1
Fluorenthene	ND	ND	1
Benzidene	ND	ND	30
pyrene	ND	ND	1
benzylbutylphthalate	ND	ND	1
3,3-Dichlorobenzidine	ND	ND	40
Benz(a)anthracene	ND	ND	1
bis(2-Ethylhexyl)phthalate	ND	ND	10
chrysene	ND	ND	2
Di-n-octyl phthalate	ND	ND	1
Benzo(b)fluoranthene	ND	ND	2
Benzo(k)fluoranthene	ND	ND	1
Benzo(a)pyrene	ND	ND	1
Indeno(1,2,3-cd)pyrene	ND	ND	1
Dibenz(a,h)anthracene	ND	ND	1
Benzo(g,h,i)perylene	ND	ND	1
Dibenzofuran	ND	ND	1
Benzoic Acid	ND	ND	50
Benzyl Alcohol	ND	ND	1
DATE ANALYZED:	1-18-89	1-19-89	

COMMENTS: Results are in micrograms per liter.
ND = Not detected at or above limit of detection.
The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

APPROVED BY: Bennett J Tyson

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SF027035.BO.FW
ATTENTION: SUSAN COLMAN
SAMPLE DESCRIPTION: WATER
DATE OF SAMPLE: 12-6-88

REFERENCE NUMBER: 21759

DATE: 1-20-89
PHONE:
SAMPLED BY: SANDI MADSON
DATE RECEIVED: 12-7-88
DATE EXTRACTED: 12-13-88

TEST METHODS: EPA-625/8270

A M E N D E D R E P O R T

	DMEMRGW-6 (ug/l)	SPIKE* ADDED (ug/l)	CONCENTRATION* ug/l SPIKE RECOVERED	% RECOVERY
ACID COMPOUNDS				
Phenol	ND	20	17	85
2-chlorophenol	ND	20	17	85
2-methyl phenol	ND	20	7	35
4-methyl phenol	ND	20	6	30
2-nitrophenol	ND	20	21	105
2,4-dimethylphenol	ND	20	3	15
2,4-dichlorophenol	ND	20	15	75
4-chloro-3-methylphenol	ND	20	11	55
2,4,5-trichlorophenol	ND	20	15	75
2,4,6-trichlorophenol	ND	20	16	80
2,4-dinitrophenol	ND	20	3	15
4-nitrophenol	ND	20	6	30
2-methyl-4,6-dinitrophenol	ND	20	10	50
pentachlorophenol	ND	20	8	40
BASE/NEUTRAL COMPOUNDS				
N-Nitrosodimethylamine	ND	20	14	70
bis(2-Chloroethyl)ether	ND	20	11	55
1,3-Dichlorobenzene	ND	20	18	90
1,4-Dichlorobenzene	ND	20	18	90
1,2-Dichlorobenzene	ND	20	19	95
bis(2-Chloroisopropyl)ether	ND	20	21	105
N-Nitroso-di-n-propylamine	ND	20	18	90
Hexachloroethane	ND	20	17	85
Nitrobenzene	ND	20	23	115
Isophorone	ND	20	26	130
bis(2-Chloroethoxy)methane	ND	20	26	130
1,2,4-Trichlorobenzene	ND	20	20	100
Naphthalene	ND	20	22	110
Hexachlorobutadiene	ND	20	20	100
2-Chloronaphthalene	ND	20	22	110
2-Methyl Napthalene	ND	20	22	110

COMMENTS: Results are in micrograms per liter.
ND = Not detected
* Incorrect headings on original report 1-24-89.
The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

APPROVED BY: Leonard J Tyson

CH2M HILL ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE
REDDING, CA 96001 916-243-5831

REPORT TO: DEL MONTE-EMERYVILLE
CH2M HILL/SFO
SFO27035.AO.FW
ATTENTION: SUSAN COLMAN
SAMPLE DESCRIPTION: WATER
DATE OF SAMPLE: 12-6-88
TEST METHODS: EPA-625/8270

REFERENCE NUMBER: 21759
PAGE 4A OF 4
DATE: 1-20-89
PHONE:
SAMPLED BY: SANDI MADSON
DATE RECEIVED: 12-7-88
DATE EXTRACTED: 12-13-88

A M E N D E D R E P O R T

BASE-NEUTRAL EXTRACTABLES CONT.	DMEMRGW-6 (ug/l)	SPIKE* ADDED (ug/l)	CONCENTRATION* ug/l SPIKE RECOVERED	% RECOVERY
4-chloroaniline	ND	20	12	60
2-nitroaniline	ND	20	16	80
3-nitroaniline	ND	20	10	50
4-nitroaniline	ND	20	6	30
hexachlorocyclopentadiene	ND	20	7	35
dimethyl phthalate	ND	20	6	30
acenaphthylene	ND	20	23	115
acenaphthene	ND	20	22	110
2,4-dinitrotoluene	ND	20	14	70
2,6-dinitrotoluene	ND	20	18	90
diethyl phthalate	ND	20	15	75
4-chlorophenylphenylether	ND	20	20	100
fluorene	ND	20	21	105
N-nitrosodiphenylamine	ND	20	18	90
4-bromophenylphenylether	ND	20	21	105
hexachlorobenzene	ND	20	24	120
Phenanthrene	ND	20	24	120
Anthracene	ND	20	22	110
Di-N-Butyl phthalate	ND	20	26	130
Fluorenthene	ND	20	22	110
Benzidene	ND	20	40	-
pyrene	ND	20	25	125
benzylbutylphthalate	ND	20	23	115
3,3-Dichlorobenzidine	ND	20	10	50
Benz(a)anthracene	ND	20	22	110
bis(2-Ethylhexyl)phthalate	ND	20	30	150
chrysene	ND	20	22	110
Di-n-octyl phthalate	ND	20	15	75
Benzo(b)fluoranthene	ND	20	13	65
Benzo(k)fluoranthene	ND	20	17	85
Benzo(a)pyrene	ND	20	13	65
Indeno(1,2,3-cd)pyrene	ND	20	12	60
Dibenz(a,h)anthracene	ND	20	10	50
Benzo(g,h,i)perylene	ND	20	12	60
Dibenzofuran	ND	20	20	100
Benzoic Acid	ND	20	6	30
Benzyl Alcohol	ND	20	27	135

COMMENTS: Results are in micrograms per liter
ND = Not detected *Incorrect headings on original report 1/24/89.

The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

APPROVED BY: Bennett J Tyson

CH2M HILL CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
FO27035AUFW	DelMonte EMR

CLIENT NAME: DELMONTE

REPORT TO: D. WALLACE / SFO

COPY TO: A. COATE & SCOLEMAN / SFO

REQUESTED COMPLETION DATE: 1/21/89

LABORATORY: CH2MHILL

ANALYSES REQUESTED

STA NO	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION	NUMBER OF CONTAINERS	624 (40ml)	625 (2.5L)	TPH(G) (40ml)	TPH(D) (2.5L)	Cl2 (500ml)	Cl, EC, pH, TDS, TOC
1	12/20	9—		X	DMEMR GW-1	10	3	2	2	1	1	1
2	12/20	10—		X	DMEMR GW-2	10	3	2	2	1	1	1

FOR LAB USE ONLY

LAB # ____

PROJ # ____

ACK ____ VERIFIED ____

DATE INVOICED ____

NO. OF SAMPLES ____ pg ____ of ____

DISPOSITION: D R ____ DATE

REMARKS

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME
1 [signature]	12/20 10 AM	2		3	

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY LAB: (SIGNATURE)	DATE/TIME
4		5		6		7	

REMARKS ____

SAMPLING PROGRAM: SDWA ☐ NPDES ☐ RCRA ☐ OTHER ____ (SPECIFY)

SAMPLE SHIPPED VIA: ☐ UPS ☐ BUS ☐ FED-EX ☐ HAND OTHER ____

AIR BUS BILL NUMBER: 659 465 209 7

CH2M HILL CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
SFO27035.A0.EW	DEL MONTE . ENVR

CLIENT NAME: DEL MONTE

REPORT TO: D. WALLACE /SFO

COPY TO: A CORTE /SFO S. COLEMAN /SFO

REQUESTED COMPLETION DATE: 1/21/87

LABORATORY: CH2MHILL

ANALYSES REQUESTED

STA NO	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION	NUMBER OF CONTAINERS	624 (40ml)	625 (2.5l)	TFH (g) (40ml)	TFH (d) (2.5l)	Cl2 (500ml)	Cl, EC, TDS, pH
3	12/20	11		X	DMENVR GW-3	10	3	2	2	1	1	1
8	12/20	12		X	DMENVR GW-8	10	3	2	2	1	1	1

FOR LAB USE ONLY

LAB # ____

PROJ # ____

ACK ____ VERIFIED ____

DATE INVOICED ____

NO. OF SAMPLES ____ pg ____ of ____

DISPOSITION: D R ____ DATE

REMARKS

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME
1 [signature]	12/20 12	2		3	

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY LAB: (SIGNATURE)	DATE/TIME
4		5		6		7	

REMARKS ____

SAMPLING PROGRAM: ☐ SDWA ☐ NPDES ☐ RCRA OTHER ____ (SPECIFY)

SAMPLE SHIPPED VIA: ☐ UPS ☐ BUS ☐ FED-EX ☐ HAND OTHER ____

AIR BUS BILL NUMBER: 659 415 207

DISTRIBUTION: WHITE — ORIGINAL ACCOMPANIES SHIPMENT PINK — COPY TO COORDINATOR FIELD FILES YELLOW — CLIENT

REV. 6/87 FORM 2

... OF CUSTODY RECORD

...NUMBER	PROJECT NAME
SFO 21055.AC.FU	DELMONTE - EMERYVILLE

CLIENT NAME: DELMONTE

REPORT TO: D. WALLACE /SFO

COPY TO: A. COATE /SFO S. COLEMAN /SFO

REQUESTED COMPLETION DATE: 1/2/88

LABORATORY: CH2M HILL

ANALYSES REQUESTED

STA NO	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION	NUMBER OF CONTAINERS	CHLORINE 50 ml	CH, TDS, EC, Oil 50 ml	624 40 ml	625 2.5 L	TEH (g) 40 ml	TEH (d) 2.5 L					
4	12/21	3[illegible]		X	DMEMR GW-4	10	1	1	3	2	2	1					
5	12/21	125		X	DMEMR GW-5	10	1	1	3	2	2	1					

FOR LAB USE ONLY

LAB # ____

PROJ # ____

ACK ____ VERIFIED ____

DATE INVOICED ____

NO. OF SAMPLES ____ pg ____ of ____

DISPOSITION: D R ____ DATE

REMARKS

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME
1 [signature]	12/21 3:30	2 [signature]	12/21 3:30	3	

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY LAB: (SIGNATURE)	DATE/TIME
4		5		6		7	

REMARKS ____

SAMPLING PROGRAM: SDWA ☒ NPDES ☐ RCRA ☐ OTHER ____ (SPECIFY)

SAMPLE SHIPPED VIA: ☐ UPS ☐ BUS ☐ FED-EX ☐ HAND OTHER ____

AIR BUS BILL NUMBER: [illegible]

DISTRIBUTION: WHITE — ORIGINAL ACCOMPANIES SHIPMENT PINK — COPY TO COORDINATOR FIELD FILES YELLOW — CLIENT

REV. 6/87 FORM

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-416

Received: 12 MAY 89
Reported: 31 MAY 89

Ms. Susan Colman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF027289.A0.GW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
05-416-1	DM-MW6-589	12 MAY 89
05-416-2	DM-MW7-589	12 MAY 89
05-416-3	DM-MW8-589	12 MAY 89

PARAMETER	05-416-1	05-416-2	05-416-3
TPH-Volatile Hydrocarbons/BTEX			
Date Analyzed	05.15.89	05.15.89	---
Dilution Factor, Times	1	1	---
Benzene, ug/L	<0.3	49	---
Ethylbenzene, ug/L	<0.3	4.5	---
Toluene, ug/L	<0.3	1.6	---
Total Xylene Isomers, ug/L	11	5.9	---
C4 to C12 Hydrocarbons, ug/L	910	1000	---
Other TPH-Volatile Hydrocarbons	---	---	---

CH2M HILL CHAIN OF CUSTODY RECORD

LOG # 890416

PROJECT NUMBER	PROJECT NAME
SF027289.AQGW	Del Monte Plant 35

CLIENT NAME: Del Monte

REPORT TO: [redacted] Sue Colman / COPY TO: CH2MHILL

REQUESTED COMPLETION DATE: / LABORATORY:

STA NO	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION	NUMBER OF CONTAINERS	BTXE-EPA602	TPH-Gasoline	Halogenated VOCs 601	Phenol-EPA 604	REMARKS
MW-6	05/2	13:58		X	DM-MW6-589	2	X	X			Standard Turn-Around
MW-7	05/2	15:20		X	DM-MW7-589	2	X	X			"
MW-8	05/2	16:00		X	DM-MW8-589	3			X	X	"

NOTE: HCl Preservative Added by Lab

FOR LAB USE ONLY

LAB # _____

PROJ # _____

ACK _____ VERIFIED _____

DATE INVOICED _____

NO. OF SAMPLES _____ pg _____ of _____

DISPOSITION: D R _____ DATE

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME
1 [signature] Hydrogeologist	051289 1630			3	

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY LAB: (SIGNATURE)	DATE/TIME
4		5		6 [signature]	051289 1640	7 [signature]	5/12/89 1640

REMARKS _____

SAMPLING PROGRAM: SDWA ☐ NPDES ☐ RCRA ☐ OTHER _____ (SPECIFY)

SAMPLE SHIPPED VIA: ☐ UPS ☐ BUS ☐ FED-EX ☒ HAND OTHER _____

AIR BUS BILL NUMBER

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-07-137

Received: 11 JUL 89
Reported: 25 JUL 89

Ms. Susan Coleman
CH2M HILL
6425 Christie Street, Suite 500
Emeryville, California 94608

Purchase Order: SFO 27289.AO.GW

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-137-1	MW-6	10 JUL 89
07-137-2	MW-7	10 JUL 89

PARAMETER	07-137-1	07-137-2
TPH-Volatile Hydrocarbons/BTEX		
Date Analyzed	07.14.89	07.17.89
Dilution Factor, Times	1	1
Benzene, ug/L	<0.3	5.2
Ethylbenzene, ug/L	<0.3	<0.3
Toluene, ug/L	<0.3	0.6
Total Xylene Isomers, ug/L	6.0	5.6
C4 to C12 Hydrocarbons, ug/L	210	500
Other TPH-Volatile Hydrocarbons/BTEX	---	---

LOG # 8907137

CH2M HILL CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
560 27289.A0.4W	Del Monte

LABORATORY: Brown and Caldwell, Emeryville

	STA. NO.	DATE	TIME	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	BTX-E + aromatics, 8020	TPH	Method 601+E	pH, Cond, SO4, TDS, Nitrate (nitrate)						REMARKS
1	MW-6	7/10/89	1220		X	MW-6 ✓	3	X	X								Admit know if lab needed 2 VOAs, total or two for each analysis, so filled three VOAs (didn't have enough VOAs onsite for 6 or VOAs per sample for BTX-E and TPH
2	MW-7	7/10/89	1630		X	MW-7 ✓	3	X	X								
3	MW 8	7/10/89	1730		X	MW-8 ✓	2			X							
5	MW 9	7/10/89	1810		X	MW-9 ✓	4			X	X						
6	MW 10	7/10/89	1415		X	MW-10 ✓	4			X	X						
7	MW 11	7/10/89	1117		X	MW-11 ✓	4			X	X						
4	MW-13	7/10/89	1800		X	MW-13 ✓	2			X							

SAMPLED BY AND TITLE (SIGNATURE)	DATE/TIME	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
Ken Zarn Hydrogeologist 05848	7/10/89 4PM	Ken Zarn	7/11/89 7:49	
RELINQUISHED BY: (SIGNATURE)	**DATE/TIME**	**RECEIVED BY: (SIGNATURE)**	**RELINQUISHED BY: (SIGNATURE)**	**DATE/TIME**	**RECEIVED BY LAB: (SIGNATURE)**
				7/11/89 7:50	

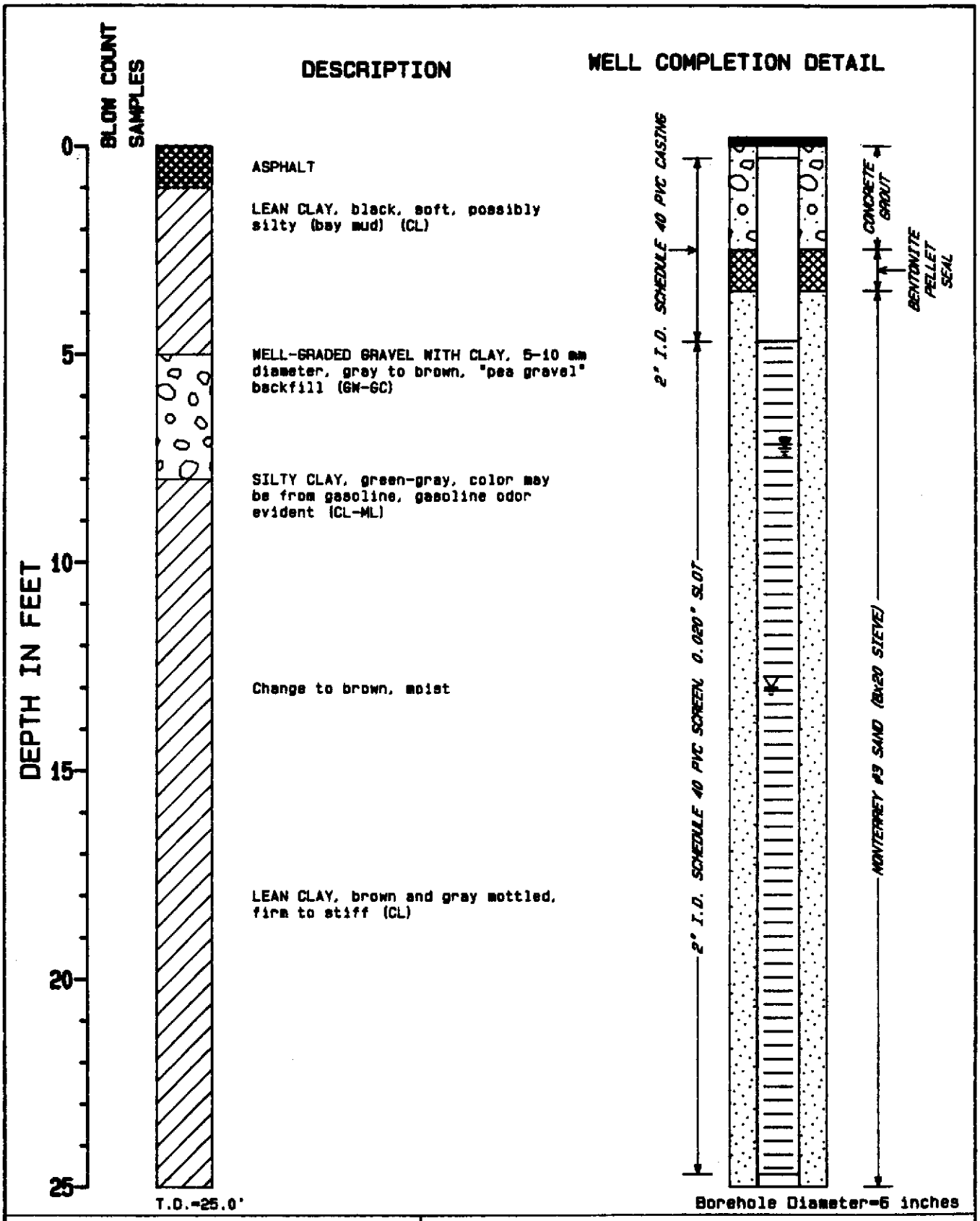
REMARKS

SAMPLE SHIPPED VIA ☐ UPS ☐ BUS ☐ FEDERAL EXPRESS

AIR BUS BILL NUMBER

DISTRIBUTION: WHITE — ORIGINAL ACCOMPANIES SHIPMENT, PINK — COPY TO COORDINATOR FIELD FILES, YELLOW — CLIENT

MONITORING WELL BORING LOG



▽ = Water level first encountered

▼ = Water level after development

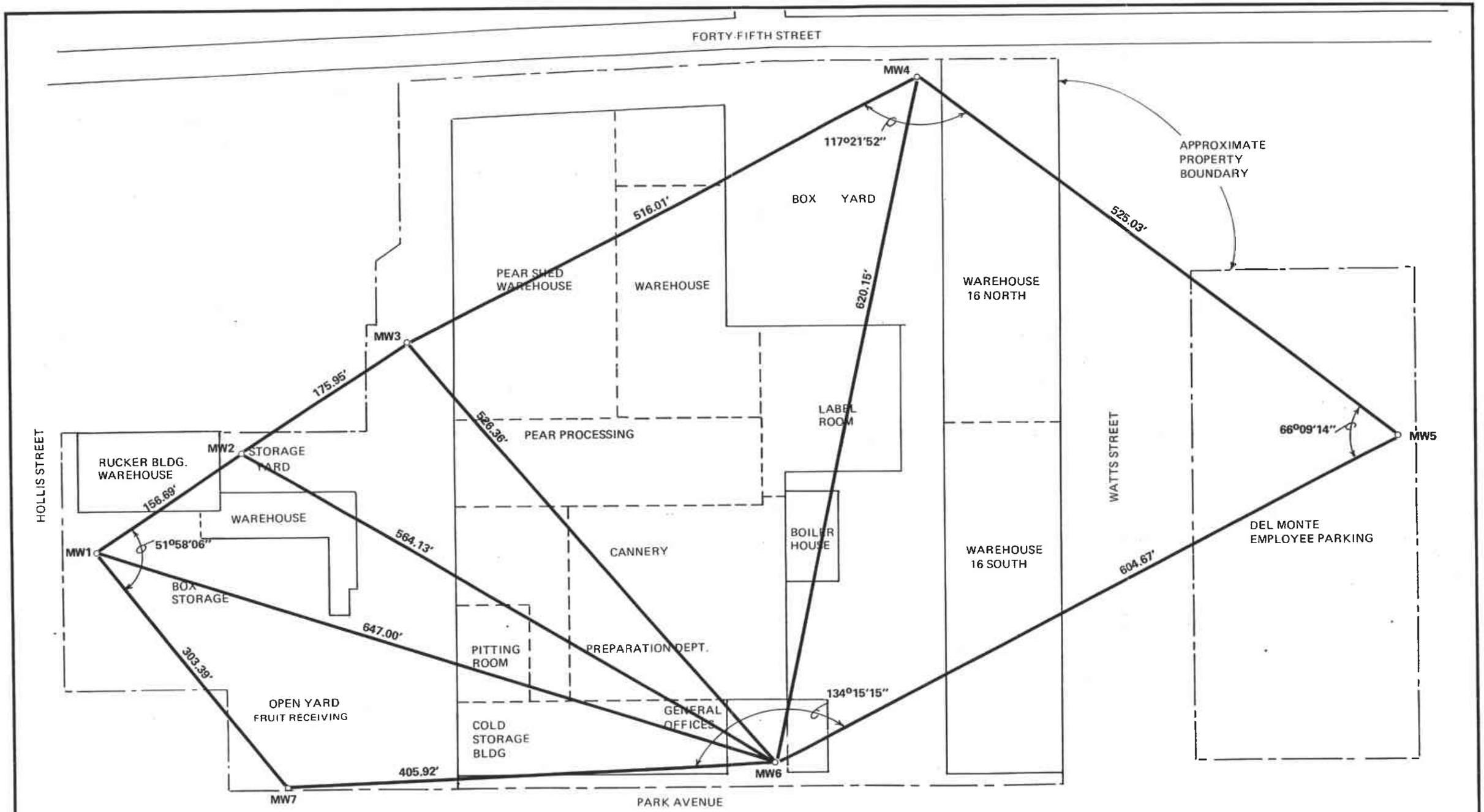
MW7

Del Monte Emeryville Plant No. 35

Date Completed: 05/03/89

Top of casing elevation (MSL)=22.38

SF027289.A0.6W



ELEVATIONS

MW1	20.79'	MW5	36.97'
MW2	24.47'	MW6	27.51'
MW3	23.17'	MW7	22.38'
MW4	28.81'		

Elevations Based on Mean Sea Level 1973 Adjustment

FIGURE A–1
SURVEY DATA

CH2M HILL

SFO27289.AO

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *(Form designed for use on elite (12-pitch) typewriter).*

Department of Health Service
Toxic Substances Control Division
Sacramento, California

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

GENERATOR

1. Generator's US EPA ID No.: CAD981139111 — Manifest Document No.: 8800001
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: 8823125[illegible]

3. Generator's Name and Mailing Address: DEL MONTE CORP. 1250 PARK AVE EMERYVILLE CA 94608

B. State Generator's ID: [illegible]

4. Generator's Phone: 415 420-7500

5. Transporter 1 Company Name: H&H SHIP SERVICE
6. US EPA ID Number: CAD004771168

C. State Transporter's ID: [illegible]
D. Transporter's Phone: [illegible]

7. Transporter 2 Company Name: ~~H&H SHIP SERVICE~~
8. US EPA ID Number:

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: H&H SHIP SERVICE 220 CHINA BASIN SAN FRANCISCO, CA 94107
10. US EPA ID Number: CAD004771168

G. State Facility's ID: CAD004771168
H. Facility's Phone: 543-0406

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NA 9189 WASTE HAZARDOUS LIQUID NOS ORM-E	001	TT	1000	G	State: [illegible] EPA/Other: [illegible]
b.					State: EPA/Other:
c.					State: EPA/Other:
d.					State: EPA/Other:

J. Additional Descriptions for Materials Listed Above
97% WATER
2% MUD
1% PETROLEUM PRODUCT
(RINSATE)

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
Coveralls

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
WALTER BERRIS	[signature]	01 22 89

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
STEVE MESQUITE	[signature]	01 22 89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 D

To: P.O. Box 400, Sacramento, CA 95812-0400

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch) typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981391082 — Manifest Document No.: 01448
2. Page 1 of
Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: 88227448
B. State Generator's ID

3. Generator's Name and Mailing Address: [illegible] CORP [illegible] 35, 1250 PARK AVE [illegible] CA 94008
4. Generator's Phone ( ) [illegible]

5. Transporter 1 Company Name: HIGH SHIP SERVICE CO
6. US EPA ID Number: CAD001422711 168
C. State Transporter's ID
D. Transporter's Phone (415) 543-4735
7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: HIGH SHIP SERVICE CO, 230 CHINA BASIN ST, SAN FRANCISCO CA 94107
10. US EPA ID Number
G. State Facility's ID
H. Facility's Phone (415) 543-4735

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE EMPTY GASOLINE TANK FLAMMABLE LIQUID UN 1203	001	TP	1	G	State 512; EPA/Other D001
b. WASTE EMPTY FUEL OIL TANKS COMBUSTIBLE LIQUID NA 1993	004	TP	1460	G	State 512; EPA/Other NA
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above: EMPTY UNDERGROUND GASOLINE & FUEL OIL STORAGE TANKS WITH LESS THAN ONE GALLON RESIDUAL LIQUID IN EACH TANK

K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information: BOOTS & GLOVES

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: BHIKHU SHAH — Signature: [signature] — Month Day Year: 1 3 2 2 1 9

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: KEVIN E. JOHNSON — Signature: Kevin E Johnson — Month Day Year: 02 22 89

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DA[YS]
To: P.O. Box 400, Sacramento, CA 95812-0400

KERN BACKHOE SERVICE INC. — KERN VACUUM SERVICE

P.O. BOX 5337 • BAKERSFIELD, CALIFORNIA 93388
(805) 589-5220

Well, Tank No. _____
Field or Area _____

№ 15202

NON-HAZARDOUS WASTE HAULER RECORD
TO BE USED FOR NON-HAZARDOUS WASTES ONLY

GENERATOR (Generator Must Complete)

1
Name Del Monte Plant No. 35
Field Address 1250 Park Ave
City, State, Zip Emeryville CA 94608
Phone 420-2517
Order Placed By _____
Signature of Authorized Agent L J Hanson
Date 6/23/89
Title CONTROLLER

2
WASTE TO BE DISPOSED
Type NON-HAZARDOUS
Generating Location 1250 DEL MONTE PARK AVE, EMERYVILLE, CA.
Special Handling Instructions:
☒ Gloves ☒ Goggles ☐ Other _____
Quantity 10 YARDS ~~Bbls.~~

3
DESIGNATED FACILITY
Name LIQUID WASTE MANAGEMENT, INC
Address STAR ROUTE BOX 4
City, State, Zip McKITTRICK, CA. 93251
Phone 805-762-7607

TRANSPORTER (Hauler Must Complete)

Name KERN BACKHOE SERVICE, INC.
Address P.O. BOX 5337
City, State, Zip BAKERSFIELD, CA. 93388
Phone 805-589-5220
Signature of Authorized Agent or Driver Mike Adams MIKE ADAMS
Date 6-23-89

Ticket # 15103 Unit No. 196 / —
Pick Up Date 6-23-89 Time 8:00 ☒ AM ☐ PM

NOTE: This form to be used in lieu of the California Department of Health Services Hazardous Waste Manifest for NON-HAZARDOUS wastes only

REMARKS:
Paid by CH2M Hill
Corporate Headquarters
P.O. Box 428 Corvallis Oregon

DISPOSAL FACILITY (Facility Operator Must Complete)

Ph. 7

Name LIQUID WASTE MANAGEMENT, INC.
Address STAR ROUTE BOX 4
City, State, Zip McKITTRICK, CA. 93251
Phone 805-762-7607 / Disp. Ticket # 30073
Signature of Authorized Agent Martha DeDo Date 6-23-89

Quantity Received _____ ~~Bbls.~~ TONS Date 6-23-89
Time _____ ☐ AM ☐ PM

DISPOSAL METHOD: ☒ Surface Impoundment ☐ Injection ☐ Landfill ☐ Other _____

Return Copy To: **GENERATOR UNLESS OTHERWISE SPECIFIED**

NOTE: It is not necessary to send copy to Dept. of Health Services.
NO HAZARDOUS FEES SHOULD BE LEVIED