January 31, 2013

Rita and Tony Sullins
Don Sul Inc.
187 North L Street
Livermore, CA 94550

Re: Transmittal Letter
Site Location: Arrow Rentals
187 North L Street, Livermore, CA 94550

Dear Mr. Wickham:

On behalf of Rita and Tony Sullins, Don Sul Inc., Geological Technics Inc. (GTI) prepared the 2nd 2012 Semi-Annual Groundwater Monitoring, dated January 31, 2013 that was sent to your office via electronic delivery per Alameda County's guidelines.

I declare under penalty of law that the information and/or recommendations contained in the above referenced document or report is true and correct to the best of my knowledge.

Respectfully submitted,

Rita / Tony Sullins
Property Owner
Don Sul Inc.
187 North L Street
Livermore, CA 94550

Geological Technics Inc. _____

REPORT

2nd Semi-Annual Groundwater Monitoring & Remedial Effectiveness (Performed in 4th Quarter: November 2012)

Arrow Rentals Service
187 North L St.
Livermore, CA 94550

Project No. 1262.2
January 31, 2013

Prepared for:
Tony & Rita Sullins
Arrow Rentals Service
187 North L St.
Livermore, CA 94550

Prepared by:
Geological Technics Inc.
1172 Kansas Ave.
Modesto, California 95351
(209) 522-4119
www.gtienv.com

Geological Technics Inc.

1172 Kansas Ave.
Modesto, California 95351
(209) 522-4119/Fax (209) 522-4227
www.gtienv.com

January 31, 2013

Project No.: 1262.2
Project Name: Sullins (L St.)

Tony & Rita Sullins
Arrow Rentals Service
187 North L Street
Livermore, CA 94550

RE: Report: 2nd Semi-Annual Groundwater Monitoring & Remedial Effectiveness Performed 4th Quarter, November 2012
Location: 187 North L Street, Livermore, CA 94550.
(ACEH Fuel Leak Case No. RO0000394)

Dear Mr. & Ms. Sullins:

Geological Technics Inc. has prepared the following Report for the 2nd Semi-Annual 2012 groundwater monitoring event performed on November 19th and 21st, 2012, at the 187 North L Street property in Livermore, CA. In addition, the remedial activities performed during the 3rd and 4th Quarters of 2012 will be discussed. An elevated core of gasoline contamination persists in the location of and down-gradient (northwest) of the former USTs/piping. GTI is has implemented the Corrective Action Plan (CAP) and the Dual Phase Extraction (DPE) system which was started on November 15th, 2011. An installation report detailing the installation and start-up of the DPE system was submitted on December 29th, 2011.

If you have any questions, please do not hesitate to call me at (209) 522-4119.

Respectfully submitted,

Raynold Kablanow

Digitally signed by Raynold Kablanow
DN: cn=Raynold Kablanow, o, ou=Geological Technics, email=gti@gtienv.com, c=US
Date: 2013.02.05 07:20:40 -08'00'

Raynold I. Kablanow II, PhD
PG, CHG, REAII

cc: Jerry Wickham - ACEH
USTCUF (Via Geotracker)

TABLE OF CONTENTS

FIGURES

APPENDICES

Geological Technics Inc.

1172 Kansas Ave.
Modesto, California 95351
(209) 522-4119/Fax (209) 522-4227
www.gtienv.com

REPORT

2nd Semi-Annual Groundwater Monitoring & Remedial Effectiveness

Arrow Rentals Services
187 North L St.
Livermore, CA

Project No. 1262.2
January 31, 2012

1.0 EXECUTIVE SUMMARY

This report summarizes the results of the 2nd Semi-Annual 2012 groundwater monitoring and sampling event that took place on November 19th and 21st, 2012. In addition, the remedial activities performed during the 3rd and 4th Quarters of 2012 will be included in this report.

The average shallow groundwater elevation at the site was 439.15 feet above mean sea level (msl) and the average depth to water was 40.35 feet below ground surface (bgs). This represents decrease of 2.12 feet since the May 2012 monitoring event and a decrease of 4.94 feet since the October 2011 monitoring event. The shallow groundwater flow was northwest (N63°W) at a slope of 0.0153 ft/ft for this event.

The analytical results of groundwater samples show that detectable concentrations of gasoline range petroleum hydrocarbons were present in all seventeen of the site's groundwater monitoring wells sampled for this event. Historically, a persistent core of high concentrations has remained in the vicinity of wells W-1/W-1s/CMT-4, which are located adjacent to former USTs/piping trenches and is down gradient of the former UST system.

GTI is currently implementing the Corrective Action Plan (CAP) which includes the operation of a Dual Phase Extraction (DPE) system and an air sparging system to treat the residual contamination at the site, which was started on November 15th, 2011 and March 21st, 2012, respectively. As of December 13th, 2012, the DPE system had removed a total of approximately 10,209.5 pounds, or 1,666.1 gallons, of gasoline hydrocarbons as TPH-G.

During the 1st and 2nd Quarters of 2012, the soil vapor extraction removed approximately 1,933.1 pounds, or 324.1 gallons, of gasoline hydrocarbons as TPH-G while the groundwater extraction removed approximately 21.8 pounds, or 3.5 gallons.

Recommendations

1. Continue groundwater monitoring as directed by Alameda County Environmental Health in their most recent email dated October 6th, 2011.
2. Continue implementation of the Corrective Action Plan (CAP) and operating the Dual Phase Extraction (DPE) and air sparging systems, as the initial 1-year of operation has been effective at treating the sites groundwater and soil contamination. It is recommended that the DPE system target the lower clay layer (35-45' to 65 feet bgs) dominantly during the 1st and 2nd Quarters of 2013 as the upper gravelly layer (surface to 35-45 feet bgs) has been effectively remediated due to low groundwater conditions.

1.1 Site History

Gasoline range petroleum hydrocarbons associated with underground storage tank (UST) systems have been documented in soil and groundwater at 187 North L Street, Livermore, CA (sees Figures 1 and 2 for vicinity and site maps).

The work performed to date is summarized below*:

- 1972 – Three 1,500 gallon gasoline USTs removed.
- 1984 – A single 1,000 gallon gasoline UST installed.
- 1986 – Two gasoline USTs removed (4,000 & 6,000 gallon).
- June 1985 – Pitcock Petroleum dispenses ~600 gallons into a vapor monitoring well adjacent to the 1,000 gasoline UST (Pitcock Release).
- September 1988 – Three monitoring wells installed (W-1, W-2 and W-3).
- March 1989 – Five soil borings advanced (B-1 through B-5).
- May 1989 – Three monitoring wells installed (W-1, W-2 and W-3).
- July 1990 – Five monitoring wells installed (W-A through W-E), three soil borings advanced (B-7, B-8 and B-1A), and a soil gas survey was completed.
- March 1991 – A single soil boring advanced (B-F).
- January 1992 - UST pipeline soil excavation and sampling, two soil borings advanced (B-G and B-H).
- March 1994 – Dual Phase Extraction pilot test performed.
- March 1996 - Four monitoring wells installed (W-1s, W-Bs, W-3s and W-Es).
- 1998- Soil gas survey.
- November 2005 - Soil gas survey.
- October 2006 - Five continuous tubing multi-Chambered wells installed (the MW-4/104/204/304/404 through MW-8/108/208/308 series).
- October 2006 - Dual Phase Extraction pilot test performed.
- August 2007 – Final Corrective Action Plan prepared.

- April 2011 – Begin implementation of Corrective Action Plan.
- November 2011 – Start-up of Dual Phase Extraction (DPE) system.
- March 2012 – Start-up of air sparging system
- 1988 to present – intermittent monitoring/sampling of select monitoring wells.
  * Data from Woodward Clyde Consultants, GTI, & ACEH documentation.

1.2 Site Setting and Geology

The site is in the central portion of the City of Livermore, California, which is located in the Livermore Valley. The shallow sediments (<100 feet below grade) investigated in the project are Pleistocene (recent) alluvial fan and flood plain deposits [source: Geologic Map of California, San Jose Sheet, Division of Mines and Geology, 1966 (truncated geologic map copy located in Appendix D)].

The subject property is at an elevation of approximately 480 feet above mean sea level based on an October 16, 2006 survey conducted by Keir & Wright Engineers Surveyors Inc. of Livermore, California. Regionally, the surrounding area slopes to the west [source: USGS, Livermore Quadrangle, 7.5 Minute Series Topographic Map, 1980 photo-revision (truncated topographic map copy located in Appendix D)].

The subjective field observations of various field geologists and associated boring logs documented during this investigation were included in GTI's December 18, 2006 SCM report. The subsurface lithology falls into two predominant categories- gravelly soils and clayey soils. The site exhibits little correlation between boreholes and this situation is exacerbated by the fact that different geologists logged the boreholes and a five foot sampling interval was utilized in the past. The Site's geology is summarized as consisting primarily of gravelly units from the surface to approximately 35 – 45 feet bgs. Below these depths are 15 to 20 feet of clayey units that seem to retard the vertical migration of contaminants. These fine grained units are underlain by more gravels and a second clay horizon at approximately 78 feet bgs. Silts and sand units are present in the soil profile but are thin (usually a few inches thick, but much less than 5 feet thick) and less frequent than the soils noted above.

2.0 GROUNDWATER MONITORING

2.1 Groundwater Elevation and Flow Direction

The average groundwater elevation in the site's shallow water table wells was 439.15 feet above mean sea level (amsl) on November 19th, 2012. This corresponds to 40.35 feet below grade surface (bgs) and represents a decrease of 2.12 feet since the May 2012 monitoring event and a decrease of 4.94 feet since the October 2011 monitoring event. The depth to groundwater observed in the site's wells has ranged from approximately 20 - 44 feet below

grade surface from 1989 to 2012. Refer to Figures 1 through 3 for site details, well and borehole locations.

GTI grouped the five CMT™ well sets installed in October 2006 and existing wells according to the aquifer interval that the screened section intercepted (see Table 3 in Appendix A for well construction details, and Figure 4 for well screen intervals):

Shallow Wells (screened 20 – 45 feet bgs):

W-1s, W-Bs, W-3s, W-Es, and either {MW-4, MW-5, MW-6, MW-7, MW-8} or {MW-105, MW-106, MW-107, MW-108} depending on groundwater elevation

Intermediate Wells (screened 40 – 60 feet bgs):

W-1, W-3, W-A, MW-104, MW-205, MW-206, MW-207, MW-208.

Notes:

- Well W-1 is considered intermediate and is monitored; however the well is not utilized for groundwater gradient measurements due to modifications to the well top for remedial purposes.
- Monitoring well W-2 cannot be located following the construction of the housing complex to the south and southeast of the site.
- Monitoring well W-3 could not be monitored since an access agreement could not be obtained from Signature Properties.

Deep Wells (screened ~ 65 feet bgs):

MW-204, MW-305, MW-306, MW-307, MW-308

Deepest Wells (screened > 70 feet bgs):

MW-304, MW-404

The groundwater elevation data are summarized in Tables 1A, 1B and 1C of Appendix A, for the shallow, intermediate and deep/deepest aquifer levels, respectively.

Horizontal Groundwater Gradients:

The calculated gradients for the November 2012 monitoring event are as follows:

Aquifer Zone:	Gradient:	Bearing:
Water table	0.0153	N63°W
Intermediate	0.015	N36°W
Deep	0.0089	N72°W

Figures 5A illustrates the shallow aquifer groundwater gradient map for the November 2012 monitoring event. Figure 5B and 5C illustrate the intermediate and deep aquifer gradient maps, respectively.

Vertical Groundwater Gradients:
GTI calculated vertical gradients for well pairs MW-204/304, MW-205/305, MW-206/306 and MW-207/307 for the November 2012 monitoring event.

The following procedure is used to calculate vertical groundwater gradients in wells with submerged screens:

- Determine the vertical distance between the two measuring devices (wells) by calculating the distance between the mid-point between the screen top and bottom in the deep well (MW-305) and the mid-point between the screen top and bottom in the shallower well (MW-205).
- Measure the head in both wells used in the calculations.
- If the lateral distance between the well pair is greater than a few feet, then calculations must be made to correct the down-gradient piezometric head to account for the sloping water table between the wells. This is not necessary in this case because the wells are adjacent to each other in the CMT™ well sets.
- Divide the difference in head by the difference in vertical distance in the measuring devices to obtain the vertical gradient.

Figure 3 shows the location of the well pairs used for calculating vertical groundwater gradient in this report: MW-204/304, MW-205/305 MW-206/306, and MW-207/307; Table 2 in Appendix A shows the calculated vertical gradients.

For the November 2012 event, the vertical gradient is as follows:

- For the MW-204/304 pair was negative (or downward) at -0.01 ft/ft.
- For the MW-205/305 pair was negative (or downward) at -0.01 ft/ft.
- For the MW-206/306 pair was positive (or upward) at 0.02 ft/ft.
- For the MW-207/307 pair was positive (or upward) at 0.02 ft/ft.

In their January 16, 2007 correspondence Alameda County Environmental Health (ACEH) staff directed that groundwater elevation data for deep wells MW-304 & MW-404 be included in future reports. This data has been added in two columns on the far right of Table 1C, Appendix A.

2.2 Groundwater Sampling Procedure

On November 19th and 21st, 2012, Geological Technics Inc. (GTI) staff mobilized to the site to conduct depth-to-water measurements and purging & sampling of the site's monitoring wells. Before sampling was attempted, the wells were sounded for depth to water and groundwater levels recorded with exceptions as noted. The CMT™ wells were purged of at least three well volumes of stagnant water by hand. The non-CMT™ wells were purged of at least three well volumes of stagnant water using a dedicated Waterra check-ball. Purging continued until the temperature, conductivity, and pH of the groundwater stabilized (<10%

variation in three consecutive readings), indicating that formation water representative of aquifer conditions was entering the wells.

Once purging was complete, water samples were collected from the Waterra tube. Care was taken to minimize sample agitation. Once a sample container was filled and capped, the bottle was inverted, tapped and checked for headspace bubbles. The sample container was identified and labeled with a unique designation, inserted into a foam holder and placed into an ice chest cooled to 4°C for transport to the laboratory. Disposable gloves were used by the technician to collect all samples and were changed with each sample collection.

The following deviations from the sampling protocol are noted:

- *Several CMT™ wells did not contain enough water to purge and collect samples. Samples were not collected from the following wells: MW-4, MW-5, MW-6, MW-7, MW-8, MW-105, MW-106, MW-107 and MW-108.*

A chain of custody document, listing all samples collected, accompanied the samples from field to laboratory, thereby providing a means to track the movement of and ensure the integrity of the samples.

All well purge water was placed in a 55 gallon DOT approved container. Upon completing the groundwater monitoring event, all purge water was pumped from drums and into the DPE system for remediation prior to being discharged to the sanitary sewer system.

Groundwater monitoring field logs are included in Appendix C.

2.3 Laboratory Analyses

The groundwater samples collected on November 19th and 21st, 2012 were delivered to BC Laboratories of Bakersfield, California (certification #1186) for analyses.

The groundwater samples were analyzed for:

- Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) by EPA method 8021b
- Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA method 8021b
- Oxygenated Fuel Compound MTBE by EPA method 8021b (select wells)

The results and detection limits for the above analyses are listed in Table 4 of Appendix A while the lab analytical results are presented in Appendix B.

As required under AB2886, the depth to groundwater data for the 2nd Semiannual 2012 was submitted to GeoTracker on February 4, 2013 – confirmation number 1988265275. Laboratory data was submitted to GeoTracker on February 4, 2013 – confirmation numbers 3263015687 & 1692460536.

3.0 EXTRACTION WELL DEVELOPMENT

Due to an accumulation of silt within groundwater extraction well W-1 and groundwater extraction/air sparge well W-A, these wells were developed using mechanical surging and pumping techniques. W-A and W-1 were developed on December 4th, 2012 to remove silt produced from the remediation occurring in these wells.

3.1 Well Development Observations

W-1

Groundwater extraction well W-1 was developed for 155 minutes and purged 95 gallons of groundwater which removed 2.32 feet of silt from the well. Following development of the well, the purge water was clear with no sediments present.

W-A

Groundwater extraction & air sparging well W-A was developed for 190 minutes and purged 225 gallons of groundwater which removed 2.28 feet of silt from the well. Following development of the well, the purge water was clear with very little sediments present.

3.2 Well Development Procedures

The following well development protocol was used:

- Static water level and total depth of each well was measured.
- Each well was surged and pumped using dedicated tubing with a surge block attachment and a Waterra® inertia pump until, turbidity level, specific conductance, pH and temperature parameters were stable (within 10%).
- Repeated surging and pumping until each well produced visually clear water

The following records were kept:

- Date and duration of development
- Water level from top of casing (notched measuring point) prior to development and at completion of development. Measurements were made to 0.01 ft.
- Depth from notch on top of casing to the top of any sediment present in the well after development
- Volume and physical characteristics of developed water: including odor, color, sediment content
- Type and capacity of pump used and pumping rates
- Description of all development methods used

All well development equipment was decontaminated, by washing in Alconox solution with double rinse, between each well. The development water was entered into the dual phase extraction system.

4.0 FINDINGS AND DISCUSSION

4.1 Field Parameters

For the November 2012 event:

- Dissolved Oxygen (DO) ranged from 0.06 (W-1s) to 0.19 (W-3s).
- Electrical Conductivity (EC) ranged from 825 (W-Bs) to 1301 (W-1s).
- Oxygen Reduction Potential (ORP) ranged from -139.9 (W-A) to -39.2 (W-Bs).
- pH ranged from 6.16 (W-1s) to 7.04 (W-Bs and W-1).
- Temperature ranged from 17.2 °C (W-Bs and W-3s) to 18.6 °C (W-1s).

Field parameters were collected while purging all monitoring wells except the five CMT™ wells. The field parameter results are shown in Table 5 of Appendix A.

4.2 Laboratory Analytical Data

Both the May and November 2012 groundwater monitoring events reported historically low groundwater elevation levels (39 ft and 41.5 ft bgs, respectively) which likely resulted in near or above historically high concentrations in deeper wells as the contaminant smear zone extended to near historic groundwater lows. As shown in Figure 9, contaminant concentrations in the core of the plume tend to be elevated during low groundwater periods.

Shallow Aquifer:

- CMT wells MW-4, MW-5, MW-6, MW-7, MW-8, MW-105, MW-106, MW-107 and MW-108 have not been sampled since prior to starting dual phase extraction (DPE) remediation in November 2011, making it difficult to assess the performance of the DPE system in these shallow wells.
- Shallow monitoring well W-1s reported the highest concentrations of TPH-g (3,600 µg/l) and benzene (320 µg/l) of all the wells sampled in the shallow aquifer. Contaminant concentrations in W-1s appear to be decreasing over time.
- The shallow aquifer TPH-g plume appears to be moving down-gradient over time, as suggested by the increasing concentrations in MW-207 and MW-107, which has been dry during the previous two (2) groundwater monitoring events. Concentrations in well MW-207 appear to be stabilizing, while down gradient wells W-Bs and MW-208 appear to be decreasing over time. Concentrations in far down-gradient well W-3s appear to be decreasing, suggesting the shallow groundwater plume is slowly moving down gradient towards well CMT-7 while decreasing in concentration. However, the data is incomplete and further groundwater monitoring events will allow for a better evaluation of seasonal fluctuations.
- Monitoring wells W-1s and W-3s reported a decrease in both TPH-G and benzene concentrations for the November 2012 groundwater monitoring event. Well W-Bs reported a slight increase in both TPH-G and benzene, however this well is on an overall decreasing trend.

- CMT™ wells MW-4, MW-5, MW-6, MW-7, MW-8, MW-105, MW-106, MW-107 and MW-108 were dry and therefore could not be sampled.
- Figure 6 shows a contour map indicating GTI's interpretation of the shallow TPH-g plume in November 2012.

Intermediate Aquifer:

- Well W-1 reported the highest concentrations of TPH-g (36,000 µg/l) and benzene (6,300 µg/l) in the intermediate aquifer. Contaminant concentrations in W-1 appear to be on an overall decreasing trend and reported near historically low TPH-G concentrations for the November 2012 monitoring event. Both TPH-g and benzene concentrations increased from the previous event (May 2012), which may be due to seasonal fluctuations.
- The core of the intermediate aquifer TPH-g plume appears to move around from one monitoring event to the next, as suggested by the historical fluctuation of the plume center between W-1, W-A, MW-104 and MW-205, with contaminant concentrations increasing and decreasing.
- Remediation by dual-phase extraction in wells W-1s and W-1 appears to have decreased the contaminant mass in the core of the plume, as shown in Figure 7. This is supported by the reduced contaminant concentrations in intermediate core wells W-1, W-A, MW-205 and MW-104. Wells W-A and MW-205 reported a significant reduction in contaminant concentrations since the May 2012 monitoring event, suggesting the air sparging and DPE remediation systems are effective.
- CMT™ wells MW-207 and MW-208 have reported increases in both TPH-G and benzene since the start of DPE remediation in November 2011. This may be caused by both low groundwater elevations and/or the sites geology. As shown in Figures 13 and 14, MW-207 and MW-208 are located in a discontinuous 5-foot thick sand and gravel lens located within the lower clay layer (see section 1.2 for site geology). This sand and gravel lens connects wells MW-207 and MW-208 to the groundwater extraction well W-1, which appears to be drawing contaminants from the surrounding clay layer, suggested by decreasing contaminant trends in wells screened within this layer.
- Figure 7 contains a contour map indicating GTI's interpretation of the intermediate TPH-g plume in November 2012. The groundwater plume is localized in the vicinity of the former USTs/piping trenches and appears to be centered on well W-1, which reported a TPH-g concentration of 36,000 µg/l during the November 2012 event.

Deep Aquifer:

- CMT™ monitoring wells MW-204 and MW-308 reported the highest concentrations of TPH-g (4,800 µg/l) and well MW-204 reported the highest concentration of benzene (1,900 µg/l) in the deep aquifer. Contaminant concentrations in MW-204 appear to be fluctuating but appear to be on an overall decreasing trend.

- All deep wells sampled during the November 2012 monitoring event reported increases in both TPH-g and benzene since the May 2012 event, except MW-306 which was not sampled during the May event. GTI believes that the increasing contaminant trends in the sites deep wells is due to near historically low groundwater elevations during the May and November 2012 events.
- Concentrations reported in the deep wells during the November 2012 event suggest that remediation is occurring in the core of the plume based on decreasing concentrations in core well MW-204. However increasing trends in wells MW-307 and MW-308 suggest the plume may be slowly moving down-gradient.
- MW-307 was not sampled during the November 2012 monitoring event.
- Figure 8 contains a contour map indicating GTI's interpretation of the deep TPH-g plume in November 2012. The groundwater plume is localized in the vicinity of the former USTs/piping trenches and appears to be centered on well CMT-4 (MW-204).

Deepest Aquifer

- CMT™ well MW-304 reported an increase in all constituents analyzed for the November 2012 monitoring event.
- CMT™ well MW-404 reported a decrease in all constituents analyzed for the November 2012 monitoring event except ethyl benzene and total xylenes.

Figures

- Figure 9 illustrates TPH-g concentration versus time in well W-1s (located in the vicinity of the core of the contaminant plume). With the exception of events in 1995, 1997 and 2001 the contaminant concentrations exhibit a fairly stable trend. The three peaks evident correspond with low stands of groundwater and suggest that significant contaminant mass is present although decades have past since the original USTs were removed. The November 2012 monitoring event represents a historical low concentration of TPH-g and benzene in this well despite the low groundwater elevation conditions.
- Figure 10 illustrates TPH-g concentration versus time in well W-3s (located down/cross gradient of the core of the plume). The contaminant concentrations show an overall declining trend, despite several elevated spikes in concentrations in 1996, 1997, 1998 and 2003. These events of elevated concentration do not show a correlation with low groundwater elevations, as was observed in W-1s. Since the start of remediation in November 2011, groundwater contaminant concentrations have been on a decreasing trend in this well.
- Figure 11 illustrates TPH-g concentration versus time in well W-Bs (located down gradient of the core of the plume). The contaminant concentrations showed a rapid declining trend from 1995 – 2003 but appear to be fairly stabilized since. The November 2012 monitoring event represents a near historical low concentration of TPH-g and benzene in this well, despite a slight rise since the May 2012 event.

Despite some small fluctuations, contaminant concentrations have been on a declining trend since April 2007.

- Figure 12 – See Section 5.2: Treatment System Data.
- Figures 13 and 14: Cross Sections A-A' and B-B' illustrate the site's geology and the distribution of groundwater contaminants prior to (October 2011 event) and following remediation (November 2012 event). As shown, the site is underlain with an upper gravelly unit from the surface to approximately 35 to 45 feet bgs and a lower clay unit from 35/45 feet to approximately 65 feet bgs and appears to inhibit the migration of the contamination below this unit. According the *Final Corrective Action Plan* dated August 1st, 2007, the extent of the sites soil contamination lies in the groundwater smear zone between 20 and 45 or greater feet below grade surface (bgs). Decreasing contaminant trends in wells W-Bs, W-A and MW-205 suggest remediation of the lower clay unit is occurring. Within the lower clay layer is a sand and gravel lens that is reporting an increase in contaminant concentrations in the down-gradient wells screened within this lens (MW-207 and 208). Groundwater extraction well W-1 is screened within this lens and appears to be drawing contaminants from the surrounding lower clay layer into the sand/gravel lens. Due to near historical low groundwater elevations, groundwater samples have not been collected from the shallow groundwater wells within the upper gravelly unit except well W-1s, which displays a decreasing trend since remediation began. As groundwater elevations increase, contaminant reduction within the upper gravelly unit can be better assessed.
- Figure 15 – See Section 5.3: Groundwater Drawdown Testing.

5.0 REMEDIATION SYSTEM STATUS & EFFECTIVNESS

A dual phase extraction (DPE) and an air sparging remediation system were installed at the site and operations commenced in November 2011 and March 2012, respectively. The remedial action consists of dual phase extraction (DPE - soil vapor and groundwater) and air sparging in four (4) of the sites core wells:

- Vadose zone well EW-1 is used to remove soil vapor from the vadose zone
- Shallow depth well W-1s is used to remove soil vapor from the smear zone
- Intermediate depth well W-1 is used to remove soil vapor and groundwater
- Intermediate depth well W-A is used for air sparging and can be utilized to remove soil vapor and groundwater

According the *Final Corrective Action Plan* dated August 1st, 2007, the extent of the sites soil contamination lies in the groundwater smear zone between 20 and 45 or greater feet below grade surface (bgs). The sites general geology consists of an upper gravelly unit from the surface to approximately 35 to 45 feet bgs and a lower clay unit from 35/45 feet to approximately 65 feet bgs and appears to inhibit the migration of the contamination below

this unit. Remediation wells W-1s and EW-1 are screened within the upper gravelly layer (screened across 10 to 45 feet bgs). Remediation wells W-1 and W-A are screened within the lower clay unit (screened across 42 to 57.5 feet bgs). Therefore the screen intervals of the four (4) remediation wells completely transcends both the upper gravelly and lower clay units as well as the vertical extent of the soil contamination (20 to 45+ feet bgs).

A site map showing the distribution of the remediation wells and cross section lines is provided as Figure 3. A cross section illustrating the sites geology and remediation wells is provided as Figures 13 and 14.

5.1 System Operation

The extracted vapors are treated with a thermal oxidizer and then discharged to ambient air under permit from the Bay Area Air Quality Management District (BAAQMD). The treated water is discharged to the municipal sewer system under permit from the City of Livermore.

The groundwater extracted by DPE is initially separated from the vapor phase via a knockout tank, with groundwater residing in the tank and the vapor phase continues on to the thermal oxidizer for treatment. The water is then pumped from the tank to an air stripper column to remove volatile organic petroleum hydrocarbons. The vapors generated by the air stripper are plumbed back to the thermal oxidizer joining the DPE extracted vapors. The treated groundwater is plumbed to two (2) 2000 lbs. granulated activated carbon vessels in series after leaving the air stripper. The water is then monitored with an LEL sensor for contaminant levels while being discharged to the sewer system under associated permit requirements.

System operation commenced on November 15th, 2011 (soil vapor extraction only), in compliance with the Alameda County Environmental Health (ACEH) directive extension. Various system repairs and modifications were completed following the initial start-up and full operation of the DPE system (soil vapor extraction only) began on November 29th, 2011.

Modifications to DPE well W-1 were completed and groundwater extraction testing began on December 7th, 2011. Upon the start-up of groundwater extraction, various repairs and modifications were made to the air stripper and were completed on December 19th, 2012. In anticipation for the City of Livermore groundwater discharge permit inspection, operational testing and sampling of the air stripper system were completed. On January 10th, 2012, Alan Wilcox from the City of Livermore met on-site to perform the groundwater discharge permit inspection. Upon issuance of the groundwater discharge permit, further air stripper operational testing and modifications were made. On January 18th, 2012, the DPE system began full operation and extraction and treatment of both groundwater and soil vapor.

Due to decreasing contaminant concentrations in the vapor phase and decreasing funds, the DPE system was shut down in order to install a catalytic cell to the DPE system and switch

from thermal to catalytic oxidizer mode. This reduced the propane use of the system by over 60%.

Upon completion of the system modifications and the further allocation of funds, the DPE system was restarted in full operation on February 23rd, 2012. Between March 19th and March 21st, 2012, an air sparging system was installed into intermediate well W-A. The air sparge line was plumbed into the existing W-A remediation line and valves were installed to allow either air injection or dual phase extraction. Both the DPE and air sparging systems have been in continuous operation since March 2012, except for minor repairs.

Both the DPE and air sparge systems were shut down on November 4th, 2012 in anticipation of the 4th Quarter 2012 groundwater monitoring event.

3rd & 4th Quarters 2012

The DPE system operated throughout the 3rd and 4th quarters except for the following reasons:

- June 20, 2012 – system was shut down due to numerous alarms. Issues were corrected and the system was restarted.
- July 5, 2012 – system shut down due to low propane volume. The propane tank was filled and the system was restarted on July 9, 2012.
- July 18, 2012 – system shut down due to a malfunctioning relay causing the storage tank pump to fail and the tank to fill, initiating a high water alarm. The issue was corrected and the system was restarted.
- October 3, 2012 – system shut down due to numerous alarms. Issues were corrected and the system was restarted.
- October 16, 2012 – system shut down due to electrical breaker issue. The breaker was reset and the system was restarted.
- November 16, 2012 – system shut down due to numerous alarms. The system was not restarted in preparation for the upcoming 4th quarter groundwater monitoring event.

Upon attempting to restart the DPE system on December 13th, 2012, GTI determined that the propane regulation system for the thermal oxidizer (TO) was not working correctly, causing excessive propane use and TO temperatures. Following repairs by Mako Industries of Livermore, CA the system was restarted on January 10th, 2013.

As discussed in the 1st Semi-Annual 2012 Groundwater Monitoring & Remedial Effectivness report, during the first seven (7) months of DPE operation (November 2011 thru June 2012), wells W-1s and W-1 were focused on for extraction due to historically low groundwater levels exposing the upper gravely unit (surface to 35-45 feet bgs) that is expected to contain a majority of the contaminant mass. Due to lower concentrations being extracted from vadose zone well EW-1, this well was remediated less frequently.

Based on recent groundwater monitoring data in the intermediate CMT well intervals (MW-205, 206, 207 and 208) and previous work, it is suspected there is a significant mass of contaminants residing in the lower clay layer (35/45 to 65 feet bgs). In order to address the entire extent of the groundwater and soil contamination, GTI began pulsing the system by rotating which wells are being extracted from on a bi-monthly basis during the 3rd and 4th Quarters of 2012. Wells W-A and W-1 were used to focus on the lower clay layer, while wells W-1s and EW-1 were used to focus on the upper gravelly layer. The air sparging system continued to operate in well W-A while it was not being extracted from.

During the first year of operation, extensive remediation of the upper gravely layer was accomplished as demonstrated by decreasing contaminant concentrations in well W-1s and a decline in contaminant concentrations of the DPE vapor stream when extracting from shallow wells W-1s and EW-1. During the 3rd and 4th Quarters of 2012, DPE remediation was focused on wells screened in the lower clay layer (W-1 and W-A) in order to reduce contaminant concentrations in this unit. Based on decreasing contaminant concentrations in wells screened within this layer and a decline in contaminant concentrations of the DPE vapor stream when extracting from intermediate wells W-1 and W-A, remediation of the lower clay layer is occurring. Intermittent remediation of the upper gravel unit and air sparging in well W-A occurred during the 3rd and 4th Quarters of 2012.

5.2 Treatment System Data

As of December 13th, 2012, the DPE system has removed a total of approximately 10,246.1 pounds, or 1,666 gallons, of gasoline hydrocarbons as TPH-G since operation began on November 15th, 2011. During the 3rd and 4th Quarters of 2012, the DPE system operated for 2,034 hours and removed a total of approximately 2,014.9 pounds, or 327.7 gallons of gasoline hydrocarbons as TPH-G, which is an average of 23.8 pounds or 3.9 gallons per day.

Soil Vapor Extraction Mass Removal

Mass removal calculations are completed utilizing the results of bi-monthly PID analyses and four (4) laboratory analyses results of the system influent and effluent vapor streams. Four (4) samples were collected for laboratory analyses throughout the initial seven (7) months of system operation, of which a PID reading was collected directly from the sample bags for the purpose of correlation. Figure 12 is a graph and table outlining how the laboratory vapor samples were correlated to bi-monthly PID readings.

As of December 13th, 2012, the DPE system has removed approximately 10,210 pounds, or 1,660 gallons of soil-vapor gasoline hydrocarbons as TPH-G since operation began on November 15th, 2011. During the 3rd and 4th Quarters of 2012, the DPE system removed approximately 1993 pounds, or 324 gallons of soil vapor gasoline hydrocarbons as TPH-G. These amounts do not include effluent vapors from the air stripper that are plumbed from the air stripper to the thermal oxidizer since none of the samples were collected during the

operation of the air stripper. The mass of TPH-G treated by the thermal oxidizer is summarized in Table 7 of Appendix A.

Groundwater Extraction Mass Removal

Mass removal calculations are completed utilizing the results of monthly sampling of the influent groundwater stream for laboratory analyses. As of December 13th, 2012, the DPE system had removed approximately 36.6 pounds, or 6 gallons, of gasoline hydrocarbons as TPH-G from groundwater extraction. During the 3rd and 4th Quarters of 2012, the DPE system removed approximately 21.8 pounds, or 3.5 gallons, of gasoline hydrocarbons as TPH-G The mass of TPH-G removed by groundwater extraction and treated by air stripping and running through granular activated carbon is summarized in Table 6 of Appendix A.

Assumptions

- Average vapor concentrations used in the mass removal calculations assume that the daily concentration of TPH-G removed by the system is equivalent to the concentration of TPH-G sampled during the following bi-monthly event. For example: If analyses were performed twice a month (every 2 weeks), the average daily concentration for that two (2) week time period is assumed equivalent to the sample concentration of the sample collected from the sampling event at the end of the 2 week period.
- Daily airflow is assumed to be equivalent to the airflow reading from the following sampling event.
- Vapor concentrations are collected using a PID and data is recorded in parts per million (ppm) and correlated to laboratory results that are reported in milligrams per cubic meter (mg/m^3). When vapor samples were collected for laboratory analysis, a PID reading was collected directly from the sample and following various sampling events, the data was correlated and an equation was produced. For more information on data correlation, refer to Figure 12.
- The mass removed as vapor does not include vapor phase contaminants "stripped" from the groundwater in the air stripper as none of the vapor sampling occurred while the air stripper was operating, which occurs for approximately 90 minutes per day.
- Concentration of aqueous phase removal is based on actual analytical results taken from the line following the knockout drum and prior to the first groundwater storage tank. The bi-monthly analytical results are assumed constant for the previous two (2) week period. It is likely the concentrations, thus the mass removed from the extraction wells, is higher at the well than is measured at the sampling point for the following reasons:
  - The groundwater extraction is achieved by high vacuum and soil vapor extraction from the wells, which result in withdraws of both soil vapor and groundwater. This air/water mixture is transported through 90 feet of piping to the DPE unit where the two phases are separated in the knockout drum. So in essence, the

piping system acts as a linear air stripper causing the VOCs in the water to transfer into the vapor phase.

5.3 Groundwater Drawdown Testing

Extraction from Wells W-1s & W-1 (April 2012)
Following four (4) months of full operation of the DPE system, drawdown tests were performed at the site on March 21st, April 3rd and April 19th, 2012. A map with contours and a cross section representing the groundwater drawdown that was observed on April 19th, 2012 was included in the *1st Semi-Annual 2012 Groundwater Monitoring & Remedial Effectiveness* report dated August 1st, 2012.

While extracting from wells W-1 and W-1s, the dual phase extraction developed a cone of depression approximately 110 feet in diameter with a drawdown depth of approximately 5 feet in the core of the plume (MW-104). The area of drawdown extends beyond CMT™ wells MW-5, MW-6, MW-7 and MW-8 and nearly envelopes the entire area of the intermediate groundwater contamination plume.

Extraction from Wells W-A & W-1 (August 2012)
As the Figure 15 shows, following eight (8) months of full operation, the DPE system had developed a cone of depression that influences groundwater flow throughout the majority of the intermediate groundwater plume shown in Figure 7. The cone of depression capture zone extends an unknown distance beyond CMT™ wells MW-5, MW-6, MW-7 and MW-8 and has a drawdown depth of approximately 8.4 feet in the core of the plume (MW-104). Assuming that groundwater flow between intermediate wells W-3 and MW-208 was at the historical average gradient (0.036 ft/ft at N45W), the capture zone extends approximately 130 feet down-gradient of the core (MW-104), as depicted with dashed contours on Figure 15. Based on this assumption, the cone of depression capture zone fully envelopes the intermediate groundwater plume.

Based on the low groundwater levels during the first year of DPE operation (37 to 43.5 feet bgs) and the area of drawdown (additional 8+ feet bgs), a majority of the soil contamination smear zone (approx. 20 to 45+ feet bgs, as stated in the CAP dated 2006) is being addressed by the DPE remediation system, to some degree.

5.4 Future DPE Operation

GTI believes that from November 2011 thru December 2012, an extensive amount of remediation of the vadose zone has occurred, especially the upper gravel unit.

During the first seven (7) months of DPE operation, wells W-1s and W-1 were focused on for extraction due to historically low groundwater levels exposing the upper gravely unit (surface to 35-45 feet bgs) that is expected to contain a majority of the contaminant mass. Due to lower concentrations being extracted from vadose zone well EW-1, this well was remediated

less frequently. During the 3rd and 4th Quarters of 2012, GTI began pulsing the system by rotating which wells are being extracted from on a bi-monthly basis. Wells W-A and W-1 were used to focus on the lower clay layer, while wells W-1s and EW-1 will be used to focus on the upper gravelly layer. Air sparging continued in well W-A while it is not being extracted from.

Due to stabilizing vapor concentrations from the upper gravel layer wells and elevated concentrations from the lower clay unit at the start of the 4th quarter, the lower clay unit was dominantly remediated.

Based on groundwater monitoring data and elevated contaminant concentrations being removed from the lower clay layer, GTI recommends continue pulse-mode operation of the DPE system and air sparging system during the 1st, 2nd & 3rd quarters of 2013. The pulse mode will continue as follows:

1. Four weeks remediating the lower clay unit by operating groundwater and vapor extraction from wells W-A and W-1, followed by;
2. Two weeks remediating the upper gravel unit (vadose zone) by operating groundwater extraction well W-1 with vapor extraction wells W-1s and EW-1. The air sparging system will operate in well W-A during this 2 week period.

Following the 3rd groundwater monitoring event, the need to continue operating the remediation systems will be assessed. Groundwater elevations are historically higher during the 2nd Quarter and may allow for the sampling of the shallow CMT wells.

6.0 CONCLUSIONS & RECOMMENDATIONS

Conclusions

1. Elevated concentrations of BTEX and TPH-g are present in a laterally limited (probably less than 150 foot radius in the down gradient direction) groundwater plume that is centered near W-1/W-1s/CMT-4, with the core between the vicinity CMT™ Cluster 7, CMT™ Cluster 5 and wells W-1/W-1s/CMT-4. The plume appears to attenuate to the northeast at CMT™ Cluster 6, to the northwest at W-3s and W-3 and unknown to the north and south.
2. The data shows that the dual phase extraction system has been effective in removing contaminant mass, as evidenced by decreasing contaminant concentrations in the core of the plume, near the extraction wells (W-1, W-1s and EW-1).
3. The data shows that the down-gradient edge (MW-207 & MW-208) of the plume is increasing in contaminant concentrations; however this is attributed to the historically low groundwater and minimal water column these wells. The low groundwater has left these well intervals near the top of the water column and within the contaminant smear zone. In addition, wells MW-207 and MW-208 are screened within the same

sand/gravel lens as extraction well W-1, which is drawing contaminants from the surrounding lower clay unit (see Section 3.2 under Figures 13 and 14).

4. Increasing contaminant concentrations in the site's deep wells is attributed to the historically low groundwater, drawing the contaminant smear zone closer to these wells.
5. Based on decreasing contaminant concentrations in wells W-A and MW-205, the air sparging and groundwater extraction occurring in well W-A appears to be remediating the up-gradient edge of the groundwater plume core.
6. Overall the contaminant concentrations at the site are following a decreasing trend, as shown in Figures 9, 10 and 11. It appears that there is a direct relationship between groundwater elevation and contaminant concentrations. It is hypothesized that the low groundwater levels during the November 2012 groundwater monitoring event may be responsible for the high concentrations reported in some wells near the top of groundwater. Continued sampling will allow for further evaluation of this relationship.

Recommendations

1. Continue groundwater monitoring as directed by Alameda County Environmental Health in their most recent email dated October 6th, 2011.
2. Continue implementation of the Corrective Action Plan (CAP) and operating the Dual Phase Extraction (DPE) and air sparging systems, as the initial 1-year of operation has been effective at treating the sites groundwater and soil contamination. It is recommended that the DPE system target the lower clay layer (35-45' to 65 feet bgs) dominantly during the 3rd quarter of 2013 as the upper gravelly layer (surface to 35-45 feet bgs) has been effectively remediated due to low groundwater conditions.

7.0 LIMITATIONS

This report was prepared in accordance with the generally accepted standard of care and practice in effect at the time Services were rendered. It should be recognized that definition and evaluation of environmental conditions is an inexact science and that the state or practice of environmental geology/hydrology is changing and evolving and that standards existing at the present time may change as knowledge increases and the state of the practice continues to improve. Further, that differing subsurface soil characteristics can be experienced within a small distance and therefore cannot be known in an absolute sense. All conclusions and recommendations are based on the available data and information.

The tasks proposed and completed during this project were reviewed and approved by the local regulatory agency for compliance with the law. No warranty, expressed or implied, is made.

8.0 SIGNATURES & CERTIFICATION

This report was prepared by:

Andrew Dorn, B.Sc. Geology

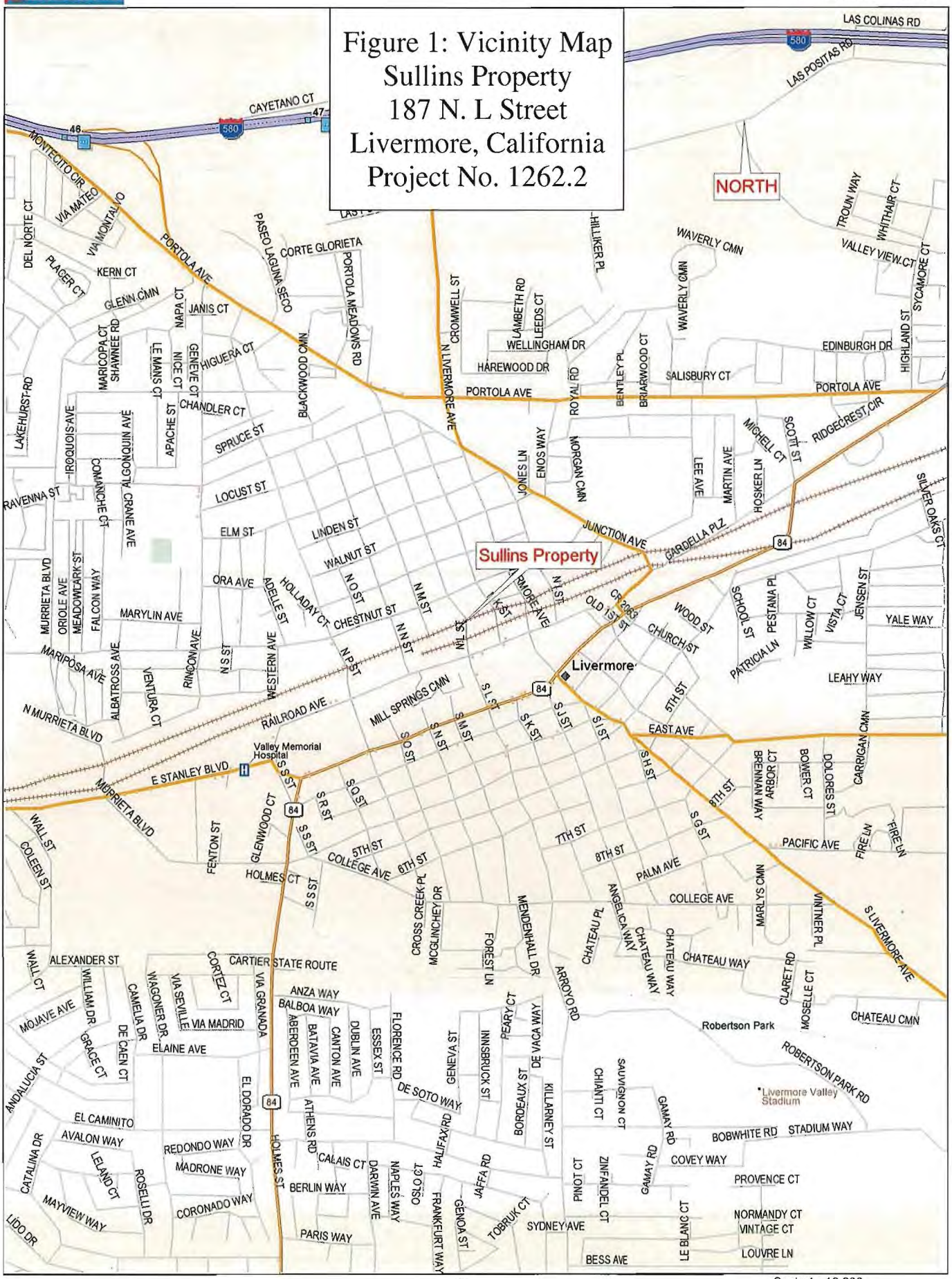
This report was prepared under the direction of:

Raynold Kablanow

Digitally signed by Raynold Kablanow
DN: cn=Raynold Kablanow, o, ou=Geological Technics, email=gti@gtienv.com, c=US
Date: 2013.02.05 07:21:11 -08'00'

Raynold I. Kablanow II, PhD
PG, CHG, REAII

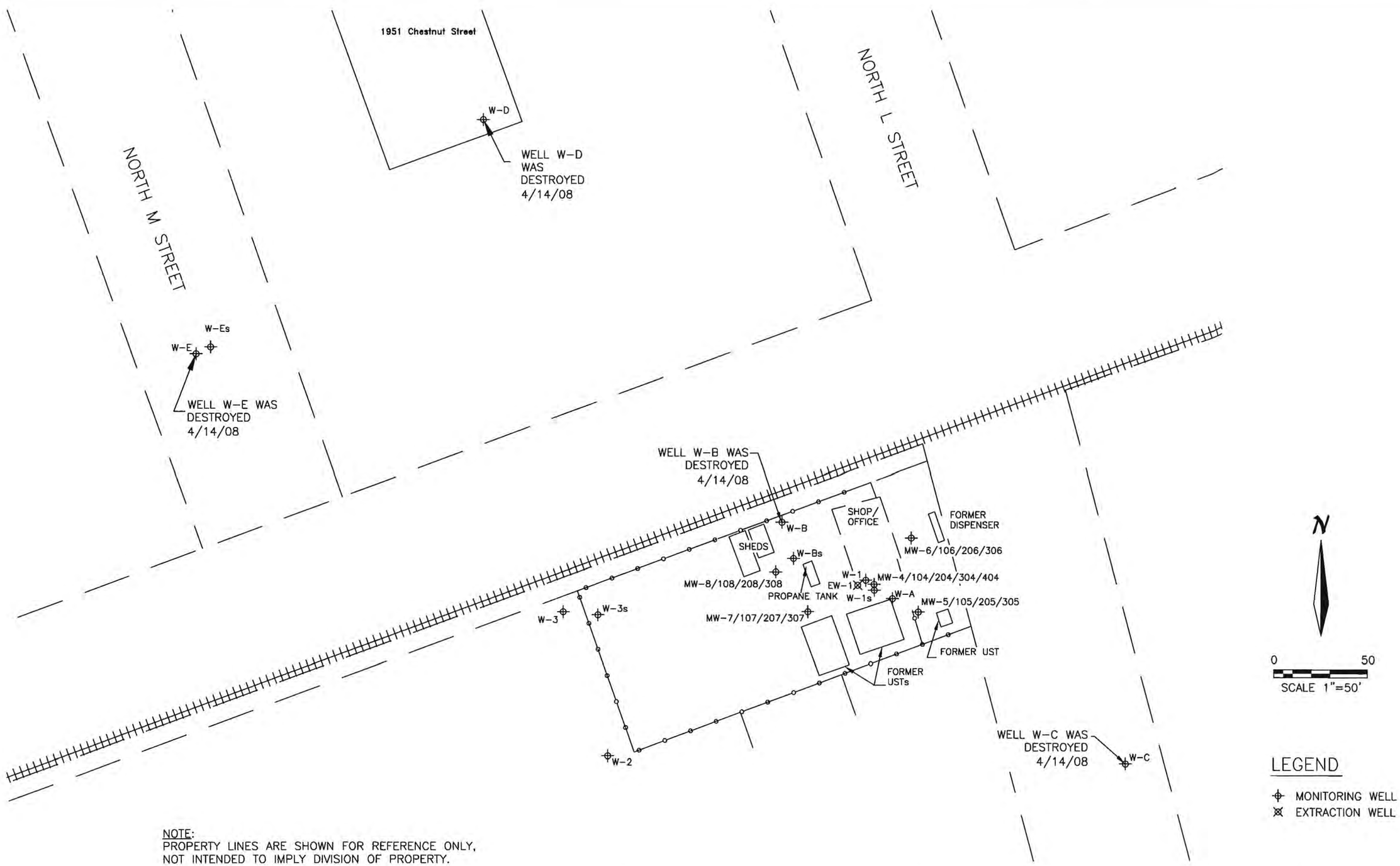
Figure 1: Vicinity Map
Sullins Property
187 N. L Street
Livermore, California
Project No. 1262.2



TN
MN (13.9°E)

Scale 1 : 19,200

1" = 1,600.0 ft Data Zoom 13-4



NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

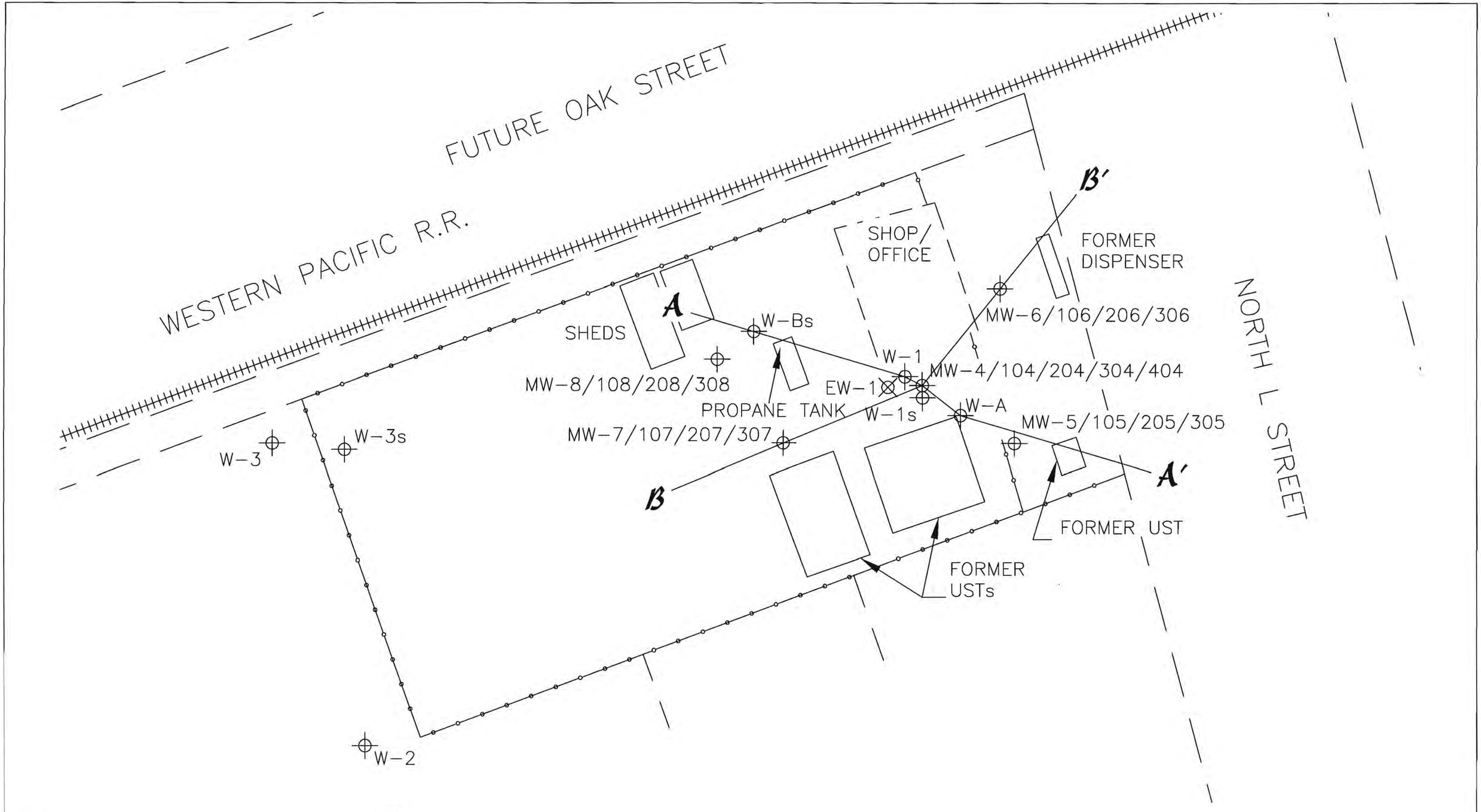
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	1" = 50 feet
File:	12622 Graphics 11-19-12

Geological Technics, Inc.
1172 Kansas Ave.
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 2: SITE MAP

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA



NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

N

⊕ MONITORING WELL
⊗ EXTRACTION WELL
NA DATA NOT AVAILABLE

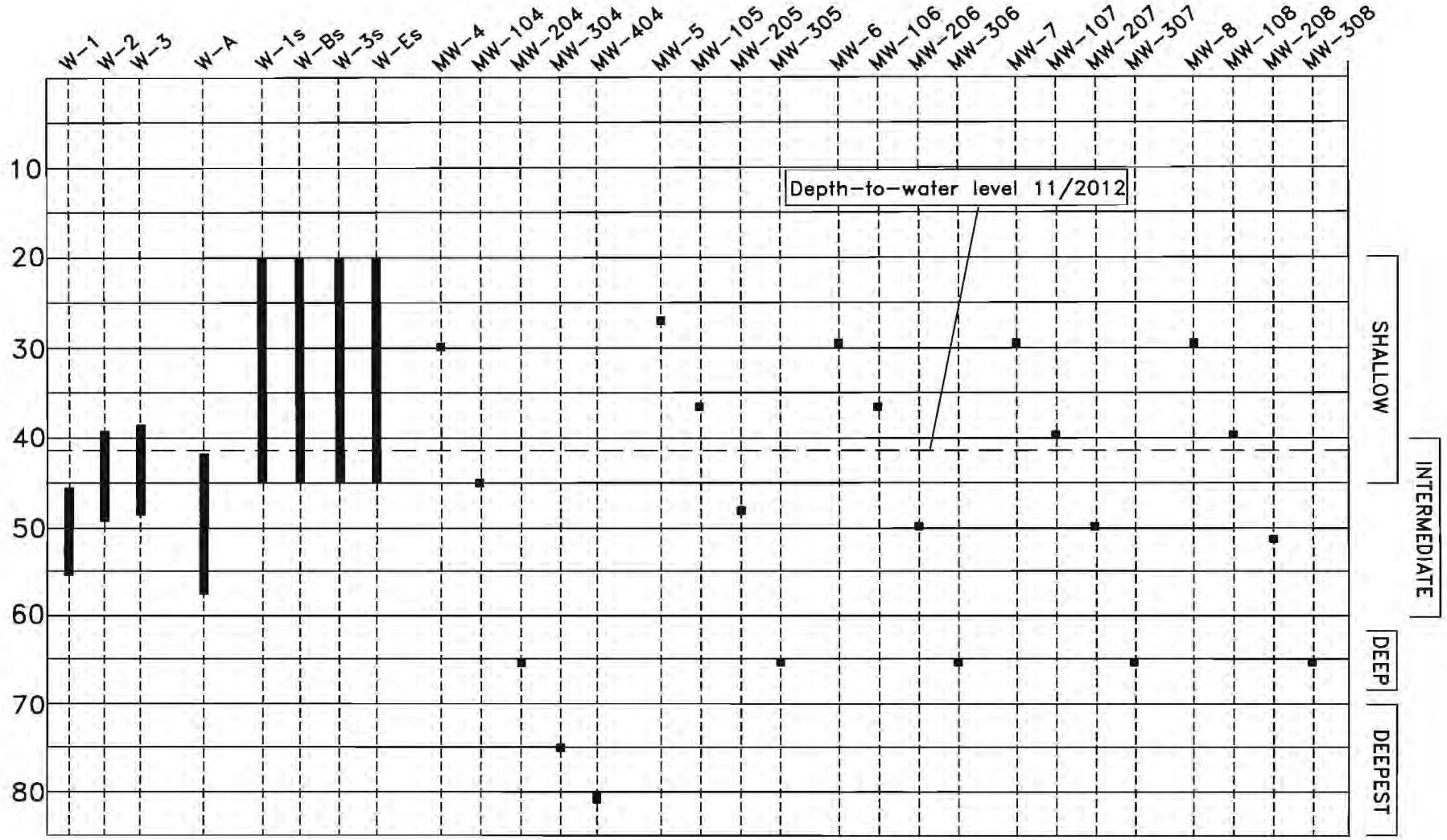
By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	NTS
File:	12622 Graphics 11-19-12

Geological Technics, Inc.
1172 Kansas Ave.
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 3: SITE DETAIL MAP

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA

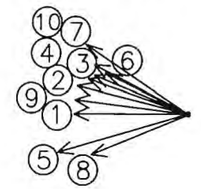
Figure 4:
Well Screened
Interval Diagram



Sullins
187 North L Street
Livermore, CA

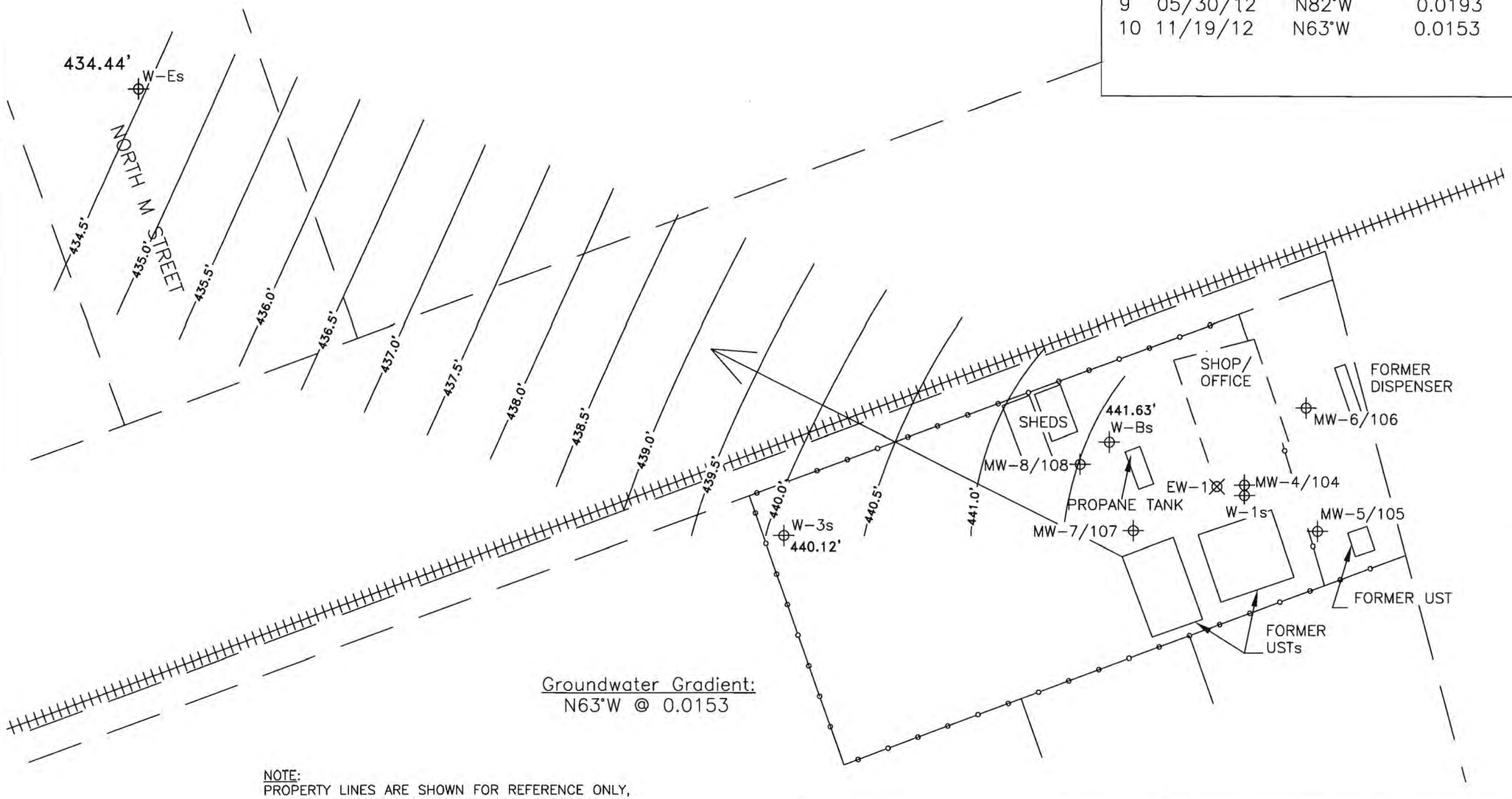
	DATE	BEARING	GRADIENT
1	04/29/04	WEST	0.019
2	07/07/06	N76°W	0.019
3	10/16/06	N68°W	0.014
4	04/17/07	N71°W	0.016
5	12/19/07	S74°W	0.033
6	04/07/08	N64°W	0.012
7	04/08/11	N56°W	0.0221
8	10/25/11	S68°W	0.0129
9	05/30/12	N82°W	0.0193
10	11/19/12	N63°W	0.0153

ROSE DIAGRAM



0.001 0.01 0.1 1

GROUNDWATER GRADIENT FT/FT



N

0 50

SCALE 1"=50'

LEGEND

- MONITORING WELL
- EXTRACTION WELL
- NA DATA NOT AVAILABLE

GRADIENT CALCULATED BY COMPUTER GENERATED CONTOURS

GROUNDWATER ELEV. 441.63'

CONTOUR INTERVAL = 0.5 FOOT

GW BEARING DETERMINED USING W-Es, W-3s and W-Bs.

Groundwater Gradient:
N63°W @ 0.0153

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	1" = 50 feet
File:	12622 Graphics 11-19-12

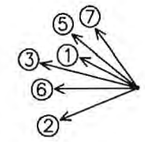
Geological Technics, Inc.
1172 Kansas Ave
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 5A: GROUNDWATER GRADIENT MAP SHALLOW WELLS

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA

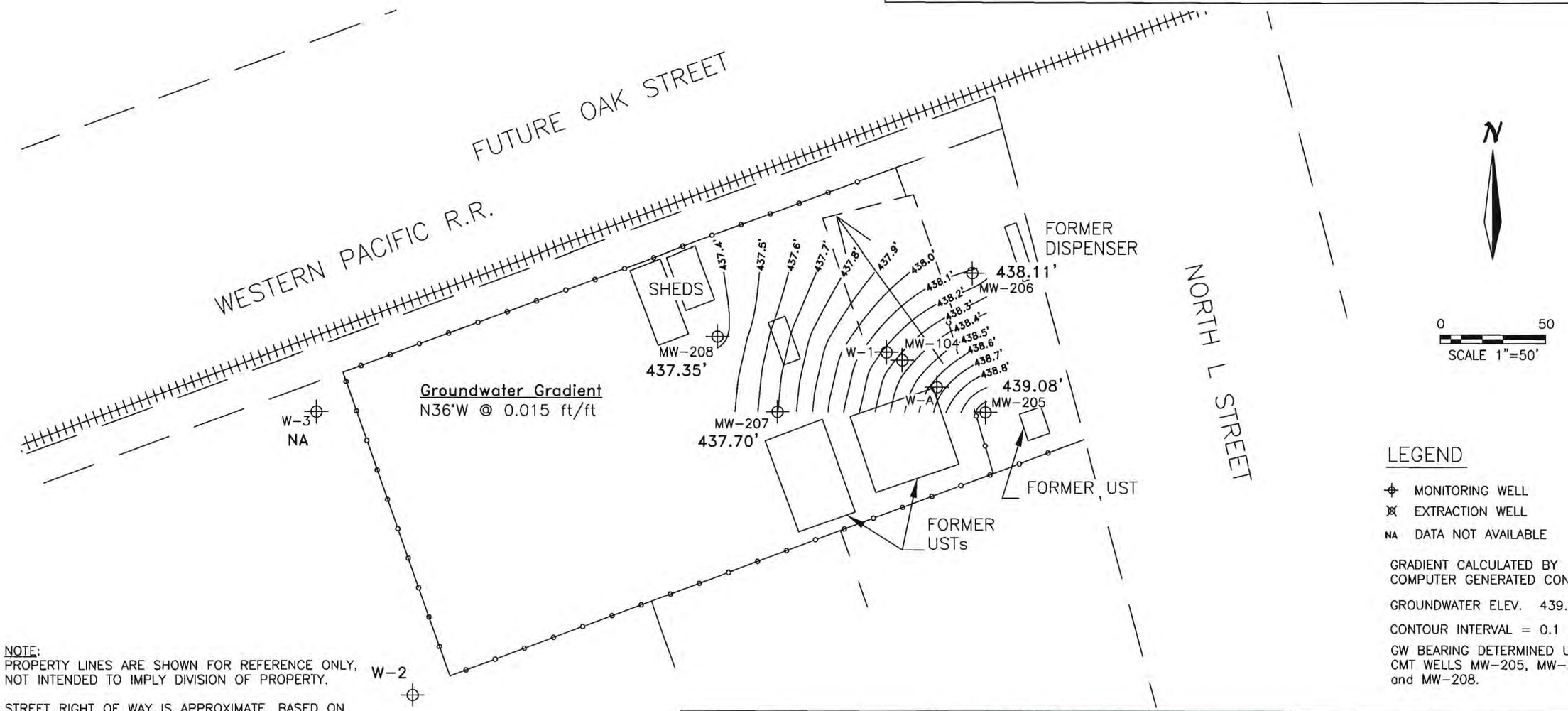
	DATE	BEARING	GRADIENT
1	10/16/06	N63°W	0.012
2	04/17/07	S68°W	0.022
3	12/19/07	N76°W	0.04
4	04/07/08	NORTHWEST	VARIABLE
5	10/25/11	N53°W	0.025
6	05/30/12	S89°W	0.020
7	11/19/12	N36°W	0.015

ROSE DIAGRAM



0.001 0.01 0.1 1

GROUNDWATER GRADIENT FT/FT



LEGEND

- MONITORING WELL
- EXTRACTION WELL
- NA DATA NOT AVAILABLE

GRADIENT CALCULATED BY COMPUTER GENERATED CONTOURS

GROUNDWATER ELEV. 439.08'

CONTOUR INTERVAL = 0.1 FEET

GW BEARING DETERMINED USING CMT WELLS MW-205, MW-206 and MW-208.

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

WELLS W-A and W-1 WERE LEFT OUT OF GRADIENT CALCULATIONS DUE TO ANOMALOUS VALUES AND MODIFICATION TO WELL TOP

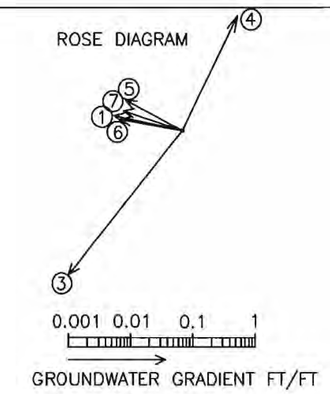
By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	NTS
File:	12622 Graphics 11-19-12

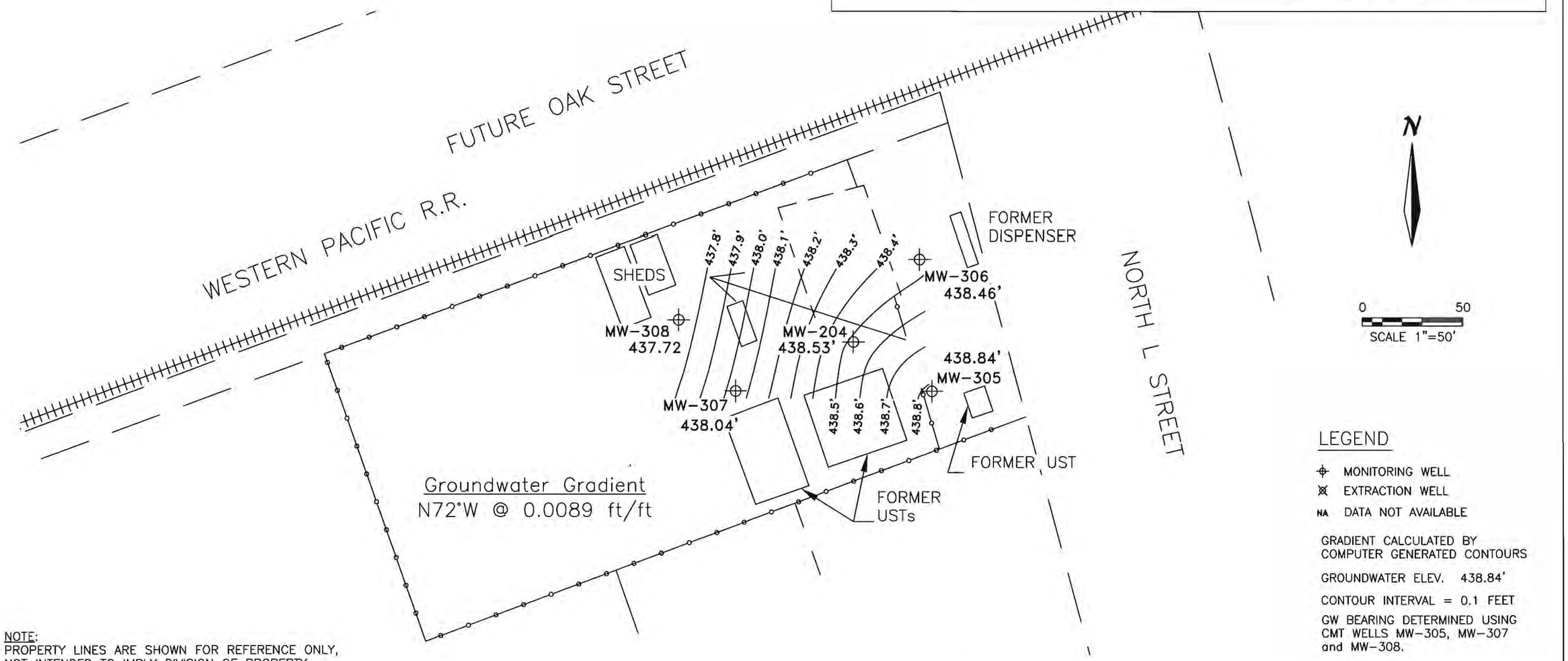
Geological Technics, Inc.
1101 7th Street
Modesto, CA
95354
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 5B: GROUNDWATER GRADIENT MAP INTERMEDIATE WELLS

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA

	DATE	BEARING	GRADIENT
1	10/16/06	N78°W	0.0140
2	04/17/07	UNDETERMINED	
3	12/19/07	S39°W	0.1800
4	04/07/08	N26°E	0.1000
5	10/25/11	N64°W	0.0114
6	05/30/12	N79°W	0.0100
7	11/19/12	N72°W	0.0089





LEGEND

- ⊕ MONITORING WELL
- ⊠ EXTRACTION WELL
- NA DATA NOT AVAILABLE

GRADIENT CALCULATED BY COMPUTER GENERATED CONTOURS

GROUNDWATER ELEV. 438.84'

CONTOUR INTERVAL = 0.1 FEET

GW BEARING DETERMINED USING CMT WELLS MW-305, MW-307 and MW-308.

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

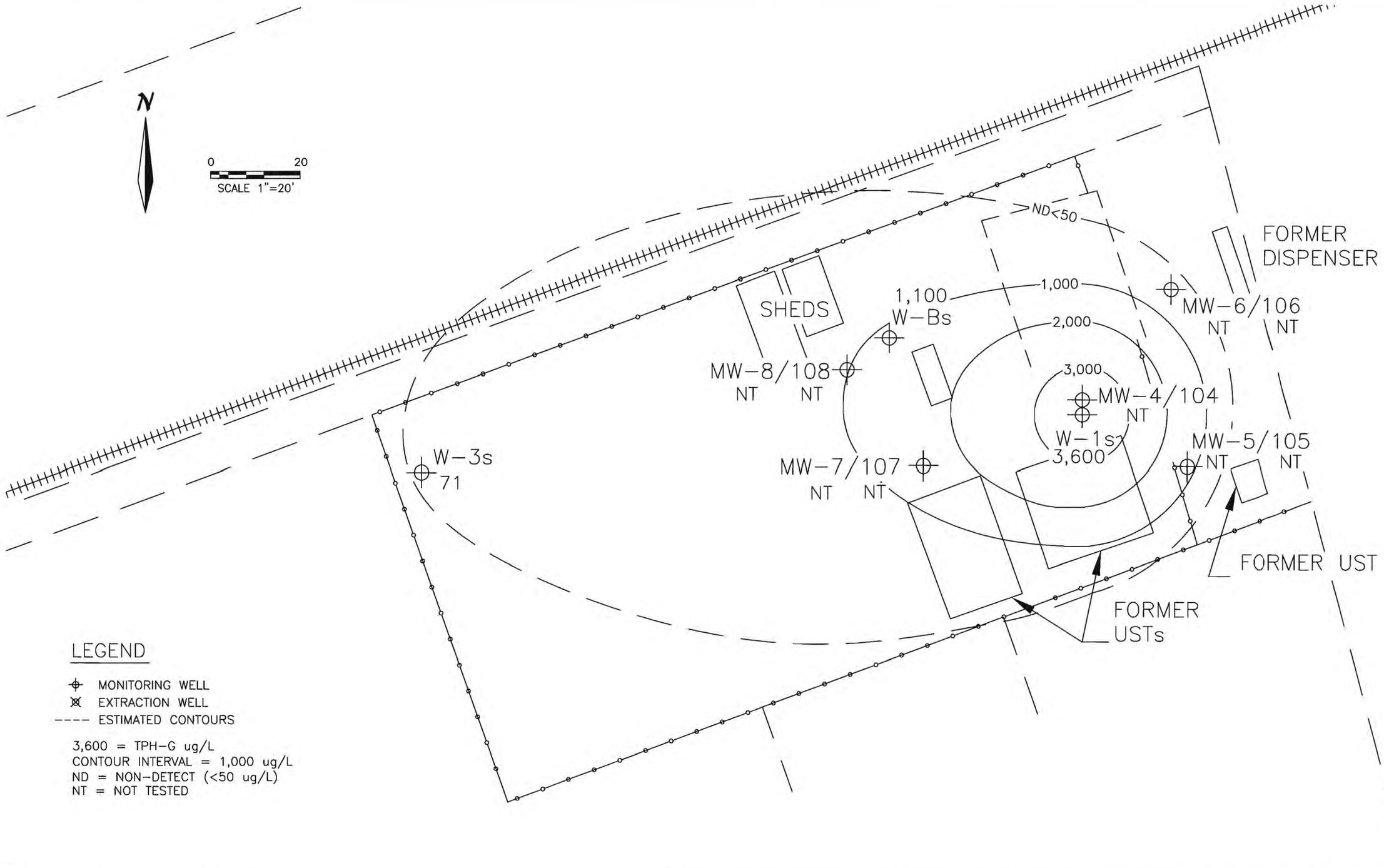
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	NTS
File:	12622 Graphics 11-19-12

Geological Technics, Inc.
1101 7th Street
Modesto, CA
95354
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 5C: GROUNDWATER GRADIENT MAP DEEP WELLS

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA



LEGEND

- ⊕ MONITORING WELL
- ⊠ EXTRACTION WELL
- ---- ESTIMATED CONTOURS

3,600 = TPH-G ug/L
CONTOUR INTERVAL = 1,000 ug/L
ND = NON-DETECT (<50 ug/L)
NT = NOT TESTED

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

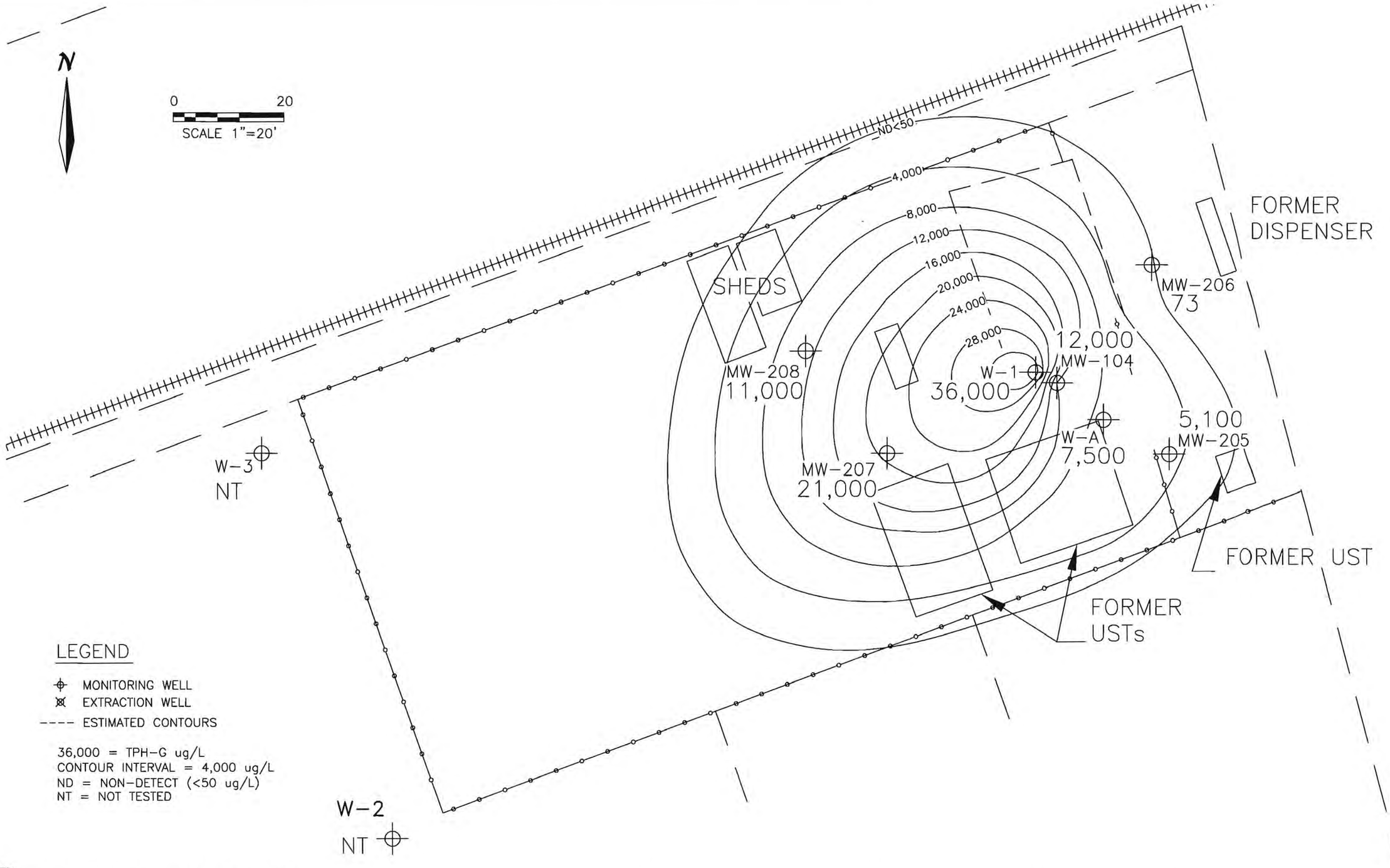
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	1" = 50 feet
File:	12622 Graphics 11-19-12

Geological Technics, Inc.
1172 Kansas Ave.
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 6: SHALLOW WELL TPH-G CONCENTRATIONS

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA



LEGEND

- MONITORING WELL
- EXTRACTION WELL
- ---- ESTIMATED CONTOURS

36,000 = TPH-G ug/L
CONTOUR INTERVAL = 4,000 ug/L
ND = NON-DETECT (<50 ug/L)
NT = NOT TESTED

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

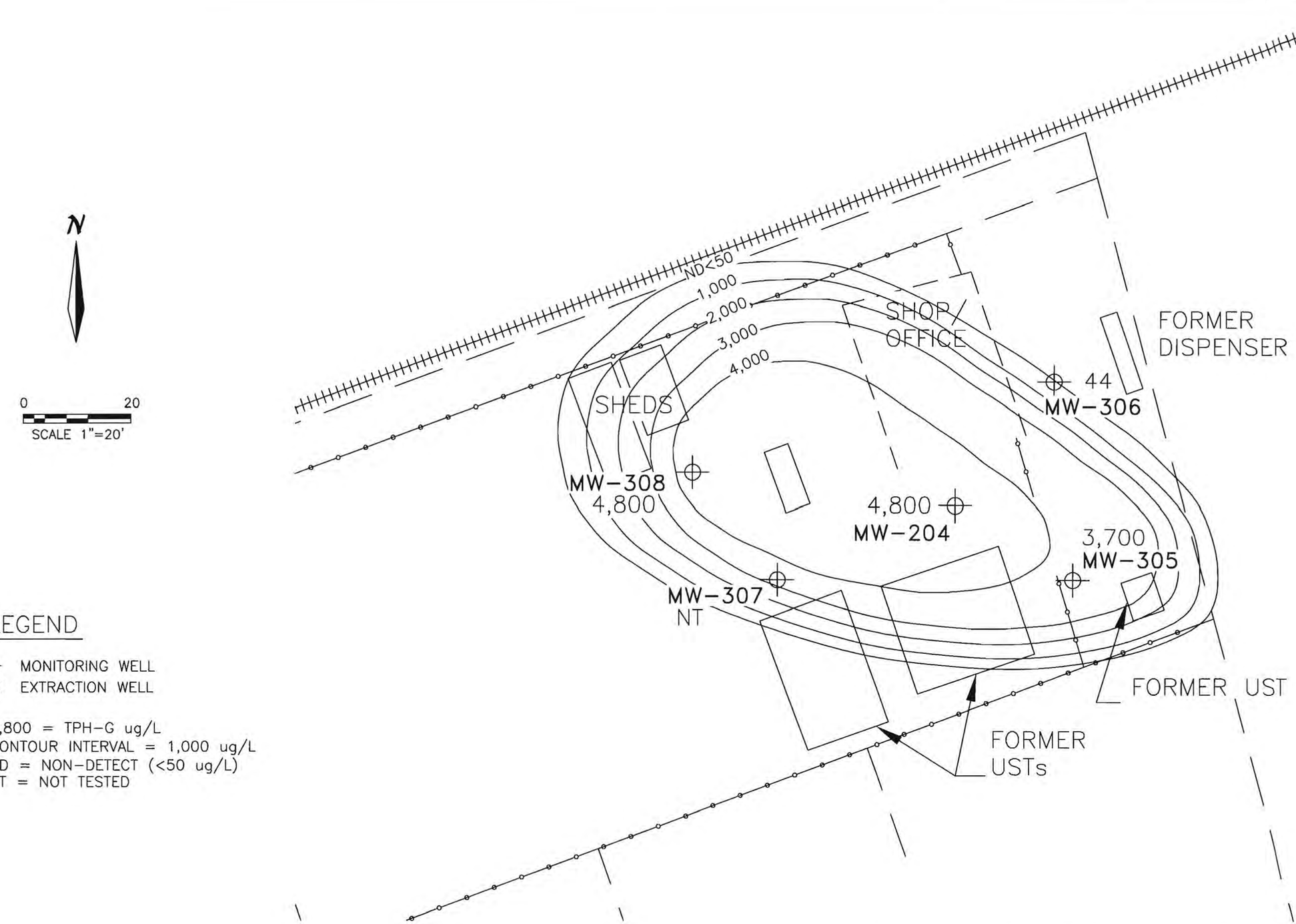
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	1" = 50 feet
File:	12622 Graphics 11-19-12

Geological Technics, Inc.
1172 Kansas Ave.
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 7: INTERM. WELL TPH-G CONCENTRATIONS

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA



LEGEND

- ⊕ MONITORING WELL
- ⊠ EXTRACTION WELL

4,800 = TPH-G ug/L
CONTOUR INTERVAL = 1,000 ug/L
ND = NON-DETECT (<50 ug/L)
NT = NOT TESTED

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

By:	AD
Job No:	1262.2 Date: 12-27-12
Scale:	1" = 20 feet
File: 12622 Graphics 11-19-12	

Geological Technics, Inc.
1172 Kansas Ave.
Modesto, CA
95351
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 8: DEEP WELL TPH-G CONCENTRATIONS

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA

Figure 9: Sullins
187 N.L Street
Livermore, CA

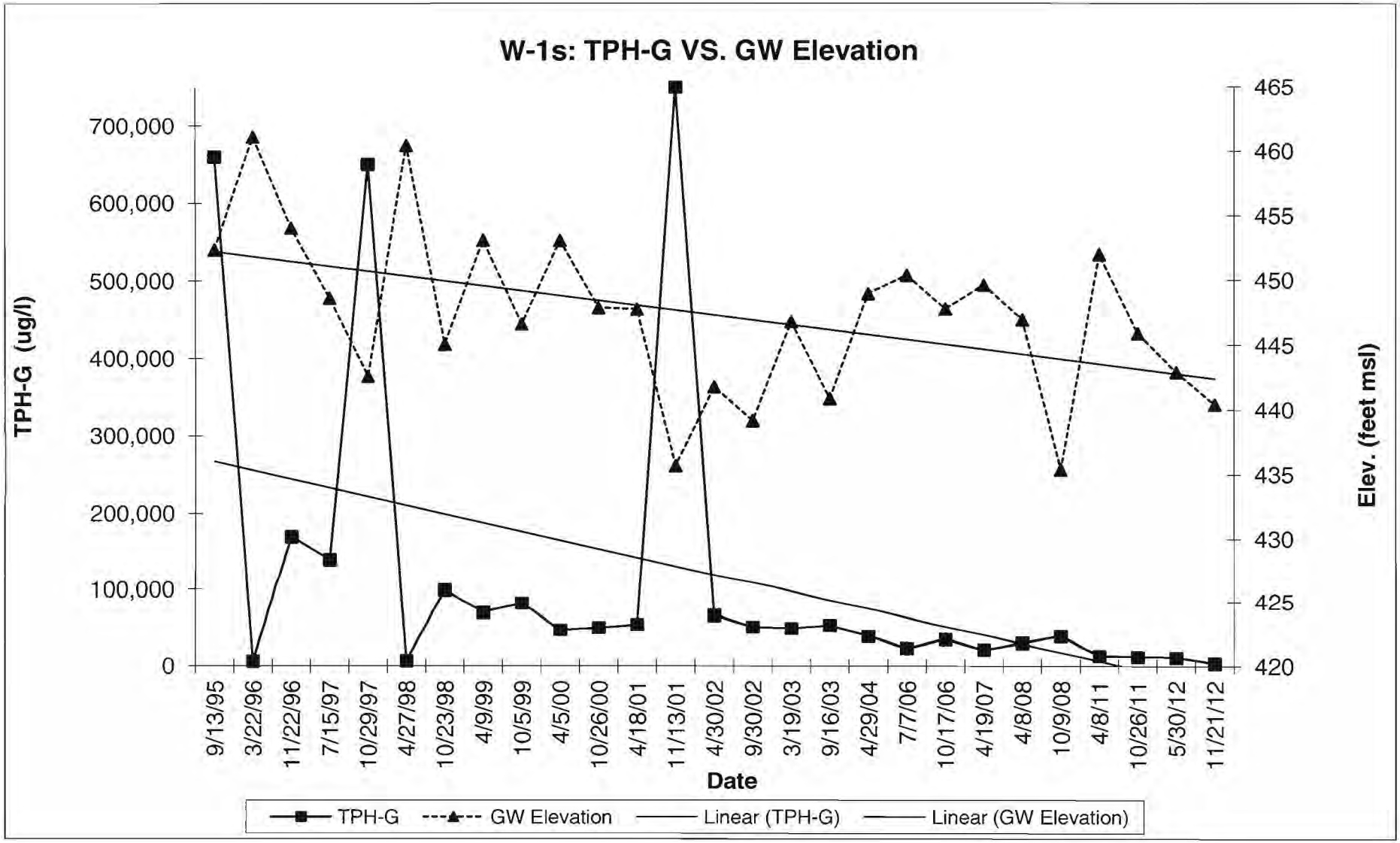


Figure 10: Sullins
187 N.L Street
Livermore, CA

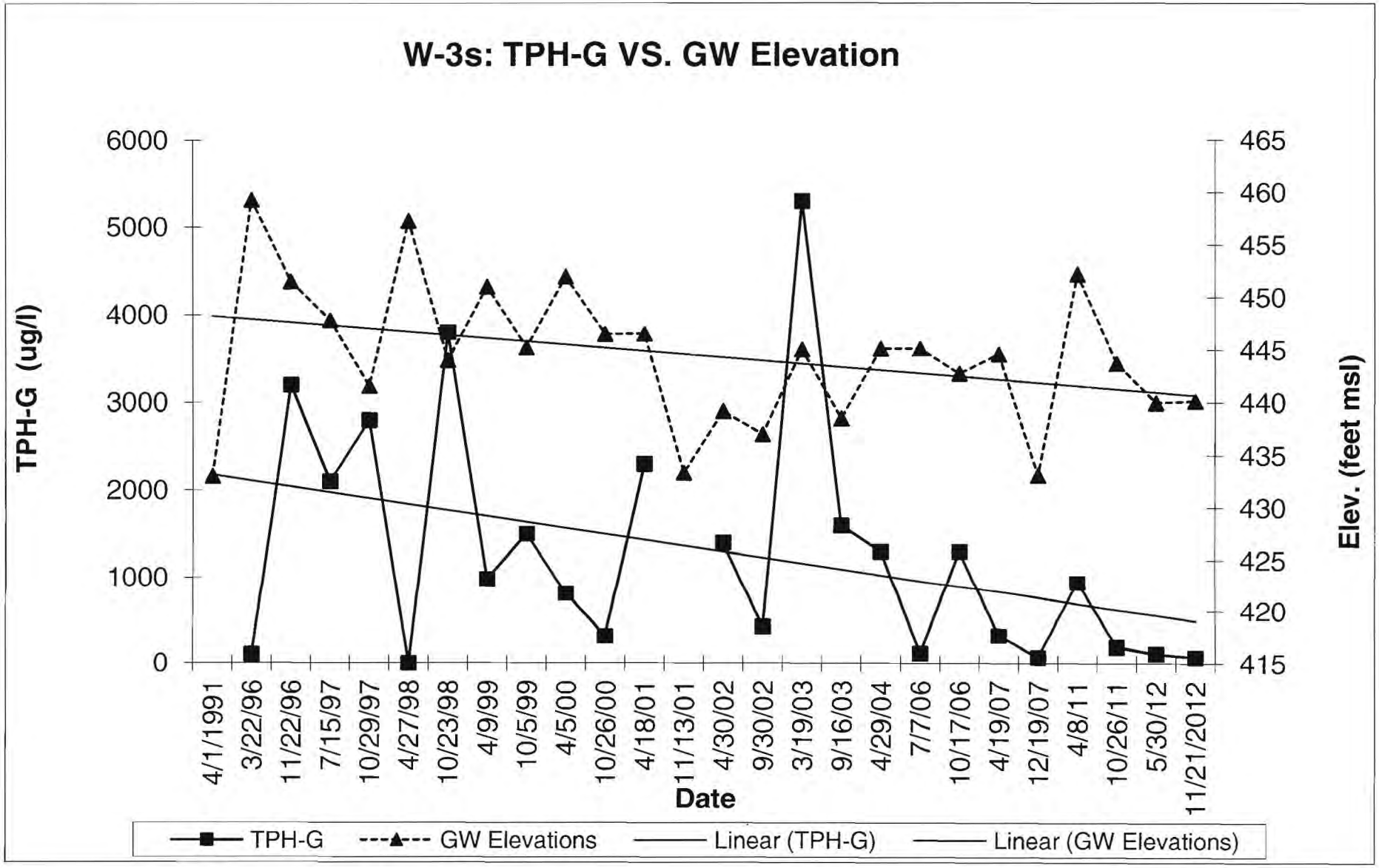


Figure 11: Sullins
187 N.L Street
Livermore, CA

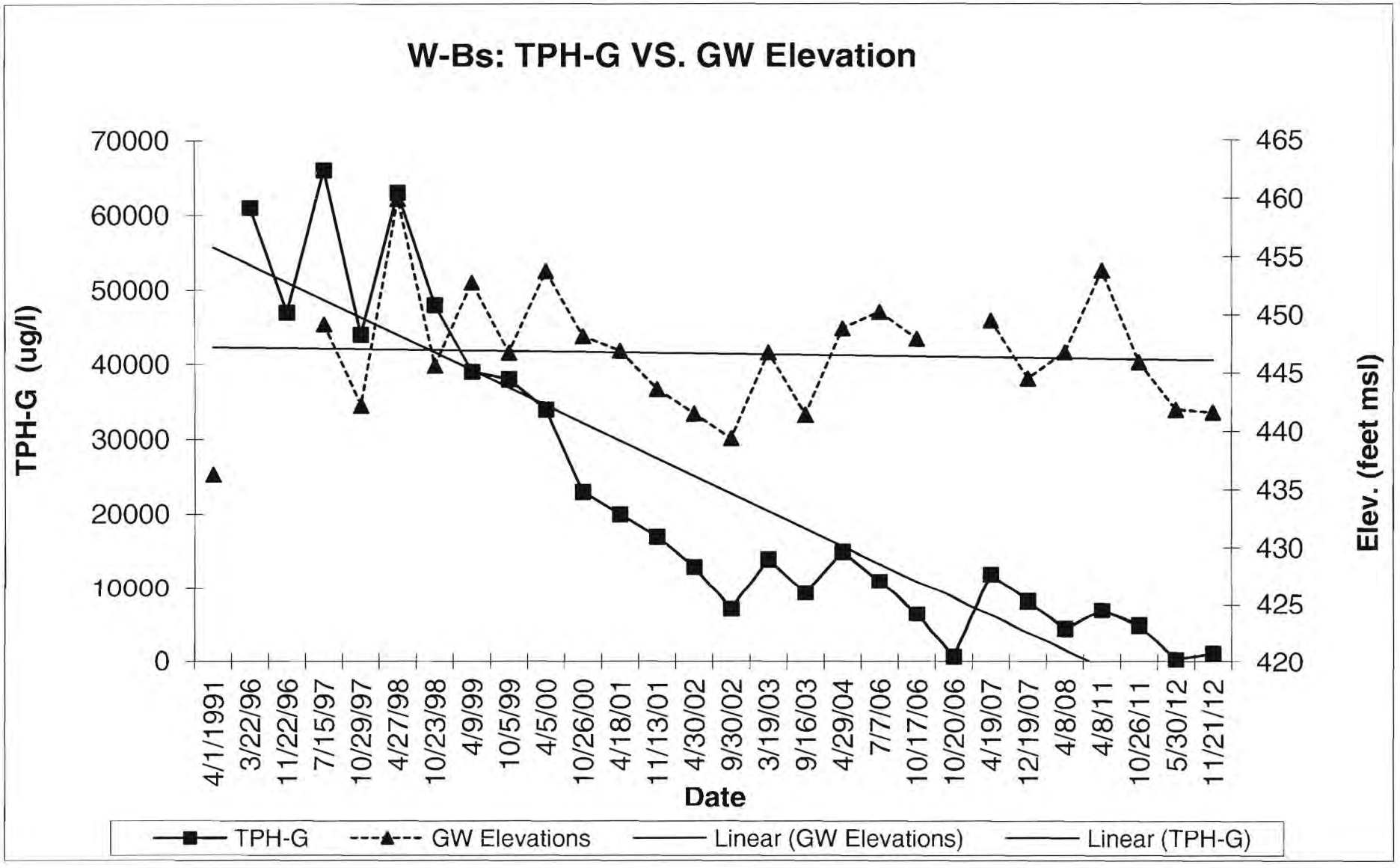
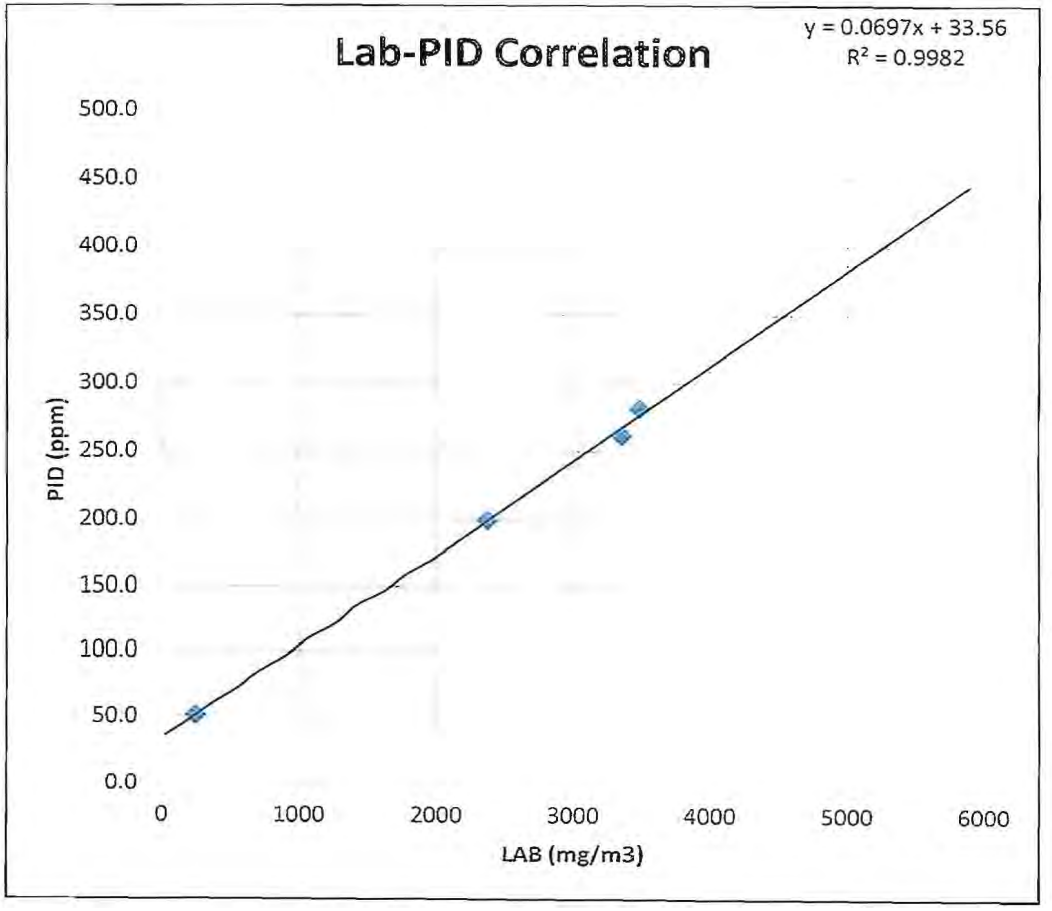


Figure 12: Photo-Ionization Detector to Laboratory Data Correlation

Sullins (Arrow Rentals)
187 North "L" Street
Livermore, CA
Project No.: 1262.2

DATE	Lab Results	Correlation Results	PID
	(mg/m^3)	(mg/m^3)	(ppm)
11/15/2011	-	68197.1	4800
11/16/2011	-	28139.9	2000
11/29/2011	-	24706.4	1760
12/7/2011	-	4234.3	329
12/8/2011	2380.0	2388.8	200
12/13/2011	-	8197.1	606
12/14/2011	-	11816.6	859
12/30/2011	-	8182.8	605
1/5/2012	3360.0	3275.8	262
1/10/2012	-	7939.6	588
1/13/2012	-	11087.0	808
1/19/2012	-	12617.7	915
1/26/2012	-	3776.5	297
1/31/2012	-	3862.4	303
2/24/2012	-	11845.2	861
3/8/2012	3490.0	3561.9	282
3/21/2012	-	2288.7	193
4/3/2012	-	2145.6	183
4/19/2012	-	2288.7	193
5/3/2012	-	915.3	97
5/16/2012	251.0	258.7	51.1



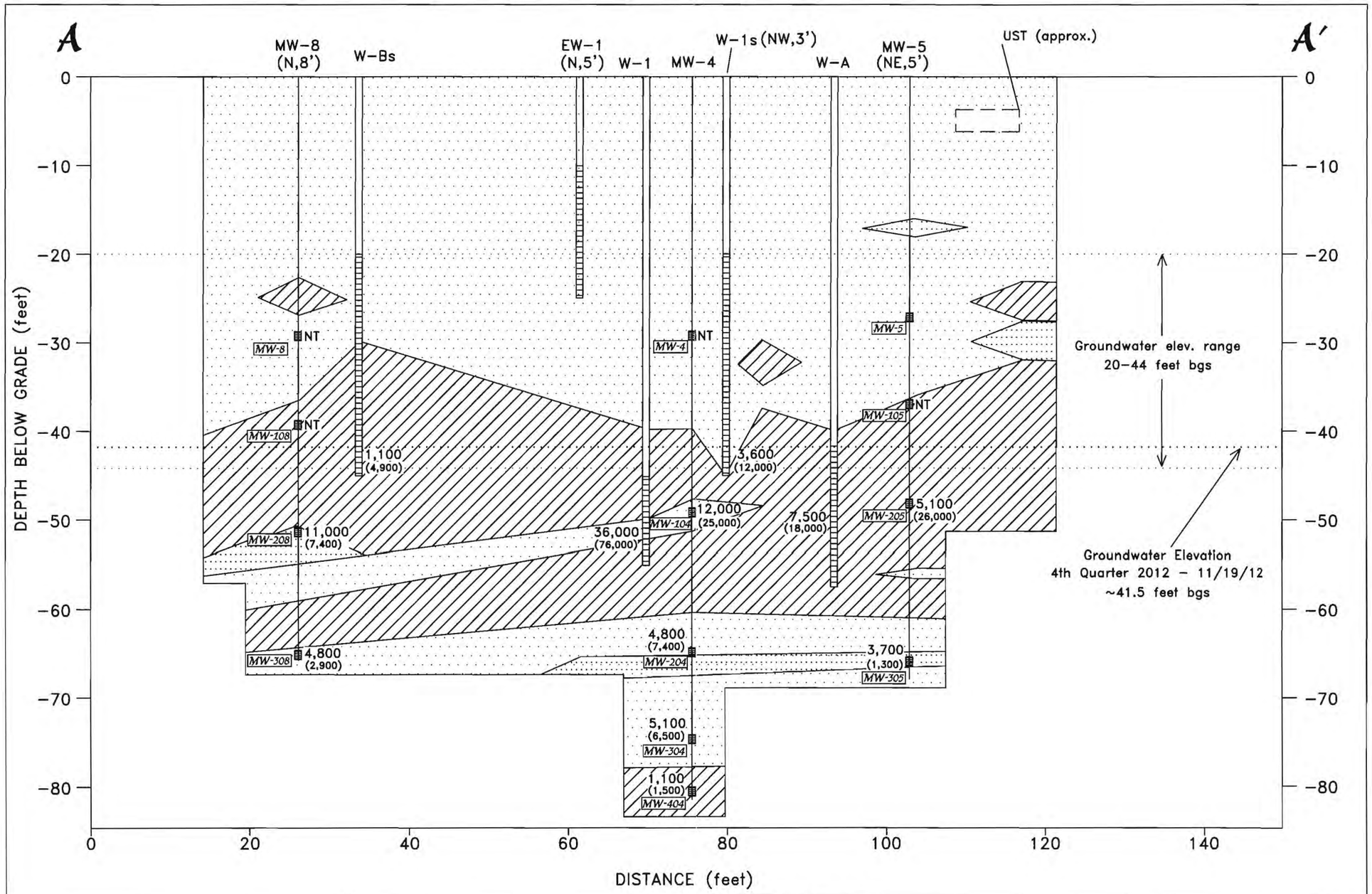


Figure 13
Cross Section A - A'
With TPH-G Soil plume

Arrow Rentals
187 N L Street
Livermore, CA
Project No.: 1262.2

Geological Technics Inc. *12/27/12*

LEGEND

Scale as Indicated.

(25,000) = Groundwater TPH-G Concentration (mg/kg)- October 2011 - Prior to DPE Remediation

2300 = Groundwater TPH-G Concentration (mg/kg)

NT = Not Tested

MW-108 = CMT well screen section

(N,5') = Boring projection onto section (direction, distance)

GRAVELLY UNITS UNITS (Includes sandy gravels,silty gravels, clayey gravels)

FINE GRAINED UNITS (Includes silts and clays, gravelly clays)

SAND UNITS

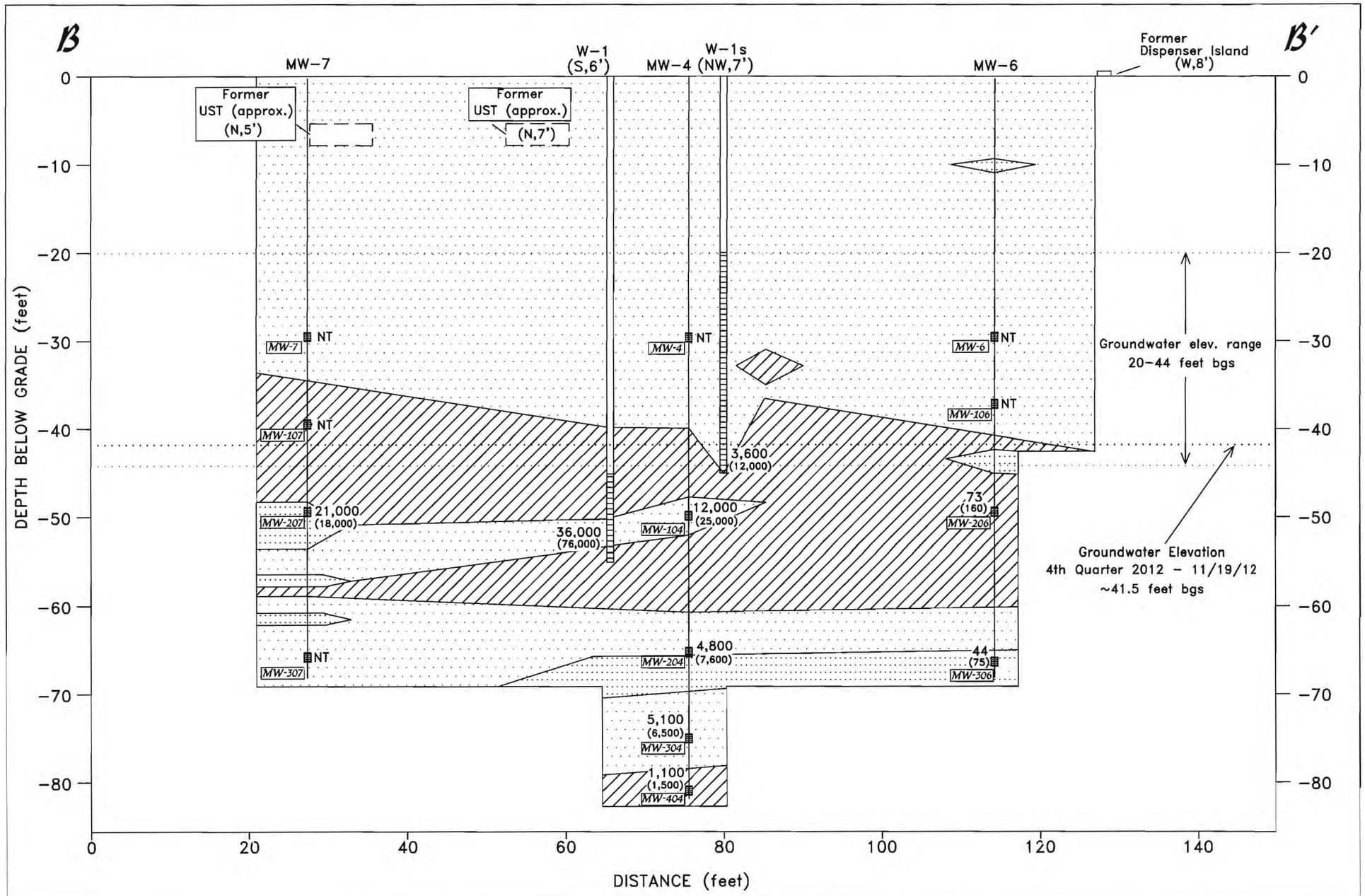


Figure 14
Cross Section B – B'
With TPH-gasoline
Arrow Rentals
187 N L Street
Livermore, CA
Project No.: 1262.2

Geological Technics Inc. *12/27/12*

LEGEND

Scale as Indicated.

(25,000) = Groundwater TPH-G Concentration (mg/kg)- October 2011 – Prior to DPE Remediation

2300 = Groundwater TPH-G Concentration (mg/kg)

NT = Not Tested

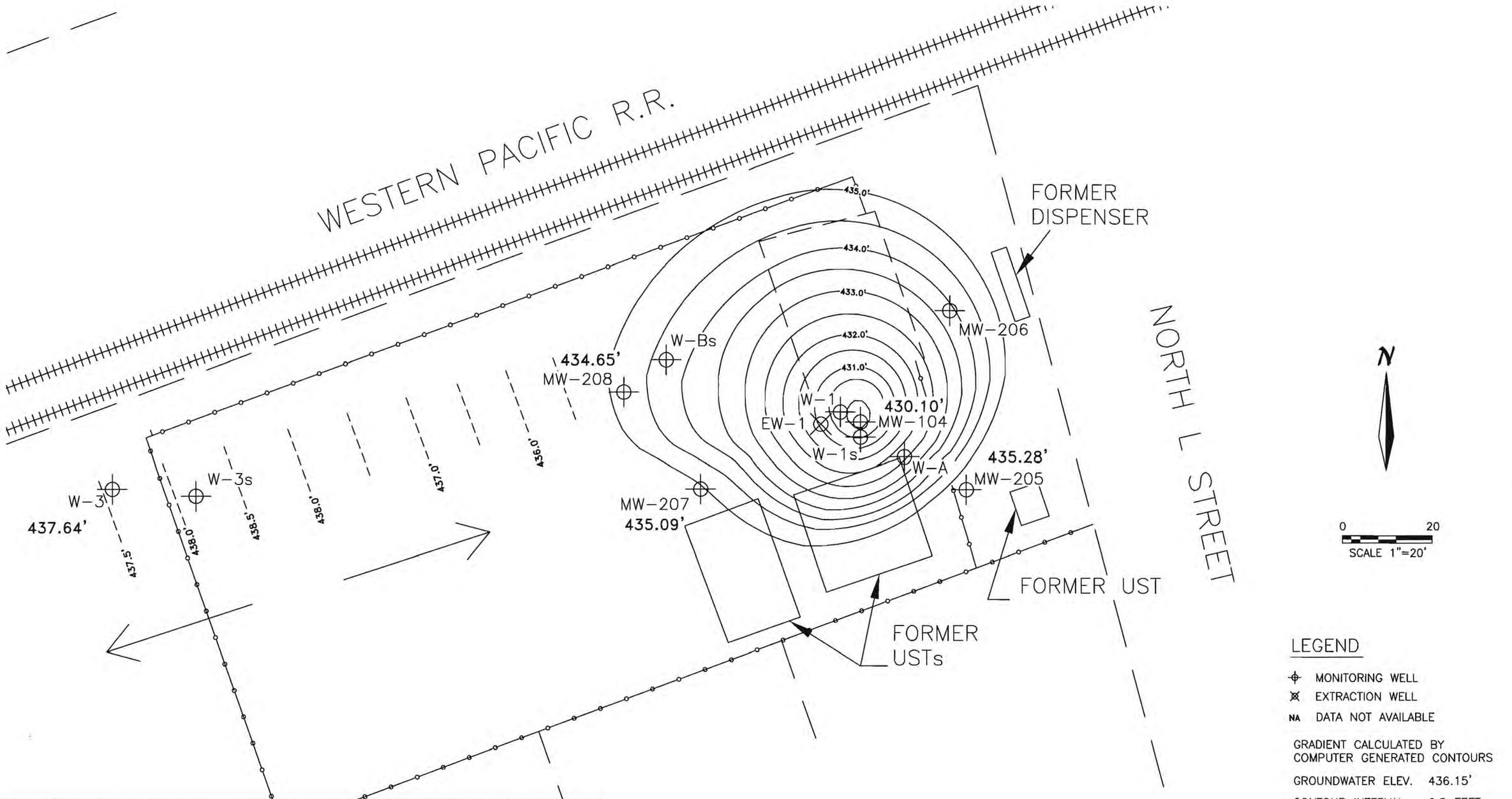
MW-108 = CMT well screen section

(N,5') = Boring projection onto section (direction, distance)

GRAVELLY UNITS UNITS (Includes sandy gravels,silty gravels, clayey gravels)

FINE GRAINED UNITS (Includes silts and clays, gravelly clays)

SAND UNITS



LEGEND

- MONITORING WELL
- EXTRACTION WELL
- NA DATA NOT AVAILABLE

GRADIENT CALCULATED BY COMPUTER GENERATED CONTOURS

GROUNDWATER ELEV. 436.15'

CONTOUR INTERVAL = 0.5 FEET

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY, NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

WELLS W-A and W-1 WERE LEFT OUT OF GRADIENT CALCULATIONS DUE TO ANOMALOUS VALUES AND MODIFICATION TO WELL TOP

THE HISTORICAL AVERAGE GROUNDWATER GRADIENT WAS USED TO ASSISST IN DETERMINING THE GW ELEV. CONTOURS BETWEEN WELLS W-3 AND MW-208 REPRESENTED W/ DASHED CONTOURS.

By:	AD
Job No:	1262.2 Date: 12-27-2012
Scale:	NTS
File:	DPE Drawdown 8-31-12

Geological Technics, Inc.
1101 7th Street
Modesto, CA
95354
209.522.4119 (tel)
209.522.4227 (fax)

FIGURE 15: DPE DRAWDOWN TEST - 8/31/12

ARROW RENTALS
187 NORTH L STREET
LIVERMORE, CA

Appendix A

Summary Tables

Table 1A: Summary of Groundwater Elevation and Gradient - Water Table Wells

Arrow Rentals
187 North L Street
Livermore, CA
Project No. 1262.2

Date		Elevation of Groundwater*																								Avg. Elv.	Avg. DTW	Gradient	Bearing
		W-1s	DTW-W-1s	W-3s	DTW-W-3s	W-Bs	DTW-W-Bs	W-Es	DTW-W-Es																	(feet)	(feet)	(ft/ft)	
	top of casing	479.09		476.98		478.82		474.66																					
	top of screen	459.09	20	456.98	20	458.82	20	454.66	20																				
	bottom of screen	434.09	45	431.98	45	433.82	45	429.66	45																				
6/2/1989		435.93		432.48		-		-																		434.21	43.83		
7/25/1990		-		-		434.20		431.58																		432.89	43.85		
1/1/1992																										-	41.00		
4/24/1996		461.14		459.28		460.77		456.21																		459.35	18.04		
11/22/1996		454.09		451.53		453.12		446.66																		451.35	26.04		
7/15/1997		448.68		447.81		449.20		443.20																		447.22	30.17		
10/29/1997		442.64	36.45	441.53		442.19		437.98																		441.09	36.30		
4/27/1998		460.48	18.61	457.25		459.96		455.39																		458.27	19.12		
10/23/1998		445.11	33.98	444.01		445.60		440.16																		443.72	33.67		
4/9/1999		453.14	25.95	451.02		452.78		447.25																		451.05	26.34		
10/5/1999		446.66	32.43	445.20		446.72		441.47																		445.01	32.38		
4/5/2000		453.12	25.97	451.96		453.77		448.04																		451.72	25.67		
10/26/2000		447.91	31.18	446.50		448.14		442.43																		446.25	31.14		
4/18/2001		447.80	31.29	446.51		446.89		442.63																		445.96	31.43		
11/13/2001		435.69	43.40	433.32		443.59		431.05																		435.91	41.48		
2/15/2002		442.46		-	-	-	-	-																		442.46	34.93		
3/15/2002		441.32		-	-	-	-	-																		441.32	36.07		
4/16/2002		441.79		-	-	-	-	-																		441.79	35.60		
4/30/2002		441.80	37.29	439.19		441.50		437.09																		439.90	37.49		
9/30/2002		439.17	39.92	437.01		439.39		434.50																		437.52	39.87		
3/19/2003		446.83	32.26	445.03		446.74		441.80																		445.10	32.29		
9/16/2003		440.88		438.50		441.40		436.14																		439.23	38.16		
4/29/2004		448.99	30.10	447.39	29.59	448.83	29.99	443.43	31.23																	447.16	30.23	0.019	West
7/7/2006		450.40	28.69	448.61	28.37	450.25	28.57	444.21	30.45																	448.37	29.02	0.019	N76°W

*Data prior to July 7, 2006 from *Environmental Sampling Services* 5/27/04 Groundwater Monitoring Report

Date		Elevation of Groundwater - Wells Surveyed October 16, 2006 in accordance with SWRCB Geotracker Requirements																										Avg. Elv.	Avg. DTW	Gradient	Bearing
		W-1s	DTW-W-1s	W-3s	DTW-W-3s	W-Bs	DTW-W-Bs	W-Es	DTW-W-Es	MW-4	DTW-MW-4	MW-5	DTW-MW-5	MW-6	DTW-MW-6	MW-7	DTW-MW-7	MW-8	DTW-MW-8	MW-105	DTW-MW-105	MW-106	DTW-MW-106	MW-107	DTW-MW-107	MW-108	MW-109	(feet)	(feet)	(ft/ft)	
	top of casing	481.19		479.12		480.92		476.78		480.84		481.12		480.79		480.91		480.64		481.12		480.79		480.91		480.64					
	top of screen	461.19	20	459.12	20	460.92	20	456.78	20	451.84	29	455.12	26	451.79	29	451.91	29	451.64	29	445.12	36	444.79	36	441.91	39	441.64	39 -				
	bottom of screen	436.19	45	434.12	45	435.92	45	431.78	45	450.84	30	454.12	27	450.79	30	450.91	30	450.64	30	444.12	37	443.79	37	440.91	40	440.64	40				
10/16/2006		447.81	33.38	446.17	32.95	447.93	32.99	442.75	34.03	-	-	-	-	-	-	-	-	-	-	447.97	33.15	447.11	33.68	446.77	34.14	446.34	34.30	446.61	33.58	0.014	N68°W
4/17/2007		449.64	31.55	448.35	30.77	449.51	31.41	444.58	32.20	454.09	26.75	-	-	-	-	-	-	-	-	-	-	-	-	448.92	31.99	-	-	448.20	31.58	0.016	N71°W
12/19/2007		438.88	42.31	437.46	41.66	444.51	36.41	433.10	43.68	-	-	-	-	-	-	-	-	-	-	-	-	443.07	37.72	442.26	38.65	442.60	38.04	440.27	39.78	0.033	S74°W
4/7/2008		446.97	34.22	-	-	446.76	34.16	442.34	34.44	453.30	27.54	-	-	445.99	34.80	-	-	452.15	28.49	447.38	33.74	445.18	35.61	445.86	35.05	446.36	34.28	447.23	33.23	0.012	N64°W
10/8-9/2008		435.40	43.69	-	-	-	-	431.01	43.65	-	-	-	-	-	-	-	-	-	-	431.68	49.44	431.31	49.48	-	-	430.56	50.08	431.99	47.27	0.010	N57°W
4/8/2011		452.00	27.09	452.20	26.92	453.81	27.11	446.59	28.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	451.15	27.30	0.0221	N56°W
10/26/2011		445.90	35.29	443.72	35.40	445.92	35.00	441.13	35.65	-	-	-	-	-	-	-	-	-	-	445.57	35.55	446.15	34.64	444.99	35.92	444.59	36.05	445.26	35.41	0.0129	S68°W
5/30/2012		442.92	38.27	439.98	39.14	441.85	39.07	437.10	39.68	-	-	-	-	-	-	-	-	-	-	445.63	35.49	443.61	37.18	442.15	38.76	-	-	441.89	38.23	0.0129	N82°W
11/19/2012		440.42	40.77	440.12	39.00	441.63	39.29	434.44	42.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	439.15	40.35	**0.0153**	**N63°W**

"-" = well dry or depth to water measurement could not be obtained
Starting 10/26/11 - Gradient calculated using a 3-point problem with monitoring wells W-Bs, W-Es and W-3s.

Geological Technics Inc.
12622 gwg

1/3/2013

Table 1B: Summary of Groundwater Elevation and Gradient - Intermediate Wells

Arrow Rentals
187 North L Street
Livermore, CA
Project No. 1262.2

Date	Elevation of Groundwater - Wells Surveyed Octpber 16, 2006 in accordance with SWRCB Geotracker Requirements																									
		W-1	DTW-W-1	W-A	DTW-W-A	W-B	DTW-W-B	W-C	DTW-W-C	W-D	DTW-W-D	W-E	DTW-W-E	MW-104	DTW-MW-104	MW-205	DTW-MW-205	MW-206	DTW-MW-206	MW-207	DTW-MW-207	MW-208	DTW-MW-208	Avg. Elv.	Avg. DTW	Gradient	Bearing
	top of casing	480.77		481.04		480.74		481.61		477.03		476.56		480.84		481.12		480.79		480.91		480.64		(feet)	(feet)	(ft/ft)	
	top of screen	435.27	45.5	439.04	42	440.74	40	436.61	45	435.03	42	436.06	40.5	431.34	49.5	434.12	47	431.79	49	431.91	49	429.64	51				
	bottom of screen	425.27	55.5	423.54	57.5	425.74	55	426.61	55	419.53	57.5	416.26	60.3	430.34	50.5	433.12	48	430.79	50	430.91	50	428.64	52				
10/16/2006		-	-	-	-	-	-	-	-	-	-	442.63	33.93	444.85	35.99	446.75	34.37	447.03	33.76	446.27	34.64	445.12	35.52	445.44	34.70	0.012	N63°W
4/17/2007		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	448.57	32.22	447.13	33.78	447.05	33.59	447.58	33.20	0.022	S68°W
12/19/2007		-	-	438.36	42.68	-	-	-	-	-	-	-	-	435.98	44.86	-	-	436.10	44.69	434.33	46.58	433.92	46.72	435.74	45.11	0.04	N76°W
4/7/2008		-	-	446.72	34.32	-	-	-	-	-	-	-	-	443.10	37.74	444.84	36.28	446.38	34.41	444.84	36.07	443.66	36.98	444.92	35.97	northwest	variable
10/8-9/2008		-	-	-	-	Wells Destroyed on 4/18/2008								431.08	49.76	434.51	46.61	431.32	49.47	-	-	430.68	49.96	431.90	48.95	0.12	N20°W
4/8/2011		-	-	453.38	27.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	453.38	27.66	N/A	N/A
10/26/2011		445.28	35.49	445.60	35.44	-	-	-	-	-	-	-	-	444.83	36.01	444.00	37.12	443.25	37.54	442.79	38.12	442.05	38.59	443.75	37.14	0.025	N52°W
5/30/2012		441.21	39.56	441.50	39.54	-	-	-	-	-	-	-	-	441.78	39.06	442.43	38.69	441.39	39.40	440.37	40.54	440.05	40.59	441.25	39.63	0.020	S89°W
11/19/2012		439.12	41.65	438.12	42.92	-	-	-	-	-	-	-	-	439.29	41.55	439.08	42.04	438.11	42.68	437.70	43.21	437.35	43.29	438.40	42.48	**0.015**	**N36°W**

"-" = well dry or depth to water measurement could not be obtained
Starting 10/26/11 - Gradient calculated using a 3-point problem with CMT wells 205, 206 & 208

Table 1C: Summary of Groundwater Elevation and Gradient - Deep Wells

Arrow Rentals
187 North L Street
Livermore, CA
Project No. 1262.2

Date	Elevation of Groundwater - Wells Surveyed October 16, 2006 in accordance with SWRCB Geotracker Requirements																	
		DEEP WELLS										GROUNDWATER				DEEPEST WELLS			
		MW-204	DTW-MW-204	MW-305	DTW-MW-305	MW-306	DTW-MW-306	MW-307	DTW-MW-307	MW-308	DTW-MW-308	Avg. Elv.	Avg. DTW	Gradient	Bearing	MW-304	DTW-MW-304	MW-404	DTW-MW-404
	top of casing	480.84		481.12		480.79		480.91		480.64		(feet)	(feet)	(ft/ft)		480.84		480.84	
	top of screen	415.34	65.5	416.12	65	415.79	65	415.91	65	415.64	65					406.34	74.5	400.84	80.0
	bottom of screen	414.34	66.5	415.12	66	414.79	66	414.91	66	414.64	66					405.34	75.5	399.34	81.5
10/16/2006		447.09	33.75	447.44	33.68	447.29	33.50	446.63	34.28	446.37	34.27	446.96	33.90	0.014	N78°W	442.76	38.08	444.37	36.47
4/17/2007		-	-	448.49	32.63	449.08	31.71	-	-	-	-	448.79	32.17	-	-	-	-	448.82	32.02
12/19/2007		435.73	45.11	-	-	443.19	37.60	435.20	45.71	434.93	45.71	437.26	43.53	0.18	S39°W	435.45	45.39	435.51	45.33
4/7/2008		446.42	34.42	446.56	34.56	442.68	38.11	446.86	34.05	445.59	35.05	445.62	35.24	0.1	N26°E	441.42	39.42	446.18	34.66
10/8-9/2008		429.90	50.94	444.51	36.61	432.28	48.51	-	-	442.09	38.55	437.20	43.65	-	-	-	-	432.20	48.64
4/8/2011		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/26/2011		445.22	35.62	445.74	35.38	445.34	35.45	-	-	445.55	35.09	445.46	35.39	0.0114	N64°W	445.14	35.70	445.07	35.77
5/30/2012		441.06	39.78	441.37	39.75	440.96	39.83	440.56	40.35	440.24	40.40	440.84	40.02	0.0100	N79°W	440.95	39.89	440.85	39.99
11/19/2012		438.53	42.31	438.84	42.28	438.46	42.33	438.04	42.87	437.72	42.92	438.32	42.54	**0.0089**	**N72°W**	438.40	42.44	438.33	42.51

"-" = well dry or depth to water measurement could not be obtained
Starting 10/26/11 - Gradient calculated using a 3-point problem with CMT wells 305, 307 & 308

Table 2

Arrow Rentals
187 North L Street
Livermore CA
Project No. 1262.2

Date	Well Pair	Mid Points (TS-BS & TS-BS)	gwl/ts	bs/bs	GW Elev. (Head)	Vert Head diff.	Vert Dist diff.	Vertical Gradient
16-Oct-06	MW-104	430.84	431.34	430.34	444.85	2.240	16.00	0.14
	MW-204	414.84	415.34	414.34	447.09			
16-Oct-06	MW-205	433.62	434.12	433.12	446.75	0.690	18.00	0.04
	MW-305	415.62	416.12	415.12	447.44			
19-Apr-07	MW-107	441.41	441.91	440.91	448.92	-1.790	10.00	-0.18
	MW-207	431.41	431.91	430.91	447.13			
19-Apr-07	MW-206	431.29	431.79	430.79	446.75	0.510	16.00	0.03
	MW-306	415.29	415.79	414.79	447.44			
19-Dec-07	MW-204	414.84	415.34	414.34	435.73	-0.280	9.00	-0.03
	MW-304	405.84	406.34	405.34	435.45			
19-Dec-07	MW-304	405.84	406.34	405.34	435.45	0.060	5.75	0.01
	MW-404	400.09	400.84	399.34	435.51			
19-Dec-07	MW-207	431.41	431.91	430.91	434.33	0.870	16.00	0.05
	MW-307	415.41	415.91	414.91	435.20			
7-Apr-08	MW-204	414.84	415.34	414.34	446.42	-5.000	9.00	-0.56
	MW-304	405.84	406.34	405.34	441.42			
7-Apr-08	MW-205	433.62	434.12	433.12	446.75	1.720	18.00	0.10
	MW-305	415.62	416.12	415.12	447.44			
7-Apr-08	MW-206	431.29	431.79	430.79	446.75	-3.700	16.00	-0.23
	MW-306	415.29	415.79	414.79	447.44			
7-Apr-08	MW-207	431.41	431.91	430.91	444.84	2.020	16.00	0.13
	MW-307	415.41	415.91	414.91	446.86			
8-Oct-08	MW-204	414.84	415.34	414.34	429.90		9.00	N/A
	MW-304	405.84	406.34	405.34	-			
8-Oct-08	MW-205	433.62	434.12	433.12	434.51	10.000	18.00	0.56
	MW-305	415.62	416.12	415.12	444.51			
8-Oct-08	MW-206	431.29	431.79	430.79	431.32	0.960	16.00	0.06
	MW-306	415.29	415.79	414.79	432.28			
8-Oct-08	MW-207	431.41	431.91	430.91	-		16.00	N/A
	MW-307	415.41	415.91	414.91	-			
25-Oct-11	MW-204	414.84	415.34	414.34	445.22	-0.080	9.00	-0.01
	MW-304	405.84	406.34	405.34	445.14			
25-Oct-11	MW-205	433.62	434.12	433.12	444.00	1.740	18.00	0.10
	MW-305	415.62	416.12	415.12	445.74			
25-Oct-11	MW-206	431.29	431.79	430.79	443.25	2.090	16.00	0.13
	MW-306	415.29	415.79	414.79	445.34			
25-Oct-11	MW-207	431.41	431.91	430.91	442.79		16.00	N/A
	MW-307	415.41	415.91	414.91	-			
30-May-12	MW-204	414.84	415.34	414.34	441.06	-0.110	9.00	-0.01
	MW-304	405.84	406.34	405.34	440.95			
30-May-12	MW-205	433.62	434.12	433.12	442.43	-1.060	18.00	-0.06
	MW-305	415.62	416.12	415.12	441.37			
30-May-12	MW-206	431.29	431.79	430.79	441.39	-0.430	16.00	-0.03
	MW-306	415.29	415.79	414.79	440.96			
30-May-12	MW-207	431.41	431.91	430.91	440.37	0.190	16.00	0.01
	MW-307	415.41	415.91	414.91	-			
19-Nov-12	MW-204	414.84	415.34	414.34	438.53	-0.130	9.00	-0.01
	MW-304	405.84	406.34	405.34	438.40			
19-Nov-12	MW-205	433.62	434.12	433.12	439.08	-0.240	18.00	-0.01
	MW-305	415.62	416.12	415.12	438.84			
19-Nov-12	MW-206	431.29	431.79	430.79	438.11	0.350	16.00	0.02
	MW-306	415.29	415.79	414.79	438.46			
19-Nov-12	MW-207	431.41	431.91	430.91	437.70	0.340	16.00	0.02
	MW-307	415.41	415.91	414.91	438.04			

Table 3: Summary of Well Construction

Arrow Rentals
187 North L Street
Livermore, CA
Project No. 1262.2

Well/Boring Type	Well/Boring Number	Status	Date Drilled	Total Depth (ft)	Boring Diameter (in)	Well Casing Diameter (in)	Casing Type	Slot Size (in)	Sand Type	Well Screen		Filter Pack		Annular Seal		Grout Seal	
										From	To	From	To	From	To	From	To
Monitoring	W-1	Active	5/25/1989	56.5	8	2	PVC	0.010	#2/12	55.5	45.5	55.5	41.5	41.5	39	39	S
Monitoring	W-2	Active	5/26/1989	51.5	8	2	PVC	0.010	#2/12	49	39	49	36	36	22.5	22.5	S
Monitoring	W-3	Active	5/26/1989	51.5	8	2	PVC	0.010	#2/12	48	38	48	34.5	34.5	32.5	32.5	S
Monitoring	W-A	Active	7/12/1990	63	12	4	PVC	0.010	#2/12	57.5	42	63	40	40	36.5	36.5	S
Monitoring	W-B	Active	7/13/1990	55	12	4	PVC	0.010	#2/12	55	40	55	32	32	30	30	S
Monitoring	W-C	Active	7/11/1990	55	8	2	PVC	0.010	#2	55	45	55	37.5	37.5	35	35	S
Monitoring	W-D	Active	7/12/1990	57.5	12	4	PVC	0.010	#2/12	57.5	42	57.5	39.5	34	32	32	S
Monitoring	W-E	Active	7/10/1990	61	8	2	PVC	0.010	#2/12	60.3	40.5	61	37	30	29	29	S
Monitoring	MW-1s	Active	3/11/1996	45	?	6	PVC	0.010	#2/12	45	20	45	17	17	15	15	S
Monitoring	MW-Bs	Active	3/12/1996	45	?	6	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
Monitoring	MW-3s	Active	3/12/1996	45	?	4	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
Monitoring	MW-Es	Active	3/13/1996	45	?	2	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
Monitoring	MW-4	Active	10/04/06	82	8	-	MCT	-	#2/12	30	29	30	20	16	14	14	S
Monitoring	MW-104	Active	-	-	-	-	MCT	-	#2/12	50.5	49.5	52	48	-	-	-	-
Monitoring	MW-204	Active	-	-	-	-	MCT	-	#2/12	66.5	65.5	68	64	-	-	-	-
Monitoring	MW-304	Active	-	-	-	-	MCT	-	#2/12	75.5	74.5	76	73	-	-	-	-
Monitoring	MW-404	Active	-	-	-	-	MCT	-	#2/12	81.5	80	81.5	79.5	-	-	-	-
Monitoring	MW-5	Active	10/09/06	68	8	-	MCT	-	#2/12	27	26	29	24	24	21.5	21.5	S
Monitoring	MW-105	Active	-	-	-	-	MCT	-	#2/12	37	36	39	34	-	-	-	-
Monitoring	MW-205	Active	-	-	-	-	MCT	-	#2/12	48	47	50	45	-	-	-	-
Monitoring	MW-305	Active	-	-	-	-	MCT	-	#2/12	66	65	68	63	-	-	-	-
Monitoring	MW-6	Active	10/10/06	68	8	-	MCT	-	#2/12	30	29	31	27	27	24	24	S
Monitoring	MW-106	Active	-	-	-	-	MCT	-	#2/12	37	36	39	35	-	-	-	-
Monitoring	MW-206	Active	-	-	-	-	MCT	-	#2/12	50	49	52	47	-	-	-	-
Monitoring	MW-306	Active	-	-	-	-	MCT	-	#2/12	66	65	68	63	-	-	-	-
Monitoring	MW-7	Active	10/05/06	69.5	8	-	MCT	-	#2/12	30	29	30	20	-	-	6	S
Monitoring	MW-107	Active	-	-	-	-	MCT	-	#2/12	40	39	42	37	-	-	-	-
Monitoring	MW-207	Active	-	-	-	-	MCT	-	#2/12	50	49	52	47	-	-	-	-
Monitoring	MW-307	Active	-	-	-	-	MCT	-	#2/12	66	65	68	63	-	-	-	-
Monitoring	MW-8	Active	10/06/06	66.5	8	-	MCT	-	#2/12	30	29	30	30	20	18	18	S
Monitoring	MW-108	Active	-	-	-	-	MCT	-	#2/12	40	39	42	37	-	-	-	-
Monitoring	MW-208	Active	-	-	-	-	MCT	-	#2/12	52	51	54	49	-	-	-	-
Monitoring	MW-308	Active	-	-	-	-	MCT	-	#2/12	66	65	66	63	-	-	-	-
Vapor Extraction	EW-1	Active	10/3/2006	25	10	4	PVC	0.010	#2/12	25	10	25	9.5	9.5	7.5	7.5	S

Red= Destroyed in 2008

Table 4: Summary of Groundwater Analytical Data

Arrow Rentals
187 North L Street
Livermore CA
Project No. 1262.2

Wells	Date	TPH Gasoline ug/L	TPH Diesel ug/L	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Total Xylenes ug/L	MTBE ug/L	ETBE ug/L	DIPE ug/L	TAME ug/L	TBA ug/L	1,2 DCA ug/L	EDB ug/L
W-1	11/1988 (?)	210,000	300,000	29,000	30,000	5,400	24,000	-	-	-	-	-	-	-
	9/13/1995	666,000	-	65,000	78,000	6,400	36,000	<12500	-	-	-	-	-	-
	10/19/2006	77,000	-	9,700	11,000	2,000	10,000	-	-	-	-	-	-	-
	10/20/2006	110,000	-	4,600	7,200	3,900	11,000	-	-	-	-	-	-	-
	12/20/2007	140,000	-	20,000	17,000	3,000	16,000	<2000	-	-	-	-	-	-
	4/8/2011	68,900	-	13,800	8,150	1,520	11,600	<200	-	-	-	-	-	-
	10/26/2011	76,000	-	15,000	6,100	910	11,000	-	-	-	-	-	-	-
	5/30/2012	25,000	-	4,500	840	600	1,900	-	-	-	-	-	-	-
	11/19/2012	36,000	-	6,300	1,700	1,900	6,200	-	-	-	-	-	-	-
W-2	11/1988 (?)	360	<50	6.7	2.1	0.5	1.3	-	-	-	-	-	-	-
	9/13/1995	90	-	<0.5	<0.5	<0.5	<0.5	<5	-	-	-	-	-	-
	4/8/2011	well location unknown												
W-3	11/1988 (?)	11,000	2,200	290	120	150	140	-	-	-	-	-	-	-
	9/13/1995	27,000	-	5,600	290	460	280	<2500	-	-	-	-	-	-
	4/7/2011	193	-	7.8	<0.5	0.5	<1	<0.5	-	-	-	-	-	-
	10/26/2011	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/30/2012	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/19/2012	-	-	-	-	-	-	-	-	-	-	-	-	-
W-A	1990	10,000	2,400	6,800	5,500	620	3,400	-	-	-	-	-	-	-
(dup)	1990	-	-	6,900	5,600	620	6,800	-	-	-	-	-	-	-
	10/20/2006	450	-	40	19	21	33	-	-	-	-	-	-	-
	10/29/2007	40,000	-	4,000	330	1,600	3,000	<100	-	-	-	-	-	-
	4/8/2011	13,200	-	2,370	128	439	523	<20	-	-	-	-	-	-
	10/26/2011	18,000	-	3,500	410	970	870	-	-	-	-	-	-	-
	6/7/2012	37,000	-	3,500	700	660	1700	-	-	-	-	-	-	-
	11/21/2012	7,500	-	1,900	110	300	440	-	-	-	-	-	-	-
W-B	1990	13,000	1,700	22,000	7,900	2,000	4,000	-	-	-	-	-	-	-
(dup)	1990	21,000	1,600	21,000	7,300	1,800	3,700	-	-	-	-	-	-	-
		Abondened April 14, 2008												
W-C	1990	<10	<100	<1	<1	<1	<1	-	-	-	-	-	-	-
		Abondened April 14, 2008												
W-D	1990	100	<100	1	2	2	1	-	-	-	-	-	-	-
		Abondened April 14, 2008												
W-E	1990	<10	<100	<1	<1	<1	<1	-	-	-	-	-	-	-
	9/13/1995	95	-	4	<0.5	<0.5	<0.5	18	-	-	-	-	-	-
		Abondened April 14, 2008												
W-1s	3/22/1996	6,400	-	580	470	85	1,100	<500	-	-	-	-	-	-
	11/22/1996	170,000	-	13,000	18,000	3,500	18,000	<10000	-	-	-	-	-	-
	7/15/1997	140,000	38,000	12,000	12,000	2,600	16,000	<800	-	-	-	-	-	-
	10/29/1997	650,000	180,000	14,000	19,000	7,800	35,000	<3000	-	-	-	-	-	-
	4/27/1998	6,700	2,200	410	250	77	870	<30	-	-	-	-	-	-
	10/23/1998	99,000	18,000	9,800	9,400	1,800	11,000	<600	-	-	-	-	-	-
	4/9/1999	70,000	24,000	6,500	7,000	1,800	8,900	360	-	-	-	-	-	-
	10/5/1999	82,000	60,000	5,500	4,500	2,500	14,000	<300	-	-	-	-	-	-
	4/5/2000	47,000	15,000	4,300	2,300	1,500	6,100	170	-	-	-	-	-	-
	10/26/2000	50,000	1,200	3,800	1,800	1,700	7,600	<50	-	-	-	-	-	-
	4/18/2001	54,000	6,800	5,200	1,800	1,500	7,000	<330	-	-	-	-	-	-
	11/13/2001	750,000	-	9,500	7,800	7,200	33,000	<2000	-	-	-	-	-	-
	4/30/2002	66,000	8,200	6,000	2,700	2,300	11,000	<1200	-	-	-	-	-	-
	9/30/2002	51,000	1,200	5,600	1,500	2,000	9,400	<1000	-	-	-	-	-	-
	3/19/2003	49,000	9,800	3,400	880	1,300	7,300	<500	-	-	-	-	-	-
	9/16/2003	53,000	24,000	4,100	1,200	1,400	6,600	<1000	-	-	-	-	-	-
	4/29/2004	39,000	5,900	3,700	1,200	810	4,700	<2500	-	-	-	-	-	-
	7/7/2006	23,000	<500	4,000	710	1,200	2,900	<100	<500	<500	<500	<1000	<50	<50
	10/17/2006	35,000	<470	5,000	1,300	1,500	3,500	-	-	-	-	-	-	-
	10/19/2006	40,000	-	6,000	3,800	1,300	4,400	-	-	-	-	-	-	-
	10/20/2006	32,000	-	2,100	2,700	1,200	3,600	-	-	-	-	-	-	-
	4/19/2007	21,000	-	2,200	460	1,200	1,800	<200	-	-	-	-	-	-
	10/29/2007	68,000	-	19,000	830	2,700	4,000	<400	-	-	-	-	-	-
	4/8/2008	30,000	-	2,600	340	1,800	1,700	<120	-	-	-	-	-	-
	10/9/2008	39,000	-	3,900	340	1,400	2,000	<250	-	-	-	-	-	-
	4/8/2011	13,400	-	2,040	239	1,180	877	<20	-	-	-	-	-	-
	10/26/2011	12,000	-	2,900	280	520	530	-	-	-	-	-	-	-
	5/30/2012	11,000	-	490	83	140	740	-	-	-	-	-	-	-
	11/21/2012	3,600	-	320	47	33	180	-	-	-	-	-	-	-
W-3s	3/22/1996	100	-	13	6.9	5.3	14	<5	-	-	-	-	-	-
	11/22/1996	3,200	-	270	29	63	100	<100	-	-	-	-	-	-
	7/15/1997	2,100	340	230	7	33	51	<20	-	-	-	-	-	-
	10/29/1997	2,800	750	630	31	71	69	<30	-	-	-	-	-	-
	4/27/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<3	-	-	-	-	-	-
	10/23/1998	3,800	1,000	500	28	90	37	35	-	-	-	-	-	-
	4/9/1999	980	430	240	4	37	3	<12	-	-	-	-	-	-
	10/5/1999	1,500	1,000	290	9.5	53	9.8	<6	-	-	-	-	-	-
	4/5/2000	810	320	150	3	9	5.7	<5	-	-	-	-	-	-
	10/26/2000	310	120	83	3.5	6.4	1.2	<5	-	-	-	-	-	-
	4/18/2001	2,300	1,600	320	8	16	7	<20	-	-	-	-	-	-
	11/13/2001	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/30/2002	1,400	490	320	5.5	24	5	<25	-	-	-	-	-	-
	3/19/2003	5,300	1,500	920	24	140	27	<25	-	-	-	-	-	-
	3/19/2003	5,300	1,500	920	24	140	27	<25	-	-	-	-	-	-
	9/16/2003	1,600	1,400	270	1.7	5.2	<0.5	<5	-	-	-	-	-	-
	4/29/2004	1,300	400	210	5.1	23	4.5	<25	-	-	-	-	-	-
	7/7/2006	110	<500	44	0.77	<0.5	<0.5	<1	<5	<5	<5	<10	<0.5	<0.5
	10/17/2006	1,300	<50	95	<2	2	<2	-	-	-	-	-	-	-
	4/19/2007	320	-	83	<2.5	<2.5	<2.5	<5	-	-	-	-	-	-
	12/19/2007	69	-	1.3	<0.5	<0.5	<1	<2	-	-	-	-	-	-
	4/8/2011	937	-	422	<5	6.5	<10	<5	-	-	-	-	-	-
	10/25/2011	190	-	5.2	0.76	1.3	2.1	-	-	-	-	-	-	-
	5/30/2012	110	-	33	0.51	1.1	0.5	-	-	-	-	-	-	-
	11/19/2012	71	-	<0.3	<0.3	<0.3	<0.6	-	-	-	-	-	-	-

Table 4: Summary of Groundwater Analytical Data

Arrow Rentals
187 North L Street
Livermore CA
Project No. 1262.2

Wells	Date	TPH Gasoline ug/L	TPH Diesel ug/L	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Total Xylenes ug/L	MTBE ug/L	ETBE ug/L	DIPE ug/L	TAME ug/L	TBA ug/L	1,2 DCA ug/L	EDB ug/L
W-Bs	3/22/1996	61,000	-	9,800	8,000	2,200	11,000	<5000	-	-	-	-	-	-
	11/22/1996	47,000	-	5,100	3,100	1,400	7,800	<2500	-	-	-	-	-	-
	7/15/1997	66,000	17,000	7,800	4,900	1,900	10,000	<600	-	-	-	-	-	-
	10/29/1997	44,000	27,000	6,000	500	1,500	6,400	380	-	-	-	-	-	-
	4/27/1998	63,000	17,000	6,100	5,400	1,900	9,100	<600	-	-	-	-	-	-
	10/23/1998	48,000	9,600	6,700	1,200	1,500	6,200	<300	-	-	-	-	-	-
	4/9/1999	39,000	12,000	4,100	1,900	1,400	5,600	<300	-	-	-	-	-	-
	10/5/1999	38,000	7,300	3,800	390	1,600	5,900	<60	-	-	-	-	-	-
		34,000	9,600	3,500	1,200	1,400	4,700	<150	-	-	-	-	-	-
	10/26/2000	23,000	650	2,500	210	1,100	2,600	150	-	-	-	-	-	-
	4/18/2001	20,000	2,500	2,400	180	880	1,800	<20	-	-	-	-	-	-
	11/13/2001	17,000	3,600	2,000	130	1,100	1,700	<150	-	-	-	-	-	-
	4/30/2002	13,000	2,300	1,000	38	660	360	<170	-	-	-	-	-	-
	9/30/2002	7,100	1,500	940	28	260	93	<250	-	-	-	-	-	-
	3/19/2003	14,000	3,900	1,200	77	820	900	<120	-	-	-	-	-	-
	9/16/2003	9,400	1,900	1,300	36	580	160	<150	-	-	-	-	-	-
	4/29/2004	15,000	3,300	2,400	170	1,300	950	<200	-	-	-	-	-	-
	7/7/2006	11,000	<50	1,900	160	820	440	<40	<200	<200	<200	<400	<20	<20
	10/17/2006	6,500	<47	1,000	37	410	83	-	-	-	-	-	-	-
	10/20/2006	630	<47	39	8.5	1.7	20	-	-	-	-	-	-	-
	4/19/2007	12,000	-	1,500	100	900	620	<100	-	-	-	-	-	-
	12/19/2007	8,200	-	360	<50	380	<100	<200	-	-	-	-	-	-
	4/8/2008	4,400	-	410	15	460	71	<50	-	-	-	-	-	-
	4/8/2011	6,960	-	1,280	56.2	632	432	<10	-	-	-	-	-	-
	10/25/2011	4,900	-	250	23	230	38	-	-	-	-	-	-	-
	5/30/2012	310	-	7.6	0.46	18	3	-	-	-	-	-	-	-
	11/19/2012	1,100	-	31	3.9	23	17	-	-	-	-	-	-	-
W-Es	3/22/1996	<50	-	<0.5	<0.5	<0.5	<0.5	<5	-	-	-	-	-	-
	11/22/1996	280	-	24	0.6	1.8	2.2	<5	-	-	-	-	-	-
	7/15/1997	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/29/1997	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/27/1998	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/23/1998	82	69	<0.5	0.8	<0.5	0.8	4	-	-	-	-	-	-
	4/9/1999	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/5/1999	68	88	<0.5	<0.5	<0.5	<1.0	4	-	-	-	-	-	-
	4/5/2000	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/26/2000	110	<50	0.7	<0.5	<0.5	<1.0	<5	-	-	-	-	-	-
	4/18/2001	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/13/2001	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/30/2002	-	-	-	-	-	-	-	-	-	-	-	-	-
	9/30/2002	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/19/2003	86	61	<0.5	<0.5	<0.5	<0.5	<5	-	-	-	-	-	-
	4/17/2007	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/29/2004	55	87	0.62	<0.5	<0.5	<0.5	<5	-	-	-	-	-	-
	7/7/2006	<25	<50	<0.5	<0.5	<0.5	<0.5	2.4	<5	<5	<5	<10	<0.5	<0.5
	10/17/2006	<50	<50	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
	4/17/2007	<50	-	<0.5	<0.5	<0.5	<0.5	<1	-	-	-	-	-	-
	12/19/2007	<50	-	<0.5	<0.5	<0.5	<1	<2	-	-	-	-	-	-
	4/7/2008	<50	-	<0.5	<0.5	<0.5	<1	<5	-	-	-	-	-	-
	10/8/2008	<50	-	<0.5	<0.5	<0.5	<1	<5	-	-	-	-	-	-
	4/8/2011	<50	-	<0.5	<0.5	<0.5	<1	0.5	-	-	-	-	-	-
	10/26/2011	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/29/2012	<50	-	<0.5	<0.5	<0.5	<1	0.84	-	-	-	-	-	-
	11/19/2012	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4	10/16/2006	DRY												
	4/17/2007	DRY												
	10/29/2007	460,000	-	24,000	21,000	3,800	19,000	<500	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2011	DRY												
	10/26/2011	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/30/2012	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/19/2012	DRY												
MW-5	10/16/2006	DRY												
	4/19/2007	DRY												
	12/19/2007	DRY												
	4/8/2011	DRY												
	10/26/2011	DRY												
	5/30/2012	DRY												
	11/19/2012	DRY												
MW-6	10/16/2006	DRY												
	4/17/2007	DRY												
	12/19/2007	DRY												
	4/8/2011	220	-	3.2	<0.5	<0.5	<1	<0.5	-	-	-	-	-	-
	10/26/2011	DRY												
	5/30/2012	DRY												
	11/19/2012	DRY												
MW-7	10/16/2006	DRY												
	4/17/2007	DRY												
	12/19/2007	DRY												
	4/8/2011	DRY												
	10/26/2011	DRY												
	5/30/2012	DRY												
	11/19/2012	DRY												
MW-8	10/16/2006	DRY												
	4/17/2007	DRY												
	12/19/2007	DRY												
	4/8/2011	765	-	119	<2	3.0	6.0	<2	-	-	-	-	-	-
	10/26/2011	DRY												
	5/30/2012	DRY												
	11/19/2012	DRY												
MW-104	10/19/2006	960	-	250	170	20	83	-	-	-	-	-	-	-
	4/8/2008	DRY												
	10/29/2007	1,300	-	210	82	110	380	<5	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2008	32,000	-	7,100	1,400	680	1,800	<250	-	-	-	-	-	-
	4/8/2011	18,500	-	13,700	212	266	384	250	-	-	-	-	-	-
	10/26/2011	25,000	-	8,400	120	490	740	-	-	-	-	-	-	-
	5/30/2012	18,000	-	4,200	280	490	1,300	<10	-	-	-	-	-	-
	11/19/2012	12,000	-	6,100	280	310	530	32	-	-	-	-	-	-
MW-105	10/16/2006	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/19/2007	13,000	-	4,300	980	490	1,500	<250	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2008	DRY												
	10/9/2008	11,000	-	3,800	70	40	110	<50	-	-	-	-	-	-
	4/8/2011	11,300	-	5,870	135	518	1,110	<40	-	-	-	-	-	-
	10/26/2011	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/30/2012	DRY												
	11/19/2012	DRY												

Table 4: Summary of Groundwater Analytical Data

Arrow Rentals
187 North L Street
Livermore CA
Project No. 1262.2

Wells	Date	TPH Gasoline ug/L	TPH Diesel ug/L	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Total Xylenes ug/L	MTBE ug/L	ETBE ug/L	DIPE ug/L	TAME ug/L	TBA ug/L	1,2 DCA ug/L	EDB ug/L
MW-106	10/16/2006	56	-	2.2	<0.5	0.57	<0.5	-	-	-	-	-	-	-
	4/19/2007	240	-	7.6	<0.5	<0.5	<0.5	<1	-	-	-	-	-	-
	10/29/2007	86	-	<0.5	<0.5	<0.5	<0.5	<1	-	-	-	-	-	-
	12/20/2007	54	-	1.0	<0.5	<0.5	<1	<2	-	-	-	-	-	-
	4/8/2008	DRY												
	10/8/2008	90	-	0.6	<0.5	<0.5	<1	<5	-	-	-	-	-	-
	4/14/2009													
	4/8/2011	247	-	9.3	<0.5	<0.5	<1	<0.5	-	-	-	-	-	-
	10/26/2011	190	-	1.7	<0.3	<0.3	<0.6	-	-	-	-	-	-	-
	5/30/2012	DRY												
	11/19/2012	DRY												
MW-107	10/19/2006	320	-	430	290	33	140	-	-	-	-	-	-	-
	4/19/2007	7,400	-	3,400	150	140	140	<200	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2008	18,000	-	6,100	700	380	480	<50	-	-	-	-	-	-
	4/8/2011	20,400	-	15,100	<200	360	<400	<200	-	-	-	-	-	-
	10/26/2011	16,000	-	6,400	28	140	200	-	-	-	-	-	-	-
	5/30/2012	DRY												
	11/19/2012	DRY												
MW-108	10/16/2006	3,400	-	790	46	<20	65	-	-	-	-	-	-	-
	4/19/2007	<20,000	-	5,400	<200	400	220	<400	-	-	-	-	-	-
	10/29/2007	310	-	55	3.2	10	14	1.9	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2008	2,200	-	1,100	24	26	140	<25	-	-	-	-	-	-
	10/9/2008	2,100	-	490	8.4	35	40	<12	-	-	-	-	-	-
	4/8/2011	4,000	-	1,640	10.8	123	84.2	89.6	-	-	-	-	-	-
	10/26/2011	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/30/2012	DRY												
	11/19/2012	DRY												
MW-204	10/19/2006	5,800	-	560	420	110	580	-	-	-	-	-	-	-
	4/18/2007	<10,000	-	2,700	650	210	970	<200	-	-	-	-	-	-
	10/29/2007	710	-	18	9.9	11	34	<1	-	-	-	-	-	-
	12/20/2007	22,000	-	4,700	1,100	490	1,400	<800	-	-	-	-	-	-
	4/8/2008	9,800	-	1,800	340	520	560	<50	-	-	-	-	-	-
	10/8/2008	18,000	-	9,200	360	130	370	<100	-	-	-	-	-	-
	4/8/2011	2,520	-	1,140	27.8	72.8	30.6	<10	-	-	-	-	-	-
	10/26/2011	7,400	-	1,900	38	250	400	-	-	-	-	-	-	-
	5/30/2012	3,800	-	770	44	76	170	17						
	11/19/2012	4,800	-	1,900	88	220	470	<20						
MW-205	10/16/2006	<2000	-	880	63	<20	54	-	-	-	-	-	-	-
	10/17/2006	5,100	-	2,000	190	52	220	-	-	-	-	-	-	-
	4/18/2007	<40,000	-	14,000	550	<400	<400	<800	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2008	31,000	-	20,000	640	510	1,400	<250	-	-	-	-	-	-
	4/8/2011	33,600	-	25,000	232	640	448	<200	-	-	-	-	-	-
	10/26/2011	26,000	-	11,000	130	240	300	-	-	-	-	-	-	-
	5/29/2012	40,000	-	15,000	150	860	1,100	<10						
	11/21/2012	5,100	-	1,700	26	210	360	<20						
MW-206	10/16/2006	<50	-	0.72	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
	4/8/2008	<50	-	0.96	<0.5	<0.5	<0.5	<1	-	-	-	-	-	-
	12/19/2007	84	-	0.71	<0.5	<0.5	<1	<2	-	-	-	-	-	-
	4/8/2008	60	-	1.8	<0.5	<0.5	<1	<5	-	-	-	-	-	-
	4/8/2011	1,170	-	115	<10	<10	<20	<10	-	-	-	-	-	-
	10/26/2011	160	-	5.7	0.40	0.25	<0.6	-	-	-	-	-	-	-
	5/29/2012	1,500	-	250	100	38	170	-	-	-	-	-	-	-
	11/21/2012	73	-	1.4	<0.3	<0.3	<0.6	-	-	-	-	-	-	-
MW-207	10/19/2006	1,000	-	170	52	18	67	-	-	-	-	-	-	-
	4/18/2007	<25,000	-	9,700	480	<250	250	<500	-	-	-	-	-	-
	12/19/2007	DRY												
	4/7/2008	32,000	-	12,000	350	580	790	<250	-	-	-	-	-	-
	4/8/2011	19,500	-	15,000	<100	180	<200	108	-	-	-	-	-	-
	10/26/2011	18,000	-	7,600	38	160	280	-	-	-	-	-	-	-
	5/29/2012	24,000	-	11,000	87	310	340	190	-	-	-	-	-	-
	11/21/2012	21,000	-	14,000	65	310	190	140	-	-	-	-	-	-
MW-208	10/17/2006	1,500	-	520	39	<10	100	-	-	-	-	-	-	-
	4/19/2007	<10,000	-	2,500	<100	<100	<100	<200	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2008	19,000	-	3,900	230	550	1,200	<200	-	-	-	-	-	-
	4/8/2011	12,300	-	5,820	75	432	270	<50	-	-	-	-	-	-
	10/26/2011	7,400	-	1,600	97	60	210	-	-	-	-	-	-	-
	5/29/2012	11,000	-	2,600	42	220	170	<10	-	-	-	-	-	-
	11/21/2012	11,000	-	3,500	37	310	130	39	-	-	-	-	-	-
MW-304	10/19/2006	3,300	-	290	240	56	530	-	-	-	-	-	-	-
	4/19/2007	<10,000	-	3,100	450	<100	420	<200	-	-	-	-	-	-
	12/20/2007	1,500	-	380	43	32	110	<40	-	-	-	-	-	-
	4/7/2008	820	-	100	36	36	98	<5	-	-	-	-	-	-
	4/8/2011	2,880	-	657	32.3	93.5	262	<5	-	-	-	-	-	-
	10/26/2011	6,500	-	1,600	45	190	350	-	-	-	-	-	-	-
	5/30/2012	1,600	-	190	13	39	100	-	-	-	-	-	-	-
	11/19/2012	5,100	-	1,600	67	250	500	-	-	-	-	-	-	-
MW-305	10/16/2006	<50	-	1.8	<0.5	<0.5	0.67	-	-	-	-	-	-	-
	4/19/2007	<20,000	-	3,600	<200	<200	<200	<400	-	-	-	-	-	-
	12/19/2007	DRY												
	4/8/2008	290	-	42	14	8.1	28	<5	-	-	-	-	-	-
	4/8/2011	862	-	193	10.4	27.6	69.1	<5	-	-	-	-	-	-
	10/26/2011	1,300	-	280	37	20	49	-	-	-	-	-	-	-
	5/29/2012	920	-	260	3.6	18	30	-	-	-	-	-	-	-
	11/21/2012	3,700	-	1,300	17	170	230	-	-	-	-	-	-	-
MW-306	10/16/2006	<50	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
	4/18/2007	<50	-	3.1	<0.5	<0.5	<0.5	<1	-	-	-	-	-	-
	12/20/2007	<50	-	0.54	<0.5	<0.5	<1	<2	-	-	-	-	-	-
	4/7/2008	<50	-	<0.5	<0.5	<0.5	<1	<5	-	-	-	-	-	-
	4/8/2011	<50	-	10.4	<0.5	<0.5	<1	<0.5	-	-	-	-	-	-
	10/26/2011	75	-	0.5	<0.3	<0.3	<0.6	-	-	-	-	-	-	-
	5/30/2012	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/21/2012	44	-	1.2	<0.3	<0.3	<0.6	-	-	-	-	-	-	-
MW-307	10/19/2006	<50	-	2.3	1.5	<0.5	4.7	-	-	-	-	-	-	-
	4/18/2007	<4000	-	1,300	250	78	310	<80	-	-	-	-	-	-
	12/19/2007	1,500	-	200	50	59	140	<40	-	-	-	-	-	-
	4/7/2008	2,500	-	720	110	69	160	<25	-	-	-	-	-	-
	4/8/2011	70	-	24.3	3.8	0.6	3.3	<0.5	-	-	-	-	-	-
	10/26/2011	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/29/2012	2,000	-	540	4.2	57	110	4.5	-	-	-	-	-	-
	11/19/2012	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 4: Summary of Groundwater Analytical Data

Arrow Rentals
187 North L Street
Livermore CA
Project No. 1262.2

Wells	Date	TPH Gasoline ug/L	TPH Diesel ug/L	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Total Xylenes ug/L	MTBE ug/L	ETBE ug/L	DIPE ug/L	TAME ug/L	TBA ug/L	1,2 DCA ug/L	EDB ug/L
MW-308	10/16/2006	<50	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
	4/19/2007	<10,000	-	1,600	<100	<100	<100	<200	-	-	-	-	-	-
	12/19/2007	190	-	25	1.5	7.2	8.4	<4	-	-	-	-	-	-
	4/7/2008	770	-	150	10	48	45	<5	-	-	-	-	-	-
	4/8/2011	3,240	-	1,230	18.6	187	125	<10	-	-	-	-	-	-
	10/26/2011	2,900	-	610	9.2	73	53	-	-	-	-	-	-	-
	5/29/2012	1,200	-	89	5.1	18	25	-	-	-	-	-	-	-
	11/21/2012	4,800	-	930	46	160	210	-	-	-	-	-	-	-
MW-404	10/19/2006	1,700	-	120	73	27	280	-	-	-	-	-	-	-
	4/18/2007	<10,000	-	1,400	440	130	550	<200	-	-	-	-	-	-
	12/19/2007	2,200	-	160	63	92	300	<40	-	-	-	-	-	-
	4/8/2008	DRY												
	4/8/2011	119	-	90.8	1.4	1.0	2.6	<0.5	-	-	-	-	-	-
	10/26/2011	1,500	-	400	9.1	46	65	-	-	-	-	-	-	-
	5/30/2012	1,200	-	260	11	34	80	-	-	-	-	-	-	-
	11/19/2012	1,100	-	230	<6.0	46	84	-	-	-	-	-	-	-

pre- 2006 data adapted from *Environmental Sampling Services* 5/27/04 Groundwater Monitoring Report
"-" = not analyzed

Table 5: Summary of Field Parameters

Arrow Rentals
187 North L Street
Livermore, California
Project No. 1262.2

Monitoring Well	W-1s					W-3s					W-Bs					W-Es				
	pH	E.C.	Temp	ORP	DO	pH	E.C.	Temp	ORP	DO	pH	E.C.	Temp	ORP	DO	pH	E.C.	Temp	ORP	DO
Date			°C					°C					°C					°C		
7/7/2006	-	-	-	-128.5	0.13	-	-	-	-	0.07	-	-	-	-107.3	0.09	7.05	339	20.9	32.9	0.06
12/29/2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4/8/2008	6.76	514	24.8	-95.5	-	-	-	-	-	-	-	-	-	-	0.28	7.07	503	25.1	121.4	6.85
10/8-9/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4/7-8/2011	6.17	967	19.1	-221.5	0.37	6.63	964	18.1	40.7	0.72	6.61	780	18.5	-198.2	0.02	7.03	790	19.5	141.3	1.06
10/26/2011	6.65	1012	18.1	-121.5	0.16	6.65	914	17.9	-57.6	0.52	6.51	722	17.6	-115.8	0.38	-	-	-	-	-
5/30/2012	6.60	1574	21.4	-351.9	0.00	6.89	761	20.3	-66.9	0.11	6.88	676	20.9	-87.3	0.79	-	-	-	-	-
11/19/2012	6.16	1301	18.6	-119.7	0.06	6.75	834	17.2	-65.1	0.19	7.04	825	17.2	-39.2	0.18	-	-	-	-	-

Monitoring Well	W-1					W-3					W-A				
	pH	E.C.	Temp	ORP	DO	pH	E.C.	Temp	ORP	DO	pH	E.C.	Temp	ORP	DO
Date			°C					°C					°C		
4/7-8/2011	6.30	917	19.0	-164.3	0.40	6.94	928	18.3	-185.7	0.10	6.85	907	18.9	-254.5	0.04
10/26/2011	6.45	1073	17.8	-60.9	0.20	-	-	-	-	-	6.70	1019	18.0	-120.2	0.15
5/30/2012	6.71	1062	20.7	-98.7	0.95	-	-	-	-	-	6.83	1127	20.3	-90.3	0.15
11/19/2012	7.04	965	17.3	-97.0	0.12	-	-	-	-	-	6.92	1185	18.0	-139.9	0.17

" - " = insufficient data no result reported

Table 6: TPH-G Mass Removal Calculations: Groundwater

Sullins (Arrow Rentals)
187 North "L" Street
Livermore, CA
Project No.: 1262.2

Date/Time	Hours			GW Removed		Lab	Removal Calculations				Mass Removal Totals	
	Meter	Cumulative	in period	Cummulative (gallons)	In Period (gallons)	(ug/L)	(grams/L)	(grams/gal.)	(lbs./gal.)	(lbs./period)	cumulative pounds	cumulative gallons
Start-Up	11/15/11 @ 0700										-	-
12/7/2011	10428.3	0.0	-	0	-	-	-	-	-	0.00	-	-
12/13/2011	10441.8	13.5	695.1	1060	1060	2400.0	0.00240	0.00063	0.00000140	0.67	0.67	0.11
1/13/2012	11136.9	708.6	106.9	1378	67	6400.0	0.00640	0.00169	0.00000373	0.11	0.79	0.13
1/18/2012	11243.8	815.5	11.7	1445	1735	3800.0	0.00380	0.00100	0.00000221	1.74	2.53	0.41
1/19/2012	11255.5	827.2	585.7	3180	4520	2800.0	0.00280	0.00074	0.00000163	3.34	5.87	0.95
3/8/2012	11841.2	1412.9	624.6	7700	12173	190.0	0.00019	0.00005	0.00000011	0.61	6.48	1.05
4/3/2012	12465.8	2037.5	719.8	19873	18435	810.0	0.00081	0.00021	0.00000047	3.94	10.43	1.70
5/3/2012	13185.6	2757.3	310.6	38308	5546	1000.0	0.00100	0.00026	0.00000058	1.47	11.89	1.93
5/16/2012	13496.2	3067.9	1.8	43854	139	2800.0	0.00280	0.00074	0.00000163	0.10	11.99	1.95
6/7/2012	13498.0	3069.7	163.2	43993	2176	5000.0	0.00500	0.00132	0.00000291	2.87	14.87	2.42
7/9/2012	13661.2	3232.9	707.9	46169	9396	2600.0	0.00260	0.00069	0.00000151	6.45	21.32	3.47

Table 7: Mass Removal Calculations: Soil Vapor

Sullins (Arrow Rentals)
187 North "L" Street
Livermore, CA
Project No.: 1262.2

Date/Time	Hours			Lab	PID	Air Flow	Removal Calculations					Mass Removal Totals	
	Meter	Cumulative	in period	(mg/m3)	(ppm)	(cfm)	(mg/ft3)	(lbs./ft3)	(lbs./min)	(lbs./hour)	(lbs./period)	cumulative lbs.	cumulative gal.
Start-Up	11/15/11 @ 0700												
11/15/2011	10378.5	0	-	-	-	-	-	-	-	-	0	-	-
11/15/2011	10381.5	27.6	27.6	68197.1	4800	78	1931.11	0.004257	0.3321	19.924	549.9	549.9	89.4
11/16/2011	10409.1	28.0	0.4	28139.9	2000	125	796.83	0.001757	0.2196	13.175	5.3	555.2	90.3
11/29/2011	10409.5	46.8	18.8	24706.4	1760	75	699.60	0.001542	0.1157	6.941	130.5	685.7	111.5
12/7/2011	10428.3	55.7	8.9	4234.3	329	131	119.90	0.000264	0.0346	2.078	18.5	704.2	114.5
12/8/2011	10437.2	60.3	4.6	**2380.0**	200	90	67.39	0.000149	0.0134	0.802	3.7	707.9	115.1
12/13/2011	10441.8	67.3	7.0	8197.1	606	137	232.11	0.000512	0.0701	4.206	29.4	737.3	119.9
12/14/2011	10448.8	435.5	368.2	11816.6	859	100	334.61	0.000738	0.0738	4.426	1629.7	2367.0	384.9
12/30/2011	10817.0	579.2	143.7	8182.8	605	96	231.71	0.000511	0.0490	2.942	422.8	2789.8	453.6
1/5/2012	10960.7	698.0	118.8	**3360.0**	262	136	95.14	0.000210	0.0285	1.712	203.3	2993.1	486.7
1/10/2012	11079.5	755.4	57.4	7939.6	588	161	224.82	0.000496	0.0798	4.788	274.8	3268.0	531.4
1/13/2012	11136.9	874.0	118.6	11087.0	808	133	313.95	0.000692	0.0921	5.523	655.1	3923.0	637.9
1/19/2012	11255.5	1040.2	166.2	12617.7	915	98	357.29	0.000788	0.0772	4.632	769.8	4692.8	763.1
1/26/2012	11421.7	1147.8	107.6	3776.5	297	149	106.94	0.000236	0.0351	2.108	226.8	4919.6	799.9
1/31/2012	11529.3	1151.0	3.2	3862.4	303	141	109.37	0.000241	0.0340	2.040	6.5	4926.1	801.0
Shut Down	1/31/2012 @ 1550 to 2/24/2012 @ 1330												
2/24/2012	11532.5	1459.7	308.7	11845.2	861	84	335.42	0.000739	0.0621	3.727	1150.5	6076.6	988.1
3/8/2012	11841.2	1774.7	315.0	**3490.0**	282	152	98.82	0.000218	0.0331	1.987	625.9	6702.5	1089.8
3/21/2012	12156.2	2084.3	309.6	2288.7	193	158	64.81	0.000143	0.0226	1.354	419.3	7121.9	1158.0
4/3/2012	12465.8	2469.3	385.0	2145.6	183	145	60.76	0.000134	0.0194	1.165	448.7	7570.5	1231.0
4/19/2012	12850.8	2804.1	334.8	2288.7	193	132	64.81	0.000143	0.0189	1.132	378.9	7949.4	1292.6
5/3/2012	13185.6	3114.7	310.6	915.3	97	130	25.92	0.000057	0.0074	0.446	138.4	8087.8	1315.1
5/16/2012	13496.2	3116.5	1.8	**251.0**	51.1	99	7.11	0.000016	0.0016	0.093	0.2	8088.0	1315.1
Shut Down	5/16/2012 @ 1025 to 6/07/2012 @ 0940												
6/7/2012	13498.0	3186.7	70.2	2345.9	197.0	88	66.43	0.000146	0.0129	0.773	54.3	8142.2	1323.9
6/20/2012	13568.2	3278.3	91.6	1687.8	151.0	128	47.79	0.000105	0.0135	0.809	74.1	8216.4	1336.0
7/5/2012	13659.8	3279.7	1.4	673.5	80.1	105	19.07	0.000042	0.0044	0.265	0.4	8216.7	1336.1
7/9/2012	13661.2	3292.2	12.5	705.0	82.3	93	19.96	0.000044	0.0041	0.246	3.1	8219.8	1336.6
7/18/2012	13673.7	3602.4	310.2	481.8	66.7	95	13.64	0.000030	0.0029	0.171	53.2	8273.0	1345.2
7/31/2012	13983.9	3987.6	385.2	6509.0	488.0	85	184.31	0.000406	0.0345	2.072	798.3	9071.3	1475.0
8/16/2012	14369.1	4346.8	359.2	3032.6	245.0	89	85.87	0.000189	0.0168	1.011	363.1	9434.4	1534.0
8/31/2012	14728.3	4659.0	312.2	3519.0	279.0	129	99.65	0.000220	0.0283	1.700	530.8	9965.2	1620.4
9/13/2012	15040.5	4686.7	27.7	25.5	34.8	121	0.72	0.000002	0.0002	0.012	0.3	9965.6	1620.4
Shut Down	9/14/2012 @ ~1900 due to low pressure alarm												
10/1/2012	15068.2	4691.3	4.6	2675.0	220.0	120	75.75	0.000167	0.0200	1.202	5.5	9971.1	1621.3
Shut Down	9/14/2012 @ ~1400 due to low pressure alarm												
10/16/2012	15072.8	5050.8	359.5	1087.0	109.0	98	30.78	0.000068	0.0066	0.397	142.7	10113.8	1644.5
10/31/2012	15432.3	5149.7	98.9	2374.5	199.0	108	67.24	0.000148	0.0160	0.961	95.0	10208.8	1660.0
Shut Down	11/4/2012 @ 1400 and was left off until 12/13/2012 @ 1245 in order to perform the 4th Quarter groundwater monitoring event												
11/16/2012*	15531.2	5150.5	0.8	2045.5	176.0	108	57.92	0.000128	0.0138	0.827	0.7	10209.5	1660.1
12/13/2012	15532.0	-	-	521.9	69.5	130	14.78	0.000033	0.0042	-	-	-	-
Shut Down	12/13/2012 @ 1415 to undetermined time due to malfunction of propane regulating system												
											TOTAL Mass Removed 11/15/11 thru 12/13/12	10209.5	1660.1
											TOTAL Mass Removed During 3rd and 4th Quarters of 2012	1993.1	324.1

* = PID concentration a extraction flow rate an average of previous 3 events due to system shut down

Appendix B

Laboratory Analytical Data Sheets

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 12/04/2012

Project Manager

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Project:	Sullins
BC Work Order:	1222682
Invoice ID:	B135306

Enclosed are the results of analyses for samples received by the laboratory on 11/26/2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon
Client Service Rep

Authorized Signature

Table of Contents

Geological Technics Inc.
1172 Kansas Avenue
Modesto, CA
(209) 522-4119 Fax 522-4227
E-mail: gti@gtienv.com

Chain of Custody

#12-22682

Project #:	Client/Project Name:
1262.2	SULLINS (ARROW RENTALS)

Site Address: 187 N. L STREET, LIVERMORE, CA

Global ID No.: T0600100116

Sampled By: (print and sign name) ANDREW DORN

Date	Time	Field I.D.	Sample I.D.	No. of Containers	Matrix (Soil, Water, Gas, Other)	Preservation Type	Analysis Requested: TPH-G + BTEX (8015/8021)*
11-19-12	1345	-1	W-3S	6	W	HCL	X
11-19-12	1655	-2	W-BS				
11-21-12	1425	-3	W-A				
11-21-12	1435	-4	W-1S				
11-19-12	1630	-5	W-1				
11-21-12	1025	-6	MW-306				
11-21-12	1035	-7	MW-206				
11-21-12	1120	-8	MW-308				
11-21-12	1340	-9	MW-305				
11-19-12	1410	-10	MW-404				
11-19-12	1435	-11	MW-304	↓	↓	↓	↓

Laboratory: BC LABS

Temp. @ Shipping: C°

Temp. @ Lab Receipt: C°

Purchase Order # 1262-703348

EDF Report: ☒ Yes ☐ No

Turnaround Time: S = Standard
1 day 2 day 5 day

Remarks

* PLEASE USE THE FOLLOWING REPORTING LIMITS:

TPH-G	50.0 ug/L
BTEX	0.5 ug/L

CHK BY: BCL

DISTRIBUTION: TSR

SUB-OUT ☐

Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Date:	Time:
Andrew Dorn	11-21-12	1645	Elizabeth Emmons	11/26/12	1645
Elizabeth Emmons	11-26-12	1300	Ross Duckey	11-26-12	1300
Ross Duckey	11-26-12	1600	Hany Bogan	11-26-12	1600

Please return cooler/ice chest to Geological Technics Inc. REL- Hany Bogan 11-26-12 1830 11-26-12 18:30

REL- 11-26-12 21:25 KOM- 11-26-12 2125

Rev. 2/2009

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Chain of Custody and Cooler Receipt Form for 1222682 Page 2 of 3

BC LABORATORIES INC. — COOLER RECEIPT FORM — Rev. No. 13 08/17/12 — Page 1 of 2

Submission #: 12-222682

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☐ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: 109 Thermometer ID: 207 Date/Time 11-20-12

Temperature: (A) 0.6 °C / (C) 0.7 °C Analyst Init JBW 2130

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A ,6	A ,6	A ,6	A ,6	A ,6	A ,6	A ,6	A ,6	A ,6	A ,6
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										

Comments:

Sample Numbering Completed By: BLT Date/Time: 11/27/12 0600

A = Actual / C = Corrected

Chain of Custody and Cooler Receipt Form for 1222682 Page 3 of 3

BC LABORATORIES INC. — COOLER RECEIPT FORM — Rev. No. 13 — 08/17/12 — Page 2 of 2

Submission #: 12-222682

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ (Intact? Yes ☐ No ☐) Containers ☐ (Intact? Yes ☐ No ☐) None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☐ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: 100 Thermometer ID: 207 Date/Time 11-28-12
Temperature: (A) 0.6 °C / (C) 0.7 °C Analyst Init JSW 2130

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A									
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										

Comments:
Sample Numbering Completed By: BLT Date/Time: 11/27/12 0600
A = Actual / C = Corrected

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1222682-01	**COC Number:**	---	**Receive Date:**	11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:**	11/19/2012 13:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-3S	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Groundwater
			Delivery Work Order:	
			Global ID: T0600100116	
			Location ID (FieldPoint): W-3S	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	
1222682-02	**COC Number:**	---	**Receive Date:**	11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:**	11/19/2012 16:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-BS	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Groundwater
			Delivery Work Order:	
			Global ID: T0600100116	
			Location ID (FieldPoint): W-BS	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	
1222682-03	**COC Number:**	---	**Receive Date:**	11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:**	11/21/2012 14:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-A	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Groundwater
			Delivery Work Order:	
			Global ID: T0600100116	
			Location ID (FieldPoint): W-A	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1222682-04	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/21/2012 14:35
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	W-1S	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): W-1S
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1222682-05	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/19/2012 16:30
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	W-1	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): W-1
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1222682-06	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/21/2012 10:25
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-306	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): MW-306
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1222682-07	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/21/2012 10:35
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-206	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): MW-206
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1222682-08	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/21/2012 11:20
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-308	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): MW-308
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1222682-09	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/21/2012 13:40
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-305	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): MW-305
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1222682-10	**COC Number:**	---	**Receive Date:**	11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:**	11/19/2012 14:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-404	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Groundwater
			Delivery Work Order:	
			Global ID: T0600100116	
			Location ID (FieldPoint): MW-404	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	
1222682-11	**COC Number:**	---	**Receive Date:**	11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:**	11/19/2012 14:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-304	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Groundwater
			Delivery Work Order:	
			Global ID: T0600100116	
			Location ID (FieldPoint): MW-304	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-01 | **Client Sample Name:** Sullins, W-3S, 11/19/2012 1:45:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.30	0.040	EPA-8021B	ND		1
Toluene	ND	ug/L	0.30	0.046	EPA-8021B	ND		1
Ethylbenzene	ND	ug/L	0.30	0.042	EPA-8021B	ND		1
Total Xylenes	ND	ug/L	0.60	0.14	EPA-8021B	ND		1
Gasoline Range Organics (C4 - C12)	**71**	**ug/L**	**50**	**5.0**	**Luft**	ND		2
a,a,a-Trifluorotoluene (PID Surrogate)	90.5	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	94.0	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 14:18	jjh	GC-V4	1	BVL0015
2	Luft	11/26/12	11/30/12 14:18	jjh	GC-V4	1	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-02 | **Client Sample Name:** Sullins, W-BS, 11/19/2012 4:55:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**31**	**ug/L**	**0.30**	**0.040**	**EPA-8021B**	ND		1
Toluene	**3.9**	**ug/L**	**0.30**	**0.046**	**EPA-8021B**	ND		1
Ethylbenzene	**23**	**ug/L**	**0.30**	**0.042**	**EPA-8021B**	ND		1
Total Xylenes	**17**	**ug/L**	**0.60**	**0.14**	**EPA-8021B**	ND		1
Gasoline Range Organics (C4 - C12)	**1100**	**ug/L**	**50**	**5.0**	**Luft**	ND		2
a,a,a-Trifluorotoluene (PID Surrogate)	112	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	111	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 14:41	jjh	GC-V4	1	BVL0015
2	Luft	11/26/12	11/30/12 14:41	jjh	GC-V4	1	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-03 | **Client Sample Name:** Sullins, W-A, 11/21/2012 2:25:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1900**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	**A01**	1
Toluene	**110**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	1
Ethylbenzene	**300**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	1
Total Xylenes	**440**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**7500**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	2
a,a,a-Trifluorotoluene (PID Surrogate)	99.0	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	107	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 15:28	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 15:28	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-04 | **Client Sample Name:** Sullins, W-1S, 11/21/2012 2:35:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**320**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	**A01**	1
Toluene	**47**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	1
Ethylbenzene	**33**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	1
Total Xylenes	**180**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**3600**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	2
a,a,a-Trifluorotoluene (PID Surrogate)	97.6	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	98.6	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 16:07	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 16:07	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-05 | **Client Sample Name:** Sullins, W-1, 11/19/2012 4:30:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**6300**	**ug/L**	**30**	**4.0**	**EPA-8021B**	ND	**A01**	1
Toluene	**1700**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	2
Ethylbenzene	**1900**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	2
Total Xylenes	**6200**	**ug/L**	**60**	**14**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**36000**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	3
a,a,a-Trifluorotoluene (PID Surrogate)	90.7	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (PID Surrogate)	114	%	70 - 130 (LCL - UCL)		EPA-8021B			2
a,a,a-Trifluorotoluene (FID Surrogate)	128	%	70 - 130 (LCL - UCL)		Luft			3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	12/03/12 14:31	jjh	GC-V4	100	BVL0015
2	EPA-8021B	11/26/12	11/30/12 16:30	jjh	GC-V4	20	BVL0015
3	Luft	11/26/12	11/30/12 16:30	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-06 | **Client Sample Name:** Sullins, MW-306, 11/21/2012 10:25:00AM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.2**	**ug/L**	**0.30**	**0.040**	**EPA-8021B**	ND		1
Toluene	ND	ug/L	0.30	0.046	EPA-8021B	ND		1
Ethylbenzene	ND	ug/L	0.30	0.042	EPA-8021B	ND		1
Total Xylenes	ND	ug/L	0.60	0.14	EPA-8021B	ND		1
Gasoline Range Organics (C4 - C12)	**44**	**ug/L**	**50**	**5.0**	**Luft**	ND	J	2
a,a,a-Trifluorotoluene (PID Surrogate)	93.5	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	92.0	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 17:01	jjh	GC-V4	1	BVL0015
2	Luft	11/26/12	11/30/12 17:01	jjh	GC-V4	1	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-07 | **Client Sample Name:** Sullins, MW-206, 11/21/2012 10:35:00AM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.4**	**ug/L**	**0.30**	**0.040**	**EPA-8021B**	ND		1
Toluene	ND	ug/L	0.30	0.046	EPA-8021B	ND		1
Ethylbenzene	ND	ug/L	0.30	0.042	EPA-8021B	ND		1
Total Xylenes	ND	ug/L	0.60	0.14	EPA-8021B	ND		1
Gasoline Range Organics (C4 - C12)	**73**	**ug/L**	**50**	**5.0**	**Luft**	ND		2
a,a,a-Trifluorotoluene (PID Surrogate)	98.0	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	101	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 17:23	jjh	GC-V4	1	BVL0015
2	Luft	11/26/12	11/30/12 17:23	jjh	GC-V4	1	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-08 | **Client Sample Name:** Sullins, MW-308, 11/21/2012 11:20:00AM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**930**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	**A01**	1
Toluene	**46**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	1
Ethylbenzene	**160**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	1
Total Xylenes	**210**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**4800**	**ug/L**	**1000**	**100**	Luft	ND	**A01**	2
a,a,a-Trifluorotoluene (PID Surrogate)	94.5	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	97.1	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 17:49	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 17:49	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-09 | **Client Sample Name:** Sullins, MW-305, 11/21/2012 1:40:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1300**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	**A01**	1
Toluene	**17**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	1
Ethylbenzene	**170**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	1
Total Xylenes	**230**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**3700**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	2
a,a,a-Trifluorotoluene (PID Surrogate)	97.3	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	96.9	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 18:14	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 18:14	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-10 | **Client Sample Name:** Sullins, MW-404, 11/19/2012 2:10:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**230**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	**A01**	1
Toluene	ND	ug/L	6.0	0.92	EPA-8021B	ND	A01	1
Ethylbenzene	**46**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	1
Total Xylenes	**84**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**1100**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	2
a,a,a-Trifluorotoluene (PID Surrogate)	95.8	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	92.1	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 18:39	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 18:39	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222682-11 | **Client Sample Name:** Sullins, MW-304, 11/19/2012 2:35:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1600**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	A01	1
Toluene	**67**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	A01	1
Ethylbenzene	**250**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	A01	1
Total Xylenes	**500**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	A01	1
Gasoline Range Organics (C4 - C12)	**5100**	**ug/L**	**1000**	**100**	**Luft**	ND	A01	2
a,a,a-Trifluorotoluene (PID Surrogate)	96.5	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	94.4	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 21:00	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 21:00	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVL0015						
Benzene	BVL0015-BLK1	ND	ug/L	0.30	0.040	
Toluene	BVL0015-BLK1	ND	ug/L	0.30	0.046	
Ethylbenzene	BVL0015-BLK1	ND	ug/L	0.30	0.042	
Total Xylenes	BVL0015-BLK1	ND	ug/L	0.60	0.14	
Gasoline Range Organics (C4 - C12)	BVL0015-BLK1	ND	ug/L	50	5.0	
a,a,a-Trifluorotoluene (PID Surrogate)	BVL0015-BLK1	70.8	%	70 - 130 (LCL - UCL)		
a,a,a-Trifluorotoluene (FID Surrogate)	BVL0015-BLK1	72.4	%	70 - 130 (LCL - UCL)		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVL0015										
Benzene	BVL0015-BS1	LCS	42.747	40.000	ug/L	107		85 - 115		
Toluene	BVL0015-BS1	LCS	43.352	40.000	ug/L	108		85 - 115		
Ethylbenzene	BVL0015-BS1	LCS	43.126	40.000	ug/L	108		85 - 115		
Total Xylenes	BVL0015-BS1	LCS	129.65	120.00	ug/L	108		85 - 115		
Gasoline Range Organics (C4 - C12)	BVL0015-BS1	LCS	921.69	1000.0	ug/L	92.2		85 - 115		
a,a,a-Trifluorotoluene (PID Surrogate)	BVL0015-BS1	LCS	35.093	40.000	ug/L	87.7		70 - 130		
a,a,a-Trifluorotoluene (FID Surrogate)	BVL0015-BS1	LCS	34.366	40.000	ug/L	85.9		70 - 130		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVL0015	Used client sample: N										
Benzene	MS	1222450-16	ND	42.909	40.000	ug/L		107		70 - 130	
	MSD	1222450-16	ND	42.339	40.000	ug/L	1.3	106	20	70 - 130	
Toluene	MS	1222450-16	ND	43.644	40.000	ug/L		109		70 - 130	
	MSD	1222450-16	ND	43.056	40.000	ug/L	1.4	108	20	70 - 130	
Ethylbenzene	MS	1222450-16	ND	43.457	40.000	ug/L		109		70 - 130	
	MSD	1222450-16	ND	42.932	40.000	ug/L	1.2	107	20	70 - 130	
Total Xylenes	MS	1222450-16	ND	130.98	120.00	ug/L		109		70 - 130	
	MSD	1222450-16	ND	129.28	120.00	ug/L	1.3	108	20	70 - 130	
Gasoline Range Organics (C4 - C12)	MS	1222450-16	ND	885.65	1000.0	ug/L		88.6		70 - 130	
	MSD	1222450-16	ND	906.20	1000.0	ug/L	2.3	90.6	20	70 - 130	
a,a,a-Trifluorotoluene (PID Surrogate)	MS	1222450-16	ND	35.562	40.000	ug/L		88.9		70 - 130	
	MSD	1222450-16	ND	35.739	40.000	ug/L	0.5	89.3		70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1222450-16	ND	36.196	40.000	ug/L		90.5		70 - 130	
	MSD	1222450-16	ND	35.825	40.000	ug/L	1.0	89.6		70 - 130	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 12/04/2012

Project Manager

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Project:	Sullins
BC Work Order:	1222683
Invoice ID:	B135309

Enclosed are the results of analyses for samples received by the laboratory on 11/26/2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon
Client Service Rep

Authorized Signature

Table of Contents

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Geological Technics Inc.
1172 Kansas Avenue
Modesto, CA
(209) 522-4119 Fax 522-4227
E-mail: gti@gtienv.com

Page 1 of 1

Chain of Custody

#12-222683

Project #:	Client/Project Name:
1262.2	SULLINS (ARROW RENTALS)

Site Address: 187 N. L STREET, LIVERMORE, CA

Global ID No.: T0600100116

Sampled By: (print and sign name) ANDREW DORN Andrew Dorn

Date	Time	Field I.D.	Sample I.D.	No. of Containers	Matrix (Soil, Water, Gas, Other)	Preservation Type	* Analysis Requested: TPH-G, BTEX & MTBE (8015/8021)
11-19-12	1510	-1	MW-104	6	W	HCL	X
11-19-12	1455	-2	MW-204				
11-21-12	1355	-3	MW-205				
11-21-12	1240	-4	MW-207				
			~~MW-104~~				
11-21-12	1140	-5	MW-208				

Laboratory: BC LABS

Temp. @ Shipping: C°

Temp. @ Lab Receipt: C°

Purchase Order # 1262-703348

EDF Report: ☒ Yes ☐ No

Turnaround Time: (S = Standard) 1 day 2 day 5 day

Remarks

*PLEASE USE THE FOLLOWING REPORTING LIMITS:

TPH-G	50.0 ug/L
BTEX	0.5 ug/L
MTBE	0.5 ug/L

CHK BY: BLS

DISTRIBUTION: KAM

SUB-OUT ☐

Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Date:	Time:
Andrew Dorn	11-21-12	1645	Elizabeth Emmons	11/21/12	1645
Elizabeth Emmons	11-26-12	1300	Ross Dickey	11-26-12	1300
Ross Dickey	11-26-12	1600	Hang Bogan	11-26-12	1600

Please return cooler/ice chest to Geological Technics Inc. REL- Hang Bogan 11-26-12 1830 11-26-12 18:30

REL. 11-26-12 21:25 KAM 11-26-12 2175

Rev. 2/2009

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Chain of Custody and Cooler Receipt Form for 1222683 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/12 Page 1 Of 1

Submission #: 12-222683

SHIPPING INFORMATION	SHIPPING CONTAINER
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☑ None ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____	Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals | Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☐ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: JOG Thermometer ID: 207 Date/Time 11-28-12

Temperature: (A) 0.6 °C / (C) 0.7 °C Analyst Init JDW 2130

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A 16	A 16	A 16	A 16	A 16					
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										

Comments:

Sample Numbering Completed By: BLT Date/Time: 11/27/12 0600

A = Actual / C = Corrected

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1222683-01	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/19/2012 15:10
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-104	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): MW-104
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1222683-02	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/19/2012 14:55
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-204	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): MW-204
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1222683-03	**COC Number:**	---	**Receive Date:** 11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:** 11/21/2012 13:55
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-205	**Lab Matrix:** Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:** Groundwater
			Delivery Work Order:
			Global ID: T0600100116
			Location ID (FieldPoint): MW-205
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1222683-04	**COC Number:**	---	**Receive Date:**	11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:**	11/21/2012 12:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-207	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Groundwater
			Delivery Work Order:	
			Global ID: T0600100116	
			Location ID (FieldPoint): MW-207	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	
1222683-05	**COC Number:**	---	**Receive Date:**	11/26/2012 21:25
	Project Number:	Sullins	**Sampling Date:**	11/21/2012 11:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-208	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Groundwater
			Delivery Work Order:	
			Global ID: T0600100116	
			Location ID (FieldPoint): MW-208	
			Matrix: W	
			Sample QC Type (SACode): CS	
			Cooler ID:	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222683-01 | **Client Sample Name:** Sullins, MW-104, 11/19/2012 3:10:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**6100**	**ug/L**	**30**	**4.0**	**EPA-8021B**	ND	**A01**	1
Toluene	**280**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	2
Ethylbenzene	**310**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	2
Methyl t-butyl ether	**32**	**ug/L**	**20**	**0.60**	**EPA-8021B**	ND	**A01,V11**	2
Total Xylenes	**530**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	2
Gasoline Range Organics (C4 - C12)	**12000**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	3
a,a,a-Trifluorotoluene (PID Surrogate)	88.4	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (PID Surrogate)	97.4	%	70 - 130 (LCL - UCL)		EPA-8021B			2
a,a,a-Trifluorotoluene (FID Surrogate)	104	%	70 - 130 (LCL - UCL)		Luft			3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	12/03/12 14:53	jjh	GC-V4	100	BVL0015
2	EPA-8021B	11/26/12	11/30/12 21:23	jjh	GC-V4	20	BVL0015
3	Luft	11/26/12	11/30/12 21:23	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222683-02 | **Client Sample Name:** Sullins, MW-204, 11/19/2012 2:55:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1900**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	**A01**	1
Toluene	**88**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	1
Ethylbenzene	**220**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	1
Methyl t-butyl ether	ND	ug/L	20	0.60	EPA-8021B	ND	A01,V11	1
Total Xylenes	**470**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**4800**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	2
a,a,a-Trifluorotoluene (PID Surrogate)	94.0	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	90.0	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 21:46	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 21:46	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222683-03 | **Client Sample Name:** Sullins, MW-205, 11/21/2012 1:55:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1700**	**ug/L**	**6.0**	**0.80**	**EPA-8021B**	ND	**A01**	1
Toluene	**26**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	1
Ethylbenzene	**210**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	1
Methyl t-butyl ether	ND	ug/L	20	0.60	EPA-8021B	ND	A01,V11	1
Total Xylenes	**360**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	1
Gasoline Range Organics (C4 - C12)	**5100**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	2
a,a,a-Trifluorotoluene (PID Surrogate)	92.2	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (FID Surrogate)	94.2	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	11/30/12 22:10	jjh	GC-V4	20	BVL0015
2	Luft	11/26/12	11/30/12 22:10	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222683-04 | **Client Sample Name:** Sullins, MW-207, 11/21/2012 12:40:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**14000**	**ug/L**	**60**	**8.0**	**EPA-8021B**	ND	**A01**	1
Toluene	**65**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	2
Ethylbenzene	**310**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	2
Methyl t-butyl ether	**140**	**ug/L**	**20**	**0.60**	**EPA-8021B**	ND	**A01,V11**	2
Total Xylenes	**190**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	2
Gasoline Range Organics (C4 - C12)	**21000**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	3
a,a,a-Trifluorotoluene (PID Surrogate)	84.7	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (PID Surrogate)	119	%	70 - 130 (LCL - UCL)		EPA-8021B			2
a,a,a-Trifluorotoluene (FID Surrogate)	106	%	70 - 130 (LCL - UCL)		Luft			3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	12/04/12 08:13	jjh	GC-V4	200	BVL0015
2	EPA-8021B	11/26/12	11/30/12 22:33	jjh	GC-V4	20	BVL0015
3	Luft	11/26/12	11/30/12 22:33	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1222683-05 | **Client Sample Name:** Sullins, MW-208, 11/21/2012 11:40:00AM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**3500**	**ug/L**	**30**	**4.0**	**EPA-8021B**	ND	**A01**	1
Toluene	**37**	**ug/L**	**6.0**	**0.92**	**EPA-8021B**	ND	**A01**	2
Ethylbenzene	**310**	**ug/L**	**6.0**	**0.84**	**EPA-8021B**	ND	**A01**	2
Methyl t-butyl ether	**39**	**ug/L**	**20**	**0.60**	**EPA-8021B**	ND	**A01,V11**	2
Total Xylenes	**130**	**ug/L**	**12**	**2.8**	**EPA-8021B**	ND	**A01**	2
Gasoline Range Organics (C4 - C12)	**11000**	**ug/L**	**1000**	**100**	**Luft**	ND	**A01**	3
a,a,a-Trifluorotoluene (PID Surrogate)	86.0	%	70 - 130 (LCL - UCL)		EPA-8021B			1
a,a,a-Trifluorotoluene (PID Surrogate)	99.0	%	70 - 130 (LCL - UCL)		EPA-8021B			2
a,a,a-Trifluorotoluene (FID Surrogate)	103	%	70 - 130 (LCL - UCL)		Luft			3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021B	11/26/12	12/03/12 17:31	jjh	GC-V4	100	BVL0015
2	EPA-8021B	11/26/12	11/30/12 22:56	jjh	GC-V4	20	BVL0015
3	Luft	11/26/12	11/30/12 22:56	jjh	GC-V4	20	BVL0015

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVL0015						
Benzene	BVL0015-BLK1	ND	ug/L	0.30	0.040	
Toluene	BVL0015-BLK1	ND	ug/L	0.30	0.046	
Ethylbenzene	BVL0015-BLK1	ND	ug/L	0.30	0.042	
Methyl t-butyl ether	BVL0015-BLK1	ND	ug/L	1.0	0.030	
Total Xylenes	BVL0015-BLK1	ND	ug/L	0.60	0.14	
Gasoline Range Organics (C4 - C12)	BVL0015-BLK1	ND	ug/L	50	5.0	
a,a,a-Trifluorotoluene (PID Surrogate)	BVL0015-BLK1	70.8	%	70 - 130 (LCL - UCL)		
a,a,a-Trifluorotoluene (FID Surrogate)	BVL0015-BLK1	72.4	%	70 - 130 (LCL - UCL)		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVL0015										
Benzene	BVL0015-BS1	LCS	42.747	40.000	ug/L	107		85 - 115		
Toluene	BVL0015-BS1	LCS	43.352	40.000	ug/L	108		85 - 115		
Ethylbenzene	BVL0015-BS1	LCS	43.126	40.000	ug/L	108		85 - 115		
Methyl t-butyl ether	BVL0015-BS1	LCS	43.358	40.000	ug/L	108		85 - 115		
Total Xylenes	BVL0015-BS1	LCS	129.65	120.00	ug/L	108		85 - 115		
Gasoline Range Organics (C4 - C12)	BVL0015-BS1	LCS	921.69	1000.0	ug/L	92.2		85 - 115		
a,a,a-Trifluorotoluene (PID Surrogate)	BVL0015-BS1	LCS	35.093	40.000	ug/L	87.7		70 - 130		
a,a,a-Trifluorotoluene (FID Surrogate)	BVL0015-BS1	LCS	34.366	40.000	ug/L	85.9		70 - 130		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVL0015	Used client sample: N										
Benzene	MS	1222450-16	ND	42.909	40.000	ug/L		107		70 - 130	
	MSD	1222450-16	ND	42.339	40.000	ug/L	1.3	106	20	70 - 130	
Toluene	MS	1222450-16	ND	43.644	40.000	ug/L		109		70 - 130	
	MSD	1222450-16	ND	43.056	40.000	ug/L	1.4	108	20	70 - 130	
Ethylbenzene	MS	1222450-16	ND	43.457	40.000	ug/L		109		70 - 130	
	MSD	1222450-16	ND	42.932	40.000	ug/L	1.2	107	20	70 - 130	
Methyl t-butyl ether	MS	1222450-16	ND	42.867	40.000	ug/L		107		70 - 130	
	MSD	1222450-16	ND	46.033	40.000	ug/L	7.1	115	20	70 - 130	
Total Xylenes	MS	1222450-16	ND	130.98	120.00	ug/L		109		70 - 130	
	MSD	1222450-16	ND	129.28	120.00	ug/L	1.3	108	20	70 - 130	
Gasoline Range Organics (C4 - C12)	MS	1222450-16	ND	885.65	1000.0	ug/L		88.6		70 - 130	
	MSD	1222450-16	ND	906.20	1000.0	ug/L	2.3	90.6	20	70 - 130	
a,a,a-Trifluorotoluene (PID Surrogate)	MS	1222450-16	ND	35.562	40.000	ug/L		88.9		70 - 130	
	MSD	1222450-16	ND	35.739	40.000	ug/L	0.5	89.3		70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1222450-16	ND	36.196	40.000	ug/L		90.5		70 - 130	
	MSD	1222450-16	ND	35.825	40.000	ug/L	1.0	89.6		70 - 130	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 12/04/2012 16:37
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
V11	The Continuing Calibration Verification (CCV) recovery is not within established control limits.

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 10/25/2012

Project Manager

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Project:	Sullins
BC Work Order:	1220146
Invoice ID:	B132760

Enclosed are the results of analyses for samples received by the laboratory on 10/17/2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon
Client Service Rep

Authorized Signature

Table of Contents

Geological Technics Inc. #12-20146

1172 Kansas Avenue
Modesto, CA
(209) 522-4119 Fax 522-4227
E-mail: gti@gtienv.com

Page 1 of 1

Chain of Custody

Project #:	Client/Project Name:
1262.2	SULLINS (ARROW RENTALS)

Site Address: 187 NORTH "L" STREET, LIVERMORE, CA

Global ID No.: T0600100116

Sampled By: (print and sign name) ANDREW DORN

Date	Time	Field I.D.	Sample I.D.	No. of Containers	Matrix (Soil, Water, Gas, Other)	Preservation Type	Analysis Requested: TPH-G + BTEX (8015/8021)
10-16-2012	1205	-	GW-INF	8	W	HCL	X

Laboratory: BC LABS

Temp. @ Shipping: C°

Temp. @ Lab Receipt: C°

Purchase Order # 1262-703348

EDF Report: ☐ Yes ☒ No

Turnaround Time: (S = Standard) 1 day 2 day 5 day

Remarks

CHK BY DISTRIBUTION

BLT JNS

SUB OUT

Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Date:	Time:
	10-16-2012	1415		10-17-12	1525
Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Date:	Time:
	10-17-12	1700		10-17-12	1700
Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Date:	Time:
	10-17-12	1830		10-17-12	18:30

Please return cooler/ice chest to Geological Technics Inc.

REL. 10-17-12 21:35 KOM 10-17-12 2135

Rev. 2/2009

Chain of Custody and Cooler Receipt Form for 1220146 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/12 Page 1 Of 1

Submission #: 1220146

SHIPPING INFORMATION	SHIPPING CONTAINER
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☑ None ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____	Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals | Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: PLAS Thermometer ID: 207

Temperature: | A | 2.4 °C / | C | 2.6 °C

Date/Time 10-17-12

Analyst Init JNO 2135

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PTA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A-8									
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL-504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										

Comments:

Sample Numbering Completed By: BLT Date/Time: 10/18/12 1410

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 10/25/2012 12:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1220146-01	COC Number:	---	Receive Date:	10/17/2012 21:35
	Project Number:	Sullins	Sampling Date:	10/16/2012 12:05
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	GW-INF	Lab Matrix:	Water
	Sampled By:	Andrew Dorn of GTIM	Sample Type:	Groundwater

Delivery Work Order:
Global ID: T0600100116
Location ID (FieldPoint): GW-INF
Matrix: W
Sample QC Type (SACode): CS
Cooler ID:

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 10/25/2012 12:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1220146-01 | **Client Sample Name:** Sullins, GW-INF, 10/16/2012 12:05:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	140	ug/L	1.5	0.20	EPA-8021	ND	A01	1
Toluene	44	ug/L	1.5	0.23	EPA-8021	ND	A01	1
Ethylbenzene	46	ug/L	1.5	0.21	EPA-8021	ND	A01	1
Total Xylenes	110	ug/L	3.0	0.70	EPA-8021	ND	A01	1
Gasoline Range Organics (C4 - C12)	1800	ug/L	250	25	Luft	ND	A01	2
a,a,a-Trifluorotoluene (PID Surrogate)	115	%	70 - 130 (LCL - UCL)		EPA-8021			1
a,a,a-Trifluorotoluene (FID Surrogate)	116	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021	10/22/12	10/23/12 20:52	jjh	GC-V4	5	BVJ1887
2	Luft	10/23/12	10/23/12 20:52	jjh	GC-V4	5	BVJ1932

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 10/25/2012 12:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVJ1887						
Benzene	BVJ1887-BLK1	ND	ug/L	0.30	0.040	
Toluene	BVJ1887-BLK1	ND	ug/L	0.30	0.046	
Ethylbenzene	BVJ1887-BLK1	ND	ug/L	0.30	0.042	
Total Xylenes	BVJ1887-BLK1	ND	ug/L	0.60	0.14	
a,a,a-Trifluorotoluene (PID Surrogate)	BVJ1887-BLK1	90.4	%	70 - 130 (LCL - UCL)		
QC Batch ID: BVJ1932						
Gasoline Range Organics (C4 - C12)	BVJ1932-BLK1	ND	ug/L	50	5.0	
a,a,a-Trifluorotoluene (FID Surrogate)	BVJ1932-BLK1	82.5	%	70 - 130 (LCL - UCL)		

Geological Technics	Reported: 10/25/2012 12:11
1172 Kansas Avenue	Project: Sullins
Modesto, CA 95354	Project Number: 1262.2
	Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVJ1887										
Benzene	BVJ1887-BS1	LCS	45.956	40.000	ug/L	115		85 - 115		
Toluene	BVJ1887-BS1	LCS	45.259	40.000	ug/L	113		85 - 115		
Ethylbenzene	BVJ1887-BS1	LCS	44.021	40.000	ug/L	110		85 - 115		
Total Xylenes	BVJ1887-BS1	LCS	130.81	120.00	ug/L	109		85 - 115		
a,a,a-Trifluorotoluene (PID Surrogate)	BVJ1887-BS1	LCS	38.064	40.000	ug/L	95.2		70 - 130		
QC Batch ID: BVJ1932										
Gasoline Range Organics (C4 - C12)	BVJ1932-BS1	LCS	935.11	1000.0	ug/L	93.5		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BVJ1932-BS1	LCS	34.163	40.000	ug/L	85.4		70 - 130		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 10/25/2012 12:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVJ1887	Used client sample: N										
Benzene	MS	1219349-28	ND	45.096	40.000	ug/L		113		70 - 130	
	MSD	1219349-28	ND	45.841	40.000	ug/L	1.6	115	20	70 - 130	
Toluene	MS	1219349-28	ND	44.431	40.000	ug/L		111		70 - 130	
	MSD	1219349-28	ND	44.937	40.000	ug/L	1.1	112	20	70 - 130	
Ethylbenzene	MS	1219349-28	ND	43.145	40.000	ug/L		108		70 - 130	
	MSD	1219349-28	ND	43.597	40.000	ug/L	1.0	109	20	70 - 130	
Total Xylenes	MS	1219349-28	ND	128.93	120.00	ug/L		107		70 - 130	
	MSD	1219349-28	ND	129.63	120.00	ug/L	0.5	108	20	70 - 130	
a,a,a-Trifluorotoluene (PID Surrogate)	MS	1219349-28	ND	38.207	40.000	ug/L		95.5		70 - 130	
	MSD	1219349-28	ND	37.199	40.000	ug/L	2.7	93.0		70 - 130	
QC Batch ID: BVJ1932	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1219349-29	ND	902.40	1000.0	ug/L		90.2		70 - 130	
	MSD	1219349-29	ND	895.72	1000.0	ug/L	0.7	89.6	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1219349-29	ND	34.382	40.000	ug/L		86.0		70 - 130	
	MSD	1219349-29	ND	34.680	40.000	ug/L	0.9	86.7		70 - 130	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 10/25/2012 12:11
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 08/30/2012

COPY

Project Manager

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Project:	Sullins
BC Work Order:	1215702
Invoice ID:	B128923

Enclosed are the results of analyses for samples received by the laboratory on 8/20/2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon
Client Service Rep

Authorized Signature

Table of Contents

Geological Technics Inc.
1172 Kansas Avenue
Modesto, CA
(209) 522-4119 Fax 522-4227
E-mail: gti@gtienv.com

12-15702

Page 1 of 1

Chain of Custody

Project #:	Client/Project Name:
12.62.2	SULLINS (ARROW RENTALS)

Site Address: 187 NORTH "L" STREET, LIVERMORE, CA

Global ID No.: T0600100116

Sampled By: (print and sign name) ANDREW DORN

Date	Time	Field I.D.	Sample I.D.	No. of Containers	Matrix (Soil, Water, Gas, Other)	Preservation Type	Analysis Requested: TPH-G + BTEX (8015/8021)
8-16-2012	1415	-1	GW-INF	9	W	HCL	X

Laboratory: BC LABS
Temp. @ Shipping: C°
Temp. @ Lab Receipt: C°
Purchase Order # 1262-703398
EDF Report: ☐ Yes ☒ No
Turnaround Time: (5 = Standard) 1 day 2 day 5 day
Remarks

CHK BY: AG
DISTRIBUTION
SUB-OUT ☐

Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Date:	Time:
	8-16-2012	1630	Elizabeth Emmons	8/16/12	1630
Relinquished by: (signature) Elizabeth Emmons	8.20.12	1152	Received by: (signature) Ron Dickey	8.20.12	1152
Relinquished by: (signature) Ron Dickey	8.20.12 1600		Received by: (signature) Dany Logan	8-20-12	1520

Please return cooler/ice chest to Geological Technics Inc.

REL Dany Logan 8-20-12 1830 REC'D Ron Dickey 8.20.12 1830 Ron Dickey 8.20.12 2100 8/20/12 2101

Rev. 2/2009

Chain of Custody and Cooler Receipt Form for 1215702 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 12 12/30/10 Page 1 Of 1

Submission #: 12-1570 2

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

☑ COC Received ☐ YES ☐ NO

Emissivity: 0.95 Container: 24oz Thermometer ID: 207 Date/Time 8-20-12

Temperature: (A) 1.6 °C / (C) 1.2 °C Analyst Init JDW 2100

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A-9									
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL - 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:
Sample Numbering Completed By: JDW Date/Time: 8/20/12 2150
A = Actual / C = Corrected

I:\HK\DOCS\Word\Forms\LAB_DOCS\FORMS\SAMREC.DOC

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 08/30/2012 14:31
Project: Sullins
Project Number: Arrow Rentals
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information

1215702-01

COC Number: ---
Project Number: Sullins
Sampling Location: ---
Sampling Point: GW-INF
Sampled By: Andrew Dorn of GTIM

Receive Date: 08/20/2012 21:00
Sampling Date: 08/16/2012 14:15
Sample Depth: ---
Lab Matrix: Water
Sample Type: Groundwater
Delivery Work Order:
Global ID: T0600100116
Location ID (FieldPoint): GW-INF
Matrix: W
Sample QC Type (SACode): CS
Cooler ID:

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 08/30/2012 14:31
Project: Sullins
Project Number: Arrow Rentals
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1215702-01	Client Sample Name:	Sullins, GW-INF, 8/16/2012 2:15:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	47	ug/L	1.5	0.20	EPA-8021	ND	A01	1
Toluene	35	ug/L	1.5	0.23	EPA-8021	ND	A01	1
Ethylbenzene	19	ug/L	1.5	0.21	EPA-8021	ND	A01	1
Total Xylenes	99	ug/L	3.0	0.70	EPA-8021	ND	A01	1
Gasoline Range Organics (C4 - C12)	2300	ug/L	250	25	Luft	ND	A01	2
a,a,a-Trifluorotoluene (PID Surrogate)	92.2	%	70 - 130	(LCL - UCL)	EPA-8021			1
a,a,a-Trifluorotoluene (FID Surrogate)	122	%	70 - 130	(LCL - UCL)	Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021	08/28/12	08/30/12 10:15	jjh	GC-V4	5	BVH2254
2	Luft	08/28/12	08/30/12 10:15	jjh	GC-V4	5	BVH2254

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 08/30/2012 14:31
Project: Sullins
Project Number: Arrow Rentals
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVH2254						
Benzene	BVH2254-BLK1	ND	ug/L	0.30	0.040	
Toluene	BVH2254-BLK1	ND	ug/L	0.30	0.046	
Ethylbenzene	BVH2254-BLK1	ND	ug/L	0.30	0.042	
Total Xylenes	BVH2254-BLK1	ND	ug/L	0.60	0.14	
Gasoline Range Organics (C4 - C12)	BVH2254-BLK1	ND	ug/L	50	5.0	
a,a,a-Trifluorotoluene (PID Surrogate)	BVH2254-BLK1	82.2	%	70 - 130 (LCL - UCL)		
a,a,a-Trifluorotoluene (FID Surrogate)	BVH2254-BLK1	93.1	%	70 - 130 (LCL - UCL)		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 08/30/2012 14:31
Project: Sullins
Project Number: Arrow Rentals
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVH2254										
Benzene	BVH2254-BS1	LCS	36.098	40.000	ug/L	90.2		85 - 115		
Toluene	BVH2254-BS1	LCS	38.104	40.000	ug/L	95.3		85 - 115		
Ethylbenzene	BVH2254-BS1	LCS	36.219	40.000	ug/L	90.5		85 - 115		
Total Xylenes	BVH2254-BS1	LCS	114.92	120.00	ug/L	95.8		85 - 115		
Gasoline Range Organics (C4 - C12)	BVH2254-BS1	LCS	1000.8	1000.0	ug/L	100		85 - 115		
a,a,a-Trifluorololuene (PID Surrogate)	BVH2254-BS1	LCS	36.017	40.000	ug/L	90.0		70 - 130		
a,a,a-Trifluorotoluene (FID Surrogate)	BVH2254-BS1	LCS	37.112	40.000	ug/L	92.8		70 - 130		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 08/30/2012 14:31
Project: Sullins
Project Number: Arrow Rentals
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVH2254	Used client sample: Y - Description: GW-INF, 08/16/2012 14:15										
Benzene	MS	1215702-01	47.050	245.65	200.00	ug/L		99.3		70 - 130	A01
	MSD	1215702-01	47.050	243.86	200.00	ug/L	0.7	98.4	20	70 - 130	A01
Toluene	MS	1215702-01	35.000	240.08	200.00	ug/L		103		70 - 130	A01
	MSD	1215702-01	35.000	242.72	200.00	ug/L	1.1	104	20	70 - 130	A01
Ethylbenzene	MS	1215702-01	19.375	217.06	200.00	ug/L		98.8		70 - 130	A01
	MSD	1215702-01	19.375	221.58	200.00	ug/L	2.1	101	20	70 - 130	A01
Total Xylenes	MS	1215702-01	98.505	729.96	600.00	ug/L		105		70 - 130	A01
	MSD	1215702-01	98.505	739.89	600.00	ug/L	1.4	107	20	70 - 130	A01
Gasoline Range Organics (C4 - C12)	MS	1215702-01	2343.6	8175.6	5000.0	ug/L		117		70 - 130	A01
	MSD	1215702-01	2343.6	9070.7	5000.0	ug/L	10.4	135	20	70 - 130	A01,Q03
a,a,a-Trifluorotoluene (PID Surrogate)	MS	1215702-01	ND	40.958	40.000	ug/L		102		70 - 130	
	MSD	1215702-01	ND	39.528	40.000	ug/L	3.6	98.8		70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1215702-01	ND	50.843	40.000	ug/L		127		70 - 130	
	MSD	1215702-01	ND	50.169	40.000	ug/L	1.3	125		70 - 130	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 08/30/2012 14:31
Project: Sullins
Project Number: Arrow Rentals
Project Manager: Project Manager

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
Q03	Matrix spike recovery(s) is(are) not within the control limits.

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 07/17/2012

Project Manager

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Project:	Sullins
BC Work Order:	1212730
Invoice ID:	B125938

Enclosed are the results of analyses for samples received by the laboratory on 7/11/2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon
Client Service Rep

Authorized Signature

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Table of Contents

Geological Technics Inc.
1172 Kansas Avenue
Modesto, CA
(209) 522-4119 Fax 522-4227
E-mail: gti@gtienv.com

Page 1 of 1

Chain of Custody

12-12730

Project #:	Client/Project Name:
1262.2	SULLINS (ARROW RENTALS)

Site Address: 187 NORTH "L" STREET, LIVERMORE, CA

Global ID No.: T0600100116

Sampled By: (print and sign name) ANDREW DORN

Date	Time	Field I.D.	Sample I.D.	No. of Containers	Matrix (Soil, Water, Gas, Other)	Preservation Type	Analysis Requested: TPH-G + BTEX (8015/8021)
7-09-12	1215		GW-INF	6	W	HCL	X

Laboratory: BC LABS
Temp. @ Shipping: C°
Temp. @ Lab Receipt: C°
Purchase Order # 1262-703348
EDF Report: ☐ Yes ☒ No
Turnaround Time: (S = Standard) 1 day 2 day 5 day

Remarks

CHK BY
DISTRIBUTION
SUB-OUT ☐

Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Date:	Time:
	7-09-2012	1515	Elizabeth Guzman	7/9/12	1515
Elizabeth Guzman	7/10/12	1158	Ross Wilday	7-11-12	1158
Ross Wilday	7-11-12	1750	Doug Bogan	7-11-12	1750

Please return cooler/ice chest to Geological Technics Inc.

REL. Doug Bogan 7-11-12 1830 REC. R Wilday 7-11-12 1830 Rel. R Wilday 7-11-12 2200 Rec. 7-11-12 0900

Rev. 2/2009

Chain of Custody and Cooler Receipt Form for 1212730 Page 2 of 2

BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 1 Of 1

Submission #: 12-12730

SHIPPING INFORMATION	SHIPPING CONTAINER
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☒ None ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.98 Container: Cpe Thermometer ID: 177

Temperature: A 2.3 °C / C 2.4 °C

Date/Time 7-11-12

Analyst Init: JKW 2200

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A 16	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ JAR										
32 OZ JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:

Sample Numbering Completed By: KIQ Date/Time: 7-11-12 2350

A = Actual / C = Corrected

[H:\DOCS\WP\OILCAB\DOCS\FORMS\SAMREC2.WPD]

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 07/17/2012 15:16
Project: Sullins
Project Number: Arrow Rentals - 1262.2
Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1212730-01	**COC Number:**	---	**Receive Date:**	07/11/2012 22:00
	Project Number:	Sullins	**Sampling Date:**	07/09/2012 12:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GW-INF	**Lab Matrix:**	Water
	Sampled By:	Andrew Dorn of GTIM	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600100116			
	Location ID (FieldPoint): GW-INF			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 07/17/2012 15:16
Project: Sullins
Project Number: Arrow Rentals - 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1212730-01	Client Sample Name:	Sullins, GW-INF, 7/9/2012 12:15:00PM, Andrew Dorn

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	110	ug/L	3.0	0.40	EPA-8021	ND	A01	1
Toluene	51	ug/L	3.0	0.46	EPA-8021	ND	A01	1
Ethylbenzene	21	ug/L	3.0	0.42	EPA-8021	ND	A01	1
Total Xylenes	120	ug/L	6.0	1.4	EPA-8021	ND	A01	1
Gasoline Range Organics (C4 - C12)	2600	ug/L	500	50	Luft	ND	A01	2
a,a,a-Trifluorotoluene (PID Surrogate)	83.7	%	70 - 130 (LCL - UCL)		EPA-8021			1
a,a,a-Trifluorotoluene (FID Surrogate)	123	%	70 - 130 (LCL - UCL)		Luft			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8021	07/12/12	07/13/12 18:50	jjh	GC-V4	10	BVG0737
2	Luft	07/12/12	07/13/12 18:50	jjh	GC-V4	10	BVG0737

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 07/17/2012 15:16
Project: Sullins
Project Number: Arrow Rentals - 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BVG0737						
Benzene	BVG0737-BLK1	ND	ug/L	0.30	0.040	
Toluene	BVG0737-BLK1	ND	ug/L	0.30	0.046	
Ethylbenzene	BVG0737-BLK1	ND	ug/L	0.30	0.042	
Total Xylenes	BVG0737-BLK1	ND	ug/L	0.60	0.14	
Gasoline Range Organics (C4 - C12)	BVG0737-BLK1	ND	ug/L	50	5.0	
a,a,a-Trifluorotoluene (PID Surrogate)	BVG0737-BLK1	70.8	%	70 - 130 (LCL - UCL)		
a,a,a-Trifluorotoluene (FID Surrogate)	BVG0737-BLK1	105	%	70 - 130 (LCL - UCL)		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 07/17/2012 15:16
Project: Sullins
Project Number: Arrow Rentals - 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BVG0737										
Benzene	BVG0737-BS1	LCS	34.602	40.000	ug/L	86.5		85 - 115		
Toluene	BVG0737-BS1	LCS	34.246	40.000	ug/L	85.6		85 - 115		
Ethylbenzene	BVG0737-BS1	LCS	36.547	40.000	ug/L	91.4		85 - 115		
Total Xylenes	BVG0737-BS1	LCS	105.77	120.00	ug/L	88.1		85 - 115		
Gasoline Range Organics (C4 - C12)	BVG0737-BS1	LCS	1120.4	1000.0	ug/L	112		85 - 115		
a,a,a-Trifluorotoluene (PID Surrogate)	BVG0737-BS1	LCS	34.189	40.000	ug/L	85.5		70 - 130		
a,a,a-Trifluorotoluene (FID Surrogate)	BVG0737-BS1	LCS	41.546	40.000	ug/L	104		70 - 130		

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 07/17/2012 15:16
Project: Sullins
Project Number: Arrow Rentals - 1262.2
Project Manager: Project Manager

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BVG0737	Used client sample: N										
Benzene	MS	1210608-79	ND	34.329	40.000	ug/L		85.8		70 - 130	
	MSD	1210608-79	ND	35.171	40.000	ug/L	2.4	87.9	20	70 - 130	
Toluene	MS	1210608-79	ND	34.591	40.000	ug/L		86.5		70 - 130	
	MSD	1210608-79	ND	34.542	40.000	ug/L	0.1	86.4	20	70 - 130	
Ethylbenzene	MS	1210608-79	ND	35.913	40.000	ug/L		89.8		70 - 130	
	MSD	1210608-79	ND	36.694	40.000	ug/L	2.2	91.7	20	70 - 130	
Total Xylenes	MS	1210608-79	ND	105.92	120.00	ug/L		88.3		70 - 130	
	MSD	1210608-79	ND	106.27	120.00	ug/L	0.3	88.6	20	70 - 130	
Gasoline Range Organics (C4 - C12)	MS	1210608-79	ND	1108.0	1000.0	ug/L		111		70 - 130	
	MSD	1210608-79	ND	1092.5	1000.0	ug/L	1.4	109	20	70 - 130	
a,a,a-Trifluorotoluene (PID Surrogate)	MS	1210608-79	ND	34.583	40.000	ug/L		86.5		70 - 130	
	MSD	1210608-79	ND	36.533	40.000	ug/L	5.5	91.3		70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1210608-79	ND	42.430	40.000	ug/L		106		70 - 130	
	MSD	1210608-79	ND	41.366	40.000	ug/L	2.5	103		70 - 130	

Geological Technics
1172 Kansas Avenue
Modesto, CA 95354

Reported: 07/17/2012 15:16
Project: Sullins
Project Number: Arrow Rentals - 1262.2
Project Manager: Project Manager

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.

Appendix C

Groundwater Monitoring Field Notes

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street

Livermore, CA

Well I.D.: W-1s

Date: 11/19/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
9:50	0	17.95	1551	7.03	-50.7	3.52	Black with sheen, strong hydrocarbon odor, no sediments
10:40	5.25	19.67	1331	6.59	-127.3	0.13	Black with sheen, strong hydrocarbon odor, no sediments
11:50	10.50	18.59	1303	6.15	-120.8	0.07	Black with sheen, strong hydrocarbon odor, no sediments
13:00	15.75	18.60	1301	6.16	-119.7	0.06	Clearish black, strong hydrocarbon odor, no sediments (stopped @14 gal due to slow recharge)
14:35							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.06 gal/min

Well Constructed TD (ft):	45.00
* Well TD (ft):	44.20
Silt Thickness (ft):	0.80
Initial DTW (ft):	40.77
Water column height (ft):	3.43
One casing volume (gal):	5.08
** Final DTW (ft):	41.80
Casing diameter (in):	6"

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes: Stopped 1st purge volume at 10:40 and started 2nd at 11:05

Stopped 2nd purge volume at 11:50 and started 3rd at 12:20

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing, 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.46

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street

Livermore, CA

Well I.D.: W-3s

Date: 11/19/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
12:15	0	16.21	820	7.06	125.9	4.90	Milky gray, mild odor, very few sediments
12:35	2.75	17.09	838	6.94	-88.4	0.40	Milky black, mild odor, very few sediments
12:55	5.50	17.17	833	6.77	-68.6	0.18	Milky black, mild odor, very few sediments
13:15	8.25	17.18	834	6.75	-65.1	0.19	Milky black, mild odor, very few sediments
13:45							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.09 gal/min

Well Constructed TD (ft):	45.00
* Well TD (ft):	43.12
Silt Thickness (ft):	1.88
Initial DTW (ft):	39.00
Water column height (ft):	4.12
One casing volume (gal):	2.67
** Final DTW (ft):	39.30
Casing diameter (in):	4"

Sample Containers used: 6 # VOAs __X__ preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes: micro purged and allowed recharge prior to sampling drawdown to a maximum of 39.8'

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: W-Bs

Project No.: 1262.2

Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
13:55	0	17.29	820	6.63	-46.3	3.25	Clearish gray, mild odor, very few sediments
14:25	7.75	17.45	821	7.55	-31.4	0.32	Clearish gray, mild odor, very few sediments
15:00	15.50	17.26	826	7.13	-38.2	0.18	Clearish gray, mild odor, very few sediments
15:35	23.25	17.21	825	7.04	-39.2	0.18	Clearish gray, mild odor, very few sediments
16:55							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.13 gal/min

Well Constructed TD (ft):	45.00
* Well TD (ft):	44.41
Silt Thickness (ft):	0.59
Initial DTW (ft):	39.29
Water column height (ft):	5.12
One casing volume (gal):	7.58
** Final DTW (ft):	40.68
Casing diameter (in):	6"

Sample Containers used: 6 # VOAs X preserved ___ non-preserved

___ # amber liters ___ preserved ___ non-preserved

___ # polys ___ ___ preserved ___ non-preserved

___ # polys ___ ___ preserved ___ non-preserved

Notes: Drawdown to 42.9' bgs-very slow recharge= ~ 1 ft per 40 minutes

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

*= measured **= @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street

Livermore, CA

Well I.D.: W-A

Date: 11/21/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
13:35	0	18.40	1170	6.82	-103.6	2.35	Grayish brown, strong hydrocarbon odor, very few sediments
13:50	2	17.98	1198	6.88	-151.9	0.15	Grayish brown, strong hydrocarbon odor, very few sediments
14:05	4	18.02	1189	6.92	-146.6	0.12	Grayish brown, strong hydrocarbon odor, very few sediments
14:20	6	17.99	1185	6.92	-139.9	0.17	Grayish brown, strong hydrocarbon odor, very few sediments
14:25							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.12 gal/min

Well Constructed TD (ft):	63.00
* Well TD (ft):	53.61
Silt Thickness (ft):	9.39
Initial DTW (ft):	42.92
Water column height (ft):	10.69
One casing volume (gal):	1.82
** Final DTW (ft):	43.10
Casing diameter (in):	4"

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street
Livermore, CA

Well I.D.: W-1

Date: 11/19/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
15:50	0	16.57	1103	5.70	-47.2	6.53	Thick black, strong odor, very few sediments (1/2 gal)>clearish black sheen
15:58	2.25	17.37	978	7.23	-127.6	0.13	Clearish black, strong odor, no sediments
16:06	4.50	17.36	968	7.08	-101.6	0.11	Clearish black, strong odor, no sediments
16:14	6.75	17.32	967	7.06	-98.6	0.11	Clearish black, strong odor, no sediments
16:25	8.00	17.30	965	7.04	-97.0	0.12	Clearish black, strong odor, no sediments
16:30							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.10 gal/min

Well Constructed TD (ft):	56.50
* Well TD (ft):	54.38
Silt Thickness (ft):	2.12
Initial DTW (ft):	41.65
Water column height (ft):	12.73
One casing volume (gal):	2.17
** Final DTW (ft):	41.65
Casing diameter (in):	2"

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-4

Project No.: 1262.2

Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	30.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: _____ # VOAs ___X___ preserved ____ non-preserved

_____ # amber liters _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes: Dry

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-104

Project No.: 1262.2

Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
15:00	0						
15:05	0.5						
15:10							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	50.50
* Well TD (ft):	49.90
Silt Thickness (ft):	0.60
Initial DTW (ft):	41.55
Water column height (ft):	8.35
One casing volume (gal):	0.09
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

_____ # amber liters _____ preserved _____ non-preserved

_____ # polys _____ _____ preserved _____ non-preserved

_____ # polys _____ _____ preserved _____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.46

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)
Well I.D.: MW-204
Project No.: 1262.2
Date: 11/19/2012
Project Location: 187 N. L Street
Livermore, CA
Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
14:40	0						
14:55	1.0						
14:55							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.07 gal/min

Well Constructed TD (ft):	66.50
* Well TD (ft):	66.04
Silt Thickness (ft):	0.46
Initial DTW (ft):	42.31
Water column height (ft):	23.73
One casing volume (gal):	0.27
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ___ non-preserved
___ # VOAs ___ preserved ___ non-preserved
___ # polys ___ ___ preserved ___ non-preserved
___ # polys ___ ___ preserved ___ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No
No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St) Well I.D.: MW-304

Project No.: 1262.2 Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
14:15	0						
14:30	1.5						
14:35							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.075 gal/min

Well Constructed TD (ft):	75.50
* Well TD (ft):	75.12
Silt Thickness (ft):	0.38
Initial DTW (ft):	42.44
Water column height (ft):	32.68
One casing volume (gal):	0.36
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ___ non-preserved

___ # amber liters ___ preserved ___ non-preserved

___ # polys ___ ___ preserved ___ non-preserved

___ # polys ___ ___ preserved ___ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-404

Project No.: 1262.2

Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
13:30	0						Reddish brown, very mild odor, no sediments
14:05	1.5						
14:10							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.04 gal/min

Well Constructed TD (ft):	81.50
* Well TD (ft):	81.01
Silt Thickness (ft):	0.49
Initial DTW (ft):	42.51
Water column height (ft):	38.50
One casing volume (gal):	0.43
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street
Livermore, CA

Well I.D.: MW-5

Date: 11/19/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	27.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: _____ # VOAs X preserved ____ non-preserved

_____ # amber liters _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes: Dry

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street

Livermore, CA

Well I.D.: MW-105

Date:

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	37.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: _____ # VOAs X preserved ____ non-preserved

_____ # amber liters _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.46

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-205

Project No.: 1262.2

Date: 11/21/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
13:40	0						
13:50	0.5						
13:55							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.03 gal/min

Well Constructed TD (ft):	48.00
* Well TD (ft):	47.80
Silt Thickness (ft):	0.20
Initial DTW (ft):	42.04
Water column height (ft):	5.76
One casing volume (gal):	0.07
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ___ non-preserved

___ # amber liters ___ preserved ___ non-preserved

___ # polys ___ ___ preserved ___ non-preserved

___ # polys ___ ___ preserved ___ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17 3" dia. = 0.38 4" dia. = 0.65 5" dia. = 1.02 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-305

Project No.: 1262.2

Date: 11/21/2012

Project Location: 187 N. L Street
Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
13:15	0						Greenish gray, strong hydrocarbon odor, no sediments
13:35	1.5						Greenish gray, strong hydrocarbon odor, no sediments
13:40							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.06 gal/min

Well Constructed TD (ft):	66.00
* Well TD (ft):	65.81
Silt Thickness (ft):	0.19
Initial DTW (ft):	42.28
Water column height (ft):	23.53
One casing volume (gal):	0.26
** Final DTW (ft):	42.25
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-6

Project No.: 1262.2

Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	30.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: _____ # VOAs ___X___ preserved ____ non-preserved

_____ # amber liters _____ preserved ____ non-preserved

_____ # polys _____ ____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes: Dry

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17 3" dia. = 0.38 4" dia. = 0.65 5" dia. = 1.02 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-106

Project No.: 1262.2

Date: 11/19/2012

Project Location: 187 N. L Street
Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	37.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

_____ # VOAs _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street
Livermore, CA

Well I.D.: MW-206

Date: 11/21/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
10:10	0						
10:20	0.50						
10:35							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.02 gal/min

Well Constructed TD (ft):	50.00
* Well TD (ft):	50.92
Silt Thickness (ft):	
Initial DTW (ft):	42.68
Water column height (ft):	8.24
One casing volume (gal):	0.09
** Final DTW (ft):	42.68
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-306

Project No.: 1262.2

Date: 11/21/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
9:50	0						Milky light brown, strong septic odor, very few sediments
10:10	1.5						Clearish brown, strong septic odor, very few sediments
10:25							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.043 gal/min

Well Constructed TD (ft):	66.00
* Well TD (ft):	66.90
Silt Thickness (ft):	
Initial DTW (ft):	42.33
Water column height (ft):	24.57
One casing volume (gal):	0.27
** Final DTW (ft):	42.33
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street

Livermore, CA

Well I.D.: MW-7

Date: 11/19/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	30.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used:

_____ # VOAs	_X_ preserved	____ non-preserved
_____ # amber liters	_____ preserved	____ non-preserved
_____ # polys _____	_____ preserved	____ non-preserved
_____ # polys _____	_____ preserved	____ non-preserved

Notes: Dry

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St) Well I.D.: MW-107

Project No.: 1262.2 Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	40.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

_____ # amber liters _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes: _____

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums: _____

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-207

Project No.: 1262.2

Date: 11/21/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
12:15	0						
12:35	0.5						
12:40							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.02 gal/min

Well Constructed TD (ft):	50.00
* Well TD (ft):	49.24
Silt Thickness (ft):	0.76
Initial DTW (ft):	43.21
Water column height (ft):	6.03
One casing volume (gal):	0.07
** Final DTW (ft):	43.21
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs __X__ preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Project No.: 1262.2

Project Location: 187 N. L Street
Livermore, CA

Well I.D.: MW-8

Date: 11/19/2012

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
							Dry

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	30.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

_____ # amber liters _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes: Dry

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.66, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St) Well I.D.: MW-108

Project No.: 1262.2 Date: 11/19/2012

Project Location: 187 N. L Street

Livermore, CA Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: _____ gal/min

Well Constructed TD (ft):	40.00
* Well TD (ft):	
Silt Thickness (ft):	
Initial DTW (ft):	Dry
Water column height (ft):	
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

_____ # VOAs _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

_____ # polys _____ _____ preserved ____ non-preserved

Notes: Dry

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St) Well I.D.: MW-208

Project No.: 1262.2 Date: 11/21/2012

Project Location: 187 N. L Street

Livermore, CA Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
11:25	0						Clearish gray, strong hydrocarbon odor, no sediments
11:35	0.5						Clearish gray, strong hydrocarbon odor, no sediments
11:40							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.03 gal/min

Well Constructed TD (ft):	52.00
* Well TD (ft):	50.83
Silt Thickness (ft):	1.17
Initial DTW (ft):	43.29
Water column height (ft):	7.54
One casing volume (gal):	0.09
** Final DTW (ft):	43.29
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved _ non-preserved

_____ # amber liters _____ preserved _____ non-preserved

_____ # polys _____ _____ preserved _____ non-preserved

_____ # polys _____ _____ preserved _____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Geological Technics, Inc.

Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-308

Project No.: 1262.2

Date: 11/21/2012

Project Location: 187 N. L Street

Livermore, CA

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks
10:55	0						Clearish gray, mild hydrocarbon & septic odor, no sediments
11:15	1.5						Clearish gray, mild hydrocarbon & septic odor, no sediments
11:20							Collected Samples

Purge Method: ☒ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.06 gal/min

Well Constructed TD (ft):	66.00
* Well TD (ft):	63.38
Silt Thickness (ft):	2.62
Initial DTW (ft):	42.92
Water column height (ft):	20.46
One casing volume (gal):	0.23
** Final DTW (ft):	42.95
Casing diameter (in):	CMT

Sample Containers used: 6 # VOAs X preserved ____ non-preserved

____ # amber liters ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

____ # polys ____ ____ preserved ____ non-preserved

Notes:

Sampled By: A. Dorn

Sample Method: Waterra ☒ Bailer ☐ Other ☐

* = measured ** = @ sampling

Gallons per foot of casing: 2" dia. = 0.17; 3" dia. = 0.38; 4" dia. = 0.65; 5" dia. = 1.02; 6" dia. = 1.48

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Appendix D

Well Development Field Notes

Geological Technics, Inc.

Well Development Field Log

Project Name: Sullins

Project No.: 1262.2

Project Location: 187 N. L Street
Livermore, CA

Well I.D.: W-A

Date: 12/4/2012

Time	Cumulative Volume Purged (gal)	Pumping Rate (gpm)	Temp. C°	E.C. (µmhos/cm)	pH	DO (mg/L)	Remarks
11:35	0	1					Milky greenish gray, strong odor, lots of sediments
12:05	30	1					Milky greenish gray, strong odor, lots of sediments
12:35	60	1					Milky greenish gray, strong odor, lots of sediments
13:05	90	1					Milky greenish gray, strong odor, lots of sediments-Removed surge block
13:35	135	1.35					Milky greenish gray, strong odor, lots of sediments
14:05	180	1.35					Clearish greenish gray, strong odor, few sediments
14:15	195	1.35					Clearish greenish gray, strong odor, few sediments
14:30	210	1.35					Clearish greenish gray, strong odor, few sediments
14:45	225	1.35					Clear, strong odor, very few sediments

Development Method: ☒ Dedicated Waterra w/ surge block attachement ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 1.18 gal/min

Develop Style: ☐ Continuous ☒ Intermittent

Well Pumped Dry: ☐ Yes ☒ No

* Bottom of Well Screen (ft bgs):	57.50'
* Top of Well Screen (ft bgs):	42.00'
**Well Screen Interval (ft):	15.00'
Casing diameter (in):	4"
Initial DTW (ft):	36.95'
Water column height (ft):	15.47'
**Volume (gal/linear ft):	0.17
**One casing volume (gal):	10.10

*Well Constructed TD (ft):	57.50'
* Well TD (ft):	52.42'
**Silt Thickness (ft):	2.28 removed
Final DTW (ft):	41.66'
Initial Apprnc (clr-odor):	Greenish gray/Strong
Final Apprnc (clr-odor):	Clear/Strong
Total Developed Vol (gal):	225
Develop Duration (min):	190
Final=	54.70'

Notes:
used 1" tubing w/4" surge block

Developed By: A. Dorn

Develop Water Drummed: ☐ Yes ☒ No

No. of Drums: DPE System

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

* = constructed

** = calculated

Geological Technics, Inc.

Well Development Field Log

Project Name: Sullins

Project No.: 1262.2

Project Location: 187 N. L Street
Livermore, CA

Well I.D.: W-1

Date: 12/4/2012

Time	Cumulative Volume Purged (gal)	Pumping Rate (gpm)	Temp. C°	E.C. (µmhos/cm)	pH	DO (mg/L)	Remarks
11:35	0	0.48					Black with sheen, strong odor, lots of sediments (greenish gray)
11:40	1.5	0.48					Greenish gray, strong odor, lots of sediments
12:10	15	0.48					Greenish gray, strong odor, lots of sediments
12:40	30	0.48					Clearish green/gray, strong odor, few sediments
13:10	45	0.48					Clearish green/gray, strong odor, few sediments
13:30	55	0.48					clearish green/gray, strong odor, few sediments-removed surge block
13:50	75	1					Clear, strong odor, no sediments
14:10	95	1					Clear, strong odor, no sediments-Finished

Development Method: ☒ Dedicated Waterra w/ surge block attachement ☐ Centrifugal pump with dedicated tubing ☐ Other

Pumping Rate: 0.62 gal/min

Develop Style: ☐ Continuous ☒ Intermittent

Well Pumped Dry: ☐ Yes ☒ No

* Bottom of Well Screen (ft bgs):	55.50'
* Top of Well Screen (ft bgs):	45.50'
**Well Screen Interval (ft):	10.00'
Casing diameter (in):	2"
Initial DTW (ft):	36.54'
Water column height (ft):	17.34'
**Volume (gal/linear ft):	0.17
**One casing volume (gal):	2.95

*Well Constructed TD (ft):	56.60'
* Well TD (ft):	53.88'
**Silt Thickness (ft):	2.06'
Final DTW (ft):	38.01'
Initial Apprnc (clr-odor):	Black sheen/strong
Final Apprnc (clr-odor):	Clear/strong
Total Developed Vol (gal):	95
Develop Duration (min):	155
Final=	56.20'

Gallons per foot of casing: 2" dia. = 0.17, 3" dia. = 0.38, 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Notes:
used 5/8 " tubing w/2" surge block

Developed By: A. Dorn

Develop Water Drummed: ☐ Yes ☒ No

No. of Drums: DPE System

* = constructed

** = calculated