SCS ENGINEERS

# Quarterly Groundwater Monitoring
# Fourth Quarter 2010

## 1451 Carrizo Gorge Road

## Jacumba, California

(DEH CASE #H02688-003)

Presented to:

**Mr. Tony Sawyer**
County of San Diego
Department of Environmental Health
P.O. Box 129261
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Presented by:

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March 3, 2011
Project Number: 01208459.00

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Project No. 01208459.00

Mr. Tony Sawyer
County of San Diego
Department of Environmental Health
P.O. Box 129261
San Diego, California 92112-9261

**Subject**: Quarterly Groundwater Monitoring Event Conducted During December 2010 (4Q2010)

DEH File Number: H02688-003

**Site**: 1451 Carrizo Gorge Road
Jacumba, California

Dear Mr. Sawyer:

SCS Engineers (SCS), is pleased to present this report (Report) of the December 2010 quarterly groundwater monitoring (Assessment) of petroleum hydrocarbon-bearing groundwater in the vicinity of a former underground storage tank (UST) system at the above-referenced Site (Figures 1 and 2). During the current assessment, 11 Site monitoring wells were monitored for depth to water, purged, and sampled pursuant to the requirements of the County of San Diego, Department of Environmental Health (DEH), Site Assessment and Mitigation (SAM) Program. This work was conducted in accordance with Scope of Services Change Number 2 (SSC2) to Exhibit 00 to the Contract between SCS and Tif Oyl, Inc. (Client), dated August 28, 2008.

Should you have any questions regarding this Report, please do not hesitate to call the undersigned at (858) 571-5500.

Sincerely,


Chris Crosby
Staff Professional
**SCS ENGINEERS**

Charles E. Houser, CEG 2206
Senior Project Professional
**SCS ENGINEERS**

Chuck Pryatel, MBA, REHS
Vice President
**SCS ENGINEERS**

cc: Mr. Larry Doyle

State UST Cleanup Fund via electronic upload to State Geotracker website

Enclosures

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# 1 BACKGROUND

The Site is located at 1451 Carrizo Gorge Road in Jacumba, San Diego County, California (Figure 1). The Site is currently occupied by a Chevron gasoline service station. In January 1999, underground storage tanks (USTs) were removed from the Site. Analysis of soil samples collected during the UST removal indicated that a release of petroleum hydrocarbons had occurred from the UST system. The Department of Environmental Health (DEH) Site Assessment and Mitigation (SAM) Program directed that corrective action measures be taken regarding the release.

A summary of the previous environmental assessments conducted at the Site follows:

- Eight groundwater monitoring wells and five soil borings were drilled by Southern California Soil and Testing, Inc. (SCST) between December 16, 2002, and January 2, 2003. Locations of the wells (MW-1 through MW-8) are depicted on Figure 2. Groundwater was encountered at a depth of approximately 75 feet below ground surface (bgs). Results of soil sample analysis indicated that soil impacts were limited to the vicinity of the former UST system. Groundwater sample analysis indicated that groundwater beneath the Site was impacted by petroleum hydrocarbons. SCST recommended additional assessment be conducted at the Site.

- On June 24, 2003, the SAM Program requested that a workplan for additional assessment and a sensitive receptor survey be prepared for the Site. The workplan was prepared by Petra Geotechnical, Inc. (Petra) and submitted on August 15, 2003. The SAM Program approved the workplan in a letter, dated August 19, 2003. In February 2004, Petra drilled three groundwater monitoring wells and one soil boring (Figure 2). Boring MW-10 was intended to be completed as a well but encountered drilling refusal and was not completed. Based on the results of the soil and groundwater sampling, Petra concluded that the extent of groundwater with dissolved petroleum hydrocarbons had been assessed and that there was a low likelihood that sensitive receptors, such as supply wells and surface water resources, were impacted by the release at the Site.

- In June 2005, approximately 5 feet of phase-separated hydrocarbons (PSH) was measured in well MW-2. Petra recommended beginning PSH monitoring and bailing and conducting a high-vacuum, dual-phase extraction (HVDPE) pilot test at the Site. On October 14, 2005, Petra submitted a workplan for a HVDPE pilot test and soil vapor assessment to the SAM Program for approval. The SAM Program approved the workplan in a letter, dated November 17, 2005.

- The pilot test was conducted between March 14 and 29, 2006. Approximately 3,175 pounds of petroleum hydrocarbons were extracted during the pilot test. During subsequent monitoring of well MW-2, approximately 2 inches or less of PSH were measured. Petra concluded that HVDPE would be an effective method to treat and mitigate PSH and petroleum hydrocarbon-bearing groundwater at the Site and recommended that a corrective action plan (CAP) be prepared for the Site. The SAM Program approved the preparation of a CAP in a letter, dated September 7, 2006.

- On March 31, 2008, a CAP was submitted to the SAM Program by Petra. The CAP recommended three approximately 30-day HVDPE remediation events be conducted at the Site. In a letter, dated July 30, 2008, the SAM Program granted conditional concurrence with the CAP and directed that the public notification process for the CAP be implemented. The CAP notification process was completed in late 2008.

- Prior to issuing final approval of the CAP, the SAM Program requested an addendum to the October 14, 2005, workplan for soil vapor assessment. The SAM program requested that the proposed soil vapor sample locations be revised to concentrate the vapor sample locations near the Site structure and that the proposed depth of sampling be revised from 5 feet to 3 feet. The workplan addendum was submitted by SCS to the SAM Program on February 18, 2009. In a telephone conversation on February 25, 2009, the SAM Program confirmed approval of the CAP and approval letter was issued by the SAM Program on February 27, 2009.

- Between March 3, 2009, and August 14, 2009, three approximately 30-day HVDPE events were conducted at the Site by Calclean, Inc. A total of approximately 14,870 pounds of petroleum hydrocarbons were removed during the HVDPE at the Site. During monitoring events conducted at the Site since the completion of the three approved HVDPE events, PSH has not been measured in wells at the Site.

- SCS prepared five reports entitled, *Quarterly Groundwater Monitoring, First Quarter 2009, 1451 Carrizo Gorge Road, Jacumba, California,* dated August 26, 2009; *Quarterly Groundwater Monitoring, Second Quarter 2009, 1451 Carrizo Gorge Road, Jacumba, California,* dated October 22, 2009; *Quarterly Groundwater Monitoring, Third Quarter 2009, 1451 Carrizo Gorge Road, Jacumba, California,* dated January 15, 2010; *Quarterly Groundwater Monitoring, Fourth Quarter 2009, 1451 Carrizo Gorge Road, Jacumba, California,* dated April 19, 2010; and *Quarterly Groundwater Monitoring, First Quarter 2010, 1451 Carrizo Gorge Road, Jacumba, California,* dated September 23, 2010, which documented the findings of quarterly groundwater monitoring and sampling events conducted in February 2009, June 2009, August/September 2009, December 2009, and March 2010.

- SCS received a letter from the DEH, dated May 14, 2010, and an email correspondence, dated May 25, 2010, directing SCS to continue quarterly groundwater monitoring and sampling, evaluate for stability and remediation by natural attenuation (RNA) after three more quarterly sampling events, collect RNA parameters during the third and fourth quarter 2010 sampling events, and implement the soil vapor survey.

- On May 17 through 19, 2010, SCS performed groundwater monitoring and sampling at the Site. The results of the monitoring and sampling event were reported in the SCS report entitled, *Quarterly Groundwater Monitoring, Second Quarter 2010, 1451 Carrizo Gorge Road, Jacumba, California*, dated November 4, 2010. In that report, SCS recommended that, during future groundwater monitoring and sampling events, groundwater samples from wells MW-1, MW-2, MW-5, and MW-11 be analyzed for

remediation by natural attenuation (RNA) parameters. In a letter, dated November 19, 2010, the SAM Program concurred with this recommendation.

- On September 22 and 23, 2010, SCS performed groundwater monitoring and sampling at the Site. The results of the monitoring and sampling event was reported in the SCS report entitled, *Quarterly Groundwater Monitoring Third Quarter 2010, 1451 Carrizo Gorge Road, Jacumba, California*, dated January 27, 2011. In accordance with the above-referenced SAM Program letter, dated November 19, 2010, RNA parameters were analyzed for samples from wells MW-1, MW-2, MW-5, and MW-11 during the third quarter sampling.

The current Report describes the groundwater monitoring event conducted during December 2010 (4Q2010).

## 2 SITE DESCRIPTION SUMMARY

| | |
|---|---|
| Site Name: | Jacumba Texaco |
| Site Owner: | Jacumba Valley Ranch |
| Site Address: | 1451 Carrizo Gorge Road, Jacumba, California |
| DEH Case Number: | H02688-003 |
| Cleanup Fund Claim Number: | 17485 |
| Global ID: | T0607300008 |

## 3 OBJECTIVES

The objectives of the scope of services described in this Report were to:

- Assess the possible presence of PSH in groundwater at the Site.
- Assess the presence and extent of petroleum hydrocarbons and associated volatile organic compounds (VOCs) dissolved in groundwater at the Site.
- Assess RNA parameters in groundwater at the Site.
- Assess the groundwater elevation and the hydraulic gradient at the Site.

# 4 SCOPE OF SERVICES

## FIELD ACTIVITIES—GROUNDWATER SAMPLING AND ANALYSIS

### Groundwater Monitoring and Sampling

On December 13, 2010, all 11 Site groundwater monitoring wells were monitored for depth to groundwater and for the presence of PSH. On December 13 through 15, 2010, groundwater monitoring wells MW-1 through MW-9, MW-11, and MW-12 were purged and sampled in accordance with SAM Program guidelines.

Depth-to-groundwater measurements were taken using an interface probe with a manufacturer's reported accuracy of 0.01 foot, and the results are presented in Table 1. PSH was not observed in the groundwater monitoring wells prior to or during groundwater purging activities (Table 2).

Wells were purged and sampled in accordance with SAM Program guidelines. For fast-recovering wells (i.e., those that recover at least 80 percent within 2 hours), temperature, conductivity, and pH measurements (purging parameters) were measured after removal of the first borehole volume and each one-half borehole volume thereafter. Purging continued until at least one and one-half borehole volumes had been removed and purging parameters had stabilized to within 10 percent of the previous reading. Slow-recovering wells (i.e., those that recover less than 80 percent in two hours) were purged of one borehole volume. Purge water was placed in appropriate 55-gallon drums, labeled, and stored on Site pending disposal.

After purging was completed, the wells were allowed to recover. Fast-recovering wells (MW-1, MW-4, MW-5, MW-7, MW-8, MW-9, and MW-12) were sampled after at least 80 percent recovery. Slow-recovering wells (MW-2, MW-3, MW-6, and MW-11) were sampled after at least two hours from the time purging was completed. Groundwater samples were collected from each well with a single-use, disposable bailer and decanted into laboratory-supplied vials. The groundwater sample containers were labeled and placed in an ice-filled cooler pending delivery to the laboratory. Chain-of-custody procedures were implemented for sample tracking. Copies of groundwater monitoring/sampling data sheets are included in Appendix A.

### Groundwater Sample Analysis

Groundwater samples were analyzed by H&P Mobile Geochemistry, a state-accredited environmental testing laboratory in Carlsbad, California, for the following:

- Total petroleum hydrocarbons (TPH) as gasoline (TPHg) and TPH as diesel (TPHd) in general accordance with the California Department of Health Services Leaking Underground Fuel Tank (CA DHS LUFT) Method.

- Benzene, toluene, ethylbenzene, and xylenes (BTEX), and fuel oxygenates including methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), ethyl tertiary butyl ether (ETBE), and tertiary butyl alcohol (TBA) in general accordance with EPA Method 8260B.

Select groundwater samples were analyzed by Calscience Environmental Laboratories, Inc., a state accredited environmental testing laboratory in Garden Grove, California for RNA parameters listed in the SAM Manual.

### Disposal of Drummed Purged Groundwater and Rinsate Water

SCS is currently storing the purged groundwater and rinsate water in department of transportation (DOT)-rated, 55-gallon drums on Site pending disposal. Copies of the Non-Hazardous Waste Manifests documenting the disposal will be provided following disposal.

### Phase-Separated Hydrocarbon (PSH) Monitoring

Bi-weekly PSH monitoring was conducted on Site at wells MW-1 through MW-5 and concluded in March 2010. Well MW-2 had been monitored since January 28, 2009, and wells MW-1, MW-3, MW-4, and MW-5 had been monitored since the conclusion of the HVDPE event in August 2009. PSH has not been observed in any monitoring wells since August 19, 2009 (Table 2).

# 5 FINDINGS

## GEOLOGY

### Regional Geology

The Site is located in the Peninsular Ranges Geomorphic Province of Southern California. This province is typified by northwest-southeast trending mountain ranges approximately parallel to the San Andreas and related regional fault systems. The Peninsular Ranges are generally characterized by granitic rocks of the Peninsular Ranges batholith and associated metamorphic rocks. Sedimentary rocks ranging in age from Cretaceous to Pleistocene form the San Diego embayment and coastal terraces west of the batholith.

Materials encountered at the Site included fill soil, colluvium/slopewash, and alluvium. Following is a brief description of these units.

### Site Geology

#### Fill Soil

This unit generally consisted of light yellowish-brown and light olive-gray to dark gray, poorly graded sand with or without silt, and minor silty sand. This unit was interpreted to extend to depths ranging from approximately 10 to 20 feet bgs.

#### Slopewash/Colluvium

This unit underlies the fill soil and generally consisted of dense, poorly graded sand with or without silt, and minor silty sand. This unit was interpreted to extend to depths ranging from approximately 10 to 30 feet bgs.

### Alluvium

This unit underlies the fill and slopewash/colluvium and generally consisted of dense, silty to poorly graded sand with or without gravel. Colors noted in this unit included pale brown to dark brown, brownish-yellow to dark yellowish-brown, light gray to grayish-brown, strong brown, and pink. This unit was encountered to the maximum depth assessed, approximately 85 feet bgs.

The alluvial materials underlying the Site are comprised of alluvial fan deposits, possibly derived in part from the crystalline rock highlands to the north of the Site. Interbedded with sands and gravels were light pink deposits that appeared to include volcanic ash.

## HYDROGEOLOGY

The hydrologic areas and water use designations are presented in the Regional Water Quality Control Board (RWQCB) document *Water Quality Control Plan* (RWQCB, 1994). The Site is interpreted to lie within the Colorado River Basin Region 7, Anza-Borrego Planning Area, Anza-Borrego Hydrologic Unit 7122.00 (RWQCB, 1994). According to the RWQCB, the groundwater in this hydrologic unit has been classified as having existing beneficial uses for municipal and domestic supply, industrial service supply, and agricultural supply purposes (RWQCB, 1994).

The groundwater flow direction was interpreted to be generally toward the north-northeast. Based on Site geomorphology, the groundwater flow direction at the Site would be expected to trend generally toward the southwest as, under natural conditions, groundwater would follow the general topographic gradient. However, conductivity of bedrock immediately north of the Site may be greater than the overlying alluvial fan deposits, thus inducing groundwater flow northeastward. Another possible reason for the northeastward groundwater flow is that leach fields associated with the Site are located immediately south of the Site. The leach field could cause a groundwater high and create localized flow to the northeast.

### Groundwater Conditions

Table 1 presents a summary of the groundwater monitoring data for the Site. Groundwater was encountered at depths ranging from approximately 76.89 to 80.18 feet below top-of-well casings during the 4Q2010 sampling and monitoring event. The groundwater flow direction was interpreted to be generally toward the north to northeast, with a gradient ranging from approximately 0.01 to 0.05. The interpreted groundwater elevations, contours, and flow directions are depicted on Figure 3.

### Analytical Results

Groundwater analytical results for TPHg, TPHd, and VOCs from the quarterly sampling event are summarized in Table 3 and on Figure 4. TPH and VOCs were reported as follows.

#### TPH

TPHg were reported at concentrations of 2,500 micrograms per liter (µg/L) and 37,000 µg/L in the groundwater sample collected from wells MW-1 and MW-2, respectively. TPHd were reported at concentrations of 700 µg/L and 2,900 µg/L in the groundwater sample collected from

wells MW-1 and MW-2, respectively. No detectable concentrations[1] of TPHg and TPHd were reported in the remainder of the samples analyzed.

**BTEX**

Benzene was reported at concentrations ranging from 5.9 µg/L to 3,900 µg/L in groundwater samples from wells MW-1, MW-2, MW-4, and MW-5. No detectable concentrations of benzene were reported in the remainder of the samples analyzed. The interpreted extent of dissolved benzene in groundwater at the Site is depicted on Figure 5.

Toluene was reported at concentrations ranging from 0.6 µg/L to 12,000 µg/L in groundwater samples from wells MW-1, MW-2, MW-4, and MW-5. No detectable concentrations of toluene were reported in the remainder of the samples analyzed.

Ethylbenzene was reported at a concentration of 3.1 µg/L, 3.2 µg/L, and 3,000 µg/L in groundwater samples from wells MW-1, MW-5, and MW-2, respectively. No detectable concentrations of ethylbenzene were reported in the remainder of the samples analyzed.

Xylenes were reported at concentrations ranging from 15.5 µg/L to 18,600 µg/L in groundwater samples from wells MW-1, MW-2, MW-4, and MW-5. No detectable concentrations of xylenes were reported in the remainder of the samples analyzed.

**Oxygenates**

MTBE was reported at concentrations ranging from 21 µg/L to 700 µg/L in groundwater samples from wells MW-1, MW-2, MW-4, MW-5, and MW-8. No detectable concentrations of MTBE were reported in the remainder of the samples analyzed. The interpreted extent of dissolved MTBE in groundwater at the Site is depicted on Figure 6.

TAME was reported at concentrations of 12 µg/L, 13 µg/L, and 39 µg/L in the groundwater samples from wells MW-4, MW-5, and MW-1, respectively. No detectable concentrations of TAME were reported in the remainder of the samples analyzed.

DIPE was reported at a concentration of 2.8 µg/L and 4.3 µg/L in wells MW-2 and MW-5, respectively. No detectable concentrations of DIPE were reported in the remainder of the groundwater samples analyzed.

No detectable concentrations of TBA and ETBE were reported in the groundwater samples analyzed.

[1] For the purposes of this Report, "detectable concentrations" means concentrations above the laboratory reporting limits for the analytical method used.

## RNA Parameters

Groundwater samples collected from monitoring wells MW-1, MW-2, MW-5, and MW-11 were also analyzed for RNA parameters. Samples were collected from wells MW-1, MW-2, and MW-5 because these wells have historically had the highest petroleum hydrocarbon concentrations at the Site and are interpreted to be representative of conditions within the impacted area (source area). A sample was also collected from MW-11 to be representative of background conditions, since this well is generally crossgradient and has had minimal detections of petroleum hydrocarbons. The results of the RNA parameter analysis are presented in Table 4 and summarized in the table below.

| RNA Parameter | Concentration in Source Area | | | Concentration for MW-11 | Expected RNA Result in Source Area | Supports RNA |
|---|---|---|---|---|---|---|
| | MW-1 | MW-2 | MW-5 | | | |
| Carbon dioxide | 99 µg/L | 94 µg/L | 51 µg/L | 15 µg/L | Higher | Yes |
| Methane | 11.6 µg/L | 395 µg/L | 1.59 µg/L | <1.00 µg/L | Higher | Yes |
| Total manganese | 1.43 mg/L | 2.86 mg/L | 0.605 mg/L | 0.0299 mg/L | Higher | Yes |
| Total iron | 0.262 mg/L | 9.23 mg/L | 0.117 mg/L | 0.523 mg/L | NA | NA |
| Iron II | <0.10 mg/L | 3.5 mg/L | <0.10 mg/L | <0.10 mg/L | Higher | Yes (MW-2) |
| Ferric iron | 0.262 mg/L | 5.71 mg/L | 0.117 mg/L | 0.523 mg/L | NA | NA |
| Redox potential | -270 mV | -220 mV | -250 mV | -270 mV | Lower | No |
| Nitrate | 53 mg/L | <0.20 mg/L | 49 mg/L | 12 mg/L | Lower | Yes (MW-2) |
| Sulfate | 80 mg/L | <2.0 mg/L | 140 mg/L | 12 mg/L | Lower | Yes (MW-2) |
| pH | 6.51 | 6.81 | 6.91 | 7.00 | Lower | Yes |
| o-phosphate | 0.21 mg/L | 0.38 mg/L | 0.72 mg/L | 0.62 mg/L | Lower | Moderate |
| Total phosphate | 0.64 mg/L | 1.2 mg/L | 2.2 mg/L | 1.90 mg/L | Lower | Moderate |
| Ammonia | <0.10 mg/L | 0.62 mg/L | <0.10 mg/L | <0.10 mg/L | Lower | No |
| Dissolved oxygen | 2.75 mg/L | 5.46 mg/L | 2.33 mg/L | 5.69 mg/L | Lower | Yes |

µg/L: micrograms per liter; mg/L: milligrams per liter; mV: millivolts
NA = not applicable

Copies of the laboratory analytical reports are included in Appendix B.

## Hydrographs

Hydrographs depicting groundwater elevations and concentrations of dissolved-phase benzene and MTBE in groundwater versus time for wells MW-1 through MW-9, MW-11, and MW-12 are included in Appendix C and discussed in the table below. The hydrographs depict post-remediation trends beginning in September 2009 through the current sampling event. A trendline of the benzene and MTBE concentrations over time are depicted on each hydrograph with the calculated R-squared ($R^2$) values. The $R^2$ value indicates the *goodness-of-fit* of the trendline to the data set. In general, an $R^2$ value between 0.7 and 1.0 would be a *good* fit, between 0.4 and 0.7 a *moderate* fit, and below 0.4 would be a *poor* fit. For illustration purposes, samples with no detectable concentration of benzene and MTBE were plotted at one half of the laboratory reporting limit.

| Post Remediation Concentration Trends* | | | | | |
|---|---|---|---|---|---|
| Well | Benzene Trendline & $R^2$ Value** | MTBE Trendline & $R^2$ Value** | Correlation of Benzene/ MTBE with Groundwater Elevation | Concentration of Benzene/ MTBE Above MCL | Comment |
| MW-1 | Increasing $R^2$ =0.5 | Decreasing $R^2$ =0.0 | No | Yes | Benzene and MTBE increasing since March 2010. |
| MW-2 | Increasing $R^2$ =0.1 | Increasing $R^2$ =0.0 | No | Yes | PSH present from March 2004 through June 2009. |
| MW-3 | NA | NA | No | No | ND for benzene and MTBE. |
| MW-4 | Increasing $R^2$ =0.4 | Increasing $R^2$ =0.5 | No | Yes | Historical high for benzene and MTBE. |
| MW-5 | Decreasing $R^2$ =0.9 | Increasing $R^2$ =0.1 | No | Yes | Historical low for benzene. Historical high for MTBE. |
| MW-6 | NA | Decreasing $R^2$ =0.5 | No | No | ND for benzene and MTBE. |
| MW-7 | NA | NA | No | No | ND for benzene and MTBE. |
| MW-8 | NA | Increasing $R^2$ =0.9 | Benzene-No/ MTBE-Moderate | No/Yes | ND for benzene. Historical high for MTBE. |
| MW-9 | NA | NA | NA | No | ND for benzene and MTBE. |
| MW-11 | NA | NA | NA | No | ND for benzene and MTBE. |
| MW-12 | NA | NA | NA | No | ND for benzene and MTBE. |

**Notes:**
MCL = Maximum contaminant level, California Code of Regulations, Section 64444.5, dated April 14, 2010. MCL for Benzene = 1 ug/L. MCL for MTBE = 13 ug/L.
HVDPE = High-vacuum, dual-phase extraction
NA = Not applicable
ND = Not detected above the laboratory reporting limit
* Please note that comments in this table apply to benzene and MTBE concentrations reported since remediation activities, completed in August 2009.
** Value rounded to the nearest tenth

# 6 DISCUSSION

Analytical results from the December 2010 sampling event were compared to those obtained during previous monitoring events following HVDPE remediation conducted at the Site beginning in September 2009. Historical groundwater sampling results are included in Table 3. Hydrographs for wells MW-1 through MW-9, MW11, and MW-12 are included in Appendix C. The following is a summary of concentration trends and water levels since the last quarterly monitoring and sampling event. Please note that the discussion of recent trends in groundwater elevations and conditions may apply to more than just the interval between the third quarter 2010 monitoring event and this fourth quarter 2010 event.

- Water levels peaked in August 2007 and continually decreased until September 2009, with the exception of MW-8, which had a slight water level increase in February 2008 before a decreasing trend. Water levels in all wells are near the lowest elevation since assessment activities began in early 2003.

- PSH was not detected in any Site well during this event. Monitoring well MW-2 consistently had PSH from March 2004 through August 2009. Following the completion of the third HVDPE remediation event in August 2009, PSH have not been measured in this well.

- Concentrations of TPHg and TPHd from well MW-1 have increased from below the laboratory reporting limit of 500 µg/L to 2,500 µg/L and 700 µg/L, respectively, during the current sampling event. Concentrations of TPHg and TPHd from well MW-2 decreased to 37,000 µg/L and 2,900 µg/L, respectively, during the current sampling event.

- The hydrographs for wells sampled during this event show that reported benzene concentrations have increased in wells MW-1 and MW-4; decreased in wells MW-2 and MW-5; and remained stable at or below the detection limit in wells MW-3, MW-6 through MW-9, MW-11, and MW-12.

- The hydrographs for wells sampled during this event show that reported MTBE concentrations have increased in wells MW-1, MW-4, MW-5, and MW-8; decreased in well MW-2; and remain stable at or below the detection limit in wells MW-3, MW-6, MW-7, MW-9, MW-11, and MW-12.

- Analytical results for RNA parameters generally indicate RNA is occurring based on the following:

    - Dissolved oxygen is lower in the source area, and carbon dioxide is higher in the source area.
    - Manganese is higher in the source area.
    - Methane is higher in the source area.
    - Total phosphate and o-phosphate are lower in the source area.
    - pH is lower in the source area.
    - Based on results from MW-2, nitrate and sulfate are lower in the source area.
    - Based on results from MW-2, total iron, iron II, and ferrous iron are higher in the source area.

The interpreted extent of dissolved benzene and MTBE in groundwater, based on the quarterly sampling conducted during December 2010, is depicted on Figures 5 and 6, respectively. In general, post-remediation trends show increasing benzene concentrations for well MW-1, increasing benzene and MTBE concentrations for MW-2 and MW-4, and increasing MTBE concentrations for MW-8. The remaining Site wells show decreasing or stable trends of benzene and MTBE post remediation.

# 7 CONCLUSIONS

Based on the data collected during this investigation, including but not limited to laboratory results, field observations and data evaluation by a professional geologist, and current regulatory guidelines, the following conclusions are made:

- Phase-separated hydrocarbons (PSH) were not observed in any Site wells during the current sampling event. Historical data indicates that PSH have significantly decreased and are currently not present since the high-vacuum, dual-phase extraction (HVDPE) remediation events conducted in March/April 2006, March 2009, May 2009, and July/August 2009.

- On December 13, 2010, depth to groundwater was observed to be between 76.89 (MW-3) to 80.18 (MW-11) feet below top of well casings. The groundwater flow direction was interpreted to be generally toward the north-northeast, with a gradient ranging from approximately 0.01 to 0.05. Observed groundwater levels indicate that water levels peaked in August 2007 and have continually decreased until September 2009, with the exception of MW-8, which had a slight water-level increase in February 2008 before the start of a decreasing trend. Water levels in all wells are near the lowest elevation since assessment activities began in early 2003.

- With the exception of wells MW-1 and MW-2, total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd) were not reported in any of the groundwater samples analyzed during the current event. Concentrations of TPHg and TPHd have increased in MW-1 and decreased in MW-2 since the previous sampling event.

- The horizontal extent of dissolved petroleum hydrocarbons, BTEX, MTBE, and fuel oxygenates in groundwater has been delineated to the south by well MW-7, to the west by wells MW-11 and MW-12, to the north by well MW-9, and to the east by wells MW-3 and MW-6.

- In general, post-remediation trends show increasing benzene concentrations for well MW-1, increasing benzene and MTBE concentrations for MW-2 and MW-4, and increasing MTBE concentrations for MW-8.

- Based on the results from the September 2010 and December 2010 sampling events, natural attenuation is occurring at the Site.

# 8 RECOMMENDATIONS

Based on SCS's assessment of the Site, SCS recommends the following:

- Reduce monitoring and sampling at the Site to semi-annual.
- Continue to sample for RNA parameters to verify long term trends in RNA parameters and add MW-4 and MW-8 to assess RNA in the downgradient wells.
- Conduct soil vapor sampling, in accordance with the approved workplan, during the first quarter 2011 and evaluate potential health risk. This assessment is currently scheduled for early March 2011.
- Based on the results of the soil vapor survey and health risk assessment, and additional RNA data from MW-4 and MW-8, SCS may recommend additional HVDPE remediation at the Site due to increasing concentration trends of benzene in wells MW-1, MW-2, and MW-4, and increasing concentration trends of MTBE in wells MW-2, MW-4, and MW-8.

# 9 REPORT USAGE AND FUTURE SITE CONDITIONS

This Report is intended for the sole usage of the Client and the parties designated by SCS. Use of this Report is subject to the provisions of the fully executed Contract between the Client and SCS. Any third party usage of this Report shall be subject to the provisions of the Contract and any unauthorized misuse of or reliance upon the Report shall be without risk or liability to SCS.

The conclusions of this Report are judged to be relevant at the time the work described in this Report was conducted. Future conditions may differ and this Report should not be relied upon to represent future Site conditions unless a qualified consultant familiar with the practice of Phase II environmental assessments in San Diego County is consulted to assess the necessity of updating this Report.

Although this Assessment has attempted to assess the likelihood that the Site has been impacted by a hazardous material/waste release, potential sources of impact may have escaped detection for reasons that include, but are not limited to: 1) inadequate or inaccurate information rightfully provided to SCS by third parties, such as public agencies and other outside sources; 2) the limited scope of this Assessment; and 3) the presence of undetected, unknown, or unreported environmental releases.

# 10 LIKELIHOOD STATEMENTS

Statements of “likelihood” have been made in this report. Likelihood statements are based on professional judgments of SCS. The term “likelihood,” as used herein, pertains to the probability of a match between the prediction for an event and its actual occurrence. The likelihood statement assigns a measure for a “degree of belief” for the match between the prediction for the event and the actual occurrence of the event.

The likelihood statements in this Report are made qualitatively (expressed in words). The qualitative terms can be approximately related to quantitative percentages. The term “low likelihood” is used by SCS to approximate a range of 10 to 20 percent; the term “moderate likelihood” refers to an approximate range of 40 to 60 percent; and the term “high likelihood” refers to an approximate range of 80 to 90 percent.

# TABLES

**Table 1**
**(Page 1 of 6)**
**Groundwater Elevation Data**
**1451 Carrizo Gorge Road**
**Jacumba, California**

| Groundwater Monitoring Well | Wellhead Elevation (feet above msl) and Depth of Screen (feet below grade) | Date Measured | Depth to Groundwater (feet below TOC) | Groundwater Elevation (feet above msl) |
|---|---|---|---|---|
| MW-1 | 2,836.63 (65-85) | Feb-03 | 73.94 | 2,762.69 |
| | | Mar-04 | 74.21 | 2,762.42 |
| | | Jun-05 | 74.18 | 2,762.45 |
| | | Sep-05 | 75.00 | 2,761.63 |
| | | Dec-05 | 74.74 | 2,761.89 |
| | | Feb-06 | 74.85 | 2,761.78 |
| | | May-06 | 74.70 | 2,761.93 |
| | | Aug-06 | 74.38 | 2,762.25 |
| | | Nov-06 | 73.75 | 2,762.88 |
| | | Feb-07 | 72.93 | 2,763.70 |
| | | May-07 | 72.18 | 2,764.45 |
| | | Aug-07 | 72.18 | 2,764.45 |
| | | Nov-07 | 72.54 | 2,764.09 |
| | | Feb-08 | 72.84 | 2,763.79 |
| | | May-08 | 73.08 | 2,763.55 |
| | | Aug-08 | 73.66 | 2,762.97 |
| | | Nov-08 | 74.49 | 2,762.14 |
| | | Feb-09 | 75.37 | 2,761.26 |
| | | Jun-09 | 76.74 | 2,759.89 |
| | | Aug-09 | 78.41 | 2,758.22 |
| | | Dec-09 | 78.23 | 2,758.40 |
| | | Mar-10 | 77.91 | 2,758.72 |
| | | May-10 | 77.33 | 2,759.30 |
| | | Sep-10 | 77.27 | 2,759.36 |
| | | Dec-10 | 78.32 | 2,758.31 |
| MW-2 | 2,836.98 (65-85) | Feb-03 | 74.07 | 2,762.91 |
| | | Mar-04 | PSH | |
| | | Jun-05 | PSH | |
| | | Sep-05 | PSH | |
| | | Dec-05 | PSH | |
| | | Feb-06 | PSH | |
| | | May-06 | PSH | |
| | | Aug-06 | PSH | |
| | | Nov-06 | PSH | |
| | | Feb-07 | PSH | |
| | | May-07 | PSH | |
| | | Aug-07 | PSH | |
| | | Nov-07 | PSH | |
| | | Feb-08 | PSH | |
| | | May-08 | PSH | |
| | | Aug-08 | PSH | |
| | | Nov-08 | PSH | |
| | | Feb-09 | PSH | |
| | | Jun-09 | PSH | |
| | | Aug-09 | 78.08 | 2,758.90 |
| | | Dec-09 | 77.99 | 2,758.99 |
| | | Mar-10 | 77.65 | 2,759.33 |
| | | May-10 | 77.27 | 2,759.71 |
| | | Sep-10 | 77.15 | 2,759.83 |
| | | Dec-10 | 77.87 | 2,759.11 |

**Table 1**
**(Page 2 of 6)**
**Groundwater Elevation Data**
**1451 Carrizo Gorge Road**
**Jacumba, California**

| Groundwater Monitoring Well | Wellhead Elevation (feet above msl) and Depth of Screen (feet below grade) | Date Measured | Depth to Groundwater (feet below TOC) | Groundwater Elevation (feet above msl) |
|---|---|---|---|---|
| MW-3 | 2,836.36 (65-85) | Feb-03 | 73.29 | 2,763.07 |
| | | Mar-04 | 73.76 | 2,762.60 |
| | | Jun-05 | 73.75 | 2,762.61 |
| | | Sep-05 | 74.20 | 2,762.16 |
| | | Dec-05 | 74.40 | 2,761.96 |
| | | Feb-06 | 74.50 | 2,761.86 |
| | | May-06 | 74.40 | 2,761.96 |
| | | Aug-06 | 74.20 | 2,762.16 |
| | | Nov-06 | 73.62 | 2,762.74 |
| | | Feb-07 | 72.77 | 2,763.59 |
| | | May-07 | 72.04 | 2,764.32 |
| | | Aug-07 | 71.97 | 2,764.39 |
| | | Nov-07 | 72.29 | 2,764.07 |
| | | Feb-08 | 72.61 | 2,763.75 |
| | | May-08 | 72.76 | 2,763.60 |
| | | Aug-08 | 73.35 | 2,763.01 |
| | | Nov-08 | 74.10 | 2,762.26 |
| | | Feb-09 | 74.93 | 2,761.43 |
| | | Jun-09 | 75.92 | 2,760.44 |
| | | Aug-09 | 76.95 | 2,759.41 |
| | | Dec-09 | 76.86 | 2,759.50 |
| | | Mar-10 | 76.72 | 2,759.64 |
| | | May-10 | 76.40 | 2,759.96 |
| | | Sep-10 | 76.18 | 2,760.18 |
| | | Dec-10 | 76.89 | 2,759.47 |
| MW-4 | 2,836.64 (65-85) | Feb-03 | 74.99 | 2,761.65 |
| | | Mar-04 | 75.45 | 2,761.19 |
| | | Jun-05 | 75.15 | 2,761.49 |
| | | Sep-05 | 76.65 | 2,759.99 |
| | | Dec-05 | 75.81 | 2,760.83 |
| | | Feb-06 | 75.91 | 2,760.73 |
| | | May-06 | 75.53 | 2,761.11 |
| | | Aug-06 | 75.30 | 2,761.34 |
| | | Nov-06 | 74.71 | 2,761.93 |
| | | Feb-07 | 73.87 | 2,762.77 |
| | | May-07 | 73.19 | 2,763.45 |
| | | Aug-07 | 73.15 | 2,763.49 |
| | | Nov-07 | 73.50 | 2,763.14 |
| | | Feb-08 | 73.78 | 2,762.86 |
| | | May-08 | 73.87 | 2,762.77 |
| | | Aug-08 | 74.41 | 2,762.23 |
| | | Nov-08 | 75.39 | 2,761.25 |
| | | Feb-09 | PSH | |
| | | Jun-09 | 77.43 | 2,759.21 |
| | | Aug-09 | 78.82 | 2,757.82 |
| | | Dec-09 | 78.61 | 2,758.03 |
| | | Mar-10 | 78.35 | 2,758.29 |
| | | May-10 | 77.95 | 2,758.69 |
| | | Sep-10 | 77.93 | 2,758.71 |
| | | Dec-10 | 78.76 | 2,757.88 |

**Table 1**
**(Page 3 of 6)**
**Groundwater Elevation Data**
**1451 Carrizo Gorge Road**
**Jacumba, California**

| Groundwater Monitoring Well | Wellhead Elevation (feet above msl) and Depth of Screen (feet below grade) | Date Measured | Depth to Groundwater (feet below TOC) | Groundwater Elevation (feet above msl) |
|---|---|---|---|---|
| MW-5 | 2,837.28 (65-85) | Feb-03 | 75.51 | 2,761.77 |
| | | Mar-04 | 75.54 | 2,761.74 |
| | | Jun-05 | 75.62 | 2,761.66 |
| | | Sep-05 | 76.00 | 2,761.28 |
| | | Dec-05 | 76.06 | 2,761.22 |
| | | Feb-06 | 76.15 | 2,761.13 |
| | | May-06 | 75.85 | 2,761.43 |
| | | Aug-06 | 75.40 | 2,761.88 |
| | | Nov-06 | 74.80 | 2,762.48 |
| | | Feb-07 | 73.82 | 2,763.46 |
| | | May-07 | 73.21 | 2,764.07 |
| | | Aug-07 | 73.12 | 2,764.16 |
| | | Nov-07 | 73.60 | 2,763.68 |
| | | Feb-08 | 73.90 | 2,763.38 |
| | | May-08 | 74.14 | 2,763.14 |
| | | Aug-08 | 74.85 | 2,762.43 |
| | | Nov-08 | 75.79 | 2,761.49 |
| | | Feb-09 | 76.69 | 2,760.59 |
| | | Jun-09 | 77.78 | 2,759.50 |
| | | Aug-09 | 79.04 | 2,758.24 |
| | | Dec-09 | 78.90 | 2,758.38 |
| | | Mar-10 | 78.64 | 2,758.64 |
| | | May-10 | 78.20 | 2,759.08 |
| | | Sep-10 | 78.20 | 2,759.08 |
| | | Dec-10 | 79.03 | 2,758.25 |
| MW-6 | 2,835.67 (65-85) | Feb-03 | 73.29 | 2,762.31 |
| | | Mar-04 | 73.61 | 2,761.99 |
| | | Jun-05 | 73.75 | 2,761.85 |
| | | Sep-05 | 74.03 | 2,761.57 |
| | | Dec-05 | 74.34 | 2,761.26 |
| | | Feb-06 | 74.52 | 2,761.08 |
| | | May-06 | 74.35 | 2,761.25 |
| | | Aug-06 | 74.25 | 2,761.35 |
| | | Nov-06 | 73.77 | 2,761.83 |
| | | Feb-07 | 72.93 | 2,762.67 |
| | | May-07 | NM | NC |
| | | Aug-07 | 72.30 | 2,763.30 |
| | | Nov-07 | 72.66 | 2,762.94 |
| | | Feb-08 | 73.00 | 2,762.60 |
| | | May-08 | 73.05 | 2,762.55 |
| | | Aug-08 | 73.68 | 2,761.92 |
| | | Nov-08 | 74.76 | 2,760.84 |
| | | Feb-09 | 75.12 | 2,760.55 |
| | | Jun-09 | 75.78 | 2,759.89 |
| | | Aug-09 | 76.74 | 2,758.93 |
| | | Dec-09 | 76.93 | 2,758.74 |
| | | Mar-10 | 76.69 | 2,758.98 |
| | | May-10 | 76.47 | 2,759.20 |
| | | Sep-10 | 76.36 | 2,759.31 |
| | | Dec-10 | 77.07 | 2,758.60 |

**Table 1**
**(Page 4 of 6)**
**Groundwater Elevation Data**
**1451 Carrizo Gorge Road**
**Jacumba, California**

| Groundwater Monitoring Well | Wellhead Elevation (feet above msl) and Depth of Screen (feet below grade) | Date Measured | Depth to Groundwater (feet below TOC) | Groundwater Elevation (feet above msl) |
|---|---|---|---|---|
| MW-7 | 2,837.67 (65-85) | Feb-03 | 73.93 | 2,763.74 |
| | | Mar-04 | 74.34 | 2,763.33 |
| | | Jun-05 | 74.74 | 2,762.93 |
| | | Sep-05 | 75.00 | 2,762.67 |
| | | Dec-05 | 75.18 | 2,762.49 |
| | | Feb-06 | 75.45 | 2,762.22 |
| | | May-06 | 75.25 | 2,762.42 |
| | | Aug-06 | 74.90 | 2,762.77 |
| | | Nov-06 | 74.23 | 2,763.44 |
| | | Feb-07 | 73.30 | 2,764.37 |
| | | May-07 | NM | NC |
| | | Aug-07 | 72.53 | 2,765.14 |
| | | Nov-07 | 72.95 | 2,764.72 |
| | | Feb-08 | 73.24 | 2,764.43 |
| | | May-08 | 73.42 | 2,764.25 |
| | | Aug-08 | 74.15 | 2,763.52 |
| | | Nov-08 | 74.99 | 2,762.68 |
| | | Feb-09 | 75.69 | 2,761.98 |
| | | Jun-09 | 76.63 | 2,761.04 |
| | | Aug-08 | 77.50 | 2,760.17 |
| | | Dec-09 | 77.47 | 2,760.20 |
| | | Mar-10 | 77.22 | 2,760.45 |
| | | May-10 | 76.70 | 2,760.97 |
| | | Sep-10 | 76.56 | 2,761.11 |
| | | Dec-10 | 77.24 | 2,760.43 |
| MW-8 | 2,835.42 (65-85) | Feb-03 | 74.72 | 2,760.70 |
| | | Mar-04 | 74.82 | 2,760.60 |
| | | Jun-05 | 74.75 | 2,760.67 |
| | | Sep-05 | 75.05 | 2,760.37 |
| | | Dec-05 | 75.11 | 2,760.31 |
| | | Feb-06 | 75.22 | 2,760.20 |
| | | May-06 | 74.90 | 2,760.52 |
| | | Aug-06 | 74.40 | 2,761.02 |
| | | Nov-06 | 73.84 | 2,761.58 |
| | | Feb-07 | 73.03 | 2,762.39 |
| | | May-07 | NM | NC |
| | | Aug-07 | 72.35 | 2,763.07 |
| | | Nov-07 | 72.76 | 2,762.66 |
| | | Feb-08 | 72.09 | 2,763.33 |
| | | May-08 | 73.23 | 2,762.19 |
| | | Aug-08 | 74.00 | 2,761.42 |
| | | Nov-08 | 74.84 | 2,760.58 |
| | | Feb-09 | 75.69 | 2,759.73 |
| | | Jun-09 | 76.66 | 2,758.76 |
| | | Aug-09 | 78.06 | 2,757.36 |
| | | Dec-09 | 77.83 | 2,757.59 |
| | | Mar-10 | 77.62 | 2,757.80 |
| | | May-10 | 77.25 | 2,758.17 |
| | | Sep-10 | 77.24 | 2,758.18 |
| | | Dec-10 | 78.03 | 2,757.39 |

**Table 1**
**(Page 5 of 6)**
**Groundwater Elevation Data**
**1451 Carrizo Gorge Road**
**Jacumba, California**

| Groundwater Monitoring Well | Wellhead Elevation (feet above msl) and Depth of Screen (feet below grade) | Date Measured | Depth to Groundwater (feet below TOC) | Groundwater Elevation (feet above msl) |
|---|---|---|---|---|
| MW-9 | 2,835.10 (65-85) | Mar-04 | 74.82 | 2,760.28 |
| | | Jun-05 | 74.75 | 2,760.35 |
| | | Sep-05 | 75.05 | 2,760.05 |
| | | Dec-05 | 75.03 | 2,760.07 |
| | | Feb-06 | 75.17 | 2,759.93 |
| | | May-06 | 74.90 | 2,760.20 |
| | | Aug-06 | 74.40 | 2,760.70 |
| | | Nov-06 | 73.85 | 2,761.25 |
| | | Feb-07 | 73.04 | 2,762.06 |
| | | May-07 | NM | NC |
| | | Aug-07 | 72.35 | 2,762.75 |
| | | Nov-07 | 72.71 | 2,762.39 |
| | | Feb-08 | 73.12 | 2,761.98 |
| | | May-08 | 73.18 | 2,761.92 |
| | | Aug-08 | 73.89 | 2,761.21 |
| | | Nov-08 | 74.72 | 2,760.38 |
| | | Feb-09 | 75.57 | 2,759.53 |
| | | Jun-09 | 76.54 | 2,758.56 |
| | | Aug-09 | 77.95 | 2,757.15 |
| | | Dec-09 | 77.69 | 2,757.41 |
| | | Mar-10 | 77.53 | 2,757.57 |
| | | May-10 | 77.20 | 2,757.90 |
| | | Sep-10 | 77.17 | 2,757.93 |
| | | Dec-10 | 77.85 | 2,757.25 |
| MW-11 | 2,837.67 (65-85) | Mar-04 | 75.72 | 2,761.95 |
| | | Jun-05 | 75.95 | 2,761.72 |
| | | Sep-05 | 76.25 | 2,761.42 |
| | | Dec-05 | 76.19 | 2,761.48 |
| | | Feb-06 | 76.30 | 2,761.37 |
| | | May-06 | 75.67 | 2,762.00 |
| | | Aug-06 | 74.90 | 2,762.77 |
| | | Nov-06 | 74.15 | 2,763.52 |
| | | Feb-07 | 73.35 | 2,764.32 |
| | | May-07 | NM | NC |
| | | Aug-07 | 73.12 | 2,764.55 |
| | | Nov-07 | 73.75 | 2,763.92 |
| | | Feb-08 | 74.28 | 2,763.39 |
| | | May-08 | 74.38 | 2,763.29 |
| | | Aug-08 | 75.53 | 2,762.14 |
| | | Nov-08 | 76.63 | 2,761.04 |
| | | Feb-09 | 77.53 | 2,760.14 |
| | | Jun-09 | 78.32 | 2,759.35 |
| | | Aug-09 | 79.35 | 2,758.32 |
| | | Dec-09 | 79.92 | 2,757.75 |
| | | Mar-10 | 79.40 | 2,758.27 |
| | | May-10 | 78.94 | 2,758.73 |
| | | Sep-10 | 79.24 | 2,758.43 |
| | | Dec-10 | 80.18 | 2,757.49 |

**Table 1**
**(Page 6 of 6)**
**Groundwater Elevation Data**
**1451 Carrizo Gorge Road**
**Jacumba, California**

| Groundwater Monitoring Well | Wellhead Elevation (feet above msl) and Depth of Screen (feet below grade) | Date Measured | Depth to Groundwater (feet below TOC) | Groundwater Elevation (feet above msl) |
|---|---|---|---|---|
| MW-12 | 2,838.05 (65-85) | Mar-04 | 75.81 | 2,762.24 |
| | | Jun-05 | 76.00 | 2,762.05 |
| | | Sep-05 | 76.38 | 2,761.67 |
| | | Dec-05 | 76.35 | 2,761.70 |
| | | Feb-06 | 76.39 | 2,761.66 |
| | | May-06 | 75.80 | 2,762.25 |
| | | Aug-06 | 75.00 | 2,763.05 |
| | | Nov-06 | 74.27 | 2,763.78 |
| | | Feb-07 | 73.31 | 2,764.74 |
| | | May-07 | NM | NC |
| | | Aug-07 | 73.14 | 2,764.91 |
| | | Nov-07 | 73.77 | 2,764.28 |
| | | Feb-08 | 74.30 | 2,763.75 |
| | | May-08 | 74.41 | 2,763.64 |
| | | Aug-08 | 75.57 | 2,762.48 |
| | | Nov-08 | 76.68 | 2,761.37 |
| | | Feb-09 | 77.50 | 2,760.55 |
| | | Jun-09 | 78.32 | 2,759.73 |
| | | Aug-09 | 79.45 | 2,758.60 |
| | | Dec-09 | 79.84 | 2,758.21 |
| | | Mar-10 | 79.40 | 2,758.65 |
| | | May-10 | 78.82 | 2,759.23 |
| | | Sep-10 | 79.13 | 2,758.92 |
| | | Dec-10 | 80.03 | 2,758.02 |

**Notes:**
Depth to Water = Depth to groundwater as measured in the well in feet below grade.
TOC Elevation = Elevation of the top of casing (TOC) in feet above mean sea level (msl).
GW Elevation = Elevation of groundwater as measured in well in feet above msl.
PSH = Phase-separated hydrocarbons
NM = Not Measured.
NC = Not Calculated.

**Table 2**
**Phase-Separated Hydrocarbon (PSH) Monitoring Data**
**1451 Carrizo Gorge Road, Jacumba, CA**

| Date | MW-1 | | | MW-2 | | | MW-3 | | | MW-4 | | | MW-5 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DTP | DTW | PT | DTP | DTW | PT | DTP | DTW | PT | DTP | DTW | PT | DTP | DTW | PT |
| 1/28/2009 | -- | -- | -- | 75.02 | 78.96 | 3.94 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/9/2009 | -- | -- | -- | 75.02 | 77.57 | 2.55 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/20/2009 | -- | -- | -- | 75.24 | 77.54 | 2.30 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/26/2009* | NP | 75.37 | NP | 75.39 | 76.73 | 1.34 | NP | 74.93 | NP | 76.50 | 76.64 | 0.14 | NP | 76.69 | NP |
| 4/17/2009 | -- | -- | -- | 76.90 | 77.09 | 0.19 | -- | -- | -- | NP | 77.24 | NP | -- | -- | -- |
| 5/1/2009 | -- | -- | -- | 76.52 | 76.91 | 0.39 | -- | -- | -- | NP | 76.99 | NP | -- | -- | -- |
| 6/22/2009* | NP | 76.74 | NP | 76.85 | 76.88 | 0.03 | NP | 75.92 | NP | NP | 77.43 | NP | NP | 77.78 | NP |
| 8/17/2009 | NP | 80.01 | NP | 79.39 | 79.41 | 0.02 | NP | 77.89 | NP | NP | 80.34 | NP | NP | 80.35 | NP |
| 8/19/2009 | NP | 79.38 | NP | NP | 79.05 | NP | NP | 77.56 | NP | NP | 79.72 | NP | NP | 79.83 | NP |
| 8/24/2009 | NP | 78.86 | NP | NP | 78.51 | NP | NP | 77.25 | NP | NP | 79.24 | NP | NP | 79.41 | NP |
| 8/31/2009* | NP | 78.41 | NP | NP | 78.08 | NP | NP | 76.95 | NP | NP | 78.82 | NP | NP | 79.04 | NP |
| 9/18/2009 | NP | 78.02 | NP | NP | 77.70 | NP | NP | 76.73 | NP | NP | 78.44 | NP | NP | 78.73 | NP |
| 10/2/2009 | NP | 78.05 | NP | NP | 77.70 | NP | NP | 76.74 | NP | NP | 78.45 | NP | NP | 78.74 | NP |
| 10/15/2009 | NP | 78.11 | NP | NP | 77.73 | NP | NP | 76.89 | NP | NP | 78.49 | NP | NP | 78.78 | NP |
| 10/30/2009 | NP | 78.20 | NP | NP | 77.78 | NP | NP | 76.86 | NP | NP | 78.61 | NP | NP | 78.89 | NP |
| 11/16/2009 | NP | 78.27 | NP | NP | 77.92 | NP | NP | 76.93 | NP | NP | 78.65 | NP | NP | 78.93 | NP |
| 11/30/2009 | NP | 78.14 | NP | NP | 77.85 | NP | NP | 76.80 | NP | NP | 78.55 | NP | NP | 78.86 | NP |
| 12/11/2009 | NP | 78.13 | NP | NP | 77.95 | NP | NP | 76.87 | NP | NP | 78.59 | NP | NP | 78.90 | NP |
| 12/29/2009* | NP | 78.23 | NP | NP | 77.99 | NP | NP | 76.86 | NP | NP | 78.61 | NP | NP | 78.90 | NP |
| 1/22/2010 | NP | 77.55 | NP | NP | 77.41 | NP | NP | 76.37 | NP | NP | 78.08 | NP | NP | 78.40 | NP |
| 2/9/2010 | NP | 78.01 | NP | NP | 77.81 | NP | NP | 76.80 | NP | NP | 78.46 | NP | NP | 78.74 | NP |
| 2/23/2010 | NP | 78.20 | NP | NP | 77.85 | NP | NP | 76.89 | NP | NP | 78.60 | NP | NP | 78.85 | NP |
| 3/8/2010* | NP | 77.91 | NP | NP | 77.65 | NP | NP | 76.72 | NP | NP | 78.35 | NP | NP | 78.64 | NP |

Notes: DTP = Depth to phase-separated hydrocarbons (PSH) below top
DTW = Depth to water below top of casing in feet
PT = PSH thickness in feet
NP = No PSH
-- indicates well not gauged
* indicates quarterly groundwater monitoring events

**Table 3**
**(Page 1 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 (installed 12/20/00) | Feb-03 | 1,400 | | 2,000 | 2,200 | 150 | 3,180 | 48 | | | | |
| | Mar-04 | 760 | | 270 | 52 | < 0.5 | 111 | 2 | | | | |
| | Jun-05 | 1,300 | | 680 | 190 | 15 | 100 | < 10.0 | | | | |
| | Sep-05 | 1,800 | | 860 | 310 | 24 | 217 | < 10.0 | | | | |
| | Dec-05 | 1,100 | | 280 | 74 | < 5.0 | 65 | < 10.0 | | | | |
| | Feb-06 | 1,900 | | 540 | 200 | 16 | 104 | <4.0 | | | | |
| | May-06 | 1,500 | | 330 | 25 | < 5.0 | 134 | 76 | | | | |
| | Aug-06 | 1,100 | | 160 | 130 | 7.5 | 170 | < 10.0 | | | | |
| | Nov-06 | <500 | | 140 | 98 | 6.6 | 130 | 25 | | | | |
| | Feb-07 | 1,600 | | 130 | 130 | 9.9 | 162 | 19 | | | | |
| | May-07 | <500 | | 130 | 110 | 12 | 111 | 12 | | | | |
| | Aug-07 | 1,800 | | 100 | 70 | 8 | 80 | 14 | | | | |
| | Nov-07 | <500 | | 71 | 46 | 6.5 | 58 | 9.1 | | | | |
| | Feb-08 | 1,400 | | 145 | 142 | 20.8 | 148.3 | < 5.0 | | | | |
| | May-08 | 550 | | 210 | 100 | <2.5 | 274 | 51 | | | | |
| | Aug-08 | 1,700 | | 180 | 120 | 22 | 160 | < 1.0 | | | | |
| | Nov-08 | 2,000 | | 220 | 140 | 15 | 220 | < 5.0 | | | | |
| | Feb-09 | 1,300 | <500 | 230 | 230 | 60 | 460 | 61 | <1 | 4.0 | 17 | < 1 |
| | Jun-09 | 2,900 | <500 | 2,000 | 180 | 5.5 | 1,840 | 660 | < 10 | 36 | 200 | < 10 |
| | Sep-09 | <500 | <500 | 6.8 | 1.2 | < 0.5 | 46.8 | 950 | < 1.0 | 47 | 36 | < 1.0 |
| | Dec-09 | <500 | <500 | 0.9 | 1.3 | < 0.5 | 3.5 | 11,000 | < 1.0 | 3.9 | < 5.0 | < 1.0 |
| | Mar-10 | <500 | <500 | 0.6 | 0.8 | < 0.5 | 2.1 | 26 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | May-10 | <500 | <500 | 5.9 | 6.2 | < 0.5 | 43 | 150 | < 1.0 | 7.1 | < 5.0 | < 1.0 |
| | Sep-10 | <500 | <500 | 49 | 53 | 8.2 | 439 | 330 | < 1.0 | 18 | < 5.0 | < 1.0 |
| | Dec-10 | 2,500 | 700 | 160 | 13 | 3.1 | 720 | 700 | < 1.0 | 39 | < 5.0 | < 1.0 |

**Table 3**
**(Page 2 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 (installed 12/20/00) | Feb-03 | **8,200** | | **2,600** | **1,400** | **61** | **1,520** | **13** | | | | |
| | Mar-04 | Free Product, No Analysis | | | | | | | | | | |
| | Jun-05 | Free Product, No Analysis | | | | | | | | | | |
| | Sep-05 | Free Product, No Analysis | | | | | | | | | | |
| | Dec-05 | Free Product, No Analysis | | | | | | | | | | |
| | Feb-06 | Free Product, No Analysis | | | | | | | | | | |
| | May-06 | Free Product, No Analysis | | | | | | | | | | |
| | Aug-06 | Free Product, No Analysis | | | | | | | | | | |
| | Nov-06 | Free Product, No Analysis | | | | | | | | | | |
| | Feb-07 | Free Product, No Analysis | | | | | | | | | | |
| | May-07 | Free Product, No Analysis | | | | | | | | | | |
| | Aug-07 | Free Product, No Analysis | | | | | | | | | | |
| | Nov-07 | Free Product, No Analysis | | | | | | | | | | |
| | Feb-08 | Free Product, No Analysis | | | | | | | | | | |
| | May-08 | Free Product, No Analysis | | | | | | | | | | |
| | Aug-08 | Free Product, No Analysis | | | | | | | | | | |
| | Nov-08 | Free Product, No Analysis | | | | | | | | | | |
| | Feb-09 | Free Product, No Analysis | | | | | | | | | | |
| | Jun-09 | Free Product, No Analysis | | | | | | | | | | |
| | Sep-09 | **10,000** | < 500 | **4,000** | **10,000** | **2,300** | **6,500** | **800** | < 20 | < 20 | < 100 | < 20 |
| | Dec-09 | **94,000** | **21,000** | **58** | **110** | **18** | **119** | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Mar-10 | **98,000** | **32,000** | **4,900** | **11,000** | **1,900** | **12,200** | **180** | < 10 | < 10 | < 50 | < 10 |
| | May-10 | **57,000** | **11,000** | **6,100** | **14,000** | **2,300** | **16,200** | **230** | < 100 | < 100 | < 500 | < 100 |
| | Sep-10 | **69,000** | **7,600** | **4,300** | **12,000** | **2,400** | **17,500** | **120** | < 1.0 | < 1.0 | < 500 | **2.4** |
| | Dec-10 | **37,000** | **2,900** | **3,900** | **12,000** | **3,000** | **18,600** | **97** | < 1.0 | < 1.0 | < 5.0 | **2.8** |

**Table 3**
**(Page 3 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 (installed 12/20/00) | Feb-03 | <500 | | **5.5** | <0.5 | <0.5 | <1 | <1 | | | | |
| | Mar-04 | <500 | | **20** | <0.5 | <0.5 | 7.6 | **180** | | | | |
| | Jun-05 | <500 | | **9.0** | <0.5 | <0.5 | 1.6 | **3.5** | | | | |
| | Sep-05 | <500 | | **1.7** | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Dec-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Feb-06 | <500 | | **1.0** | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | May-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Aug-06 | <500 | | **0.7** | <0.5 | <0.5 | <1.2 | <1 | | | | |
| | Nov-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Feb-07 | <500 | | <0.5 | **0.5** | <0.5 | <1.5 | <1 | | | | |
| | May-07 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Aug-07 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Nov-07 | <500 | | **1.7** | **5.5** | 0.7 | 5.1 | <1.0 | | | | |
| | Feb-08 | <500 | | <1.0 | <0.5 | <0.5 | <3.0 | <1.0 | | | | |
| | May-08 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Aug-08 | <50 | | **0.5** | **0.52** | <0.5 | <2.0 | <1.0 | | | | |
| | Nov-08 | <50 | | <0.5 | <0.5 | <0.5 | <2.0 | <1.0 | | | | |
| | Feb-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1 | <1 | <5 | <1 |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Sep-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | **5.5** | <1.0 |
| | Mar-10 | <500 | <500 | <0.5 | **0.6** | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |

**Table 3**
**(Page 4 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-4 (installed 12/19/00) | Feb-03 | <500 | | **3.3** | <0.5 | <0.5 | <1 | <1 | | | | |
| | Mar-04 | <500 | | **1.9** | <0.5 | <0.5 | 61 | <1 | | | | |
| | Jun-05 | <500 | | **66** | **6** | <0.5 | 35.4 | <1 | | | | |
| | Sep-05 | <500 | | **57** | **3.6** | <0.5 | 29 | <1 | | | | |
| | Dec-05 | <500 | | **33** | **0.9** | <0.5 | 11.1 | <1 | | | | |
| | Feb-06 | <500 | | **4.1** | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | May-06 | **1,000** | | **630** | **8.2** | <0.5 | 620 | <10 | | | | |
| | Aug-06 | <500 | | **6.8** | **4.5** | <0.5 | 6.8 | **1.9** | | | | |
| | Nov-06 | <500 | | **27** | **20** | **1.3** | 11.3 | <1 | | | | |
| | Feb-07 | **2,400** | | **210** | **450** | **750** | 420 | <1 | | | | |
| | May-07 | **3,700** | | **850** | **1,400** | **11** | 960 | <10 | | | | |
| | Aug-07 | **7,100** | | **3,500** | **5,100** | **350** | 3,460 | <5 | | | | |
| | Nov-07 | **19,000** | | **6,900** | **13,000** | **820** | 6,900 | <1.0 | | | | |
| | Feb-08 | **38,400** | | **3,210** | 3,030 | 166 | 2,410 | <50.0 | | | | |
| | May-08 | **17,000** | | **3,300** | **6,600** | **270** | 5,000 | <10 | | | | |
| | Aug-08 | **5,200** | | **1,600** | **700** | **75** | 1,000 | <10 | | | | |
| | Nov-08 | **3,300** | | **1,100** | **80** | <0.5 | 170 | <10 | | | | |
| | Feb-09 | Free Product, No Analysis | | | | | | | | | | |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | **35** | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Sep-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | **8.7** | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | **180** | <1.0 | **7.9** | **7.3** | <1.0 |
| | Mar-10 | <500 | <500 | **3.0** | **11** | **2.6** | **19.3** | **160** | <1.0 | **5.3** | **10** | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | **64** | <1.0 | **1.6** | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | **0.6** | <0.5 | <0.5 | <1.5 | **150** | <1.0 | **7.3** | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | **5.9** | **0.6** | <0.5 | **15.5** | **260** | <1.0 | **12** | <5.0 | <1.0 |

**Table 3**
**(Page 5 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-5 (installed 12/20/00) | Feb-03 | <500 | | 3,900 | 7.8 | 0.6 | 33 | 19 | | | | |
| | Mar-04 | 570 | | 870 | 2.2 | <0.5 | 8 | 16 | | | | |
| | Jun-05 | 2,900 | | 1,800 | 19 | <5 | 26 | 14 | | | | |
| | Sep-05 | 740 | | 500 | <0.5 | <5 | <15 | <10 | | | | |
| | Dec-05 | 1,600 | | 620 | <0.5 | <5 | 10 | 12 | | | | |
| | Feb-06 | 1,200 | | 630 | 5.8 | <5 | 11 | 37 | | | | |
| | May-06 | 1,200 | | 840 | <0.5 | <5 | 22.5 | 16 | | | | |
| | Aug-06 | <500 | | 660 | 5.8 | 5.9 | <1.5 | 24 | | | | |
| | Nov-06 | <500 | | 2,100 | <0.5 | 41 | <15 | 19 | | | | |
| | Feb-07 | 1,900 | | 930 | <0.5 | 13 | <15.0 | 23 | | | | |
| | May-07 | <500 | | 2,600 | <0.5 | 17 | <15 | 39 | | | | |
| | Aug-07 | 3,000 | | 3,600 | 3.9 | 100 | 44.5 | 37 | | | | |
| | Nov-07 | <500 | | 3,600 | <0.5 | 66 | <150 | <100 | | | | |
| | Feb-08 | 6,620 | | 3,050 | <0.5 | 60 | <150 | <50 | | | | |
| | May-08 | 1,100 | | 2,000 | 11 | 34 | <15 | 26 | | | | |
| | Aug-08 | 2,900 | | 1,300 | <0.5 | 5.9 | <5.0 | 20 | | | | |
| | Nov-08 | 1,000 | | 550 | <0.5 | <0.5 | <20 | <10 | | | | |
| | Feb-09 | <500 | <500 | 180 | <0.5 | <0.5 | <1.5 | 23 | <1.0 | <1.0 | 490 | 9.3 |
| | Jun-09 | <500 | <500 | 300 | <0.5 | <0.5 | 8.7 | 120 | < 1.0 | 3.3 | 180 | 5.7 |
| | Sep-09 | <500 | <500 | 110 | 0.5 | < 0.5 | 2.8 | 55 | < 1.0 | 1.0 | 76 | 8.1 |
| | Dec-09 | <500 | <500 | 62 | < 0.5 | < 0.5 | 2.1 | 32 | < 1.0 | < 1.0 | 74 | 3.8 |
| | Mar-10 | <500 | <500 | 47 | 0.5 | < 0.5 | < 1.5 | 350 | < 1.0 | 5.7 | 90 | 4.3 |
| | May-10 | <500 | <500 | 25 | < 0.5 | < 0.5 | < 1.5 | 26 | < 1.0 | < 1.0 | 25 | 3.9 |
| | Sep-10 | <500 | <500 | 23 | 11 | 2.9 | 25 | 21 | < 1.0 | < 1.0 | < 5.0 | 4.2 |
| | Dec-10 | <500 | <500 | 19 | 11 | 3.2 | 29 | 560 | < 1.0 | 13 | < 5.0 | 4.3 |

**Table 3**
**(Page 6 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-6 (installed 1/15/02) | Feb-03 | <500 | | **1.0** | <0.5 | <1 | <0.5 | <1.0 | | | | |
| | Mar-04 | <500 | | **1.4** | <0.5 | <0.5 | 3.1 | <1.0 | | | | |
| | Jun-05 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | | | | |
| | Sep-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Dec-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Feb-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | May-06 | <500 | | <0.5 | <0.5 | <0.5 | 0.9 | <1.0 | | | | |
| | Aug-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Nov-06 | <500 | | <0.5 | **0.9** | <0.5 | <1.5 | <1.0 | | | | |
| | Feb-07 | <500 | | **0.6** | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | May-07 | NS | | <0.5 | NS | NS | NS | NS | | | | |
| | Aug-07 | NS | | <0.5 | NS | NS | NS | NS | | | | |
| | Nov-07 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Feb-08 | NS | | <0.5 | NS | NS | NS | NS | | | | |
| | May-08 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Aug-08 | NS | | <0.5 | NS | NS | NS | NS | | | | |
| | Nov-08 | <50 | | <0.50 | <0.50 | <0.50 | <2.0 | <1.0 | | | | |
| | Feb-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | **2.7** | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Sep-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | **19** | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | < 1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Mar-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | < 1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | < 1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | < 1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |

**Table 3**
**(Page 7 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-7 (installed 1/15/02) | Feb-03 | <500 | | **0.9** | <0.5 | <1 | <1 | <1.0 | | | | |
| | Mar-04 | <500 | | **2.3** | <0.5 | <0.5 | <0.5 | <1.0 | | | | |
| | Jun-05 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | | | | |
| | Sep-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Dec-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Feb-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | May-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Aug-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Nov-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Feb-07 | <500 | | **0.7** | **0.6** | <0.5 | <1.5 | <1.0 | | | | |
| | May-07 | NS | | NS | NS | NS | NS | NS | | | | |
| | Aug-07 | NS | | **0.7** | NS | NS | NS | NS | | | | |
| | Nov-07 | <500 | | **0.7** | **1.0** | <0.5 | <1.5 | <1.0 | | | | |
| | Feb-08 | NS | | NS | NS | NS | NS | NS | | | | |
| | May-08 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Aug-08 | NS | | NS | NS | NS | NS | NS | | | | |
| | Nov-08 | <50 | | <0.5 | <0.5 | <0.5 | <2.0 | <1.0 | | | | |
| | Feb-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Aug-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | **14** | <1.0 |
| | Mar-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |

**Table 3**
**(Page 8 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-8 (installed 1/14/02) | Feb-03 | 1,700 | | **5,200** | **5.9** | **710** | **382.4** | **3.7** | | | | |
| | Mar-04 | 1,200 | | **1,400** | **2** | <0.5 | **49.6** | **2.1** | | | | |
| | Jun-05 | <500 | | **34** | <0.5 | <0.5 | <0.5 | <1.0 | | | | |
| | Sep-05 | 880 | | **37** | **0.6** | <0.5 | **58.8** | <1.0 | | | | |
| | Dec-05 | 570 | | **120** | **0.8** | <0.5 | **38.1** | **1.1** | | | | |
| | Feb-06 | <500 | | **28** | <0.5 | <0.5 | **26.4** | <1 | | | | |
| | May-06 | <500 | | **26** | <0.5 | <0.5 | **4.2** | **1** | | | | |
| | Aug-06 | <500 | | **16** | <0.5 | <0.5 | **3.6** | <1.0 | | | | |
| | Nov-06 | <500 | | **16** | **0.5** | **5** | **3.6** | <1.0 | | | | |
| | Feb-07 | <500 | | **18** | <0.5 | <0.5 | **3.2** | <1.0 | | | | |
| | May-07 | NS | | NS | NS | <0.5 | NS | NS | | | | |
| | Aug-07 | NS | | NS | NS | <1.0 | NS | NS | | | | |
| | Nov-07 | <500 | | **46** | <1.0 | <1.0 | **6** | <2.0 | | | | |
| | Feb-08 | 89 | | **18.2** | <1.0 | <0.5 | <3.0 | <1.0 | | | | |
| | May-08 | <500 | | **12** | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Aug-08 | <50 | | **7.6** | <0.50 | <0.50 | <2.0 | <1.0 | | | | |
| | Nov-08 | <50 | | **3.4** | <0.50 | <0.50 | <2.0 | <1.0 | | | | |
| | Feb-09 | <500 | <500 | **0.6** | <0.5 | <0.5 | <1.5 | **1.1** | <1.0 | <1.0 | <5.0 | <1.0 |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Sep-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | **5.4** | <1.0 |
| | Mar-10 | <500 | <500 | <0.5 | **0.5** | <0.5 | <1.5 | **1.1** | <1.0 | <1.0 | <5.0 | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | **2.9** | <1.0 | <1.0 | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | **18** | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | **21** | <1.0 | <1.0 | <5.0 | <1.0 |

**Table 3**
**(Page 9 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-9 (installed 1/14/02) | Feb-03 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Mar-04 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Jun-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Sep-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Dec-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Feb-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | May-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Aug-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Nov-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Feb-07 | <500 | | **0.6** | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | May-07 | NS | | NS | NS | NS | NS | NS | | | | |
| | Aug-07 | NS | | NS | NS | NS | <1.5 | NS | | | | |
| | Nov-07 | <500 | | **9.6** | **0.8** | <0.5 | NS | <1.0 | | | | |
| | Feb-08 | NS | | NS | NS | NS | <1.5 | NS | | | | |
| | May-08 | <500 | | **17** | <0.5 | <0.5 | NS | <1.0 | | | | |
| | Aug-08 | <50 | | **6.1** | <0.50 | <0.50 | <2.0 | <1.0 | | | | |
| | Nov-08 | <50 | | **3.4** | <0.50 | <0.50 | <2.0 | <1.0 | | | | |
| | Feb-09 | <500 | <500 | **0.7** | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Sep-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Mar-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | **10** | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |

**Table 3**
**(Page 10 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-11 (installed 1/14/02) | Feb-03 | <500 | | **9.2** | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Mar-04 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Jun-05 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Sep-05 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Dec-05 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Feb-06 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | May-06 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Aug-06 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Nov-06 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Feb-07 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | May-07 | NS | | NS | NS | NS | NS | NS | | | | |
| | Aug-07 | NS | | NS | NS | NS | NS | NS | | | | |
| | Nov-07 | <500 | | <0.5 | <0.6 | <0.5 | <0.5 | <1 | | | | |
| | Feb-08 | NS | | NS | NS | NS | NS | NS | | | | |
| | May-08 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Aug-08 | NS | | NS | NS | NS | NS | NS | | | | |
| | Nov-08 | <50 | | <0.5 | <0.50 | <0.5 | <0.50 | <1 | | | | |
| | Feb-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | < 1.0 | < 1.0 | < 1.0 | < 5.0 | < 1.0 |
| | Aug-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Mar-10 | <500 | <500 | <0.5 | **0.6** | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |

**Table 3**
**(Page 11 of 11)**
**Groundwater Analytical Data for TPH and VOCs**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | TPHg (µg/L) | TPHd (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | ETBE (µg/L) | TAME (µg/L) | TBA (µg/L) | DIPE (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-12 (installed 2/25/04) | Feb-03 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Mar-04 | <500 | | <0.5 | <0.5 | <0.5 | <0.5 | <1 | | | | |
| | Jun-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Sep-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Dec-05 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Feb-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | May-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Aug-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Nov-06 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | Feb-07 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1 | | | | |
| | May-07 | NS | | NS | NS | NS | NS | NS | | | | |
| | Aug-07 | NS | | NS | NS | NS | NS | NS | | | | |
| | Nov-07 | <500 | | <0.5 | 0.6 | <0.5 | <1.5 | <1.0 | | | | |
| | Feb-08 | NS | | NS | NS | NS | NS | NS | | | | |
| | May-08 | <500 | | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | | | | |
| | Aug-08 | NS | | NS | NS | NS | NS | NS | | | | |
| | Nov-08 | <50 | | <0.50 | <0.50 | <0.50 | <2.0 | <1.0 | | | | |
| | Feb-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Jun-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | < 1.5 | < 1.0 | < 1.0 | < 1.0 | **10** | < 1.0 |
| | Aug-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-09 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | **12** | <1.0 |
| | Mar-10 | <500 | <500 | <0.5 | **0.5** | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | May-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Sep-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |
| | Dec-10 | <500 | <500 | <0.5 | <0.5 | <0.5 | <1.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 |

**Notes:**

Results presented in micrograms per liter (µg/L).

Samples were analyzed for gasoline-range (TPHg), and diesel-range (TPHd) total petroleum hydrocarbons in general accordance with CA DHS LUFT method; and benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl-t-butyl ether (ETBE), tert-amyl methyl ether (TAME), and t-butanol (TBA) in general accordance with EPA Method 8260B.

VOC = volatile organic compound

< indicates not reported at a concentration above the laboratory reporting limit.

NS indicates well not sampled.

Bold font indicates that concentration is above the laboratory reporting limit.

**Table 4**
**Groundwater Analytical Data for RNA Parameters**
**1451 Carrizo Gorge Road, Jacumba, California**

| Well Number | Sample Date | Carbon Dioxide (µg/L) | Methane (µg/L) | Dissolved Oxygen (mg/L) | Redox Potential (mV) | Nitrate as N (mg/L) | Sulfate (mg/L) | Total Manganese (mg/L) | Total Iron (mg/L) | Iron (II) (mg/L) | Ferric Iron (mg/L) | o-Phosphate as P (mg/L) | Total Phosphate (mg/L) | Ammonia as N (mg/L) | pH (pH units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | Sep-10 | 77 | **2.84** | **3.34** | **-240** | **65** | **59** | **1.16** | **0.560** | <0.10 | **0.560** | <0.10 | <0.31 | <0.10 | **6.52** |
| | Dec-10 | **99** | **11.6** | **2.75** | **-270** | **53** | **80** | **1.43** | **0.262** | <0.10 | **0.262** | **0.21** | **0.64** | <0.10 | **6.51** |
| MW-2 | Sep-10 | **94** | **253** | **1.48** | **-230** | <0.10 | <1.0 | **3.02** | **8.81** | **1.7** | **7.12** | <0.10 | <0.31 | **0.56** | **6.68** |
| | Dec-10 | **94** | **395** | **5.46** | **-220** | <0.20 | <2.0 | **2.86** | **9.23** | **3.5** | **5.71** | **0.38** | **1.2** | **0.62** | **6.81** |
| MW-5 | Sep-10 | **53** | **1.25** | **2.65** | **-280** | **38** | **160** | **0.635** | **0.186** | <0.10 | **0.186** | **0.11** | **0.34** | <0.10 | **6.75** |
| | Dec-10 | **51** | **1.59** | **2.33** | **-250** | **49** | **140** | **0.605** | **0.117** | <0.10 | **0.117** | **0.72** | **2.2** | <0.10 | **6.91** |
| MW-11 | Sep-10 | **26** | < 1.00 | **3.84** | **-290** | **13** | 17 | **0.0751** | **2.86** | <0.10 | **2.86** | **0.16** | **0.50** | <0.10 | **6.72** |
| | Dec-10 | **15** | < 1.00 | **5.69** | **-270** | **12** | **12** | **0.0299** | **0.523** | <0.10 | **0.523** | **0.62** | **1.90** | <0.10 | **7.00** |

**Notes:**

Samples collected by SCS Engineers on September 22, 2010 and on December 14, 2010.

Samples were analyzed for carbon dioxide and methane by EPA Method RSK-175m, total iron and total manganese by EPA Method 6010B, iron II by Standard Method 3500-FoB, ferric iron by EPA Method 6010B - Standard Method 3500-FoB, redox potential by ASTM Method D 1498, nitrate (as N) and sulfate by EPA Method 300.0, pH by Standard Method 4500 H+B, o-phosphate (as P) by Standard Method 4500 P B/E, ammonia (as N) by Standard Method 4500-NH3 B/C, and dissolved oxygen by Standard Method 4500-O G.

RNA = Remediation by natural attenuation

µg/L = micrograms per liter

mg/L = milligrams per liter

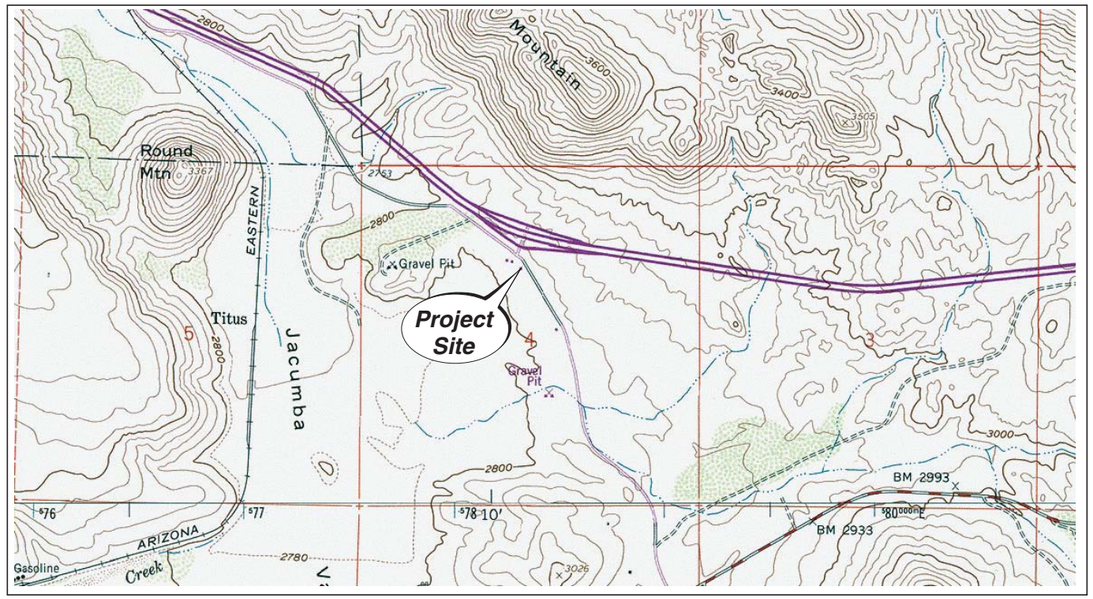
mV = millivolts

< indicates not reported at a concentration above the laboratory reporting limit.

Bold font indicates that concentration is above the laboratory reporting limit.

# FIGURES


## REGIONAL SITE LOCATION



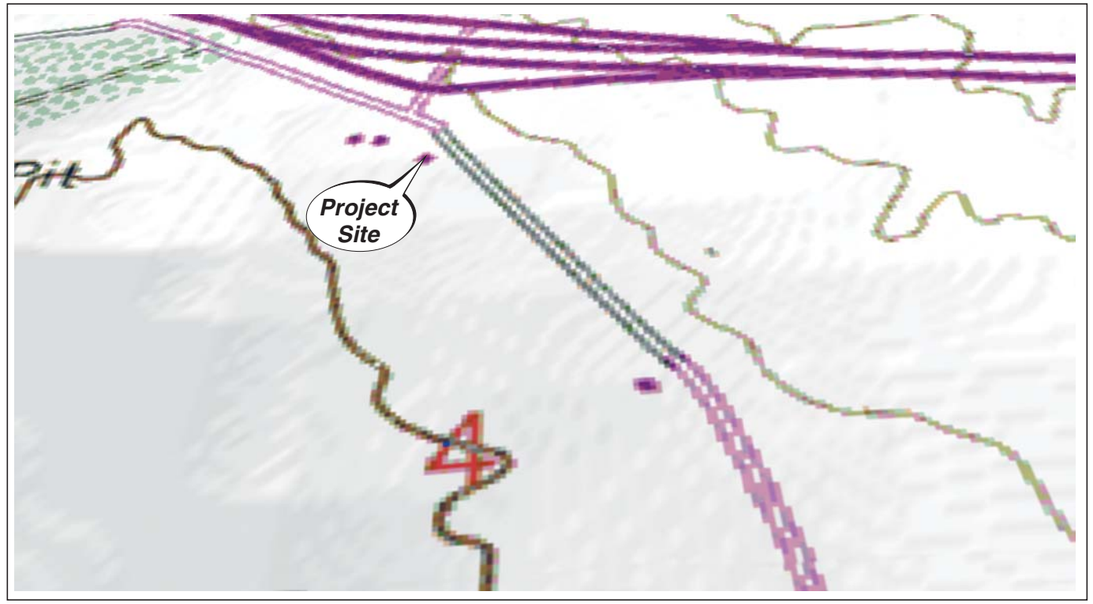

Reference:
U.S.G.S. 7.5 Minute Quadrangle map
Jacumba, California - 1977. Photo revised 1982.

## 2-DIMENSIONAL SITE LOCATION

0 1,000 2,000 3,000
Approximate Graphic Scale in Feet


Reference:
Google Earth Aerial Photograph
Jacumba, California - 2009

## SITE AERIAL PHOTOGRAPH




Reference:
U.S.G.S. 7.5 Minute Quadrangle map
Jacumba, California - 1977. Photo revised 1982.

## 3-DIMENSIONAL SITE LOCATION

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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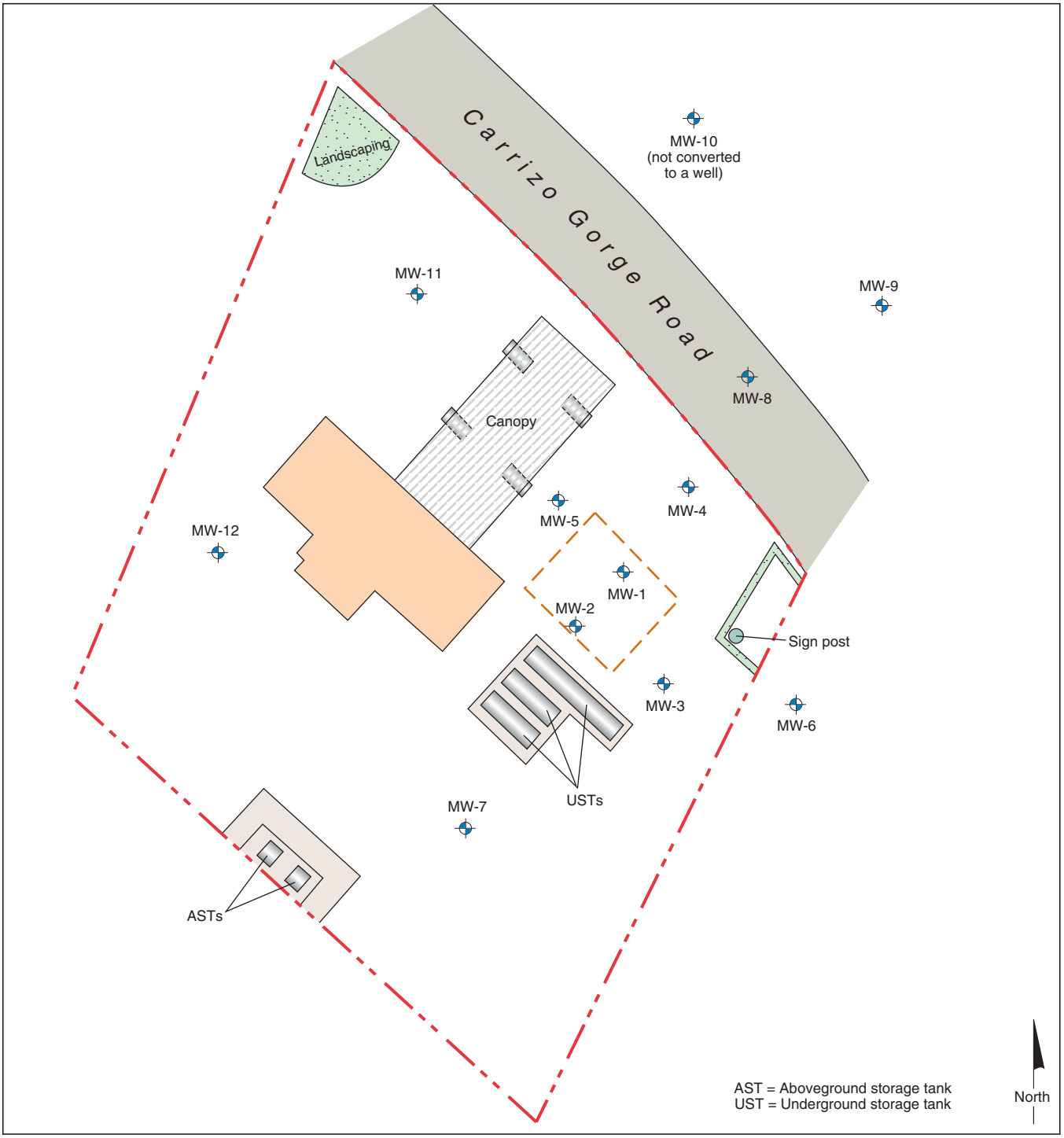
# 4-WAY SITE LOCATION MAP

**Tif Oyl, Inc.**
1451 Carrizo Gorge Road
Jacumba, California

**Project No.: 01208459.00**

**Figure 1**

**Date Drafted: 7/6/09**




**EXPLANATION**

Approximate Site boundary

Approximate location of former UST excavation

MW-12 Approximate monitoring well location

0 20 40 60

Approximate Graphic Scale in Feet

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.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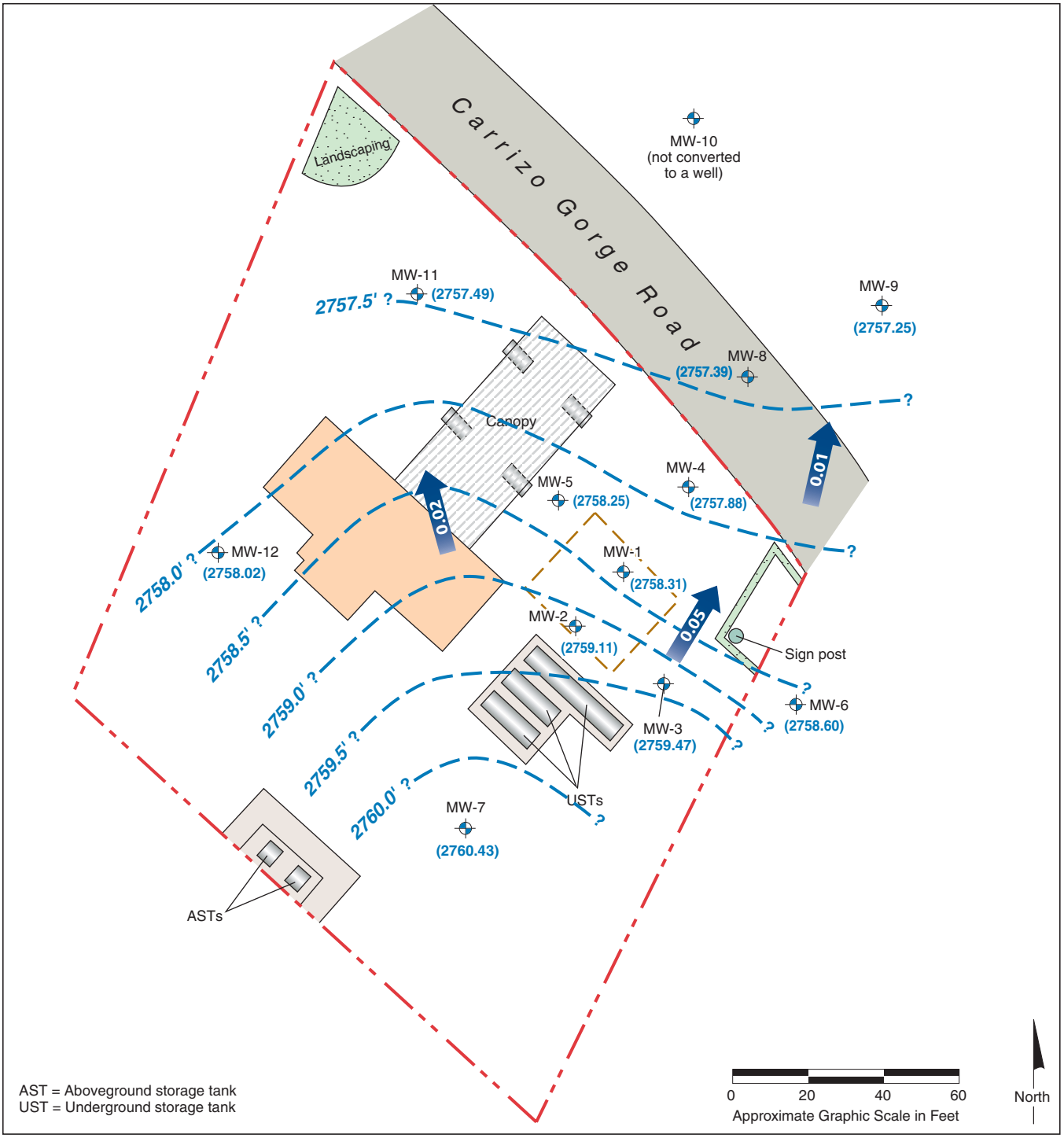
# SITE PLAN WITH WELL LOCATIONS

**Tif Oyl, Inc.**
1451 Carrizo Gorge Road
Jacumba, California

**Project No.: 01208459.00**

**Figure 2**

**Date Drafted: 1/8/10**




**EXPLANATION**

Approximate Site boundary

MW-12 (2758.02) Approximate monitoring well location with reported groundwater concentrations in feet above mean sea level

2759.0' Estimated groundwater contour in feet above mean sea level. Contour interval 0.5 foot.

0.02 Groundwater gradient

Approximate location of former UST excavation

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.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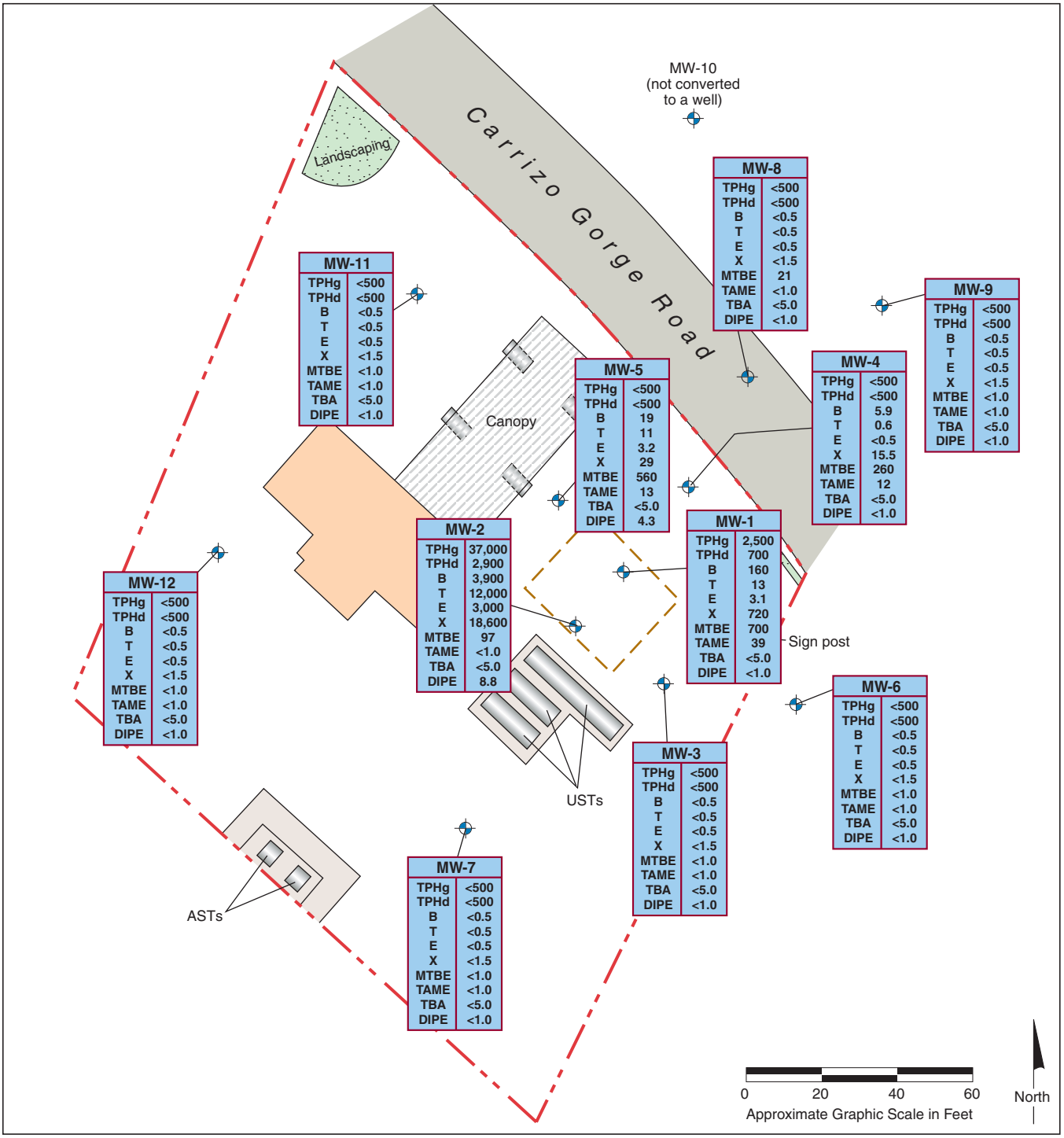
# GROUNDWATER ELEVATION MAP
# DECEMBER 2010

**Tif Oyl, Inc.**
1451 Carrizo Gorge Road
Jacumba, California

**Project No.: 01208459.00**

**Figure 3**

**Date Drafted: 1/13/11**




**EXPLANATION**

Approximate Site boundary

Approximate location of former UST excavation

MW-12 Approximate monitoring well location

| MW-9 | |
|---|---|
| TPHg | <500 |
| TPHd | <500 |
| B | <0.5 |
| T | <0.5 |
| E | <0.5 |
| X | <1.5 |
| MTBE | <1.0 |
| TAME | <1.0 |
| TBA | <5.0 |
| DIPE | <1.0 |

Groundwater samples collected by SCS Engineers on December 13-15, 2010. Samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd) by DHS LUFT Method; and benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary butyl ether (MTBE), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), and di-isopropyl ether (DIPE) by EPA Method 8260B. All results reported in micrograms per liter (µg/L).
< indicates not reported at a concentration above the laboratory reporting limit.

AST = Aboveground storage tank
UST = Underground storage tank

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.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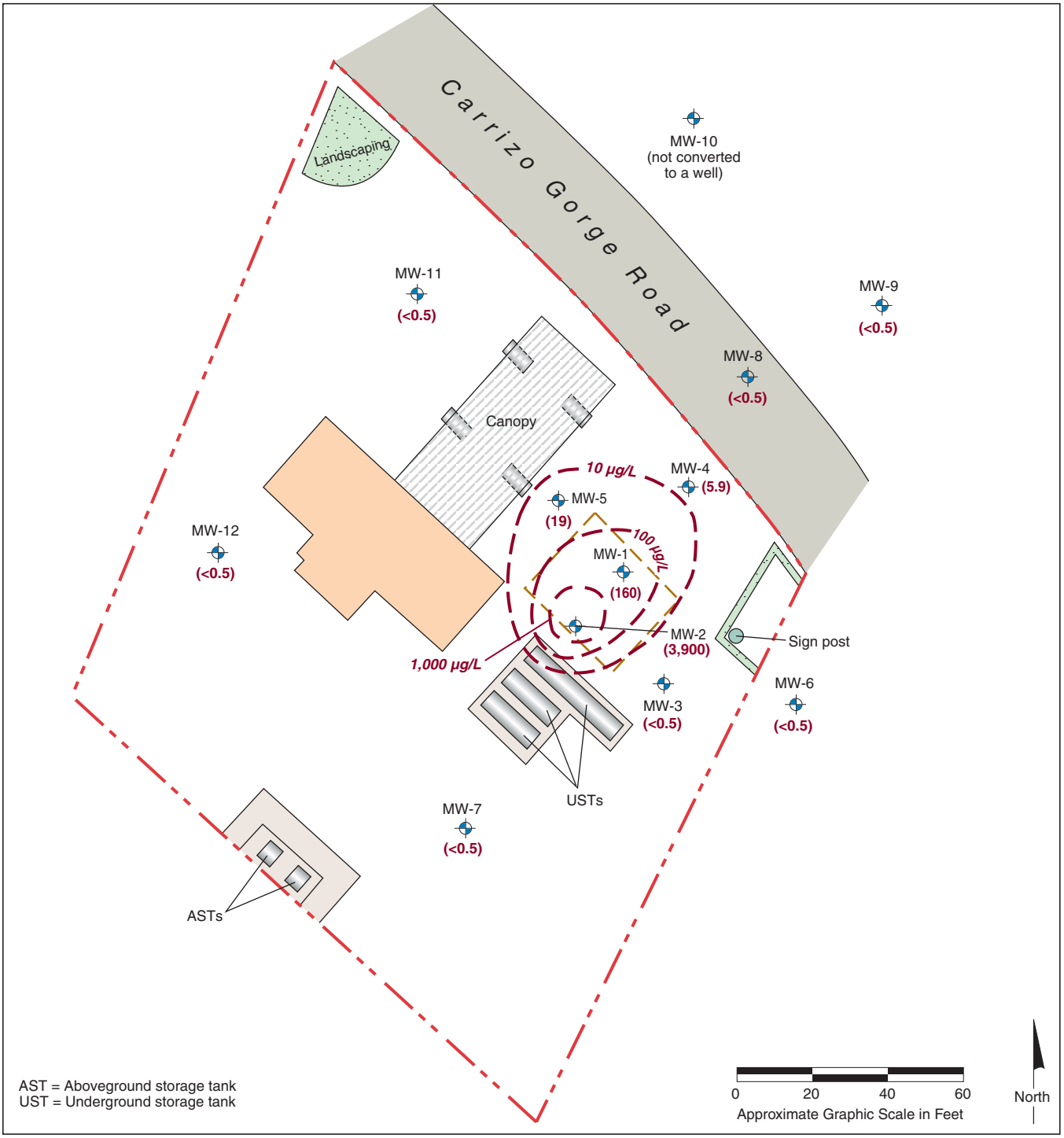
# GROUNDWATER ANALYTICAL RESULTS DECEMBER 2010

**Tif Oyl, Inc.**
1451 Carrizo Gorge Road
Jacumba, California

**Project No.: 01208459.00**

**Figure 4**

**Date Drafted: 1/12/11**




**EXPLANATION**

Approximate Site boundary

Approximate location of former UST excavation

MW-12 (<0.5) — Approximate monitoring well location with reported benzene concentrations in groundwater in micrograms per liter (µg/L), analyzed by EPA Method 8260B. Samples collected by SCS Engineers on December 13-15, 2010. < indicates not detected above laboratory detection limits.

10 µg/L — Interpreted extent of benzene iso-concentration contour in µg/L

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.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San Diego, California 92123

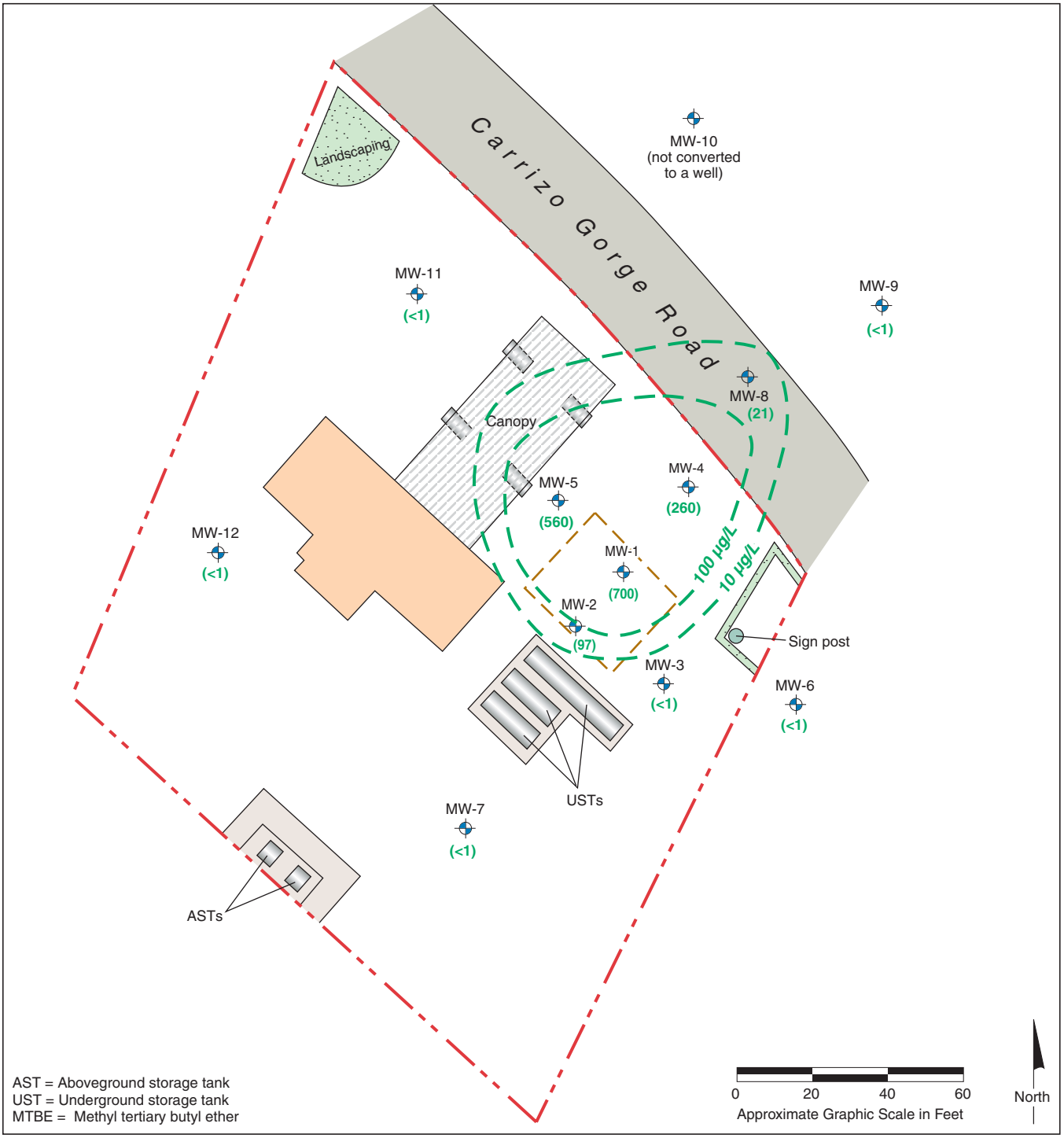

# BENZENE CONTOUR MAP
# DECEMBER 2010

**Tif Oyl, Inc.**
1451 Carrizo Gorge Road
Jacumba, California

**Project No.: 01208459.00**

**Figure 5**

**Date Drafted: 1/13/11**




**EXPLANATION**

Approximate Site boundary

Approximate monitoring well location with reported MTBE concentrations in groundwater in micrograms per liter (µg/L), analyzed by EPA Method 8260B. Samples collected by SCS Engineers on December 13-15, 2010. < indicates not detected above laboratory detection limits.

Approximate location of former UST excavation

10 µg/L — Interpreted extent of MTBE iso-concentration contour in µg/L.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.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# MTBE CONTOUR MAP
# DECEMBER 2010

**Tif Oyl, Inc.**
1451 Carrizo Gorge Road
Jacumba, California

**Project No.: 01208459.00**

**Figure 6**

**Date Drafted: 1/13/11**

# APPENDICES

# APPENDIX A

# GROUNDWATER PURGING AND SAMPLING FORMS

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| | | |
|---|---|---|
| **Client:** Jacumba Texaco | **Project No:** 01208459.00 | **Recorded by:** C. Crosby |
| **Site Address:** 1451 Carrizo Gorge Rd. Jacumba, CA | **Date:** 12/13/10 | |

## WELL MONITORING DATA

| Time | WELL NO. | DTB | DTW | DTP | PT | SWE | ELEV-W | ELEV-P |
|---|---|---|---|---|---|---|---|---|
| | MW-1 | | 78.32 | | | | | |
| | MW-2 | | 77.87 | | | | | |
| | MW-3 | | 76.89 | | | | | |
| | MW-4 | | 78.76 | | | | | |
| | MW-5 | | 79.03 | | | | | |
| | MW-6 | | 77.07 | | | | | |
| | MW-7 | | 77.24 | | | | | |
| | MW-8 | | 78.03 | | | | | |
| | MW-9 | | 77.85 | | | | | |
| | MW-11 | | 80.18 | | | | | |
| | MW-12 | | 80.03 | | | | | |
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**WELL NO.** - Monitoring well number
**DTB** - Depth to bottom of well
**DTW** - Depth to water from datum
**SWE** - Surveyed well elevation in feet
**DTP** - Depth to product from datum
**ELEV-W** - Relative elevation of water
**PT** - Product Thickness
**ELEV-P** - Relative elevation of product

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# WELL PURGING/SAMPLING LOG

Project Name: Jacumba Texaco | Well No.: MW-1
Project Number: 01208459.00 | Date: 12/14/10
Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA
Well GPS: Latitude: Longitude:
Sampled by: C. Crosby | Checked by: CEH | License #: 2206

## WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 8 (10) 12 _____
Casing Diameter (in.) (CD): (2) (4) 6 8 _____
Total Well Depth (ft.) (WD): 81.8 | Product thickness (ft.): —
Static Water Level (ft.) (SWL): 78.32 | Time measured: —
Water Column (ft.) (WC=WD-SWL): 3.48 | Filter Pack Porosity (P): 0.30

### Borehole Volume (BV) Calculations

**BV (gal) = 0.041 [$CD^2$ + P ($BD^2$-$CD^2$)](WC)**
This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. **BV =** 5.9 **gallons**

## PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump _____ Bailer ✓ Centrifugal Pump ___ Other ____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ___Teflon Bailer ✓ Disposable Bailer ___Bladder Pump ___Centrifugal Pump ___Other:
Decontamination Method: _____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) _____ Other:

## PURGING AND SAMPLING METHODOLOGIES

### Well Recovery Type

✓ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ___ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

### PURGING METHODS

___Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
✓Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
___Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____
___Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
___Method 5, non-purge method. Only with prior written approval from SAM

### PURGING INFORMATION

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 1100 | | | | | | | | |
| 1127 | 81.05 | 2.73 | 6.0 | 1444 | — | 6.75 | — | 19.9 |
| 1154 | 81.27 | 2.95 | 9.0 | 1462 | — | 6.76 | — | 19.6 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 5.9 (gal) | Total Volume Purge Water: 9 (gal) | Average pumping rate: — (gpm)

### RECOVERY CALCULATIONS

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 78.91

### SAMPLING INFORMATION

Date & Time Sampled: 12/14/10 1250 | Depth to water at time of sampling (feet): 78.80

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
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| | | | | |

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## WELL PURGING/SAMPLING LOG

| | | | |
|---|---|---|---|
| Project Name: Jacumba Texaco | | | Well No.: MW-2 |
| Project Number: 01208459.00 | | | Date: 12/14/10 |
| Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA | | | |
| Well GPS: Latitude: | | Longitude: | |
| Sampled by: C. Crosby | Checked by: CEH | | License #: 2206 |

### WELL SPECIFICATIONS & MEASUREMENTS

| | |
|---|---|
| Borehole Diameter (in.) (BD): 6 8 (10) 12 ____ | |
| Casing Diameter (in.) (CD): 2 (4) 6 8 ____ | |
| Total Well Depth (ft.) (WD): 83.7 | Product thickness (ft.): — |
| Static Water Level (ft.) (SWL): 77.87 | Time measured: — |
| Water Column (ft.) (WC=WD-SWL): 5.83 | Filter Pack Porosity (P): 0.30 |

**Borehole Volume (BV) Calculations**

$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. BV = 9.9 gallons

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP

Purging Equipment/Method: Bladder Pump ____ Bailer ✓ Centrifugal Pump ___ Other ____

pH/Temp/Conductivity Meter Type and ID: Oakton

Sampler Type: ___Teflon Bailer ✓ Disposable Bailer ___Bladder Pump ___Centrifugal Pump ___Other: ____

Decontamination Method: ____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) ____ Other: ____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

___ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ✓ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

___Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.

___Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.

___Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.

List the date and time the pump was installed: Date:____ Time:____

✓ Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.

___Method 5, non-purge method. Only with prior written approval from SAM

### PURGING INFORMATION

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 0830 | | | | | | | | |
| 0945 | 83.64 | 5.77 | 6.0 | 1409 | — | 7.04 | — | 18.6 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 9.9 (gal) Total Volume Purge Water: 6 (gal) Average pumping rate: — (gpm)

### RECOVERY CALCULATIONS

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 79.02

### SAMPLING INFORMATION

Date & Time Sampled: 12/14/10 1500 Depth to water at time of sampling (feet): 82.25

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
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# WELL PURGING/SAMPLING LOG

Project Name: Jacumba Texaco | Well No.: MW-3
Project Number: 01208459.00 | Date: 12/15/10
Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA
Well GPS: Latitude: Longitude:
Sampled by: C. Crosby | Checked by: CEH | License #: 2206

## WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 8 (10) 12 _____
Casing Diameter (in.) (CD): 2 (4) 6 8 _____
Total Well Depth (ft.) (WD): 84.6 | Product thickness (ft.): —
Static Water Level (ft.) (SWL): 76.89 | Time measured: —
Water Column (ft.) (WC=WD-SWL): 7.71 | Filter Pack Porosity (P): 0.30

### Borehole Volume (BV) Calculations

$$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. BV = 13.1 gallons

## PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump _____ Bailer ✓ Centrifugal Pump ___ Other _____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ___Teflon Bailer ✓ Disposable Bailer ___Bladder Pump ___ Centrifugal Pump ___Other: _____
Decontamination Method: _____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) _____ Other: _____

## PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

___Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ✓ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

___Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
___Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
___Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____
✓Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
___Method 5, non-purge method. Only with prior written approval from SAM

## PURGING INFORMATION

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 0750 | | | | | | | | |
| 0905 | 84.13 | 7.24 | 9.5 | 1342 | — | 7.16 | — | 18.2 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 13.1 (gal) | Total Volume Purge Water: 9.5 (gal) | Average pumping rate: — (gpm)

## RECOVERY CALCULATIONS

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 78.33

## SAMPLING INFORMATION

Date & Time Sampled: 12/15/10 1145 | Depth to water at time of sampling (feet): 82.40

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
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## WELL PURGING/SAMPLING LOG

| | | |
|---|---|---|
| Project Name: Jacumba Texaco | | Well No.: MW-4 |
| Project Number: 01208459.00 | | Date: 12/15/10 |
| Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA | | |
| Well GPS: Latitude: | Longitude: | |
| Sampled by: C. Crosby | Checked by: CEH | License #: 2206 |

### WELL SPECIFICATIONS & MEASUREMENTS

| | |
|---|---|
| Borehole Diameter (in.) (BD): 6 8 (10) 12 ____ | |
| Casing Diameter (in.) (CD): 2 (4) 6 8 ____ | |
| Total Well Depth (ft.) (WD): 85.3 | Product thickness (ft.): — |
| Static Water Level (ft.) (SWL): 78.76 | Time measured: — |
| Water Column (ft.) (WC=WD-SWL): 6.54 | Filter Pack Porosity (P): 0.30 |

**Borehole Volume (BV) Calculations**

$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. **BV =** 11.1 **gallons**

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP

Purging Equipment/Method: Bladder Pump ____ Bailer ✓ Centrifugal Pump ____ Other ____

pH/Temp/Conductivity Meter Type and ID: Oakton

Sampler Type: ____ Teflon Bailer ✓ Disposable Bailer ____ Bladder Pump ____ Centrifugal Pump ____ Other: ____

Decontamination Method: ____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) ____ Other: ____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

✓ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ____ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

____ Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.

✓ Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.

____ Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.

List the date and time the pump was installed: Date:____ Time:____

____ Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.

____ Method 5, non-purge method. Only with prior written approval from SAM

### PURGING INFORMATION

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 0825 | | | | | | | | |
| 0842 | 83.60 | 4.84 | 12 | 1446 | — | 7.44 | — | 18.6 |
| 0853 | 83.97 | 5.21 | 17 | 1420 | — | 7.25 | — | 18.9 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 11.1 (gal) Total Volume Purge Water: 17 (gal) Average pumping rate: — (gpm)

### RECOVERY CALCULATIONS

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 79.80

### SAMPLING INFORMATION

Date & Time Sampled: 12/15/10 1015 Depth to water at time of sampling (feet): 79.10

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
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## WELL PURGING/SAMPLING LOG

| | | |
|---|---|---|
| Project Name: Jacumba Texaco | | Well No.: MW-5 |
| Project Number: 01208459.00 | | Date: 12/14/10 |
| Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA | | |
| Well GPS: Latitude: | Longitude: | |
| Sampled by: C. Crosby | Checked by: CEH | License #: 2206 |

### WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 8 (10) 12 ____
Casing Diameter (in.) (CD): 2 (4) 6 8 ____
Total Well Depth (ft.) (WD): 85.0
Product thickness (ft.): —
Static Water Level (ft.) (SWL): 79.03
Time measured: —
Water Column (ft.) (WC=WD-SWL): 5.97
Filter Pack Porosity (P): 0.30

**Borehole Volume (BV) Calculations**

$$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. BV = 10.1 gallons

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump ____ Bailer ✓ Centrifugal Pump ____ Other ____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ____ Teflon Bailer ✓ Disposable Bailer ____ Bladder Pump ____ Centrifugal Pump ____ Other: ____
Decontamination Method: ____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) ____ Other: ____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

✓ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ____ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

____ Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
✓ Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
____ Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:____ Time:____
____ Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
____ Method 5, non-purge method. Only with prior written approval from SAM

**PURGING INFORMATION**

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 1010 | | | | | | | | |
| 1055 | 84.56 | 5.53 | 10.5 | 1397 | — | 7.08 | — | 19.8 |
| 1205 | 84.82 | 5.79 | 15.5 | 1432 | — | 7.02 | — | 19.9 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 10.1 (gal) Total Volume Purge Water: 15.5 (gal) Average pumping rate: — (gpm)

**RECOVERY CALCULATIONS**

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 80.18

**SAMPLING INFORMATION**

Date & Time Sampled: 12/14/10 1400 Depth to water at time of sampling (feet): 80.15

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
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# WELL PURGING/SAMPLING LOG

Project Name: Jacumba Texaco | Well No.: MW-6
Project Number: 01208459.00 | Date: 12/13/10
Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA
Well GPS: Latitude: Longitude:
Sampled by: C. Crosby | Checked by: CEH | License #: 2206

## WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 (8) 10 12 _____
Casing Diameter (in.) (CD): (2) 4 6 8 _____
Total Well Depth (ft.) (WD): 85.0 | Product thickness (ft.): —
Static Water Level (ft.) (SWL): 77.07 | Time measured: —
Water Column (ft.) (WC=WD-SWL): 7.93 | Filter Pack Porosity (P): 0.30

### Borehole Volume (BV) Calculations

$$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. **BV =** 7.1 **gallons**

## PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump _____ Bailer ✓ Centrifugal Pump ___ Other ____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ___ Teflon Bailer ✓ Disposable Bailer ___ Bladder Pump ___ Centrifugal Pump ___ Other: _____
Decontamination Method: _____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) _____ Other: _____

## PURGING AND SAMPLING METHODOLOGIES

### Well Recovery Type

___ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ✓ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

### PURGING METHODS

___ Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
___ Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
___ Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____
✓ Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
___ Method 5, non-purge method. Only with prior written approval from SAM

### PURGING INFORMATION

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 0930 | | | | | | | | |
| 1030 | 84.25 | 7.18 | 7.5 | 1202 | — | 7.61 | — | 19.6 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 7.1 (gal) | Total Volume Purge Water: 7.5 (gal) | Average pumping rate: — (gpm)

### RECOVERY CALCULATIONS

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 78.50

### SAMPLING INFORMATION

Date & Time Sampled: 12/13/10 1230 | Depth to water at time of sampling (feet): 79.58

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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## WELL PURGING/SAMPLING LOG

Project Name: Jacumba Texaco | Well No.: MW-7
Project Number: 01208459.00 | Date: 12/13/10
Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA
Well GPS: Latitude: Longitude:
Sampled by: C. Crosby | Checked by: CEH | License #: 2206

### WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 (8) 10 12 ____
Casing Diameter (in.) (CD): (2) 4 6 8 ____
Total Well Depth (ft.) (WD): 84.5 | Product thickness (ft.): —
Static Water Level (ft.) (SWL): 77.24 | Time measured: —
Water Column (ft.) (WC=WD-SWL): 7.26 | Filter Pack Porosity (P): 0.30

**Borehole Volume (BV) Calculations**

$$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. BV = 6.5 gallons

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump ____ Bailer ✓ Centrifugal Pump ____ Other ____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ____ Teflon Bailer ✓ Disposable Bailer ____ Bladder Pump ____ Centrifugal Pump ____ Other: ____
Decontamination Method: ____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) ____ Other: ____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

✓ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ____ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

___Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
✓Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
___Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____
___Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
___Method 5, non-purge method. Only with prior written approval from SAM

**PURGING INFORMATION**

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 1035 | | | | | | | | |
| 1100 | 80.05 | 2.81 | 6.5 | 1377 | — | 7.28 | — | 19.3 |
| 1115 | 80.83 | 3.59 | 10.0 | 1387 | — | 7.31 | — | 19.3 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 6.5 (gal) | Total Volume Purge Water: 10 (gal) | Average pumping rate: — (gpm)

**RECOVERY CALCULATIONS**

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 77.95

**SAMPLING INFORMATION**

Date & Time Sampled: 12/13/10 1240 | Depth to water at time of sampling (feet): 77.82

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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Environmental Consultants
8799 Balboa Avenue, Suite 290
San Diego, California 92123

## WELL PURGING/SAMPLING LOG

| | | |
|---|---|---|
| Project Name: Jacumba Texaco | | Well No.: MW-8 |
| Project Number: 01208459.00 | | Date: 12/15/10 |
| Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA | | |
| Well GPS: Latitude: | Longitude: | |
| Sampled by: C. Crosby | Checked by: CEH | License #: 2206 |

### WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 (8) 10 12 _____
Casing Diameter (in.) (CD): (2) 4 6 8 _____
Total Well Depth (ft.) (WD): 84.9
Product thickness (ft.): —
Static Water Level (ft.) (SWL): 78.03
Time measured: —
Water Column (ft.) (WC=WD-SWL): 6.87
Filter Pack Porosity (P): 0.30

**Borehole Volume (BV) Calculations**

$$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. BV = 6.2 gallons

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump _____ Bailer ✓ Centrifugal Pump ___ Other ____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ___Teflon Bailer ✓ Disposable Bailer ___Bladder Pump ___ Centrifugal Pump ___Other: _____
Decontamination Method: _____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) _____ Other: _____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

✓ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ___ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

___Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
✓Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
___Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____
___Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
___Method 5, non-purge method. Only with prior written approval from SAM

**PURGING INFORMATION**

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters: Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
|---|---|---|---|---|---|---|---|---|
| 1030 | | | | | | | | |
| 1058 | 82.95 | 4.92 | 6.5 | 1442 | — | 7.50 | — | 19.1 |
| 1125 | 83.03 | 5.00 | 9.5 | 1436 | — | 7.56 | — | 19.1 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 6.2 (gal) Total Volume Purge Water: 9.5 (gal) Average pumping rate: — (gpm)

**RECOVERY CALCULATIONS**

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 79.03

**SAMPLING INFORMATION**

Date & Time Sampled: 12/15/10 1300 Depth to water at time of sampling (feet): 79.00

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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San Diego, California 92123

## WELL PURGING/SAMPLING LOG

| | | |
|---|---|---|
| Project Name: Jacumba Texaco | | Well No.: MW-9 |
| Project Number: 01208459.00 | | Date: 12/15/10 |
| Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA | | |
| Well GPS: Latitude: | Longitude: | |
| Sampled by: C. Crosby | Checked by: CEK | License #: 2206 |

### WELL SPECIFICATIONS & MEASUREMENTS

| | |
|---|---|
| Borehole Diameter (in.) (BD): 6 (8) 10 12 ____ | |
| Casing Diameter (in.) (CD): (2) 4 6 8 ____ | |
| Total Well Depth (ft.) (WD): 83.1 | Product thickness (ft.): — |
| Static Water Level (ft.) (SWL): 77.85 | Time measured: — |
| Water Column (ft.) (WC=WD-SWL): 5.25 | Filter Pack Porosity (P): 0.30 |

**Borehole Volume (BV) Calculations**

$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. BV = 4.7 gallons

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP

Purging Equipment/Method: Bladder Pump ____ Bailer ✓ Centrifugal Pump ____ Other ____

pH/Temp/Conductivity Meter Type and ID: Oakton

Sampler Type: ____Teflon Bailer ✓ Disposable Bailer ____Bladder Pump ____Centrifugal Pump ____Other: ____

Decontamination Method: ____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) ____ Other: ____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

✓ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ___ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

___Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.

✓ Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.

___Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____

___Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.

___Method 5, non-purge method. Only with prior written approval from SAM

### PURGING INFORMATION

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 0930 | | | | | | | | |
| 0950 | 80.75 | 2.90 | 5.0 | 1386 | — | 7.48 | — | 18.8 |
| 1002 | 81.02 | 3.17 | 7.5 | 1400 | — | 7.54 | — | 18.9 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 4.7 (gal) Total Volume Purge Water: 7.5 (gal) Average pumping rate: — (gpm)

### RECOVERY CALCULATIONS

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 78.48

### SAMPLING INFORMATION

Date & Time Sampled: 12/15/10 1110 Depth to water at time of sampling (feet): 78.15

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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## WELL PURGING/SAMPLING LOG

Project Name: Jacumba Texaco | Well No.: MW-11
Project Number: 01208459.00 | Date: 12/14/10
Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA
Well GPS: Latitude: Longitude:
Sampled by: C. Crosby | Checked by: CEH | License #: 2206

### WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 (8) 10 12 _____
Casing Diameter (in.) (CD): (2) 4 6 8 _____
Total Well Depth (ft.) (WD): 84.3 | Product thickness (ft.): —
Static Water Level (ft.) (SWL): 80.18 | Time measured: —
Water Column (ft.) (WC=WD-SWL): 4.12 | Filter Pack Porosity (P): 0.30

Borehole Volume (BV) Calculations

**BV (gal) = 0.041 [$CD^2$ + P ($BD^2$-$CD^2$)](WC)**
This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. **BV =** 3.7 **gallons**

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump _____ Bailer ✓ Centrifugal Pump ___ Other ____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ___Teflon Bailer ✓ Disposable Bailer ___Bladder Pump ___Centrifugal Pump ___Other: _____
Decontamination Method: _____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) _____ Other: _____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

___Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ✓ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

___Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
___Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
___Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____
✓ Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
___Method 5, non-purge method. Only with prior written approval from SAM

**PURGING INFORMATION**

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 0850 | | | | | | | | |
| 1000 | 83.67 | 3.49 | 3.0 | 1485 | — | 7.38 | — | 18.5 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 3.7 (gal) | Total Volume Purge Water: 3 (gal) | Average pumping rate: — (gpm)

**RECOVERY CALCULATIONS**

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 80.87

**SAMPLING INFORMATION**

Date & Time Sampled: 12/14/10 1320 | Depth to water at time of sampling (feet): 81.96

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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## WELL PURGING/SAMPLING LOG

Project Name: Jacumba Texaco — Well No.: MW-12
Project Number: 01208459.00 — Date: 12/13/10
Project Address: 1451 Carrizo Gorge Rd., Jacumba, CA
Well GPS: Latitude: Longitude:
Sampled by: C. Crosby — Checked by: CEH — License #: 2206

### WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in.) (BD): 6 (8) 10 12 _____
Casing Diameter (in.) (CD): (2) 4 6 8 _____
Total Well Depth (ft.) (WD): 84.0 — Product thickness (ft.): —
Static Water Level (ft.) (SWL): 80.03 — Time measured: —
Water Column (ft.) (WC=WD-SWL): 3.97 — Filter Pack Porosity (P): 0.30

**Borehole Volume (BV) Calculations**

$BV\ (gal) = 0.041\ [CD^2 + P\ (BD^2 - CD^2)](WC)$

This equation applies to wells constructed straddling the water table only. For submerged screens, document all calculations. Porosity is expressed in decimal form. BV = 3.6 gallons

### PURGING & SAMPLING EQUIPMENT

Water Level Meter Type and ID: Heron OWIP
Purging Equipment/Method: Bladder Pump _____ Bailer ✓ Centrifugal Pump ___ Other ____
pH/Temp/Conductivity Meter Type and ID: Oakton
Sampler Type: ___ Teflon Bailer ✓ Disposable Bailer ___ Bladder Pump ___ Centrifugal Pump ___ Other: _____
Decontamination Method: _____ Steam/High Pressure Wash ✓ 3 Stage (Alconox, tap water & DI rinse) _____ Other: _____

### PURGING AND SAMPLING METHODOLOGIES

**Well Recovery Type**

✓ Fast -recovers 80% within 2 hours -Methods 1, 2, 3, & 5 ___ Slow - more than 2 hours to recover 80% -Methods 3, 4, & 5

**PURGING METHODS**

___ Method 1, remove 3 BV, sample after well recovers 80% of total purged drawdown.
✓ Method 2, remove 1 BV, test parameters until stable per SAM Manual, sample after well recovers 80% of total purged drawdown.
___ Method 3, Low-flow - install pump at least 2 hours prior to start of purging. Follow detailed methodology in SAM Manual.
List the date and time the pump was installed: Date:_____ Time:_____
___ Method 4, remove 1 BV, sample after 2 hours. Note - if well recovers 80% of total purged drawdown, use another method.
___ Method 5, non-purge method. Only with prior written approval from SAM

### PURGING INFORMATION

| Time | Water Level (feet below top of casing) | Drawdown (feet) | Water Volume Purged (gal) | Measured Parameters | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Conductivity (µmhos) | Dissolved Oxygen | pH | Turbidity | Temp (°C) |
| 1120 | | | | | | | | |
| 1140 | 82.95 | 2.92 | 4.0 | 1452 | — | 7.06 | — | 19.7 |
| 1201 | 83.30 | 3.27 | 5.5 | 1438 | — | 6.96 | — | 20.1 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Borehole Volume: 3.6 (gal) — Total Volume Purge Water: 5.5 (gal) — Average pumping rate: — (gpm)

### RECOVERY CALCULATIONS

Recovery of 80% of drawdown from purging = SWL + (0.2)(Maximum Drawdown during purging) 80.68

### SAMPLING INFORMATION

Date & Time Sampled: 12/13/10 1310 — Depth to water at time of sampling (feet): 80.50

| Quantity | Container Type | Filtered (Y/N) | Sample Preservatives | Analytical Methods to Perform |
|---|---|---|---|---|
| 6 | VOA | N | HCl | 8015 TPHg/d, 8260 BTEX/Oxy. |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# APPENDIX B

# ANALYTICAL DATA AND CHAIN-OF-CUSTODY DOCUMENTATION

H&P Mobile Geochemistry Inc.

29 December 2010

Mr. Chuck Houser
SCS Engineers - San Diego
8799 Balboa Avenue, Suite 290
San Diego, CA 92123

H&P Project: SCS121610-10
Client Project: 01208459.00 / Jacumba Texaco

Dear Client:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 16-Dec-10 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Louis a. Adame for
Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845



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| | | |
|---|---|---|
| SCS Engineers - San Diego | Project: SCS121610-10 | |
| 8799 Balboa Avenue, Suite 290 | Project Number: 01208459.00 / Jacumba Texaco | Reported: |
| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| MW-1 | E012095-01 | Water | 14-Dec-10 | 16-Dec-10 |
| MW-2 | E012095-02 | Water | 14-Dec-10 | 16-Dec-10 |
| MW-3 | E012095-03 | Water | 15-Dec-10 | 16-Dec-10 |
| MW-4 | E012095-04 | Water | 15-Dec-10 | 16-Dec-10 |
| MW-5 | E012095-05 | Water | 14-Dec-10 | 16-Dec-10 |
| MW-6 | E012095-06 | Water | 13-Dec-10 | 16-Dec-10 |
| MW-7 | E012095-07 | Water | 13-Dec-10 | 16-Dec-10 |
| MW-8 | E012095-08 | Water | 15-Dec-10 | 16-Dec-10 |
| MW-9 | E012095-09 | Water | 15-Dec-10 | 16-Dec-10 |
| MW-11 | E012095-10 | Water | 14-Dec-10 | 16-Dec-10 |
| MW-12 | E012095-11 | Water | 13-Dec-10 | 16-Dec-10 |

Mobile Geochemistry Inc.

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Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

SCS Engineers - San Diego
8799 Balboa Avenue, Suite 290
San Diego, CA 92123

Project: SCS121610-10
Project Number: 01208459.00 / Jacumba Texaco
Project Manager: Mr. Chuck Houser

Reported:
29-Dec-10 10:54

## Volatile Organic Compounds by EPA Method 8260B

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-1 (E012095-01) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| **Methyl tertiary-butyl ether (MTBE)** | **700** | 100 | ug/l | 10 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | 0.1 | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| **Tertiary-amyl methyl ether (TAME)** | **39** | 1.0 | " | " | " | " | " | " | |
| **Benzene** | **160** | 50 | " | 10 | " | " | " | " | |
| **Toluene** | **13** | 0.5 | " | 0.1 | " | " | " | " | |
| **Ethylbenzene** | **3.1** | 0.5 | " | " | " | " | " | " | |
| **m,p-Xylene** | **110** | 1.0 | " | " | " | " | " | " | |
| **o-Xylene** | **610** | 50 | " | 10 | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | 0.1 | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *105 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *107 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *114 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *106 %* | | *75-125* | | " | " | " | |
| **MW-2 (E012095-02) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| **Methyl tertiary-butyl ether (MTBE)** | **97** | 1.0 | ug/l | 0.1 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| **Diisopropyl ether (DIPE)** | **2.8** | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| **Benzene** | **3900** | 50 | " | 10 | " | " | " | " | |
| **Toluene** | **12000** | 100 | " | 20 | " | " | 22-Dec-10 | " | |
| **Ethylbenzene** | **3000** | 50 | " | 10 | " | " | 21-Dec-10 | " | |
| **m,p-Xylene** | **12000** | 100 | " | " | " | " | " | " | |
| **o-Xylene** | **6600** | 50 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | 0.1 | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *104 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *101 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *101 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *101 %* | | *75-125* | | " | " | " | |

Mobile Geochemistry Inc.

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Carlsbad, CA 92010
760-804-9678 Phone
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SCS Engineers - San Diego
8799 Balboa Avenue, Suite 290
San Diego, CA 92123

Project: SCS121610-10
Project Number: 01208459.00 / Jacumba Texaco
Project Manager: Mr. Chuck Houser

Reported:
29-Dec-10 10:54

## Volatile Organic Compounds by EPA Method 8260B

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-3 (E012095-03) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | 0.05 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| Benzene | ND | 0.5 | " | " | " | " | " | " | |
| Toluene | ND | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *105 %* | | *75-125* | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *105 %* | | *62-139* | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *110 %* | | *75-125* | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *104 %* | | *75-125* | " | " | " | " | |
| **MW-4 (E012095-04) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| **Methyl tertiary-butyl ether (MTBE)** | **260** | 10 | ug/l | 1 | EL02204 | 22-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | 0.05 | " | " | 22-Dec-10 | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| **Tertiary-amyl methyl ether (TAME)** | **12** | 1.0 | " | " | " | " | " | " | |
| **Benzene** | **5.9** | 0.5 | " | " | " | " | " | " | |
| **Toluene** | **0.6** | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| **m,p-Xylene** | **1.5** | 1.0 | " | " | " | " | " | " | |
| **o-Xylene** | **14** | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *106 %* | | *75-125* | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *99.1 %* | | *62-139* | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *111 %* | | *75-125* | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *102 %* | | *75-125* | " | " | " | " | |

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Project: SCS121610-10
Project Number: 01208459.00 / Jacumba Texaco
Project Manager: Mr. Chuck Houser

Reported:
29-Dec-10 10:54

## Volatile Organic Compounds by EPA Method 8260B

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-5 (E012095-05) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| **Methyl tertiary-butyl ether (MTBE)** | **560** | 200 | ug/l | 20 | EL02201 | 21-Dec-10 | 22-Dec-10 | EPA 8260B | |
| **Diisopropyl ether (DIPE)** | **4.3** | 1.0 | " | 0.1 | " | " | 21-Dec-10 | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| **Tertiary-amyl methyl ether (TAME)** | **13** | 1.0 | " | " | " | " | " | " | |
| **Benzene** | **19** | 0.5 | " | " | " | " | " | " | |
| **Toluene** | **11** | 0.5 | " | " | " | " | " | " | |
| **Ethylbenzene** | **3.2** | 0.5 | " | " | " | " | " | " | |
| **m,p-Xylene** | **19** | 1.0 | " | " | " | " | " | " | |
| **o-Xylene** | **10** | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *103 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *114 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *114 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *109 %* | | *75-125* | | " | " | " | |
| **MW-6 (E012095-06) Water Sampled: 13-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | 0.05 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| Benzene | ND | 0.5 | " | " | " | " | " | " | |
| Toluene | ND | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *108 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *110 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *110 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *108 %* | | *75-125* | | " | " | " | |

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| 8799 Balboa Avenue, Suite 290 | Project Number: 01208459.00 / Jacumba Texaco | Reported: |
| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

## Volatile Organic Compounds by EPA Method 8260B

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-7 (E012095-07) Water Sampled: 13-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | 0.05 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| Benzene | ND | 0.5 | " | " | " | " | " | " | |
| Toluene | ND | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *100 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *105 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *108 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *107 %* | | *75-125* | | " | " | " | |
| **MW-8 (E012095-08) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| **Methyl tertiary-butyl ether (MTBE)** | **21** | 1.0 | ug/l | 0.05 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| Benzene | ND | 0.5 | " | " | " | " | " | " | |
| Toluene | ND | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *104 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *105 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *108 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *106 %* | | *75-125* | | " | " | " | |

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| 8799 Balboa Avenue, Suite 290 | Project Number: 01208459.00 / Jacumba Texaco | Reported: |
| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

## Volatile Organic Compounds by EPA Method 8260B

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-9 (E012095-09) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | 0.05 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| Benzene | ND | 0.5 | " | " | " | " | " | " | |
| Toluene | ND | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *104 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *112 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *109 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *108 %* | | *75-125* | | " | " | " | |
| **MW-11 (E012095-10) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | 0.05 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| Benzene | ND | 0.5 | " | " | " | " | " | " | |
| Toluene | ND | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *102 %* | | *75-125* | | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *109 %* | | *62-139* | | " | " | " | |
| *Surrogate: Toluene-d8* | | *109 %* | | *75-125* | | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *110 %* | | *75-125* | | " | " | " | |

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Project Number: 01208459.00 / Jacumba Texaco
Project Manager: Mr. Chuck Houser

Reported:
29-Dec-10 10:54

## Volatile Organic Compounds by EPA Method 8260B

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-12 (E012095-11) Water Sampled: 13-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | 0.05 | EL02201 | 21-Dec-10 | 21-Dec-10 | EPA 8260B | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | " | " | " | " | " | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | " | " | " | " | " | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | " | " | " | " | " | |
| Benzene | ND | 0.5 | " | " | " | " | " | " | |
| Toluene | ND | 0.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.5 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.5 | " | " | " | " | " | " | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | " | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *105 %* | | *75-125* | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *109 %* | | *62-139* | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *108 %* | | *75-125* | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *101 %* | | *75-125* | " | " | " | " | |

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Project Manager: Mr. Chuck Houser

Reported:
29-Dec-10 10:54

## TPH by GC FID

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-1 (E012095-01) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| **Gasoline (C5-C11)** | **2500** | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| **Diesel (C12-C24)** | **700** | 500 | " | " | " | " | " | " | D-08 |
| **MW-2 (E012095-02) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| **Gasoline (C5-C11)** | **37000** | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| **Diesel (C12-C24)** | **2900** | 500 | " | " | " | " | " | " | D-08 |
| **MW-3 (E012095-03) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |
| **MW-4 (E012095-04) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |
| **MW-5 (E012095-05) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |
| **MW-6 (E012095-06) Water Sampled: 13-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |
| **MW-7 (E012095-07) Water Sampled: 13-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |

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Project Number: 01208459.00 / Jacumba Texaco
Project Manager: Mr. Chuck Houser

Reported:
29-Dec-10 10:54

## TPH by GC FID

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution Factor | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-8 (E012095-08) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |
| **MW-9 (E012095-09) Water Sampled: 15-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |
| **MW-11 (E012095-10) Water Sampled: 14-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |
| **MW-12 (E012095-11) Water Sampled: 13-Dec-10 Received: 16-Dec-10** | | | | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | 1 | EL02101 | 20-Dec-10 | 20-Dec-10 | DHS LUFT | |
| Diesel (C12-C24) | ND | 500 | " | " | " | " | " | " | |

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| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EL02201 - EPA 5030** | | | | | | | | | | |
| **Blank (EL02201-BLK1)** | | | | Prepared & Analyzed: 21-Dec-10 | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | | | | | | | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | | | | | | | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | | | | | | | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | | | | | | | |
| Benzene | ND | 0.5 | " | | | | | | | |
| Toluene | ND | 0.5 | " | | | | | | | |
| Ethylbenzene | ND | 0.5 | " | | | | | | | |
| m,p-Xylene | ND | 1.0 | " | | | | | | | |
| o-Xylene | ND | 0.5 | " | | | | | | | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | | | | | | | |
| *Surrogate: Dibromofluoromethane* | *2.56* | | " | *2.50* | | *102* | *75-125* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.66* | | " | *2.50* | | *107* | *62-139* | | | |
| *Surrogate: Toluene-d8* | *2.70* | | " | *2.50* | | *108* | *75-125* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *2.62* | | " | *2.50* | | *105* | *75-125* | | | |
| **Matrix Spike (EL02201-MS1)** | | **Source: E012095-11** | | Prepared & Analyzed: 21-Dec-10 | | | | | | |
| Benzene | 2.68 | 0.5 | ug/l | 2.50 | ND | 107 | 75-125 | | | |
| Toluene | 2.99 | 0.5 | " | 2.50 | ND | 120 | 74-125 | | | |
| *Surrogate: Dibromofluoromethane* | *2.47* | | " | *2.50* | | *98.9* | *75-125* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.63* | | " | *2.50* | | *105* | *62-139* | | | |
| *Surrogate: Toluene-d8* | *2.68* | | " | *2.50* | | *107* | *75-125* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *2.72* | | " | *2.50* | | *109* | *75-125* | | | |
| **Matrix Spike Dup (EL02201-MSD1)** | | **Source: E012095-11** | | Prepared & Analyzed: 21-Dec-10 | | | | | | |
| Benzene | 2.69 | 0.5 | ug/l | 2.50 | ND | 108 | 75-125 | 0.317 | 20 | |
| Toluene | 2.81 | 0.5 | " | 2.50 | ND | 112 | 74-125 | 6.21 | 20 | |
| *Surrogate: Dibromofluoromethane* | *2.63* | | " | *2.50* | | *105* | *75-125* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.66* | | " | *2.50* | | *106* | *62-139* | | | |
| *Surrogate: Toluene-d8* | *2.75* | | " | *2.50* | | *110* | *75-125* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *2.64* | | " | *2.50* | | *106* | *75-125* | | | |

Mobile Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

| | | |
|---|---|---|
| SCS Engineers - San Diego | Project: SCS121610-10 | |
| 8799 Balboa Avenue, Suite 290 | Project Number: 01208459.00 / Jacumba Texaco | Reported: |
| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EL02204 - EPA 5030** | | | | | | | | | | |
| **Blank (EL02204-BLK1)** | | | | Prepared & Analyzed: 22-Dec-10 | | | | | | |
| Methyl tertiary-butyl ether (MTBE) | ND | 1.0 | ug/l | | | | | | | |
| Diisopropyl ether (DIPE) | ND | 1.0 | " | | | | | | | |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | " | | | | | | | |
| Tertiary-amyl methyl ether (TAME) | ND | 1.0 | " | | | | | | | |
| Benzene | ND | 0.5 | " | | | | | | | |
| Toluene | ND | 0.5 | " | | | | | | | |
| Ethylbenzene | ND | 0.5 | " | | | | | | | |
| m,p-Xylene | ND | 1.0 | " | | | | | | | |
| o-Xylene | ND | 0.5 | " | | | | | | | |
| Tertiary-butyl alcohol (TBA) | ND | 5.0 | " | | | | | | | |
| *Surrogate: Dibromofluoromethane* | *2.70* | | *"* | *2.50* | | *108* | *75-125* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.55* | | *"* | *2.50* | | *102* | *62-139* | | | |
| *Surrogate: Toluene-d8* | *2.66* | | *"* | *2.50* | | *106* | *75-125* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *2.66* | | *"* | *2.50* | | *107* | *75-125* | | | |
| **LCS (EL02204-BS1)** | | | | Prepared & Analyzed: 22-Dec-10 | | | | | | |
| Benzene | 2.56 | 0.5 | ug/l | 2.50 | | 102 | 75-125 | | | |
| Toluene | 2.48 | 0.5 | " | 2.50 | | 99.1 | 74-125 | | | |
| *Surrogate: Dibromofluoromethane* | *2.66* | | *"* | *2.50* | | *106* | *75-125* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.64* | | *"* | *2.50* | | *106* | *62-139* | | | |
| *Surrogate: Toluene-d8* | *2.69* | | *"* | *2.50* | | *108* | *75-125* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *2.63* | | *"* | *2.50* | | *105* | *75-125* | | | |
| **LCS Dup (EL02204-BSD1)** | | | | Prepared & Analyzed: 22-Dec-10 | | | | | | |
| Benzene | 2.52 | 0.5 | ug/l | 2.50 | | 101 | 75-125 | 1.63 | 20 | |
| Toluene | 2.45 | 0.5 | " | 2.50 | | 97.9 | 74-125 | 1.24 | 20 | |
| *Surrogate: Dibromofluoromethane* | *2.65* | | *"* | *2.50* | | *106* | *75-125* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.75* | | *"* | *2.50* | | *110* | *62-139* | | | |
| *Surrogate: Toluene-d8* | *2.71* | | *"* | *2.50* | | *108* | *75-125* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *2.70* | | *"* | *2.50* | | *108* | *75-125* | | | |

Mobile Geochemistry Inc.

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Carlsbad, CA 92010
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760-804-9159 Fax

| | | |
|---|---|---|
| SCS Engineers - San Diego | Project: SCS121610-10 | |
| 8799 Balboa Avenue, Suite 290 | Project Number: 01208459.00 / Jacumba Texaco | Reported: |
| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

## TPH by GC FID - Quality Control

## H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EL02101 - LUFT-DHS** | | | | | | | | | | |
| **Blank (EL02101-BLK1)** | | | | Prepared & Analyzed: 20-Dec-10 | | | | | | |
| Gasoline (C5-C11) | ND | 500 | ug/l | | | | | | | |
| Diesel (C12-C24) | ND | 500 | " | | | | | | | |
| **Matrix Spike (EL02101-MS1)** | | | Source: E012102-01 | Prepared & Analyzed: 20-Dec-10 | | | | | | |
| Gasoline (C5-C11) | 2620 | 500 | ug/l | 3000 | ND | 87.2 | 75-125 | | | |
| Diesel (C12-C24) | 7550 | 500 | " | 7500 | ND | 101 | 75-125 | | | |
| **Matrix Spike Dup (EL02101-MSD1)** | | | Source: E012102-01 | Prepared & Analyzed: 20-Dec-10 | | | | | | |
| Gasoline (C5-C11) | 2440 | 500 | ug/l | 3000 | ND | 81.3 | 75-125 | 6.92 | 30 | |
| Diesel (C12-C24) | 8390 | 500 | " | 7500 | ND | 112 | 75-125 | 10.5 | 30 | |

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760-804-9159 Fax

| | | |
|---|---|---|
| SCS Engineers - San Diego | Project: SCS121610-10 | |
| 8799 Balboa Avenue, Suite 290 | Project Number: 01208459.00 / Jacumba Texaco | Reported: |
| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

## Notes and Definitions

| | |
|---|---|
| D-08 | Results in the diesel organics range are primarily due to overlap from a gasoline range product. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

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Carlsbad, CA 92010
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760-804-9159 Fax

| | | |
|---|---|---|
| SCS Engineers - San Diego | Project: SCS121610-10 | |
| 8799 Balboa Avenue, Suite 290 | Project Number: 01208459.00 / Jacumba Texaco | Reported: |
| San Diego, CA 92123 | Project Manager: Mr. Chuck Houser | 29-Dec-10 10:54 |

## Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15

This certification applies to samples analyzed in summa canisters.

# Chain of Custody Record

H&P Mobile Geochemistry Inc.
☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date:
(SR) H&P Project # SCS1216 10-10
Outside Lab:

Client: SCS Engineers
Address: 8799 Balboa Ave., Suite 290
San Diego, CA 92123
Email: ccrosby@scsengineers.com

Collector: Chris Crosby
Client Project # 01208459.00
Location: Jacumba Texaco: 1451 Carrizo Gorge Rd., Jacumba CA
Phone: 858-571-5500 Fax: 858-571-5357

Page: 1 of 2
Project Contact: Chuck Houser
Turn around time: Normal

Geotracker EDF: Yes ☑ No ☐
Global ID: T0607300008
Excel EDD: Yes ☐ No ☐

**Sample Receipt**
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☑ Yes ☐ No ☐ N/A
Temperature: 3°

Special Instructions:
Please cc results to chouser@scsengineers.com

Golden State Truckline 515566418

Lab Work Order # EO12095

| Sample Name | Field Point Name | Purge Vol | Time | Date | Sample Type | Container Type | Total # of containers | SOIL/GW: 8260B Full List | SOIL/GW: 8260B ☒ BTEX/OXY ☐ TPH gas | SOIL/GW: 8015M TPH ☒ g ☒ d ☐ ext | SOIL/GW: 418.1 TRPH | SOIL VAPOR/AIR ANALYSIS: VOC's: Full List ☐ 8260B ☐ TO-15 | VOC's: Short List/DTSC ☐ 8260B ☐ TO-15 | VOC's: SAM, 8260B ☐ SAM A ☐ SAM B | Naphthalene ☐ 8260B ☐ TO-15 | Oxygenates ☐ 8260B ☐ TO-15 | TPHv gas ☐ 8260B ☐ TO-15 | Ketones ☐ 8260B ☐ TO-15 | Other ☐ 8260B ☐ TO-15 | Leak Check Compound ☐ 1,1 DFA ☐ OTHER | Methane | Fixed Gases ☐ $CO_2$ ☐ $O_2$ ☐ $N_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | | 1250 | 12/14/10 | GW | VOA | 6 | | ☒ | ☒ | | | | | | | | | | | | |
| MW-2 | | | 1500 | ↓ | | | | | | | | | | | | | | | | | | |
| MW-3 | | | 1145 | 12/15/10 | | | | | | | | | | | | | | | | | | |
| MW-4 | | | 1015 | ↓ | | | | | | | | | | | | | | | | | | |
| MW-5 | | | 1400 | 12/14/10 | | | | | | | | | | | | | | | | | | |
| MW-6 | | | 1230 | 12/13/10 | | | | | | | | | | | | | | | | | | |
| MW-7 | | | 1240 | ↓ | | | | | | | | | | | | | | | | | | |
| MW-8 | | | 1300 | 12/15/10 | | | | | | | | | | | | | | | | | | |
| MW-9 | | | 1110 | ↓ | | | | | | | | | | | | | | | | | | |
| MW-11 | | | 1320 | 12/14/10 | ↓ | ↓ | ↓ | | | | | | | | | | | | | | | |

| | (company) | | (company) | Date: | Time: |
|---|---|---|---|---|---|
| Relinquished by: (Signature) Chris Crosby | SCS | Received by: (Signature) | H&P | 12/16/10 | 1015 |
| Relinquished by: (Signature) | | Received by: (Signature) | | | |
| Relinquished by: (Signature) | | Received by: (Signature) | | | |

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☒ Disposal ☐ Return to client ☐ Pickup

# Chain of Custody Record

H&P Mobile Geochemistry Inc.
☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date:
H&P Project # SCS12610-10
Outside Lab:

Client: SCS Engineers
Address: 8799 Balboa Ave., Suite 290
San Diego, CA 92123
Email: Ccrosby@scsengineers.com

Collector: Chris Crosby
Client Project # 01208459.00
Location: Jacumba Texaco: 1451 Carrizo Gorge Rd., Jacumba CA
Phone: 858-571-5500 Fax: 858-571-5357

Page: 2 of 2
Project Contact: Chuck Houser
Turn around time: Normal

Geotracker EDF: Yes ☑ No ☐
Global ID: T0607300008
Excel EDD: Yes ☐ No ☐

**Sample Receipt**
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☑ Yes ☐ No ☐ N/A
Temperature: 3°

Special Instructions:
Please cc results to chouser@scsengineers.com

Lab Work Order # E012095

| Sample Name | Field Point Name | Purge Vol | Time | Date | Sample Type | Container Type | Total # of containers | SOIL/GW: 8260B Full List | SOIL/GW: 8260B ☒ BTEX/OXY ☐ TPH gas | SOIL/GW: 8015M TPH ☒ g ☐ ext | SOIL/GW: 418.1 TRPH | SOIL VAPOR/AIR ANALYSIS: VOC's: Full List ☐ 8260B ☐ TO-15 | VOC's: Short List/DTSC ☐ 8260B ☐ TO-15 | VOC's: SAM, 8260B ☐ SAM A ☐ SAM B | Naphthalene ☐ 8260B ☐ TO-15 | Oxygenates ☐ 8260B ☐ TO-15 | TPHv gas ☐ 8260B ☐ TO-15 | Ketones ☐ 8260B ☐ TO-15 | Other ____ ☐ 8260B ☐ TO-15 | Leak Check Compound ☐ 1,1 DFA ☐ OTHER | Methane | Fixed Gases ☐ $CO_2$ ☐ $O_2$ ☐ $N_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-12 | – | – | 1310 | 12/13/10 | GW | VOA | 6 | | X | X | | | | | | | | | | | | |

| Relinquished by: (Signature) | (company) | Received by: (Signature) | (company) | Date: | Time: |
|---|---|---|---|---|---|
| Chris Crosby | SCS | [signature] | H&P | 12/16/10 | 1015 |
| Relinquished by: (Signature) | (company) | Received by: (Signature) | (company) | Date: | Time: |
| Relinquished by: (Signature) | (company) | Received by: (Signature) | (company) | Date: | Time: |

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☒ Disposal ☐ Return to client ☐ Pickup

Calscience
Environmental
Laboratories, Inc.

December 29, 2010

Chuck Houser
SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Subject: **Calscience Work Order No.: 10-12-1217**
**Client Reference: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 12/15/2010 and analyzed in accordance with the attached chain-of-custody.

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Ranjit Clarke
Project Manager

Calscience Environmental Laboratories, Inc.

**Analytical Report**

| | | | |
|---|---|---|---|
| SCS Engineers | | Date Received: | 12/15/10 |
| 8799 Balboa Avenue, Suite 290 | | Work Order No: | 10-12-1217 |
| San Diego, CA 92123-1562 | | Preparation: | N/A |
| | | Method: | RSK-175M |

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA



| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **MW-1** | **10-12-1217-1-A** | **12/14/10 12:50** | **Aqueous** | **GC 52** | **N/A** | **12/16/10 00:00** | **101216L01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| Methane | 11.6 | 1.00 | 1 | | ug/L |

| **MW-2** | **10-12-1217-2-A** | **12/14/10 15:00** | **Aqueous** | **GC 52** | **N/A** | **12/16/10 00:00** | **101216L01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| Methane | 395 | 2.00 | 2 | | ug/L |

| **MW-5** | **10-12-1217-3-A** | **12/14/10 14:00** | **Aqueous** | **GC 52** | **N/A** | **12/16/10 00:00** | **101216L01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| Methane | 1.59 | 1.00 | 1 | | ug/L |

| **MW-11** | **10-12-1217-4-A** | **12/14/10 13:20** | **Aqueous** | **GC 52** | **N/A** | **12/16/10 00:00** | **101216L01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| Methane | ND | 1.00 | 1 | | ug/L |

| **Method Blank** | **099-12-663-1,178** | **N/A** | **Aqueous** | **GC 52** | **N/A** | **12/16/10 00:00** | **101216L01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| Methane | ND | 1.00 | 1 | | ug/L |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

**Analytical Report**

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 12/15/10
Work Order No: 10-12-1217
Preparation: EPA 3010A Total
Method: EPA 6010B
Units: mg/L

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA



| Client Sample Number | Lab Sample Number | Date /Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **MW-1** | **10-12-1217-1-F** | **12/14/10 12:50** | **Aqueous** | **ICP 5300** | **12/15/10** | **12/15/10 20:27** | **101215LA3** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Iron | 0.262 | 0.100 | 1 | | Manganese | 1.43 | 0.00500 | 1 | |

| Client Sample Number | Lab Sample Number | Date /Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **MW-2** | **10-12-1217-2-F** | **12/14/10 15:00** | **Aqueous** | **ICP 5300** | **12/15/10** | **12/15/10 20:28** | **101215LA3** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Iron | 9.23 | 0.100 | 1 | | Manganese | 2.86 | 0.00500 | 1 | |

| Client Sample Number | Lab Sample Number | Date /Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **MW-5** | **10-12-1217-3-F** | **12/14/10 14:00** | **Aqueous** | **ICP 5300** | **12/15/10** | **12/15/10 20:32** | **101215LA3** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Iron | 0.117 | 0.100 | 1 | | Manganese | 0.605 | 0.00500 | 1 | |

| Client Sample Number | Lab Sample Number | Date /Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **MW-11** | **10-12-1217-4-F** | **12/14/10 13:20** | **Aqueous** | **ICP 5300** | **12/15/10** | **12/15/10 20:33** | **101215LA3** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Iron | 0.523 | 0.100 | 1 | | Manganese | 0.0299 | 0.00500 | 1 | |

| Client Sample Number | Lab Sample Number | Date /Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-003-11,226** | **N/A** | **Aqueous** | **ICP 5300** | **12/15/10** | **12/15/10 20:05** | **101215LA3** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Iron | ND | 0.100 | 1 | | Manganese | ND | 0.00500 | 1 | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

**Analytical Report**

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 12/15/10
Work Order No: 10-12-1217

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA



| Client Sample Number | Lab Sample Number | Date Collected | Matrix |
|---|---|---|---|
| **MW-1** | **10-12-1217-1** | **12/14/10** | **Aqueous** |

| Parameter | Results | RL | DF | Qual | Units | Date Prepared | Date Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| Redox Potential | -270 | -800 | 1 | | mV | 12/15/10 | 12/15/10 | ASTM D 1498 |
| Nitrate (as N) | 53 | 1.0 | 10 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Sulfate | 80 | 2.0 | 2 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Iron (II) | ND | 0.10 | 1 | | mg/L | 12/15/10 | 12/15/10 | SM 3500-FeB |
| pH | 6.51 | 0.01 | 1 | | pH units | N/A | 12/15/10 | SM 4500 H+ B |
| o-Phosphate (as P) | 0.21 | 0.20 | 2 | | mg/L | N/A | 12/15/10 | SM 4500 P B/E |
| Ammonia (as N) | ND | 0.10 | 1 | | mg/L | 12/21/10 | 12/21/10 | SM 4500-NH3 B/C |
| Dissolved Oxygen | 2.75 | 0.0100 | 1 | | mg/L | N/A | 12/15/10 | SM 4500-O G |
| Carbon Dioxide | 99 | 1.0 | 1 | | mg/L | N/A | 12/15/10 | SM4500-CO2D |

| | | | |
|---|---|---|---|
| **MW-2** | **10-12-1217-2** | **12/14/10** | **Aqueous** |

Comment(s): (3) The reporting limit is elevated resulting from matrix interference.

| Parameter | Results | RL | DF | Qual | Units | Date Prepared | Date Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| Redox Potential | -220 | -800 | 1 | | mV | 12/15/10 | 12/15/10 | ASTM D 1498 |
| Nitrate (as N) (3) | ND | 0.20 | 2 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Sulfate (3) | ND | 2.0 | 2 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Iron (II) | 3.5 | 0.10 | 1 | | mg/L | 12/15/10 | 12/15/10 | SM 3500-FeB |
| pH | 6.81 | 0.01 | 1 | | pH units | N/A | 12/15/10 | SM 4500 H+ B |
| o-Phosphate (as P) | 0.38 | 0.10 | 1 | | mg/L | N/A | 12/15/10 | SM 4500 P B/E |
| Ammonia (as N) | 0.62 | 0.10 | 1 | | mg/L | 12/21/10 | 12/21/10 | SM 4500-NH3 B/C |
| Dissolved Oxygen | 5.46 | 0.0100 | 1 | | mg/L | N/A | 12/15/10 | SM 4500-O G |
| Carbon Dioxide | 94 | 1.0 | 1 | | mg/L | N/A | 12/15/10 | SM4500-CO2D |

| | | | |
|---|---|---|---|
| **MW-5** | **10-12-1217-3** | **12/14/10** | **Aqueous** |

| Parameter | Results | RL | DF | Qual | Units | Date Prepared | Date Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| Redox Potential | -250 | -800 | 1 | | mV | 12/15/10 | 12/15/10 | ASTM D 1498 |
| Nitrate (as N) | 49 | 1.0 | 10 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Sulfate | 140 | 2.0 | 2 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Iron (II) | ND | 0.10 | 1 | | mg/L | 12/15/10 | 12/15/10 | SM 3500-FeB |
| pH | 6.91 | 0.01 | 1 | | pH units | N/A | 12/15/10 | SM 4500 H+ B |
| o-Phosphate (as P) | 0.72 | 0.10 | 1 | | mg/L | N/A | 12/15/10 | SM 4500 P B/E |
| Ammonia (as N) | ND | 0.10 | 1 | | mg/L | 12/21/10 | 12/21/10 | SM 4500-NH3 B/C |
| Dissolved Oxygen | 2.33 | 0.0100 | 1 | | mg/L | N/A | 12/15/10 | SM 4500-O G |
| Carbon Dioxide | 51 | 1.0 | 1 | | mg/L | N/A | 12/15/10 | SM4500-CO2D |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

**Analytical Report**

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 12/15/10
Work Order No: 10-12-1217

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA



| Client Sample Number | Lab Sample Number | Date Collected | Matrix |
|---|---|---|---|
| **MW-11** | **10-12-1217-4** | **12/14/10** | **Aqueous** |

| Parameter | Results | RL | DF | Qual | Units | Date Prepared | Date Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| Redox Potential | -270 | -800 | 1 | | mV | 12/15/10 | 12/15/10 | ASTM D 1498 |
| Nitrate (as N) | 12 | 0.20 | 2 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Sulfate | 12 | 2.0 | 2 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Iron (II) | ND | 0.10 | 1 | | mg/L | 12/15/10 | 12/15/10 | SM 3500-FeB |
| pH | 7.00 | 0.01 | 1 | | pH units | N/A | 12/15/10 | SM 4500 H+ B |
| o-Phosphate (as P) | 0.62 | 0.10 | 1 | | mg/L | N/A | 12/15/10 | SM 4500 P B/E |
| Ammonia (as N) | ND | 0.10 | 1 | | mg/L | 12/21/10 | 12/21/10 | SM 4500-NH3 B/C |
| Dissolved Oxygen | 5.69 | 0.0100 | 1 | | mg/L | N/A | 12/15/10 | SM 4500-O G |
| Carbon Dioxide | 15 | 1.0 | 1 | | mg/L | N/A | 12/15/10 | SM4500-CO2D |

| | | | |
|---|---|---|---|
| **Method Blank** | | **N/A** | **Aqueous** |

| Parameter | Results | RL | DF | Qual | Units | Date Prepared | Date Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| Nitrate (as N) | ND | 0.10 | 1 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Sulfate | ND | 1.0 | 1 | | mg/L | N/A | 12/15/10 | EPA 300.0 |
| Iron (II) | ND | 0.10 | 1 | | mg/L | 12/15/10 | 12/15/10 | SM 3500-FeB |
| o-Phosphate (as P) | ND | 0.10 | 1 | | mg/L | N/A | 12/15/10 | SM 4500 P B/E |
| Ammonia (as N) | ND | 0.10 | 1 | | mg/L | 12/21/10 | 12/21/10 | SM 4500-NH3 B/C |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

**Analytical Report**

| | | |
|---|---|---|
| SCS Engineers | Date Sampled: | 12/14/10 |
| 8799 Balboa Avenue, Suite 290 | Date Received: | 12/15/10 |
| San Diego, CA 92123-1562 | Date Analyzed: | 12/15/10 |
| | Work Order No.: | 10-12-1217 |
| | Method: | SM 4500 P B/E (Calculation) |
| Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA | | Page 1 of 1 |

All concentrations are reported in mg/L (ppm).

| Sample Number | o-Phosphate (as $PO_4$) Concentration | RL | Qual |
|---|---|---|---|
| **MW-1** | 0.64 | 0.62 | |
| **MW-2** | 1.2 | 0.31 | |
| **MW-5** | 2.2 | 0.31 | |
| **MW-11** | 1.90 | 0.31 | |
| **Method Blank** | ND | 0.31 | |

RL - Reporting Limit , Qual - Qualifiers

*

Calscience Environmental Laboratories, Inc.

**Analytical Report**

| | | |
|---|---|---|
| SCS Engineers | Date Sampled: | 12/14/10 |
| 8799 Balboa Avenue, Suite 290 | Date Received: | 12/15/10 |
| San Diego, CA 92123-1562 | Date Analyzed: | 12/15/10 |
| | Work Order No.: | 10-12-1217 |
| | Method: | SM 3500 FeB / EPA 6010B (Calc.) |
| Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA | | Page 1 of 1 |

All concentrations are reported in mg/L (ppm).

| Sample Number | Ferric Iron ($Fe^{3+}$) Concentration | RL | Qual |
|---|---|---|---|
| **MW-1** | 0.262 | 0.100 | |
| **MW-2** | 5.71 | 0.100 | |
| **MW-5** | 0.117 | 0.100 | |
| **MW-11** | 0.523 | 0.100 | |
| **Method Blank** | ND | 0.100 | |

RL - Reporting Limit , Qual - Qualifiers

*

Calscience Environmental Laboratories, Inc.

## Quality Control - Spike/Spike Duplicate

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 12/15/10
Work Order No: 10-12-1217
Preparation: EPA 3010A Total
Method: EPA 6010B

Project Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **10-12-1220-1** | **Aqueous** | **ICP 5300** | **12/15/10** | **12/15/10** | **101215SA3** |

| Parameter | MS %REC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|
| Iron | 4X | 4X | 65-149 | 4X | 0-21 | Q |
| Manganese | 96 | 96 | 86-116 | 0 | 0-7 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - Spike/Spike Duplicate

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 10-12-1217

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA

**Matrix: Aqueous or Solid**

| Parameter | Method | Quality Control Sample ID | Date Analyzed | Date Extracted | MS% REC | MSD % REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| o-Phosphate (as P) | SM 4500 P B/E | MW-2 | 12/15/10 | N/A | 90 | 87 | 70-130 | 0 | 0-25 | |
| Nitrate (as N) | EPA 300.0 | 10-12-1225-2 | 12/15/10 | N/A | 99 | 100 | 80-120 | 0 | 0-20 | |
| Sulfate | EPA 300.0 | 10-12-1225-2 | 12/15/10 | N/A | 95 | 95 | 80-120 | 0 | 0-20 | |
| Iron (II) | SM 3500-FeB | MW-11 | 12/15/10 | 12/15/10 | 100 | 100 | 70-130 | 0 | 0-25 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - Duplicate



SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 10-12-1217

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA

**Matrix: Aqueous or Solid**

| Parameter | Method | QC Sample ID | Date Analyzed | Sample Conc | DUP Conc | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| pH | SM 4500 H+ B | 10-12-1204-1 | 12/15/10 | 7.11 | 7.09 | 0 | 0-25 | |
| Carbon Dioxide | SM4500-CO2D | MW-1 | 12/15/10 | 99 | 100 | 2 | 0-25 | |
| Redox Potential | ASTM D 1498 | MW-11 | 12/15/10 | -270 | -270 | 1 | 0-20 | |
| Dissolved Oxygen | SM 4500-O G | 10-12-1319-1 | 12/15/10 | 1.94 | 2.20 | 13 | 0-25 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - LCS/LCS Duplicate

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

| | |
|---|---|
| Date Received: | N/A |
| Work Order No: | 10-12-1217 |
| Preparation: | N/A |
| Method: | RSK-175M |

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-12-663-1,178** | **Aqueous** | **GC 52** | **N/A** | **12/16/10** | **101216L01** |

| Parameter | LCS %REC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|
| Methane | 98 | 99 | 79-109 | 0 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - LCS/LCS Duplicate

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

| | |
|---|---|
| Date Received: | N/A |
| Work Order No: | 10-12-1217 |
| Preparation: | EPA 3010A Total |
| Method: | EPA 6010B |

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **097-01-003-11,226** | **Aqueous** | **ICP 5300** | **12/15/10** | **12/15/10** | **101215LA3** |

| Parameter | LCS %REC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|
| Iron | 97 | 96 | 80-120 | 1 | 0-20 | |
| Manganese | 98 | 97 | 80-120 | 1 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 10-12-1217

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA

**Matrix: Aqueous or Solid**

| Parameter | Method | Quality Control Sample ID | Date Extracted | Date Analyzed | LCS % REC | LCSD % REC | %REC CL | RPD | RPD CL | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate (as N) | EPA 300.0 | 099-12-906-1,452 | N/A | 12/15/10 | 101 | 102 | 90-110 | 0 | 0-15 | |
| Sulfate | EPA 300.0 | 099-12-906-1,452 | N/A | 12/15/10 | 99 | 99 | 90-110 | 2 | 0-15 | |
| Ammonia (as N) | SM 4500-NH3 B | 099-12-814-869 | 12/21/10 | 12/21/10 | 101 | 101 | 80-120 | 0 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - Laboratory Control Sample



SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 10-12-1217

Project: Jacumba Texaco / 1451 Carrizo Gorge Rd., Jacumba, CA

**Matrix: Aqueous or Solid**

| Parameter | Method | Quality Control Sample ID | Date Analyzed | Date Extracted | Conc Added | Conc Recovered | LCS %Rec | %Rec CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| o-Phosphate (as P) | SM 4500 P B/E | 099-05-084-602 | 12/15/10 | N/A | 0.4000 | 0.39 | 98 | 80-120 | |
| Iron (II) | SM 3500-FeB | 099-05-111-3,910 | 12/15/10 | 12/15/10 | 1.000 | 1.0 | 101 | 80-120 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Glossary of Terms and Qualifiers

Work Order Number: 10-12-1217

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within LCS ME Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |
| | Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. |

# Calscience Environmental Laboratories, Inc.

**CHAIN OF CUSTODY RECORD**

☒ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

WO # / LAB USE ONLY: 12-1217

Date: 12/14/10

Page: 1 of 1

| | |
|---|---|
| LABORATORY CLIENT: SCS Engineers | CLIENT PROJECT NAME / NUMBER: Jacumba Texaco, 1451 Carrizo Gorge Rd., Jacumba, CA |
| ADDRESS: 8799 Balboa Ave., Suite 290 | P.O. NO.: 01208459.00 |
| CITY: San Diego STATE: CA ZIP: 92123 | PROJECT CONTACT: Chuck Houser |
| TEL: 858-571-5500 E-MAIL: ccrosby@scsengineers.com | SAMPLER(S): (PRINT) Chris Crosby |

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☒ COELT EDF | GLOBAL ID: T0607300008 | LOG CODE:

SPECIAL INSTRUCTIONS:
- Bill to H and P Carlsbad, Suzie Reed
- Please cc results to chouser@scsengineers.com

## REQUESTED ANALYSES

| LAB USE ONLY | SAMPLE ID | SAMPLING DATE | SAMPLING TIME | MATRIX | NO. OF CONT. | Unpreserved | Preserved | Field Filtered | TPH (g) or GRO | TPH (d) or DRO or (C6-C36) or (C6-C44) | TPH ( ) | BTEX / MTBE (8260) or ( ) | ~~VOCs (8260)~~ Nitrate/Sulfate (EPA 300.0) | ~~Oxygenates (8260)~~ DO (SM 4500-O G) | En Core / Terra Core Prep (5035) | ~~SVOCs (8270)~~ $CO_2$ (SM 4500-CO2 D) | ~~Pesticides (8081)~~ Methane (RSK-175M) | ~~PCBs (8082)~~ ORP (ASTM D-1498) | PNAs (8310) or (8270) | T22 Metals (6010/747X) | Cr(VI) [7196 or 7199 or 218.6] | Air - VOCs (TO-14A) or (TO-15) | ~~Air - TPH (g) (TO-3)~~ pH (SM 4500-H+B) | Ammonia (SM 4500-NH3 B/C) | Phosphate (SM 4500 P B/E) | Fe(II)/Mn (6010B, SM 3500-Fe D) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1 | 12/14/10 | 1250 | GW | 9 | | | | | | | | X | X | | X | X | X | | | | | X | X | X | X |
| 2 | MW-2 | 12/14/10 | 1500 | ↓ | ↓ | | | | | | | | X | X | | X | X | X | | | | | X | X | X | X |
| 3 | MW-5 | 12/14/10 | 1400 | | | | | | | | | | X | X | | X | X | X | | | | | X | X | X | X |
| 4 | MW-11 | 12/14/10 | 1320 | | | | | | | | | | X | X | | X | X | X | | | | | X | X | X | X |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | |
|---|---|---|---|
| Relinquished by: (Signature) Chris Crosby (SCS) | Received by: (Signature/Affiliation) | Date: | Time: |
| Relinquished by: (Signature) | Received by: (Signature/Affiliation) | Date: | Time: |
| Relinquished by: (Signature) G50 | Received by: (Signature/Affiliation) Peggy M-62 | Date: 12/15/10 | Time: 10:30 |

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

06/01/10 Revision

(1217)

GSO GOLDEN STATE OVERNIGHT

**WebShip** >>>>>

800-322-5555 www.gso.com

*Ship From:*
BRENDA VANEGAS
SCS ENGINEERS
8799 BALBOA AVE #290
SAN DIEGO, CA 92123

*Ship To:*
**CAL SCIENCE**
**CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.**
**7440 LINCOLN WAY**
**GARDEN GROVE, CA 92841**

**COD:**
$0.00

**Reference:**
01208459.00/003

**Delivery Instructions:**

**Signature Type:**
SIGNATURE REQUIRED

**Tracking #:** 515558769

**PDS**

**ORC** **D**

**GARDEN GROVE**

**D92843A**

87121245

Print Date : 12/14/10 17:45 PM

**Package 1 of 1**

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

## LABEL INSTRUCTIONS:

**Do not copy or reprint this label for additional shipments - each package must have a unique barcode.**

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
STEP 2 - Fold this page in half.
STEP 3 - Securely attach this label to your package, do not cover the barcode.
STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

## ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

## TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-12-[1][2][1][7]

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: SCS ENGINEERS

DATE: 12/15/10

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

**Temperature** 3.2 °C + 0.5 °C (CF) = 3.7 °C ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter **Initial:** PS

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** PS

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ PS 12/15/10 | ☑ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☑ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Residual Chlorine / Dissolved Sulfide received within 24 hours | ☑ | ☐ | ☐ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☑ | ☐ | ☐ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑VOA**h** (2) ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☑1AGB**s**

☐500AGB ☑500AGJ ☐500AGJ**s** ☑250AGB ☐250CGB ☐250CGB**s** ☐1PB ☑500PB ☐500PB**na**

☐250PB ☑250PB**n** ☑125PB (2) ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

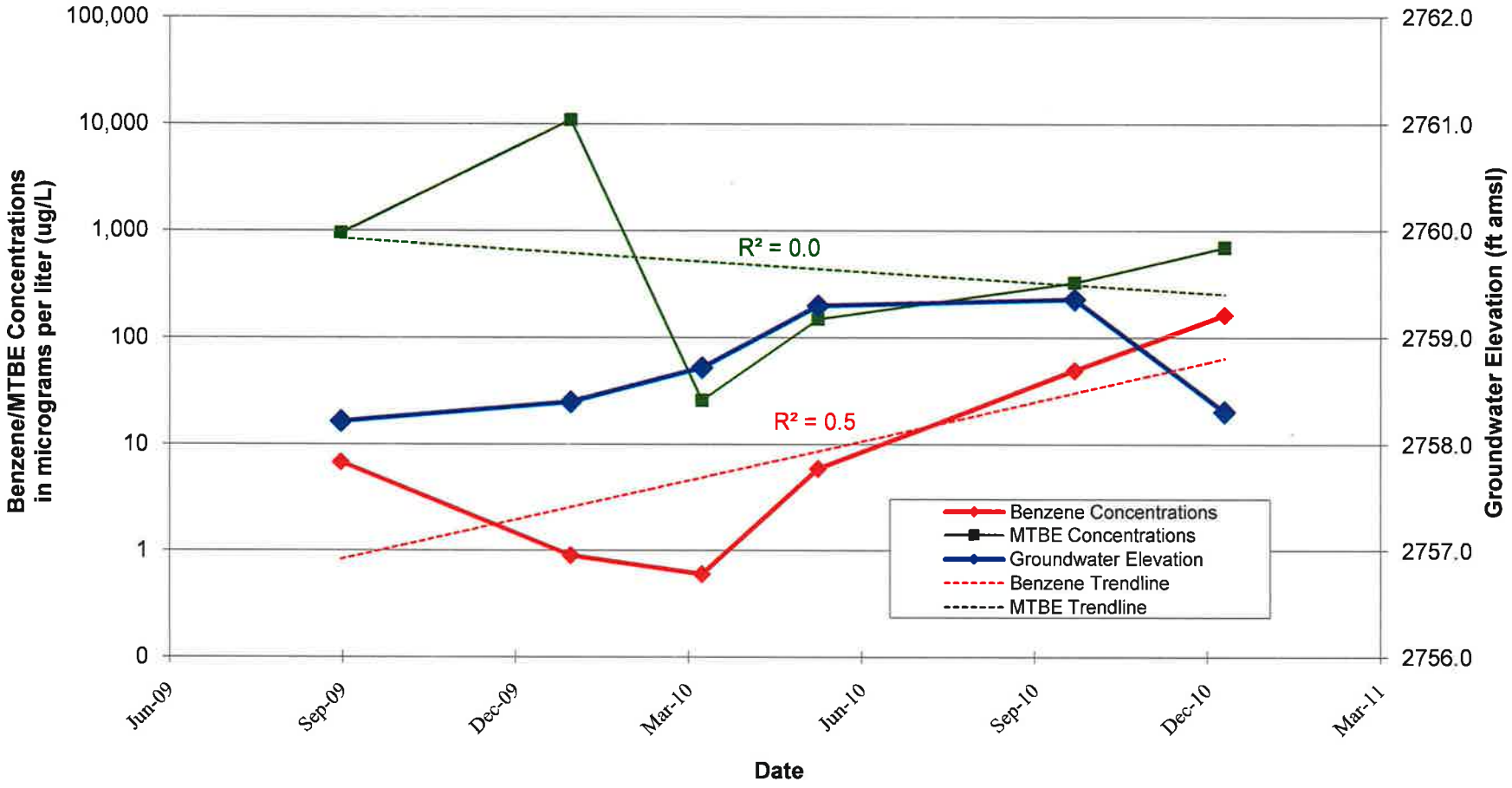
**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** [illegible]

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

# APPENDIX C

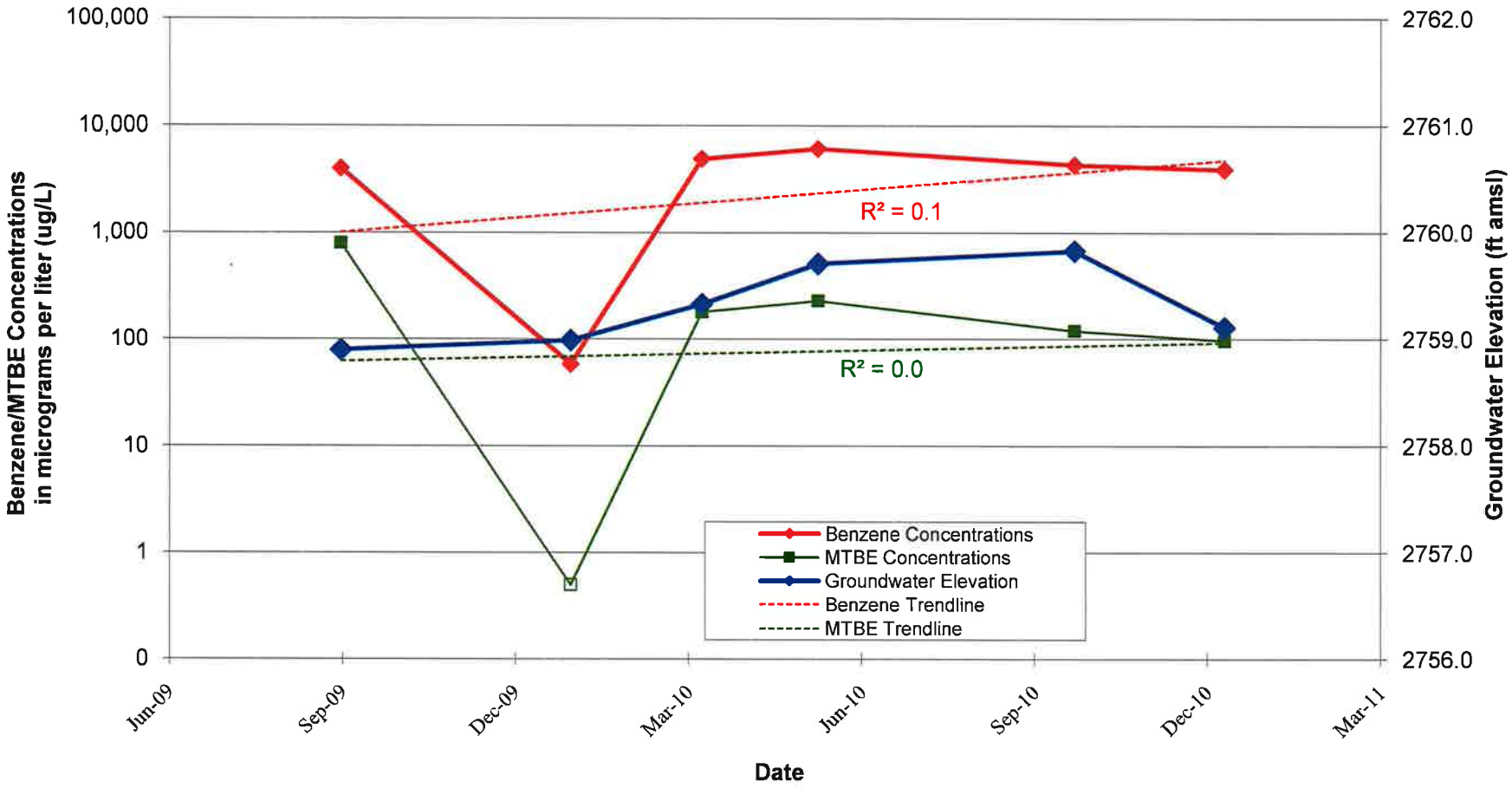
# HYDROGRAPHS

**MW-1**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

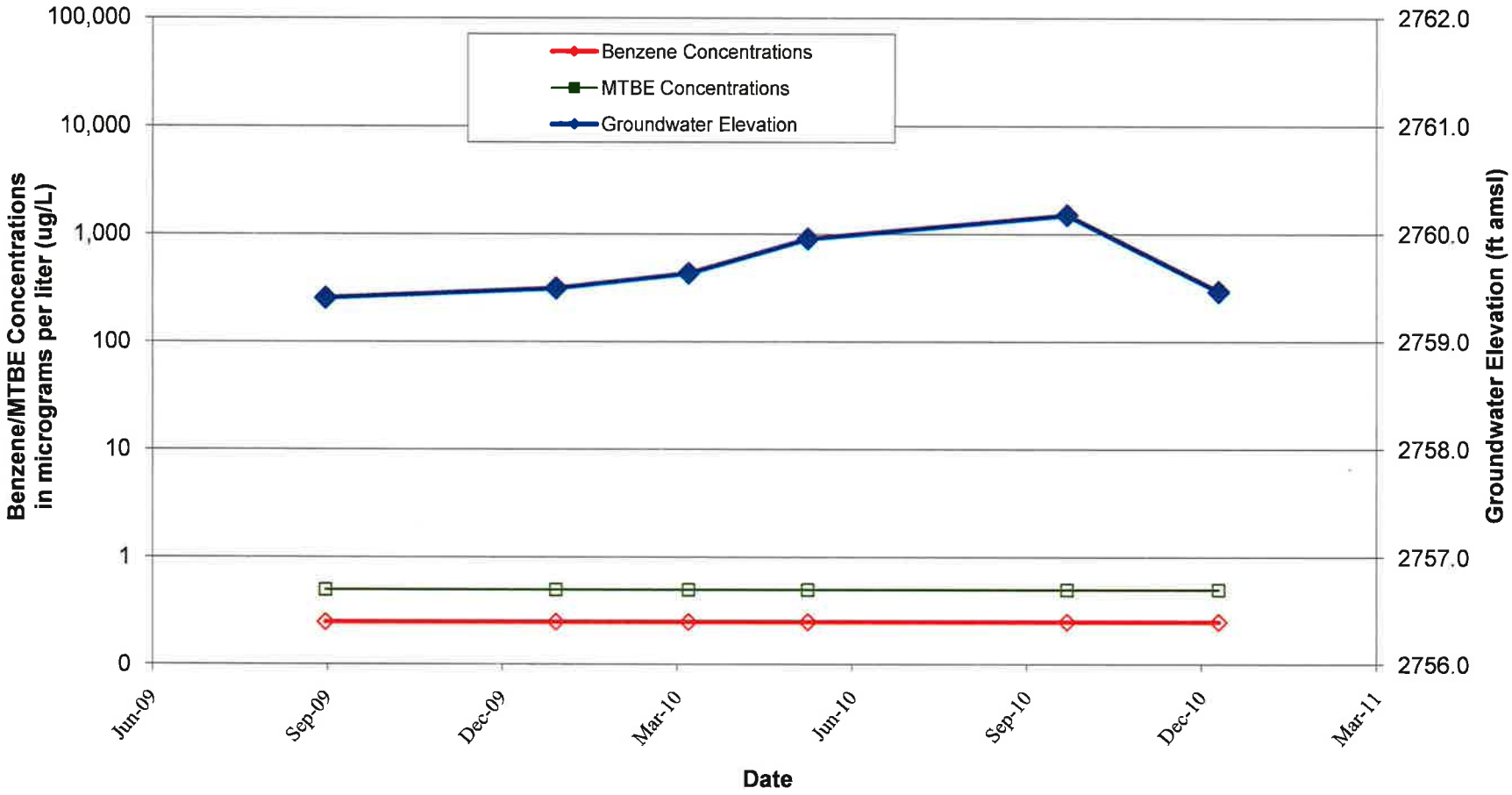
**MW-2**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

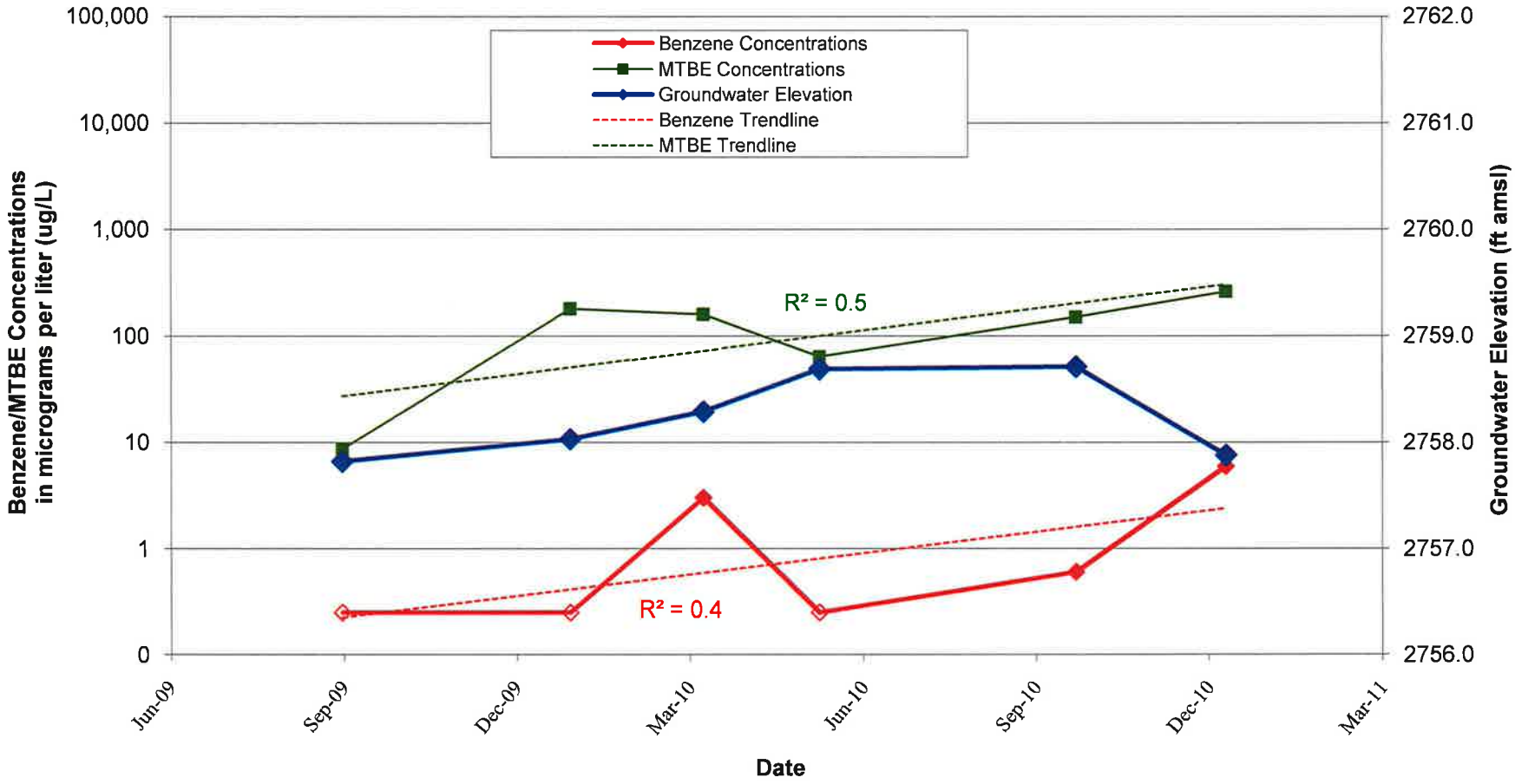
**MW-3**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

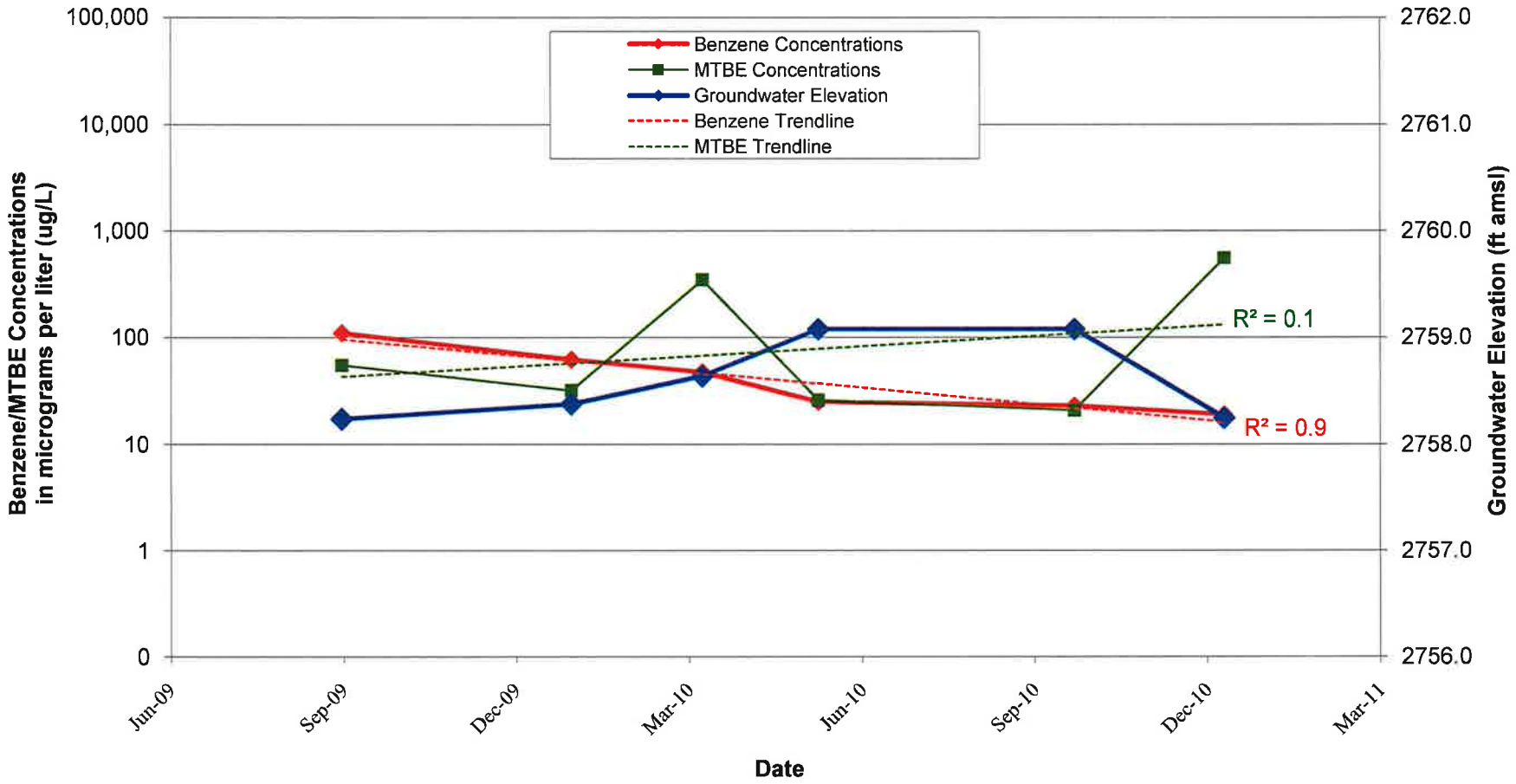
**MW-4**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

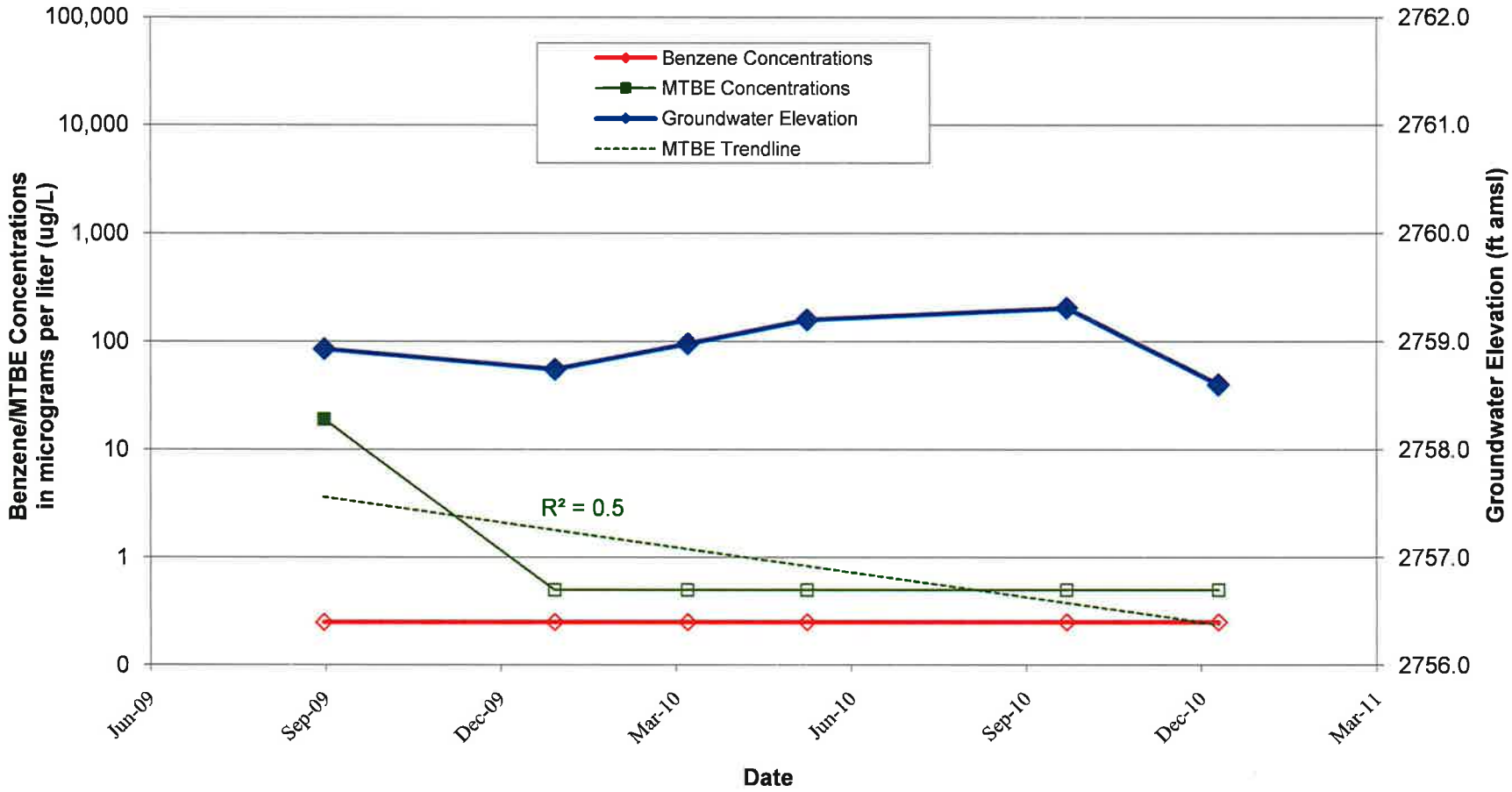
Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

**MW-5**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

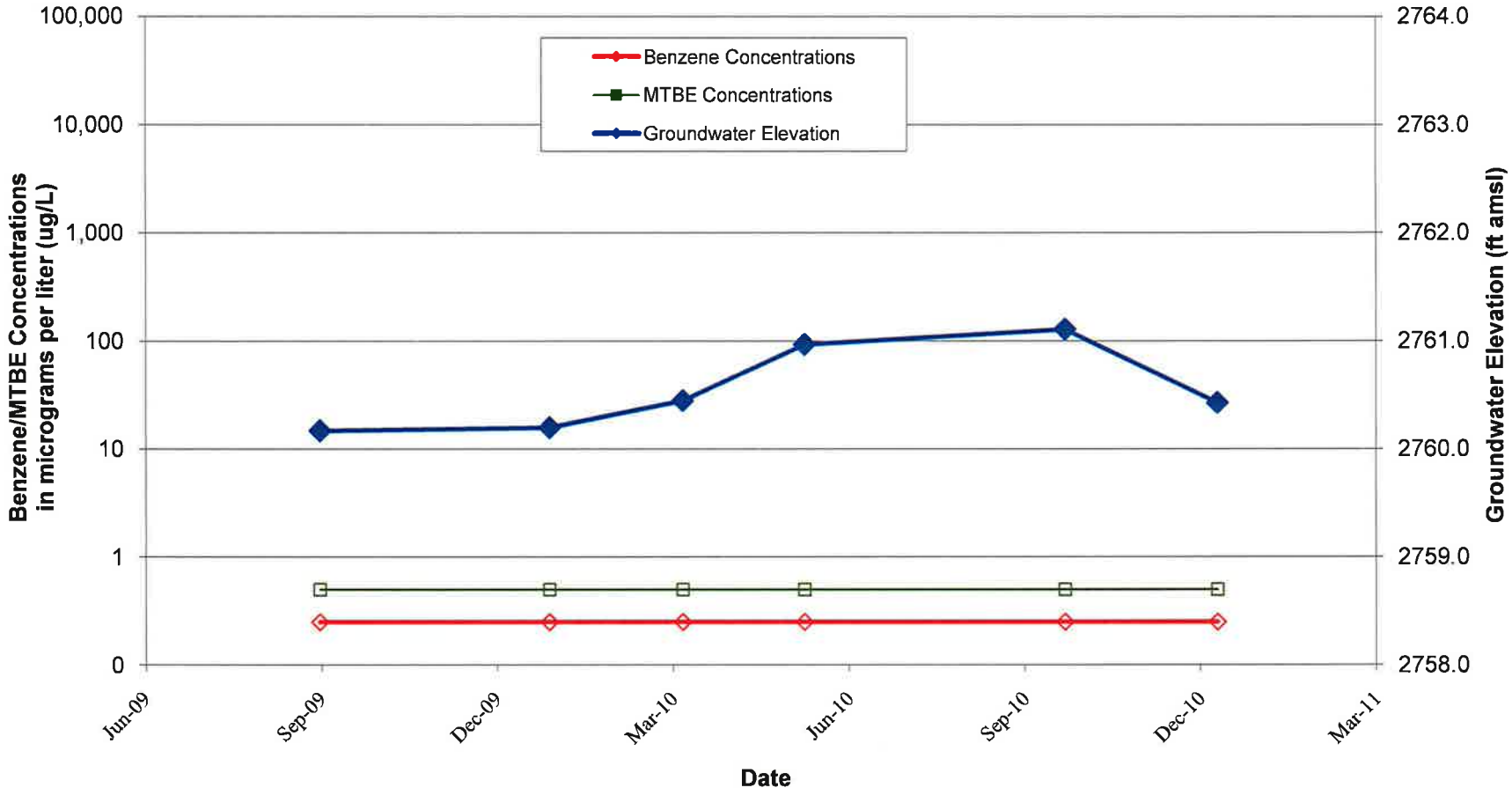
**MW-6**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

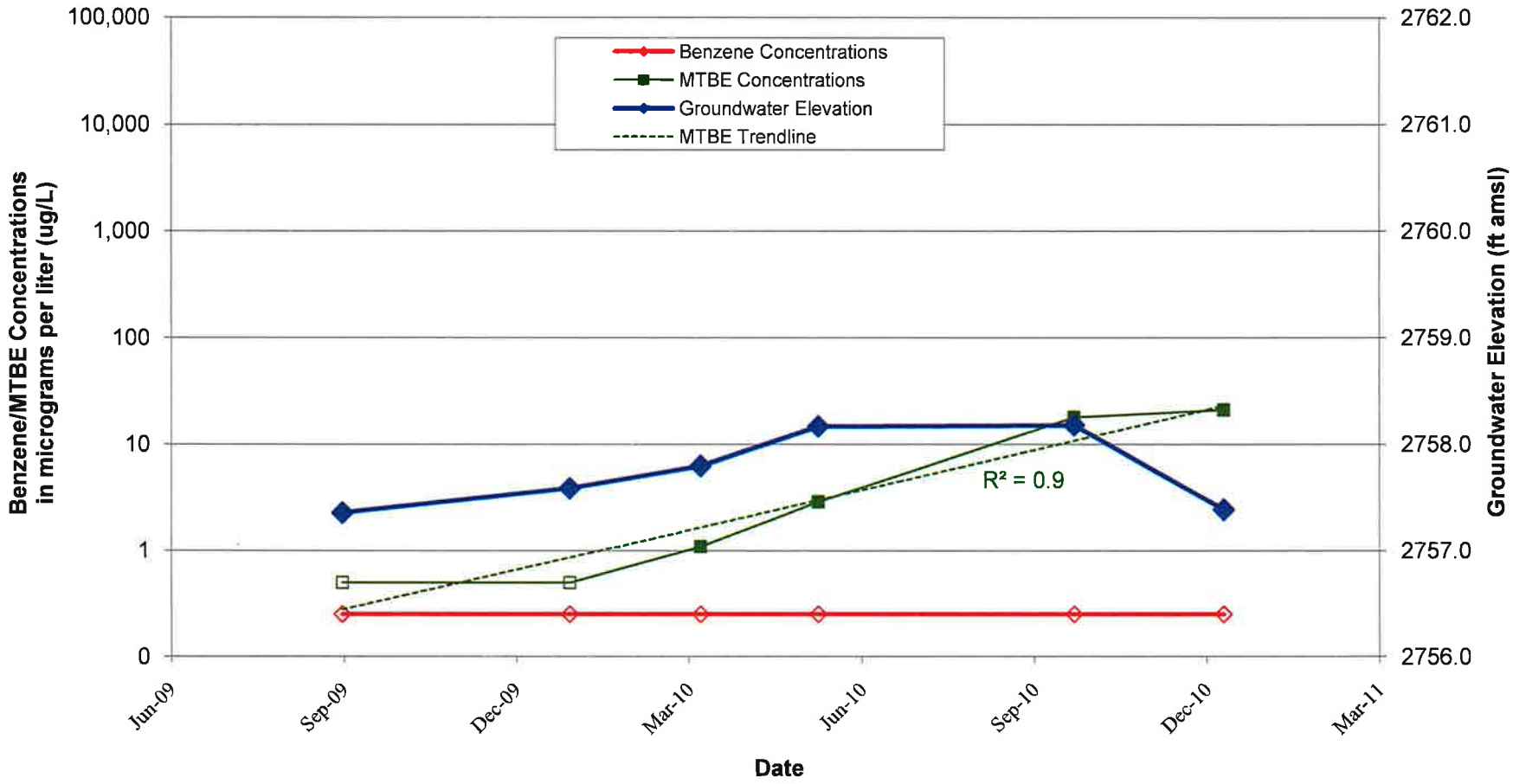
**MW-7**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

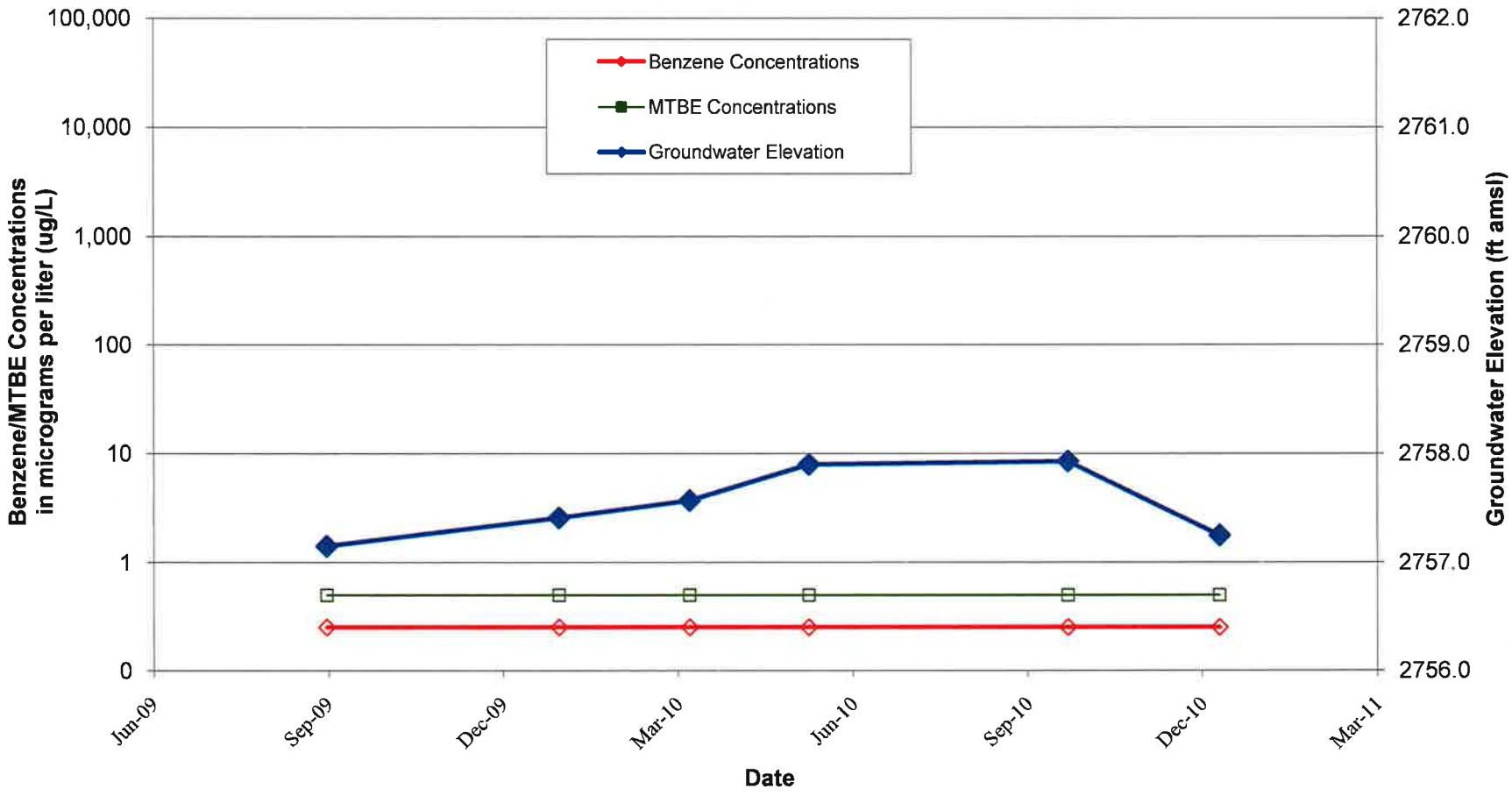
**MW- 8**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

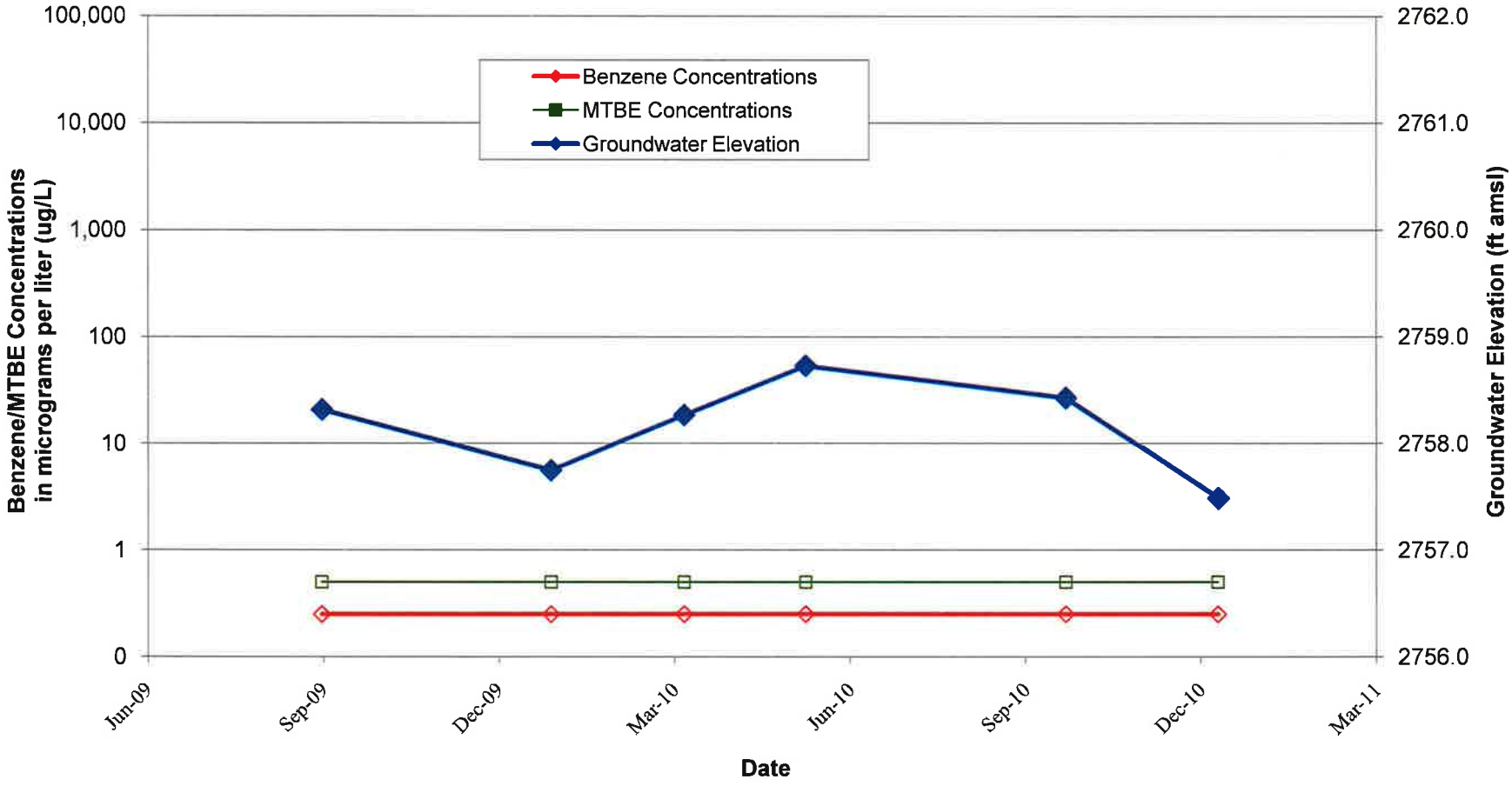
**MW-9**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

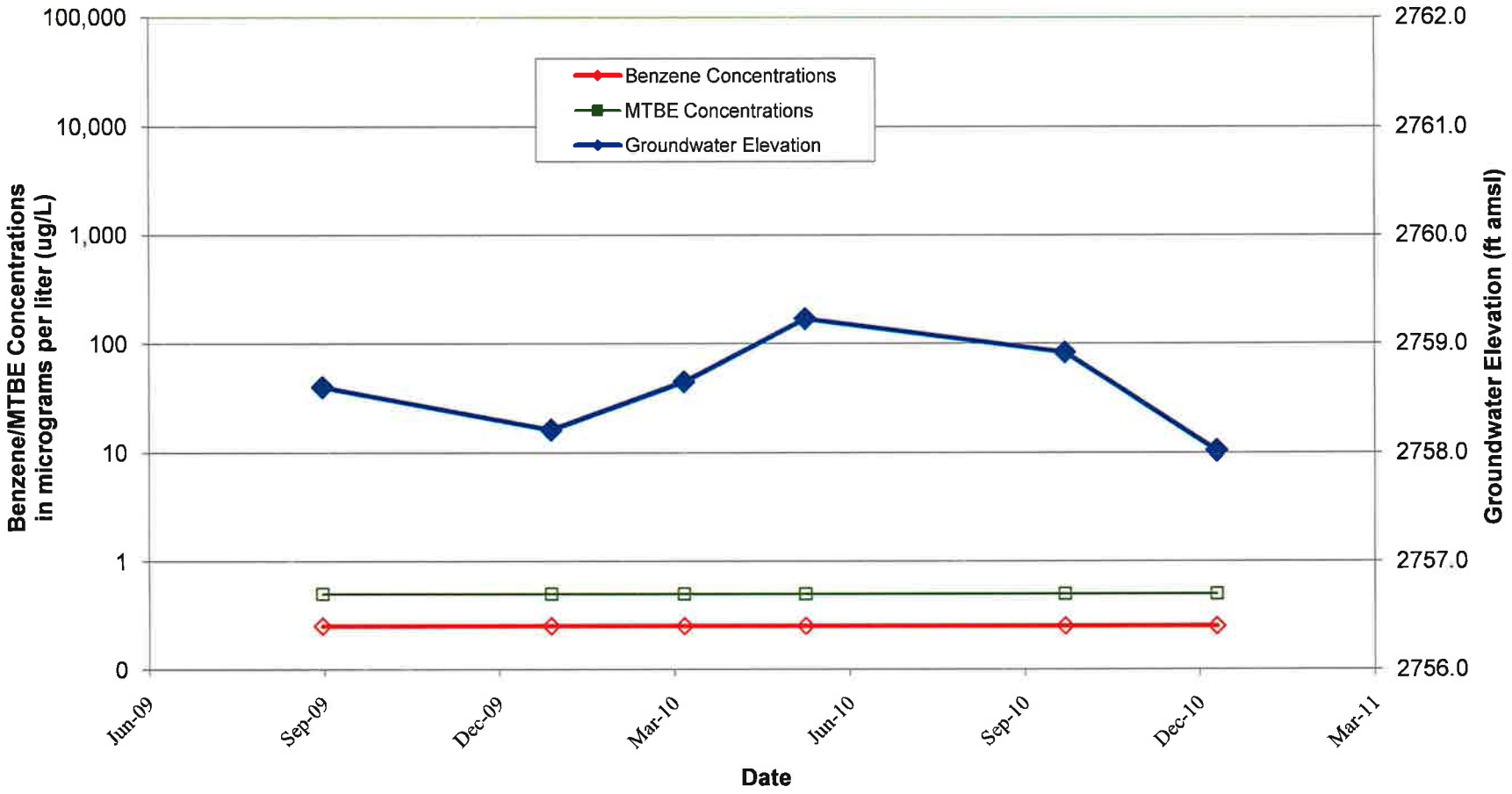
**MW-11**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.

**MW-12**
**Benzene/MTBE Concentrations and Groundwater Elevation versus Time**
**1451 Carrizo Gorge Road, Jacumba, California**




SCS ENGINEERS

Note: Hollow points represent non-detects and are plotted at 1/2 the reporting limit.