CH2M HILL
Engineers
Planners
Economists
Scientists

March 24, 1995

BAE28830.B4.ZZ

Mr. Brian Oliva
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Mr. Sum Arigala
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

Subject: Proposal to Shut Off West Parcel GET System
Del Monte Plant 35, Emeryville, CA

Enclosed for your review is a proposal to shut off the groundwater extraction and treatment system on the West Parcel of Del Monte's Plant 35 in Emeryville. We look forward to discussing your comments at our upcoming meeting scheduled for Thursday, March 30th at 9:00 am at the RWQCB offices. Please feel free to call me before then if you have questions or comments you wish to discuss. I can be reached at (510) 251-2888, ext. 2189.

Sincerely,

CH2M HILL

Madeline Wall

Madeline Wall
Project Manager

c: Mr. Steve Ronzone/Del Monte
Mr. Thomas Bender/The Bender Partnership
Dr. Ravi Arulanantham/RWQCB/ACDEH
Ms. Susan Hugo/ACDEH

see page 2 notes

Proposal to Shut Off West Parcel GET System

Del Monte Plant 35
Emeryville, California

1.0 Introduction

Since January 1993, Del Monte Foods has operated a groundwater extraction and treatment (GET) system to remediate groundwater affected by chlorinated hydrocarbons (primarily TCE) beneath the West Parcel of Del Monte Plant 35 in Emeryville, California. The GET system has effectively reduced the levels of TCE and other chlorinated hydrocarbons (ClHC) during the two years of operation. The purpose of this submittal is to demonstrate the effectiveness of the groundwater remediation at Plant 35 and to request approval to terminate the GET system operation.

2.0 Background

Del Monte Plant 35 is located in an industrial area and was a food processing plant from the late 1920s through 1989. Plant 35 is located on approximately 13 acres; the West Parcel, located at 4204 Hollis Street, is approximately 2 acres in size and the East Parcel, located at 1250 Park Avenue, is approximately 11 acres in size (Figure 1).

Plant 35 is underlain by approximately 5 to 8 feet of fill which is composed primarily of clay containing gravel. Native silty clay extends from beneath the fill to a depth of approximately 15 to 20 feet below ground surface. Discontinuous lenses of sands and gravels have also been encountered within the native silty clay. This silty clay zone is underlain with silty sand. Shallow groundwater exists beneath the property at a depth of approximately 7 to 10 feet below ground surface and flows in a southwesterly direction (Figure 2).

2.1 1989 Underground Tank Removal

Del Monte removed four 50-gallon underground tanks from the West Parcel in March 1989 (CH2M HILL, 1989). These tanks were located adjacent to a building that Del Monte had previously leased to medical research companies. The tanks were used to store fuel oil; however, prior to removal of the tanks, tank content sampling revealed the presence of ClHC. Subsequent groundwater investigations revealed the presence of ClHC compounds in the shallow groundwater in the vicinity of the former fuel oil tank area. Del Monte has been monitoring the groundwater in the vicinity of the former fuel oil tank area since May 1989.

2.2 GET System Construction and Operation

In 1992, Del Monte proposed to the Alameda County Department of Environmental Health (ACDEH) that a GET system be constructed and operated on the West Parcel to remediate groundwater containing ClHC. The proposal was presented in a letter to ACDEH from CH2M HILL (CH2M HILL, 1992). The proposed GET system was subsequently discussed at

a meeting between Del Monte, the ACDEH, and the Regional Water Quality Control Board (RWQCB) on September 25, 1992. Verbal concurrence was obtained to excavate and aerate additional soil affected by the release from the tanks, construct the GET system, and operate the system for 6 months.

In December 1992 Del Monte demolished and removed the building located at the southwest corner of the West Parcel. The removal of this building allowed access to soil that could not be removed during the removal of the four fuel oil tanks in 1989. In January 1993, affected soil was excavated and aerated and the GET system was constructed.

Because the GET system was effectively reducing levels of ClHC in groundwater beneath the West Parcel, in June 1993 Del Monte decided to continue operating the system until the end of 1993, 6 months beyond the originally agreed-upon 6 month period.

During the second six months of GET system operation, Del Monte proposed expanding the groundwater extraction system by adding an extraction trench along the down-gradient property edge. The purpose of adding the trench was to further reduce concentrations of ClHC in groundwater and to minimize offsite migration of ClHC. Plans for the GET system expansion and continued operation were described in the *Draft Remediation Plan, Del Monte Plant 35* (CH2M HILL, 1994), submitted April 25, 1994 to the ACDEH and RWQCB. The plans were reviewed and approved by the ACDEH and RWQCB. The plans identified the end point of groundwater treatment to be when Kaiser's construction begins or when asymptotic concentration levels of chlorinated hydrocarbons in the groundwater are approached.

Del Monte continued to operate the GET system and constructed the extraction trench in July and August 1994. As of March 1995, the GET system has operated for 26 months.

3.0 Description of GET System

3.1 GET System Construction

Del Monte began construction of the GET system on January 11, 1993 and began operating the system on January 14, 1993. In June and July 1994, the extraction system was expanded.

The original GET system extracts groundwater through one of two 16-inch diameter perforated pipes installed in the pea gravel at the bottom of the excavation pit. The extracted groundwater is pumped to a 20,000-gallon covered settling tank to settle out silt and fine sand. An automatic shutoff device does not allow for more than 7,000 gallons of water to be contained within the 20,000-gallon settling tank at any time. After the settling tank, the extracted groundwater gravity flows to a 100-gallon holding tank prior to treatment. Treatment consists of two activated carbon canisters in series. The treated groundwater is then discharged to the sanitary sewer; Del Monte obtained a Wastewater Discharge Permit from the East Bay Municipal Utility District (EBMUD).

The GET system was shut down on December 10, 1993 due to the expiration of the EBMUD Wastewater Discharge Permit. Del Monte received a renewed Wastewater Discharge Permit on January 14, 1994, but the restart of the GET system was delayed until March 8, 1994 because of a faulty transfer pump and the unavailability of an electrical power source on the Plant 35 property.

In 1994 Del Monte expanded the groundwater extraction system on the West Parcel by constructing an extraction trench adjacent and parallel to Hollis Street. The trench was completed in early July. Extraction of groundwater from the trench began on August 11, 1994.

A plan view and a process flow schematic of the GET system are shown on Figures 3 and 4. Four water sample ports (SP-A, SP-B, SP-C, SP-D, and SP-E) used to monitor the GET system are also shown on Figure 4.

Three piezometers were installed downgradient of the GET system at the locations shown on Figure 5. Water levels have been measured once every one to two weeks to monitor the zone of influence.

3.2 Wastewater Discharge Permit Requirements

A Wastewater Discharge permit was issued by EBMUD to Del Monte for discharging the treated groundwater to the sanitary sewer. The initial permit was issued for a period of one year, from December 7, 1992 to December 6, 1993. The permit has been renewed two times. The current permit became effective on January 18, 1995.

Initially the permit required monthly sampling of 3 sample ports (SP-A, SP-B, and SP-D) with samples being analyzed for ClHC and benzene, toluene, ethylbenzene, and xylene (BTEX). After the first year of operations, EBMUD revised the permit to allow quarterly sampling of 2 sample ports (SP-B and SP-D). BTEX analysis was dropped because no BTEX were detected during the first year of operation. The current permit requires quarterly sampling of 2 ports (SP-B and SP-D) with analysis for ClHC.

Results of the GET system monitoring have been reported quarterly to the EBMUD, ACDEH, and the RWQCB.

3.3 Groundwater Monitoring

Groundwater in the vicinity of the GET system has been monitored quarterly both before and after the system began operation by the following wells:

- MW-7, MW-9, and MW-10 have been sampled quarterly both before and after the GET system began operating.

- MW-8 was sampled quarterly before the GET system was installed, but was removed when the extraction pit was constructed.

- MW-11 was sampled quarterly both before and after the GET system began operation, but was removed in July 1994 when the extraction trench was constructed.

- MW-12 was installed in February 1994 offsite, across Hollis Street from the Del Monte property and was added to the quarterly monitoring program.

The monitoring well locations are shown on Figure 3. Reports presenting the groundwater monitoring results have been submitted quarterly to the ACDEH and the RWQCB.

4.0 GET System Effectiveness

Groundwater and treatment system influent monitoring results were analyzed to assess the effectiveness of the GET system to date. Results are presented and discussed below.

4.1 Monitoring Results

Concentrations of ClHC in samples from groundwater monitoring wells and from the treatment system influent have decreased significantly since the GET system began operating in January 1993. Groundwater monitoring results are tabulated in Table 1 and treatment system influent results are tabulated in Table 2. The groundwater monitoring data are shown graphically in Figure 6.

The most recent sampling event occurred on March 9, 1995. As shown on Figure 6, results are similar to those obtained in recent quarters with the exception of MW-12. An increase in TCE and PCE was seen in the MW-12 sample results over the previous quarter; however, levels are still below levels measured before the extraction trench became operational in August 1994.

4.2 Analysis of Treatment System Monitoring Results

To assess whether or not the data indicate that an asymptotic level of treatment has been achieved, the treatment system influent data were analyzed.

4.2.1 Reduction in Concentration Over Time

A regression analysis was performed on the concentration data (total ClHC) from SP-D (the treatment system influent) versus time. Research of regression models suggest that a nonlinear model representing an exponential decay with a nonzero asymptote may be most appropriate for this application (Tucker and Parker, 1992). In performing the regression, the data were assumed to regress non-linearly to a non-zero asymptotic point where concentration, Conc., is proportional to $Ae^{Bt}+C$. The constant C is the asymptote, the value to which the data regresses.

Using the software *REGRESS: Statistical Evaluation of Asymptotic Limits of Groundwater Remediation* (API, 1992), the concentration data were fitted to the curve and the constants were calculated to be:

A = 783.6994 µg/l

B = - 0.0179 1/day

C = 58.63 µg/l

Therefore, the fitted curve is Conc. = $783.6994e^{(-0.0179t)} + 58.63$.

The asymptote of 58.63 µg/l is the predicted concentration of the treatment system influent at infinite time.

The REGRESS statistical analysis output and regression curve are shown in Table 3 and Figure 7, respectively. In Table 3, the R^2 value of 0.924 and the sum of squared residuals equal to 3.40×10^4 indicate the model's goodness-of-fit. The plot of the model and the raw data in Figure 7 also shows how well the model fits the data.

4.2.2 Reduction in Mass Removed Over Time

According to discussions with RWQCB staff, the achievement of asymptotic levels is typically assessed by considering the mass of a contaminant removed over time. For such an evaluation to be meaningful, the volume of water extracted needs to be reasonably consistent over time. Volumes of water extracted from the Plant 35 GET system during a given quarter have varied widely, ranging from 73,769 to 674,093 gallons. The reasons for variations in the amount of water extracted per quarter include: a system shutdown at the end of 1993/beginning of 1994 while awaiting the EBMUD permit renewal; maintenance problems that occasionally occurred rendering the system temporarily non-operational; the addition of the extraction trench; adjustments to pumping rates.

Because of these volume variations, statistical analysis of mass removed over time was not conducted; however, mass removed was plotted versus time and is shown on Figure 8. Each data point on Figure 8 was calculated by multiplying the volume of water treated during a reporting period (quarter) by the concentration of total ClHC detected in the water sample collected that quarter from Sample Port D, the influent to the treatment system. If more than one sample was analyzed during the quarter (as in 1993 when samples were collected monthly) the concentrations of total ClHC from each analysis were averaged to arrive at one concentration of total ClHC for the quarter. Data on which Figure 8 is based are provided in Table 4.

As shown in Figure 8, the data indicate a decreasing mass of ClHC removed over time.

5.0 Conclusions and Recommendations

5.1 Conclusions

During the 26 months of GET system operation, the concentrations of total ClHC measured in samples of groundwater and the GET system influent have significantly decreased:

- Before the GET system was constructed, total ClHC in groundwater samples from MW-7, MW-9, and MW-10 ranged from 62 to 409 µg/l. The March 1995 results for these wells ranged from 12 to 25 µg/l.

- The initial concentration of total ClHC in the influent to the GET system was 666 µg/l (January 19, 1993). The concentration measured in March 1995 was 19 µg/l.

Graphical representations of groundwater monitoring data and of treatment system influent data over time show the significant reduction and suggest that asymptotic levels have been reached. Regression analysis of the treatment system influent data using the REGRESS model indicates that an asymptotic level has been approached with an asymptote of 58.63 µg/l.

Based on these results, the stated objective of operating the GET system until concentrations have reached asymptotic levels has been met.

5.2 Recommendations

We recommend that the GET system be turned off at this time and that groundwater monitoring continue and results evaluated as described below.

5.2.1 Groundwater Monitoring

After the treatment system is shut off, we recommend groundwater monitoring according to the following schedule:

- MW-7, MW-10, and MW-12 sampled one month after system shut down and quarterly thereafter.

- Groundwater monitoring ceased when four consecutive quarters have passed with results at or below the established criterion (discussed below).

- The same schedule followed for MW-9 except monitoring of MW-9 will cease when the well is closed in preparation for site demolition (anticipated in May 1995).

5.2.2 Contingency Plan

A contingency plan with the following elements is recommended:

- Groundwater monitoring results will be reviewed quarterly and the results compared against established criteria.
- If the criteria are exceeded in a quarterly sampling event, two additional rounds of samples will be collected; one month and two months after the initial event.
- If the criteria are still exceeded, Del Monte will re-activate the GET system.
- If the criteria are not exceeded, no additional action will be taken and groundwater monitoring will continue on the regular quarterly schedule.

5.2.3 Groundwater Criteria

Groundwater in the vicinity of Del Monte Plant 35 is not a current source of drinking water and is not considered a potenetial future source of drinking water because of low aquifer pumping yields and low groundwater quality in the region due to a long history of industrial activities. Drinking water standards are not, therefore applicable to the groundwater in the vicinity of the Del Monte property. This concept has been previously discussed with the RWQCB and the ACDEH and was the basis of the target groundwater remediation goal of the GET system being established as asymptotic levels.

There are no established quantitative standards or criteria applicable for groundwater that is not considered a potential drinking water source.

Based on the non-use of groundwater in the vicinity of the Del Monte property, the industrial/commercial nature of the area, and the fact that most of the ground surface is paved thereby limiting direct contact with groundwater or indirect contact through vapors, we recommend a groundwater criterion of 250 µg/l total CHC. As discussed above, groundwater monitoring data obtained after the GET system is shut off will be compared with this criterion to determine if there is a need for additional action.

References

API, 1992. Software and Users Manual for REGRESS: Statistical Evaluation of Asymptotic Limits of Groundwater Remediation. Health and Environmental Sciences, API Publication Number 4543. April 1992.

CH2M HILL, 1989. Property Assessment and Tank Removal Report, Del Monte Plant No. 35, Southwest Corner. September 1989.

CH2M HILL, 1992. Letter to ACDEH Re: Update of Remediation Activities Plan for Del Monte Plant 35 - West Parcel. September 11, 1992.

CH2M HILL, 1994. Draft Remediation Plan, Del Monte Plant 35. April 1994.

Tucker and Parker, 1992. Tucker, W.A. and Parker, E.F. Technological Limits of Groundwater Remediation: A Statistical Evaluation Method. Environmental Science and Engineering, Inc.

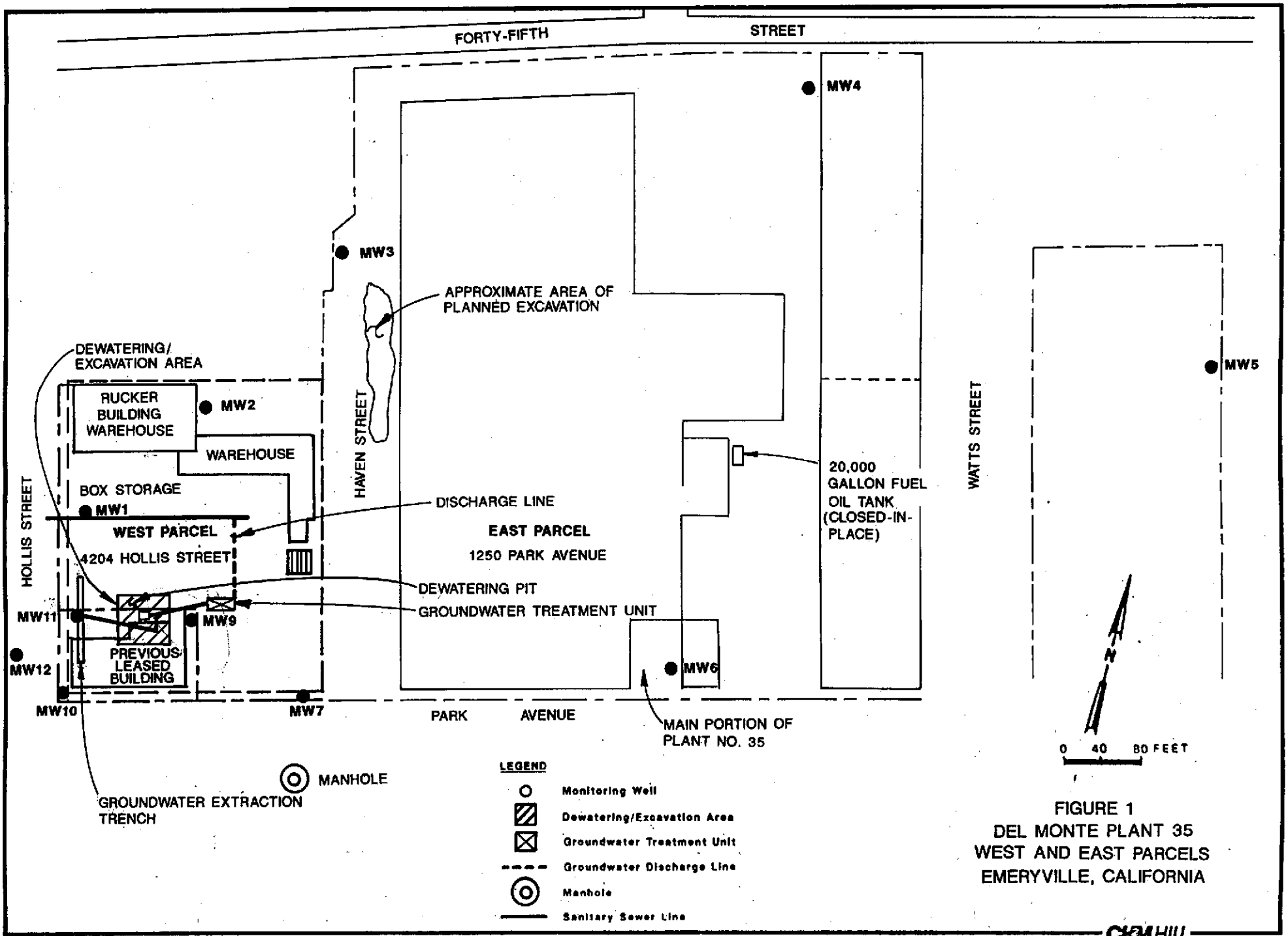

FIGURE 1
DEL MONTE PLANT 35
WEST AND EAST PARCELS
EMERYVILLE, CALIFORNIA

CH2M HILL

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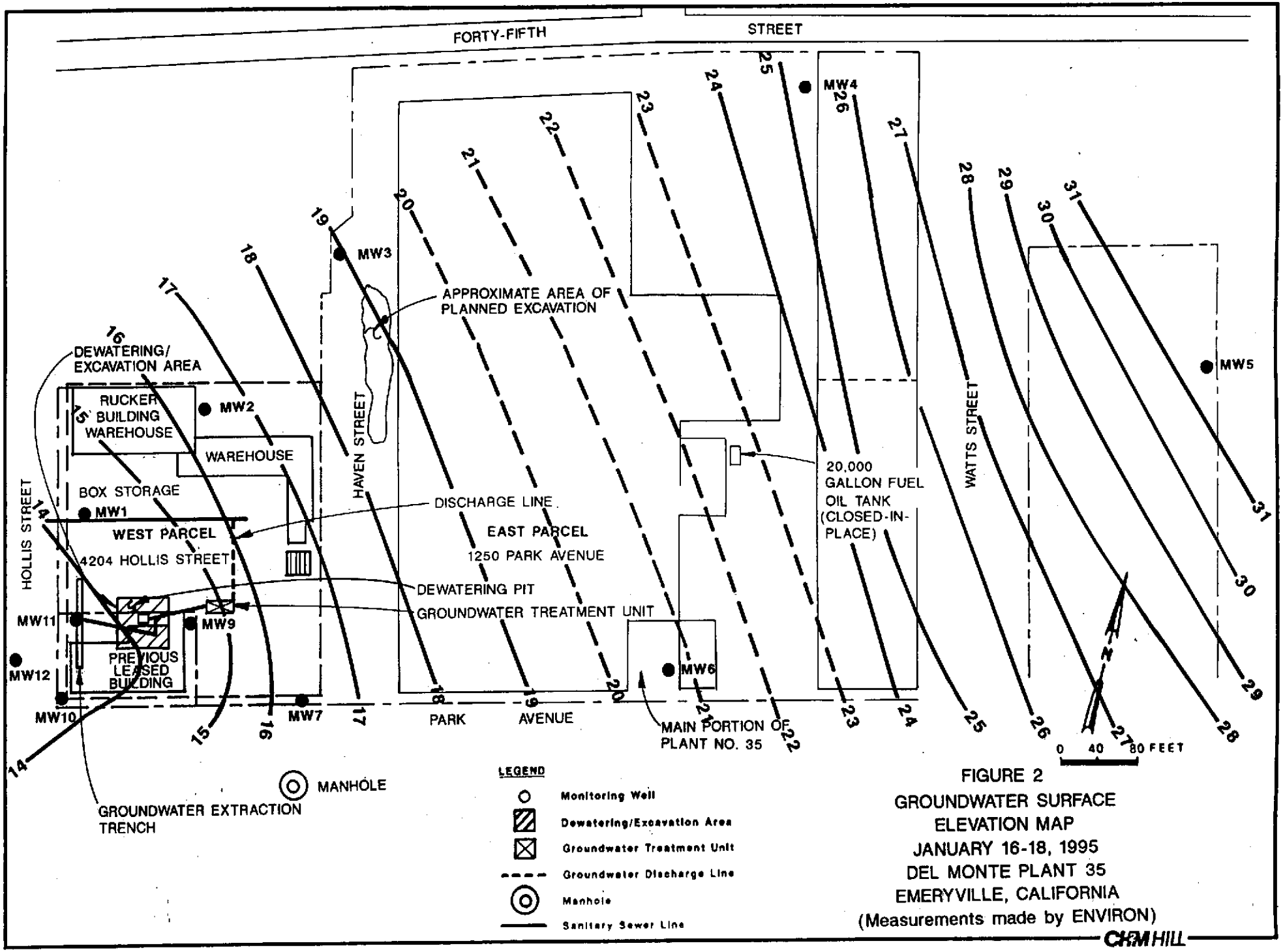

FIGURE 2
GROUNDWATER SURFACE ELEVATION MAP
JANUARY 16-18, 1995
DEL MONTE PLANT 35
EMERYVILLE, CALIFORNIA
(Measurements made by ENVIRON)

CH2M HILL

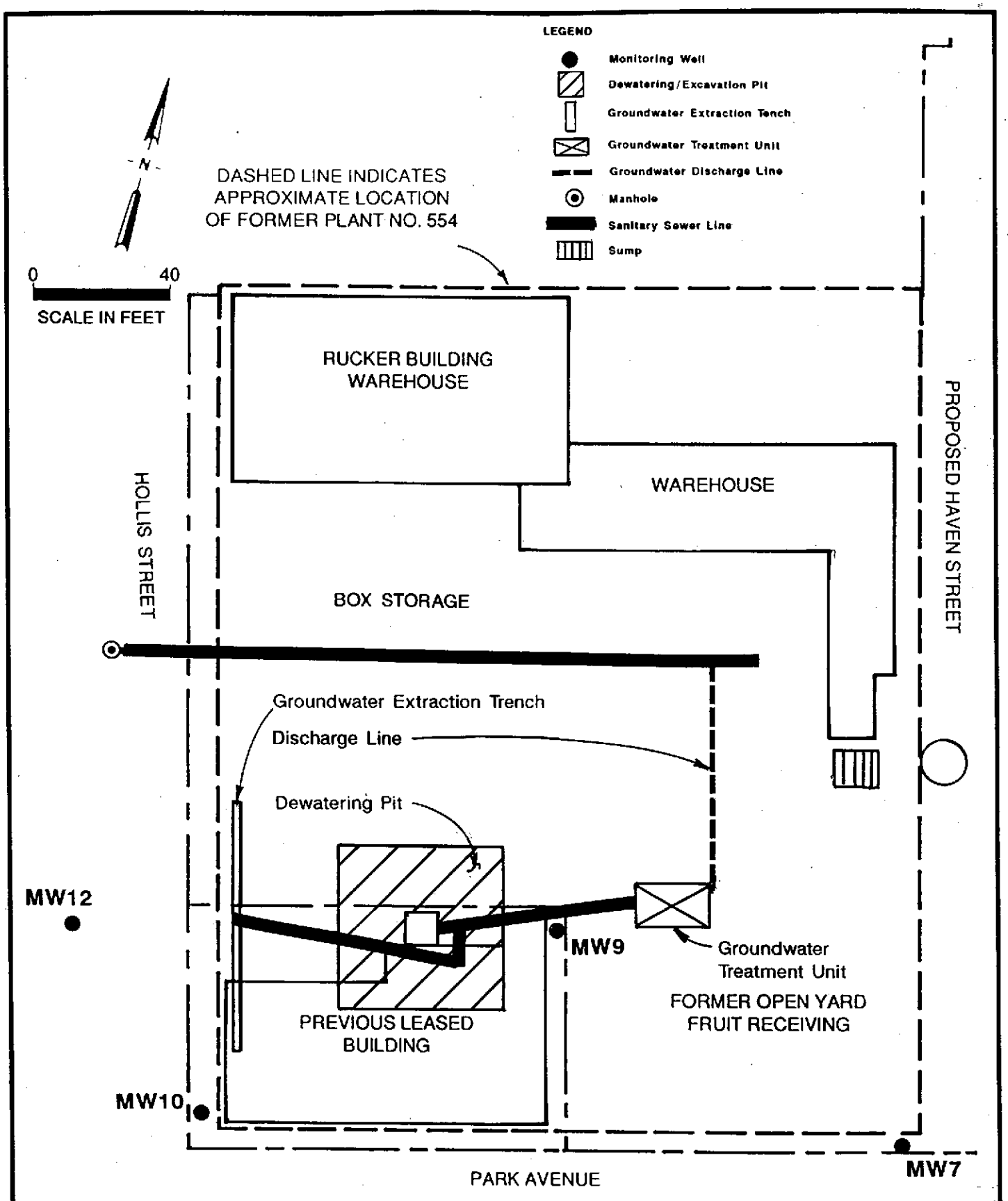

FIGURE 3
DEL MONTE PLANT 35
GROUNDWATER EXTRACTION SYSTEM
Emeryville, California

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CH2M HILL

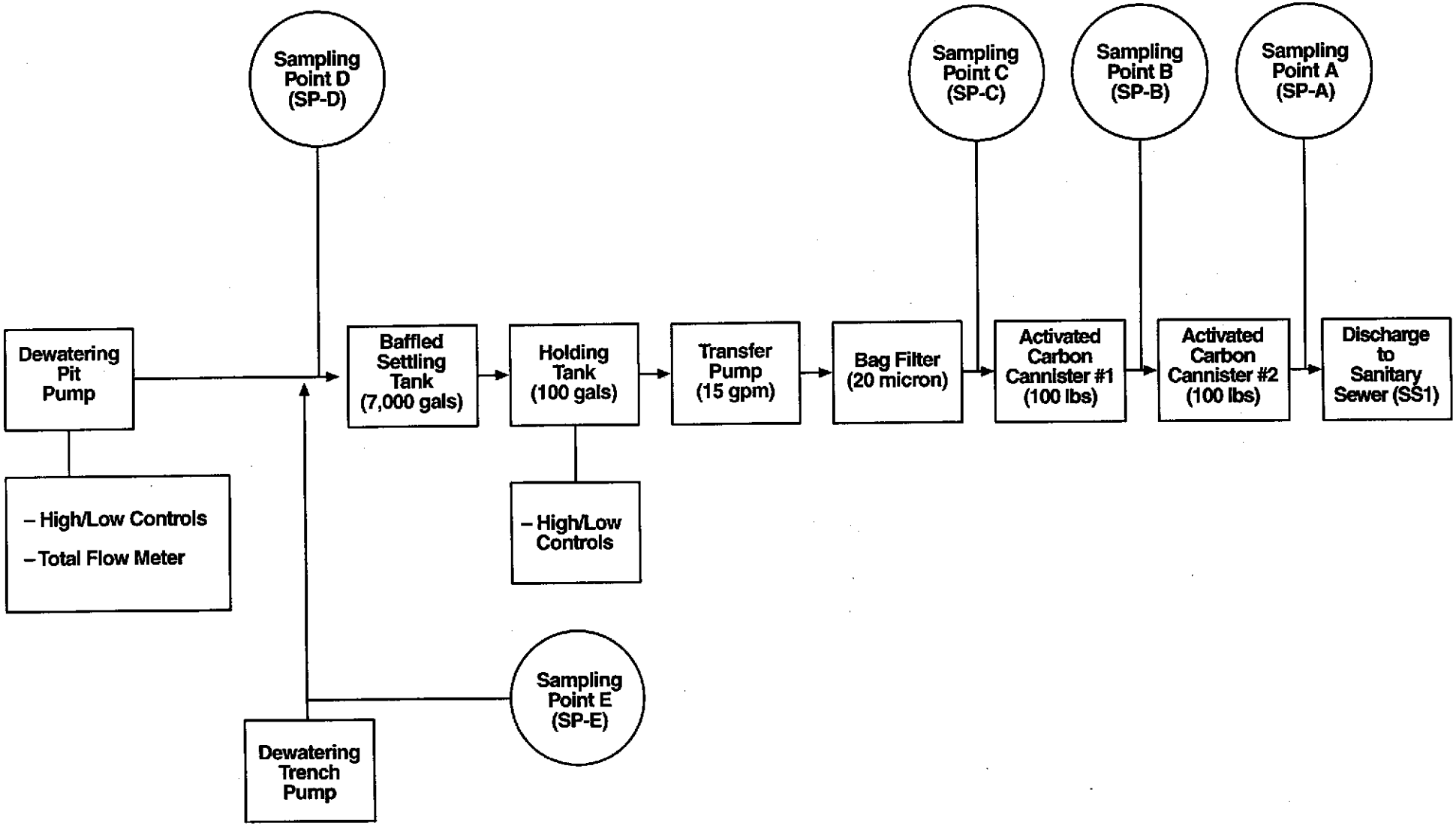

Figure 4
DEL MONTE PLANT 35
GROUNDWATER TREATMENT UNIT

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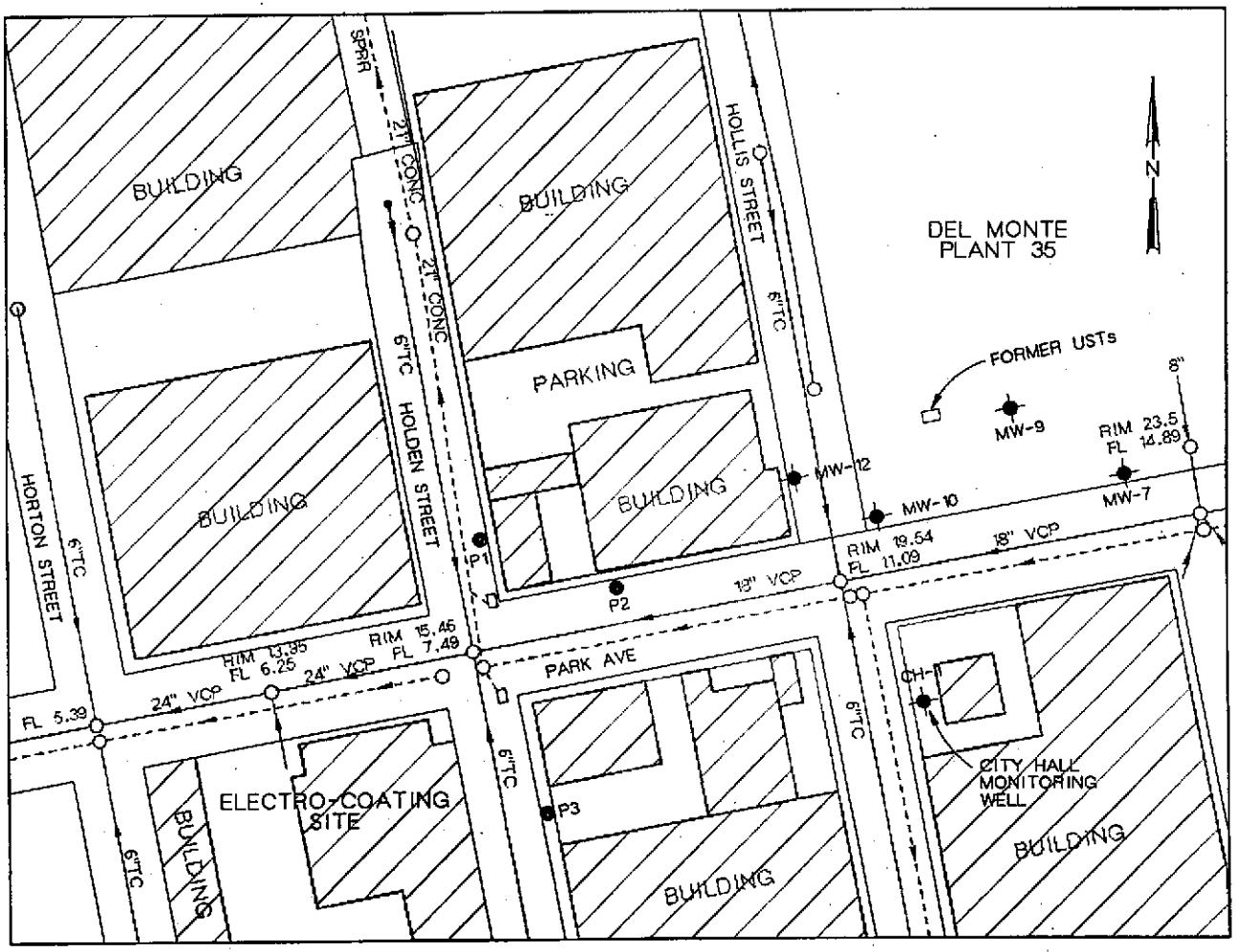

LEGEND:

- APPROXIMATE BUILDING LOCATION
- MW-11 EXISTING MONITORING WELL
- P-1 PIEZOMETER

0 100' 200' 300'

SCALE: 1" = 100'

FIGURE 5
PIEZOMETER LOCATIONS
DEL MONTE PLANT 35
EMERYVILLE, CALIFORNIA

CH2MHILL

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Figure 6
Total Chlorinated Hydrocarbon Concentration
in Monitoring Wells

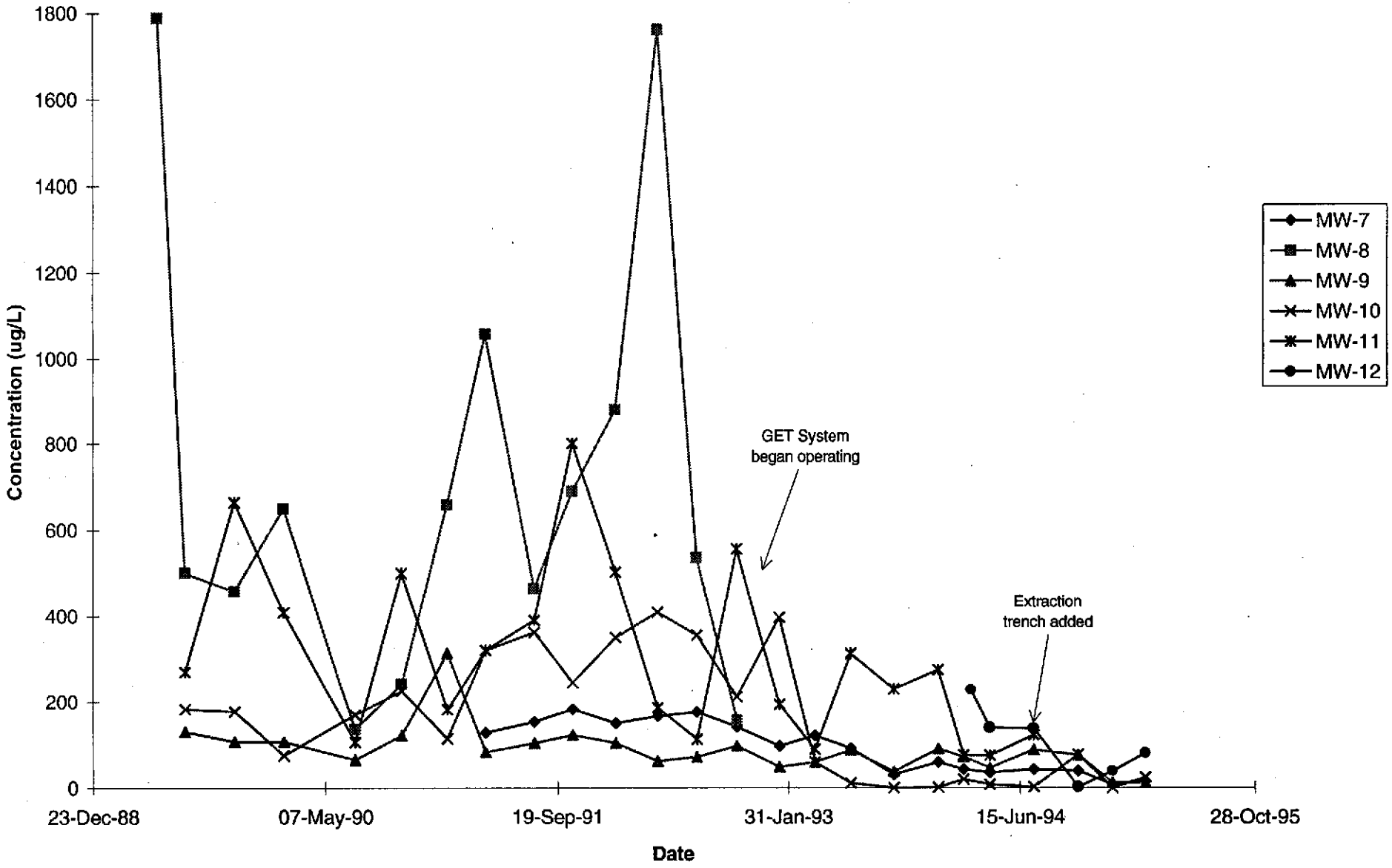

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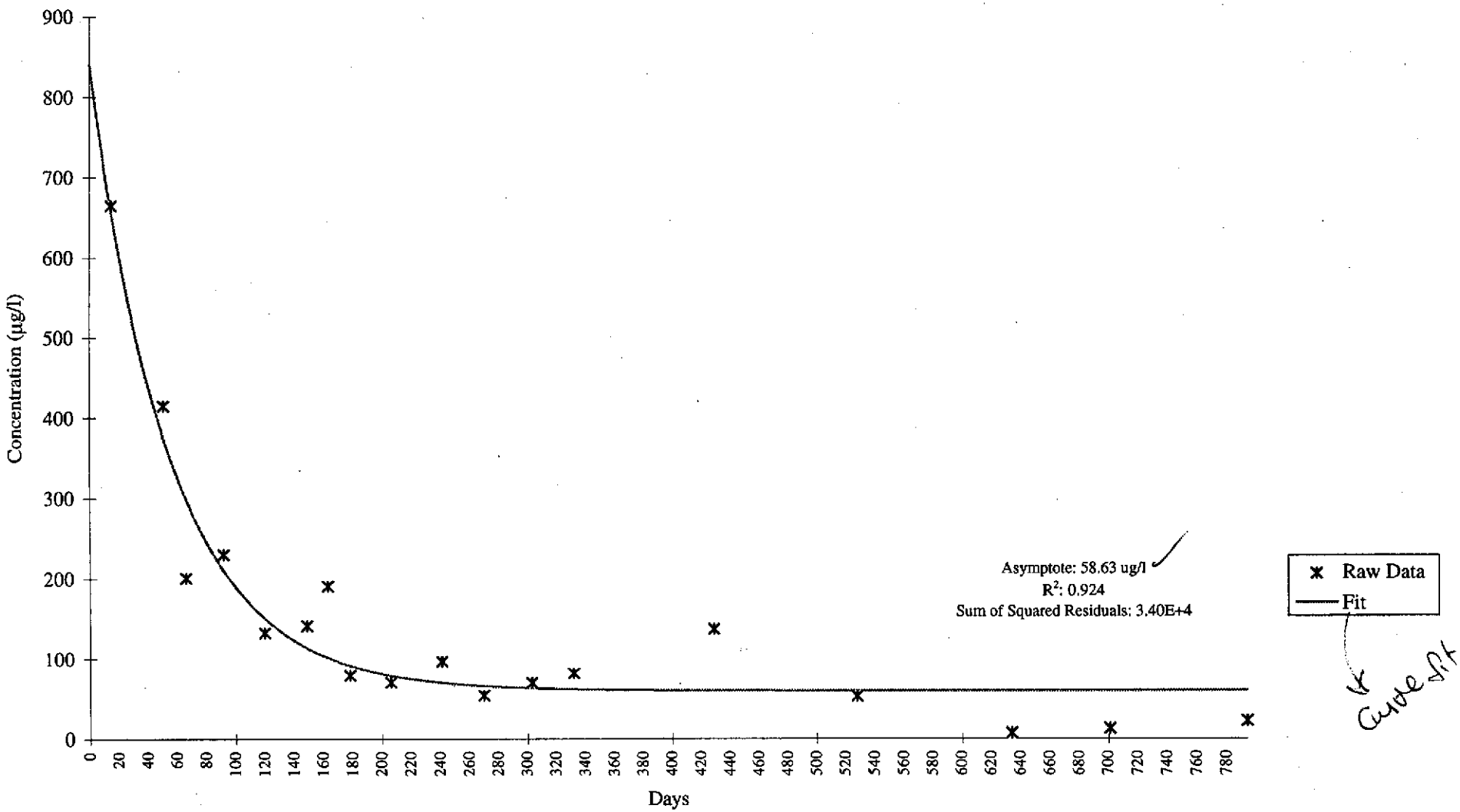
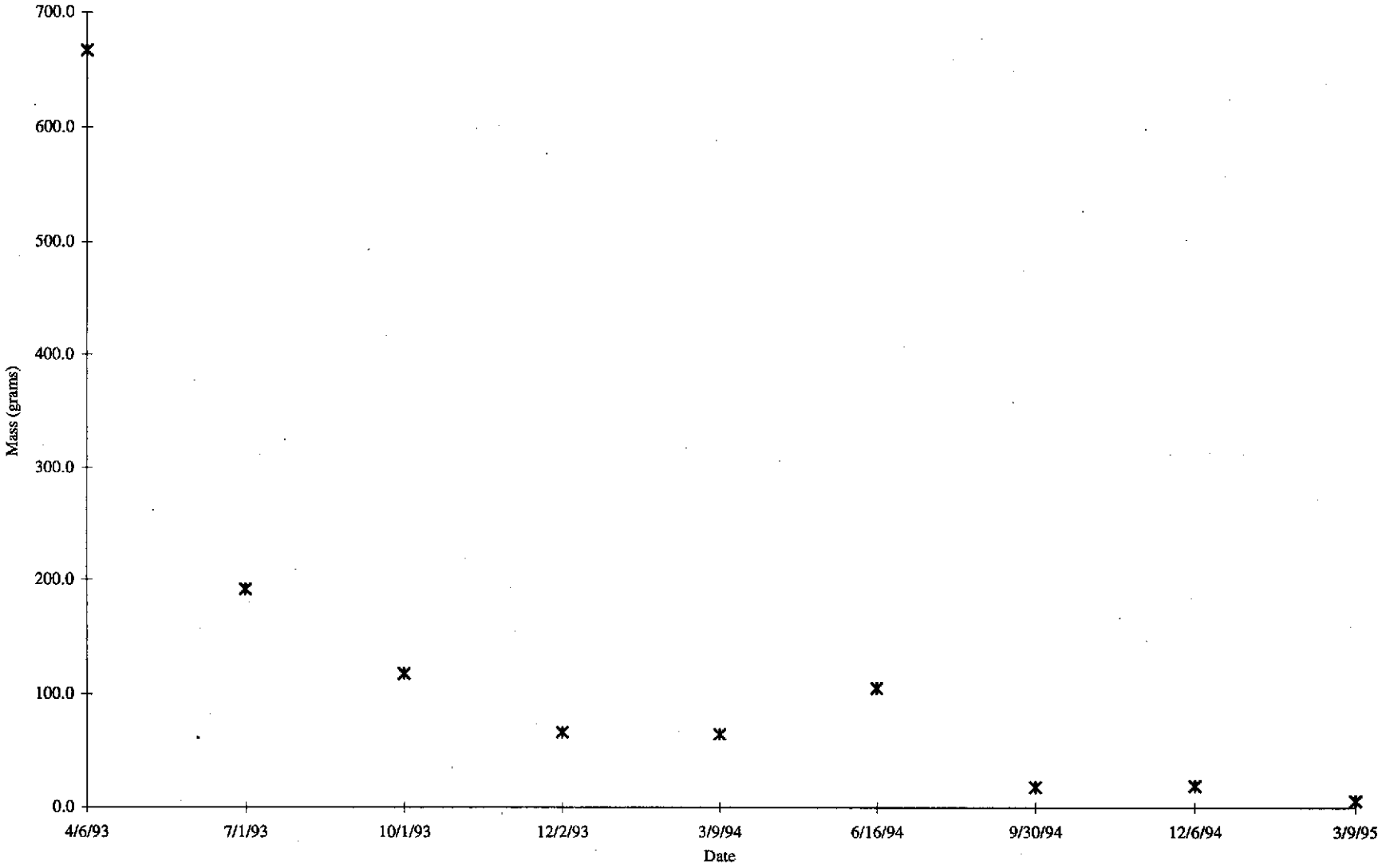
Figure 7
Total Chlorinated Hydrocarbon Concentration
Treatment System Influent (SP-D)



REGRESS.XLB/Sheet17 Chart 4

Figure 8
SP-D Average Total VOCs Removed



REGRESS.XLB/Sheet10 Chart 1

TABLE 1

DEL MONTE PLANT NO. 35, WEST PARCEL
4204 HOLLIS STREET, EMERYVILLE, CA
QUARTERLY GROUNDWATER MONITORING RESLUTS

Monitoring Well	Sampling Date	Concentration (ug/L) 1,2-DCE(a)	1,1-DCE(b)	1,2-DCA(c)	TCE(d)	PCE(e)	VC(f)	1,2-DP(g)
MW7	17-Apr-91	85.0	<0.5	<0.5	23.0	14.0	5.1	<0.5
MW7	31-Jul-91	100.0	<0.5	<0.5	29.0	19.0	5.1	<0.5
MW7	22-Oct-91	130.0	<1.0	<1.0	30.0	20.0	3.0	<1.0
MW7	23-Jan-92	100.0	<0.5	<0.5	29.0	17.0	3.1	<0.5
MW7	23-Apr-92	92.0	<0.5	<0.5	46.0	28.0	<0.5	<0.5
MW7	17-Jul-92	93.0	<0.5	<0.5	51.0	30.0	1.8	<0.5
MW7	12-Oct-92	71.0	<0.5	<0.5	39.0	28.0	2.8	<0.5
MW7	13-Jan-93	54.0	<0.5	<0.5	25.0	16.0	2.1	<0.5
MW7	30-Mar-93	65.0	<0.5	<0.5	31.0	22.0	2.5	<0.5
MW7	16-Jun-93	45.0	<2.0	<2.0	25.0	19.0	2.7	<2.0
MW7	17-Sep-93	1.6 (t)	<1.0	<1.0	17.0	12.0	<1.0	<1.0
MW7	21-Dec-93	20.3	<0.5	<0.5	17.0	20.0	1.9	<0.5
MW7	14-Feb-94	18.0	<0.5	<0.5	13.0	11.0	0.7	<0.5
MW7	11-Apr-94	13.0	<0.5	<0.5	12.0	10.0	<1.0	<0.5
MW7	15-Jul-94	18.8	<0.5	<0.5	13.0	11.0	<0.50	<0.5
MW7	17-Oct-94	18.2	<0.5	<0.5	11.0	10.0	<0.50	<0.5
MW7	29-Dec-94	<1.0 (t)	<1.0	<1.0	4.4	3.8	<1.0	<1.0
MW7	09-Mar-95	<1.0 (t)	<1.0	<1.0	8.4	6.8	<1.0	<1.0
MW8	12-May-89	290.0	<10.0	<10.0	1400.0	20.0	78.0	<10.0
MW8	10-Jul-89	140.0	<2.5	<2.5	330.0	14.0	17.0	<2.5
MW8-dup	10-Jul-89	130.0	<2.5	<2.5	310.0	12.0	16.0	<2.5
MW8	24-Oct-89	100.0	<2.0	<2.0	330.0	24.0	4.0	<2.0
MW8	07-Feb-90	100.0	<2.0	<2.0	520.0	18.0	12.0	<2.0
MW8	10-Jul-90	5.0	<0.2	<0.5	91.0	36.0	3.0	<0.5
MW8	17-Oct-90	59.0	<1.0	<1.0	160.0	21.0	2.0	<1.0
MW8	24-Jan-91	160.0	<2.0	<5.0	450.0	13.0	9.0	27.0
MW8	17-Apr-91	210.0	<5.0	<5.0	830.0	16.0	<5.0	<5.0
MW8	31-Jul-91	85.0	<2.0	<2.0	350.0	30.0	<2.0	<2.0
MW8	22-Oct-91	40.0	<5.0	<5.0	630.0	20.0	<5.0	<5.0
MW8	23-Jan-92	160.0	<5.0	<5.0	690.0	29.0	<5.0	<5.0
MW8	23-Apr-92	130.0	<10.0	<10.0	1600.0	30.0	<10.0	<10.0
MW8	17-Jul-92	35.0	<2.0	<2.0	490.0	11.0	<2.0	<2.0
MW8	12-Oct-92	22.0	<1.0	<1.0	110.0	24.0	1.3	<1.0
MW8 (SP-D)	19-Jan-93	37.0	<0.5	<0.5	620.0	4.9	3.0	<0.5
MW8 (SP-D)	26-Feb-93	50.0	<0.5	<0.5	350.0	14.0	<0.5	<0.5
MW8 (SP-D)	11-Mar-93	44.9	<0.5	<0.5	130.0	25.0	<0.5	<0.5
MW8 (SP-D)	06-Apr-93	48.0	<1.0	<1.0	160.0	21.0	<1.0	<1.0
MW8 (SP-D)	04-May-93	29.0	<0.5	<0.5	89.0	14.0	<0.5	<0.5
MW8 (SP-D)	02-Jun-93	1.2 (t)	<1.0	<1.0	120.0	8.5	<1.0	<1.0
MW8 (Extr. Well)	16-Jun-93	66.8	<2.0	<2.0	86.0	31.0	1.4	<2.0
MW8 (SP-D)	16-Jun-93	62.0	<2.0	<2.0	102.0	24.0	<2.0	<2.0
MW8 (SP-D)	02-Sep-93	<1.0 (t)	<1.0	<1.0	83.0	11.0	<1.0	<1.0
MW8 (SP-D)	01-Oct-93	<1.0 (t)	<1.0	<1.0	41.0	10.0	<1.0	<1.0
MW8 (SP-D)	05-Nov-93	<1.0 (t)	<1.0	<1.0	56.0	11.0	<1.0	<1.0
MW8 (SP-D)	02-Dec-93	<1.0 (t)	<1.0	<1.0	68.0	11.0	<1.0	<1.0
MW8 (SP-D)	09-Mar-94	<1.0 (t)	<1.0	<1.0	130.0	4.4	<1.0	<1.0
MW8 (SP-D)	16-Jun-94	<1.0 (t)	<1.0	<1.0	37.0	13.0	<1.0	<1.0
MW8 (SP-D)	17-Oct-94	<1.0 (t)	<1.0	<1.0	2.5	2.5	<1.0	<1.0
MW8 (SP-D)	06-Dec-94	<1.0 (t)	<1.0	<1.0	5.5	1.4	<1.0	<1.0
MW8 (SP-D)	09-Mar-95	<1.0 (t)	<1.0	<1.0	16.0	3.4	<1.0	<1.0
MW9	10-Jul-89	63.0	<0.5	<0.5	13.0	38.0	16.0	<0.5
MW9	24-Oct-89	6.4	<0.5	<0.5	29.0	48.0	23.0	<0.5
MW9	07-Feb-90	55.0	<0.5	<0.5	15.0	30.0	7.1	<0.5

TABLE 1

DEL MONTE PLANT NO. 35, WEST PARCEL
4204 HOLLIS STREET, EMERYVILLE, CA
QUARTERLY GROUNDWATER MONITORING RESLUTS

Monitoring Well	Sampling Date	Concentration (ug/L) 1,2-DCE(a)	1,1-DCE(b)	1,2-DCA(c)	TCE(d)	PCE(e)	VC(f)	1,2-DP(g)
MW9	10-Jul-90	3.0	<0.2	<0.5	9.0	43.0	10.0	<0.5
MW9	17-Oct-90	70.0	<0.5	<0.5	14.0	32.0	4.6	<0.5
MW9	24-Jan-91	70.0	<2.0	<2.0	220.0	23.0	<2.0	<2.0
MW9	17-Apr-91	44.0	<0.5	<0.5	12.0	26.0	<0.5	<0.5
MW9	31-Jul-91	55.0	<0.5	<0.5	14.0	32.0	2.3	<0.5
MW9	22-Oct-91	71.0	<0.5	<0.5	15.0	33.0	2.8	<0.5
MW9	23-Jan-92	64.0	<0.5	<0.5	10.0	27.0	2.1	<0.5
MW9	23-Apr-92	22.0	<0.5	<0.5	11.0	29.0	<0.5	<0.5
MW9	17-Jul-92	26.0	<0.5	<0.5	13.0	32.0	<0.5	<0.5
MW9	12-Oct-92	41.0	<0.5	<0.5	17.0	36.0	3.0	<0.5
MW9	13-Jan-93	22.0	<0.5	<0.5	7.9	17.0	1.4	<0.5
MW9	30-Mar-93	26.0	<0.5	<0.5	9.6	22.0	2.1	<0.5
MW9	16-Jun-93	41.5	<2.0	<2.0	12.0	27.0	6.8	<2.0
MW9	17-Sep-93	1.6 (t)	<1.0	<1.0	11.0	21.0	3.5	<1.0
MW9	21-Dec-93	34.5	<0.5	<0.5	16.0	34.0	5.9	<0.5
MW9	14-Feb-94	30.8	<0.5	<0.5	11.0	25.0	4.2	<0.5
MW9	11-Apr-94	18.0	<0.5	<0.5	9.0	18.0	1.6	<0.5
MW9	15-Jul-94	42.4	<0.5	<0.5	15.0	24.0	7.1	<0.5
MW9	17-Oct-94	35.6	<0.5	<0.5	14.0	24.0	2.2	<0.5
MW9	29-Dec-94	<1.0 (t)	<1.0	<1.0	3.5	8.5	<1.0	<1.0
MW9	09-Mar-95	<1.0 (t)	<1.0	<1.0	3.4	8.4	<1.0	<1.0
MW10	10-Jul-89	85.0	0.8	<0.5	27.0	42.0	28.0	<0.5
MW10	24-Oct-89	104.8	<0.5	<0.5	37.0	28.0	6.9	<0.5
MW10	07-Feb-90	50.0	<0.5	<0.5	11.0	8.0	5.3	<0.5
MW10	10-Jul-90	9.0	<0.2	<0.5	30.0	76.0	54.0	<0.5
MW10-dup	10-Jul-90	10.0	5.0	<0.5	28.0	69.0	17.0	<0.5
MW10	17-Oct-90	140.0	<0.5	<0.5	35.0	37.0	13.0	<0.5
MW10	24-Jan-91	65.0	<0.5	<0.5	14.0	31.0	3.3	<0.5
MW10	17-Apr-91	210.0	<2.0	<2.0	48.0	52.0	10.0	<2.0
MW10	31-Jul-91	280.0	<2.0	<2.0	66.0	14.0	2.0	<2.0
MW10	22-Oct-91	160.0	<1.0	<1.0	40.0	40.0	5.0	<1.0
MW10	23-Jan-92	240.0	<2.0	<2.0	46.0	54.0	10.0	<2.0
MW10	23-Apr-92	210.0	<2.0	<2.0	89.0	110.0	<2.0	<2.0
MW10	17-Jul-92	180.0	<1.0	<1.0	78.0	82.0	15.0	<1.0
MW10	12-Oct-92	110.0	<1.0	<1.0	45.0	46.0	11.0	<1.0
MW10	13-Jan-93	190.0	<1.0	<1.0	78.0	110.0	19.0	<1.0
MW10	30-Mar-93	26.0	<0.5	<0.5	15.0	18.0	0.7	<0.5
MW10	16-Jun-93	3.2	<2.0	<2.0	2.7	4.7	<2.0	<2.0
MW10	17-Sep-93	<1.0 (t)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW10	21-Dec-93	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5
MW10	14-Feb-94	9.9	<0.5	<0.5	5.4	4.4	<0.5	<0.5
MW10	11-Apr-94	3.7	<0.5	<0.5	2.2	1.5	<1.0	<0.5
MW10	15-Jul-94	<0.5	<0.5	<0.5	1.0	1.0	<0.5	<0.5
MW10	17-Oct-94	20.6	<0.5	<0.5	37.0	19.0	<0.5	<0.5
MW10	29-Dec-94	<1.0 (t)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW10	09-Mar-95	1.7 (t)	<1.0	<1.0	13.0	9.8	<1.0	<1.0
MW11	10-Jul-89	73.0	<1.0	4.0	160.0	12.0	16.0	5.7
MW11	24-Oct-89	188.0	<2.0	10.0	410.0	15.0	22.0	20.0
MW11	07-Feb-90	105.0	<2.0	2.0	270.0	8.0	11.0	13.0
MW11	10-Jul-90	4.0	<2.0	23.0	46.0	18.0	15.0	<0.5
MW11	17-Oct-90	150.0	<2.0	11.0	300.0	8.0	<2.0	31.0
MW11	24-Jan-91	120.0	<1.0	<1.0	29.0	29.0	3.0	<1.0
MW11	17-Apr-91	100.0	<1.0	14.0	160.0	12.0	5.0	29.0

TABLE 1

DEL MONTE PLANT NO. 35, WEST PARCEL
4204 HOLLIS STREET, EMERYVILLE, CA
QUARTERLY GROUNDWATER MONITORING RESLUTS

Monitoring Well	Sampling Date	Concentration (ug/L) 1,2-DCE(a)	1,1-DCE(b)	1,2-DCA(c)	TCE(d)	PCE(e)	VC(f)	1,2-DP(g)
MW11	31-Jul-91	250.0	<2.0	<2.0	61.0	65.0	12.0	2.0
MW11	22-Oct-91	180.0	<2.0	5.0	560.0	20.0	5.0	30.0
MW11	23-Jan-92	160.0	<2.0	13.0	290.0	19.0	<2.0	21.0
MW11	23-Apr-92	30.0	<1.0	9.0	120.0	13.0	<1.0	14.0
MW11	17-Jul-92	26.0	<0.5	1.4	81.0	<0.5	<0.5	3.5
MW11	12-Oct-92	63.0	<3.0	4.4	450.0	16.0	5.2	17.0
MW11	13-Jan-93	29.0	<1.0	2.2	140.0	13.0	3.2	6.4
MW11	30-Mar-93	17.0	<0.5	<0.5	55.0	10.0	1.6	5.1
MW11	16-Jun-93	41.5	<2.0	6.3	230.0	20.0	7.0	7.2
MW11	17-Sep-93	<5.0 (t)	<5.0	<5.0	230.0	<5.0	<5.0	<5.0
MW11	21-Dec-93	32.2	<0.5	2.8	220.0	14.0	6.1	<0.5
MW11	14-Feb-94	11.8	<0.5	2.0	52.0	5.6	1.5	2.6
MW11	11-Apr-94	10.0	<0.5	<0.5	57.0	4.9	<1.0	2.7
MW11	27-Jun-94	<0.5	<0.5	<0.5	110.0	12.0	<0.5	<0.5
MW-11 (SP-E)	30-Sep-94	<1.0 (t)	<1.0	<1.0	2.6	2.8	<1.0	<1.0
MW-11 (SP-E)	06-Dec-94	<1.0 (t)	<1.0	<1.0	4.2	1.8	<1.0	<1.0
MW-11 (SP-E)	09-Mar-95	<1.0 (t)	<1.0	<1.0	2.3	1.1	<1.0	<1.0
MW12	02-Mar-94	35.3	<0.5	<0.5	170.0	16.0	6.8	<0.5
MW12	11-Apr-94	25.0	<0.5	<0.5	100.0	13.0	<1.0	<0.5
MW12	15-Jul-94	31.9	<0.5	<0.5	82.0	19.0	4.2	<0.5
MW12	17-Oct-94	<0.5	<0.5	<0.5	1.1	0.9	<0.5	<0.5
MW12	29-Dec-94	<1.0 (t)	<1.0	<1.0	28.0	11.0	<1.0	<1.0
MW12	09-Mar-95	<1.0 (t)	<1.0	<1.0	64.0	16.0	<1.0	<1.0
	Primary MCL	---	6	0.5	5	5	0.5	5

(a) 1,2-Dichloroethene
(b) 1,1-Dichloroethene
(c) 1,2-Dichloroethane
(d) Trichloroethene
(e) Tetrachloroethene
(f) Vinyl chloride
(g) 1,2-Dichloropropane
(t) trans-1,2-Dichloroethene

TABLE 2

GROUNDWATER TREATMENT SYSTEM MONITORING RESULTS
DEL MONTE PLANT 35
4204 HOLLIS STREET, EMERYVILLE CA

Sample Port	Date	Concentrations (ug/L) B	T	E	X	PCE	TCE	VC	1,2-DCE
SP-A	14-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-A	19-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-A*	19-Jan-93	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0	< 0.6	< 1.0	< 0.6
SP-A	27-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-A	26-Feb-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-A*	22-Mar-93	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0	< 0.6	< 1.0	< 0.6
SP-A	06-Apr-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9
SP-A	04-May-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.1
SP-A	02-Jun-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0 t
SP-A	29-Jul-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0 t
SP-A	02-Sep-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0 t
SP-A	01-Oct-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0 t
SP-A	05-Nov-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	3.7	< 1.0	1.0 t
SP-A	02-Dec-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	13	< 1.0	< 1.0 t
SP-A	09-Mar-94	NA	NA	NA	NA	NA	NA	NA	NA
SP-A	16-Jun-94	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0 t
SP-A	30-Sep-94	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0 t
SP-A	06-Dec-94	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0 t
SP-A**	08-Dec-94	<0.5	<0.5	<0.5	<0.5	<1.0	2.1	<1.0	<1.0 t
SP-A	09-Mar-95	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0 t
SP-B	14-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-B	19-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-B	27-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-B	26-Feb-93	< 0.5	< 0.5	< 0.5	< 0.5	5.9	< 0.5	< 0.5	< 0.5
SP-B	06-Apr-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	11	< 0.5	27
SP-B	04-May-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	16	<0.5	39
SP-B	02-Jun-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	5.5	< 1.0	<1.0 t
SP-B	29-Jul-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	12	< 1.0	<1.0 t
SP-B	02-Sep-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	42	< 1.0	<1.0 t
SP-B	01-Oct-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	36	< 1.0	<1.0 t
SP-B	05-Nov-93	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	67	< 1.0	<1.0 t
SP-B	02-Dec-93	< 0.5	< 0.5	< 0.5	< 0.5	1.1	61	< 1.0	<1.0 t
SP-B	09-Mar-94	NA	NA	NA	NA	<1.0	4.9	<1.0	<1.0 t
SP-B	16-Jun-94	NA	NA	NA	NA	<1.0	26	<1.0	<1.0 t
SP-B	30-Sep-94	NA	NA	NA	NA	<1.0	1.8	<1.0	<1.0 t
SP-B	06-Dec-94	NA	NA	NA	NA	4.0	4.8	<1.0	<1.0 t
SP-B**	08-Dec-94	<0.5	<0.5	<0.5	<0.5	6.2	8.6	<1.0	<1.0 t
SP-B	09-Mar-95	NA	NA	NA	NA	<1.0	11	<1.0	<1.0 t
SP-C	14-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 0.5	< 0.5
SP-C	19-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.4	< 0.5	< 0.5
SP-C	27-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	6.6	250	< 0.5	19
SP-C	26-Feb-93	< 0.5	< 0.5	< 0.5	< 0.5	12	220	< 0.5	36
SP-C	11-Mar-93	NA	NA	NA	NA	17	100	< 0.5	37
SP-C	06-Apr-93	< 0.5	< 0.5	< 0.5	< 0.5	13	130	< 1.0	34
SP-C	04-May-93	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2

GROUNDWATER TREATMENT SYSTEM MONITORING RESULTS
DEL MONTE PLANT 35
4204 HOLLIS STREET, EMERYVILLE CA

Sample Port	Date	Concentrations (ug/L) B	T	E	X	PCE	TCE	VC	1,2-DCE
SP-C	02-Jun-93	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	29-Jul-93	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	02-Sep-93	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	01-Oct-93	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	05-Nov-93	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	02-Dec-93	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	09-Mar-94	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	16-Jun-94	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	30-Sep-94	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	08-Dec-94	NA	NA	NA	NA	NA	NA	NA	NA
SP-C	09-Mar-95	NA	NA	NA	NA	NA	NA	NA	NA
SP-D	14-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SP-D	19-Jan-93	< 0.5	< 0.5	< 0.5	< 0.5	4.9	620	3.0	37
SP-D	26-Feb-93	< 0.5	< 0.5	< 0.5	< 0.5	14	350	< 0.5	50
SP-D	11-Mar-93	NA	NA	NA	NA	25	130	< 0.5	44.9
SP-D	06-Apr-93	NA	NA	NA	NA	21	160	< 1.0	48
SP-D	04-May-93	< 0.5	< 0.5	< 0.5	< 0.5	14	89	< 0.5	29
SP-D	02-Jun-93	< 0.5	< 0.5	< 0.5	< 0.5	8.5	130	< 1.0	1.2 t
SP-D	16-Jun-93	< 2.0	< 2.0	< 2.0	< 2.0	24	102	< 2.0	62
SP-D	29-Jul-93	< 0.5	< 0.5	< 0.5	< 0.5	7.2	60	< 1.0	<1.0 t
SP-D	02-Sep-93	< 0.5	< 0.5	< 0.5	< 0.5	11	83	< 1.0	<1.0 t
SP-D	01-Oct-93	< 0.5	< 0.5	< 0.5	< 0.5	10	41	< 1.0	<1.0 t
SP-D	05-Nov-93	< 0.5	< 0.5	< 0.5	< 0.5	11	56	< 1.0	<1.0 t
SP-D	02-Dec-93	< 0.5	< 0.5	< 0.5	< 0.5	11	68	< 1.0	<1.0 t
SP-D	09-Mar-94	NA	NA	NA	NA	4.4	130	<1.0	<1.0 t
SP-D	16-Jun-94	NA	NA	NA	NA	13	37	<1.0	<1.0 t
SP-D	30-Sep-94	NA	NA	NA	NA	2.5	2.5	<1.0	<1.0 t
SP-D	06-Dec-94	NA	NA	NA	NA	1.4	5.5	4.0	<1.0 t
SP-D	09-Mar-95	NA	NA	NA	NA	3.4	16	<1.0	<1.0 t
SP-E	30-Sep-94	NA	NA	NA	NA	2.8	2.6	<1.0	<1.0 t
SP-E	06-Dec-94	NA	NA	NA	NA	1.8	4.2	<1.0	<1.0 t
SP-E	09-Mar-95	NA	NA	NA	NA	1.1	2.3	<1.0	<1.0 t

(NA) Not Analyzed
(*) Sample collected by East Bay Municipal Utility District
(**) Sampled collected to monitor the water from the East Parcel.
B - benzene, T - toluene, E - ethylbenzene, X - xylenes
(PCE) perchloroethylene
(TCE) trichloroethylene
(VC) vinyl chloride
(1,2-DCE) 1,2-Dichloroethene (Total)
t trans-1,2-Dichloroethene

Table 3

DATA MONITORING ANALYSIS REPORT 03/22/1995, Page 01

Input data file: C:\REGRESS\TOTCONC.RAW
Last revised: 03/22/1995 Fit Performed: 03/22/1995
Total data points: 19 # Data points used: 18

Fit equation: 4 - Non-Linear: y = Ae^(Bt) + C

Coefficients: A = 783.6994,
B = -0.0179,
C = 58.64 = ASYMPTOTE

R^2: 0.9249 Sum of (residuals^2): 3.402E+004

Data set: (Concentration units = ug/l)

Point #:	Date:	# Days:	Raw Conc.:	Fit Conc.:	%Error
1		0	2.00		
2	01/19/1993	15	664.90	657.74	1.1%
3	02/24/1993	51	414.50	373.08	10.0%
4	03/11/1993	66	200.40	299.02	-49.2%
5	04/06/1993	92	230.00	209.54	8.9%
6	05/04/1993	120	132.50	150.04	-13.2%
7	06/02/1993	149	140.70	113.02	19.7%
8	06/16/1993	163	190.00	100.96	46.9%
9	07/01/1993	178	78.90	90.99	-15.3%
10	07/29/1993	206	69.20	78.23	-13.1%
11	09/02/1993	241	69.00	69.11	-0.2%
12	10/01/1993	270	53.00	64.87	-22.4%
13	11/05/1993	305	69.00	61.97	10.2%
14	12/02/1993	332	81.00	60.69	25.1%
15	03/09/1994	429	136.40	59.00	56.7%
16	06/16/1994	528	52.00	58.70	-12.9%
17	09/30/1994	634	7.00	58.65	-737.8%
18	12/06/1994	701	11.90	58.64	-392.8%
19	03/09/1995	794	21.40	58.64	-174.0%