**Tetra Tech EM Inc.**

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December 21, 2000

# 4868

J. W. Silveira Company
499 Embarcadero
Oakland, California 94606

Subject: September 2000, Second Quarterly Monitoring Report for the Site Located at 1200 20th Avenue, Oakland

## INTRODUCTION

The purpose of this report is to provide the results of the quarterly groundwater monitoring conducted in the third quarter of 2000. Groundwater samples were collected from 3 monitoring wells located at the site on September 27, 2000. The site is located at the east corner of the intersection of 20th Avenue and Solano Way in Oakland, California (Figure 1).

## SITE BACKGROUND

Two underground storage tanks (USTs) were previously located at the site. 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), TPH as diesel (TPH-d), and total lead. The highest concentrations of BTEX and TPH-g were detected along 20th Avenue at the western end of the removal excavation. Groundwater was not encountered during removal of USTs. As part of the

UST removal action activities, three groundwater monitoring wells were installed at the site (Figure 2). This report discusses the May 2000 quarterly groundwater sampling of the three monitoring wells at the site.

## GROUNDWATER SAMPLING ACTIVITIES

For the third quarterly sampling event in the year 2000, the three monitoring wells at the site were sampled on September 27, 2000. The depth of groundwater was measured at each well with an electronic depth probe. The depth to the monitoring well caps were removed from the tops of the well and the groundwater 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 the monitoring well a Horiba U10 water quality checker was used to measure the following physical parameters of the groundwater: pH, temperature, electrical conductivity, dissolved oxygen, and turbidity. Copies of the groundwater field sampling sheets are provided in Appendix A. These physical parameters were monitored to determine when the groundwater in the well casing was representative of the groundwater outside of the monitoring well. After the physical parameters of the groundwater had stabilized groundwater samples were collected from the well. The samples were placed in the appropriate sample containers provided by the laboratory. After each sample was labeled the sample was stored in a cooler of ice under a chain-of-custody control. The groundwater samples were sent to Curtis & Tompkins Analytical Laboratories (C&T), in Berkeley, California. C&T is a California state-certified laboratory. The groundwater samples were analyzed for BTEX, methyl tertiary-butyl ether (MTBE), and TPH-g.

## GROUNDWATER GRADIENT

The groundwater elevations were calculated for each of the monitoring wells from the measured depth to groundwater at the site. The depth to groundwater is measured from the top of casing at each well, and the groundwater elevations measured at the site are presented in Table 1. The groundwater flow direction and gradient at the site were calculated using these data. The groundwater flow direction is north 29 degrees east (N21E), as shown on Figure 3. MW-3 is down gradient from the location of the former UST, and MW-1 and MW-2 are slightly up gradient to the north and southeast, respectively, of the former UST location. 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 UST, this well is down gradient (with respect to groundwater flow) from the location of

the former UST. The groundwater gradient was calculated to be 0.049 feet/foot (ft/ft). The direction of groundwater flow and the groundwater gradient are consistent with those calculated using previous water-level measurements from the three wells at the site.

## GROUNDWATER ANALYTICAL RESULTS

BTEX and TPH-g were detected in the groundwater sample collected from MW-1 (sample number JW2-18); MBTE was not detected in this groundwater sample. BTEX, MTBE, and TPH-g were not detected in the groundwater samples collected from MW-2 and MW-3. Table 2 presents the analytical results for the September 2000 quarterly sampling event at the site. The detected concentrations of benzene, toluene, ethylbenzene, and total xylenes in the groundwater sample from MW-1 are 1,200, 59, 420, and 330 micrograms per liter (ug/L) respectively. The concentration of TPH-g detected in groundwater at MW-1 is 4,300 ug/L. The complete laboratory data package and chain-of-custody is attached as Appendix B at the end of this report.

## CONCLUSIONS AND RECOMMENDATIONS

This report presents the analytical results of the September 2000 quarterly groundwater monitoring event for the three wells located at the site. No groundwater contaminants are detected in the monitoring wells MW-2 and MW-3. Monitoring well MW-1 still has elevated levels of TPH-g and BTEX compounds.

In previous discussions with the Alameda County Health Care Services Agency (ACHCSA), it was recommended that the groundwater contamination in MW-1 be addressed through some form of remediation so that site closure can be attained. After the April 1999 sampling event, TtEMI discussed inserting an oxygen-releasing compound (ORC) sock into MW-1 with ACHSCA. After the February 2000 quarterly groundwater sampling event the contaminant concentrations in groundwater from MW-1 decreased significantly without the presence of an ORC sock in the well. Tables 3, 4, and 5 show the analytical history of groundwater samples collected from the 3 monitoring wells since February of 1995. At that time TtEMI recommended reviewing the analytical results of the May 2000 quarterly sampling prior to installing an ORC sock into the well. If contaminant concentrations in groundwater from MW-1 continued to decrease over time, this would show that natural attenuation is occurring and the site should be suitable for closure without requiring use of an ORC sock. The May 2000 quarterly groundwater contaminant concentrations did not continue to decrease in groundwater

from MW-1. Even though these analytical results from September showed that the contaminant concentrations have decreased a set of ORC socks was placed in MW-1 immediately after the December 18th groundwater sampling event. It is recommended that the ORC socks stay in the well for at least 6 months prior to the next round of groundwater sampling.

Should you have any questions, please feel free to contact the undersigned project manager, Hal Dawson, at (415) 222-8316.

Sincerely,

for Hal Dawson
TtEMI Project Manager

Jerry Wickham
Registered Geologist #3766

REGISTERED GEOLOGIST
JERRY T. WICKHAM
3766
STATE OF CALIFORNIA

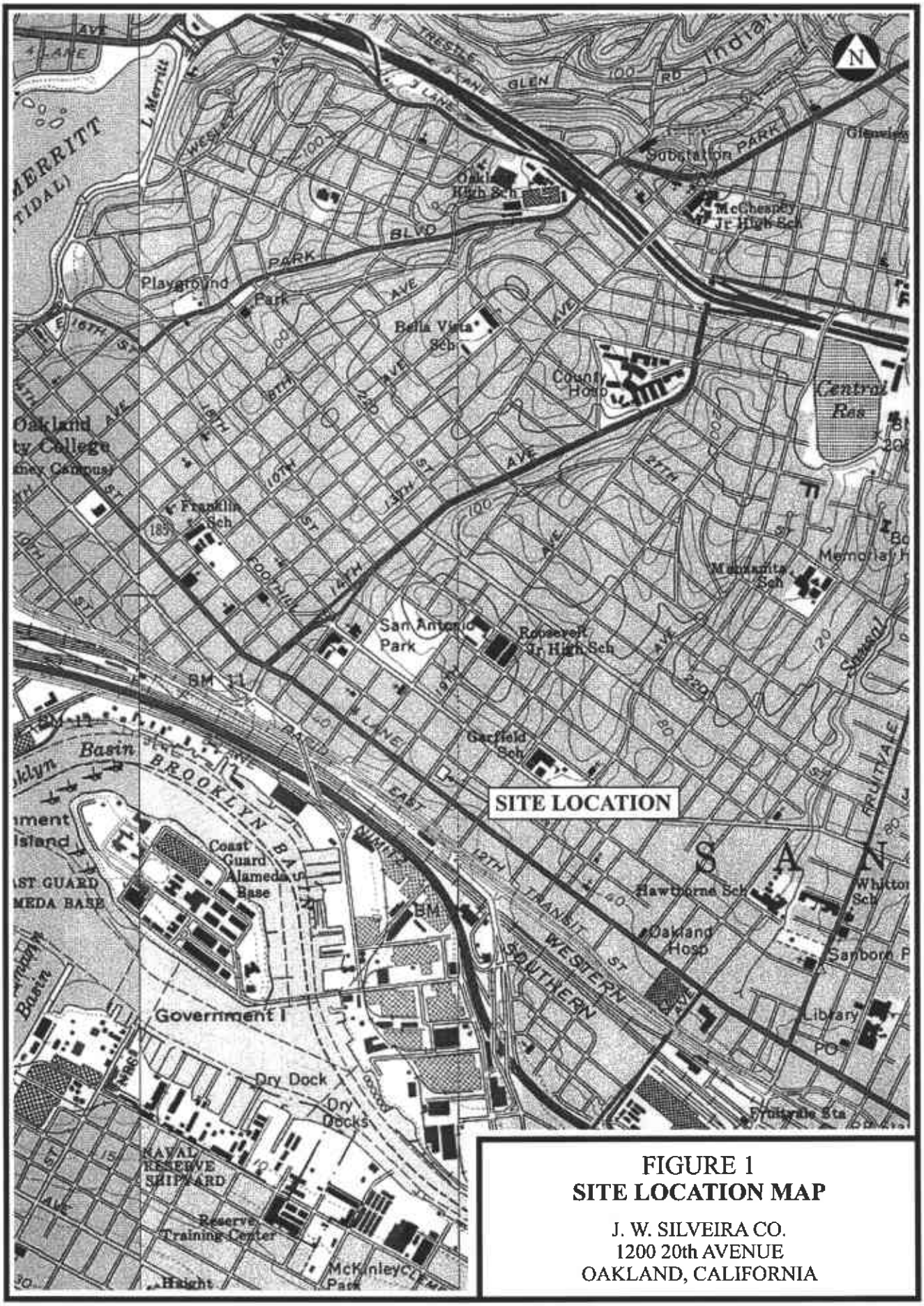
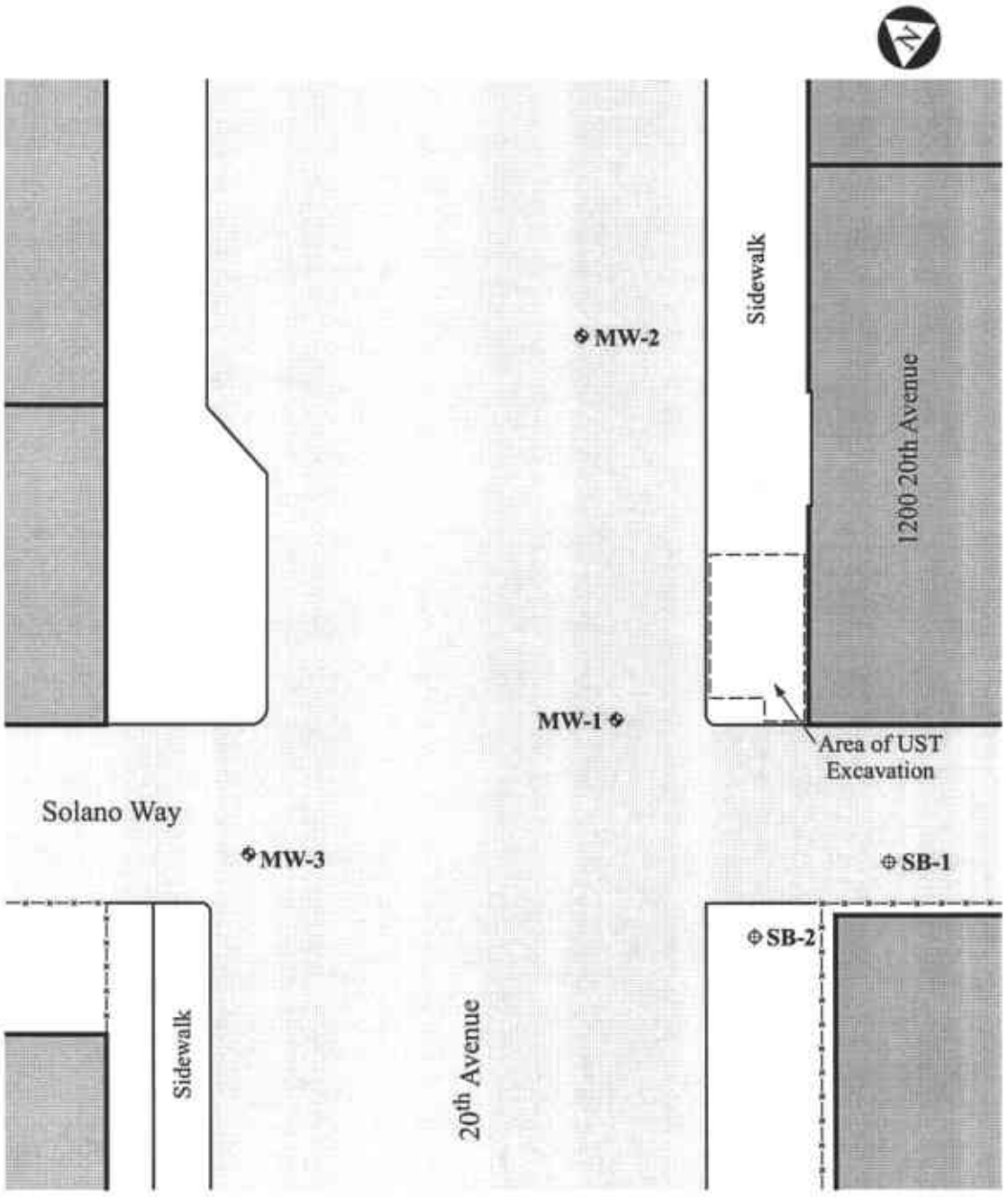



FIGURE 1
**SITE LOCATION MAP**

J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA




Notes:

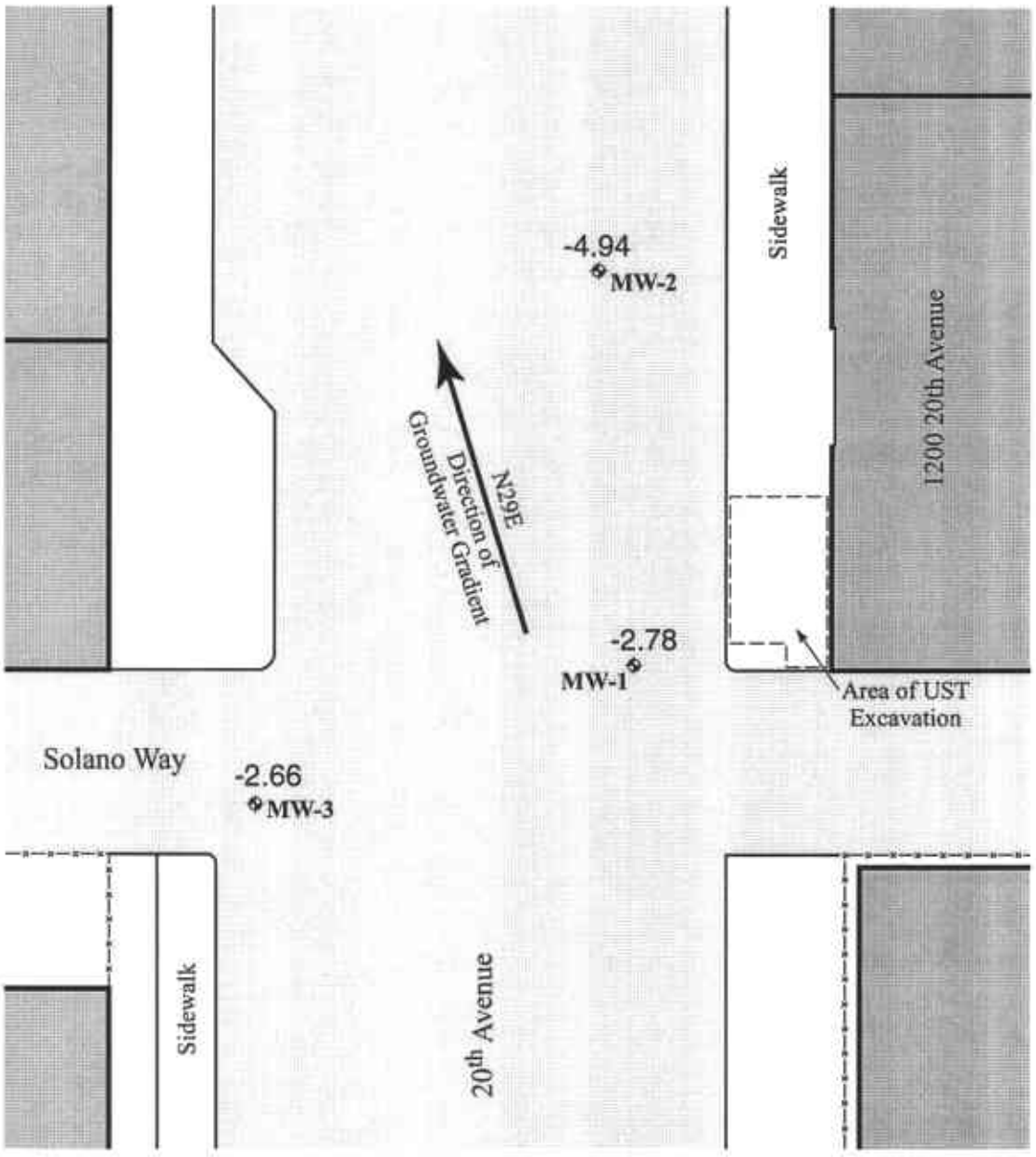
- ◈ Monitoring Well (MW)
- ⊕ Soil Boring (SB)

Scale: 1 inch = 20 feet

0 10 20 30 40

FIGURE 2
**MONITORING WELL AND SOIL BORING LOCATIONS**
J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA

**Tetra Tech EM Inc.**




Notes:

◆ Monitoring Well (MW)

0.15 Groundwater elevation in feet above mean sea level

Scale: 1 inch = 20 feet

0 10 20 30 40

FIGURE 3
**GROUNDWATER GRADIENT**

J. W. SILVEIRA CO.
1200 20th AVENUE
OAKLAND, CALIFORNIA

**TABLE 1**
**GROUNDWATER ELEVATIONS**
**1200 20TH AVENUE**

| Date | Groundwater Elevations (msl) | | |
|---|---|---|---|
| | MW-1 | MW-2 | MW-3 |
| 9/27/00 | -2.78 | -4.94 | -2.66 |

Notes:
MW-1 TOC Elevation: 17.15 ft
MW-2 TOC Elevation: 20.11 ft
MW-3 TOC Elevation: 16.06 ft
TOC top of casing
msl mean sea level

**TABLE 2**
**SECOND QUARTER GROUNDWATER RESULTS**
**VOC AND TPH COMPOUNDS**
**1200 20TH AVENUE**

| Analyte | Monitoring Well | | |
|---|---|---|---|
| VOC (µg/L) | MW-1 | MW-2 | MW-3 |
| Benzene | 1,200 | *ND* | *ND* |
| Toluene | 59 | *ND* | *ND* |
| Ethylbenzene | 420 | *ND* | *ND* |
| m,p-Xylenes | 330 | *ND* | *ND* |
| o-Xylene | 35 | *ND* | *ND* |
| MTBE | *ND* | *ND* | *ND* |
| TPH (µg/L) | MW-1 | MW-2 | MW-3 |
| Gasoline | 4,300 | *ND* | *ND* |

Notes:

| | |
|---|---|
| µg/L | micrograms per Liter |
| *ND* | not detected |
| TPH | total petroleum hydrocarbons |
| VOC | volitile organic compound |

MW-1 is water sample JW2-18
MW-2 is water sample JW2-19
MW-3 is water sample JW2-20

**TABLE 3**
**VOC AND TPH COMPOUNDS IN GROUNDWATER**
**MW-1 FROM FEBRUARY 1995 TO SEPTEMBER 2000**
**1200 20TH AVENUE**

| Date | TPH (µg/L) | VOC (µg/L) | | | |
|---|---|---|---|---|---|
| | Gasoline | Benzene | Toluene | Ethylbenzene | Xylenes |
| 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 |
| May-00 | 18,000 | 3,700 | 430 | 770 | 2,440 |
| Sep-00 | 4,300 | 1,200 | 59 | 420 | 330 365 |

Notes:

| | |
|---|---|
| µg/L | micrograms per Liter |
| - - | not analyzed |
| *ND* | not detected |
| TPH | total petroleum hydrocarbons |
| VOC | volitile organic compound |

**TABLE 4**
**VOC AND TPH COMPOUNDS IN GROUNDWATER**
**MW-2 FROM FEBRUARY 1995 TO SEPTEMBER 2000**
**1200 20TH AVENUE**

| Date | TPH (µg/L) | VOC (µg/L) | | | |
|---|---|---|---|---|---|
| | Gasoline | Benzene | Toluene | Ethylbenzene | Xylenes |
| 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 | *ND* |
| 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* |
| May-00 | *ND* | *ND* | *ND* | *ND* | *ND* |
| Sep-00 | *ND* | *ND* | *ND* | *ND* | *ND* |

Notes:

| | |
|---|---|
| µg/L | micrograms per Liter |
| - - | not analyzed |
| *ND* | not detected |
| TPH | total petroleum hydrocarbons |
| VOC | volitile organic compound |

**TABLE 5**
**VOC AND TPH COMPOUNDS IN GROUNDWATER**
**MW-3 FROM FEBRUARY 1995 TO SEPTEMBER 2000**
**1200 20TH AVENUE**

| Date | TPH (µg/L) | VOC (µg/L) | | | |
|---|---|---|---|---|---|
| | Gasoline | Benzene | Toluene | Ethylbenzene | Xylenes |
| 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* |
| May-00 | *ND* | *ND* | *ND* | *ND* | *ND* |
| Sep-00 | *ND* | *ND* | *ND* | *ND* | *ND* |

Notes:

| | |
|---|---|
| µg/L | micrograms per Liter |
| - - | not analyzed |
| *ND* | not detected |
| TPH | total petroleum hydrocarbons |
| VOC | volitile organic compound |

# APPENDIX A
# GROUNDWATER SAMPLING DATA SHEETS

# GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 1 OF 2

MONITORING WELL NO. MW-1

PROJECT JW SILVEIRA

SITE 2, 1200 20TH AVE

PROJECT NO. P1106004

TOTAL GALLONS TO BE PURGED

PURGING METHOD BAILER

SAMPLING METHOD BAILER

68°F

| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | Field Parameters Measured: pH | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (°C) | | | Water Level (feet) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1538 | Ø | | 6.15 | 1.18 | 33 | Ø.42 | 19.7° | | | | |
| 1544 | 3 | | 6.21 | 1.2Ø | 332 | Ø.62 | 19.7° | | | | |
| 1551 | 6 | | 6.25 | 1.19 | 376 | Ø.85 | 19.5° | | | | |
| 1557 | 9 | | 6.26 | 1.19 | 31Ø | Ø.86 | 19.4 | | | | |
| 1603 | 12 | | 6.26 | 1.18 | 555 | Ø.82 | 19.4 | | | | |
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| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY |
|---|---|---|
| | | |
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| | | |

SAMPLE ID: JW2-18 @ 1610

ANALYSIS: BTEX, MTBE, TPH-P

COC NUMBER: Ø1Ø6

SAMPLING PERSONNEL: Hal & Roy

TETRA TECH EM INC.
• SAN FRANCISCO •

# GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 2 OF 2

MONITORING WELL NO. MW-1

PROJECT JW SILVEIRA

SITE 2, 1200 20th AVE

PROJECT NO. P1106004

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 17.15 feet

WATER LEVEL 19.93 feet btoc 1530 @

WATER LEVEL ELEVATION -2.78 feet msl

STANDING WATER COLUMN 8.89 feet

WELL VOLUMES TO BE PURGED _____

MINUMUM PURGE VOLUME _____ gallons

ACTUAL VOLUME PURGED _____ gallons

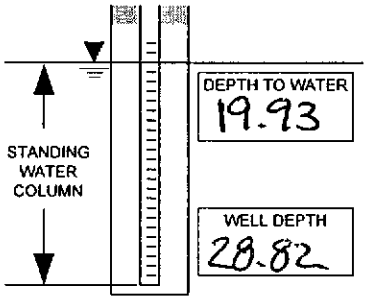
VOLUME CALCULATED BY:

*PURGE VOLUME CALCULATION*

One Well Volume = Casing Volume + Annulus Volume

One Well Volume = 1.51 gal + 6.96 gal

One Well Volume = 8.47 gallons




Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)[a]

Casing Volume = 8.89 ft x 0.17 gal/linear ft

Casing Volume = 1.51 gallons

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 Borehole Volume (gal/linear ft)[b] ) - Casing Volume ] x 0.3[c]

Annulus Volume = [( 8.89 ft x 2.78 gal/linear ft) - 1.51 gal ] x 0.3

Annulus Volume = 6.96 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 |

# GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 1 OF 2

MONITORING WELL NO. MW-2

PROJECT JW SILVEIRA

SITE 2, 1200 20TH AVE

PROJECT NO. P1106004

TOTAL GALLONS TO BE PURGED _____

PURGING METHOD BAILER

SAMPLING METHOD BAILER

| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | Field Parameters Measured: pH | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (°C) | | | Water Level (feet) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1458 | 0 | | 6.12 | 0.720 | 21 | 4.83 | 19.3° | | | | |
| 1503 | 2 | | 6.05 | 0.723 | 140 | 4.92 | 19.0° | | | | |
| 1506 | 4 | | 6.10 | 0.724 | 211 | 4.98 | 19.0° | | | | |
| 1511 | 6 | | 6.09 | 0.719 | 279 | 5.00 | 18.9° | | | | |
| 1515 | 8 | | 6.09 | 0.717 | 285 | 5.02 | 18.9° | | | | |
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| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY |
|---|---|---|
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SAMPLE ID: JW2-19 @ 1520

ANALYSIS: BTEX, MTBE, TPH-P

COC NUMBER: 0106

SAMPLING PERSONNEL:

Hal & Roy

TETRA TECH EM INC.
• SAN FRANCISCO •

# GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 2 OF 2

MONITORING WELL NO. MW-2

PROJECT JW SILVEIRA

SITE 2, 1200 20th Ave

PROJECT NO. P1106004

CASING DIAMETER 2 inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 20.11 feet

WATER LEVEL ~~6.15~~ 25.05 feet btoc 1450 @

WATER LEVEL ELEVATION -4.94 feet msl

STANDING WATER COLUMN 6.15 feet

WELL VOLUMES TO BE PURGED _____

MINUMUM PURGE VOLUME _____ gallons

ACTUAL VOLUME PURGED _____ gallons

VOLUME CALCULATED BY:

## PURGE VOLUME CALCULATION

One Well Volume = Casing Volume + Annulus Volume

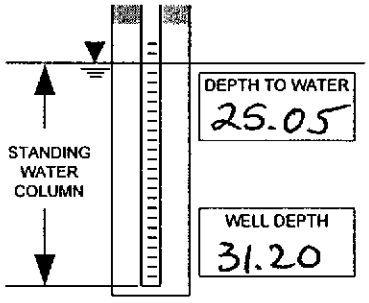
One Well Volume = 1.05 gal + 4.81 gal

One Well Volume = 5.86 gallons

Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)[a]

Casing Volume = 6.15 ft x 0.17 gal/linear ft

Casing Volume = 1.05 gallons




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 Borehole Volume (gal/linear ft)[b]) - Casing Volume ] x 0.3[c]

Annulus Volume = [( 6.15 ft x 2.78 gal/linear ft) - 1.05 gal ] x 0.3

Annulus Volume = 4.81 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 |

# GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 1 OF 2

MONITORING WELL NO. MW-3

PROJECT JW SILVEIRA

SITE 2, 1200 20th AVE

PROJECT NO. P1106004

TOTAL GALLONS TO BE PURGED _____

PURGING METHOD BAILER

SAMPLING METHOD BAILER

| Time | Volume of Water Removed (gallons) | Discharge Rate (gal/min) | Field Parameters Measured: pH | Specific Conductivity (ms/cm) | Turbidity (ntu) | Dissolved Oxygen (mg/L) | Temp. (°C) | | | Water Level (feet) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1348 | 0 | | 6.34 | 1.61 | 248 | 5.63 | 19.8 | | | | |
| 1402 | 3 | | 6.38 | 1.53 | 369 | 6.05 | 19.9 | | | | |
| 1409 | 6 | | 6.33 | 1.44 | 387 | 5.14 | 19.8 | | | | |
| 1420 | 9 | | 6.38 | 1.38 | 392 | 5.28 | 19.7 | | | | |
| 1427 | 12 | | 6.36 | 1.34 | 375 | 5.62 | 19.7 | | | | |
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| FIELD EQUIPMENT | SERIAL NUMBER | RENTAL COMPANY |
|---|---|---|
| HORIBA U-10 | U-10.08 | EQUIPCO |
| | | |
| | | |

SAMPLE ID: JW2-20 @ 1430

ANALYSIS: BTEX, MTBE, TPH-P

COC NUMBER: 0106

SAMPLING PERSONNEL:

Hal & Roy

TETRA TECH EM INC.
• SAN FRANCISCO •

# GROUNDWATER SAMPLING RECORD

DATE 9-27-00 PAGE 2 OF 2

MONITORING WELL NO. MW-3

PROJECT JW SILVEIRA

SITE 2, 1200 20th AVE

PROJECT NO. P1140604

CASING DIAMETER 2" inches

BOREHOLE DIAMETER 8.25 inches

TOP OF CASING ELEVATION 16.06 feet

WATER LEVEL 18.72 feet btoc @

WATER LEVEL ELEVATION -2.66 feet msl

STANDING WATER COLUMN 10.43 feet

WELL VOLUMES TO BE PURGED

MINUMUM PURGE VOLUME gallons

ACTUAL VOLUME PURGED gallons

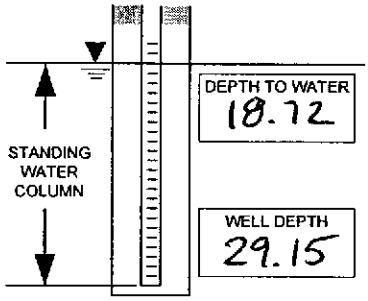
VOLUME CALCULATED BY:

*PURGE VOLUME CALCULATION*

One Well Volume = Casing Volume + Annulus Volume

One Well Volume = 1.77 gal + 7.81 gal

One Well Volume = 9.58 gallons




Casing Volume = Standing Water Column (ft) x Pipe Volume (gal/linear ft)[a]

Casing Volume = 10.43 ft x 0.17 gal/linear ft

Casing Volume = 1.77 gallons

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 Borehole Volume (gal/linear ft)[b] ) - Casing Volume ] x 0.3[c]

Annulus Volume = [( 10 ft x 2.78 gal/linear ft ) - 1.77 gal ] x 0.3

Annulus Volume = 7.81 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 |

# APPENDIX B
# ANALYTICAL DATA PACKAGE

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532



Laboratory Number 147754

TETRA TECH EM INC.

Tetra Tech EMI
135 Main Street
Suite 1800
San Francisco, CA 94105

Project#: P110604
Location: JW Silveira Props

| Sample ID | Lab ID |
|---|---|
| JW2-18 | 147754-001 |
| JW2-19 | 147754-002 |
| JW2-20 | 147754-003 |

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: _____ Date: 10/19/00
Operations Manager

Signature: _____ Date: 10/19/00
Project Manager

CA ELAP # 1459

000001

Curtis & Tompkins, Ltd.

**Laboratory Number:** 147754
**Client:** Tetra Tech EMI
**Location:** JW Silveira Props
**Project#:** P110604

**Receipt Date:** 09/28/00

## CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on September 28, 2000. The samples were received intact at 6.5 degrees Celsius.

**TPH-Purgeable Hydrocarbons:** High surrogate recoveries were observed for trifluorotoluene in the matrix spike and spike duplicate of JW2-18 (CT#147754-001) and the continuing calibration verifications due to coelution with a hydrocarbon peak. The surrogate recoveries for bromofluorobenzene were within criteria. High percent differences were observed in the continuing calibration verifications that were analyzed on September 29 and 30, 2000 (GC07) causing the spike recoveries in the laboratory control sample and matrix spikes to be flagged for batch 58599. The responses were high, the spike recoveries were within criteria, and gasoline was not detected in any of the associated samples. No other analytical problems were encountered.

**BTXE by EPA8260:** Due to an oversight by the project manager, the samples were analyzed by GC/MS instead of by GC as requested. There was insufficient sample provided to perform a matrix spike and spike duplicate analysis on a water sample from this site. No analytical problems were encountered.

Curtis & Tompkins, Ltd.

# Chain of Custody

Tetra Tech EM Inc.
San Francisco Office

14775

0106

# Chain of Custody Record

135 Main St. Suite 1800
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

Page 1 of 1

| | | | |
|---|---|---|---|
| Project name: 1200 20th AVE JW Silveira - 2 | PO# | Lab: C&T | |
| Project number: P110604 | TtEMI technical contact: SARA WOOLEY | Field samplers: Hal & Roy | |
| | TtEMI project manager: HAL DAWSON | Field samplers' signatures: | |

| Sample ID | Sample Description/Notes | Date | Time | Matrix | No./Container Types: 40 ml VOA | 1 Liter Amber | 1 Liter Poly | Brass Tube | Glass Jar | Preservative Added: HCl | HCl | HCl | Analysis Required: CLP VOA | CLP SVOA | CLP Pest/PCBs | CLP Metals | TPH Purgeables | TPH Extractables | BTEX | MTBE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JW2-18 | MW1 | 9-27-00 | 1610 | WATER | 4 | | | | | | | | | | | | X | | X | X |
| JW2-19 | MW2 | " | 1520 | " | 4 | | | | | | | | | | | | X | | X | X |
| JW2-20 | MW3 | " | 1430 | " | 4 | | | | | | | | | | | | X | | X | X |

TEMP. RECEIVED: 6.5°C
RECEIVED BY: JHB

| | Name (print) | Company Name | Date | Time |
|---|---|---|---|---|
| Relinquished by: Roy D. Glenn | Roy Glenn | TT EMI | 9-28-00 | |
| Received by: Hal Dawson | Hal Dawson | TTEMI | 9/28/00 | 1100 |
| Relinquished by: Lisa Bennett | Lisa Bennett | C&T | 9/29/00 | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | | | |

Turnaround time/remarks:
Received chilled on a cooler.

Curtis & Tompkins, Ltd.

# TPH/Purgeable Data

000005

Curtis & Tompkins, Ltd.

# Gasoline by GC/FID CA LUFT

| | | | |
|---|---|---|---|
| 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 | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 4,300 G | 250 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 104 | 59-135 |
| Bromofluorobenzene (FID) | 105 | 60-140 |

600000

G = Pattern resembles gasoline
RL = Reporting Limit

Curtis & Tompkins, Ltd.

## Gasoline by GC/FID CA LUFT

| | | | |
|---|---|---|---|
| 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 | | |

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

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 118 | 59-135 |
| Bromofluorobenzene (FID) | 122 | 60-140 |

ND = Not Detected
RL = Reporting Limit



000007

Curtis & Tompkins, Ltd.

## Gasoline by GC/FID CA LUFT

| | | | |
|---|---|---|---|
| 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 | UJC |

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

ND = Not Detected
RL = Reporting Limit



600008

Curtis & Tompkins, Ltd.

# Gasoline by GC/FID CA LUFT

| | | | |
|---|---|---|---|
| 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 | | |

Type: MS Lab ID: QC126339

| Analyte | MSS Result | Spiked | Result | %REC | 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 Lab ID: QC126340

| Analyte | 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 * | >LR 59-135 |
| Bromofluorobenzene (FID) | 128 | 60-140 |

* = Value outside of QC limits; see narrative
b = See narrative
>LR= Response exceeds instrument's linear range
RPD= Relative Percent Difference



000009

Curtis & Tompkins, Ltd.

## Gasoline by GC/FID CA LUFT

| | | | |
|---|---|---|---|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8015M |
| Field ID: | ZZZZZZZZZZ | 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 | | |

Type: MS Lab ID: QC126520

| Analyte | MSS Result | Spiked | Result | %REC | 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: QC126521

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 2,000 | 1,978 | 94 | 65-131 | 8 | 20 |

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

000040

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

## 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: | QC126338 | Batch#: | 58599 |
| Matrix: | Water | Analyzed: | 09/29/00 |
| Units: | ug/L | | |

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

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 131 | 59-135 |
| Bromofluorobenzene (FID) | 112 | 60-140 |

b = See narrative



000011

Curtis & Tompkins, Ltd.

## 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 | Analyzed: | 10/03/00 |
| Units: | ug/L | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 2,000 | 1,901 | 95 | 73-121 |

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

000012

Curtis & Tompkins, Ltd.

# 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: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC126337 | Batch#: | 58599 |
| Matrix: | Water | Analyzed: | 09/29/00 |
| Units: | ug/L | | |

| Analyte | Result | 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

Curtis & Tompkins, Ltd.

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

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

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

000044

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE Data

Curtis & Tompkins, Ltd.

## Purgeable Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 147754 | Location: | JW Silveira Props |
| Client: | Tetra Tech EMI | Prep: | EPA 5030 |
| Project#: | P110604 | Analysis: | EPA 8260B |
| Field ID: | JW2-18 MW-1 | 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 | | |

| Analyte | Result | RL |
|---|---|---|
| MTBE | ND | 3.6 |
| Benzene | 1,200 | 3.6 |
| Toluene | 59 | 3.6 |
| Ethylbenzene | 420 | 3.6 |
| m,p-Xylenes | 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 |

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Aromatics by GC/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 MW2 | 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 | 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 |

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Aromatics by GC/MS

| | | | |
|---|---|---|---|
| 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 mw-3 | 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 |
| m,p-Xylenes | 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

Curtis & Tompkins, Ltd.

# Purgeable Aromatics by GC/MS

| | | | |
|---|---|---|---|
| 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 | | |

Type: BS Lab ID: QC126262

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Benzene | 50.00 | 48.19 | 96 | 80-116 |
| Toluene | 50.00 | 48.71 | 97 | 80-120 |

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

Type: BSD Lab ID: QC126263

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Benzene | 50.00 | 47.32 | 95 | 80-116 | 2 | 20 |
| Toluene | 50.00 | 48.07 | 96 | 80-120 | 1 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 78-123 |
| Toluene-d8 | 98 | 80-110 |
| Bromofluorobenzene | 99 | 80-115 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Purgeable Aromatics by GC/MS

| | | | |
|---|---|---|---|
| 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 | | |

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

Type: BSD Lab ID: QC126379

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

| Surrogate | %REC | Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 112 | 78-123 |
| Toluene-d8 | 100 | 80-110 |
| Bromofluorobenzene | 103 | 80-115 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

## Purgeable Aromatics by GC/MS

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

Type: BS Lab ID: QC126398

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

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

Type: BSD Lab ID: QC126399

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

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

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

## Purgeable Aromatics by GC/MS

| | | | |
|---|---|---|---|
| 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 | | |

| 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 |
| o-Xylene | ND | 0.5 |

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

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Aromatics by GC/MS

| | | | |
|---|---|---|---|
| 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: | QC126380 | Batch#: | 58609 |
| Matrix: | Water | Analyzed: | 10/01/00 |
| Units: | ug/L | | |

| 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 |
| o-Xylene | ND | 0.5 |

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

ND = Not Detected
RL = Reporting Limit



000044

Curtis & Tompkins, Ltd.

# Purgeable Aromatics by GC/MS

| | | | |
|---|---|---|---|
| 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 | Result | RL |
|---|---|---|
| MTBE | ND | 0.5 |
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | 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 |

ND = Not Detected
RL = Reporting Limit