Tetra Tech EM Inc.

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Ro 504

December 1, 2003

Mr. Barney M. Chan Hazardous Materials Specialist Alameda County Health Care Services Agency Environmental Health Services 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Subject:

Submittal of Site Closure Reports for J. W. Silveira Company

Underground Storage Tank Sites at 744 East 12th Street and

1200 20th Avenue in Oakland, California

Dear Mr. Chan:

In previous discussions with you, it was agreed that closure reports should be completed for the J. W. Silveira Company underground storage tank sites located at 744 East 12th Street and 1200 20th Avenue in Oakland, California. Enclosed are two copies of each closure report for these two sites. Your review and comments are appreciated.

If you have any questions or wish to discuss either of the closure reports further, please feel free to contact me at (775) 333-8466.

Sincerely,

Hal Dawson

TtEMI Geologist/Project Manager

SITE CLOSURE REPORT

1200 20th AVENUE OAKLAND, CALIFORNIA

December 2003

Prepared for: J.W. Silveira Company 499 Embarcadero Street Oakland, California 94606

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- A GROUNDWATER SAMPLING SHEETS
- B LABORATORY DATA AND CHAINS-OF-CUSTODY

1.0 APPROVAL PAGE

This Site Closure Report for the underground storage tank (UST) site located at 1200 20th Avenue, in Oakland, California, was prepared for J.W. Silveira Company, the owner of the site. Should you have any questions about this report, please feel free to contact me at (775) 333-8466.

HAROLD W. DAWSON

No. 7072

Sincerely,

Harold W. Dawson

TtEMI Project Manager

California Registered Geologist #7072

2.0 INTRODUCTION

The purpose of this report is to recommend closure for the J. W. Silveira Company underground storage tank (UST) site at 1200 20th Avenue in Oakland, California (Figure 1). Tetra Tech EM Inc. (TtEMI) conducted quarterly groundwater monitoring at the site in the year 2000, and one event of groundwater monitoring at the site in the year 2001. The year 2000 quarterly sampling dates were February 9, May 23, September 27, and December 18, 2000, respectively; the year 2001 sampling date was August 30, 2001. The analytical data for the years 2000 and 2001, and all other associated environmental sampling conducted at the site are summarized in this closure report.

3.0 SITE BACKGROUND

The location of the UST site is shown on Figure 1. Two USTs were previously located at the eastern corner of the intersection of 20th Avenue and Solano Way in Oakland, California (Figure 1). The two 600-gallon USTs, which reportedly contained gasoline, were removed in January 1994. The physical size of both of the tanks (estimated during the removal activities) was 8 feet long by 3.5 feet in diameter. During removal of the USTs, it was noted that the single-walled steel tanks had rusted through and had leaked. The approximate surface area of the removal excavation was about 20 feet by 10 feet. Approximately 80 cubic yards of soil was over-excavated and transported off site for disposal. The bottom of the excavation was approximately 15 feet below the ground surface (bgs). The exact depth to the bottom of the USTs was not recorded during the removal activities; the estimated depth to the bottom of the former USTs is 6 to 8 feet bgs.

Six soil samples were collected from the sidewalls and the bottom of the removal excavation. The soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH) as gasoline (TPH-g), and TPH as diesel (TPH-d). The highest concentrations of BTEX compounds and TPH-g were detected at the southwestern edge of the excavation along 20th Avenue. TPH-d was not detected in any of the soil samples. Groundwater was not encountered during removal of the USTs.

As part of the UST removal action activities, three soil borings were advanced and completed as groundwater monitoring wells in February 1995. The three monitoring wells (MW-1, MW-2, and MW-3) were constructed to a depth of 30, 35, and 30 feet bgs, respectively (Figure 2). Two soil samples were collected from each of the three soil borings and analyzed for TPH-g and BTEX. The samples collected from the soil boring for MW-1 contained concentrations of TPH-g and BTEX compounds. TPH-g in soil at MW-1 was detected at 4.8 milligrams per

kilogram (mg/kg) at 5 feet bgs and 1.3 mg/kg at 15 feet bgs. No TPH-g or BTEX compounds were detected in the remaining four soil samples from MW-2 and MW-3. For groundwater, only the sample from MW-1 detected any chemical compounds. TPH-g was detected at 1,900 micrograms per liter (µg/L), and benzene was detected at 92 µg/L.

In June 1999, two additional soil borings were also advanced to determine whether soil or groundwater contamination were present south of the former UST location. Two soil samples were collected and analyzed for TPH-g, BTEX, and methyl tertiary-butyl ether (MTBE). No contamination was detected in these soil samples. Groundwater samples were not collected since groundwater was not encountered in the two soil borings at a depth of 36 and 38 feet bgs. Figure 2 shows the locations of all soil borings and groundwater monitoring wells at the site. Figure 4 provides soil concentration data for the site.

4.0 GROUNDWATER MONITORING ACTIVITIES

The three groundwater monitoring wells at the site were sampled sporadically from February 1995 to August 2001; the only year in which quarterly sampling was conducted for each of the three wells at the site was the year 2000. TtEMI conducted the groundwater monitoring activities in 2000 and 2001. All previous monitoring was conducted by another environmental consultant. The following text describes the groundwater monitoring activities conducted by TtEMI. For each sampling event in the year 2000, the depth to groundwater was measured in all three monitoring wells with an electronic depth probe. The monitoring well cap was removed from the top of each well, and the groundwater table was allowed to equilibrate before the depth to groundwater was measured. Each well was purged and sampled with a dedicated disposable bailer. During the purging of each monitoring well, a Horiba U10 water quality meter was used to measure the following physical parameters of the groundwater: pH, temperature, electrical conductivity, dissolved oxygen, and turbidity. These physical parameters were monitored to determine when groundwater within the well casing was representative of groundwater surrounding each monitoring well. Copies of the groundwater field sampling sheets are provided in Appendix A. After the physical parameters of the groundwater had stabilized, a groundwater sample was collected from each well. The samples were placed in appropriate sample containers provided by the laboratory. After each sample was labeled, the sample was stored in a cooler of ice under chain-of-custody control. The groundwater samples were received by Curtis & Tompkins Analytical Laboratories (C&T), in Berkeley, California. C&T is a California state-certified laboratory. The groundwater samples were analyzed for BTEX, TPH-g, and MTBE.

There was no indication of remaining mobile or potentially mobile free product at the site during the UST removals or during subsequent non-TtEMI and TtEMI groundwater monitoring activities. The only visible signs of contamination currently present at the site are a slight oily sheen on the groundwater that is removed from MW-1 during monitoring activities. The contamination appears to be localized around MW-1 as this visual indicator is not present in groundwater removed from MW-2 or MW-3 during monitoring activities. Presently, groundwater at the site is not used for any domestic or industrial purposes. For this reason, groundwater is assumed to be nonpotable.

Only MW-1 was sampled in August 2001. The same procedures described above were followed during this sampling event. As directed by Alameda County, TtEMI placed nine oxygen-releasing compound (ORC) socks into well MW-1 following the December 2000 sampling event. The ORC socks are made by Regenesis and are designed to oxygenate the water in a monitoring well to enhance biodegradation of chemical contaminants in groundwater. Alameda County, J. W. Silveira, and TtEMI agreed that it would be worth investigating whether ORC socks would have any effect on the analytical results from this well. The ORC socks were removed from well MW-1 one month before the August 2001 sampling event. Their placement in the well appeared to have little to no effect on the groundwater analytical results.

4.1 GROUNDWATER GRADIENT

Using the data collected during the TtEMI groundwater monitoring activities, groundwater elevations were calculated for each of the three monitoring wells at the site using the measured depth to groundwater and the top-of-casing elevation of each well. The depth to groundwater was measured from the top of casing of each monitoring well. The groundwater elevation measurements from the site in 2000 and 2001 are presented in Table 1. The groundwater flow direction and gradient at the site were calculated using these data. The flow direction at the site was consistently northeast, ranging from north 13 degrees east (N13E) in December 2000 to north 29 degrees east (N29E) in September 2000. The calculated groundwater gradient at the site was found to range from the lowest (0.038 feet/foot [ft/ft]) in December 2000 to the highest (0.06 ft/ft) in February 2000.

Figure 3 is a potentiometric map and graphically presents the August 2001 groundwater flow direction (north 26 degrees east [N26E]) and gradient (0.051 ft/ft) at the site. These are the latest collected data from the site and show the typical average groundwater flow direction and gradient. The direction of groundwater flow is nearly opposite to the direction of the ground surface slope at the site. Although MW-2 is located at a higher elevation than the location of

the former USTs, this well is downgradient (with respect to groundwater flow) from the location of the former USTs. The groundwater flow directions and gradients calculated from TtEMI's 2000 and 2001 data are consistent with the groundwater gradients and directions calculated using previous water-level measurements from the three wells at the site.

4.2 GROUNDWATER ANALYTICAL RESULTS

Groundwater monitoring was conducted for the three wells at the site from February 1995 to August 2001. Tables 2, 3, and 4 show the groundwater results for MW-1, MW-2, and MW-3, respectively, for this time frame. No detectable concentrations of TPH-g or BTEX have been present in the groundwater samples from wells MW-2 and MW-3 since July 1998.

From February 1995 to August 2001, TPH-q has been detected in MW-1 groundwater at concentrations ranging from 1,300 to 23,00 ug/L. From September 2000 to August 2001, the TPH-g concentrations in MW-1 appear to have stabilized in the 3,000 to 5,000 ug/L range. Benzene has been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 92 to 3,700 ug/L. From December 2000 to August 2001, the benzene concentrations in MW-1 appear to have stabilized in the 500 to 850 ug/L range. Toluene has been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 7 to 560 ug/L. From September 2000 to August 2001, the toluene concentrations in MW-1 appear to have stabilized below 65 ug/L. Ethylbenzene has been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 14 to 1000 ug/L. From September 2000 to August 2001, the ethylbenzene concentrations in MW-1 appear to have stabilized in the 130 to 420 ug/L range. Xylenes have been detected in groundwater from MW-1 over the same time frame (from February 1995 to August 2001) at concentrations ranging from 31 to 3,100 ug/L. From September 2000 to August 2001, the concentrations of xylenes in MW-1 appear to have stabilized in the 130 to 330 ug/L range. MTBE was only analyzed for in groundwater from February 2000 to August 2001. MTBE was not detected in groundwater from MW-1. Figure 4 provides groundwater concentration data for the site.

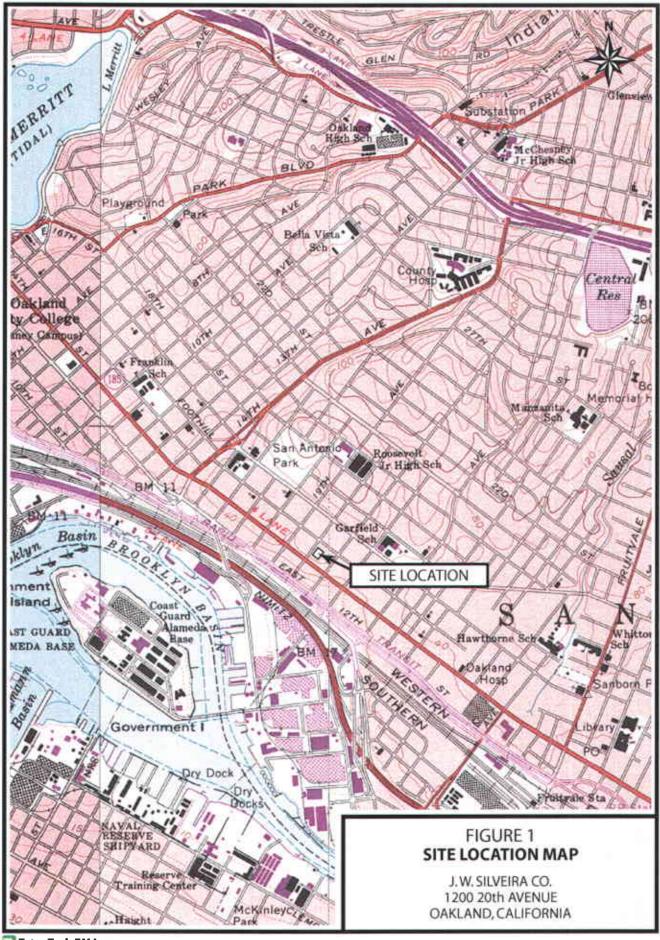
The complete laboratory data packages and chains-of-custody for the years 2000 and 2001 sampling events at the site are provided in Appendix B.

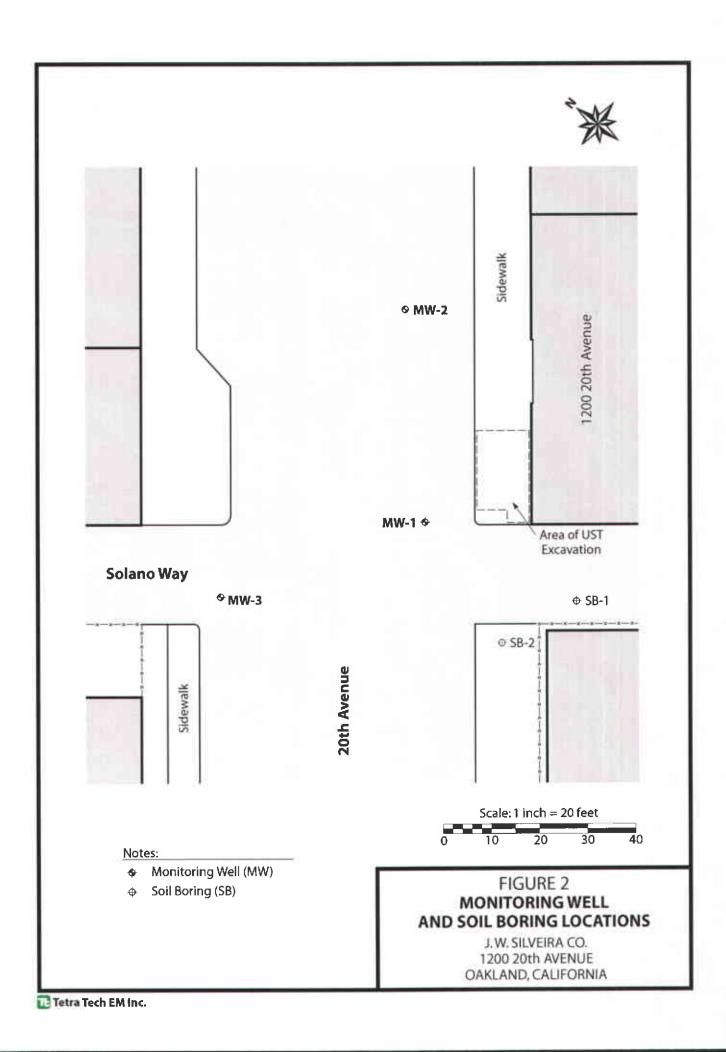
5.0 CONCLUSIONS AND RECOMMENDATIONS

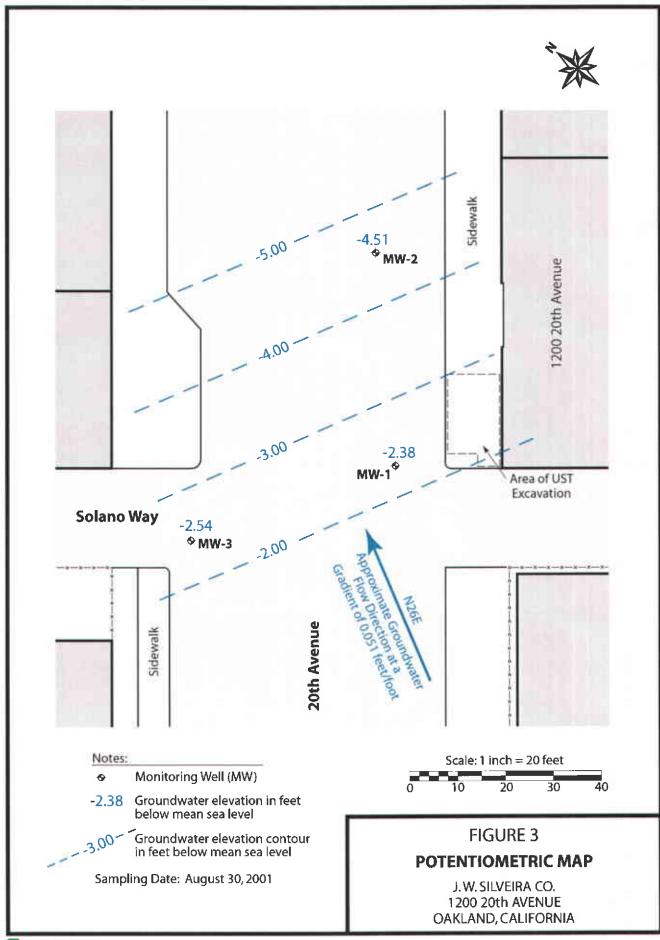
This closure report presents the analytical data for groundwater monitoring, and all other associated environmental sampling conducted at the UST site located at 1200 20th Avenue in Oakland, California. Moderate concentrations of soil and groundwater contamination are present locally around MW-1. However, no mobile or potentially mobile free product has been observed at the site. A slight oily sheen is present on groundwater removed from MW-1. No groundwater contaminants have been detected in the samples collected from wells MW-2 and MW-3 since July 1998. The TPH-g and BTEX contaminant concentrations present in groundwater samples from MW-1 appear to have stabilized since about September 2000.

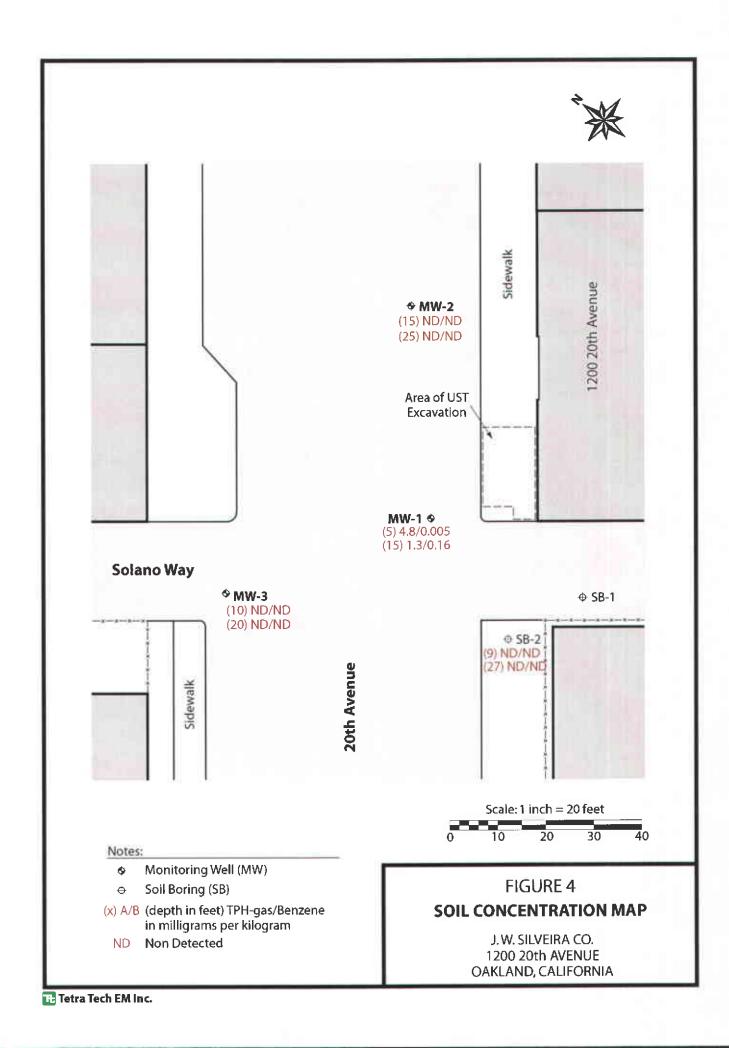
Based on the analytical data accumulated for the site, TtEMI recommends that the site be closed. The moderate contaminant concentrations around MW-1 are localized and the contamination does not appear to be migrating downgradient. Based on the depth to groundwater, the detected contaminant concentrations in MW-1 do not pose a risk to human health or the environment. It appears that the overexcavation of soil during the UST removals eliminated any future source of groundwater contamination and the localized contamination does not give evidence that there is a plume at the site. Groundwater is assumed to be nonpotable at the site. The three monitoring wells should be abandoned after approval of site closure

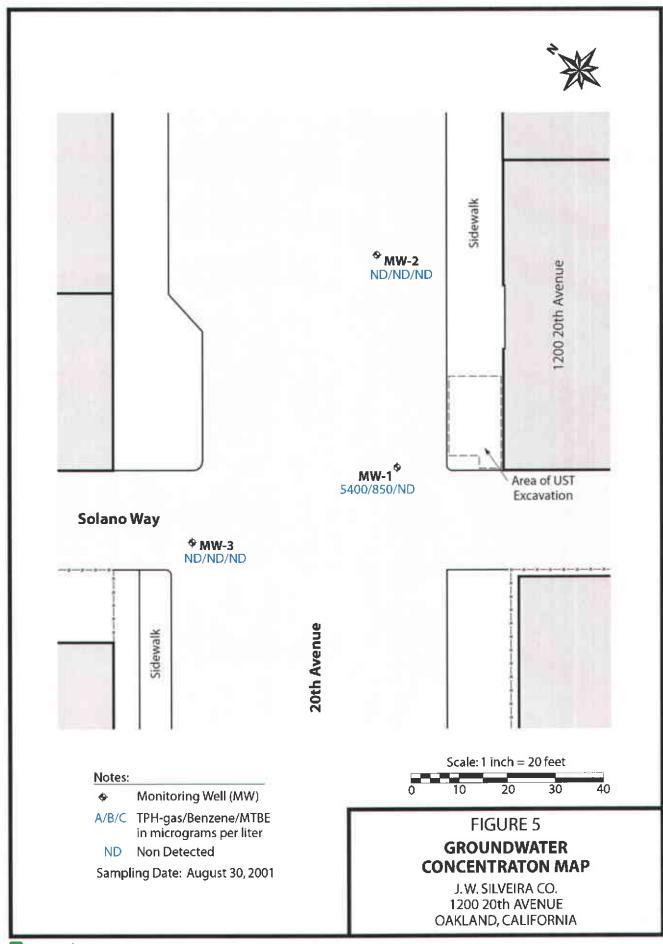
FIGURES











TABLES

TABLE 1 GROUNDWATER ELEVATIONS FEBRUARY 2000 TO AUGUST 2001 1200 20TH AVENUE, OAKLAND

| Date | Grou | ndwater Elevations | (msl) |
|----------|-------|--------------------|-------|
| | MW-1 | MW-2 | MW-3 |
| 2/9/00 | 0.07 | -2.50 | -0.10 |
| 5/23/00 | 0.42 | -2.03 | 0.15 |
| 9/27/00 | -2.78 | -4.94 | -2.66 |
| 12/18/00 | -2.45 | -4.94 | -2.98 |
| 8/30/01 | -2.38 | -4.51 | 2.54 |

Notes:

msl Mean sea level TOC Top of casing

MW-1 TOC Elevation: 17.15 feet MW-2 TOC Elevation: 20.11 feet MW-3 TOC Elevation: 16.06 feet

TABLE 2 VOCs AND TPH CONCENTRATIONS IN GROUNDWATER MONITORING WELL MW-1 FEBRUARY 1995 TO AUGUST 2001 1200 20TH AVENUE, OAKLAND

| Date | TPH (µg/L) | | | | | |
|--------|------------|---------|---------|--------------|---------|------|
| Date | Gasoline | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE |
| Feb-95 | 1,900 | 92 | 39 | 57 | 260 | |
| Jun-95 | 4,100 | 410 | 32 | 14 | 180 | |
| Oct-95 | 1,300 | 180 | 22 | 32 | 81 | |
| Feb-96 | 1,700 | 200 | 21 | 41 | 120 | |
| Jun-96 | 1,900 | 160 | 7 | 34 | 31 | |
| Sep-96 | 4,700 | 460 | 66 | 190 | 680 | |
| Jan-97 | 2,200 | 230 | 35 | 100 | 330 | |
| Jul-98 | 23,000 | 3,500 | 450 | 1,000 | 3,100 | |
| Apr-99 | 14,000 | 2,600 | 560 | 340 | 1,600 | |
| Feb-00 | 3,000 | 280 | 17 | 92 | 118 | ND |
| May-00 | 18,000 | 3,700 | 430 | 770 | 2,440 | ND |
| Sep-00 | 4,300 | 1,200 | 59 | 420 | 330 | ND |
| Dec-00 | 3,200 | 500 | 26 | 130 | 130 | ND |
| Aug-01 | 5,400 | 850 | 64 | 230 | 200 | ND |

Notes:

MTBE Methyl tertiary-butyl ether

μg/L Micrograms per liter
'- - Not analyzed

ND Not detectedTPH Total petroleum hydrocarbonsVOC Volatile organic compound

TABLE 3 VOCs AND TPH CONCENTRATIONS IN GROUNDWATER MONITORING WELL MW-2 FEBRUARY 1995 TO AUGUST 2001 1200 20TH AVENUE, OAKLAND

| Date | TPH (µg/L) | and the second s | | VOC (µg/L) | | |
|--------|------------|--|---------|--------------|---------|------|
| | Gasoline | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE |
| Feb-95 | ND | ND | ND | ND | ND | |
| Jun-95 | ND | 1.8 | ND | 1.1 | 0.62 | |
| Oct-95 | 55 | 2.2 | ND | 1.5 | סא | |
| Feb-96 | ND | 3.3 | 2.7 | 0.99 | 2.4 | |
| Jun-96 | ND | ND | 0.6 | ND | 1.2 | |
| Sep-96 | ND | 9.3 | 0.57 | 1,3 | 1,9 | |
| Jan-97 | ND | 2.6 | ND | ND | 0.76 | |
| Jul-98 | ND | ND | ND | ND | ND | |
| Apr-99 | ND | ND. | ND | ND | ND | |
| Feb-00 | ND | ND | ND | ND | ND | ND |
| May-00 | ND | ND | ND | ND | ND | ND |
| Sep-00 | סא | ND | D | ND | D | ND |
| Dec-00 | ND | ND | ND | ND | ND | ND |
| Aug-01 | | | 3.5 | | | |

Notes:

MTBE Methyl tertiary-butyl ether μg/L Micrograms per liter

'-- Not analyzed ND Not detected

TPH Total petroleum hydrocarbons VOC Volatile organic compound

TABLE 4 VOCs AND TPH CONCENTRATIONS IN GROUNDWATER MONITORING WELL MW-3 FEBRUARY 1995 TO AUGUST 2001 1200 20TH AVENUE, OAKLAND

| Date | TPH (ug/L) | (ug/L) VOC (ug/L) | | | | | | | |
|--------|------------|-------------------|---------|--------------|---------|------|--|--|--|
| Date | Gasoline | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE | | | |
| Feb-95 | ND | ND | ND | ND | ND | | | | |
| Jun-95 | 160 | 0.6 | ND | 0.6 | 0.72 | | | | |
| Oct-95 | 130 | 5.8 | ND | 3.2 | ND | | | | |
| Feb-96 | 54 | 5.6 | 2.8 | 2.9 | 8.1 | | | | |
| Jun-96 | ND | ND | ND | ND | ND | | | | |
| Sep-96 | 96 | 12 | 7,1 | 4 | 6,2 | | | | |
| Jan-97 | ND | ND | ND | ND | ND | | | | |
| Jul-98 | ND | ND | ND | ND | ND | | | | |
| Apr-99 | ND | ND | ND | ND | ND | | | | |
| Feb-00 | ND | ND | ND | ND | ND | ND | | | |
| May-00 | ND | ND | ND | ND | ND | ND | | | |
| Sep-00 | ND | D. | ND | ND | סא | ND | | | |
| Dec-00 | ND | ND | ND | ND | ND | ND | | | |
| Aug-01 | | | | | | | | | |

Notes:

MTBE Methyl tertiary-butyl ether

μg/L Micrograms per liter

'-- Not analyzed ND Not detected

TPH Total petroleum hydrocarbons VOC Volatile organic compound

APPENDIX A GROUNDWATER SAMPLING SHEETS

GROUNDWATER SAMPLING RECORD DATE 2-9-00 PAGE 1 0F 2

| MONITORING WELL NO. MW (| |
|--------------------------|----------------------------|
| PROJECT JU) SICUEIRA | TOTAL GALLONS TO BE PURGED |
| SITE #2 - 1200 20th AUE | PURGING METHOD |
| PROJECT NO. PUBC | SAMPLING METHOD |

| | | | | Fie | eld Paramete | ers Measu | ired | | | |
|-----------|--|--|---|--|--|---|---|---|--|--|
| | | 1. | Specific | Turbidity | | Temo. | | Ì | | Comments |
| (gallons) | (gal/min) | , | | (ntu) | | (°C) | | | | Comments |
| /3 | | _ | | | | 18.7 | | | | |
| Initial | | 6.74 | 1,19 | 14 | Ø.7Ø | 19.2 | | | 18,30 | |
| | | | | | • | | | | | Well needs new |
| | | | | | | | | | | locking well cap - could |
| 2.500 | ~ Agoldmin | 6,75 | 1.20 | 85 | 0.37 | 19.3° | | | | use whole new christy |
| 5 and | ~ 430 lomin | 6,74 | 1,18 | 289 | Ø.3¢ | 19.3° | | | | box. |
| 7.5% | ~9901 Kmin | 6.74 | 1.17 | 42¢ | 0.31 | 19.2° | | | | |
| 10 gal | ~4051/10min | 6.75 | 1,16 | | Ø,29 | 19.2° | | | | |
| 12.50 | ~45 /10min | 6.75 | 1.16 | 541 | 0.32 | 19.2° | | | | |
| 15 gal. | Accilianin | 6.75 | 1.16 | 662 | ϕ . 35 | 19.20 | | | | |
| 17.5gal | ~4gr.//0mm | 6,76 | 1.16 | 999 | | | | · | | |
| 200 90 | -491/lomin | 6.77 | 1.17 | 999 | Ø.53 | 19.20 | - | | | |
| J | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | - | | | | | | |
| - | | | | | | | | | | |
| | 5 gal 7.5 gal 10 gal 12.5 gal 15 gal | Water Removed (gal/min) Initial 2.5 gal ~4 gal/min 7.5 gal ~4 gal/min 10 gal ~4 gal/min 12.5 gal ~4 gal/min 12.5 gal ~4 gal/min 13 gal ~4 gal/min 14 gal/min 15 gal ~4 gal/lomin 17.5 gal ~4 gal/lomin | Vater Removed (gallons) 13 Initial (gallonin) 6.74 2.5 gal (9al/min) 6.74 7.5 gal (9al/min) 6.74 7.5 gal (9al/min) 6.74 10 gal (10min) 6.75 12.5 gal (10min) 6.75 15 gal (17.5 gal) (10min) 6.75 17.5 gal (17.5 gal) (10min) 6.75 | Water Removed (gal/min) [Gallons] [Gallons] [Gal/min] [Gal/min | Volume of Water Removed (gallons) 73 Discharge Rate (gal/min) PH Conductivity (ntu) (ntu) (ntu) (ms/cm) (ntu) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ntu) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ntu) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ntu) (ms/cm) (ms/cm) (ntu) (ntu) (ms/cm) (ms/cm) (ntu) (ms/cm) (ntu) (ms/cm) (ms/cm) (ms/cm) (ntu) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ntu) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ntu) (ms/cm) (ms/cm) (ms/cm) (ms/cm) (ntu) (ms/cm) (ms/cm | Volume of Water Removed (gallons) 73 Discharge Rate (gallons) 73 Discharge (gallons) 73 Discharge (gallons) 73 Discharge (gallons) 73 Discharge (gallons) 74 Discharge (gallons) 74 Discharge (gallons) 75 Discharge (mg/L) (ntu) (mg/L) | Volume of Water Removed (gallons) 73 Discharge Rate (gallons) 73 Discharge Rate (gallons) 73 Discharge Rate (gallons) 73 Discharge Rate (gallons) 74 Discharge (ms/cm) (ms/cm) (ms/cm) (mg/L) (ms/cm) (ms/cm) (mg/L) (ms/cm) | Water Removed (gal/min) PH Conductivity (ntu) (ms/cm) (mg/L) (e.c.) Initial 6.74 1.19 14 0.70 19.2° Z.5 gal ~4 gal/min 6.75 1.20 85 0.37 19.3° 7.5 gal ~4 gal/min 6.74 1.17 420 0.31 19.2° 10 gal ~4 gal/min 6.75 1.16 356 0.29 19.2° 12.5 gal ~4 gal/min 6.75 1.16 541 0.32 19.2° 15 gal ~4 gal/min 6.75 1.16 662 0.55 19.2° 17.5 gal ~4 gal/min 6.75 1.16 662 0.55 19.2° 17.5 gal ~4 gal/min 6.75 1.16 999 0.54 19.2° | Volume of Water Removed (gallons) Discharge Rate (gallons) Discharge (gallons) Dischar | Volume of Water Removed (gallons) 73 Discharge Rate (gallons) 73 Discharge (gallons) 74 Discharge (gallons) 75 Dis |

| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY | SAMPLE ID: <u>JW2-Ø5</u> | SAMPLING PERSONNEL: |
|-----------------|---------------|----------------|-----------------------------|---------------------|
| HORIBA U-10 | | EQUIP CO | ANALYSIS: TPH-9, MTBE, BTEX | |
| | | | θ . | |
| | | | COC NUMBER: | .: |
| | | | COC NOWIBER. | - |

| MONITORING WELL NO. MW | DATE <u>2-9-00</u> PAGE 2 0F 2 |
|--|--|
| PROJECT JW SILVETRA | |
| SITE #2 - 1200 20th AE | STANDING WATER COLUMN10.52feet |
| PROJECT NO. PIIG | WELL VOLUMES TO BE PURGED 2-3 |
| CASING DIAMETER 2 inches | MINUMUM PURGE VOLUME gallons |
| BOREHOLE DIAMETER 8.25 inches | ACTUAL VOLUME PURGED gallons |
| TOP OF CASING ELEVATION 17.15 feet | VOLUME CALCULATED BY: |
| WATER LEVEL 16.3¢ feet btoc @ | |
| WATER LEVEL ELEVATION feet msl | |
| PURGE VOLUME CALCULATION | |
| One Well Volume = Casing Volume + And One Well Volume =gal + One Well Volume =ga Casing Volume = Standing Water Column (ft) x Pip Casing Volume =ft x | gal standing Water Column e Volume (gal/linear ft) ^a DEPTH TO WATER 18.3¢ Well DEPTH 28.32 |
| | Borehole Volume (gal/linear ft) ^b) - Casing Volume] x 0.3° |
| Annulus Volume = $\{(\underline{10,52} \text{ ft} \times \underline{2.78})\}$ | gal/linear ft]) - 1.8 gal] x 0.3 |
| Annulus Volume = 8,2 gallons | |

| Table 1 Pipe Volume of Schedule 40 PVC Pipe | | | | | | | | | |
|--|----------------|----------------|---------------------------|----------------------|----------------|----------------|---------------------------|--|--|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | | |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 | | |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 | | |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 | | |

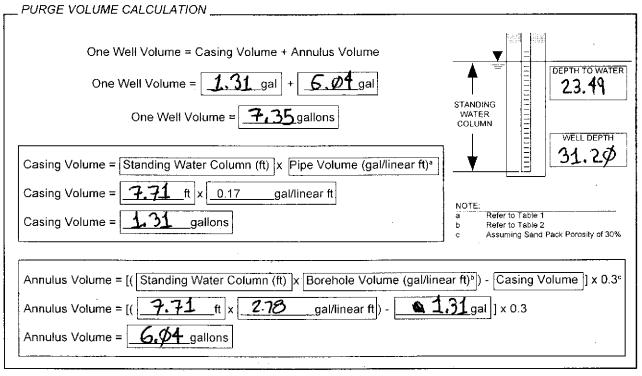
| Table 2 Volume of Borehole | | | | | | | |
|-----------------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|--|--|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | | |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 | | |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 | | |

| MONITORING WELL NO. MW 2 | | DATE 2-9-00 | PAGE 1 0F 2 |
|--------------------------|----------------------------|-------------|-------------|
| PROJECT JW SICVEIRA | TOTAL GALLONS TO BE PURGED | | |
| SITE #2 - 1200 20th AVE | PURGING METHOD | | |
| PROJECT NO. PIOLE | SAMPLING METHOD | | |

| | | D: 1 | | | Fi€ | eld Paramet | ers Measu | red | | , |
|---------------|---|--------------------------------|--------------|-------------------------------------|-----|-------------------------------|-----------------------|-----|--------------------------|--------------------|
| Time | Volume of Water Removed (gallons) // | Discharge Rate (gal/min) | pH (e.56e | Specific Conductivity (ms/cm) | | Dissolved Oxygen (mg/L) | Temp. (°C) /8-/ | | Water Level (feet) | Comments |
| Ø8 3 Ø | Initial | • | 6.55 | 0.715 | 15 | 5.83 | 18.5° | | 23.49 | \ |
| | | | | | | | | | | Well needs new |
| | | 0 < 1/ | | | | | h | | | locking well cap - |
| Ø84Ø | 2.5 gal | 2.5ga/10min | 6,69 | φ.701 | 92 | 4.76 | 18.70 | | | could use whole |
| 0846 | 7 | ~ 4 cc-11 | 1000 | 1 4 / 97 | 75 | 4.94 | 18.7° | | | new christy box. |
| 0853 | 7.5° and | ~ 4 cel/10 min | 6.64 | φ. 688 | 72 | 4.81 | 18.7° | | | <u> </u> |
| 0902 | 10 gat | ~ 9 gr/10 min | 6.65 | Ø, 69p | 154 | 4.84 | 18.7° | | | |
| \$910 | ا کیمہ 12.5 | Ome | (64 | Ø,696 | 245 | 4.78 | 18.7° | | | |
| 0921 | 15 92 | ~9gu/lomin | 6.7¢ | Ø.692 | 126 | 5,05 | 18.7° | | | |
| Ø93Ø | 17.5°00 | ~4gallomin | 6.69 | p.673 | 99 | 4.98 | 18.70 | | | |
| 09 40 | 2000 | ~ Agol/lorin | 6.68 | Ø.691 | 66 | 4.92 | 18.7 | | | |
| <u> </u> | J | _ | | | | | | | | |
| | | | | | | | | | | |
| | | | , | | | - | | | | |
| | | | | | | | | | | |

| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY | SAMPLE ID: JW2-OC | SAMPLING PERSONNEL: | |
|-----------------|---------------|----------------|-----------------------------|---------------------|---|
| HORIBA U-10 | | Equip. Co. | ANALYSIS: TPH-9, MTBE, BTEX | · | ř |
| , | | • | 0 | | |
| | | | COC NUMBER: | | |

| MONITORING WELL NO. MWZ | | DATE <u>2-7-80</u> PAG | E 2 0F 2 |
|---|---------|---|-----------|
| PROJECT JW SILVEIRA | | | |
| PROJECT JW SICUEIRA SITE #2 - 1200 201 AVE | | standing water column 7.71 _ | fee |
| PROJECT NO. PII44 | | WELL VOLUMES TO BE PURGED 2-3 | |
| CASING DIAMETER 2 | inches | MINUMUM PURGE VOLUME | _ gallons |
| BOREHOLE DIAMETER 8.25 | inches | ACTUAL VOLUME PURGED 20 | _ gallons |
| TOP OF CASING ELEVATION 20.11 | | VOLUME CALCULATED BY: | <u>.</u> |
| WATER LEVEL 23.49 feet bloc | @ | | |
| WATER LEVEL ELEVATION fe | eet msl | | |
| | | | |



| Table 1 Pipe Volume of Schedule 40 PVC Pipe | | | | | | | |
|---|----------------|----------------|---------------------------|----------------------|----------------|----------------|---------------------------|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 |

| Table 2 Volume of Borehole | | | | | | | |
|-----------------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|--|--|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | | |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 | | |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 | | |

E 1 0F 2

| MONITORING WELL NO. MW 3 | | DATE <u>2-9-00</u> | PAGE |
|--------------------------|----------------------------|--------------------|------|
| PROJECT JW SILVERA | TOTAL GALLONS TO BE PURGED | | • |
| SITE # 2 - 1200 20th AVE | PURGING METHOD | | |
| PROJECT NO. PUBL | SAMPLING METHOD | | • |

| | | | | | Fie | eld Paramete | ers Measu | ıred | | ······································ | |
|-------|----------------------------|---------------------|------|--------------|------------------|----------------|--------------|------|---|--|--------------------|
| Time | Volume of Water Removed | Discharge Rate | | Specific | Turbidity | Dissolved | Temp. | | | Water | |
| I muc | (gallons) | (gal/min) | pН | Conductivity | | \^\9\- | (°C) 18.8 | - | | Level (feet) | Comments |
| | /3 | | 6.82 | (ms/cm) | (ntu) 500-450 | (mg/L) 5:45 | | | | (ieet) | |
| 1150 | Initial | | 6.93 | 1.45 | 322 | 5,33 | 19.3 | | | | |
| | | | | • ' | | | | | ĺ | | Nell needs new |
| | | | | | | | | | | | locking well cap- |
| 1157 | 2-5gal | ~4 op 1/10 min | 6,93 | 1.45 | 695 | 5.47 | 19.5 | | | | locking well cap - |
| 1203 | 500 | ~ 10 // / · · · · · | 6.93 | 1.40 | 999 | 5.46 | 19.6" | | | | new christy box. |
| 1211 | 7590 | 10 min | 6.95 | 1.40 | १९९ | 5.48 | 19.50 | | | | <u> </u> |
| 1217 | 100 and | 19 Minin | 6.74 | 1,34 | વવવ | 5.63 | 19.50 | | | | |
| 1225 | 125gal | ~4gol/10 min | 6.92 | 1,31 | 999 | 5.20 | 19.5° | | | | |
| 1231 | 15 gal 3 | 4- 3 | 6,93 | 1.30 | 999 | 5.92 | 19,4° | | | | |
| 1239 | 15 gal | × 11 | 6.ºA | 1.28 | 999 | 5.93 | 19,4° | | | | · |
| 1244 | 2000 | 10 | 6.95 | 128 | 999 | 5,98 | 19.5° | | | | <u> </u> |
| | J . | | | | | _ | - | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY | SAMPLEID: JW2-07 | SAMPLING PERSONNEL: |
|-----------------|---------------|----------------|-----------------------------|---------------------|
| HORIBA UID | | Equip Co. | ANALYSIS: TPH-9, MTBE, BTEX | |
| • | | | g · | |
| | | | COC NUMBER: | |

| MONITORING WELL NO. MW 3 | DATE <u>2-9-00</u> PAGE 2 0F 2 |
|--|--|
| PROJECT JW SICVEIRA | |
| SITE #2 - 1200 20th AVE | STANDING WATER COLUMNfeet |
| PROJECT NO. PIPO | WELL VOLUMES TO BE PURGED |
| CASING DIAMETER Z inches | MINUMUM PURGE VOLUME gallons |
| BOREHOLE DIAMETER <u>8-25</u> inches | ACTUAL VOLUME PURGEDgallons |
| TOP OF CASING ELEVATION //e. Ole feet | VOLUME CALCULATED BY: |
| WATER LEVEL feet btoc@ | |
| WATER LEVEL ELEVATION feet msl | |
| PURGE VOLUME CALCULATION | |
| One Well Volume = Casing Volume + Annul One Well Volume =gal + One Well Volume =11.2 gallo Casing Volume = Standing Water Column (ft) x Pipe V Casing Volume =11.7 | gal STANDING WATER COLUMN Volume (gal/linear ft)* T ft NOTE: a Refer to Table 1 b Refer to Table 2 c Assuming Sand Pack Porosity of 30% |
| Annulus Volume = [(Standing Water Column (ft) x Bo | orehole Volume (gal/linear ft)b) - Casing Volume] x 0.3c |
| Annulus Volume = [(11.74 ft x 2.78 g | gal/linear ft)gal] x 0.3 |
| Annulus Volume =gallons | , |

| <u> </u> | Table 1 Pipe Volume of Schedule 40 PVC Pipe | | | | | | | | | |
|----------------------|--|----------------|---------------------------|----------------------|----------------|----------------|---------------------------|--|--|--|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | | | |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 | | | |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 | | | |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 | | | |

| Table 2 Volume of Borehole | | | | | | | |
|-----------------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|--|--|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | | |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 | | |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 | | |

| MONITORING WELL NO1 | DATE <u>5/23/00</u> PAGE 1 0F 2 |
|---|---------------------------------|
| PROJECT JW Silveira | TOTAL GALLONS TO BE PURGED |
| SITE <u>2 - 1200 20th Ave.</u> | PURGING METHOD |
| PROJECT NO. <u>P119604</u> | SAMPLING METHOD |

| | | Fie | eld Paramet | ers Meası | ıred | | ÷ | | | | |
|-----------------|---|--------------------------------|-------------|-------------------------------------|--------------------|-------------------------------|---------------|-----|---------|--------------------------|---|
| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | рН | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (°C) | | | Water Level (feet) | Comments |
| \$1 4\$5 | | | 6.75 | 1,15 | 89 | 0.09 | 21.10 | | | | |
| 1411 1417 | 3 gal | | 6.77 | 1.17 | 151 | Ø. 43 | ZØ.3° | | | | |
| 1417 | 6 gal | | 6.75 | 1.15 | 118 | 0.16 | 20,20 | | | | |
| 1421 | 9 901 | | 6.75 | 1.19 | 3 <i>sø</i> | 0.61 | 19.9° | | | | |
| 1425 | 12gal | | 6.75 | 1.18 | 599 | Ø.69 | | | | | ρ |
| <u>1432</u> | 15-2 | | 6,74 | 1.18 | 5ø6 | Ø.75 | 20,0 | | | | Jarameters Stable |
| | <u> </u> | | | | | | | | | | Sample Well @ 1435 |
| | | | | | | | | | | | Simple Well @ 1435 |
| | | | | | | | | | | | |
| | | | | | | | | | | | (coc+ Labels Say 13900 Lecouse they were |
| | | | | | | | | | | | because they were |
| - | | | | | | | | | | | pre-made). |
| | | | | | | | | | | | |
| | | - | | | | | | | <u></u> | | |
| ļ | <u> </u> | | | | | | | | 15 | | |
| FIELD | EQUIPMENT | SERIAL N | JMBER | RENTAL CO | MPANY | SAMPLE I | D: | W2- | 15 | | SAMPLING PERSONNEL: |
| | | | | | | ANALYSIS | S: | | | | |
| | | | | | | | | | | | |

COC NUMBER:

TETRA TECH EM INC.
• SAN FRANCISCO •

DATE 5/23/90 MONITORING WELL NO. PROJECT JW Silveira -1200 20th Ave STANDING WATER COLUMN 12.09 feet P110604 PROJECT NO. WELL VOLUMES TO BE PURGED CASING DIAMETER MINUMUM PURGE VOLUME _____ gallons inches BOREHOLE DIAMETER _\$,25 ACTUAL VOLUME PURGED _____gallons inches TOP OF CASING ELEVATION 17.1 VOLUME CALCULATED BY: WATER LEVEL 16,73 feet bgs @ WATER LEVEL ELEVATION 0,42

_PURGE VOLUME CALCULATION . One Well Volume = Casing Volume + Annulus Volume DEPTH TO WATER One Well Volume = 2.96gal + 16.73 STANDING One Well Volume = 11.53 gallons WATER COLUMN WELL DEPTH 28,82 Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)^a Casing Volume = 12.09 ft x 9.17 gal/linear ft NOTE: Refer to Table 1 Casing Volume = 2.06 gallons Refer to Table 2 Assuming Sand Pack Porosity of 30% Annulus Volume = [(Standing Water Column (ft) | x Borehole Volume (gal/linear ft)) - Casing Volume] x 0.3° Annulus Volume = $[(\frac{12.09}{1})]$ ft x gal/linear ft]) - 2,06 gal] x 0.3 Annulus Volume =

| | Table 1 Pipe Volume of Schedule 40 PVC Casing | | | | | | | | | | | | |
|----------------------|---|----------------|---------------------------|----------------------|----------------|----------------|---------------------------|--|--|--|--|--|--|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | | | | | | |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 | | | | | | |
| 2 | 2.375 | 2.067 | 0,17 | 6 | 6.625 | 6.065 | 1.50 | | | | | | |
| 3 | 3.500 | 3:068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 | | | | | | |

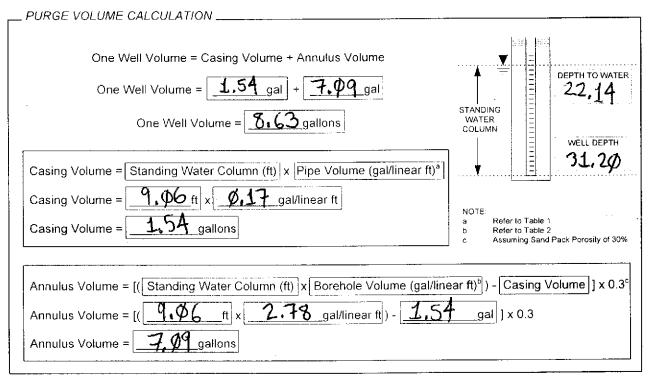
| | | | ble 2 of Borehole | · | |
|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 |

| MONITORING WELL NO | | DATE | 5/23/00 | PAGE 1 0F 2 |
|-------------------------------------|----------------------------|------|---------|-------------|
| PROJECT <u>TW Silveira</u> | TOTAL GALLONS TO BE PURGED | | | |
| SITE 2 - 1200 20 ¹³ Ave. | PURGING METHOD | | | |
| PROJECT NO. <u>P110694</u> | SAMPLING METHOD | | | |

| | | | | | Fie | eld Paramete | ers Measi | ıred | ··- | | |
|-------|----------------------------|-------------------|-------|-------------------------|------------|------------------|-----------|---------------|-----|-----------------|---|
| Time | Volume of Water Removed | Discharge Rate | | Specific | Turbidity | Dissolved | Temp. | | | Water | |
| Time | (gallons) | (gal/min) | pН | Conductivity (ms/cm) | (ntu) | Oxygen (mg/L) | (°C) | | | Level (feet) | Comments |
| | ,,, | , , | | | | | | <u></u> | | (ICCI) | |
| 1465 | Initial | | 6,65 | 9.749 | 18 | 4.62 | 20,3° | | | | |
| 1507 | 4901 | | 6.69 | 074 | 113 | 4.85 | 19.8 | | | | |
| 1509 | agai | | 6.70 | 0.768 | 323 | 4.82 | 19.6° | | | | |
| 1513 | 990 | | 6.65 | 08 760 | 158 | 4.75 | 19.5° | | | | 0 1 610 |
| 1522 | 12001 | | 617 | 0.768 0.769 0.761 | 158 275 | 479 | 19.5° | | | · | Carameters Stable |
| | J. Egan | | V40.1 | <i>Wal</i> 101 | <u> </u> | 101 | | | | | Sample @ 1425 |
| | | | | | | | | | | | (coc+ labels su 1400 |
| | | | | | | | | | | | (coc+ labels say 1400 because labels were pre- |
| | | | - | | | | | | | | prepared) |
| | | | | | | | | | | | |
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| | | | | | | | | | : | | |
| | <u> </u> | | | I | | SAMPLE I | | 1012 | 12 | | SAMPLING PERSONNEL: |
| FIELD | EQUIPMENT | SERIAL N | JMBER | RENTAL CO | MPANY | | | vv <u>८ ~</u> | LO | | SAWIFLING PERSUNNEL. |
| | | | | | | ANALYSIS | S: | | | | |
| | | | | | | | | | | | · |
| | | | | - | | COC NUM | BER: | | | | |

TETRA TECH EM INC.
• SAN FRANCISCO •

| DATE _5/23/40 | | E 2 0F 2 |
|---|-------------|-----------|
| MONITORING WELL NO. | | |
| PROJECT JW SILVEITA | a #1 | |
| SITE 2 -1200 20th AVE STANDING WATER COLUMN _ | <u>9.96</u> | feet |
| PROJECT NO. P110604 WELL VOLUMES TO BE PURGE | ED | |
| CASING DIAMETER 2 inches MINUMUM PURGE VOLUME | | _ gallons |
| BOREHOLE DIAMETER 8.25 inches ACTUAL VOLUME PURGED | | _gallons |
| TOP OF CASING ELEVATION 30, 1 feet VOLUME CALCULAT | TED BY: | |
| WATER LEVEL 22.11 feet bgs @ HWD | | |
| WATER LEVEL ELEVATION | | |



| | Table 1 Pipe Volume of Schedule 40 PVC Casing | | | | | | | | | | | | | |
|----------------------|---|----------------|---------------------------|----------------------|----------------|----------------|---------------------------|--|--|--|--|--|--|--|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | | | | | | | |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 | | | | | | | |
| 2 | 2.375 | 2.067 | 0,17 | 6 | 6.625 | 6.065 | 1.50 | | | | | | | |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 | | | | | | | |

| · | | | ble 2 of Borehole | | |
|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 |

MONITORING WELL NO. 3

PROJECT TW SIVE CA TOTAL GALLONS TO BE PURGED _____

SITE 2 - 1200 700 Ave PURGING METHOD _____

PROJECT NO. P110604 SAMPLING METHOD _____

| , | | | | | Fie | eld Paramete | ers Measi | ıred | ٠ | | |
|-------|---|---------------------------------------|-------|-------------------------------------|--------------------|-------------------------------|---------------|------|----------------|--------------------------|---------------------|
| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | pН | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (°C) | | | Water Level (feet) | Comments |
| 1542 | Initial | | 6.82 | 1.41 | 779 | 6.51 | 19.8° | | | | |
| 1548 | 3 gal | | 6.90 | 1.45 | 983 | 6,33 | 19.6 | | | | |
| 1553 | 6 gal | | 6,91 | 1.42 | 999 | 6.31 | 19,5° | | | | |
| 1558 | 9 gal | | 6,92 | 1,41 | 999 | 6.28 | 19.4° | | | | |
| 1604 | 1200 | | 6.98 | 1.35 | 990 | 6,23 | | | | | |
| 1609 | 15 gal | | 6.94 | 1.36 | 999 | 6.3¢ | 19,4 | | | | Parameters Stable |
| |) | | | | | | | | | | |
| | | | | | | | | | | | Sample @ 1612 |
| | | | | | | | | | | | (00) 1110 |
| , | | · · · · · · · · · · · · · · · · · · · | | | | | - | | | | (COC+ Labels Say |
| | | | | | | | | | | | 1600 because labels |
| | | | | | | | | | | | were pre-made). |
| | | | | | | | | | | | 1 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| FIELD | COLUDATION | SEDIAL NI | IMPED | DENTAL CO | MADANIV | SAMPLE | π | N2-1 | - 4 | | SAMPLING PERSONNEL: |

| ANALYSIS: | FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY | SAMPLE ID: JW2-17 SAMPLING PERSONNEL: |
|-------------|-----------------|---------------|----------------|---------------------------------------|
| | | | | |
| | | | | |
| COC NUMBER: | | | | COC NUMBER: |

TETRA TECH EM INC.
• SAN FRANCISCO •

gal|] x 0.3

| | GROUNDWATER SAME LING RECORD |
|---|---|
| MONITORING WELL NQ. | DATE 5/23/90 |
| PROJECT JW Silveira | |
| SITE 2 -1200 20th Ave | standing water column 13.24 feet |
| PROJECT NO | WELL VOLUMES TO BE PURGED |
| CASING DIAMETER 2 inches | MINUMUM PURGE VOLUME gallons |
| BOREHOLE DIAMETER 8,25 inches | ACTUAL VOLUME PURGED gallons |
| TOP OF CASING ELEVATION 16.00 feet | VOLUME CALCULATED BY: |
| WATER LEVEL 15.91 feet bgs @ | - |
| WATER LEVEL ELEVATION 0 () feet ms | t |
| PURGE VOLUME CALCULATION | |
| One Well Volume = Casing Volume + A One Well Volume = 2.25 gal + One Well Volume = 19.75 Casing Volume = Standing Water Column (ft) x F Casing Volume = 13.24ft x 6.17 gal/li Casing Volume = 2.25 gallons | gallons Standing Water Column Pipe Volume (gal/linear ft) ^a DEPTH TO WATER 15.91 Well DEPTH 29.15 |
| Annulus Volume = [(Standing Water Column (ft) | x Borehole Volume (gal/linear ft) ^b) - Casing Volume] x 0.3 ^c |

| | Table 1 Pipe Volume of Schedule 40 PVC Casing | | | | | | | | | | | | |
|----------------------|---|----------------|---------------------------|----------------------|----------------|----------------|---------------------------|--|--|--|--|--|--|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | | | | | | |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 | | | | | | |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 | | | | | | |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 | | | | | | |

_gal/linear ft)

| | | | able 2 of Borehole | | |
|-------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 |

Annulus Volume = [(

Annulus Volume =

| MONITOS | RING WELL NO | mw- | / | | | | | | (| SKUUN | DVVATER S | 7-27-00 | PAGE 1 0F 2 |
|---------------------|----------------------------|-------------------|----------------------|---------------------------|-----------|---------------------|----------|------------|------|----------------------------------|--------------|----------|---------------------------------------|
| DDO IEC | JW SICI | IE) 124 | | | OTAL GAI | LLONS TO | RE PURG | F D | | | | | |
| PROJEC | , 1200 | 20 th Au | r5 | | | METHOD _ | | | | | | | |
| SITE | PUM | .18.1 | <u> </u> | | | | | | | <u></u> | | | |
| PROJEC [*] | TNO. PUBL | γφ4 | | \$ | SAMPLING | METHOD_ | DAIL | ek | | | | | |
| | | | | Field Parameters Measured | | | | | | milied to ALST Earlie California | | | |
| Time | Volume of Water Removed | Discharge Rate | рH | Specific Conductivity | Turbidity | Dissolved Oxygen | Temp. | b. +7 .1" | | Water Level | | Comments | |
| | (gallons) | (gal/min) | pu. | (ms/cm) | (ntu) | (mg/L) | (°C) | | | (feet) | | | |
| 153 8 | Ø | | 6.15 | 1,18 | 33 | 0.42 | 19.70 | | | | | | |
| 1544 | 3 | | 6,21 | 1,20 | 332 | Ø.62 | 19.7° | | | | | | |
| 1551 | 6 | | 6.25 | 1.19 | 376 | 0.85 | 19.5° | | | | | | |
| 1551 1557 | 9 | | 6,26 | 1_19 | 310 | 0,86 | 19,4 | | | | | | |
| 1603 | 12 | | 6.26 | 1.18 | 555 | 0.82 | 19.4 | | | | | | |
| | | | | | | | | | | | | | |
| | Takk Barrier | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
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| | | | | | | - | | ··· | | | | | |
| jerija likimillada |) EO I PMENT | SERIAI NI | TRACIO DE BARRICA DA | RENTAL CO | | SAMPLE I | n Ju | 12-18 | C/61 | מי | SAMPLING PER | SONNEL | · · · · · · · · · · · · · · · · · · · |

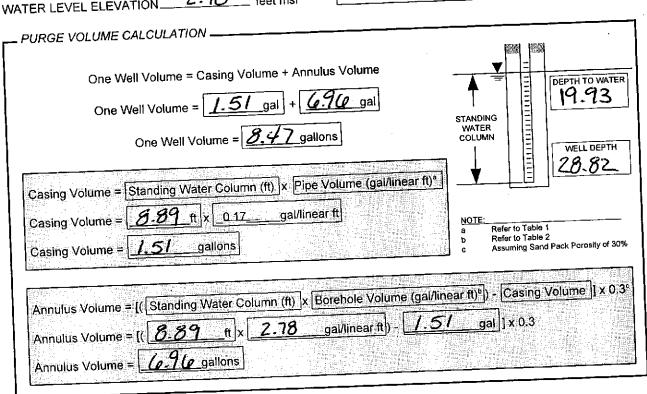
| FIELD EQUIPMENT SERIAL NUMBER RENTAL COMPANY | SAMPLE 1D: 102-18 6/610 | SAMPLING PERSONNEL: |
|--|-----------------------------|---------------------|
| | ANALYSIS: BTEX, MTBE, TPH-P | Am & For |
| | | |
| | | |
| | СОС NUMBER: | |

TETRA TECH EM INC. SAN FRANCISCO .

GROUNDWATER SAMPLING RECORD DATE 9-27-00 PAGE 2 0F 2

| MONITORING WELL NOMW-/ |
|--------------------------------------|
| PROJECT IN SILVEIRA |
| SITE 2, 1200 20th Aus |
| PROJECT NO. PIOGO 4 |
| CASING DIAMETER inches |
| BOREHOLE DIAMETER 8-25 inches |
| TOP OF CASING ELEVATION 17-15 feet |
| WATER LEVEL 19.93 feet bloc 1530 @ |
| WATER LEVEL ELEVATION -2.78 feet msl |
| WATER LEVEL ELEVATION Test more |

| STANDING WATER COLUMN 8-89 feet |
|---------------------------------|
| WELL VOLUMES TO BE PURGED |
| MINUMUM PURGE VOLUME gallons |
| ACTUAL VOLUME PURGED gallons |
| VOLUME CALCULATED BY: |
| |



| | | | Tab • Volume of Sch | e 1 | Pipe | | |
|----------------------|----------------|------------------------|---------------------------|----------------------|-------------------------|-------------------|-----------------------------------|
| Diameter (inches) | OD (inches) | Pipe ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) 4,500 | (inches) 4,026 | Volume (gal/linear ft) 0.66 |
| 1.25 | 1.660 2.375 | 1.380 2.067 | 0.08 | 6 8 | 6.625 8.625 | 6.065 7.981 | 1.50 2.60 |
| 3 | 3.500 | 3.068 | 0.38 | | | | |

| | to the markets of Color | able 2 | | |
|--------------------------|-------------------------|-----------------|----------|-----------------|
| | | | | |
| | Volume | of Borehole | | Volume |
| Diameter Volume | Diameter | Volume | Diameter | (gal/linear ft) |
| | (inches) | (gal/linear.ft) | (inches) | |
| (inches) (gal/linear ft) | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.25 2.14 | | 3.12 | 10.25 | 4.29 |
| 7.75 2.45 | 8.75 | <u> </u> | | - |

GROUNDWATER SAMPLING RECORD DATE 7-27-00 PAGE 1 0F 2

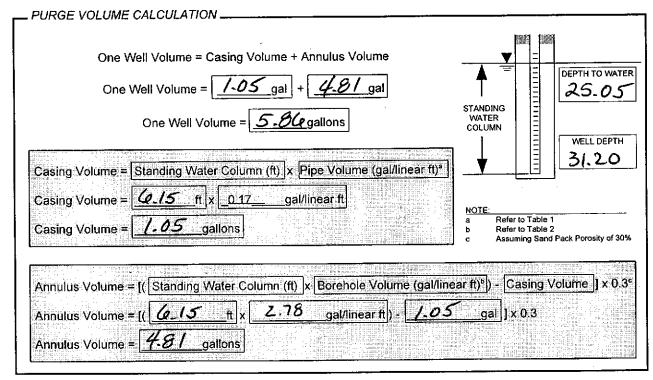
| MONITORING WELL NO. MW-Z | |
|--------------------------|----------------------------|
| PROJECT JW SILVETRA | TOTAL GALLONS TO BE PURGED |
| SITE 2, 1200 20th sur | PURGING METHOD BAILLING |
| PROJECT NO. 7116604 | SAMPLING METHOD BAILURE |

| | | | | | Fie | ld Paramete | ers Meası | ıred | Sec. 4 (1917) 1. (1917) 1. (1917) | |
|--------|---|--------------------------------|---------------|-------------------------------------|--------------------|-------------|---------------|------|---------------------------------------|----------|
| Time V | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | рΗ | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved | Temp. (°C) | | Water Level (feet) | Comments |
| 1458 | Ø | | 6.12 | Ø.72B | 21 | 4.83 | 19.3° | | | |
| 1503 | <u>8</u> | | 6. 0 5 | 0.723 | 140 | 4,92 | 19,0° | | | |
| 1506 | 4 | | 6.10 | Ø. 724 | 211 | 4,98 | 19.0° | | | |
| 1511 | 6 | | 6.09 | 0.719 | 279 | 5. pp | 18,9° | | | |
| 1515 | 8 | | 6.09 | Ø.717 | 285 | 502 | 18.90 | | | |
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| FIELD EQUIPMENT SERIAL NUMBER RENTAL COMPANY | SAMPLE ID: JW2-19 @ 1520 | SAMPLING PERSONNEL: |
|--|-----------------------------|---------------------|
| | ANALYSIS: BTEX, MTBE, TPA-P | An & Koy |
| | | / |
| | COC NUMBER: 0166 | |

GROUNDWATER SAMPLING RECORD DATE 9-27-00 PAGE 2 0F 2

| MONITORING WELL NO. MW-Z | <u> </u> |
|---------------------------------------|---------------------------------|
| PROJECT JW SIWEIRA | 1 1 |
| SITE 2, 1200 20th Aug | STANDING WATER COLUMN 6.15 feet |
| PROJECT NO. PILO 604 | WELL VOLUMES TO BE PURGED |
| CASING DIAMETER inches | MINUMUM PURGE VOLUME gallons |
| BOREHOLE DIAMETER 8.25 inches | ACTUAL VOLUME PURGED gallons |
| TOP OF CASING ELEVATION 20-11 feet | VOLUME CALCULATED BY: |
| WATER LEVEL 25.05 feet bloc 1450 @ | |
| WATER LEVEL ELEVATION — 4.94 feet msl | |



| | | Pip | Tab e Volume of Scl | le 1 redule 40 PV0 | Pipe | | |
|----------------------|----------------|----------------|---------------------------|-----------------------|----------------|----------------|---------------------------|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) |
| 1.25 | 1,660 | 1.380 | 0.08 | 4 | 4,500 | 4.026 | 0.66 |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 |

| | Volume | | able 2 of Borehole Volume | | |
|--------------|---------------------------|--------------------------|---------------------------------|---------------|---------------------------------|
| 7.25 7.75 | (gal/linear ft) 2.14 2.45 | (inches) 8.25 8.75 | (gal/linear ft) 2.78 3.12 | 9.25 10.25 | (gal/linear it) 3.52 4.29 |

GROUNDWATER SAMPLING RECORD DATE 9-27-00 PAGE 1 0F 2

| MONITORING WELL NO | - |
|---|---|
| PROJECT JW SILVEIRA | TOTAL GALLONS TO BE PURGED |
| SITE 2, 1200 20th Ave | PURGING METHOD BAILER |
| PROJECT NO. PIIO604 | SAMPLING METHOD BALLER |
| PROJECT NO. — · · · · · · · · · · · · · · · · · · | O/ (())) = (() - () - () - () - () - () - |

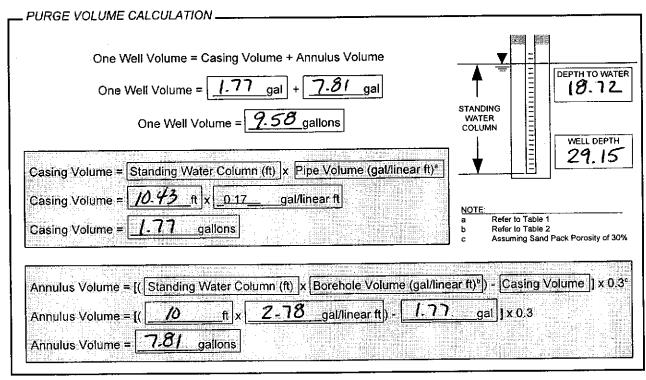
| | Field Parameters Measured | | | | | | | | | | |
|-------------|---|--------------------------------|------|-------------------------------------|--------------------|-------------------------------|---------------|---|--------------------------|---------|----------|
| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | рΗ | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (PC) | | Water Level (feet) | | Comments |
| 1348 | 0 | | 6.34 | 1.61 | 248 | 5.63 | 19.8 | | | | |
| 1402 | · <i>3</i> | | 6.38 | 1.53 | 369 | 6.05 | 19.9 | | | <u></u> | |
| 1409 | (c) | | 6.33 | 1.44 | 387 | 5.14 | 19.8 | | | | |
| 1420 | 9 | | 6.38 | 1.38 | 392 | 5.28 | 19.7 | | | | |
| 1427 | 12 | | 6.36 | 1 1 | 375 | 5.62 | 19-7 | - | <u> </u> | · | |
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| HITTELD EQUIPMENT | SERIAL NUMBER | Table 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 | | SAMPLING PERSONNEL: |
|-------------------|---------------|---|-----------------------------|---------------------|
| HOREIBA U-10 | U-10.08 | Equipuo | ANALYSIS: BTEX, MTBE, TPH-P | Hn & Koy |
| | | | | |
| | | | COC NUMBER: 6166 | |

TETRA TECH EM INC. SAN FRANCISCO •

GROUNDWATER SAMPLING RECORD PAGE 2052 PAGE 2052

| MONITORING WELL NO. MW-3 | DATE |
|--------------------------------------|-----------------------------------|
| SITE 2, 1200 20th Aug | STANDING WATER COLUMN |
| PROJECT NO. P110404 | |
| CASING DIAMETER 2" inches | WELL VOLUMES TO BE PURGED gallon: |
| BOREHOLE DIAMETER 8.25 inches | ACTUAL VOLUME PURGED gallon: |
| TOP OF CASING ELEVATION 16.06 feet | |
| WATER LEVEL 18.12 feet bloc @ | VOLUME CALCULATED BY: |
| WATER LEVEL ELEVATION -2. 6 feet msi | |
| | |



| | | Pip | Tab e Volume of Sch | le 1 redule 40 PVC | > Pipe | | |
|----------------------|----------------|----------------|---------------------------|-----------------------|----------------|----------------|---------------------------|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 |
| 3 | 3.500 | 3,068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 |

| The state of the s | | Yolume | able 2 of Borehole | | na ki indi 17 dan 24 dan 18 dan 1 |
|--|---------------------------|----------|---------------------------|----------------------|--|
| Manual Control of the | Volume (gal/linear ft) | Diameter | Yolume (gal/linear ft) | Dlameter (inches) | Volume (gal/linear ft) |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.75 | 2.45 | 8.75 | 3,12 | 10.25 | 4.29 |

GROUNDWATER SAMPLING RECORD DATE 12-18-00 PAGE 1 0F 2

MONITORING WELL NO. MWI

PROJECT JW SICUEIRA

SITE 2, 1200 20th AUE

PROJECT NO. PILOCO. OH

SAMPLING METHOD BAILUR

SAMPLING METHOD BAILUR

SAMPLING METHOD BAILUR

| | | Salata da S | | Field Parameters Measured | | | | | | | | |
|----------|---|---|------|-------------------------------------|--------------------|-----------|---------------|---|-------------|--------------------------|----------|--|
| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | рН | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved | Temp. (∘C) | | | Water Level (feet) | Comments | |
| 1514 | | | 6.45 | 1-17 | /0 | 3.24 | 20.0 | | | | | |
| 1523 | 3 | | 4.58 | 1-17 | 174 | 3.23 | 19.9 | | | | | |
| 1532 | le | | 6-58 | 1.15 | 275 | 3.41 | 19.8 | | | | | |
| 1540 | 9 | | 6.58 | 1.15 | 240 | 3-35 | 19.7 | | | | | |
| 1549 | 12 | | 6.57 | 1-15 | 245 | 3.39 | 19.7 | | | | | |
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| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY |
|-----------------|---------------|----------------|
| HONEIBA U-10 | U-10-10 | EQUIPCO |
| War lon | 107-100/2 | 1 |
| | | |

SAMPLE ID: JW2-21 @ 1555

ANALYSIS: BTEX, MTBE, TPH-P

COC NUMBER: 5005

SAMPLING PERSONNEL:

H. Danson R. Giconn

TETRA TECH EM INC.
SAN FRANCISCO

GROUNDWATER SAMPLING RECORD DATE 12-18-00 PAGE 2 OF 2

| MONITORING WELL NO. MW [| |
|----------------------------------|----------|
| PROJECT JW SILVEIRA | |
| SITE Z, 1200 20th AVE | |
| PROJECT NO. PILOG. 04 | |
| CASING DIAMETER 2 | inches |
| BOREHOLE DIAMETER 8.25 | inches |
| TOP OF CASING ELEVATION 17.15 | feet |
| WATER LEVEL 19.60 feet bloc 1510 |)@ |
| WATER LEVEL ELEVATION -2.45 | feet msl |

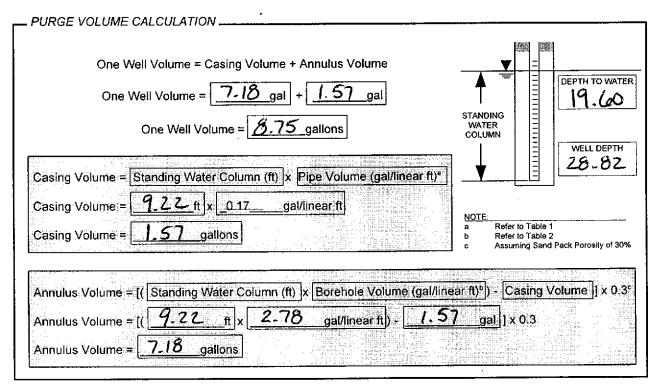
STANDING WATER COLUMN 9-22 feet

WELL VOLUMES TO BE PURGED _____ gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:

REGLENN



| | | Pip | Tab e Volume of Scl | le 1 redule 40 PV0 | Pipe | | |
|----------------------|----------------|----------------|---------------------------|-----------------------|----------------|----------------|---------------------------|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Dlameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear.ft) |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 |

| | | T Volume | able 2 of Borehole | | |
|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (Inches) | Volume (gal/linear ft) |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 |

GROUNDWATER SAMPLING RECORD DATE 12-18-00 PAGE 1 0F 2

| MONITORING WELL NO | |
|--------------------------|----------------------------|
| PROJECT JW SILVETRA | TOTAL GALLONS TO BE PURGED |
| SITE 2, 1200 + 20 16 AVE | PURGING METHOD PARCER |
| PROJECT NO. P1106. 44 | SAMPLING METHOD BAILER |
| | |

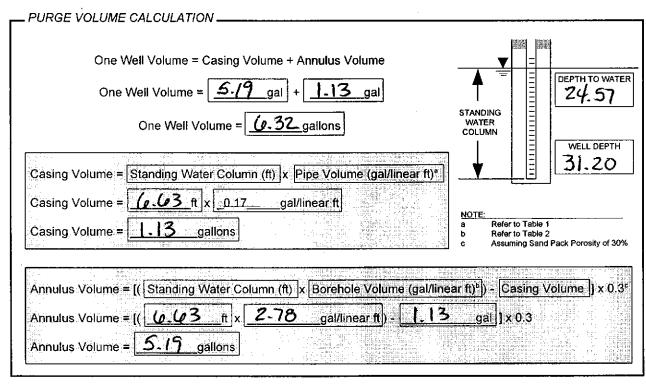
| | maga u | en de la Signifia En <u>re</u> geden de la General | | Field Parameters Measured Specific Dissolved Water | | | | | | | | | |
|------|---|---|--------------|--|--------------------|-------------------------------|---------------|----------|--|--------------------------|---|----------|--|
| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | pН | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (°C) | | | Water Level (feet) | | Comments | |
| 1425 | | | 6.42 | .760 | 10 | 6.21 | 19.2 | | | | · | | |
| 1432 | Z | | 6.44 | .761 | 111 | 6.38 | 19-2 | | | | | | |
| 1439 | 4 | | 6.44 | | 104 | 6.20 | 19.1 | | | | | | |
| 1447 | le | | 6.45 | 755 | Itele | 6.19 | 19-1 | | | | | | |
| 1456 | 8 | · | 6.45 6,45 | 0,754 | 167 | 6.3¢ | 19,2° | | | | | | |
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| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY | SAMPLE ID: 162-22@1500 | SAMPLING PERSONNEL: |
|-----------------|---------------|----------------|-----------------------------|---------------------|
| HOMBA U-10 | V#-10-10 | EQUIPUO | ANALYSIS: BTEX, MTBE, TPH-P | H. Danson |
| Wyor Lun | 101-100P2 | h | | Racen |
| | | | COC NUMBER: 5005 | |

TETRA TECH EM INC. SAN FRANCISCO •

GROUNDWATER SAMPLING RECORD DATE 12-18-00 PAGE 2 0F 2

| MONITORING WELL NO. MWZ | DATE 10 10 FAGE 2012 |
|---------------------------------------|---------------------------------|
| PROJECT JW SILVEIRA | |
| SITE 2, 1200 2011 AUE | STANDING WATER COLUMN 6.63 feet |
| PROJECT NO. <u>P1106-04</u> | WELL VOLUMES TO BE PURGED |
| CASING DIAMETER inches | MINUMUM PURGE VOLUME gallons |
| BOREHOLE DIAMETER 8-25 inches | ACTUAL VOLUME PURGED gallons |
| TOP OF CASING ELEVATION 20.11 feet | VOLUME CALCULATED BY: |
| WATER LEVEL 24.57 feet bloc @ | R.GLOW |
| WATER LEVEL ELEVATION - 4.40 feet msl | t.Cace V~ |



| | | Pip | Tab e Volume of Scl | le 1 redule 40 PVC |) Pipe | | |
|----------------------|----------------|----------------|---------------------------|-----------------------|----------------|----------------|---------------------------|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (Inches) | Volume (gal/linear ft) |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 |

| | | T Volume | able 2 of Borehole | | |
|----------------------|---------------------------|-------------|---------------------------|----------------------|---------------------------|
| Diameter (inches) | Volume (gal/linear ft) | (inches) | Volume (gal/linear ft) | Diameter (inches) | Yolume (gal/linear.ft) |
| 7.25 | 2,14 | 8.25 | 2.78 | 9.25 | 3,52 |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 |

GROUNDWATER SAMPLING RECORD DATE 12-18-00 PAGE 1 0F 2

| MONITORING WELL NO. MWS |
|-------------------------|
| PROJECT JW SILVEIRA |
| SITE 2, 1200 201 AUE |
| PROJECT NO PUDG-64 |

TOTAL GALLONS TO BE PURGED ____ PURGING METHOD BAILER SAMPLING METHOD STICE

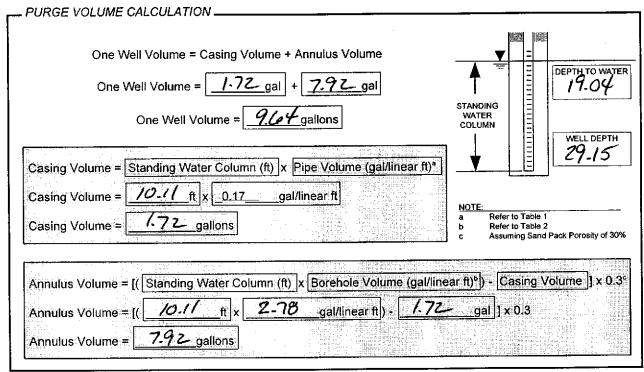
| 1 | | Figure 18 to | rielo Parameters Measureu | | | | | | | | |
|------|---|--|---------------------------|-------------------------------------|--------------------|-----------|---------------|----------|--------------|--------------------------|----------|
| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | рΗ | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved | Temp. (∘C) | | | Water Level (feet) | Comments |
| 1023 | | | 6.49 | 1.45 | 21 | 7.22 | 19.5 | | | | |
| 1032 | 3 | | 6.70 | 1.43 | 429 | 7.2Ce | 19.9 | | | | |
| 1050 | Će | | 6.74 | 1-33 | 198 | 7.33 | 19-8 | <u></u> | <u> </u> | | |
| 1100 | 9 | | 6.72 | 1.33 | Ce80 | 7.30 | 19-8 | | | | |
| 1107 | 12 | | 6.71 | 1.29 | 999 | 7.32 | 19.8 | | | | |
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| FIELD EQUIPMENT SERIAL NUMBER RENTAL COMPANY | d | SAMPLING PERSONNEL: |
|--|-----------------------------|---------------------|
| HOEBA U-10 | ANALYSIS: BTEY, MTBE, TPH-P | H. Dawson |
| Water Lever | | RGIENN |
| | COC NUMBER: 5005 | |

TETRA TECH EM INC. SAN FRANCISCO .

GROUNDWATER SAMPLING RECORD DATE 12-18-00 PAGE 2 0F 2

| MONITORING WELL NO. MW3 | DATE 12 TO GG PAGE 2 OF 2 |
|--|------------------------------|
| PROJECT JW SILVEIRA | |
| SITE 2, 1200 20th Ave | STANDING WATER COLUMN feet |
| PROJECT NO. P106.04 | WELL VOLUMES TO BE PURGED |
| CASING DIAMETER 2 inches | MINUMUM PURGE VOLUME gallons |
| BOREHOLE DIAMETER 8-25 inches | ACTUAL VOLUME PURGED gallons |
| TOP OF CASING ELEVATION 16.06 feet | VOLUME CALCULATED BY: |
| WATER LEVEL 2-98 feet bloc @ 1015 @ WATER LEVEL ELEVATION -2-98 feet msl | RGION |
| WATER LEVEL ELEVATION — %-10 feet msl | |



| | | Pip | Tab e Volume of Sch | |) Pipe | | |
|----------------------|----------------|----------------|---------------------------|----------------------|----------------|----------------|---------------------------|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 |
| 3 | 3,500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2,60 |

| PARE DISC. | | T Volume | able 2 of Borehole | | |
|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|
| Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear ft) | Diameter (inches) | Volume (gal/linear.ft) |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.75 | 2.45 | 8.75 | 3.12 | 10.25 | 4.29 |

GROUNDWATER SAMPLING RECORD

| DATE 8-30-01 PAGE 1 | 0F | 2 |
|---------------------|----|---|
|---------------------|----|---|

| MONITORING WELL NO. MW-1 |
|--------------------------|
| PROJECT JU SILVEIRA |
| SITE 1200 20th Ave |
| PROJECT NO PIOC. 04 |

| PURGING METHOD . | BAILER | |
|------------------|--------|------|
| SAMPLING METHOD | BAILBR | |

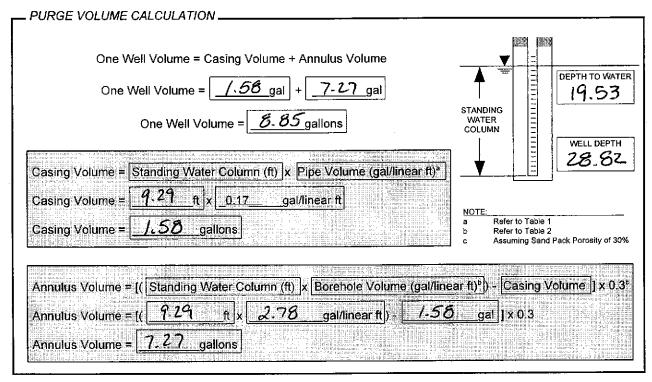
| 811111111111111111111111111111111111111 | | | Field Parameters Measured | | | | ### ################################## | | | |
|---|---|--------------------------------|---------------------------|-------------------------------------|--------------------|-------------------------------|--|------|--------------------------|--|
| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | рΗ | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (∘C) | | Water Level (feet) | Comments |
| 1435 | 0 | | | | | | | | 19.53 | |
| 1437 | 1.5 | | 6.68 | 1.ZCR | 37 | 0.72 | 20.6 | | 20.10- | |
| 1444 | 4.5 | ··· | 7.22 | 1.37 | 35 | 0.44 | 20.0 | | | |
| 1449 | 7 | | 7.30 | 1.35 | 67 | 0.91 | 19.7 | | | |
| 1457 | 10 | | 7.26 | 1.31 | 132 | 0.89 | 19.7 | | | |
| 1500 | 12 | | 7.25 | 1-29 | 108 | 0.83 | 19.7 | L. | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | - | | | | | | | | |
| | | | | | | | | | | |
| | | | | | 4 | | | | | |
| | | | | | | | | | | |
| | | | | | : | | | | | |
| | | | | | | | | | | A ALL MINOR TO PROVIDE THE COLUMN TO THE COL |
| | | | | | | | | | | |

| FIELD EQUIPMENT SERIAL NUMBER RENTAL COMPANY | 4 | SAMPLING PERSONNEL: |
|--|------------------------|---------------------|
| | ANALYSIS: BTEX & TPH-P | H. Danson |
| | | R. GLENN |
| | COC NUMBER: 3595 | |

TETRA TECH EM INC.

GROUNDWATER SAMPLING RECORD

| MONITORING WELL NO. MW-1 | DATE O DOT PAGE 2 OF 2 |
|---|---------------------------------|
| PROJECT JW SICUETRA | 0 - 0 |
| SITE 1200 20th AUE | STANDING WATER COLUMN 9.29 feet |
| PROJECT NO. PILOG. 04 | ACTUAL VOLUME PURGED gallons |
| CASING DIAMETER inches | |
| BOREHOLE DIAMETER 8-25 inches | |
| TOP OF CASING ELEVATION 17.15 feet | CALCULATED BY: |
| WATER LEVEL 19.53 feet bloc @ 1428 • | |
| WATER LEVEL ELEVATION <u>-2.38</u> feet msl | |



| | | Pip | Tab e Volume of Scl | le 1 jedule 40 PVC | ;Pipe | | |
|-------------------|----------------|----------------|---------------------------|-----------------------|----------------|----------|---------------------------|
| Diameter (inches) | OD (inches) | ID (inches) | Volume (gal/linear ft) | Diameter (inches) | OD (inches) | (inches) | Volume (gal/linear ft) |
| 1.25 | 1.660 | 1.380 | 0.08 | 4 | 4.500 | 4.026 | 0.66 |
| 2 | 2.375 | 2.067 | 0.17 | 6 | 6.625 | 6.065 | 1.50 |
| 3 | 3.500 | 3.068 | 0.38 | 8 | 8.625 | 7.981 | 2.60 |

| | | -10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 | able 9 | | TO THE RESIDENCE OF THE |
|----------|-----------------|--|---|----------|--|
| | | Volume | of Borehole | | |
| Diameter | Volume | Diameter | SIN SUIT TO THE STATE OF THE STATE OF THE SUIT OF THE | Diameter | Volume |
| (inches) | (gal/linear ft) | (Inches) | (gal/linear ft) | (Inches) | (gal/linear_ft) |
| 7.25 | 2.14 | 8.25 | 2.78 | 9.25 | 3.52 |
| 7.75 | 2.45 | 8.75 | 3.12 | 10,25 | 4.29 |

TETRA TECH EM INC.

APPENDIX B LABORATORY DATA AND

CHAIN-OF-CUSTODY



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

RECEIVED

Laboratory Number 143867

Total Volatile Hydrocarbons EPA 8015 (Mod)

TETRA TECH EM INC.

Tetra Tech EMI 135 Main Street

Suite 1800

San Francisco, CA 94105 Project#: P110604

Location: JW Silveira Props

Lab ID Sample ID JW2-2508 143867-001 JW2-06'09 143867-002 143867-003 JW2-07

I certify that this data package has been reviewed for technical correctness and completeness. Please see attached narrative for a discussion of any analytical problems related to this sample Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

The case narrative is an integral and inseparable part of this report.

Signature: 🔌 Title: Operat

Signature:

Title: Project Manager

Date: 3/17/00



Chain of Custody Record

| | 4,2 | • | 1 | |
|------|-----|----|----|--|
| | , | | , | |
| | 4 | | 1 | |
| | I | | -7 | |
| Page | | of | | |
| | | | | |

| 135 Main St. Suite 1800 | | | | | | | | | Γ | | | Pre | Ser | vati | ve A | dded | | | |
|-------------------------------|----------------|-------------------|---------------|----------------|---------------------------------------|-------------|---------------|----------------------------|--|-----------|----------|-------------------|-----------|--------------|----------|--------|--------------|-------------------|-----|
| San Francisco, CA 94105 | PO# | | Lab: | | | 1 | | | | П | | | Î. | 1 | 1 | | | | |
| 415-543-4880 | - | | | 4 | | | | | | Ш | L | 11 | | 1 | <u> </u> | - | | | 1 |
| Fax 415-543-5480 | | . * | | | | No | ./C | ont | ainer Types | | | 1 | An | alys | sis l | Requ | uired | l | |
| Project name: 1200 201 AVENUE | TtEMI technica | contact: | Field sampler | s: Halla | MZOU | | | | | | | | | S. | 1. | | | TT | |
| Silveira Site 2 | | Jackie Luta | Field sampler | Roy Gle | ?กฦ ่ | | Je l | | | | å | | ables | tabi | | | | | |
| Project number: | TtEMI project | manager: | Field sampler | s' signatures: | | 8 | | Poly Poly | | X | V | ta E | ırge | Ě× | Ų. | | | | |
| P110604 | Hall | Jawson | MalDo | JUNGON | | 40 ml VOA | 1 Liter Amber | 1 Liter Poly Brass Tube | Glass Jar | P VC | CLP SVOA | Ž | H P. | E | F | | | | |
| Sample ID | Sample | Description/Notes | Date | Time | Matrix | 3 | = | - 4 | ਹ | ្រ | 5 5 | | F | = (t | ΣĮ | . | | | |
| JW2-05 | mwi | 1200 20th AVE | 2-9-00 | 1145 | WATER | le | | | | | | | X | X | X | | | | 8 |
| JW2-46 JW2-47 | MWZ | и | 11 | 1144 | 11 | 0 | | | | | | | X | X | <u> </u> | | | | . 1 |
| JW2-07 | MW3 | V1 | 11 | 1230 | H | Q | | | | | | | Y | X | × | • | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | · | | , | | | | | | | | П | | | | | | | |
| | | | | | | | | | | | | | | | \Box | | | | |
| , | | | | | , , , , , , , , , , , , , , , , , , , | | | | | | | \Box | | 1 | П | | | П | |
| | | | | | | | _ | - | | # | | † † | | | \Box | | | H | |
| | | | | <u> </u> | | # | 1 | | | \dagger | | $\forall \exists$ | \forall | + | Ħ | \top | | $\dagger \dagger$ | |
| | <u> </u> | | | | | \parallel | + | | | + | H | + | + | + | + | + | | + | |
| | | | | | | + | - | | | + | \vdash | + | \vdash | + | + | + | ++ | ++ | |
| | | | | | | | + | + | | + | \vdash | + | \vdash | +- | ╂┼ | | } | ┼├- | + |
| · · | | | | | | | | | | | | | | ᆚ | 1.1 | | <u> </u> | $\perp \perp$ | |

| | Name (print) | Company Name | Date | Time |
|--------------------------|--------------|--------------|--------------|------|
| Relinquished by: | Poy Guw | TT EMI | 2-10-00 | |
| Received by: | * | | | , |
| Relinquished by: | | | | |
| Received by: | • | | | |
| Relinquished by: | | | | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | | | |
| Turnaround time/remarks: | | | 11.1.1.1.1.1 | |



Laboratory Number: 143867

Client: Tetra Tech EMI Location: Silveira Site 2

Project#: P110604

Receipt Date: 02/10/00

TPH-PURGEABLES CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on February 10, 2000.

A high surrogate recovery was observed for trifluorotoluene in sample JW2-95 (CT#143867-001) due to coelution with a hydrocarbon peak. The recovery for bromofluorobenzene was within criteria. No other analytical problems were encountered.

3121/00



| | | Gasoline b | y GC/FID CA LU | ift |
|-----------|----------------|------------|----------------|-------------------|
| Lab #: | 143867 | | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | · | Prep: | EPA 5030 |
| Project#: | P110604 | | Analysis: | EPA 8015M |
| Field ID: | . JW2-95 08 | | Batch#: | 53760 |
| Lab ID: | 143867-001 | popular | Sampled: | 02/09/00 |
| Matrix: | Water | has states | Received: | 02/10/00 |
| Units: | ug/L | • | Prepared: | 02/14/00 |
| Diln Fac: | 1.000 | | Analyzed: | 02/15/00 |

| Analyte | Result | RL | |
|-----------------|--------|----|--|
| Gasoline C7-C12 | 3,000 | 50 | |

| | Surrogate | The second and | Limits | | |
|---|--------------------------|----------------|--------|---------------------------------------|--|
| : | Trifluorotoluene (FID) | 174 * | 59-135 | | |
| | Bromofluorobenzene (FID) | 112 | 60-140 | · · · · · · · · · · · · · · · · · · · | |

^{* =} Value outside of QC limits; see narrative
RL = Reporting Limit
Page 1 of 1



| | | Gasoline b | y GC/FID CA LU | JFT |
|-----------|----------------|------------|----------------|-------------------|
| Lab #: | 143867 | <u> </u> | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | | Prep: | EPA 5030 |
| Project#: | P110604 | | Analysis: | EPA 8015M |
| Field ID: | JW2-0801 | | Batch#: | 53760 |
| Lab ID: | 143867-002 | ms | Sampled: | 02/09/00 |
| Matrix: | Water | 1 HW | Received: | 02/10/00 |
| Units: | ug/L | | Prepared: | 02/14/00 |
| Diln Fac: | 1.000 | | Analyzed: | 02/15/00 |

| Analyte | Result | RL | |
|-----------------|--------|------|---|
| Gasoline C7-C12 | ND | . 50 | |
| | | | • |

| 1 | Surrogal | te | %REC | Limits | | |
|---|--------------------|---------|------|--------|------|--|
| - | Trifluorotoluene | (FID) | 101 | 59-135 | • | |
| ł | Bromofluorobenzene | e (FID) | 110 | 60-140 | | |

ND = Not Detected RL = Reporting Limit Page 1 of 1



| | Gasoline by | GC/FID CA LUFT | |
|-----------|----------------|----------------|-------------------|
| Lab #: | 143867 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8015M |
| Field ID: | JW2-07 | Batch#: | 53760 |
| Lab ID: | 143867-003 | Sampled: | 02/09/00 |
| Matrix: | Water | Received: | 02/10/00 |
| Units: | ug/L | Prepared: | 02/14/00 |
| Diln Fac: | 1.000 | Analyzed: | 02/15/00 |

| Analyte | | Result | RL | |
|--------------------------|------|--------|----|--|
| Gasoline C7-C12 | N | D | 50 | |
| | | | | |
| Surrogate | %REC | Limits | | |
| Trifluorotoluene (FID) | 100 | 59-135 | | |
| Bromofluorobenzene (FID) | 108 | 60-140 | | |



| | Gasoli | ne by GC/FID CA LU | JFT | |
|-------------|----------------|--------------------|-------------------|-----|
| Lab #: | 143867 | Location: | JW Sílveira Props | |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 | |
| Project#: | P110604 | Analysis: | EPA 8015M | |
| Field ID: | ZZZZZZZZZZ | Batch#: | 53760 | |
| MSS Lab ID: | 143892-005 | Sampled: | 02/10/00 | |
| Matrix: | Water | Received: | 02/10/00 | . • |
| Imite: | ug /I. | Analyzed | 02/14/00 | |

Type:

Diln Fac:

MS

1.000

Lab ID:

QC107854

| Analyte | MSS R | esult | Spiked | Result | %REC | Limite |
|--------------------------|-------|--------|--------|--------|------|--------|
| Gasoline C7-C12 | < | 50.00 | 2,000 | 2,158 | 108 | 65-131 |
| | | - | | | | , |
| Surrogate | %REC | Limits | | | | |
| Trifluorotoluene (FID) | 116 | 59-135 | | | | |
| Bromofluorobenzene (FID) | 113 | 60-140 | | | | |

Type:

MSD

Lab ID.

QC107855

Result %REC Limits RPD

| Gasoline C7-C12 | | 2,000 | 1,975 | 99 | 65-131 | 9 | 20 |
|--------------------------|------|--------|-------|----|--------|---|----|
| | | | | | | | |
| Surrogate | %REC | Limits | | | | | |
| Trifluorotoluene (FID) | 113 | 59-135 | | | | | |
| Bromofluorobenzene (FID) | 112 | 60-140 | | | | | |

Spiked



Gasoline by GC/FID CA LUFT

Lab #:

143867

Location:

JW Silveira Props

Client:

Tetra Tech EMI

Prep:

EPA 5030

Project#:

P110604

Type:

LCS

Analysis:

EPA 8015M

Diln Fac:

1.000

Lab ID:

QC107851

Batch#:

53760

Matrix:

Water

02/14/00

Units:

ug/L

Analyzed:

| Analyte | Spiked | Result | %REC | Limits | |
|-----------------|--------|--------|------|--------|--|
| Gasoline C7-C12 | 2,000 | 2,097 | 105 | 73-121 | |

| ٠ | Surroga | ite | %REC | Limits | |
|---|-------------------|----------|------|--------|--|
| - | Trifluorotoluene | (FID) | 111 | 59-135 | |
| | Bromofluorobenzen | ne (FID) | 103 | 60-140 | |



Gasoline by GC/FID CA LUFT

Lab #:

143867

Location:

JW Silveira Props

Client:

EPA 5030 .

Tetra Tech EMI

Prep:

Project#:

P110604

<u> Analysis:</u>

EPA 8015M

Type:

BLANK

Lab ID:

QC107853

Diln Fac: Batch#:

1.000 53760

Matrix: Units:

Water

Analyzed:

02/14/00

ug/L

Result

60-140

5Ó

Analyte Gasoline C7-C12

ND

Limits

Surrogate Trifluorotoluene (FID)

59-135 97

Bromofluorobenzene (FID)

99

ND = Not Detected RL = Reporting Limit Page 1 of 1



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-053 EIVED

Laboratory Number 143867

TETRA TECH EM INC.

Aromatic Volatile Organics by GC/MS EPA 8260

Tetra Tech EMI 135 Main Street

Suite 1800

San Francisco, CA

Project#: P110604

Location: JW Silveira Props

Sample ID

JW2-0508

JW2-0609

JW2-07

Lab ID

143867-001

143867-002

143867-003

I certify that this data package has been reviewed for technical correctness and completeness. Please see attached narrative for a discussion of any analytical problems related to this sample set. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

The case narrative is an integral and inseparable part of this report.

Title: Project Manager



Laboratory Number: 143867

Client: Tetra Tech EMI Location: Silveira Site 2

Project#: P110604

Receipt Date: 02/10/00

PURGEABLE AROMATICS CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on February 10, 2000.

There was insufficient sample provided to perform a matrix spike and spike duplicate analysis. No analytical problems were encountered.



| | | Purgeable 1 | Aromatics by GO | ?/MS |
|-----------|--------------|-------------|-----------------|-------------------|
| Lab #: | 143867 | | Location: | JW Silveira Props |
| Client: | Tetra Tech E | MI | Prep: | EPA 5030 |
| Project#: | P110604 | | Analysis: | EPA 8260B |
| Field ID: | JW2-0508 | | Batch#: | 53818 |
| Lab ID: | 143867-001 | hva | Sampled: | 02/09/00 |
| Matrix: | Water | 3(21)00 | Received: | 02/10/00 |
| Units: | ug/L | | Analyzed: | 02/16/00 |
| Diln Fac: | 2.000 | · | <u> </u> | |

| Analyt | e Result | RL | |
|---|----------|-----|---|
| MTBE | ND | 1.0 | |
| Benzene | 280 | 1.0 | |
| Toluene | 17 | 1.0 | |
| Ethylbenzene | 92 | 1.0 | |
| Ethylbenzene m,p-Xylenes o-Xylene | 100 | 1.0 | : |
| o-Xylene | 18 | 1.0 | |

| Surroga | te % | REC Limits | |
|--------------------|---------|------------|--------|
| 1,2-Dichloroethane | e-d4 10 | 2 78-123 | |
| Toluene-d8 | 99 | 80-110 | ·) |
| Bromofluorobenzene | 98 | 80-115 | · · |



| | Pi | irgeable Ai | romatics by GO | :/ms |
|--|--|-------------|--------------------------------------|--|
| Lab #: Client: Project#: | 143867 Tetra Tech EMI P110604 | | Location: Prep: Analysis: | JW Silveira Props EPA 5030 EPA 8260B |
| Field ID: Lab ID: Matrix: Units: Diln Fac: | JW2-0609 143867-002 Water ug/L 1.000 | mosinia | Batch#: Sampled: Received: Analyzed: | 53818 02/09/00 02/10/00 02/16/00 |

| Analyte | Result | RL | |
|---|--------|-----|---|
| MTBE | ND | 0.5 | |
| Benzene | ND | 0.5 | |
| Toluene | ND | 0.5 | |
| Ethylbenzene | ND | 0.5 | |
| m.p-Xylenes | ND | 0.5 | , |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.5 | |

| 1,2-Dichloroethane-d4 100 78-123 Toluene-d8 100 80-110 | Surrogate | %REC | : Limits | | | *** |
|--|-----------------------|------|----------|------|------|------------|
| Totalic do | 1,2-Dichloroethane-d4 | 100 | 78-123 | | | |
| | Toluene-d8 | 100 | 80-110 | | ٠ | |
| Bromofluorobenzene 100 80-115 | Bromofluorobenzene | 100 | 80-115 | | | _ |



| | Purgeab | le Aromatics by GO | c/ms |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 143867 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Field ID: | JW2-07 | Batch#: | 53818 |
| Lab ID: | 143867-003 | Sampled: | 02/09/00 |
| Matrix: | Water | Received: | 02/10/00 |
| Units: | ug/L | Analyzed: | 02/16/00 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL | |
|--|--------|-----|--|
| MTBE | ND | 0.5 | |
| Benzene | ND | 0.5 | |
| Toluene | ND | 0.5 | |
| Ethylbenzene | ND | 0.5 | |
| m,p-Xylenes | ND. | 0.5 | |
| Toluene Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.5 | |

| Surrogate | %REC | Limits | |
|-----------------------|------|--------|---|
| 1,2-Dichloroethane-d4 | 103 | 78-123 | • |
| Toluene-d8 | 99 | 80-110 | · |
| Bromofluorobenzene | 100 | 80-115 | |



| | Purgeab | le Aromatica by \mathbf{G}^0 | :/MS | |
|-----------|----------------|--------------------------------|-------------------|--|
| Lab #: | 143867 | Location: | JW Silveira Props | |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 | |
| Project#: | P110604 | Analysis: | EPA 8260B | |
| Matrix: | Water | Batch#: | 53818 | |
| Units: | ug/L | Analyzed: | 02/16/00 | |
| Diln Fac: | 1.000 | - | ** | |

Type:

BS

Lab ID:

QC108062

| ļ | Analyte | Spiked | Result | %RF | C Limits |
|----|---------|--------|--------|-----|----------|
| - | Benzene | 50.00 | 46.09 | 92 | 80-116 |
| ١, | Toluene | 50.00 | 47.22 | 94 | 80-120 |

| ŧ | Surrogate | %REC | Limits | | | |
|---|-----------------------|------|--------|------|----------|------|
| Ŋ | 1,2-Dichloroethane-d4 | 98 | 78-123 | | • | |
| 1 | Toluene-d8 | 99 | 80-110 | | | |
| 1 | Bromofluorobenzene | 99 | 80-115 | | <u> </u> | |

Type:

BSD

Lab ID:

QC108063

| Analyte | Spiked | Result | *REC | Limits | KPU | Liv |
|---------|--------|--------|------|--------|-----|-----|
| Benzene | 50.00 | 44.46 | 89 | 80-116 | 4 | 20 |
| Toluene | 50.00 | 45.58 | 91 | 80-120 | 4 | 20 |

| إ | Surrogate | %REC | Limits | | |
|----|-----------------------|------|--------|--|----------|
| *1 | 1,2-Dichloroethane-d4 | 95 | 78-123 | | |
| j | Toluene-d8 | 97 | 80-110 | | 4 |
| | Bromofluorobenzene | 99 | 80-115 | | <u> </u> |
| ١, | h a ia | | | | |



| | Purgeab | le Aromatics by GO | Z/MS |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 143867 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC108065 | Batch#: | 53818 |
| Matrix: | Water | Analyzed: | 02/16/00 |
| Units: | ug/L | | |

| Analyte | Result | RL | |
|---|--------|-----|----------|
| MTBE | ND | 0.5 | |
| Benzene | ND | 0.5 | |
| Toluene | ИD | 0.5 | |
| Ethylbenzene | ND | 0.5 | |
| m,p-Xylenes | ND | 0.5 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.5 | <u> </u> |

| Surrogate | %REC | Limits | | | | |
|-----------------------|------|--------|---|---|---|--|
| 1,2-Dichloroethane-d4 | 103 | 78-123 | • | | • | |
| Toluene-d8 | 100 | 80-110 | | , | | |
| Bromofluorobenzene | 99 | 80-115 | | | | |
| | | | | | | |



Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878

2323 Fifth Street, Berkeley, CA 9471O, Phone (510) 486-0900

RECEIVED

Laboratory Number 145790

TETRA TECH EM INC.

Tetra Tech EMI 135 Main Street Suite 1800

San Francisco, CA

Project#: P1106.05

Location: JW Silveria UST, Oak.

Sample IDLab IDJW2-15145790-001JW2-16145790-002JW2-17145790-003

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Signature:

perations Manager

Date: '

o (m)

Signature:

Project Manager

Date:

6/23/00

CA ELAP # 1459

00 01

Page 1 of 40



Chain of Custody Record

| | | 1 | | 1 |
|---|------|---|----|----------|
| 7 | Page | | of | <u> </u> |

| 135 Main St. Suite 1800 | | | | | | | | | | | | | | Pr | eser | vati | ve A | dded | 1 | | |
|------------------------------|--------------------------|----------------|---------------|-----------|---------------------|---------------|------------|---------------|-------|------|---------------|-------------------|----------|----------------|----------|--------|---------|---------|--------|-----|--------------------|
| San Francisco, CA 94105 | PO# | Lab: | | | | | | | 3 23 | | | | | | | | | | | | |
| 415-543-4880 | | 1 697 | <i>八き</i> 丁 | | No./Container Types | | | | | | | | | | | | | | | | |
| Fax 415-543-5480 | | | | | |)./(| LOD | tair | ier i | ypes | • | Analysis Required | | | | | | | | | |
| Project name: 1200 20th Ave. | TtEMI technical contact: | Field samplers | : | 72 | | | | 1. | | | | | 250 | _w | જ્ઞ | | | | | | |
| JW SILVEIRA - #Z | JACKIE CUTA | HAC LA | 3 MOCH | Foy Green | | e. | | | | | | | <u>ڇ</u> | [쫉 | | | | | | | |
| Project number: | TtEMI project manager: | Field samplers | ' signatures: | | 8 | Am/ | <u>a</u> . | 8 교 | , l | | \$ | 5 | St/F | 월 | <u> </u> | d'y | | | | | |
| P1106 | HAR DAWSON | | | | 40 ml VOA | 1 Liter Amber | Liter Poly | Glass Jar | | | P V | P.S. | 4 4 4 | TPH Purgeables | | 1 | | | | | |
| Sample ID | Sample Description/Notes | Date | Time | Matrix | 3 | | Ξ, | E 3 | | | 2 | ਹ | 5 5 | | E X | 75 | \bot | | | | $\perp \downarrow$ |
| JW2-15 JW2-16 | MW-Z MW-1 | 5-23-00 | 1300 | WATER | 3 | | | | | | | | | X | X | X | | \prod | | | ٦ <u>_</u> |
| JW2-16 | 14w-3 mw-2 de | | 1400 | | 3 | | | | | | | | | X | χ | X | \perp | | | | ┙ |
| JW2-17 | MW-3 0 | Y | 1500 | V | 3 | | | | | | | | | X | _ > | X | | | | | |
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| | | N | ame (pri | nt) | | | | C | omp | any | N: | am | e | | | | Da | ite | | [im | e |
| Relinquished by: | | 16,60 | twin_ | | 7 | 7 | EV | ν_{\perp} | | | | | | | | T | 5-2 | 4-02 | ال | _ | |

| Landing 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Name (print) | Company Name | Date | Time |
|--|--------------|--------------|---------|------|
| Relinquished by: Ey D. D. | Koy Grenn | TTEMI | 3-24-00 | |
| Received by: | | | | |
| Relinquished by: | | | | |
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| Relinquished by: | | | | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | | | |
| Turnaraund time /remarks | | | | |



Laboratory Number: 145790

Client: Tetra Tech EMI

Location: JW Silveria UST, Oak.

Project#: P1106.05

Receipt Date: 05/24/00

TPH-PURGEABLE HYDROCARBONS AND BTXE CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on May 24, 2000.

Sample JW2-15 (CT#145790-001) was originally analyzed within the EPA recommended hold time of fourteen days but the results were greater than the linear range of the instrument. The reported results were analyzed less than two days beyond the recommended hold time.

The surrogate recoveries in the gasoline and BTXE continuing calibration verifications were flagged but the recoveries were within the laboratory's statistically derived limits.

No other analytical problems were encountered.



| | Gasoli | ne by GC/FID CA LO | IFT |
|-----------|----------------|--------------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8015M |
| Field ID: | JW2-15 | Batch#: | 56336 |
| Lab ID: | 145790-001 | Sampled: | 05/23/00 |
| Matrix: | Water | Received: | 05/24/00 |
| Units: | ug/L | Analyzed: | 06/07/00 |
| Diln Fac: | 20.00 | · · | |

| Analyte | | Result | RL . |
|--------------------------|------|----------|-------|
| Gasoline C7-C12 | | 18,000 G | 1,000 |
| | | • | |
| Surrogate | %REC | Limits | |
| Trifluorotoluene (FID) | 114 | 59-135 | |
| Bromofluorobenzene (FID) | 125 | 60-140 | |

G = Pattern resembles gasoline RL = Reporting Limit Page 1 of 1



| | Benzene, Tolu | ene, Ethylbenzene, | Xylenes |
|-----------|----------------|--------------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8021B |
| Field ID: | JW2-15 | Batch#: | 56394 |
| Lab ID: | 145790-001 | Sampled: | 05/23/00 |
| Matrix: | Water | Received: | 05/24/00 |
| Units: | ug/L | Analyzed: | 06/08/00 |
| Diln Fac: | 20.00 | | |

| Analyte | Result | RL | |
|---|--------|----|--|
| MTBE | ND | 40 | |
| Benzene | 3,700 | 10 | |
| Toluene | 430 | 10 | |
| Ethylbenzene m,p-Xylenes o-Xylene | 770 | 10 | |
| m,p-Xylenes | 2,000 | 10 | |
| o-Xylene | 440 | 10 | |

| Surrogate | %REC | Limits | |
|--------------------------|------|--------|---|
| Trifluorotoluene (PID) | 121 | 56-142 | · |
| Bromofluorobenzene (PID) | 131 | 55-149 | |



| | Gasoli | ne by GC/FID CA LU | JPT |
|-----------|----------------|--------------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8015M |
| Field ID: | JW2-16 | Batch#: | 56307 |
| Lab ID: | 145790-002 | Sampled: | 05/23/00 |
| Matrix: | Water | Received: | 05/24/00 |
| Units: | ug/L | Analyzed: . | 06/06/00 |
| Diln Fac: | 1.000 | <u> </u> | |

| Analyte | 3 | Result RL | |
|-----------------|----|-----------|--|
| Gasoline C7-C12 | ND | 50 | |
| | | | |

| Surrogate | %REC | Limits | |
|--------------------------|------|-------------|--|
| Trifluorotoluene (FID) | 109 | 59-135 | |
| Bromofluorobenzene (FID) | 108 | 60-140 | |
| | | | |



| | Benzene, Tolu | ene, Ethylbenzene, | Xylenes | |
|-----------|----------------|--------------------|----------------------|--|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. | |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 | |
| Project#: | P1106.05 | Analysis: | EPA 8021B | |
| Field ID: | JW2-16 | Batch#: | 56307 | |
| Lab ID: | 145790-002 | Sampled: | 05/23/00 | |
| Matrix: | Water | Received: | 05/24/00 | |
| Units: | ug/L | Analyzed: | 06/06/00 | |
| Diln Fac: | 1.000 | 1 | | |

| Result | RL | |
|--------|----------------------------|--|
| ND | 2.0 | |
| ND | 0.50 | |
| , ND | 0.50 | |
| ND | 0.50 | • |
| ND | 0.50 | |
| ND | 0.50 | - |
| | ND ND ND ND ND | ND 2.0 ND 0.50 ND 0.50 ND 0.50 ND 0.50 ND 0.50 |

| Surrogate | %R | | |
|------------------------|---------|--------|--|
| _Trifluorotoluene (PII | 0) 96 | 56-142 | |
| Bromofluorobenzene (| PID) 94 | 55-149 | |



| | Gasoli | ne by GC/FID CA LU | IFT |
|-----------|----------------|--------------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8015M |
| Field ID: | JW2-17 | Batch#: | 56307 |
| Lab ID: | 145790-003 | Sampled: | 05/23/00 |
| Matrix: | Water | Received: | 05/24/00 |
| Units: | ug/L | Analyzed: | 06/06/00 |
| Diln Fac: | 1.000 | - | |

| Analyte | Result | RL | |
|-----------------|--------|----|--|
| Gasoline C7-C12 | ND | 50 | |
| | | | |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (FID) | 109 | 59-135 |
| Bromofluorobenzene (FID) | 107 | 60-140 |



| | Benzene, Tolu | ene, Ethylbenzene, | Xylenes |
|-----------|----------------|--------------------|----------------------|
| | | - | |
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8021B |
| Field ID: | JW2-17 | Batch#: | 56307 |
| Lab ID: | 145790-003 | Sampled: | 05/23/00 |
| Matrix: | Water | Received: | 05/24/00 |
| Units: | ug/L | Analyzed: | 06/06/00 |
| Diln Fac: | 1.000 | - | |

| Analyte | Result | RL | |
|---|--------|------|--|
| MTBE . | ND | 2.0 | |
| Benzene | ND | 0.50 | |
| Toluene | ND | 0.50 | |
| Ethylbenzene | ND | 0.50 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.50 | |
| o-Xylene | ND | 0.50 | |

| Surrogate | %REC | Limits | |
|--------------------------|------|--------|----------|
| Trifluorotoluene (PID) | 96 | 56-142 | |
| Bromofluorobenzene (PID) | 96 | 55-149 | <u>·</u> |



Gasoline by GC/FID CA LUFT Lab #: 145790 Location: JW Silveria UST, Oak. Client: Tetra Tech EMI Prep: EPA 5030 Project#: P1106.05 Analysis: EPA 8015M Field ID: ZZZZZZZZZZ Batch#: 56307 MSS Lab ID: 145802-003 Sampled: 05/24/00 Matrix: Water Received: 05/24/00 Units: ug/L Analyzed: 06/06/00 Diln Fac: 1.000

Type:

MS

Lab ID:

QC117469

| Analyte | MSS Result | SD1Keq | Result | %RE(| C Limits |
|-----------------|------------|--------|--------|------|----------|
| Gasoline C7-C12 | 43.89 | 2,000 | 2,006 | 98 | 65-131 |
| • | | | | | |

| Surrogate | %REC | Limits | |
|--------------------------|------|--------|---|
| Trifluorotoluene (FID) | 121 | 59-135 | , |
| Bromofluorobenzene (FID) | 121 | 60-140 | |

Type:

MSD

Lab ID:

QC117470

%REC

Limits RPD Lim

Result

| Gasoline C7-C12 | _ | 2,000 | 1,977 | 97 | 65-131 | 1 | 20 |
|--------------------------|------|--------|-------|----|---|---|----|
| | | | | | | | |
| Surrogate | %REC | Limits | | | | | |
| Trifluorotoluene (FID) | 122 | 59-135 | | | | | |
| Bromofluorobenzene (FID) | 123 | 60-140 | | | | | |
| | | | | | *************************************** | | |

Spiked



| | Gasoli | ne by GC/FID CA LU | JFT |
|-------------------|----------------|--------------------|----------------------------------|
| Joh #. | 145790 | Location: | TH Cilveria HCM Oak |
| Lab #: Client: | Tetra Tech EMI | Prep: | JW Silveria UST,Oak. EPA 5030 |
| Project#: | PI106.05 | Analysis: | EPA 8015M |
| Field ID: | ZZZZZZZZZ | Batch#: | 56336 |
| MSS Lab ID: | 145814-004 | Sampled: | 05/25/00 |
| Matrix: | Water | Received: | 05/25/00 |
| Units: | ug/L | Analyzed: | 06/07/00 |
| Diln Fac: | 1.000 | | |

MS

Lab ID:

QC117562

| Analyte | MS | S Result | Spiked | Result | %RE(| Limits |
|-----------------|----|------------|--------|--------|------|--------|
| Gasoline C7-C12 | | 43.46 | 2,000 | 1,989 | 97 | 65-131 |
| | | | | | | |
| Surrogate | 9. | REC Limits | | | | |

| Surrogate | kr e | C Limits | | |
|-----------------------|-------------|----------|------|--|
| Trifluorotoluene (FID |) 122 | 59-135 | | |
| Bromofluorobenzene (F | 'ID) 127 | 60-140 | | |

Type:

MSD

Lab ID:

QC117563

Result %REC Limits RPD Lim

| Gasorine C/-CIZ | | 2,000 | 2,023 | 99 | 02-131 | 4 | 20 |
|--------------------------|------|--------|-------|----|--------|---|----|
| | | | | | | | |
| Surrogate | %REC | Limits | | | | | |
| Trifluorotoluene (FID) | 122 | 59-135 | | | | | · |
| Bromofluorobenzene (FID) | 128 | 60-140 | | | | | |
| | | 00 110 | | | | | |

Spiked



Gasoline by GC/FID CA LUFT Lab #: 145790 JW Silveria UST,Oak. Location: Client: Tetra Tech EMI Prep: EPA 5030 Project#: EPA 8015M P1106.05 Analysis: Type: LCS Diln Fac: 1.000 Lab ID: QC117466 Batch#: 56307 Matrix: Water 06/05/00 Analyzed: Units: ug/L

| Analyte | Spiked | Result | %REC | Limits |
|-----------------|--------|--------|------|--------|
| Gasoline C7-C12 | 2,000 | 1,951 | 98 . | 73-121 |

| Surrogate | %REC | Limits |
|--------------------------|-------|--------|
| Trifluorotoluene (FID) | 124 - | 59-135 |
| Bromofluorobenzene (FID) | 123 | 60-140 |
| | | |



| | Benzene, Toluene, E | thylbenzene, X | ylenes |
|-----------|---------------------|----------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8021B |
| Туре: | LCS. | Diln Fac: | 1.000 |
| Lab ID: | QC117467 | Batch#: | 56307 |
| Matrix: - | Water | Analyzed: | 06/05/00 |
| Units: | ug/L | | <u> </u> |

| Analyte | Spiked | Result | %REC | Limits |
|--------------|--------|--------|------|----------------|
| MTBE | 20.00 | 18.94 | 95 | 66-126 |
| Benzene | 20.00 | 18.09 | 90 | 67- 117 |
| Toluene | 20.00 | 18.89 | 94 | 69-117 |
| Ethylbenzene | 20.00 | 19.47 | 97 | 68-124 |
| m,p-Xylenes | 40.00 | 40.22 | 101 | 70-125 |
| o-Xylene | 20.00 | 19.21 | 96 | 65-129 |

| | | · · |
|--------------------------|------|----------|
| Surrogate | %REC | C Limits |
| Trifluorotoluene (PID) | 95 | 56-142 |
| Bromofluorobenzene (PID) | 92 | 55-149 |
| | | |



Gasoline by GC/FID CA LUFT Lab #: 145790 Location: JW Silveria UST, Oak. Client: Tetra Tech EMI Prep: EPA 5030 Project#: P1106.05 Analysis: EPA 8015M Type: LCS Diln Fac: 1.000 Lab ID: QC117559 Batch#: 56336 Matrix: Water Analyzed: 06/07/00 -Units: ug/L

| Analy | te Spiked | Recuit | %RE | C Limits |
|-----------------|-----------|--------|-----|----------|
| Gasoline C7-C12 | 2,000 | 1,806 | 90 | 73~121 |
| | | | | |

| Surrogate | %RE | C Limits | |
|--------------------------|-----|----------|--|
| Trifluorotoluene (FID) | 116 | 59-135 | |
| Bromofluorobenzene (FID) | 124 | 60-140 | |
| | | | |



| | Benzene, Toluene, E | thylbenzene, X | ylenes |
|-----------|---------------------|----------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8021B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC117774 | Batch#: | 56394 |
| Matrix: | Water | Analyzed: | 06/08/00 |
| Units: | ug/L | | |

| Analyte | Spiked | Result | %REC | Limits |
|-------------------------|---------|--------|------|--------|
| MTBE | 20.00 | 21.72 | 109 | 66-126 |
| Benzene | 20.00 | 20.75 | 104 | 67-117 |
| Toluene | 20.00 | 20.38 | 102 | 69-117 |
| Ethylbenzene | 20.00 | 20.00 | 100 | 68-124 |
| m,p-Xylenes o-Xylene | . 40.00 | 42.41 | 106 | 70-125 |
| o-Xylene | 20.00 | 19.80 | 99 | 65-129 |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (PID) | 107 | 56-142 |
| Bromofluorobenzene (PID) | 113 | 55-149 |
| | | |

;;



Gasoline by GC/FID CA LUFT Lab #: 145790 Location: JW Silveria UST, Oak. Client: Tetra Tech EMI EPA 5030 Prep: Project#: P1106.05 Analysis: EPA 8015M Type: BLANK Diln Fac: 1.000 Lab ID: QC117468 Batch#: 56307 Matrix: Water Analyzed: 06/05/00 Units: ug/L

| Analyte | Peguit + | RL | |
|---------------------------------------|----------|----|---------------------------------------|
| Gasoline C7-C12 | ND | 50 | |
| · · · · · · · · · · · · · · · · · · · | | | · · · · · · · · · · · · · · · · · · · |

| | 3 | . Limits | %RE | ite | Surroga |
|-------------------------------------|---|----------|-----|----------|-------------------|
| illituolocoldene (FID) 109 59-135 | 5 | 59-135 | 109 | (FID) | Trifluorotoluene |
| Bromofluorobenzene (FID) 109 60-140 |) | 60-140 | 109 | ne (FID) | Bromofluorobenzen |



| | Benzene, Tolu | ene, Ethylbenzene, | Xylenes |
|-----------|----------------|--------------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8021B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC117468 | Batch#: | 56307 |
| Matrix: | Water · | Analyzed: | 06/05/00 |
| Units: | ug/L | - | |
| | | | |

| Analyte | Result | RL | |
|---|--------|------|--|
| MTBE | ND | 2.0 | |
| Benzene | ND | 0.50 | |
| Toluene | ND | 0.50 | |
| Ethylbenzene | ND | 0.50 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.50 | |
| o-Xylene | ND | 0.50 | |

| Trifluorotoluene (PID) 97 56-142 | Surrogate | %REC | Limits | |
|--------------------------------------|------------------------|-------|--------|--|
| (Bromoflyorobenzene (BTD) 02 FF 140 | Trifluorotoluene (PID) | 97 | | |
| Bromorradrobenzene (FIB) 93 55-149 | Bromofluorobenzene (PI | D) 93 | 55-149 | |



| | Gasolii | ne by GC/FID CA LU | JFT . |
|---------------------------------------|--------------------------------------|-----------------------------------|---|
| Lab #: Client: Project#: | 145790 Tetra Tech EMI P1106.05 | Location: Prep: Analysïs: | JW Silveria UST,Oak. EPA 5030 EPA 8015M |
| Type: Lab ID: Matrix: Units: | BLANK QC117561 Water ug/L | Diln Fac: Batch#: Analyzed: | 1.000 56336 06/07/00 |

| HIGLYCE | | | |
|-----------------|-------------|----|--|
| Gasoline C7-C12 | ND | 50 | |
| Gasorine C. Oza | | | |
| | | | |
| Surrogate | %REC Limits | | |

| Surrogate | %R1 | C Limits |
|--------------------------|-----|----------|
| Trifluorotoluene (FID) | 98 | 59-135 |
| Bromofluorobenzene (FID) | 98 | 60-140 |



| | Benzene, Toluene, E | thylbenzene, X | ylenes |
|-----------|---------------------|----------------|----------------------|
| Lab #: | 145790 | Location: | JW Silveria UST,Oak. |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P1106.05 | Analysis: | EPA 8021B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC117775 | Batch#: | 56394 |
| Matrix: | Water | Analyzed: | 06/08/00 |
| Units: | ug/L | | |

| Analyte | Result | RL | |
|---|--------|------|--|
| MTBE | ND | 2.0 | |
| Benzene | ND | 0.50 | |
| Toluene | ND | 0.50 | |
| Ethylbenzene | ND | 0.50 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.50 | |
| o-Xylene | ND | 0.50 | |

| Surrogate | %rec | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (PID) | 103 | 56-142 |
| Bromofluorobenzene (PID) | 108 | 55-149 |





Chain of Custody Record

| 175 Mail Ca Calles 1900 | Cité | ain di C | usivuj | INCCUL | u | | | | | | | | | | Pa | ge | | O! | ſ | <u> </u> |
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| 135 Main St. Suite 1800 | | | | | | | | | | | | | F | rese | rvat | ive . | Adde | ed | | |
| San Francisco, CA 94105 | PO# | Lab: | <i>t</i> | | | | | | | | | | 141 | 2 | 五五 | 4 | | П | | |
| 415-543-4880 | | C3 | T | | No./Container Types | | | r Tynos | t | 1 | L_L | | | | | _ quir | nd od | | | |
| Fax 415-543-5480 Project name: 1200 20 1 Ave | TtEMI technical contact: | Field complete | | | 170 | •/ C | JUIN | aint | i Types | ╁ | т— | тт | | · | | T | | | | |
| JW SILVEIRA - Z | SARA WOULEY | / / / / / | | 1 | | ľ | | | | | ایرا | į | 3 3 | | | | | | | |
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| Project number: | TtEMI project manager: | Field samplers | ' signatures: | | ∥§ . | A I | 2 <u>2</u> | ВГ | | 8 | ; <u>Ĉ</u> | est | leta | X | $\lambda \omega$ | | | | | |
| P110604 | HAL DAWSON | | | | 40 ml VOA | 1 Liter Amber | 1 Liter Poly Brass Tube | Glass Jar | | V | CLP SVOA | | | TPH Extractables | 201- | | | | | Ì |
| Sample ID | Sample Description/Notes | Date | Time | Matrix | 4 | = : | | 5 | | 5 | 5 | | _ | $\overline{}$ | 77/9 | | | Ц | Ш | |
| JW2-18 | MW-1 | 9-27-00 | 1614 1520 | WATER | 4 | | | | | | | | X | | XX | | | | | |
| JW 2-19 | MW-Z | t t | 1520 | 11 | 4 | | | | | | | | Α. | | XX | | 1 | | | |
| JW 2-20 | MW-3 | / 4 | 1430 | 11 | 4 | | | | | | | | κ | (| λX | | | | | |
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| | | N: | ame (pri | nt) | Company | | | | | Name | | | | | | Date | | | T'- | ъe |
| Relinquished by: For D. | 7 | Koy Gu | BUN | | 7 | 7 | C | m: | 7 | | | | | | - |]- 2 | 8-0 | 0 | _ | - |
| Received by: | | 1 | | | | | | | | | | | | | T | | | T | | |
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| Relinquished by: | | | | | | | | | | | | | | | | | | | | |
| Received by: | | | | | | | | | | | | | | | | | | | | |
| Turnaround time/remarks: | | | | | | | | | | | | | | | | | | | | |
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14775 7

| | Chain of Custody Reco | | | | | | | | | | | | | | | | Page | • | 1 | _ of _ | i | ì |
|-----------------------------|--------------------------|--|----------------|--------|---------------|----------------|------------------|------------|-----------|----------|---------------------------------------|-----------|---------------|------------|-----------|---------|------------------|----------|-------------------|--------------------|----------|-----------|
| 135 Main St, Suite 1800 | | | • | • | | | | | | | Ĺ | | — | | D- | | | | dded | | | _ |
| San Francisco, CA 94105 | PO# | Lab: | | |] | | | | | | \vdash | T | Г | Ti Ti | N 1 | | 1 <u>Z</u> | ve A | daec | | <u> </u> | |
| 415-543-4880 | | 1 6 | FT | | - | _ , | | | | | + | | 上 | J J. | 五 | 7 | 7 | | Ш | $\perp \downarrow$ | \perp | Ш, |
| Fax 415-543-5480 | | | | | No |)./(| Cor | ıtai | iner | Types | ; | | | | \n | aly: | sis l | Req | uire | ď | | |
| Project name: 1200 20 1 Ave | TtEMI technical contact: | Field samplers | | | | | | | | | | | 1 | | _ | æ | П | | | | | \top |
| JW E WEIRA - Z | SARA WOOLEY | HAR & | | | | ber | | | | | | | Ð | | 릙 | ē. | | | | | | |
| Project number: | TtEM) project manager: | Field samplers | s' signatures: | • | ð | ΨV | Pol. | 출 | = | | | ξŞ | st/P | 퇿 | 200 | ĔĻ | 10 | | | | | |
| P110604 | HAR DAWSON | | | | 40 ml VOA | 1 Liter Amber | 1 Liter Poly | Brass Tube | Glass Jar | | VOA a LO | CLP SVOA | CLP Pest/PCBs | CLP Metals | | 3/7 | 10 | | | | | |
| Sample ID | Sample Description/Notes | Date | Time | Matrix | \$ | 1. | 11 | £ | \$ | | {\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 3 5 | 5 | 3 | TPH Purge | 3 | 18 | | | | | |
| JW2-18 | | 9-27-00 | 1614 | WATER | 4 | | | 1 | 1 | | ▮ | Ŧ | F | П | 才 | X | ₩ | 7 | Ħ | \Box | | Ŧ |
| Ju 2-19 | | £f. | 1520 1430 | 11 | 4 | | | 1 | | | | + | | \Box | X | | d x t | <u> </u> | | + | | + |
| JW 2-20 | | 11 | 1430 | и | 4 | | | 1 | | 1 | \dagger | 十 | | | X | | | + | $\dagger \dagger$ | ++ | | + |
| | | | , | | ' | | | 1 | | | 1 | \dagger | | П | Ť | 7 | | + | + | + | _ | +- |
| | | | | | | | Ī | | | | 1 | | П | П | \top | 1 | † † | + | \top | ++ | \top | \dagger |
| | | | | | | | | 1 | | | | | П | П | 7 | \top | \Box | + | \Box | 11 | - | t |
| | | | | | | | | | | | T | П | | 十 | \top | \prod | \top | \Box | $\dagger \dagger$ | + | \top | |
| | | | | | | | | | | | | П | | \top | \top | \Box | 十 | \Box | \Box | \top | \top | |
| | | | | | | | 4. | | | | | T | | П | _ | ٦. | 17 | - | | | | 1- |
| | | | | | | | | 14 | | IVE | P | 71E | Æ | D) | 10 | | | | ÷į. | 1 1 | | \dagger |
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| | | | | | | | | | | | | | | П | | | | | | ++ | _ | 1 |
| | <u></u> | | | | 1 | | | | | <u> </u> | | | | | | | | | | | | |
| | | | ame (prir | ıt) | Company | | | | | | | ап | 1e | | | | | Da | te | T | im | e |
| Relinquished by: For D. | <u></u> | Koy G | BUN | | | <i>T</i> 7 | | 97 | ηI | | | | | | | | 9 | -22 | 00 | | | |
| Received by: | | | <u> </u> | | | | | | | | | | | | | | | 1 | | | | |
| Relinquished by: | h (II) | Hall | Jaw 5 | on , | | | \mathbb{Z}_{2} | <u> </u> | 5N | II | | | | | | | 19 | 28 | 00 | 11.0 | 100 | |
| Received by: | net ! | hos | / <i>S</i> e | ennott | I CAT | | | | | | | _ | | | | | Z | Z/ | 29/ | 26 | //k | <u>Z</u> |
| Relinquished by: | | | | -1 | | | | | | | | | | | | | 7 | | 7" | | | |
| Received by: | | | | | | | | | | | | | | | | | | | | | | |
| Relinquished by: | | | | | | | | | | | | | | | | | | | | | | |
| Received by: | | | | | | | | | | | | | | | | | T | | | | | |
| Turnaround time/remarks: | | | - | | | | | | | | | | | | | | | | | | | |
| Recu | a shelled | Un | al | ooler | • | | | | | | | | | | | - | | | | | | |



TPH/Purgeable Data



| | Gasoli | ne by GC/FID CA LU | TT |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8015M |
| Field ID: | JW2-18 | Batch#: | 58651 |
| Lab ID: | 147754-001 | Sampled: | 09/27/00 |
| Matrix: | Water | Received: | 09/28/00 |
| Units: | ug/L | Analyzed: | 10/03/00 |
| Diln Fac: | 5.000 | - | |

| Gasoline C7-C12 | 4,300 G | 250 |
|------------------------|-------------|-----|
| | | |
| Surrogate | %REC Limits | |
| Trifluorotoluene (FID) | 104 59-135 | |

Result

60-140

105

Bromofluorobenzene (FID)



| | Gasoli | ne by GC/FID CA LU | IFT |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8015M |
| Field ID: | JW2-19 | Batch#: | 58599 |
| Lab ID: | 147754-002 | Sampled: | 09/27/00 |
| Matrix: | Water | Received: | 09/28/00 |
| Units: | ug/L | Analyzed: | 09/29/00 |
| Diln Fac: | 1.000 | | |

| Diln Fac: 1.000 | | |
|--------------------------|-------------|--------|
| | | |
| Analyte | Result | RL |
| Gasoline C7-C12 | ND | 50 ITC |
| | | |
| Surrogate | %REC Limits | |
| Trifluorotoluene (FID) | 118 59-135 | |
| Bromofluorobenzene (FID) | 122 60-140 | |



| | Gasoli | ne by GC/FID CA LU | IFT |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8015M |
| Field ID: | JW2-20 | Batch#: | 58599 |
| Lab ID: | 147754-003 | Sampled: | 09/27/00 |
| Matrix: | Water | Received: | 09/28/00 |
| Units: | ug/L | Analyzed: | 09/29/00 |
| Diln Fac: | 1.000 | • | |

| Analyte | Result | RL | |
|-----------------|--------|---------|--|
| Gasoline C7-C12 | ND | 50 はて 0 | |
| | | | |

| Surrogate | %REC | Limits | |
|--------------------------|------|--------|--|
| Trifluorotoluene (FID) | 117 | 59-135 | |
| Bromofluorobenzene (FID) | 121 | 60-140 | |



| | Gasoli | ne by GC/FID CA LU | JFT |
|-------------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8015M |
| Field ID: | JW2-18 | Batch#: | 58599 |
| MSS Lab ID: | 147754-001 | Sampled: | 09/27/00 |
| Matrix: | Water | Received: | 09/28/00 |
| Units: | ug/L | Analyzed: | 09/29/00 |
| Diln Fac: | 1.000 | | |

MS

Lab ID:

QC126339

| Analyte | MSS Result | Spiked | Result | %RE | C Limits |
|-----------------|------------|--------|---------|-----|----------|
| Gasoline C7-C12 | 6,154 | 2,000 | 8,109 b | 98 | 65-131 |

| Surrogate | %REC Limits | |
|--------------------------|------------------|--|
| Trifluorotoluene (FID) | 326 * >LR 59-135 | |
| Bromofluorobenzene (FID) | 128 60-140 | |

Type:

MSD

Bromofluorobenzene (FID)

Lab ID:

QC126340

Spiked Result %REC Limits RPD Lim

| | · · · · · · · · · · · · · · · · · · · | | ***************** | | | |
|------------------------|---------------------------------------|---------|-------------------|--------|---|----|
| Gasoline C7-C12 | 2,000 | 8,048 b | 95 | 65-131 | 1 | 20 |
| - | • | | | | | |
| Surrogate | %REC Limits | | | | | |
| Trifluorotoluene (FID) | 325 * SLR 59-135 | · | | | | |

60-140

128

⁼ Value outside of QC limits; see narrative

b = See narrative

>LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference

⁻ Page 1 of 1



| | Gasolir | ie by GC/FID CA LU | FT | |
|-------------|----------------|--------------------|-------------------|--|
| Lab #: | 147754 | Location: | JW Silveira Props | |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 | |
| Project#: | P110604 | Analysis: | EPA 8015M | |
| Field ID: | ZZZZZZZZZ | Batch#: | 58651 | |
| MSS Lab ID: | 147794-010 | Sampled: | 09/26/00 | |
| Matrix: | Water | Received: | 09/29/00 | |
| Units: | ug/L | Analyzed: | 10/04/00 | |
| Diln Fac: | 1.000 | · | | |

MS

Lab ID:

QC126520

| Analyte | MSS Result | Spiked | Result | %RE | C Limits |
|-----------------|------------|--------|--------|-----|----------|
| Gasoline C7-C12 | 91.97 | 2,000 | 1,817 | 86 | 65-131 |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (FID) | 109 | 59-135 |
| Bromofluorobenzene (FID) | 109 | 60-140 |

Type:

MSD

Lab ID:

| 10000 | | Analy | te Spiked | | and the second s | | KIL | Lim |
|-------|---------|--------|-----------|-------|--|--------|-----|-----|
| _ G | asoline | C7-C12 | 2,000 | 1,978 | 94 | 65-131 | 8 | 20 |
| | | | | | | | | |

| Surrogate | %REC | Limits | |
|--------------------------|------|--------|--|
| Trifluorotoluene (FID) | 111 | 59-135 | |
| Bromofluorobenzene (FID) | 109 | 60-140 | |



| | Gasoli | ne by GC/FID CA LA | JPT |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8015M |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC126338 | Batch#: | 58599 |
| Matrix: | Water | Analyzed: | 09/29/00 |
| Units: | ug/L | <u>-</u> | · |

| Analyte | Spiked | Result | %REC | Limits | |
|-----------------|--------|---------|------|--------|--|
| Gasoline C7-C12 | 2,000 | 2,324 b | 116 | 73-121 | |
| | | | | | |

| 23 | Surrogate | | Limits |
|-----|--------------------------|-----|---------------------------------------|
| ۱ [| Trifluorotoluene (FID) | 131 | 59-135 |
| | Bromofluorobenzene (FID) | 112 | 60-140 |
| | | | · · · · · · · · · · · · · · · · · · · |



Gasoline by GC/FID CA LUFT Lab #: 147754 Location: JW Silveira Props Client: Tetra Tech EMI Prep: EPA 5030 Project#: P110604 Analysis: EPA 8015M Type: LCS Diln Fac: 1.000 Lab ID: QC126517 Batch#: 58651 Matrix: Water 10/03/00 Analyzed: Units: ug/L

| Analyte | Spiked | Result | KKK. | | |
|-----------------|--------|--------|------|--------|--|
| Gasoline C7-C12 | 2,000 | 1,901 | 95 | 73-121 | |
| | | | | | |

| | Surrogate | %REC | C Limits | |
|---|--------------------------|------|----------|---|
| | Trifluorotoluene (FID) | 108 | 59-135 | _ |
| - | Bromofluorobenzene (FID) | 105 | 60-140 | |



Gasoline by GC/FID CA LUFT Lab #: JW Silveira Props 147754 Location: Client: Tetra Tech EMI Prep: EPA 5030 Project#: P110604 Analysis: EPA 8015M Type: BLANK Diln Fac: 1.000 Lab ID: QC126337 Batch#: 58599 Matrix: Water Analyzed: 09/29/00 Units: ug/L

| Analyte | | RL | |
|-----------------|----|----|--|
| Gasoline C7-C12 | ND | 50 | |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (FID) | 112 | 59-135 |
| Bromofluorobenzene (FID) | 109 | 60-140 |

ND = Not Detected RL = Reporting Limit Page 1 of 1



Gasoline by GC/FID CA LUFT 147754 JW Silveira Props Location: Tetra Tech EMI Prep: EPA 5030 P110604 Analysis: EPA 8015M

Diln Fac: 1.000 Type: BLANK Lab ID: QC126519 Batch#: 58651 Matrix: 10/03/00 Water Analyzed: Units:

RL Analyte Result Gasoline C7-C12 50

| Surrogate | %RE | C Limits | |
|--------------------------|-----|----------|--|
| Trifluorotoluene (FID) | 96 | 59-135 | |
| Bromofluorobenzene (FID) | 100 | 60-140 | |

Lab #:

Client:

Project#:

ug/L

BTXE Data



| - • • | | | |
|-----------|----------------|-----------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Field ID: | JW2-18 | Batch#: | 58617 |
| Lab ID: | 147754~001 | Sampled: | 09/27/00 |
| Matrix: | Water | Received: | 09/28/00 |
| Units: | ug/L | Analyzed: | 10/02/00 |
| Diln Fac: | 7.143 | | 20,02,00 |

| Analyte | Result | RL | |
|-------------------------|--------|-----|------------|
| MTBE | ND | 3.6 | ********** |
| Benzene | 1,200 | 3.6 | |
| Toluene | 59 | 3.6 | |
| Ethylbenzene | 420 | 3.6 | |
| m,p-Xylenes o-Xylene | 330 | 3.6 | |
| o-Xylene | 35 | 3.6 | |

| Surrogate | *REC | Limits | |
|-----------------------|------|--------|--|
| 1,2-Dichloroethane-d4 | 102 | 78-123 | |
| Toluene-d8 | 104 | 80-110 | |
| Bromofluorobenzene | 100 | 80-115 | |
| | | | |



| | Durgarh | 10 2mamaki sa kace | - 1 |
|-----------|----------------|--------------------|-------------------|
| | earyean | le Aromatics by GO | -/ MS |
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Field ID: | JW2-19 | Batch#: | 58609 |
| Lab ID: | 147754-002 | Sampled: | 09/27/00 |
| Matrix: | Water | Received: | 09/28/00 |
| Units: | ug/L | Analyzed: | 10/01/00 |
| Diln Fac: | 1.000 | | ,, |

| Analyte | Result | RL | |
|---|--------|-----|--|
| MTBE | ND | 0.5 | |
| Benzene | ND | 0.5 | |
| Toluene | ND | 0.5 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.5 | |
| m,p-Xylenes | ND | 0.5 | |
| o-Xylene | ND | 0.5 | |

| Surrogate | %REC | Limits | |
|-----------------------|------|-------------|---|
| 1,2-Dichloroethane-d4 | 116 | 78-123 | |
| Toluene-d8 | 101 | 80-110 | · |
| Bromofluorobenzene | 107 | 80-115 | |
| | | | |



| Purgeable Aromatics by GC/MB | | | | | |
|------------------------------|----------------|-----------|-------------------|--|--|
| Lab #: | 147754 | Location: | JW Silveira Props | | |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 | | |
| Project#: | P110604 | Analysis: | EPA 8260B | | |
| Field ID: | JW2-20 | Batch#: | 58581 | | |
| Lab ID: | 147754-003 | Sampled: | 09/27/00 | | |
| Matrix: | Water | Received: | 09/28/00 | | |
| Units: | ug/L | Analyzed: | 09/30/00 | | |
| Diln Fac: | 1.000 | | ,, | | |

| Analyte | Result | RL | |
|---|--------|-----|---|
| MTBE | ND | 0.5 | |
| Benzene | ND | 0.5 | |
| Toluene | ND | 0.5 | |
| Ethylbenzene | ND | 0.5 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.5 | |
| o-Xylene | ND | 0.5 | • |

| Surrogate | \$REC | Limits | |
|-----------------------|-------|--------|--|
| 1,2-Dichloroethane-d4 | 100 | 78-123 | |
| Toluene-d8 | 99 | 80-110 | |
| Bromofluorobenzene | 102 | 80-115 | |
| | | | |

ND = Not Detected RL = Reporting Limit Page 1 of 1



| | Purgeab | le Aromatics by GO | 2/ M8 |
|----------------|----------------|--------------------|-------------------|
| Lab # : | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Matrix: | Water | Batch#: | 58581 |
| Units: | ug/L | Analyzed: | 09/29/00 |
| Diln Fac: | 1.000 | | 33, 22, 33 |

BS

Lab ID:

QC126262

| Analyte | Spiked | Result | \$RE | C Limits | |
|---------|--------|--------|------|----------|--|
| Benzene | 50.00 | 48.19 | 96 | 80-116 | |
| Toluene | 50.00 | 48.71 | 97 | 80-120 | |

| Surrogate | 4REC | C limits |
|-----------------------|------|----------|
| 1,2-Dichloroethane-d4 | 99 | 78-123 |
| Toluene-d8 | 99 | 80-110 |
| Bromofluorobenzene | 99 | 80-115 |

Type:

BSD

Lab ID:

| Analyte | Spiked 1 | lesvit. | \$REC | Limits | RPD | Liim |
|---------|----------|---------|-------|--------|-----|------|
| Benzene | 50.00 | 47.32 | 95 | 80-116 | 2 | 20 |
| Toluene | 50.00 | 48.07 | 96 | 80-120 | 1 | 20 |

| Surrogate | \$RE | C Limits |
|-----------------------|------|----------|
| 1,2-Dichloroethane-d4 | 99 | 78-123 |
| Toluene-d8 | 98 | 80-110 |
| Bromofluorobenzene | 99 | 80-115 |



| | Purgeab | le Aromatics by GC | :/нв |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Matrix: | Water | Batch#: | 58609 |
| Units: | ug/L | Analyzed: | 10/01/00 |
| Diln Fac: | 1.000 | | |

BS

Lab ID:

QC126378

| Analyte | Spiked | Result | \$REC | Limits |
|---------|--------|--------|-------|--------|
| Benzene | 50.00 | 50.34 | 101 | 80-116 |
| Toluene | 50.00 | 48.90 | 98 ~ | 80-120 |

| Surrogate | 1REC | Limits | |
|-----------------------|------|--------|--|
| 1,2-Dichloroethane-d4 | 115 | 78-123 | |
| Toluene-d8 | 99 | 80-110 | |
| Bromofluorobenzene | 102 | 80-115 | |

Type:

BSD

Lab ID:

| Analyte | Spiked | Result | *REC | Limits | RPI | Lim |
|---------|--------|--------|------|--------|-----|-----|
| Benzene | 50.00 | 49.31 | 99 | 80-116 | 2 | 20 |
| Toluene | 50.00 | 47.94 | 96 | 80-120 | 2 | 20 |

| Surrogate | \$RBC | Limits | |
|-----------------------|-------|--------|---|
| 1,2-Dichloroethane-d4 | 112 | 78-123 | |
| Toluene-d8 | 100 | 80-110 | • |
| Bromofluorobenzene | 103 | 80-115 | |



| | Purgeab | le Aromatics by GO | I/MB |
|--------------------------------|-------------------------------------|----------------------|-------------------------------|
| Lab #: Client: Project#: | 147754 Tetra Tech EMI P110604 | Location: Prep: | JW Silveira Props EPA 5030 |
| Matrix: | Water | Analysis: Batch#: | EPA 8260B 58617 |
| Units: Diln Fac: | ug/L 1.000 | Analyzed: | 10/02/00 |

BS

Lab ID:

QC126398

| Analyte | Spiked | Result | 1REC | Limits |
|---------|--------|--------|------|--------|
| Benzene | 50.00 | 57.05 | 114 | 80-116 |
| Toluene | 50.00 | 59.82 | 120 | 80-120 |

| Surrogate | 4REC | Limits | |
|-----------------------|------|--------|--|
| 1,2-Dichloroethane-d4 | 98 | 78-123 | |
| Toluene-d8 | 105 | 80-110 | |
| Bromofluorobenzene | 95 | 80-115 | |

Type:

BSD

Lab ID:

| | Analyte | Spiked | Result | *REC | Limits | RPD | Lis |
|---|---------|--------|--------|------|--------|-----|-----|
| 1 | Benzene | 50.00 | 56.66 | 113 | 80-116 | 1 | 20 |
| Ŀ | Toluene | 50.00 | 58.63 | 117 | 80-120 | 2 | 20 |

| Surrogate | L REC | Limits |
|-----------------------|--------------|--------|
| 1,2-Dichloroethane-d4 | 96 | 78-123 |
| Toluene-d8 | 104 | 80-110 |
| Bromofluorobenzene | 96 | 80-115 |



| | Purgeab | le Aromatics by GO | :/MB |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC126265 | Batch#: | 58581 |
| Matrix: | Water | Analyzed: | 09/29/00 |
| Units: | ug/L | - | |

| MTBE | ND | RL 0.5 | |
|-------------------------|----|------------------|---|
| Benzene | ND | 0.5 | |
| Toluene | ND | 0.5 | |
| Ethylbenzene | ND | 0.5 | |
| m,p-Xylenes o-Xylene | ND | 0.5 | |
| o-Xylene | ND | 0.5 | / |

| Bromofluorobenzene | 102 | 80-115 |
|-----------------------|------|--------|
| Toluene-d8 . | 101 | 80-110 |
| 1,2-Dichloroethane-d4 | 103 | 78-123 |
| Surrogate | Frec | Limits |



| | Purgeab. | le Aromatics by Go | 2/ЖВ |
|-------------------|---------------------------|----------------------|-----------------------|
| Lab #: Client: | 147754 | Location: | JW Silveira Props |
| Project#: | Tetra Tech EMI P110604 | Prep: Analysis: | EPA 5030 EPA 8260B |
| Type: Lab ID: | BLANK QC126380 | Diln Fac: Batch#: | 1.000 58609 |
| Matrix: Units: | Water ug/L | Analyzed: | 10/01/00 |

| MTBE | Result ND | RL 0.5 |
|-------------------------|--------------|------------------|
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes o-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surragate | %REC | Limits | |
|-----------------------|------|--------|-------------|
| 1,2-Dichloroethane-d4 | 117 | 78-123 | |
| Toluene-d8 | 103 | 80-110 | |
| Bromofluorobenzene | 107 | 80-115 | |
| | | | |



| | Purgeab | le Aromatics by GG | 2/MB |
|-----------|----------------|--------------------|-------------------|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC126400 | Batch#: | 58617 |
| Matrix: | Water | Analyzed: | 10/02/00 |
| Units: | ug/L | | ,, |

| Analyte | Kesuit | RL | |
|---|--------|-----|---|
| MTBE | ND | 0.5 | |
| Benzene | ND | 0.5 | , |
| Toluene | ND | 0.5 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.5 | |
| m,p-Xylenes | ND | 0.5 | |
| o-Xylene | ND | 0.5 | |

| Surrogate | \$REC | Limits | |
|-----------------------|-------|--------|--|
| 1,2-Dichloroethane-d4 | 97 | 78–123 | |
| Toluene-d8 | 105 | 80-110 | |
| Bromofluorobenzene | 102 | 80-115 | |



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 9471O, Phone (510) 486-0900

RECEIVED

Laboratory Number 149311

JAN 25 2001

TETRA TECH EM INC.

Tetra Tech EMI 135 Main Street

Suite 1800

San Francisco, CA

Project#: P1106.04

Location: JW SILVEIRA

| Sample ID | Lab ID |
|-----------|------------|
| JW3-21 | 149311-001 |
| JW3-22 | 149311-002 |
| JW3-23 | 149311-003 |
| JW2-21 | 149311-004 |
| JW2-22 | 149311-005 |
| JW2-23 | 149311-006 |

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Signature:

Manager

94105

CA ELAP # 1459

000001



135 Main St. Suite 1800

Chain of Custody Record

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| San Francisco, CA 94105 | | | | | | | | | | | | | Ţ | | | | | Added | j | | |
|-----------------------------|--------------------------|----------------|---------------|--------|------------|---------------|----------------------------|-----------|-------|-----------|-----|----------|-----|--------|--------------|--|----------|-------|-----------|-------------|--------|
| 415-543-4880 | PO# | Lab: | | | | | | | | | | - | ই | ₩ | H | | | | | | |
| Fax 415-543-5480 | | | | No |)./(| Cont | aine | r Types | | | | | | | | | | | | | |
| Project name: | TtEMI technical contact: | Field samplers |) : | | | | | | | \dagger | | П | _ | | | | | П | \top | \prod | \top |
| JW SILVEIRA Project number: | SARA WOOLEY | HAL & FA |))Y | | | F. | | | | | | CB | | tbles | 202 | | | | | | Ì |
| Project number: | TtEMI project manager: | Field samplers | ' signatures: | | 1 8 | m | 취속 | | | 4 | : ≾ | Ž. | gas | 186 | <u>-</u> × | W. | | | | | |
| P1106.04 | HAL DAWSON | | | | 40 ml VOA | 1 Liter Amber | 1 Liter Poly Brass Tube | Glass Jar | | | PSV | P Pes | Μ̈́ | | | F | Ì | | | | |
| Sample ID | Sample Description/Notes | Date | Time | Matrix | \$ | 11 | I I Bra | 3 | | נו | ដ | CL | בו | | :10 | MTBE | | | | | |
| JW2-21 | MWI | 12-18-60 | 1555 | WATER | 3 | | | †† | | T | | | 7 | Y | × | X | T | | \top | 1 | 7, - |
| JWZ-22 | MWZ | ł | 1500 |) | 3 | | | | | | | | 7 | X | × | X | | | \top | Ţ, | 1 |
| JWZ-22 JWZ-23 | MW3 | V . | 1120 | ¥ | 3 | | , | | | | | П | | X | × | X | | | 1 | \prod | |
| | | | <u>'</u> | | | | | | | | | П | | | | | | Π | | | |
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| | * | | | | # 1 | T | | | | † | | \sqcap | 十 | 1 | † | \prod | \top | 11 | \dagger | \Box | + |
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| 7 00 | 1.0 | | ame (pri | nt) | | | | Coi | npany | N | am | ıe | | | | | Da | ıte - | 7 | Tim | Ф |
| Relinquished by: | <u> </u> | Koy G | LEUN | | T | 7 | EN | 1 1 | | | | | 12 | -19 | }-6 | ي رن | <u>_</u> | 90 | | <u> </u> | |
| Received by: | | [| | i · | <u>L</u> | | | | | | | | | | | | | | | | |
| Relinquished by: | | | | | | | | | | | | | | | | | | | | | |
| Received by: | | | | | j | | | | | | | | | | | | | | | | |

Relinquished by:Image: Control of the property of the

Turnaround time/remarks:



Laboratory Number: 149311

Client: Tetra Tech EMI Project#: P1106.04

Location: JW SILVEIRA

Receipt Date: 12/19/00

CASE NARRATIVE

This hardcopy data package contains sample and QC results for six water samples that were received on December 19, 2000. The samples were received cold and intact.

Total Volatile Hydrocarbons by EPA 8015M: High Trifluorotoluene surrogate recovery was observed in sample **JW2-21** (CT#149311-004). This outlier is due to the hydrocarbon peaks coeluting with the surrogate peak.

No other analytical problems were encountered.

BTXE by EPA 8021B: No analytical problems were encountered.



135 Main St. Suite 1800

Chain of Custody Record

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| Page | of | |

| San Francisco, CA 94105 | PO# | 7 | | | 7 | | | | | | $\overline{}$ | Pre | serva | ative | Adde | :d | |
|-------------------------|--------------------------|----------------|----------|----------|------------------|--------------|-------------------------|-------------|--|------|--------------------|---------------|-------------------------|---------|-----------|---------------------|-------------|
| 415-543-4880 | PO# | Lab: | | | | | | | | | 至 | TC. | 對 | | | | |
| Fux 415-543-5480 | | CFT | | No. | /Co | ntain | er Types | Analys | | | ılysi | is Required | | | | | |
| Project name: | TtEMI technical contact: | Field samplers | | | 1 | 1-1 | | | | | 71.7 | | - | | | \Box | $\neg \top$ |
| JW SILVERY | JARY WOOLEY | HAL & FA | , 04 | | | ; | | | | وُ | | bles | <u> </u> | | | | |
| Project number: | TtEMI project manager: | Field samplers | | | | Poly | 힐느 | | _₹ | VO S | itals: | frgea frac | | 2 | | , | |
| P1106.04 | HAL DAWSON | | | | 40 ml VOA | 1 Liter Poly | Brass Tube Glass Jar | | P VC | P SV | ΣŽ | T T | | F | | | |
| Sample ID | Sample Description/Notes | Date | Time | Matrix | = | | 품 중 | | CT | בו | 기리 | T T | BTEX | ع | | | |
| JW2-21 | mw-l | 12-18-00 | 1555 | WATER | 3 | | | | | | - | X | X | | | | |
| JW2-27 JW2-23 | MW-Z | | 1504 | | | | | | | | | Y | X; | X | | | |
| Ju2-23 | MW-3 | 4 | 1120 | Y | 3 | | | | | | | X | \\ | X | | | |
| | | | | | | | | | | | П | | | | | | 11 |
| | | | | | | | | | | | | | | | | | |
| | | | 7_ | | | 4 | | | | | \perp | | \coprod | \perp | | | |
| | 1 | 100 | - | | | | _ _ | <u> </u> | | | 11 | \perp | $\perp \downarrow$ | \perp | | \perp | |
| | accaived / | Unitar | 1 | | - | \perp | | | | | | _ | $\downarrow \downarrow$ | | | $\perp \downarrow$ | _ |
| | Received Amb | ient | | <u> </u> | | 4 | _ | | $\parallel \perp$ | | $\perp \downarrow$ | \bot | - | | 111 | $\dashv \downarrow$ | |
| <u> </u> | 1 Kond | · · | | | ╂ ┼- | - | _ | | | | \perp | _ | $\bot\!\!\!\!\!\bot$ | + | | | |
| | | | | 1 | - | + | | - | $\parallel \downarrow$ | | + | | ++ | + | \square | $\dashv \downarrow$ | |
| | | <u></u> | | <u> </u> | | | l | | | | | Щ | 11 | | Ш | | |
| | . 5 | N | ame (pri | nt) | | | Co | mpany | Na | me | | | | T | ate | T | ime |
| Relinquished by: | | | | | 77 | در - | MI | | | | | >-10 | 7-17 | j | 18 5 | | |
| Received by: | | Koy G | 100m | | ` ` ' | 04 | | | | | 12 | بارج 19 | -a |) | | 6,a | 5 |
| Relinquished by: | | | | | | |] 4 | | | | | | | | | | |
| Received by: | *** | | | | | | | ** | | | | | | | | † | |
| Relinquisted by: | | | | | | | | | | | | | \neg | | | | |
| Received &x | | | | | | | | | | | | | | | | 1 | |
| Relinquished by: | | | | | | | | · | | | | | | | | | |
| Received her | | | | | <u></u> | | | | | | | | | | | 1 | |
| Turnaround dme/remarks: | - | | 7.7.7. | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |



| | Gasoli | ne by GC/FID CA LU | UFT |
|-----------|----------------|--------------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8015M |
| Project#: | STANDARD | | |
| Field ID: | JW2-21 | Batch#: | 60491 |
| Lab ID: | 149311-004 | Sampled: | 12/18/00 |
| Matrix: | Water | Received: | 12/19/00 |
| Units: | ug/L | Analyzed: | 12/29/00 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL | |
|-----------------|------------|----|--|
| Gasoline C7-C12 | 3,200 G Ja | 50 | |

| Surrogate | Grino. | Limits |
|--------------------------|--------|--------|
| Trifluorotoluene (FID) | 174 * | 59-135 |
| Bromofluorobenzene (FID) | 109 | 60-140 |

^{*=} Value outside of QC limits; see narrative

G= Pattern resembles gasoline

Page 1 of 1



| | Gasoline by | GC/FID CA LUFT | |
|-----------|----------------|----------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8015M |
| Project#: | STANDARD | | |
| Field ID: | JW2-22 | Batch#: | 60491 |
| Lab ID: | 149311-005 | Sampled: | 12/18/00 |
| Matrix: | Water | Received: | 12/19/00 |
| Units: | ug/L | Analyzed: | 12/29/00 |
| Diln Fac: | 1.000 | | |

| Analyte | Res | sult RL | |
|-----------------|-----|---------|--|
| Gasoline C7-C12 | ND | 50 | |
| | • | | |

| Bromofluorobenzene (FID) | 112 | 60-140 |
|--------------------------|------|--------|
| Trifluorotoluene (FID) | 102 | 59-135 |
| Surrogate | %REC | Limits |



| | Gasoline by | GC/FID CA LUFT | |
|-----------|----------------|----------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8015M |
| Project#: | STANDARD | | |
| Field ID: | JW2-23 | Batch#: | 60491 |
| Lab ID: | 149311-006 | Sampled: | 12/18/00 |
| Matrix: | Water | Received: | 12/19/00 |
| Units: | ug/L | Analyzed: | 12/29/00 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL | |
|-----------------|--------|----|--|
| Gasoline C7-C12 | ND | 50 | |
| | | | |
| | | | |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (FID) | 105 | 59-135 |
| Bromofluorobenzene (FID) | 105 | 60-140 |
| | | |



| | Benzene, Toluene, I | 0000000 0000 0000 00000 00000000000000 | (ylenes |
|-----------|---------------------|--|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8021B |
| Project#: | STANDARD | | |
| Field ID: | JW2-21 | Batch#: | 60524 |
| Lab ID: | 149311-004 | Sampled: | 12/18/00 |
| Matrix: | Water | Received: | 12/19/00 |
| Units: | ug/L | Analyzed: | 12/30/00 |
| Diln Fac: | 5.000 | - | |

| Analyte | Result | RL | |
|---|--------|-----|---|
| MTBE | ND | 10 | |
| Benzene | 500 | 2.5 | , |
| Toluene | 26 | 2.5 | |
| Ethylbenzene m,p-Xylenes o-Xylene | 130 | 2.5 | |
| m,p-Xylenes | 130 | 2.5 | |
| o-Xylene | , 38 | 2.5 | |

| Bromofluorobenzer | ne (PID) | 119 | 55-149 | | |
|-------------------|----------|------|--------|------|--|
| Trifluorotoluene | (PID) | 132 | 56~142 | | |
| Surroga | ite | %REC | Limits | | |



| | Benzene, Toluene, E | thylbenzene, X | ylenes |
|----------------|---------------------|----------------|-----------|
| and the second | | | |
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8021B |
| Project#: | STANDARD | | |
| Field ID: | JW2-22 | Batch#: | 60491 |
| Lab ID: | 149311-005 | Sampled: | 12/18/00 |
| Matrix: | Water | Received: | 12/19/00 |
| Units: | ug/L | Analyzed: | 12/29/00 |
| Diln Fac: | 1.000 | | |
| | | | |

| Analyte | Result | RL | |
|---|--------|------|---|
| MTBE | ND | 2.0 | • |
| Benzene | ND | 0.50 | |
| Toluene | ND | 0.50 | |
| Ethylbenzene | . ND | 0.50 | |
| Ethylbenzene m,p-Xylenes o-Xylene | · ND | 0.50 | |
| o-Xylene | ND | 0.50 | |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (PID) | 114 | 56-142 |
| Bromofluorobenzene (PID) | 115 | 55-149 |



| | Benzene, Tolu | ene, Ethylbenzene, | Xylenes | |
|-----------|----------------|--------------------|-----------|--|
| Lab #: | 149311 | Prep: | EPA 5030 | |
| Client: | Tetra Tech EMI | Analysis: | EPA 8021B | |
| Project#: | STANDARD | | | |
| Field ID: | JW2-23 | Batch#: | 60491 | |
| Lab ID: | 149311-006 | Sampled: | 12/18/00 | |
| Matrix: | Water | Received: | 12/19/00 | |
| Units: | ug/L | Analyzed: | 12/29/00 | |
| Diln Fac: | 1.000 | | | |

| Analyte | Result | RL | |
|---|--------|------|--|
| MTBE | ND · | 2.0 | |
| Benzene | ND | 0.50 | |
| Toluene | ND | 0.50 | |
| Ethylbenzene | ND | 0.50 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.50 | |
| o-Xylene | ND | 0.50 | |

| Trifluorotoluene (PID) 112 56-142 Bromofluorobenzene (PID) 114 55-149 | Surrogate | %REC | Limits |
|---|--------------------------|------|--------|
| | Trifluorotoluene (PID) | 112 | |
| | Bromofluorobenzene (PID) | 114 | 55-149 |



| | Gasoli | ne by GC/FID CA Lt | JFT |
|-----------|----------------|--------------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8015M |
| Project#: | STANDARD | | |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC133746 | Batch#: | 60491 |
| Matrix: | Water | Analyzed: | 12/28/00 |
| Units: | ug/L | | |

| Iŧ | wiidayt | e Spired | Kepute | V1-11-V | O.M. C.S | ********** |
|----|-----------------|----------|--------|---------|----------|------------|
| 7 | Gasoline C7-C12 | 2,000 | 2,049 | 102 | 73-121 | |
| | | | | • | | |
| ſ | - | | | | | ****** |

| Surroga | je | %REC | Limits | |
|--------------------|---------|------|--------|--|
| Trifluorotoluene | (FID) | 112 | 59-135 | |
| Bromofluorobenzene | e (FID) | 101 | 60-140 | |



| | | | Xylenes | |
|-----------|----------------|-----------|-----------|--|
| Lab #: | 149311 | Prep: | EPA 5030 | |
| Client: | Tetra Tech EMI | Analysis: | EPA 8021B | |
| Project#: | STANDARD | | | |
| Matrix: | Water | Batch#: | 60491 | |
| Units: | ug/L | Analyzed: | 12/28/00 | |
| Diln Fac: | 1.000 | | | |

Type:

BS

Lab ID:

QC133749

| Analyte | Spiked | Result | %RBC | Limits |
|--------------|--------|--------|------|--------|
| MTBE | 20.00 | 19.41 | 97 | 51-125 |
| Benzene | 20.00 | 20.68 | 103 | 67-117 |
| Toluene | 20.00 | 20.31 | 102 | 69-117 |
| Ethylbenzene | 20.00 | 20.74 | 104 | 68-124 |
| m,p-Xylenes | 40.00 | 41.36 | 103 | 70-125 |
| o-Xylene | 20.00 | 20.33 | 102 | 65-129 |

| Surrogate | %REC | Limits | |
|--------------------------|------|--------|------|
| Trifluorotoluene (PID) | 110 | 56-142 | , |
| Bromofluorobenzene (PID) | 110 | 55-149 | |

Type:

BSD

Lab ID:

QC133750

| Analyte | Spiked | Result | %REC | Limits | RPD | I, im |
|--------------|--------|--------|------|----------------|-----|-------|
| MTBE | 20.00 | 20.10 | 101 | 51-125 | 4 | 20 |
| Benzene | 20.00 | 20.88 | 104 | 67-117 | 1 | 20 |
| Toluene | 20.00 | 20.16 | 101 | 69-1 17 | 1 | 20 |
| Ethylbenzene | 20.00 | 20.64 | 103 | 68-124 | 0 | 20 |
| m,p-Xylenes | 40.00 | 42.00 | 105 | 70-125 | 2 | 20 |
| o-Xylene | 20.00 | 20.60 | 103 | 65-129 | 1 | 20 |

| Surrogate | %RE(| C Limits |
|--------------------------|------|----------|
| Trifluorotoluene (PID) | 112 | 56-142 |
| Bromofluorobenzene (PID) | 113 | 55-149 |



| | Benzene, Toluene, | Ethylbenzene, | Xylenes |
|-----------|-------------------|---------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8021B |
| Project#: | STANDARD | | |
| Matrix: | Water | Batch#: | 60524 |
| Units: | ug/L | Analyzed: | 12/30/00 |
| Diln Fac: | 1.000 | | |

Type:

BS

Lab ID:

QC133881

| Analyte | Spiked | Result | %REC | Limits |
|--------------|--------|--------|------|--------|
| MTBE | 20.00 | 19.60 | 98 | 51-125 |
| Benzene | 20.00 | 19.93 | 100 | 67-117 |
| Toluene | 20.00 | 19.11 | 96 | 69-117 |
| Ethylbenzene | 20.00 | 20.64 | 103 | 68-124 |
| m,p-Xylenes | 40.00 | 42.77 | 107 | 70-125 |
| o-Xylene | 20.00 | 20.47 | 102 | 65-129 |

| Surrogate | %RE(| Limits |
|--------------------------|------|---------|
| Trifluorotoluene (PID) | 114 | 56-142 |
| Bromofluorobenzene (PID) | 114 | -55-149 |

Type:

BSD

Lab ID:

QC133882

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|--------------|--------|--------|------|--------|-----|-----|
| MTBE | 20.00 | 19.73 | 99 | 51-125 | 1 | 20 |
| Benzene | 20.00 | 20.31 | 102 | 67-117 | 2 | 20 |
| Toluene | 20.00 | 19.06 | 95 | 69-117 | 0 | 20 |
| Ethylbenzene | 20.00 | 20.75 | 104 | 68-124 | 1 | 20 |
| m,p-Xylenes | 40.00 | 43.42 | 109 | 70-125 | 2 | 20. |
| o-Xylene | 20.00 | 20.70 | 103 | 65-129 | 1 | 20 |

| Surrogate | %REC | ' Limits |
|--------------------------|------|----------|
| Trifluorotoluene (PID) | 110 | 56-142 |
| Bromofluorobenzene (PID) | 110 | 55-149 |



| | | GC/FID CA LUFT | |
|-----------|----------------|----------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8015M |
| Project#: | STANDARD | | |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC133745 | Batch#: | 60491 |
| Matrix: | Water | Analyzed: | 12/28/00 |
| Units: | ug/L | | |

| Analyte | Result | | |
|-----------------|--------|----|---|
| Gasoline C7-C12 | ND | 50 | · |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (FID) | 102 | 59-135 |
| Bromofluorobenzene (FID) | 108 | 60-140 |



| | Benzene, Tolu | ene, Ethylbenzene, | Xylenes |
|-----------|----------------|--------------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8021B |
| Project#: | STANDARD | | |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC133745 | Batch#: | 60491 |
| Matrix: | Water | Analyzed: | 12/28/00 |
| Units: | ug/L | | |

| Analyte | Result | RL | |
|---|--------|------|---|
| MTBE | ND | 2.0 | |
| Benzene | ND | 0.50 | |
| Toluene | ND | 0.50 | |
| Ethylbenzene | ND | 0.50 | |
| Ethylbenzene m,p-Xylenes o-Xylene | ND | 0.50 | . |
| o-Xylene | ND | 0.50 | |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (PID) | 108 | 56-142 |
| Bromofluorobenzene (PID) | 108 | 55-149 |

ND= Not Detected RL= Reporting Limit Page 1 of 1

23



| | Benzene, | Toluene, Ethylbenzene, X | ylenes |
|-----------|----------------|--------------------------|-----------|
| Lab #: | 149311 | Prep: | EPA 5030 |
| Client: | Tetra Tech EMI | Analysis: | EPA 8021B |
| Project#: | STANDARD | | |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC133880 | Batch#: | 60524 |
| Matrix: | Water | Analyzed: | 12/30/00 |
| Units: | ug/L | | |

| Analyte | Result | RL | |
|-------------------------|--------|------|--|
| MTBE | ND | 2.0 | |
| Benzene | ND | 0.50 | |
| Toluene | ND | 0.50 | |
| Ethylbenzene | ND | 0.50 | |
| m,p-Xylenes o-Xylene | ND | 0.50 | |
| o-Xylene | ND | 0.50 | |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (PID) | 110 | 56-142 |
| Bromofluorobenzene (PID) | 110 | 55-149 |



Chain of Custody Record

| 135 Main St. Suite 1800 | CII | ain or C | ustou | y ICCOI | u | | | | | ī | | _ | | | | | | | | | _ |
|--------------------------------|---------------------------|----------------|---------------|----------|-----------|---------------|--------------|-----------|------|-----|---------|-----------------|--|-------|------------------|-------|------------|------|---------|-----------|----|
| San Francisco, CA 94105 | PO# | Lab: | | | ٦ | | | | | | Т | - 1 | | | | | e Ac | lded | | | _ |
| 415-543-4880 | FO# | 1 | 1 | | | | | | | | 1 | | - | Ž | ita | | | | | | |
| Fax 415-543-5480 | | CURTIS | 2 0m | PKINS | No |)./(| Cont | aine | r Ty | oes | | | | An | alys | sis F | lequ | uire | d | | |
| Project name: JW SICUEIRA | -TtEM1 technical contact: | Field samplers | • | | | | | | - | | | | | | S. | | | | | | Τ |
| 1200 20 th AUE Project number: | SARA WODLEY | | | | | Jer | | | | | | Š | וב וב | ables | table | | | | | | |
| Project number: | TtEM1 project manager: | Field samplers | ' signatures: | | 18 | E | ố là | ۱, | | | [≰ | 8 5 | <u> </u> | 20 | ĔΧ | | | | | | |
| P1106.04 | HAL DAWSON | | | | 40 ml VOA | 1 Liter Amber | 1 Liter Poly | Glass Jar | | | CLP VOA | PSV | ֓֞֟֞֟֝֟֞֟֝֟֟֝֟֟֝֟֟֝֟֝֟֝֟֟֝֟֝֟֝֟֝֟֝֟֝֟֝֟֝ | 표 | TPH Extractables | | | | | | |
| Sample ID | Sample Description/Notes | Date | Time | Matrix | \$ | 1 | 1 2 | 3 | | | ᅙ | 히 | 3 5 | E | PΩ | | | | | | |
| JW2-24 | mw-I | 8-30-01 | 1505 | WATER | 4 | | | | | | | 1 | | X | X | | | | | · | 1 |
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| | γ | | ame (pri | | | | | | mpa | | | | | | | | Dat | | 1 | jme | ,— |
| Relinquished by: | brain and the second | Roy D | GLENA | J | 16 | TR | A | Tos | 4 6 | ZV | 1 / | NC. | | | | 8. | 31. | 6 i | Ĺ | | |

| | Name (print) | Company Name | Date | Time |
|------------------|---------------|-------------------|---------|--------------|
| Relinquished by: | KOY D. GLEXIN | TETRA TECH EM INC | 8-31-61 | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | | | |
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Turnaround time/remarks:



Chain of Custody Record

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| Page | of | , · |

| 135 Main St. Suite 1800 | | | | | | | | | | | - | _ | | | ervat | ive A | dded | | |
|--|------------------------------------|-----------------|-------------|---------------------------------------|----------|---------------|--------------|-----------|-------|------|----------------|--------------------|------|--------|-------------|-------|---------|------------------|-------------|
| San Francisco, CA 94105 | PO# | Lab: | | | | | | | | | | | 11.0 | 3 | 3 | | | | |
| 415-543-4880 | | CURTIS | 3 Ton | PKINS | No |)./(| Con | tain/ | r Tvn | PC | | | | | | Ren | uire | ऻ ॒ऻ॒ | <u> </u> |
| Fax 415-543-5480 Project name: JW Silveira | TtEMI technical contact: | Field samplers: | | | | ,,, \ | | | - 13P | - 11 | Т | | | 1 | · | Titty | Unit Co | • | |
| 1200 ZOT AVE Project number: | SARA WOOLEY THEMI project manager: | | | | | ber | | | | | | CLP Pest/PCBs | , a | tables | | | | | |
| Project number: | TtEMI project manager: | Field samplers' | signatures: | | 8 | Am | 휥 | | - | | ځاځ | | etal | i a | × | | | | |
| P1106.04 | HAR DAWSON | | | | <u>}</u> | 1 Liter Amber | 1 Liter Poly | Glass Jar | | | بار م ار | P. Pe | M d | HE | (e) | | | | |
| Sample ID | Sample Description/Notes | Date | Time | Matrix | 3 | Ξ | = | 5 5 | | [| ت ات | 5 5 | ij | T | ŧO. | | | | |
| JW2-24 | | 8-30-01 | 1505 | WATER | 4 | ŀ | | | | | | |) | | X | | | | |
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| ı | | l Na | ame (prir | 1E} | 1 | | | Cor | mnar | IV N | l an | ne | | | j j | Dg | ıte | Ti | me |

| - 40 | Name (print) | Company Name | Date | Time |
|----------------------|----------------|-------------------|---------|-------------------|
| Relinquished by: | Roy D. GLENN | TETRA TOCH EM INC | 8-31-67 | 11 3 0 |
| Received by: Act St. | Steven Stanley | CST | 8/31/01 | 1130 |
| Relinquished by: | 1 | | 7 1 | |
| Received by: | | | | |
| Relinquished by: | , | | | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | , | | |

Turnaround time/remarks:



TPH/Purgeable and BTXE Data



| | Gasoline by | GC/FID CA LUFT | |
|------------|----------------|----------------|-------------|
| Lab #: | 153916 | Location: | JW SILVEIRA |
| Client: | Tetra Tech EMI | Prep: | EPA 5030B |
| Project#: | P1106.04 | Analysis: | 8015B(M) |
| Field ID: | JW2-24 | Batch#: | 66342 |
| Lab ID: | 153916-007 | Sampled: | 08/30/01 |
| Matrix: | Water | Received: | 08/31/01 |
| Units: | ug/L | Analyzed: | 09/12/01 |
| Diln Fac: | 5.000 | | |

| Analyte | Result | RL | |
|-----------------|---------|-----|--|
| Gasoline C7-C12 | 5,400 G | 250 | |

| Surrogate | %REC | Limits |
|----------------------------|------|--------|
| Trifluorotoluene (FID) 1 | L12 | 59-135 |
| Bromofluorobenzene (FID) 1 | L08 | 60-140 |

L= Reporting Limit age 1 of 1



| 1 | Benzene, Tolu | ene, Ethylbenzene, | Xylenes | |
|--------------------|----------------|---------------------------------------|-------------|--|
| Lab #: | 153916 | Location: | JW SILVEIRA | |
| Client: | Tetra Tech EMI | Prep: | EPA 5030B | |
| ?roject#: | P1106.04 | Analysis: | EPA 8021B | |
| Field ID: | JW2-24 | Batch#: | 66342 | |
| lab ID: Matrix: | 153916-007 | Sampled: | 08/30/01 | |
| Matrix: | Water | Received: | 08/31/01 | |
| Units: | ug/L | Analyzed: | 09/12/01 | |
| Diln Fac: | 5.000 | · · · · · · · · · · · · · · · · · · · | | |

| Analyte | Result | RL . |
|---|--------|------|
| Benzene | 850 | 2.5 |
| Toluene | 64 | 2.5 |
| Ethylbenzene | 230 | 2.5 |
| m,p-Xylenes | 200 | 2.5 |
| Benzene Foluene Ethylbenzene m,p-Xylenes p-Xylene | 130 | 2.5 |

| Surrogate | %REC | Limits |
|--------------------------|------|--------|
| Trifluorotoluene (PID) | 140 | 56-142 |
| Bromofluorobenzene (PID) | 132 | 55-149 |