

July 25, 2017

**RECEIVED**

By Alameda County Environmental Health 9:12 am, Aug 04, 2017

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

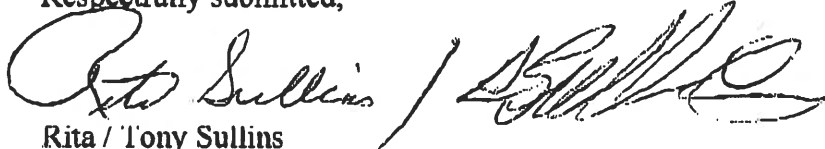
Re: Transmittal Letter  
Site Location: Arrow Rentals  
187 North L Street, Livermore, CA 94550

Dear Ms Roe:

On behalf of Rita and Tony Sullins, Don Sul Inc., Ground Zero Analysis, Inc. (GZA) prepared the July 25, 2017 First 2017 Semi-Annual Groundwater Monitoring & Remediation Effectiveness Report that was sent to your office via electronic delivery per Alameda County's guidelines and uploaded into the CA State Water Resources Control Board's Geotracker database.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, and accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment or knowing violations,

Respectfully submitted,



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



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# REPORT

## First Semi-Annual 2017 Groundwater Monitoring & Remediation Effectiveness Report

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

**Project No. 1262.2  
July 21, 2017**

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

**Prepared by:  
Ground Zero Analysis, Inc.  
1172 Kansas Ave.  
Modesto, California 95351  
(209) 522-4119**



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July 21, 2017

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

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

RE: Report: First Semi-Annual 2017 Groundwater Monitoring & Remediation  
Effectiveness Report  
Location: 187 North L Street, Livermore, CA 94550.  
(ACEH Fuel Leak Case No. RO0000394)

Dear Mr. & Mrs. Sullins:

Ground Zero Analysis, Inc. has prepared the following *First Semi-Annual 2017 Groundwater Monitoring & Remedial Effectiveness* report to discuss the groundwater monitoring event performed between May 22, 2017 and May 24, 2017. During the 1<sup>st</sup> semi-annual groundwater monitoring event of 2017, all of the Site's wells were monitored and sampled.

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

Respectfully submitted,  
Ground Zero Analysis, Inc.

A handwritten signature in blue ink, appearing to read "Gregory P. Stahl", is written over the typed name.

Gregory P. Stahl, PG 5023  
CA Certified Hydrogeologist No. 264

cc: Dilan Roe – ACEH (Via FTP site)

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## **REPORT**

### **First Semi-Annual 2017 Groundwater Monitoring & Remediation Effectiveness Report**

**Arrow Rentals Services  
187 North L St.  
Livermore, CA**

Project No. 1262.2  
July 21, 2017

#### **1.0 EXECUTIVE SUMMARY**

Details of the first semi-annual groundwater monitoring and sampling event as well as remediation activities performed during the first half of 2017 are included in this report.

The routine first semi-annual groundwater monitoring event was performed during the second quarter of 2017 between May 22, 2017 and May 24, 2017 in which depth-to-water measurements were collected from 30 groundwater wells, of which all of the wells were purged and sampled.

The Dual Phase Extraction (DPE) system was shut down during the majority of the 1<sup>st</sup> quarter of 2017. Following minor repairs and balancing, the DPE system was restarted on March 28, 2017 and operated until May 12, 2017, when the system was shut down.

In a letter dated March 16, 2017, Ground Zero Analysis, Inc. (Ground Zero) recommended evaluating the feasibility of installing an extraction well immediately up-gradient of CMT-7 and the resuming the operation of the DPE system. Due to the decreased contaminant

concentrations throughout the Site, Ground Zero does not recommend installing an additional extraction well or resuming the operation of the DPE system at this time.

The site history and geologic setting are summarized in the *1<sup>st</sup> Semi-Annual Groundwater Monitoring and Remedial Effectiveness Report* submitted by Ground Zero on July 24, 2014. A vicinity map is included as Figure 1 and a site map is included as Figure 2. A detailed site map is included as Figure 3.

## **Recommendations**

1. Evaluate the site conditions against the criteria in the SWRCB LTCP
2. Leave the DPE system shut down pending the LTCP evaluation
3. Suspend installing an additional extraction well pending the LTCP evaluation

## **2.0 GROUNDWATER MONITORING**

### **2.1 Groundwater Aquifer Designation**

The wells are categorized according to the aquifer interval which the screened section intercepted. Well construction details are summarized in Table 1 and shown in vertical view on Figure 4. Hydrographs depicting the change in groundwater elevation for the shallow, intermediate and deep wells are included in Attachment A. Well categories are discussed below:

#### **Shallow Wells** (screened 20 to 45 feet bgs):

Long Screened Wells (screened 20 to 45 feet bgs): W-1s, W-Bs, W-3s and W-Es

Water Table CMT Wells (screened 26 to 30 feet bgs): MW-4, MW-5, MW-6, MW-7 and MW-8

Shallow Aquifer CMT Wells (screened 36 to 40 feet bgs): MW-105, MW-106, MW-107 and MW-108

#### **Intermediate Wells** (screened 40 to 60 feet bgs):

W-1, W-3, W-A, MW-104, MW-205, MW-206, MW-207, MW-208, MW-9, MW-10 and EW-2

- 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 remediation purposes.
- Well W-A is considered intermediate and is monitored; however the well is not utilized for groundwater gradient measurements due to modifications to the well top for remediation purposes.
- Monitoring wells W-2 and 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

## **2.2 Groundwater Elevation and Flow**

Between 1989 and present, DTW has ranged from approximately 20 to 57 feet bgs. The November 2015 event represented the lowest groundwater elevation recorded at the Site. The May 2017 represents the highest groundwater elevation recorded at the Site since April 1996. Between November 2015 and May 2017, groundwater elevation rose approximately 35 feet. Well locations on- and off-site are shown on Figure 2 and on-site well locations are shown on Figure 3.

Groundwater monitoring wells from the shallow, intermediate and deep aquifers were purged and sampled during the May 2017 groundwater monitoring event. The following groundwater elevation data was collected during the May 2017 groundwater monitoring event:

### **Shallow Wells**

The average groundwater elevation recorded in the shallow monitoring wells was 459.34 feet amsl and the average DTW was 21.11 feet bgs. This represents an increase of 12.80 feet since the previous groundwater monitoring event (December 2016) and 15.32 since the previous 1<sup>st</sup> semi-annual groundwater monitoring event performed in May 2016. CMT wells MW-4 through MW-8 were sampled for the first time since April 2011 or earlier.

### **Intermediate Wells**

The average groundwater elevation recorded in the intermediate monitoring wells was 460.1 feet amsl and the average DTW was 20.61 feet bgs. This represents an increase of 13.90 feet since the previous groundwater monitoring event (December 2016) and an increase of 17.01 feet since the previous 1<sup>st</sup> semi-annual groundwater monitoring event performed in May 2016. The average groundwater elevation in the intermediate wells has increased 35.19 feet since the historical groundwater elevation of 424.91 feet amsl in November 2015.

### **Deep Wells**

The average groundwater elevation recorded in the deep monitoring wells was 460.41 feet amsl and the average DTW was 20.45 feet bgs. This represents an increase of 14.03 feet since the previous groundwater monitoring event (December 2016) and an increase of 17.31 feet since the previous 1<sup>st</sup> semi-annual groundwater monitoring event (May 2016).

## **2.3 Horizontal Groundwater Gradients**

The historical shallow, intermediate and deep groundwater elevation data are summarized in Table 2, Table 3 and Table 4, respectively.

During the May 2017 groundwater monitoring event, depth-to-water measurements were collected from 30 groundwater monitoring wells and the groundwater flow direction and gradient were calculated for the shallow, intermediate and deep aquifers.

Groundwater elevation data collected from the Sites CMT wells appear to be inaccurate when compared to the 2-inch and larger diameter groundwater monitoring wells located at the Site. Ground Zero believes that a slight twist in the CMT well casing is causing longer depth to water measurements which calculates to a lower groundwater elevation.

### **Shallow Aquifer**

The groundwater flow in the shallow aquifer was calculated to be to the west-southwest with a gradient of approximately 0.021 ft/ft as shown in Figure 5.

### **Intermediate Aquifer**

The groundwater flow in the intermediate aquifer was calculated to be to the west-northwest with a gradient of approximately 0.02 ft/ft. Elevation data from EW-2, MW-9 and MW-10 were used to calculate the intermediate groundwater flow as shown in Figure 6. Figure 7 illustrates the groundwater gradient contours using data collected from the intermediate CMT wells only.

### **Deep Aquifer**

The groundwater flow in the deep aquifer was calculated to be to the west-southwest with a gradient of approximately 0.025 ft/ft. Elevation data from MW-204, MW-305, MW-306, MW-307 and MW-308 was used to calculate the deep groundwater flow as shown in Figure 8.

## **2.4 Vertical Groundwater Gradients**

Ground Zero calculated vertical gradients for numerous shallow, intermediate and deep groundwater monitoring well pairs using data collected during the May 2017 monitoring event. A slight negative vertical gradient was calculated for MW-104/204, MW-204/304, MW-105/205, MW-6/106, MW-7/107 and MW-108/208. The remaining well pairs were calculated to have positive (upward) vertical gradients.

Figure 3 shows the location of the well pairs used for calculating the vertical groundwater gradient in this report. Vertical gradients are summarized in Table 5.

## **2.5 Groundwater Sampling Procedure**

During the first semi-annual groundwater monitoring event performed between May 22, 2017 and May 24, 2017, Ground Zero staff recorded DTW measurements as well as purged and sampled all of the Site's groundwater monitoring wells. Each well sampled was purged of at least three well volumes of stagnant water prior to sample collection unless the well was dewatered during purging. All of the sites 2-inch and larger diameter monitoring wells were

purged and sampled with an inertia pump and dedicated tubing or a disposable bailer. CMT wells were purged and sampled using a peristaltic pump and dedicated tubing.

When pH, temperature, and electrical conductivity (EC) measurements had stabilized to within 10%, the groundwater monitoring wells are sampled. Care is taken to minimize sample agitation.

Following purging and prior to sampling, a depth-to-water measurement is collected to ensure that the groundwater level in each well has recharged to at least 80% of its initial level recorded prior to purging.

All groundwater samples were carefully transferred to the appropriate containers, checked for headspace, uniquely labeled, temporarily stored in an ice chest refrigerated to a temperature of less than 6°C, and delivered under chain-of-custody protocol to BC Labs of Bakersfield, California (ELAP #1186) for analysis.

All well purge water was placed in a 55 gallon Department of Transportation (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.

During the May 2017 monitoring event, Ground Zero collected DTW measurements, purged and sampled all of the Sites wells. All wells were allowed to recharge at least 95% prior to the collection of a sample. The amount of recharge could not be determined for the CMT-5 and CMT-6 well series since a final DTW measurement could not be collected prior to sampling due to a malfunctioning meter.

Groundwater monitoring field logs for the May 2017 event are included in Attachment B.

## **2.6 Laboratory Analyses**

The groundwater samples were analyzed for:

- Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) by EPA method 8260B
- Total Petroleum Hydrocarbons as gasoline (TPHg) by EPA method 8260B
- Methyl *tert*-butyl ether (MTBE) by EPA method 8260B

Current analytical results for the May 2017 groundwater monitoring event are summarized in Table 6. Historical laboratory analytical results are summarized in Table 7. Laboratory analytical results and chain of custody documentation are included in Attachment C.

### **3.0 FINDINGS AND DISCUSSION**

#### **3.1 Field Parameters**

Field parameters collected during the May 2017 groundwater monitoring event are as follows:

- DO readings ranged from 0.18 mg/L (MW-Bs) to 6.43 mg/L (MW-10).
- EC ranged from 909  $\mu$ mhos/cm (W-Es) to 1,687  $\mu$ mhos/cm (MW-7)
- ORP ranged from -144.5 mV (EW-2) to 260.8 mV (MW-307)
- pH ranged from 6.47 (MW-305) to 7.78 (MW-307)
- Temperature ranged from 19.2 °C (MW-205) to 23.2 °C (W-Es)

The field parameter results are summarized in Table 8. Field notes are included in Attachment B.

#### **3.2 Laboratory Analytical Data**

##### **Shallow Aquifer**

###### Long Screened Wells

- The long screened wells include shallow aquifer wells that are screened across the entire shallow aquifer, from 20 feet to 45 feet bgs. During purging and sampling, the end of the sample tubing was kept within the upper five feet of the water column.
- All constituents of concern were reported to be non-detect above the laboratory detection limits, with the exception of trace concentrations of TPHg in W-1s, W-3s and W-Bs ranging from 16 to 18  $\mu$ g/L.

###### Water Table CMT Wells

- CMT wells MW-4 thru MW-8 are discretely screened from 26 to 30 feet bgs and samples collected from these wells are representative of the water table water quality.
- Due to an increase in the groundwater elevation beneath the Site, the water table CMT wells (MW-4 through MW-8) were sampled during the May 2017 groundwater monitoring event for the first time since the DPE system was started in November 2011. As anticipated, contaminant concentrations decreased in the shallowest CMT wells following years of soil vapor extraction in the vadose zone.
- TPHg concentrations ranged from 19  $\mu$ g/L (MW-6) to 420  $\mu$ g/L (MW-8). A May 2017 TPHg groundwater plume map representing data from the long screened and water table CMT wells is included as Figure 9.
- Benzene concentrations ranged from 4.4  $\mu$ g/L (MW-5) to 85  $\mu$ g/L (MW-7). MW-4 and MW-6 were reported to be non-detect below the laboratory detection limit. A May 2017 benzene groundwater plume map representing data from the long screened and water table CMT wells is included as Figure 10.
- MtBE concentrations were reported to be non-detect in all wells, with the exception of MW-8 (0.87  $\mu$ g/L). A May 2017 MtBE groundwater plume map representing data from the long screened and water table CMT wells is included as Figure 11.

### Shallow Aquifer CMT Wells

- CMT wells MW-105 thru MW-108 are discretely screened from 36 to 40 feet bgs and samples collected from these wells are representative of the water quality and contaminant presence in the shallow aquifer.
- TPHg concentrations ranged from 21 µg/L (MW-106) to 3,800 µg/L (MW-107). A shallow aquifer TPHg groundwater plume map for the May 2017 event is included as Figure 12.
- Benzene concentrations ranged from 2.9 µg/L (MW-105) to 2,800 µg/L (MW-107). MW-106 was reported to be non-detect. A shallow aquifer benzene groundwater plume map for the May 2017 event is included as Figure 13.
- MtBE concentrations were reported to be non-detect, with the exception of MW-108 (39 µg/L). A shallow aquifer MtBE groundwater plume map for the May 2017 event is included as Figure 14.

### **Intermediate Aquifer**

- CMT wells MW-104 and MW-205 thru MW-208 and monitoring wells W-1, W-A, MW-9, MW-10 and EW-2 are screened within the intermediate aquifer. Samples collected from these wells are representative of the water quality and contaminant presence in the intermediate aquifer.
- TPHg concentrations ranged from 39 µg/L (MW-10) to 6,600 µg/L (W-1). MW-206 was reported to be non-detect. An intermediate aquifer TPHg groundwater plume map for the May 2017 event is included as Figure 15.
- Benzene concentrations ranged from 2.9 µg/L (MW-9) to 2,700 µg/L (MW-207). MW-10 and MW-206 were reported to be non-detect. An intermediate aquifer benzene groundwater plume map for the May 2017 event is included as Figure 16.
- MtBE concentrations ranged from 2 µg/L (W-A) to 71 µg/L (MW-207). MW-9, MW-10, EW-2 and MW-206 were reported to be non-detect. An intermediate aquifer MtBE groundwater plume map for the May 2017 event is included as Figure 17.

### **Deep Aquifer**

- CMT wells MW-204 and MW-305 thru MW-308 are discretely screened between 65 and 66.5 feet bgs. Samples collected from these wells are representative of the water quality and contaminant presence in the deep aquifer.
- TPHg ranged from 11 µg/L (MW-306) to 2,400 µg/L (MW-204). A deep aquifer TPHg groundwater plume map for the May 2017 event is included as Figure 18.
- Benzene ranged from 38 µg/L (MW-305) to 89 µg/L (MW-308). MW-306 was reported to be non-detect. A deep aquifer benzene groundwater plume map for the May 2017 event is included as Figure 19.
- MtBE was not reported above laboratory detection limits in the deep aquifer.

### **Deepest Aquifer**

- CMT wells MW-304 and MW-404 are discretely screened between 74.5 and 75.5 feet bgs and 80 to 81.5 feet bgs, respectively. Samples collected from these wells are representative of the water quality and contaminant presence in the deepest aquifer.
- MW-304 reported TPHg, benzene and MtBE concentrations of 180 µg/L, 40 µg/L and below laboratory detection limits, respectively.
- MW-404 reported TPHg, benzene and MtBE concentrations of 160 µg/L, 75 µg/L and below laboratory detection limits, respectively.

#### **4.0 REMEDIATION SYSTEM STATUS & EFFECTIVENESS**

A DPE and an AS remediation system were installed at the site and operations commenced in November 2011 and March 2012, respectively. The well configuration is discussed as follows:

- Vadose zone well EW-1 is a vapor extraction well.
- Shallow depth well W-1s is a vapor extraction well or a DPE well depending on the groundwater elevation.
- Intermediate depth well W-1 serves as either a DPE well or an AS well.
- Intermediate depth well W-A serves as either a DPE well or an AS well.
- Intermediate depth well EW-2 serves as a DPE well.

Remediation wells W-1s and EW-1 are screened within the Upper Unit (screened across 10 to 45 feet bgs). Remediation wells W-1, W-A and EW-2 are screened within the Lower Unit (screened across 42 to 60 feet bgs).

#### **4.1 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 2,000 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. Effluent water samples are collected and analyzed quarterly as required by the City of Livermore sewer discharge permit.

System operation commenced on November 15, 2011 (soil vapor extraction only), in compliance with the 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 29, 2011. Upon issuance of the groundwater discharge permit, the DPE system began full operation and extraction and treatment of both groundwater and soil vapor on January 18, 2012.

## **4.2 Treatment System Data**

The DPE system was shut down during the majority of the first quarter of 2017. Following minor repairs and balancing, the DPE system was restarted on March 28, 2017 and operated until it was shut down on May 12, 2017 due to low contaminant removal rates. A vapor sample collected from the DPE system on May 2, 2017 reported trace concentrations of petroleum hydrocarbons and Ground Zero determined that operating the system was no longer cost effective as the TPHg removal rate was only 0.6 pounds per day. The soil vapor extraction monitoring and laboratory data are summarized in Table 9.

As of the May 12, 2017 operation and maintenance event, the DPE system had removed a total of approximately 15,548 pounds, or approximately 2,390 gallons of TPHg in both vapor and groundwater phases. This includes the removal of 15,398 pounds in the vapor phase and 150 pounds in aqueous phase.

The mass of TPHg removed by the thermal oxidizer is summarized in Table 10. The mass of TPHg removed by groundwater extraction and treated by air stripping and running through granular activated carbon is summarized in Table 11. The groundwater extraction monitoring and laboratory data are summarized in Table 12.

## **4.3 System Effectiveness**

Trends from the shallow, intermediate and deep groundwater monitoring wells located in the core of the plume (W-1s, W-1, MW-104, MW-204 and MW-304) show decreasing concentrations of the chemicals of concern. Charts 1 through 3 show the decreasing trend of benzene over time in the shallow and intermediate core wells W-1s, MW-104 and MW-204. The deepest zone in the plumes core represented by MW-304 and MW-404 indicate a stable plume. Chart 4 shows decreasing benzene conditions in MW-304. Chart 5 shows a slightly increasing trend in benzene concentrations detected in MW-404. However, the removal of one outlier indicates a stable trend as shown in Chart 6.

## **5.0 CONCLUSIONS**

Ground Zero makes the following conclusions based on the data collected prior to and during the first semi-annual groundwater monitoring event:

1. There is no indication of a rebound of contaminant concentrations based on samples collected during the May 2017 monitoring event, with the exception of the sample collected from MW-208 which reported a rebound in the benzene concentration. The DPE system has operated on a limited basis, only operating for approximately 25 days between June 13, 2016 and the May 2017 groundwater monitoring event.

2. The groundwater contaminant plume is stable and decreasing in size. The groundwater contaminant concentrations are on a decreasing trend in all of the Sites groundwater monitoring wells with the following exceptions:
  - MW-9, MW-10 and MW-404 are stable with minor fluctuations.
3. Benzene concentrations were reported to be below 3,000 µg/L in all of the Site's wells, including wells MW-107 and MW-207. Chart 8 and Chart 9 illustrate the benzene contaminant concentration and groundwater elevation trends in MW-107 and MW-207, respectively.
4. The groundwater contaminant plume has been adequately defined.
  - The shallow groundwater plume appears to be decreasing and attenuates to the east at MW-106, northeast at W-1s, to the north at W-Bs, to the west at W-3s as shown in Figures 9 thru 14.
  - The intermediate groundwater plume appears to be stable and attenuates to the northeast at MW-206, to the west at MW-9 and to the southwest at MW-10 as shown in Figures 15 thru 17. The minimal contaminant concentrations in down-gradient intermediate depth groundwater monitoring wells MW-9 and MW-10 represent the down gradient edge of the intermediate groundwater plume.
  - The size and concentration of the groundwater contaminant plume decreases with depth.
5. Remediation by DPE and air sparging in wells W-1s, W-1, W-A and EW-2 has been effective and has decreased the contaminant mass in the core of the plume based on the decreasing contaminant trend in these wells and core wells, MW-104, MW-204 and MW-205. Charts 1, 11, 12 and 13 illustrate the benzene contaminant concentration and groundwater elevation trends in W-1s, W-1, W-A and EW-2, respectively. Charts 2, 3 and 10 illustrate the benzene contaminant concentration and groundwater elevation trends in core wells MW-104, MW-204 and MW-205, respectively. The recent minimal mass removal rate indicates that further remediation is impracticable.
6. The current SVE and groundwater data suggest that secondary sources have been remediated to the extent feasible. Soil and soil vapor conditions meet the SWRCB *LTCP* criteria. The groundwater plume, which is less than 250 feet in length, no longer contains concentrations of benzene in excess of 3,000 ug/l. The nearest water supply well is more than 1,000 feet distant from the edge of the dissolved contaminant plume. The Site may meet the criteria of the *LTCP*.

## 6.0 RECOMMENDATIONS

Ground Zero makes the following recommendations:



## 6.0 RECOMMENDATIONS

Ground Zero makes the following recommendations:

1. Evaluate the site conditions against the criteria in the SWRCB *LTCP*
2. Leave the DPE system shut down pending the *LTCP* evaluation
3. Suspend installing an additional extraction well pending the *LTCP* evaluation

## 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.

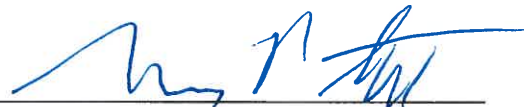
## 8.0 SIGNATURES & CERTIFICATION

This report was prepared by:



Andrew Dorn, B.Sc. Geology  
Staff Geologist  
California GIT (#411)

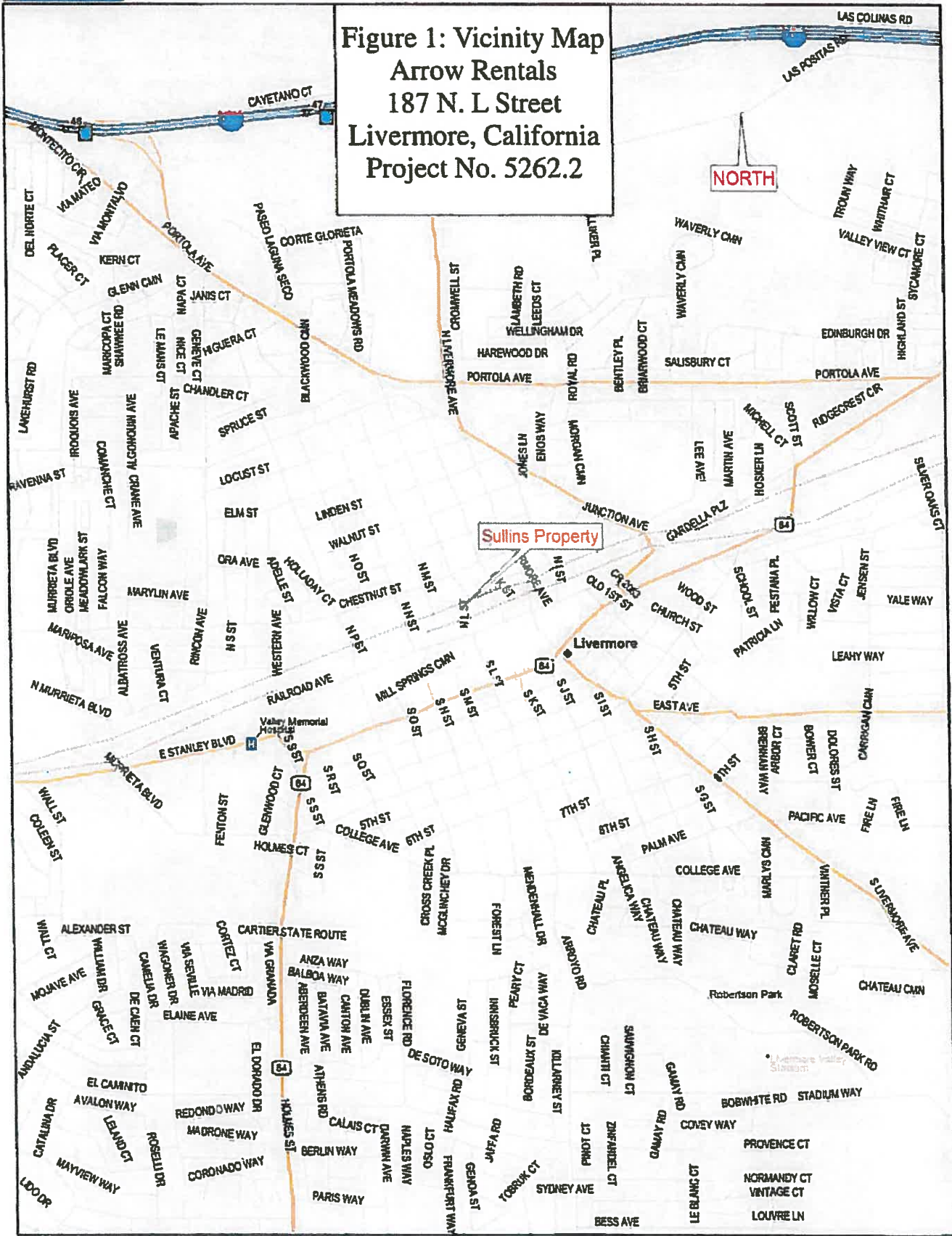
This report was prepared under the direction of:



Gregory P. Stahl, PG 5023  
CA Certified Hydrogeologist No. 264

## **FIGURES**

Figure 1: Vicinity Map  
Arrow Rentals  
187 N. L Street  
Livermore, California  
Project No. 5262.2





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

**FIGURE 2**

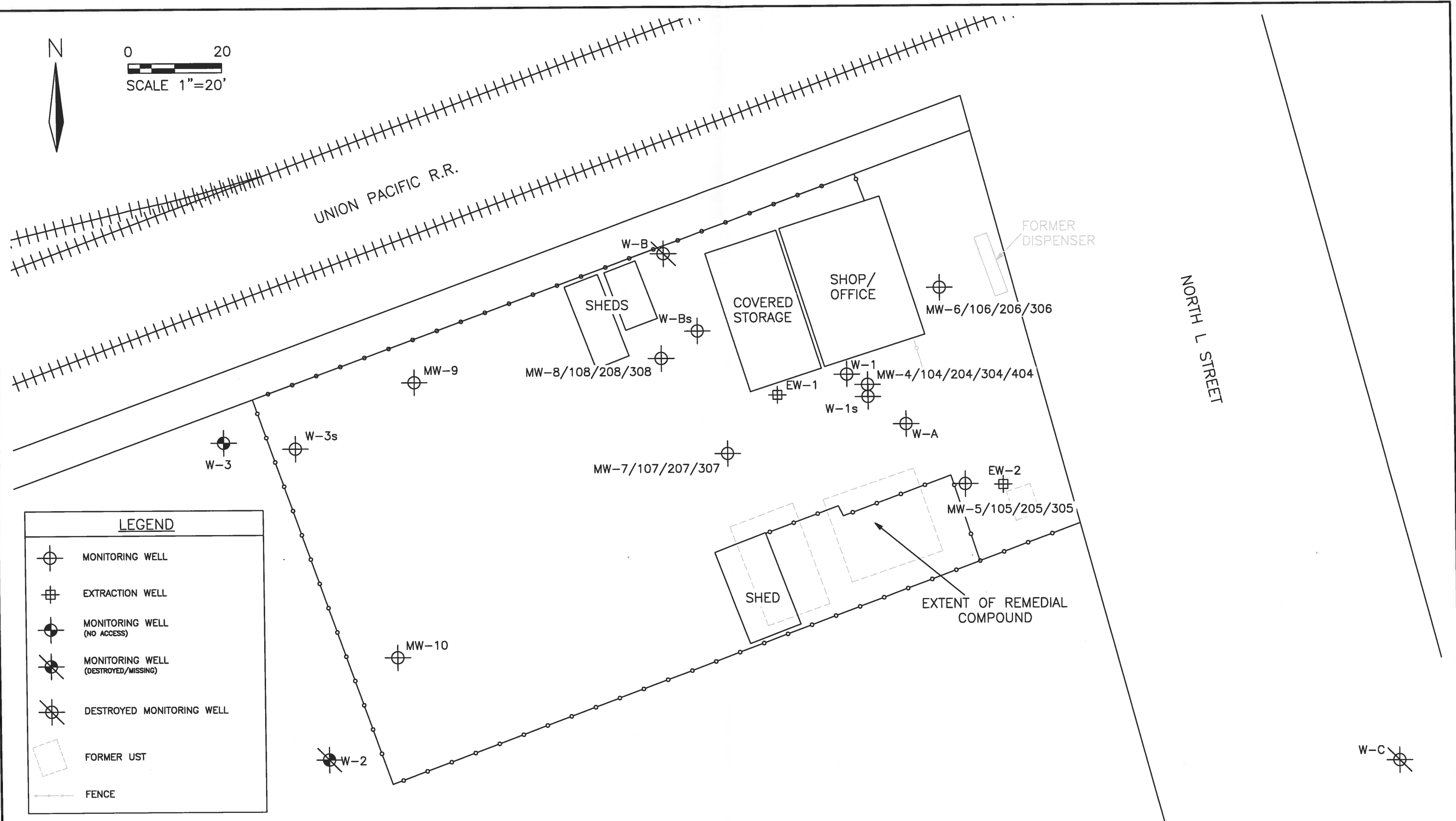
Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California










**SITE MAP**

N

0 20  
SCALE 1"=20'



**LEGEND**

-  MONITORING WELL
-  EXTRACTION WELL
-  MONITORING WELL (NO ACCESS)
-  MONITORING WELL (DESTROYED/MISSING)
-  DESTROYED MONITORING WELL
-  FORMER UST
-  FENCE

NOTE:  
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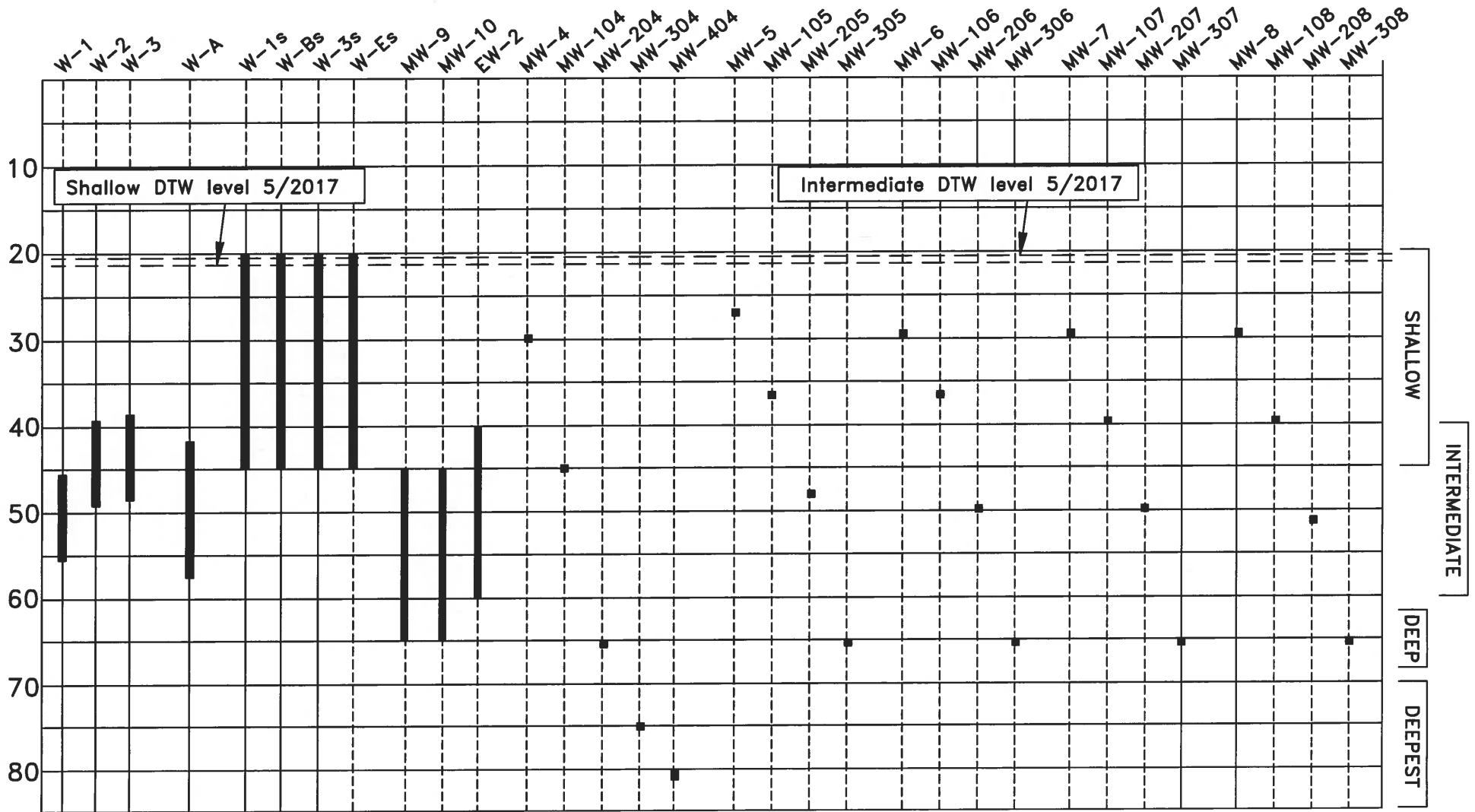
**FIGURE 3**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



**DETAILED SITE MAP**

Figure 4:  
Well Screened Interval Diagram  
Shallow & Intermediate Aquifers  
May 2017



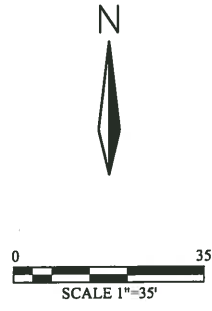
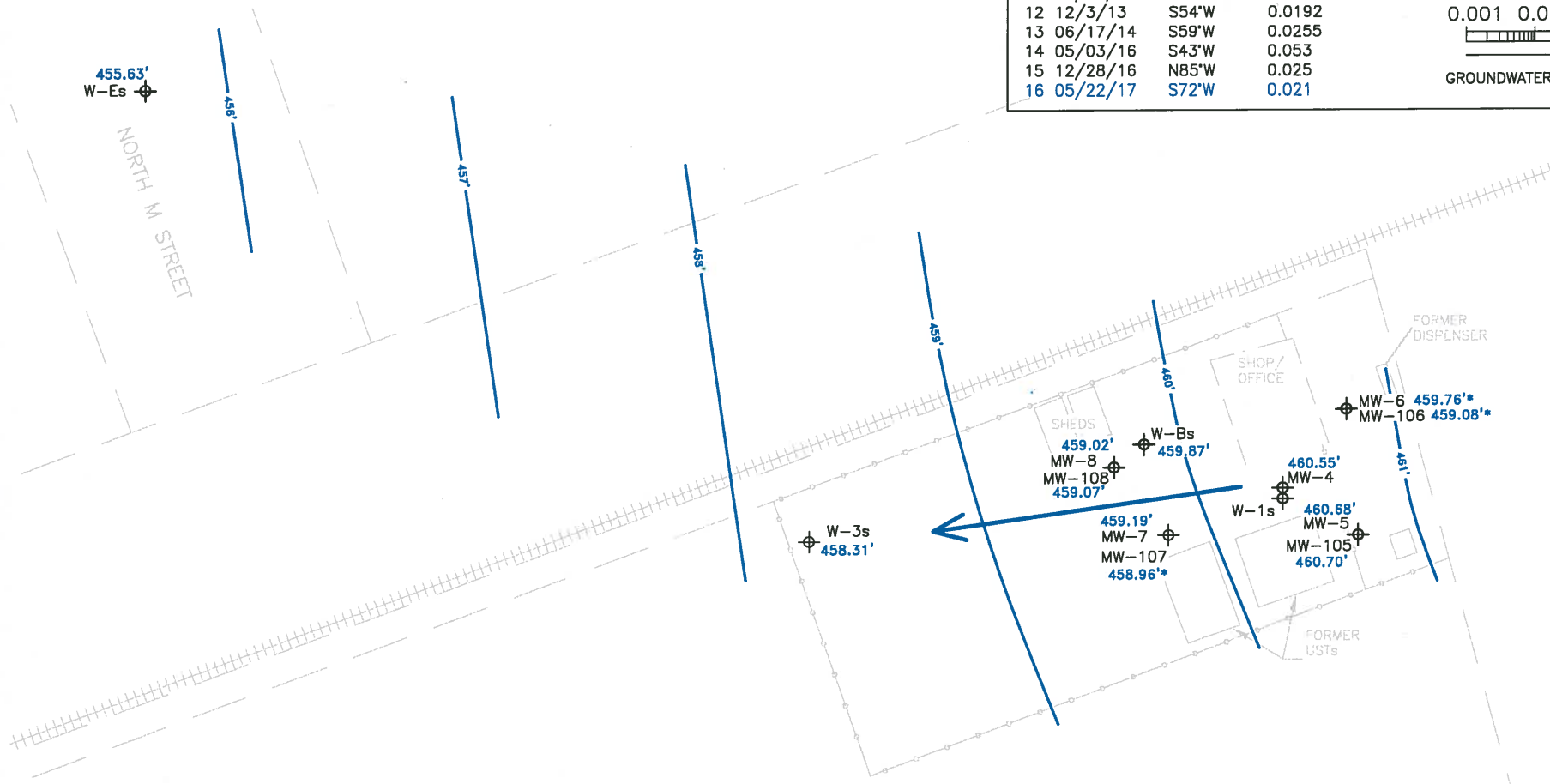
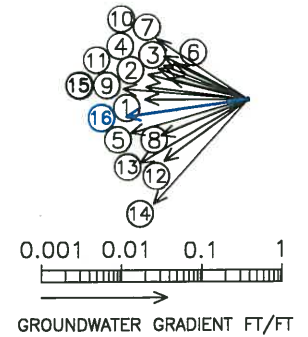
Sullins  
187 North L Street  
Livermore, CA

**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- DRY WELL WAS REPORTED DRY
- 455.63' GROUNDWATER ELEVATION
- 458.96'\* GROUNDWATER ELEVATION NOT USED IN GROUNDWATER GRADIENT CALC.

	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
11	06/24/13	N75°W	0.0097
12	12/3/13	S54°W	0.0192
13	06/17/14	S59°W	0.0255
14	05/03/16	S43°W	0.053
15	12/28/16	N85°W	0.025
16	05/22/17	S72°W	0.021

**ROSE DIAGRAM**

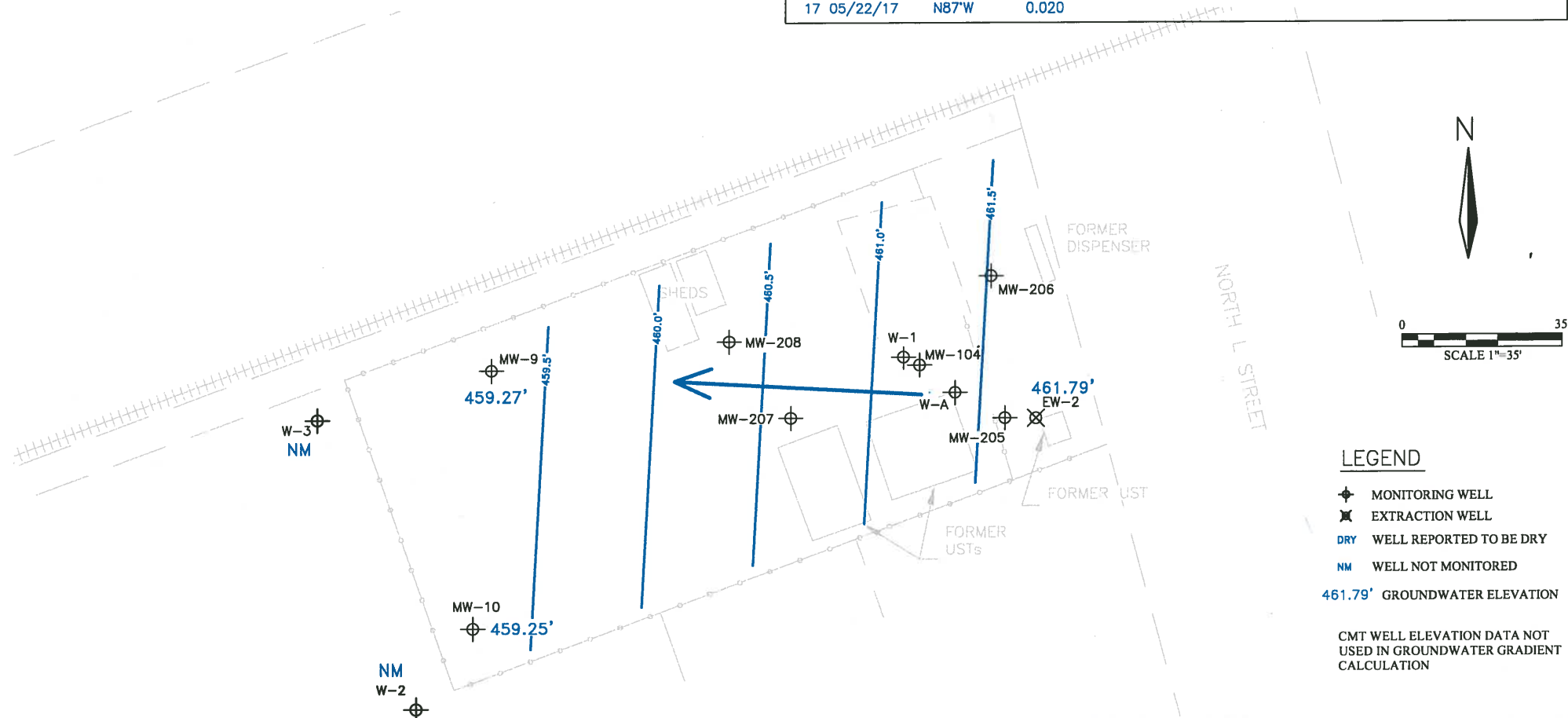
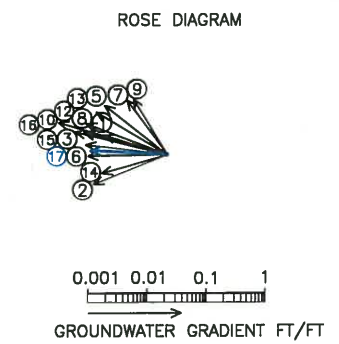


**NOTE:**  
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 NOT INTENDED TO IMPLY DIVISION OF PROPERTY.  
 STREET RIGHT OF WAY IS APPROXIMATE, BASED ON  
 ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED  
 BY WOODWARD-CLYDE CONSULTANTS

<b>FIGURE 5</b>	
Sullins (Arrow Rentals) 187 North L Street Livermore, California	

<b>SHALLOW AQUIFER GROUNDWATER GRADIENT MAP</b>
MAY 22, 2017

	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
8	06/24/13	N73°W	0.014
9	12/03/13	N32°W	0.013
10	06/17/14	N74°W	0.076
11	12/02/14		DRY
12	03/09/15	N69°W	0.032
13	11/16/15	N58°W	0.025
14	05/03/16	S77°W	0.014
15	08/26/16	N83°W	0.017
16	12/28/16	N75°W	0.019
17	05/22/17	N87°W	0.020



- LEGEND**
- ⊕ MONITORING WELL
  - ⊗ EXTRACTION WELL
  - DRY WELL REPORTED TO BE DRY
  - NM WELL NOT MONITORED
  - 461.79' GROUNDWATER ELEVATION
- CMT WELL ELEVATION DATA NOT USED IN GROUNDWATER GRADIENT CALCULATION

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

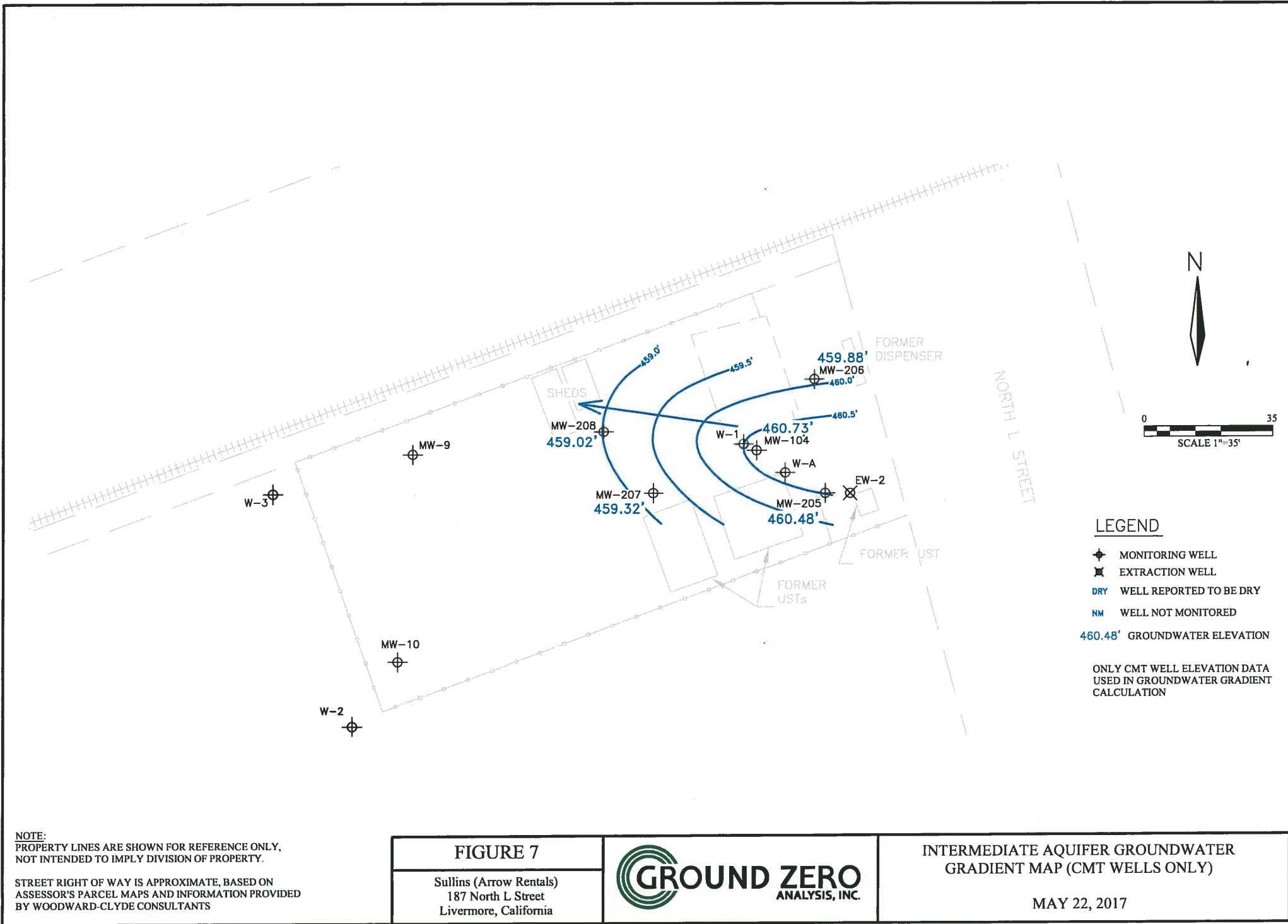
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON  
 ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED  
 BY WOODWARD-CLYDE CONSULTANTS

<b>FIGURE 6</b>	
Sullins (Arrow Rentals) 187 North L Street Livermore, California	

**INTERMEDIATE AQUIFER  
 GROUNDWATER GRADIENT MAP**

MAY 22, 2017





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

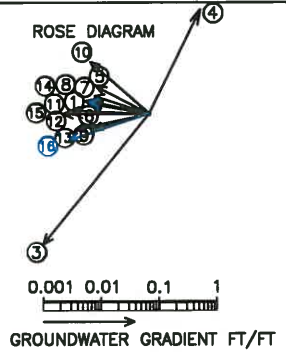
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON  
ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED  
BY WOODWARD-CLYDE CONSULTANTS

**FIGURE 7**  
Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



**INTERMEDIATE AQUIFER GROUNDWATER  
GRADIENT MAP (CMT WELLS ONLY)**  
MAY 22, 2017

	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
8	06/24/13	N78°W	0.0091
9	12/03/13	S75°W	0.010
10	06/17/14	N49°W	0.012
11	12/02/14	N87°W	0.012
12	06/25/15	WEST	0.030
13	11/16/15	WEST	0.020
14	05/03/16	N79°W	0.012
15	12/28/16	N89°W	0.020
16	05/22/17	S72°W	0.025



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- 460.93' GROUNDWATER ELEVATION

CONTOUR INTERVAL = 0.25 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

**FIGURE 8**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California



**DEEP AQUIFER GROUNDWATER  
 GRADIENT MAP**

MAY 22, 2017



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- 420 = TPH-G ug/L
- NT = NOT TESTED

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

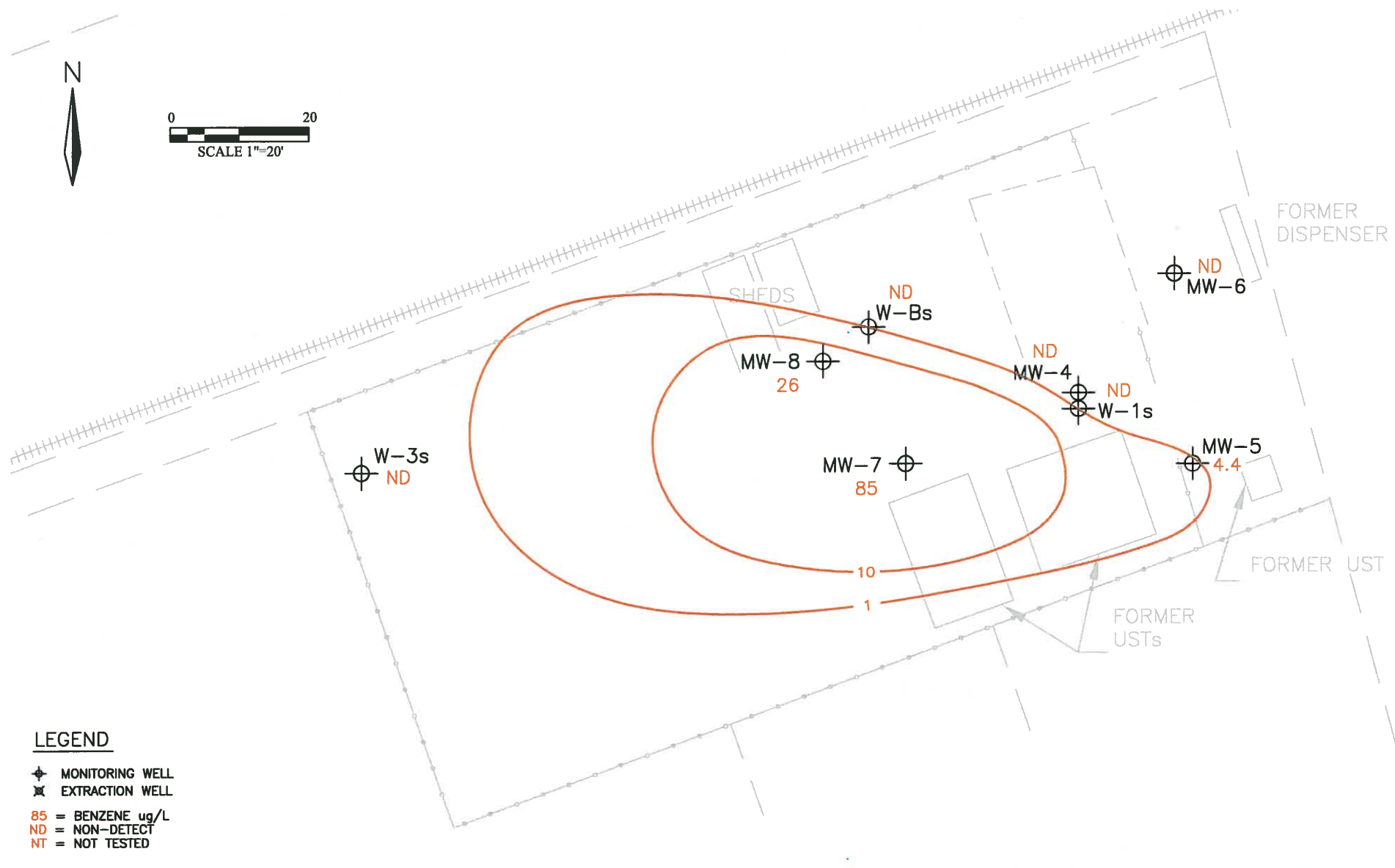
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON  
ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED  
BY WOODWARD-CLYDE CONSULTANTS

**FIGURE 9**



Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



**WATER TABLE TPH-G GROUNDWATER  
PLUME MAP**  
WELLS SCREENED 20' TO 45' BELOW GRADE SURFACE  
MAY 2017



**LEGEND**

-  MONITORING WELL
-  EXTRACTION WELL
- 85** = BENZENE ug/L
- ND** = NON-DETECT
- 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

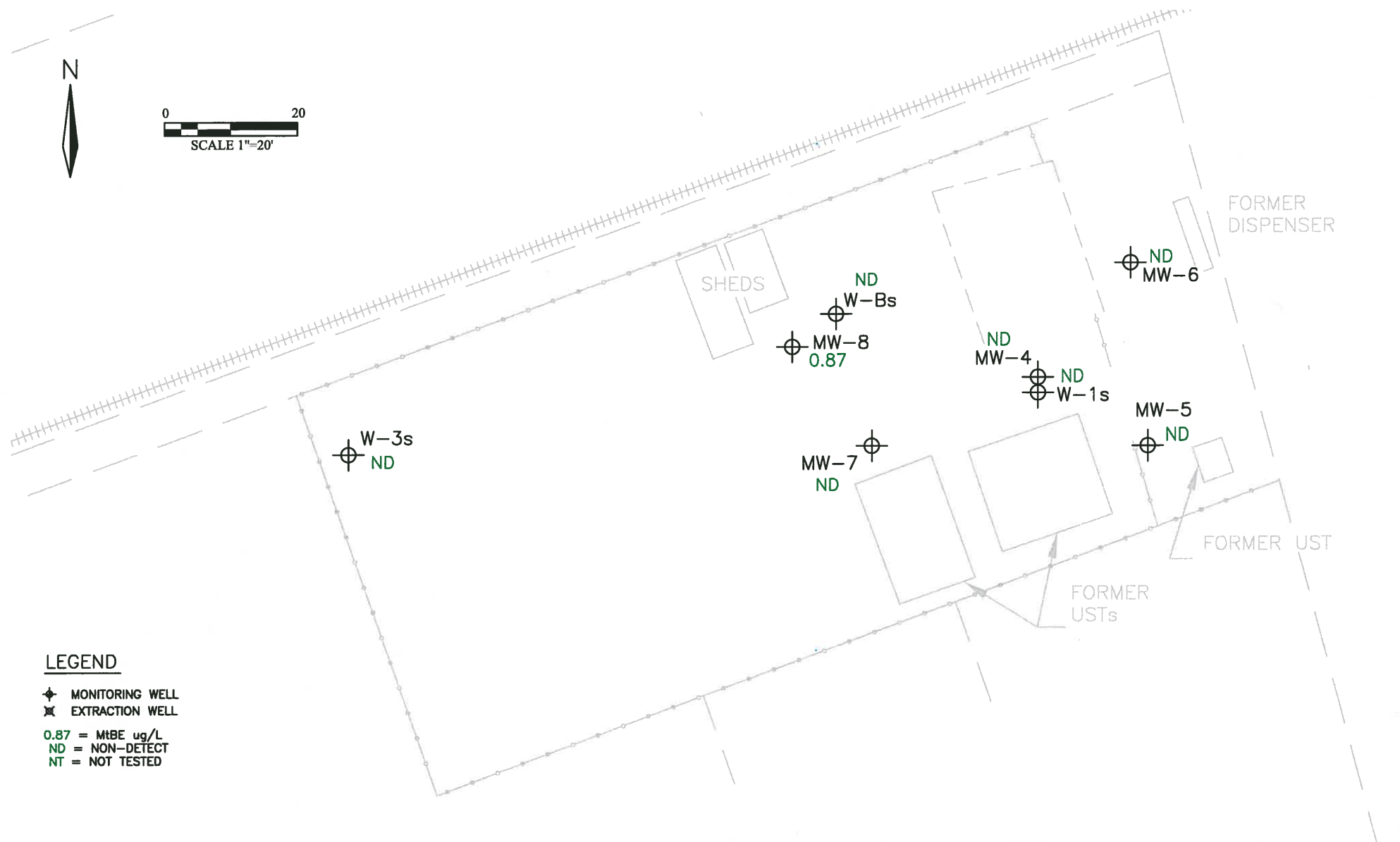
**FIGURE 10**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



**WATER TABLE BENZENE GROUNDWATER  
PLUME MAP**

WELLS SCREENED 20' TO 45' BELOW GRADE SURFACE  
MAY 2017



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- 0.87 = MTBE ug/L
- ND = NON-DETECT
- NT = NOT TESTED

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

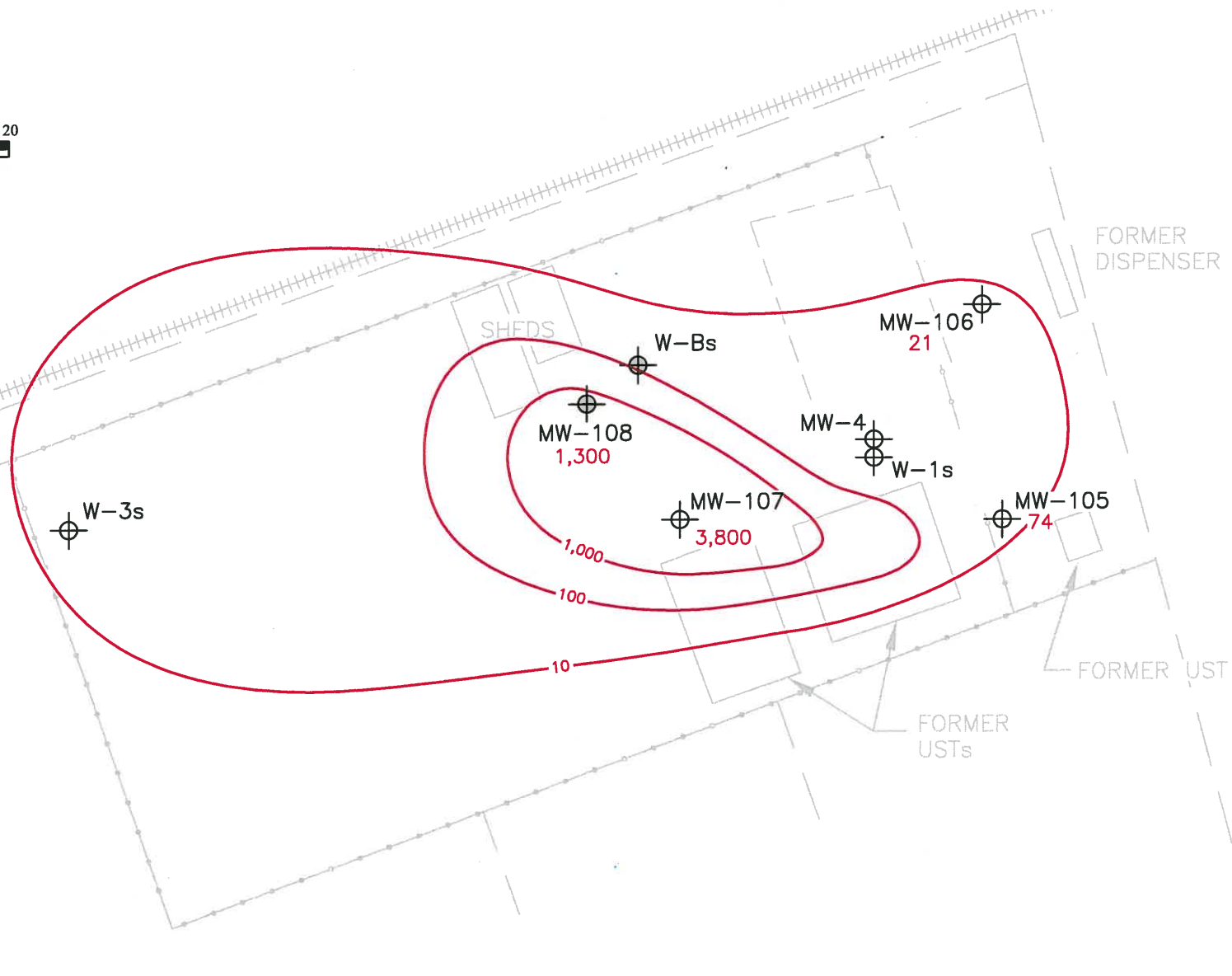
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON  
ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED  
BY WOODWARD-CLYDE CONSULTANTS

**FIGURE 11**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



**WATER TABLE MTBE GROUNDWATER  
PLUME MAP**  
WELLS SCREENED 20' TO 45' BELOW GRADE SURFACE  
MAY 2017



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL

3,800 = TPH-G ug/L  
NT = NOT TESTED

**NOTE:**  
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY,  
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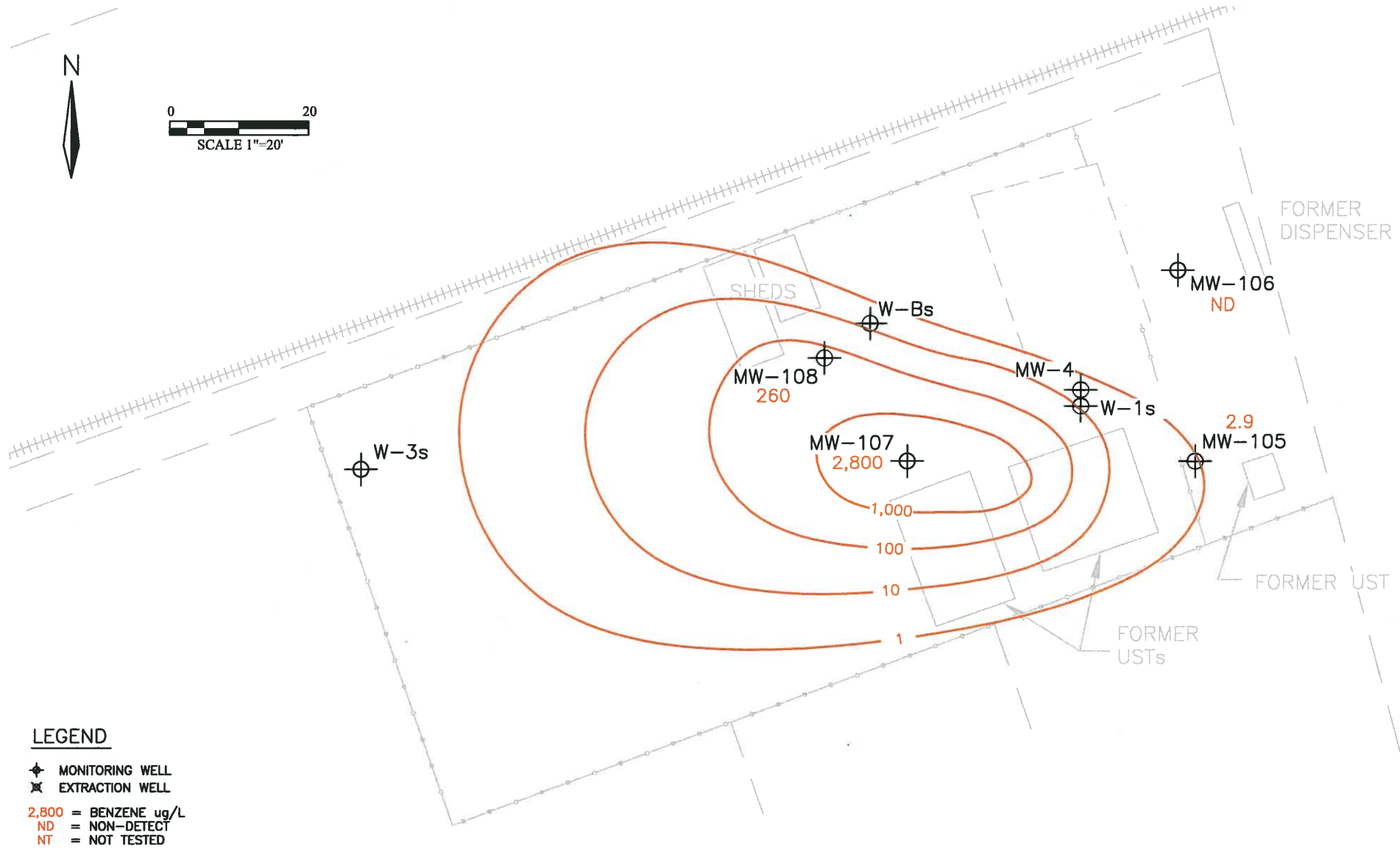
STREET RIGHT OF WAY IS APPROXIMATE, BASED ON  
ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED  
BY WOODWARD-CLYDE CONSULTANTS

**FIGURE 12**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



SHALLOW AQUIFER TPH-G GROUNDWATER  
PLUME MAP  
WELLS SCREENED 36' TO 40' BELOW GRADE SURFACE  
MAY 2017



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- 2,800 = BENZENE ug/L
- ND = NON-DETECT
- NT = NOT TESTED

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

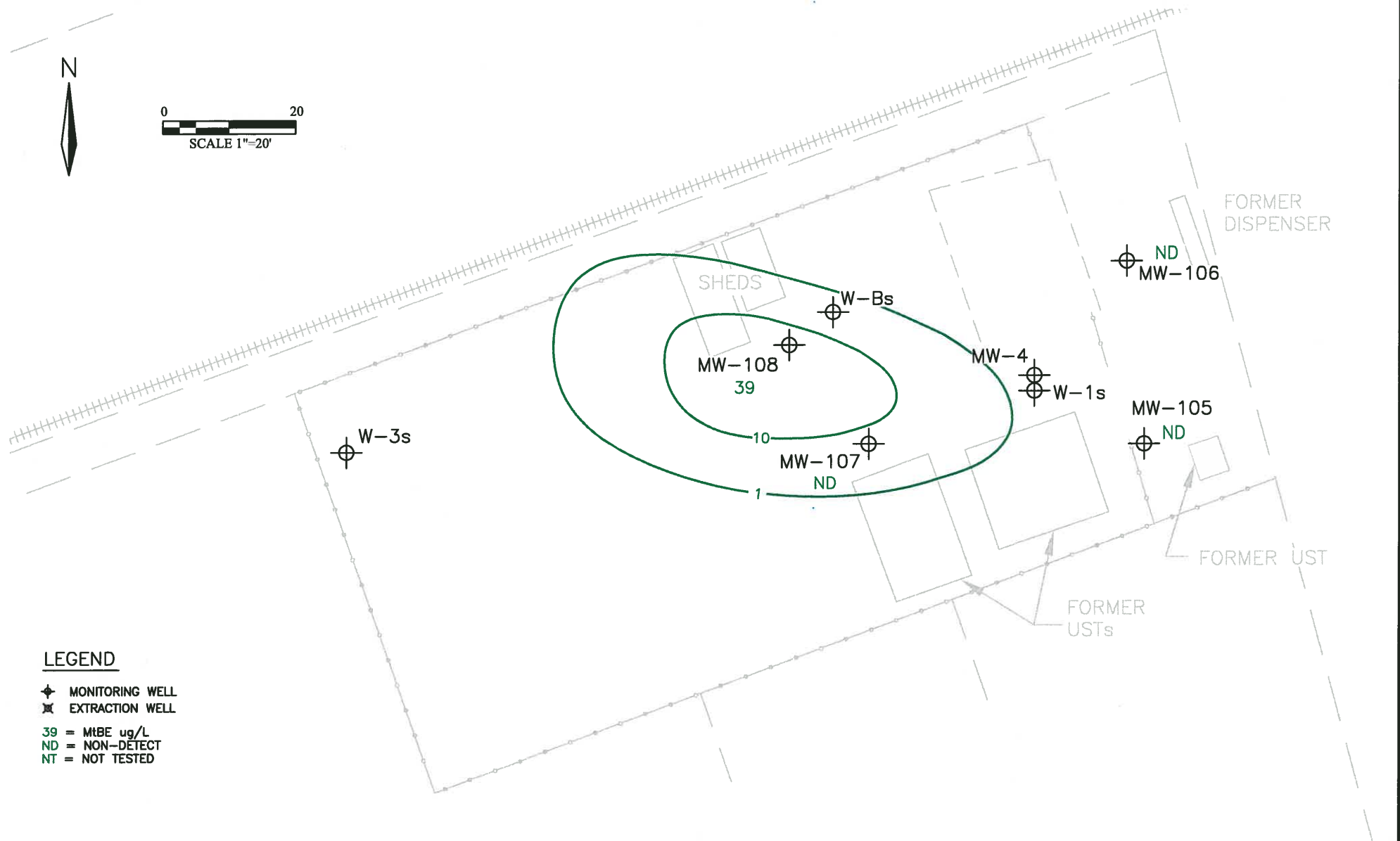
**FIGURE 13**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



**SHALLOW AQUIFER BENZENE GROUNDWATER  
PLUME MAP**

WELLS SCREENED 36' TO 40' BELOW GRADE SURFACE  
MAY 2017



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- 39 = MtBE ug/L
- ND = NON-DETECT
- NT = NOT TESTED

**NOTE:**  
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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

**FIGURE 14**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



SHALLOW AQUIFER MTBE GROUNDWATER  
PLUME MAP  
WELLS SCREENED 36' TO 40' BELOW GRADE SURFACE  
MAY 2017





**LEGEND**

-  MONITORING WELL
-  EXTRACTION WELL
-  ESTIMATED CONTOURS

2,900 = TPH-G ug/L  
NT = NOT TESTED

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

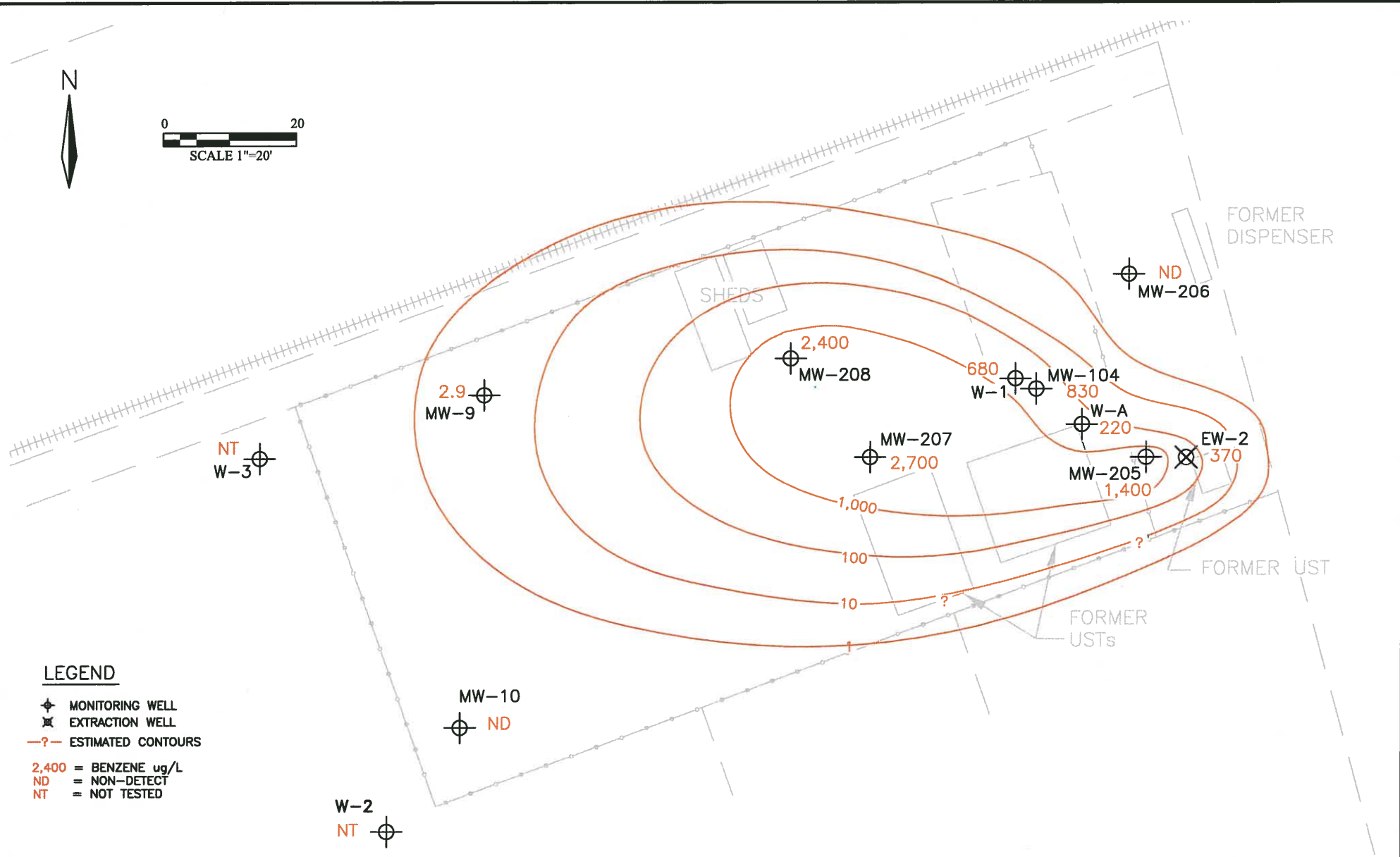
**FIGURE 15**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



**INTERMEDIATE AQUIFER TPH-G GROUNDWATER  
PLUME MAP**

MAY 2017



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- ?- ESTIMATED CONTOURS

2,400 = BENZENE ug/L  
ND = NON-DETECT  
NT = NOT TESTED

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

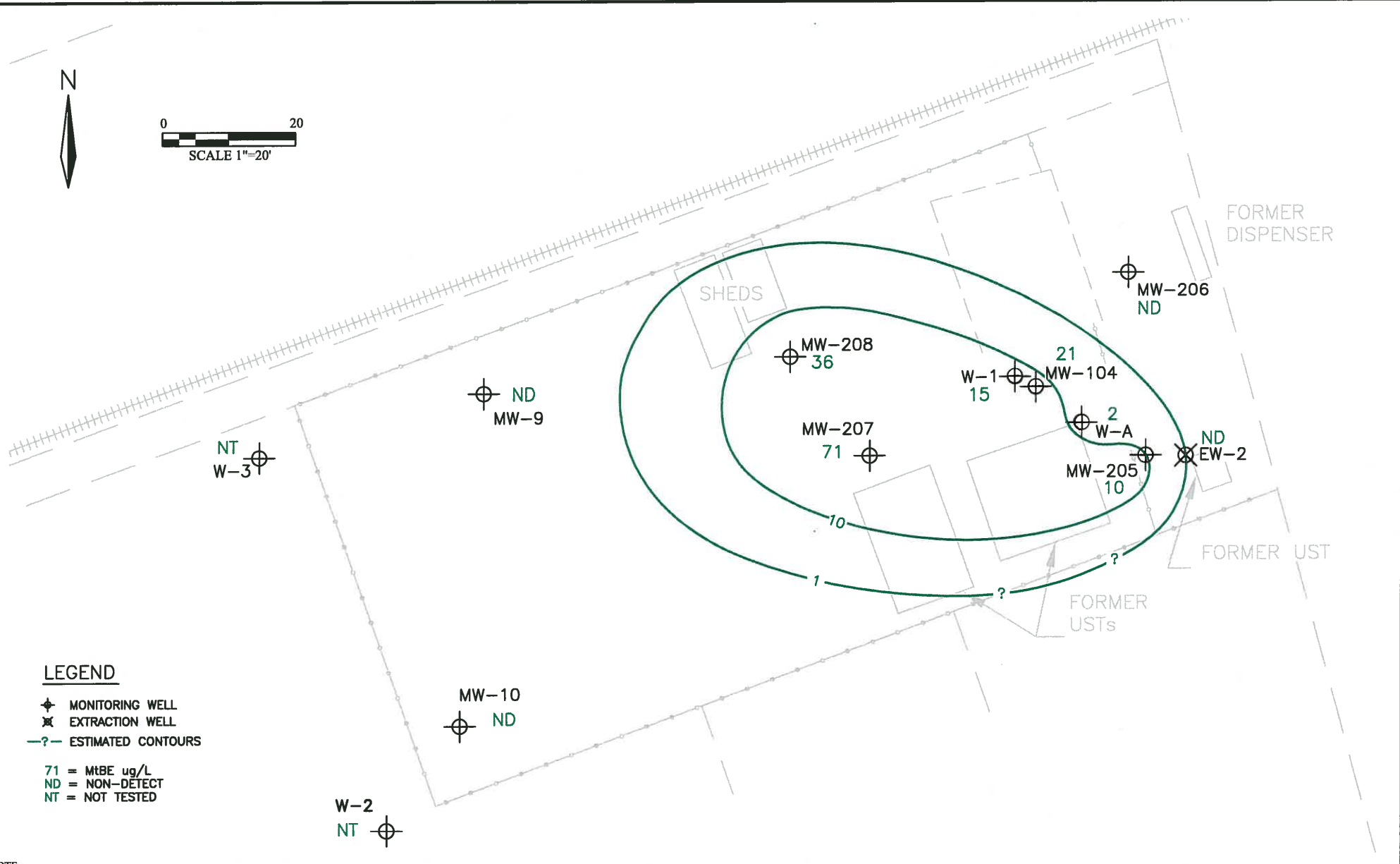
**FIGURE 16**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



INTERMEDIATE AQUIFER BENZENE  
GROUNDWATER PLUME

MAY 2017



**LEGEND**

- ⊕ MONITORING WELL
- ⊗ EXTRACTION WELL
- ?- ESTIMATED CONTOURS

71 = MTBE ug/L  
ND = NON-DETECT  
NT = NOT TESTED

**NOTE:**  
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BY WOODWARD-CLYDE CONSULTANTS

**FIGURE 17**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



INTERMEDIATE AQUIFER MTBE  
GROUNDWATER PLUME

MAY 2017

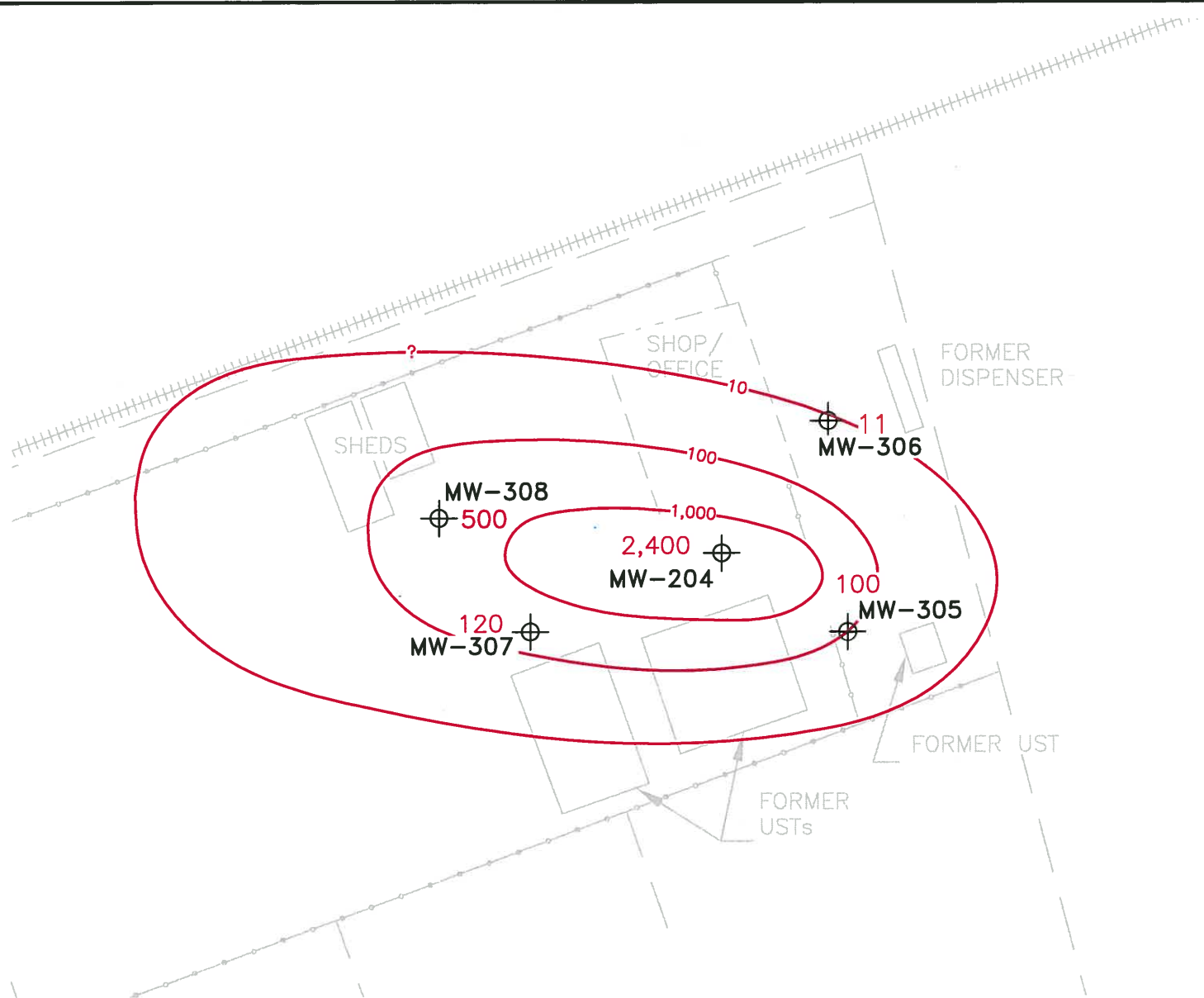


**LEGEND**

- MONITORING WELL
- EXTRACTION WELL

ESTIMATED CONTOURS

**120** = TPH-G CONCENTRATION (ug/L)



NOTE:  
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BY WOODWARD-CLYDE CONSULTANTS

**FIGURE 18**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California






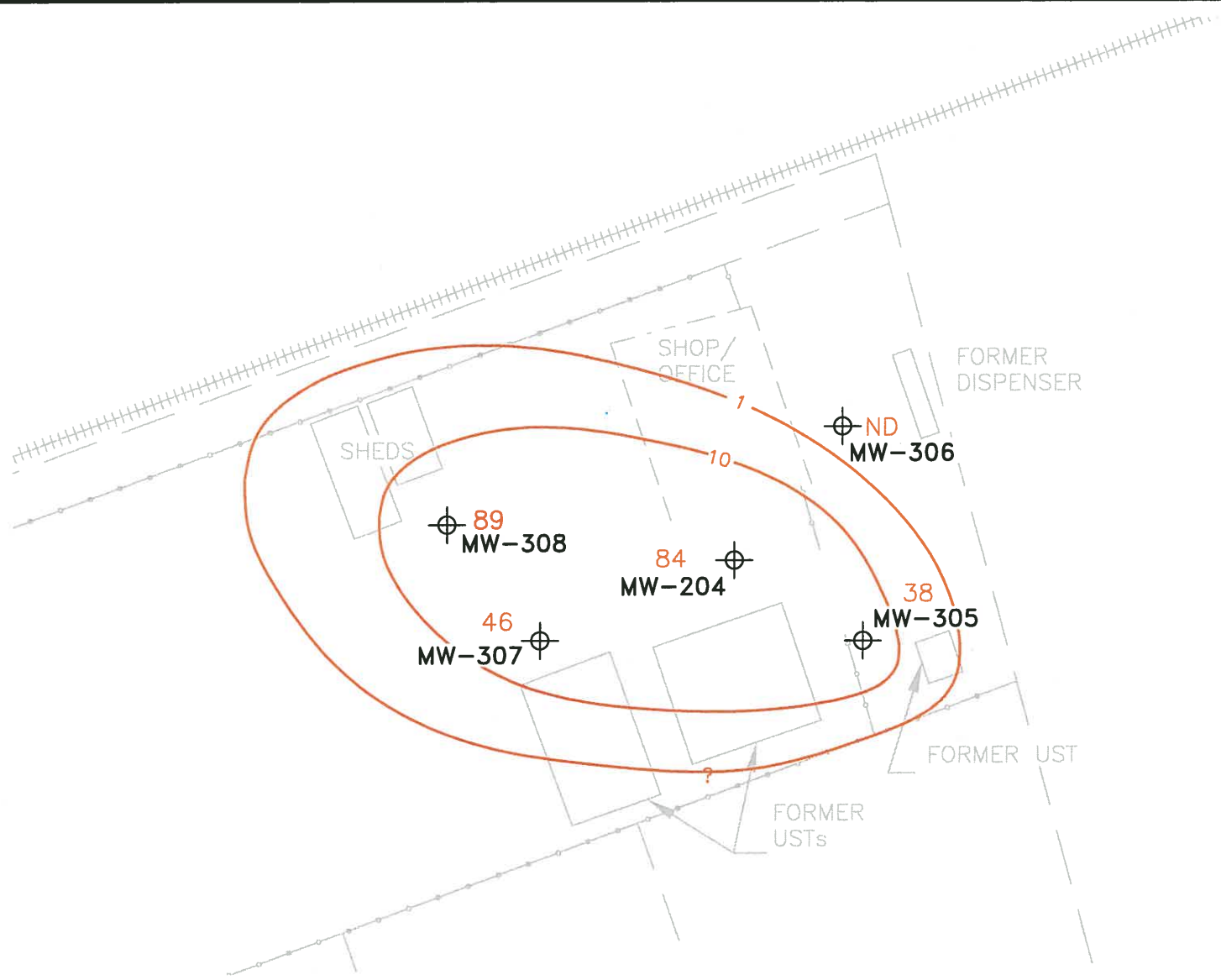
**DEEP AQUIFER TPH-G GROUNDWATER  
PLUME MAP**

MAY 2017



### LEGEND

-  MONITORING WELL
-  EXTRACTION WELL
-  ESTIMATED CONTOURS
- 46** = BENZENE CONCENTRATION (ug/L)



NOTE:  
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BY WOODWARD-CLYDE CONSULTANTS

### FIGURE 19

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California



### DEEP AQUIFER BENZENE GROUNDWATER PLUME MAP

MAY 2017

## **TABLES**

**TABLE 1**  
**Summary of Well Construction**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California

Aquifer	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
Shallow	Vapor Extraction	W-1s	Active	03/11/96	45	?	6	PVC	0.010	#2/12	45	20	45	17	17	15	15	S
	Monitoring	W-Bs	Active	03/12/96	45	?	6	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
	Monitoring	W-3s	Active	03/12/96	45	?	4	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
	Monitoring	W-Es	Active	03/13/96	45	?	2	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
	Monitoring	MW-4	Active	10/02/06	82	8	-	MCT	-	#2/12	30	29	30	20	16	14	14	S
	Monitoring	MW-5	Active	10/09/06	68	8	-	MCT	-	#2/12	27	26	29	24	24	21.5	21.5	S
	Monitoring	MW-6	Active	10/10/06	68	8	-	MCT	-	#2/12	30	29	31	27	27	24	24	S
	Monitoring	MW-7	Active	10/04/06	69.5	8	-	MCT	-	#2/12	30	29	30	20	-	-	6	S
	Monitoring	MW-8	Active	10/05/06	66.5	8	-	MCT	-	#2/12	30	29	30	30	20	18	18	S
	Monitoring	MW-105	Active	10/09/06	37	8	-	MCT	-	#2/12	37	36	39	34	35	29	-	-
	Monitoring	MW-106	Active	10/10/06	37	8	-	MCT	-	#2/12	37	36	39	35	35	31	-	-
	Monitoring	MW-107	Active	10/04/06	40	8	-	MCT	-	#2/12	40	39	42	37	37	30	-	-
	Monitoring	MW-108	Active	10/05/06	40	8	-	MCT	-	#2/12	40	39	42	37	37	30	-	-
Vapor Extraction	EW-1	Active	10/03/06	25	10	4	PVC	0.010	#2/12	25	10	25	9.5	9.5	7.5	7.5	S	
Intermediate	Vapor Extraction	W-1	Active	05/25/89	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	Missing	05/26/89	51.5	8	2	PVC	0.010	#2/12	49	39	49	36	36	22.5	22.5	S
	Monitoring	W-3	No Access	05/26/89	51.5	8	2	PVC	0.010	#2/12	48	38	48	34.5	34.5	32.5	32.5	S
	Vapor Extraction	W-A	Active	07/12/90	63	12	4	PVC	0.010	#2/12	57.5	42	63	40	40	36.5	36.5	S
	Monitoring	W-B *	Destroyed	07/13/90	55	12	4	PVC	0.010	#2/12	55	40	55	32	32	30	30	S
	Monitoring	W-C *	Destroyed	07/11/90	55	8	2	PVC	0.010	#2	55	45	55	37.5	37.5	35	35	S
	Monitoring	W-D *	Destroyed	07/12/90	57.5	8	2	PVC	0.010	#2/12	57.5	42	57.5	39.5	34	32	32	S
	Monitoring	W-E *	Destroyed	07/10/90	61	8	2	PVC	0.010	#2/12	60.5	40.5	61	37	30	29	29	S
	Monitoring	MW-104	Active	10/02/06	51	8	-	MCT	-	#2/12	50.5	49.5	52	48	45	30	-	-
	Monitoring	MW-205	Active	10/09/06	48	8	-	MCT	-	#2/12	48	47	50	45	45	39	-	-
	Monitoring	MW-206	Active	10/10/06	50	8	-	MCT	-	#2/12	50	49	52	47	47	39	-	-
	Monitoring	MW-207	Active	10/04/06	50	8	-	MCT	-	#2/12	50	49	52	47	47	42	-	-
	Monitoring	MW-208	Active	10/05/06	52	8	-	MCT	-	#2/12	52	51	54	49	49	42	-	-
	Monitoring	MW-9	Active	01/27/15	65	8	2	PVC	0.010	#2/12	65	45	65	43	43	40	40	S
Monitoring	MW-10	Active	01/27/15	65	8	2	PVC	0.010	#2/12	65	45	65	43	43	40	40	S	
Vapor Extraction	EW-2	Active	01/26/15	60	8	2	PVC	0.010	#2/12	60	40	60	38	38	35	35	S	
Deep	Monitoring	MW-204	Active	10/02/06	66.5	8	-	MCT	-	#2/12	66.5	65.5	68	64	64	52	-	-
	Monitoring	MW-305	Active	10/09/06	68	8	-	MCT	-	#2/12	66	65	68	63	63	50	-	-
	Monitoring	MW-306	Active	10/10/06	68	8	-	MCT	-	#2/12	66	65	68	63	63	52	-	-
	Monitoring	MW-307	Active	10/04/06	69.5	8	-	MCT	-	#2/12	66	65	68	63	63	52	-	-
Deepest	Monitoring	MW-308	Active	10/05/06	66.5	8	-	MCT	-	#2/12	66	65	66	63	63	54	-	-
	Monitoring	MW-304	Active	10/02/06	75.5	8	-	MCT	-	#2/12	75.5	74.5	76	73	73	68	-	-
Monitoring	MW-404	Active	10/02/06	82	8	-	MCT	-	#2/12	81.5	80	81.5	79.5	80	76	-	-	

\* = well was destroyed in 2008

**TABLE 2**  
**Summary of Groundwater Elevation and Gradient - Shallow/Water Table Wells**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Date	Elevation of Groundwater*																								Avg. Elv. (feet)	Avg. DTW (feet)	Gradient (ft/ft)	Bearing	
	W-1s	DTW	W-3s	DTW	W-Bs	DTW	W-Es	DTW																					
	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. (feet)	Avg. DTW (feet)	Gradient (ft/ft)	Bearing	
	W-1s **	DTW	W-3s	DTW	W-Bs	DTW	W-Es	DTW	MW-4	DTW	MW-5	DTW	MW-6	DTW	MW-7	DTW	MW-8	DTW	MW-105	DTW	MW-106	DTW	MW-107	DTW	MW-108	DTW					
	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					
10/16/06		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	
04/17/07		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		
12/19/07		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	
04/07/08		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
10/09/08		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
04/08/11		452.00	27.09	452.20	26.92	453.81	27.11	446.59	28.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	451.15	27.30	0.0221	N56°W		
10/26/11		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
05/30/12		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
11/19/12		440.42	40.77	440.12	39.00	441.63	39.29	434.44	42.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	439.15	40.35	0.0153	N63°W		
06/24/13		443.59	37.60	442.17	36.95	443.60	37.32	439.46	37.32	-	-	-	-	-	-	-	-	-	-	445.69	35.43	444.72	36.07	443.81	37.10	443.35	37.29	443.30	36.89	0.0097	N75°W
12/03/13		446.72	34.47	443.22	35.90	446.29	34.63	440.70	36.08	-	-	-	-	-	-	-	-	-	-	446.29	34.83	446.08	34.71	444.86	36.05	444.47	36.17	444.83	35.36	0.0192	S54°W
06/16/14		440.52	40.67	435.89	43.23	438.53	42.39	433.33	43.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	437.07	42.44	0.0255	S59°W		
12/02/14		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06/25/15		-	-	-	-	-	-	433.32	43.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/16/15		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/10/16		446.28	34.91	-	-	446.42	34.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	446.35	34.71	-	-	-	
05/03/16		446.79	34.40	441.69	37.43	446.58	34.34	439.65	37.13	-	-	-	-	-	-	-	-	-	-	-	-	-	444.27	36.64	445.38	35.26	444.02	35.87	0.0530	S43°W	
08/26/16		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	442.53	38.38	-	-	442.53	38.38	-	-	-
12/28/16		448.49	32.70	446.52	32.60	448.29	32.63	442.69	34.09	-	-	-	-	-	-	-	-	-	-	447.72	33.40	445.70	35.09	446.16	34.75	446.73	33.91	446.54	33.86	0.0250	N85°W
05/22/17		460.56	20.63	458.31	20.81	459.87	21.05	455.63	21.15	460.55	20.29	460.68	20.44	459.76	21.03	459.19	21.72	459.02	21.62	460.70	20.42	459.08	21.71	458.96	21.95	459.07	21.57	459.34	21.11	0.0200	S72°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. - The well top of W-1s was modified for the DPE system.

\*\* = The well top of W-1s was modified in November 2011 for the DPE system, therefore the depth-to-water data is irrelevant and was not used for groundwater contour or avg. groundwater elevation calculations



**TABLE 3**  
**Summary of Groundwater Elevation and Gradient - Intermediate Wells**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Date	Elevation of Groundwater - Wells Surveyed Octpber 16, 2006 in accordance with SWRCB Geotracker Requirements																				Avg. Elv. (feet)	Avg. DTW (feet)	Gradient (ft/ft)	Bearing	
	W-1**	DTW	W-A**	DTW	MW-9	DTW	MW-10	DTW	EW-2	DTW	MW-104	DTW	MW-205	DTW	MW-206	DTW	MW-207	DTW	MW-208	DTW					
<i>top of casing</i>	480.77		481.04		479.87		479.86		481.27		480.84		481.12		480.79		480.91		480.64						
<i>top of screen</i>	435.27	45.5	439.04	42	434.87	45	434.86	45	441.27	40	431.34	49.5	434.12	47	431.79	49	431.91	49	429.64	51					
<i>bottom of screen</i>	425.27	55.5	423.54	57.5	414.87	65	414.86	65	421.27	60	430.34	50.5	433.12	48	430.79	50	430.91	50	428.64	52					
10/16/2006	-	-	-	-	-	-	-	-	-	-	444.85	35.99	446.75	34.37	447.03	33.76	446.27	34.64	445.12	35.52	446.00	35.76	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	-	-	-	-	-	-	-	-	-	-	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	
** 6/24/2013	443.53	37.24	444.19	36.85	-	-	-	-	-	-	443.76	37.08	444.33	36.79	443.74	37.05	442.74	38.17	442.47	38.17	443.54	37.34	0.014	N73°W	
** 12/3/2013	444.43	36.34	445.11	35.93	-	-	-	-	-	-	444.54	36.30	445.13	35.99	444.74	36.05	444.77	36.14	444.37	36.27	444.73	36.15	0.013	N32°W	
** 6/16/14	436.71	44.06	436.97	44.07	-	-	-	-	-	-	437.15	43.69	437.70	43.42	436.64	44.15	435.92	44.99	431.78	48.86	436.12	44.75	0.076	N74°W	
12/2/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3/9/2015	-	-	-	-	436.90	42.97	437.21	42.65	439.07	42.20	-	-	-	-	-	-	-	-	-	-	437.73	42.61	0.032	N69°W	
6/25/2015	432.84	47.93	433.83	47.21	431.54	48.33	431.87	47.99	434.00	47.27	433.61	47.23	434.21	46.91	433.18	47.61	432.23	48.68	430.80	49.84	432.81	47.90	0.036	N70°W	
9/15/2015	-	-	-	-	426.47	53.40	426.78	53.08	-	-	-	-	-	-	-	-	-	-	-	-	426.63	53.24	-	-	
11/16/2015	-	-	-	-	423.98	55.89	424.53	55.33	426.22	55.05	-	-	-	-	-	-	-	-	-	-	424.91	55.42	0.025	N58°W	
3/10/2016	448.11	32.66	-	-	-	-	-	-	-	-	-	-	447.33	33.79	-	-	446.27	34.64	-	-	447.24	33.70	0.069	S13°W	
5/3/2016	443.57	37.20	443.69	37.35	442.53	37.34	442.20	37.66	444.74	36.53	443.80	37.04	443.39	37.73	443.32	37.47	442.26	38.65	441.40	39.24	443.09	37.62	0.014	S77°W	
8/26/2016	-	-	-	-	440.73	39.14	440.78	39.08	442.86	38.41	-	-	-	-	-	-	440.22	40.69	-	-	441.15	39.33	0.017	N83°W	
12/28/2016	445.97	34.80	446.89	34.15	445.54	34.33	445.74	34.12	447.87	33.40	446.82	34.02	445.91	35.21	446.57	34.22	445.52	35.39	445.12	35.52	446.20	34.52	0.019	N75°W	
5/22/2017	460.39	20.38	460.89	20.15	459.27	20.60	459.25	20.61	461.79	19.48	460.73	20.11	460.48	20.64	459.88	20.91	459.32	21.59	459.02	21.62	460.10	20.61	0.020	N87°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

\*\* = The well tops of W-A and W-1 were modified for the DPE system, therefore the depth-to-water data is irrelevant and was not used for groundwater contour or avg. groundwater elevation calculations

**TABLE 4**  
**Summary of Groundwater Elevation and Gradient - Deep Deepest Wells**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Date	Elevation of Groundwater - Wells Surveyed October 16, 2006 in accordance with SWRCB Geotracker Requirements																		
	DEEP WELLS										GROUNDWATER				DEEPEST WELLS				
	MW-204	DTW	MW-305	DTW	MW-306	DTW	MW-307	DTW	MW-308	DTW	Avg. Elv. (feet)	Avg. DTW (feet)	Gradient (ft/ft)	Bearing	MW-304	DTW	MW-404	DTW	
<i>top of casing</i>	480.84		481.12		480.79		480.91		480.64						480.84		480.84		
<i>top of screen</i>	415.34	65.5	416.12	65	415.79	65	415.91	65	415.64	65				406.34	74.5	400.84	80.0		
<i>bottom of screen</i>	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	
6/24/2013	443.75	37.09	444.05	37.07	443.69	37.10	443.16	37.75	442.87	37.77	443.50	37.36	0.0091	N78°W	443.66	37.18	443.50	37.34	
12/3/2013	444.78	36.06	445.01	36.11	444.67	36.12	444.14	36.77	443.97	36.67	444.51	36.35	0.0100	S75°W	444.66	36.18	444.54	36.30	
6/16/2014	436.62	44.22	436.89	44.23	436.57	44.22	436.11	44.80	436.10	44.54	436.46	44.40	0.012	N49°W	436.51	44.33	436.40	44.44	
12/2/2014	425.26	55.58	426.04	55.08	425.69	55.10	425.33	55.58	425.11	55.53	425.49	55.37	0.012	N87°W	425.72	55.12	425.62	55.22	
6/25/2015	432.49	48.35	432.78	48.34	432.45	48.34	431.95	48.96	431.71	48.93	432.28	48.58	0.030	West	432.38	48.46	432.24	48.60	
11/16/2015	424.78	56.06	425.03	56.09	424.75	56.04	424.27	56.64	424.11	56.53	424.59	56.27	0.020	West	424.73	56.11	-	-	
5/3/2016	443.35	37.49	443.63	37.49	443.31	37.48	442.74	38.17	442.51	38.13	443.11	37.75	0.012	N79°W	443.26	37.58	-	-	
8/26/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/28/2016	446.63	34.21	446.88	34.24	446.59	34.20	446.01	34.90	445.83	34.81	446.39	34.47	0.020	West	446.53	34.31	-	-	
5/22/2017	460.72	20.12	460.93	20.19	460.76	20.03	459.89	21.02	459.77	20.87	460.41	20.45	0.025	S72°W	460.60	20.24	460.34	20.50	

“-” = 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 5**  
**Summary of Vertical Groundwater Gradients**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, CA

Date	Well Pair	Mid Points		gwl/ts	bs/bs	GW Elevation (Head)	Vertical Head diff.	Vertical Dist diff.	Vertical Gradient
		(TS-BS & TS-BS)							
16-Oct-06	MW-104	430.84	431.34	430.34	444.85	2.240	16.00	0.140	
	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	0.038	
	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	-0.179	
	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	0.032	
	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	-0.031	
	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	0.010	
	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	0.054	
	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	-0.556	
	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	0.096	
	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	-0.231	
	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	0.126	
	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	0.556	
	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	0.060	
	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	-0.009	
	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	0.097	
	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	0.131	
	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	-				

**TABLE 5**  
**Summary of Vertical Groundwater Gradients**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, CA

Date	Well Pair	Mid Points (TS-BS & TS-BS)	gwl/ts	bs/bs	GW Elevation (Head)	Vertical Head diff.	Vertical Dist diff.	Vertical Gradient
30-May-12	MW-204 MW-304	414.84	415.34	414.34	441.06	-0.110	9.00	-0.012
		405.84	406.34	405.34	440.95			
30-May-12	MW-205 MW-305	433.62	434.12	433.12	442.43	-1.060	18.00	-0.059
		415.62	416.12	415.12	441.37			
30-May-12	MW-206 MW-306	431.29	431.79	430.79	441.39	-0.430	16.00	-0.027
		415.29	415.79	414.79	440.96			
30-May-12	MW-207 MW-307	431.41	431.91	430.91	440.37	0.190	16.00	0.012
		415.41	415.91	414.91	-			
19-Nov-12	MW-204 MW-304	414.84	415.34	414.34	438.53	-0.130	9.00	-0.014
		405.84	406.34	405.34	438.40			
19-Nov-12	MW-205 MW-305	433.62	434.12	433.12	439.08	-0.240	18.00	-0.013
		415.62	416.12	415.12	438.84			
19-Nov-12	MW-206 MW-306	431.29	431.79	430.79	438.11	0.350	16.00	0.022
		415.29	415.79	414.79	438.46			
19-Nov-12	MW-207 MW-307	431.41	431.91	430.91	437.70	0.340	16.00	0.021
		415.41	415.91	414.91	438.04			
24-Jun-13	MW-204 MW-304	414.84	415.34	414.34	443.75	-0.090	9.00	-0.010
		405.84	406.34	405.34	443.66			
24-Jun-13	MW-205 MW-305	433.62	434.12	433.12	444.33	-0.280	18.00	-0.016
		415.62	416.12	415.12	444.05			
24-Jun-13	MW-206 MW-306	431.29	431.79	430.79	443.74	-0.050	16.00	-0.003
		415.29	415.79	414.79	443.69			
24-Jun-13	MW-207 MW-307	431.41	431.91	430.91	442.74	0.420	16.00	0.026
		415.41	415.91	414.91	443.16			
3-Dec-13	MW-204 MW-304	414.84	415.34	414.34	444.78	-0.120	9.00	-0.013
		405.84	406.34	405.34	444.66			
3-Dec-13	MW-205 MW-305	433.62	434.12	433.12	445.13	-0.120	18.00	-0.007
		415.62	416.12	415.12	445.01			
3-Dec-13	MW-206 MW-306	431.29	431.79	430.79	444.74	-0.070	16.00	-0.004
		415.29	415.79	414.79	444.67			
3-Dec-13	MW-207 MW-307	431.41	431.91	430.91	444.77	-0.630	16.00	-0.039
		415.41	415.91	414.91	444.14			
16-Jun-14	MW-204 MW-304	414.84	415.34	414.34	436.62	-0.110	9.00	-0.012
		405.84	406.34	405.34	436.51			
16-Jun-14	MW-205 MW-305	433.62	434.12	433.12	437.70	-0.810	18.00	-0.045
		415.62	416.12	415.12	436.89			
16-Jun-14	MW-206 MW-306	431.29	431.79	430.79	436.64	-0.070	16.00	-0.004
		415.29	415.79	414.79	436.57			
16-Jun-14	MW-207 MW-307	431.41	431.91	430.91	435.92	0.190	16.00	0.012
		415.41	415.91	414.91	436.11			

**TABLE 5**  
**Summary of Vertical Groundwater Gradients**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, CA

Date	Well Pair	Mid Points (TS-BS & TS-BS)	gwl/ts	bs/bs	GW Elevation (Head)	Vertical Head diff.	Vertical Dist diff.	Vertical Gradient
25-Jun-15	MW-204 MW-304	414.84	415.34	414.34	432.49	-0.110	9.00	-0.012
		405.84	406.34	405.34	432.38			
25-Jun-15	MW-205 MW-305	433.62	434.12	433.12	434.21	-1.430	18.00	-0.079
		415.62	416.12	415.12	432.78			
25-Jun-15	MW-206 MW-306	431.29	431.79	430.79	433.18	-0.730	16.00	-0.046
		415.29	415.79	414.79	432.45			
25-Jun-15	MW-207 MW-307	431.41	431.91	430.91	432.23	-0.280	16.00	-0.018
		415.41	415.91	414.91	431.95			
16-Nov-15	MW-204 MW-304	414.84	415.34	414.34	424.78	-0.050	9.00	-0.006
		405.84	406.34	405.34	424.73			
3-May-16	MW-204 MW-304	414.84	415.34	414.34	443.35	-0.090	9.00	-0.010
		405.84	406.34	405.34	443.26			
3-May-16	MW-205 MW-305	433.62	434.12	433.12	443.39	0.240	18.00	0.013
		415.62	416.12	415.12	443.63			
3-May-16	MW-206 MW-306	431.29	431.79	430.79	443.32	-0.010	16.00	-0.001
		415.29	415.79	414.79	443.31			
3-May-16	MW-207 MW-307	431.41	431.91	430.91	442.26	0.480	16.00	0.030
		415.41	415.91	414.91	442.74			
26-Aug-16	MW-107 MW-207	441.41	441.91	440.91	442.53	-2.310	10.00	-0.231
		431.41	431.91	430.91	440.22			
28-Dec-16	MW-104 MW-204	430.84	431.34	430.34	446.82	-0.190	16.00	-0.012
		414.84	415.34	414.34	446.63			
28-Dec-16	MW-204 MW-304	414.84	415.34	414.34	446.63	-0.100	9.00	-0.011
		405.84	406.34	405.34	446.53			
28-Dec-16	MW-105 MW-205	444.62	445.12	444.12	447.72	-1.810	11.00	-0.165
		433.62	434.12	433.12	445.91			
28-Dec-16	MW-205 MW-305	433.62	434.12	433.12	445.91	0.970	18.00	0.054
		415.62	416.12	415.12	446.88			
28-Dec-16	MW-106 MW-206	444.29	444.79	443.79	445.70	0.870	13.00	0.067
		431.29	431.79	430.79	446.57			
28-Dec-16	MW-206 MW-306	431.29	431.79	430.79	446.57	0.020	16.00	0.001
		415.29	415.79	414.79	446.59			
28-Dec-16	MW-107 MW-207	441.41	441.91	440.91	446.16	-0.640	10.00	-0.064
		431.41	431.91	430.91	445.52			
28-Dec-16	MW-207 MW-307	431.41	431.91	430.91	445.52	0.490	16.00	0.031
		415.41	415.91	414.91	446.01			
28-Dec-16	MW-108 MW-208	441.14	441.64	440.64	446.73	-1.610	12.00	-0.134
		429.14	429.64	428.64	445.12			
28-Dec-16	MW-208 MW-308	429.14	429.64	428.64	445.12	0.710	14.00	0.051
		415.14	415.64	414.64	445.83			

**TABLE 5**  
**Summary of Vertical Groundwater Gradients**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, CA

Date	Well Pair	Mid Points (TS-BS & TS-BS)		gwl/ts	bs/bs	GW Elevation (Head)	Vertical Head diff.	Vertical Dist diff.	Vertical Gradient
22-May-17	MW-4 MW-104	451.34	451.84	450.84	460.55	0.180	20.50	0.009	
		430.84	431.34	430.34	460.73				
22-May-17	MW-104 MW-204	430.84	431.34	430.34	460.73	-0.010	16.00	-0.001	
		414.84	415.34	414.34	460.72				
22-May-17	MW-204 MW-304	414.84	415.34	414.34	460.72	-0.120	9.00	-0.013	
		405.84	406.34	405.34	460.60				
22-May-17	MW-5 MW-105	454.62	455.12	454.12	460.68	0.020	10.00	0.002	
		444.62	445.12	444.12	460.70				
22-May-17	MW-105 MW-205	444.62	445.12	444.12	460.70	-0.220	11.00	-0.020	
		433.62	434.12	433.12	460.48				
22-May-17	MW-205 MW-305	433.62	434.12	433.12	460.48	0.450	18.00	0.025	
		415.62	416.12	415.12	460.93				
22-May-17	MW-6 MW-106	451.29	451.79	450.79	459.76	-0.680	7.00	-0.097	
		444.29	444.79	443.79	459.08				
22-May-17	MW-106 MW-206	444.29	444.79	443.79	459.08	0.800	13.00	0.062	
		431.29	431.79	430.79	459.88				
22-May-17	MW-206 MW-306	431.29	431.79	430.79	459.88	0.880	16.00	0.055	
		415.29	415.79	414.79	460.76				
22-May-17	MW-7 MW-107	451.41	451.91	450.91	459.19	-0.230	10.00	-0.023	
		441.41	441.91	440.91	458.96				
22-May-17	MW-107 MW-207	441.41	441.91	440.91	458.96	0.360	10.00	0.036	
		431.41	431.91	430.91	459.32				
22-May-17	MW-207 MW-307	431.41	431.91	430.91	459.32	0.570	16.00	0.036	
		415.41	415.91	414.91	459.89				
22-May-17	MW-8 MW-108	451.14	451.64	450.64	459.02	0.050	10.00	0.005	
		441.14	441.64	440.64	459.07				
22-May-17	MW-108 MW-208	441.14	441.64	440.64	459.07	-0.050	12.00	-0.004	
		429.14	429.64	428.64	459.02				
22-May-17	MW-208 MW-308	429.14	429.64	428.64	459.02	0.750	14.00	0.054	
		415.14	415.64	414.64	459.77				

**TABLE 6**  
**Summary of Groundwater Analytical Data - First Half of 2017**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
W-1	5/24/2017	6,600 <sup>A01</sup>	680 <sup>A01</sup>	23 <sup>A01</sup>	160 <sup>A01</sup>	900 <sup>A01</sup>	15 <sup>A01</sup>
EW-2	5/24/2017	2,200 <sup>A01</sup>	370 <sup>A01</sup>	10 <sup>A01</sup>	63 <sup>A01</sup>	220 <sup>A01</sup>	<2.5 <sup>A01</sup>
W-A	5/23/2017	1,800	220 <sup>A01</sup>	5.8	53	130	2.0
W-1s	5/24/2017	18 <sup>J</sup>	<0.5	<0.5	<0.5	<1	<0.5
W-3s	5/23/2017	16 <sup>J</sup>	<0.5	<0.5	<0.5	<1.0	<0.5
W-Bs	5/23/2017	17 <sup>J</sup>	<0.5	<0.5	<0.5	<1.0	<0.5
W-Es	5/22/2017	<50	<0.5	<0.5	<0.5	<1.0	<0.5
MW-4	5/23/2017	90	<0.5	<0.5	0.38 <sup>J</sup>	<1.0	<0.5
MW-5	5/23/2017	21 <sup>J</sup>	4.4	<0.5	<0.5	<1.0	<0.5
MW-6	5/23/2017	19 <sup>J</sup>	<0.5	<0.5	<0.5	<1.0	<0.5
MW-7	5/24/2017	91	85	0.26 <sup>J</sup>	0.88	<1.0	<0.5
MW-8	5/23/2017	420	26	0.78	6.1	5.3	0.87
MW-9	5/22/2017	70	2.9	<0.5	<0.5	<1.0	<0.5
MW-10	5/22/2017	39 <sup>J</sup>	<0.5	<0.5	<0.5	<1.0	<0.5
MW-104	5/23/2017	5,600 <sup>A01</sup>	830 <sup>A01</sup>	25 <sup>A01</sup>	180 <sup>A01</sup>	1400 <sup>A01</sup>	21 <sup>A01</sup>
MW-105	5/23/2017	74	2.9	<0.5	0.48 <sup>J</sup>	0.58 <sup>J</sup>	<0.5
MW-106	5/23/2017	21 <sup>J</sup>	<0.5	<0.5	<0.5	<1.0	<0.5
MW-107	5/24/2017	3,800 <sup>A01</sup>	2,800 <sup>A01</sup>	17 <sup>A01</sup>	96 <sup>A01</sup>	100 <sup>A01</sup>	<12 <sup>A01</sup>
MW-108	5/23/2017	1,300 <sup>A01</sup>	260 <sup>A01</sup>	5.8 <sup>A01</sup>	30 <sup>A01</sup>	17 <sup>A01</sup>	39 <sup>A01</sup>
MW-204	5/23/2017	2,400 <sup>A01</sup>	84 <sup>A01</sup>	4.8 <sup>A01</sup>	18 <sup>A01</sup>	57 <sup>A01</sup>	<2.5 <sup>A01</sup>
MW-205	5/23/2017	1,500 <sup>A01</sup>	1,400 <sup>A01</sup>	3.8 <sup>A01</sup>	130 <sup>A01</sup>	94 <sup>A01</sup>	10 <sup>A01</sup>
MW-206	5/23/2017	<50	<0.5	<0.5	<0.5	<1.0	<0.5
MW-207	5/24/2017	2,900 <sup>A01</sup>	2,700 <sup>A01</sup>	16 <sup>A01</sup>	240 <sup>A01</sup>	62 <sup>A01</sup>	71 <sup>A01</sup>
MW-208	5/23/2017	2,300 <sup>A01</sup>	2,400 <sup>A01</sup>	10 <sup>A01</sup>	110 <sup>A01</sup>	32 <sup>A01</sup>	36 <sup>A01</sup>
MW-304	5/23/2017	180	40	0.99	12	18	<0.5
MW-305	5/23/2017	100	38	0.34 <sup>J</sup>	10	5.6	<0.5
MW-306	5/23/2017	11 <sup>J</sup>	<0.5	<0.5	<0.5	<1.0	<0.5
MW-307	5/24/2017	120	46	0.51	10	8.1	<0.5
MW-308	5/23/2017	500	89	1.3	16	9.8	<0.5
MW-404	5/23/2017	160	75	1.1	17	19	<0.5

NS - not sampled

<sup>A01</sup> - Detection and quantitation limits are raised due to sample dilution

<sup>J</sup> - Estimated value (CLP Flag)

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
<b>W-1</b>	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	-	
	6/26/2013	43,000	-	6,200	1,700	1,900	5,500	190	
	12/5/2013	15,000	-	2,100	580	440	1,900	13	
	6/17/2014	25,000	-	2,200	210	1,500	2,900	23	
	12/3/2014				DRY				
	6/26/2015	19,000	-	470	91	350	1,100	-	
11/16/2015				DRY					
3/10/2016	7,100 <sup>A01</sup>	-	130 <sup>A01</sup>	21 <sup>A01</sup>	93 <sup>A01</sup>	490 <sup>A01</sup>	5.7 <sup>A01</sup>		
5/4/2016	14,000 <sup>A01</sup>	-	580 <sup>A01</sup>	45 <sup>A01</sup>	220 <sup>A01</sup>	1,000 <sup>A01</sup>	18 <sup>A01</sup>		
8/26/2016	-	-	-	-	-	-	-		
12/28/2016	2,800 <sup>A01</sup>	-	210 <sup>A01</sup>	18 <sup>A01</sup>	110 <sup>A01</sup>	430 <sup>A01</sup>	14 <sup>A01</sup>		
5/24/2017	6,600 <sup>A01</sup>	-	680 <sup>A01</sup>	23 <sup>A01</sup>	160 <sup>A01</sup>	900 <sup>A01</sup>	15 <sup>A01</sup>		
<b>W-2</b>	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				
<b>W-3</b>	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				no access agreement				
<b>EW-2</b>	3/10/2015	60,000	-	7,000	4,000	1,600	10,000	<0.5	
	6/26/2015	14,000	-	740	31	1,300	1,100	8.1	
	9/15/2015				not sampled				
	11/17/2015	3,700 <sup>A01</sup>	-	270 <sup>A01</sup>	83 <sup>A01</sup>	150 <sup>A01</sup>	510 <sup>A01</sup>	91 <sup>A01</sup>	
	3/10/2016	-	-	-	-	-	-	-	
	5/5/2016	9,000 <sup>A01</sup>	-	150 <sup>A01</sup>	4.3 <sup>J,A01</sup>	88 <sup>A01</sup>	320 <sup>A01</sup>	<5.0 <sup>A01</sup>	
	8/26/2016	3,900	-	5,000 <sup>A01</sup>	64	120	100	28	
12/28/2016	5,000 <sup>A01</sup>	-	180 <sup>A01</sup>	2.3 <sup>J,A01</sup>	68 <sup>A01</sup>	150 <sup>A01</sup>	0.89 <sup>J,A01</sup>		
5/24/2017	2,200 <sup>A01</sup>	-	370 <sup>A01</sup>	10 <sup>A01</sup>	63 <sup>A01</sup>	220 <sup>A01</sup>	<2.5 <sup>A01</sup>		



**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>W-A</b>	1990	<b>10,000</b>	<b>2,400</b>	<b>6,800</b>	<b>5,500</b>	<b>620</b>	<b>3,400</b>	-
(dup)	1990	-	-	<b>6,900</b>	<b>5,600</b>	<b>620</b>	<b>6,800</b>	-
	10/20/2006	<b>450</b>	-	<b>40</b>	<b>19</b>	<b>21</b>	<b>33</b>	-
	10/29/2007	<b>40,000</b>	-	<b>4,000</b>	<b>330</b>	<b>1,600</b>	<b>3,000</b>	<100
	4/8/2011	<b>13,200</b>	-	<b>2,370</b>	<b>128</b>	<b>439</b>	<b>523</b>	<20
	10/26/2011	<b>18,000</b>	-	<b>3,500</b>	<b>410</b>	<b>970</b>	<b>870</b>	-
	6/7/2012	<b>37,000</b>	-	<b>3,500</b>	<b>700</b>	<b>660</b>	<b>1700</b>	-
	11/21/2012	<b>7,500</b>	-	<b>1,900</b>	<b>110</b>	<b>300</b>	<b>440</b>	-
	6/25/2013	<b>10,000</b>	-	<b>2,800</b>	<b>370</b>	<b>520</b>	<b>1,100</b>	<b>56</b>
	12/5/2013	<b>2,800</b>	-	<b>930</b>	<b>54</b>	<b>59</b>	<b>220</b>	<b>7.2</b>
	6/17/2014	<b>6,100</b>	-	<b>2,200</b>	<b>84</b>	<b>170</b>	<b>250</b>	<b>21</b>
	12/3/2014	DRY						
	6/26/2015	<b>12,000</b>	-	<b>2,100</b>	<b>64</b>	<b>160</b>	<b>1,000</b>	-
	11/16/2015	DRY						
	3/10/2016	-	-	-	-	-	-	-
	5/5/2016	<b>2,000</b> <sup>A01</sup>	-	<b>230</b>	<b>2.9</b>	<b>34</b>	<b>73</b>	<b>5.3</b>
	8/26/2016	-	-	-	-	-	-	-
	12/29/2016	<b>610</b>	-	<b>89</b> <sup>A01</sup>	<b>1.1</b>	<b>5.2</b>	<b>4.8</b>	<b>3.2</b>
	5/23/2017	<b>1,800</b>	-	<b>220</b> <sup>A01</sup>	<b>5.8</b>	<b>53</b>	<b>130</b>	<b>2.0</b>
<b>W-B</b>	1990	<b>13,000</b>	<b>1,700</b>	<b>22,000</b>	<b>7,900</b>	<b>2,000</b>	<b>4,000</b>	-
(dup)	1990	<b>21,000</b>	<b>1,600</b>	<b>21,000</b>	<b>7,300</b>	<b>1,800</b>	<b>3,700</b>	-
	Abandoned April 14, 2008							
<b>W-C</b>	1990	<10	<100	<1.0	<1.0	<1.0	<1.0	-
	Abandoned April 14, 2008							
<b>W-D</b>	1990	<b>100</b>	<100	<b>1.0</b>	<b>2.0</b>	<b>2.0</b>	<b>1.0</b>	-
	Abandoned April 14, 2008							
<b>W-E</b>	1990	<10	<100	<1.0	<1.0	<1.0	<1.0	-
	9/13/1995	<b>95</b>	-	<b>4.0</b>	<0.5	<0.5	<0.5	<b>18</b>
	Abandoned April 14, 2008							

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
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
	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	-
	6/26/2013	1,700	-	530	11	8.1	18	<10
	12/4/2013	1,100	-	140	16	7.8	120	7.4
	6/17/2014	320	-	9.3	<1.0	<1.0	<2.0	<1.0
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	150	-	0.55	<0.5	<0.5	<1.0	<0.5
	5/5/2016	28 <sup>J</sup>	-	3.2	<0.5	<0.5	<1	<0.5
	8/26/2016	-	-	-	-	-	-	-
	12/28/2016	120	-	7.5	0.21 <sup>J</sup>	0.50	0.76 <sup>J</sup>	0.15 <sup>J</sup>
	5/24/2017	18 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1	<0.5

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
W-3s	3/22/1996	100	-	13	6.9	5.3	14	<5.0	
	11/22/1996	3,200	-	270	29	63	100	<100	
	7/15/1997	2,100	340	230	7.0	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	<3.0	
	10/23/1998	3,800	1,000	500	28	90	37	35	
	4/9/1999	980	430	240	4.0	37	3.0	<12	
	10/5/1999	1,500	1,000	290	9.5	53	9.8	<6.0	
	4/5/2000	810	320	150	3.0	9.0	5.7	<5.0	
	10/26/2000	310	120	83	3.5	6.4	1.2	<5.0	
	4/18/2001	2,300	1,600	320	8.0	16	7.0	<20	
	11/13/2001	-	-	-	-	-	-	-	-
	4/30/2002	1,400	490	320	5.5	24	5.0	<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	<5.0	
	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	<1.0	
	10/17/2006	1,300	<50	95	<2.0	2.0	<2.0	-	
	4/19/2007	320	-	83	<2.5	<2.5	<2.5	<5.0	
	12/19/2007	69	-	1.3	<0.5	<0.5	<1.0	<2.0	
	4/8/2011	937	-	422	<5.0	6.5	<10	<5.0	
	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	-	
	6/25/2013	85	-	6.0	0.82	0.36	0.75	<1.0	
	12/3/2013	16	-	6.2	<0.5	<0.5	<1.0	<0.5	
	6/17/2014	-	-	-	-	-	-	-	
12/3/2014	DRY								
6/25/2015	DRY								
11/16/2015	DRY								
3/10/2016	-	-	-	-	-	-	-		
5/5/2016	<50	-	<0.5	<0.5	<0.5	<1.0	<0.5		
8/26/2016	-	-	-	-	-	-	-		
12/29/2016	-	-	-	-	-	-	-		
5/23/2017	16 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5		

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**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	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	
	4/5/2000	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	
	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	3.0	-	
	11/19/2012	1,100	-	31	3.9	23	17	-	
	6/25/2013	580	-	34	2.4	3.9	1.8	6.1	
	12/12/2013	1,600	-	62	3.8	31	5.1	<0.5	
	6/17/2014	190	-	26	1.3	0.67	2.5	<0.5	
	12/3/2014	DRY							
	6/25/2015	DRY							
	11/16/2015	DRY							
3/10/2016	160	-	0.38 <sup>J</sup>	<0.5	<0.5	<1.0	<0.5		
5/4/2016	44 <sup>J</sup>	-	0.87	<0.5	<0.5	<1.0	<0.5		
8/26/2016	-	-	-	-	-	-	-		
12/28/2016	87	-	5.8	0.24 <sup>J</sup>	2.4	4.0	<0.5		
5/23/2017	17 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5		

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>W-Es</b>	3/22/1996	<50	-	<0.5	<0.5	<0.5	<0.5	<5.0
	11/22/1996	<b>280</b>	-	<b>24</b>	<b>0.6</b>	<b>1.8</b>	<b>2.2</b>	<5.0
	7/15/1997	-	-	-	-	-	-	-
	10/29/1997	-	-	-	-	-	-	-
	4/27/1998	-	-	-	-	-	-	-
	10/23/1998	<b>82</b>	<b>69</b>	<0.5	<b>0.8</b>	<0.5	<b>0.8</b>	<b>4.0</b>
	4/9/1999	-	-	-	-	-	-	-
	10/5/1999	<b>68</b>	<b>88</b>	<0.5	<0.5	<0.5	<1.0	<b>4.0</b>
	4/5/2000	-	-	-	-	-	-	-
	10/26/2000	<b>110</b>	<50	<b>0.7</b>	<0.5	<0.5	<1.0	<5.0
	4/18/2001	-	-	-	-	-	-	-
	11/13/2001	-	-	-	-	-	-	-
	4/30/2002	-	-	-	-	-	-	-
	9/30/2002	-	-	-	-	-	-	-
	3/19/2003	<b>86</b>	<b>61</b>	<0.5	<0.5	<0.5	<0.5	<5.0
	4/17/2007	-	-	-	-	-	-	-
	4/29/2004	<b>55</b>	<b>87</b>	<b>0.62</b>	<0.5	<0.5	<0.5	<5.0
	7/7/2006	<25	<50	<0.5	<0.5	<0.5	<0.5	<b>2.4</b>
	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	<1.0
	12/19/2007	<50	-	<0.5	<0.5	<0.5	<1.0	<2.0
	4/7/2008	<50	-	<0.5	<0.5	<0.5	<1.0	<5.0
	10/8/2008	<50	-	<0.5	<0.5	<0.5	<1.0	<5.0
	4/8/2011	<50	-	<0.5	<0.5	<0.5	<1.0	<b>0.5</b>
	10/26/2011	-	-	-	-	-	-	-
	5/29/2012	<50	-	<0.5	<0.5	<0.5	<1.0	<b>0.84</b>
	11/19/2012	-	-	-	-	-	-	-
	6/25/2013	<50	-	<0.3	<0.3	<0.3	<0.6	<b>1.0</b>
	12/3/2013	-	-	-	-	-	-	-
	6/17/2014	-	-	-	-	-	-	-
	12/3/2014	DRY						
	6/25/2015	-	-	-	-	-	-	-
	11/16/2015	DRY						
	3/10/2016	-	-	-	-	-	-	-
	5/4/2016	<50	-	<0.5	<0.5	<0.5	<1.0	<0.5
	8/26/2016	-	-	-	-	-	-	-
	12/28/2016	<50	-	<0.5	<0.5	<0.5	<1.0	<0.5
	5/22/2017	<50	-	<0.5	<0.5	<0.5	<1.0	<0.5

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Sullins (Arrow Rentals)  
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 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
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						
	6/25/2013	DRY						
	12/3/2013	DRY						
	6/17/2014	DRY						
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	DRY						
	5/3/2016	DRY						
	8/26/2016	DRY						
12/28/2016	DRY							
5/23/2017	90	-	<0.5	<0.5	0.38 <sup>J</sup>	<1.0	<0.5	
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						
	6/25/2013	DRY						
	12/3/2013	DRY						
	6/17/2014	DRY						
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	DRY						
	5/3/2016	DRY						
	8/26/2016	DRY						
	12/28/2016	DRY						
5/23/2017	21 <sup>J</sup>	-	4.4	<0.5	<0.5	<1.0	<0.5	

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>MW-6</b>	10/16/2006	DRY						
	4/17/2007	DRY						
	12/19/2007	DRY						
	4/8/2011	<b>220</b>	-	<b>3.2</b>	<0.5	<0.5	<1.0	<0.5
	10/26/2011	DRY						
	5/30/2012	DRY						
	11/19/2012	DRY						
	6/25/2013	DRY						
	12/3/2013	DRY						
	6/17/2014	DRY						
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	DRY						
	5/3/2016	DRY						
	8/26/2016	DRY						
	12/28/2016	DRY						
5/23/2017	<b>19<sup>J</sup></b>	-	<0.5	<0.5	<0.5	<1.0	<0.5	
<b>MW-7</b>	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						
	6/25/2013	DRY						
	12/3/2013	DRY						
	6/17/2014	DRY						
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	DRY						
	5/3/2016	DRY						
	8/26/2016	DRY						
	12/28/2016	DRY						
5/24/2017	<b>91</b>	-	<b>85</b>	<b>0.26<sup>J</sup></b>	<b>0.88</b>	<1.0	<0.5	

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>MW-8</b>	10/16/2006	DRY						
	4/17/2007	DRY						
	12/19/2007	DRY						
	4/8/2011	765	-	119	<2.0	3.0	6.0	<2.0
	10/26/2011	DRY						
	5/30/2012	DRY						
	11/19/2012	DRY						
	6/25/2013	DRY						
	12/3/2013	DRY						
	6/17/2014	DRY						
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	DRY						
	5/3/2016	DRY						
	8/26/2016	DRY						
	12/28/2016	DRY						
5/23/2017	420	-	26	0.78	6.1	5.3	0.87	
<b>MW-9</b>	3/9/2015	31 <sup>J</sup>	-	6.5	<0.5	0.62	<1.0	<0.5
	6/26/2015	28 <sup>J</sup>	-	1.6	<0.3	<0.3	<0.6	<1.0
	9/15/2015	96	-	2.2	<0.5	<0.5	<1.0	<0.5
	11/17/2015	260	-	2.6	2.7	<0.3	9.2	<1.0
	3/10/2016	-	-	-	-	-	-	-
	5/4/2016	150	-	17	0.12 <sup>J</sup>	3.1	0.36 <sup>J</sup>	<0.5
	8/26/2016	-	-	-	-	-	-	-
	12/28/2016	63	-	21	0.13 <sup>J</sup>	4.4	0.40 <sup>J</sup>	<0.5
	5/22/2017	70	-	2.9	<0.5	<0.5	<1.0	<0.5
<b>MW-10</b>	3/9/2015	25 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5
	6/26/2015	34 <sup>J</sup>	-	<0.3	<0.3	<0.3	<0.6	<1.0
	9/15/2015	12 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5
	11/17/2015	71	-	<0.3	0.99	<0.3	<0.6	<1.0
	3/10/2016	-	-	-	-	-	-	-
	5/4/2016	23 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5
	8/26/2016	-	-	-	-	-	-	-
	12/28/2016	27 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5
	5/22/2017	39 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5



**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-104	10/19/2006	960	-	250	170	20	83	-
	4/18/2007	DRY						
	10/29/2007	1,300	-	210	82	110	380	<5.0
	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
	6/25/2013	15,000	-	6,600	160	490	490	120
	12/5/2013	6,000	-	840	100	150	350	20
	6/17/2014	7,200	-	2,400	76	320	510	30
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	-	-	-	-	-	-	-
	5/5/2016	3,200 <sup>A01</sup>	-	390 <sup>A01</sup>	14 <sup>A01</sup>	130 <sup>A01</sup>	320 <sup>A01</sup>	14 <sup>A01</sup>
	8/26/2016	-	-	-	-	-	-	-
	12/29/2016	4,300 <sup>A01</sup>	-	390 <sup>A01</sup>	14 <sup>A01</sup>	170 <sup>A01</sup>	420 <sup>A01</sup>	20 <sup>A01</sup>
	5/23/2017	5,600 <sup>A01</sup>	-	830 <sup>A01</sup>	25 <sup>A01</sup>	180 <sup>A01</sup>	1400 <sup>A01</sup>	21 <sup>A01</sup>
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	590						
	6/25/2013	DRY						
	12/3/2013	DRY						
	6/17/2014	DRY						
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	DRY						
	5/3/2016	DRY						
	8/26/2016	-	-	-	-	-	-	-
	12/29/2016	-	-	-	-	-	-	-
	5/23/2017	74	-	2.9	<0.5	0.48 <sup>J</sup>	0.58 <sup>J</sup>	<0.5

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	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	<1.0
	10/29/2007	86	-	<0.5	<0.5	<0.5	<0.5	<1.0
	12/20/2007	54	-	1.0	<0.5	<0.5	<1.0	<2.0
	4/8/2008				DRY			
	10/8/2008	90	-	0.6	<0.5	<0.5	<1.0	<5.0
	4/14/2009	-	-	-	-	-	-	-
	4/8/2011	247	-	9.3	<0.5	<0.5	<1.0	<0.5
	10/26/2011	190	-	1.7	<0.3	<0.3	<0.6	-
	5/30/2012				DRY			
	11/19/2012				DRY			
	6/25/2013				DRY			
	12/3/2013				DRY			
	6/17/2014				DRY			
	12/3/2014				DRY			
	6/25/2015				DRY			
	11/16/2015				DRY			
3/10/2016				DRY				
5/3/2016				DRY				
8/26/2016	-	-	-	-	-	-	-	-
12/29/2016	<50	-	<0.5	<0.5	<0.5	<1.0	<0.5	
5/23/2017	21 <sup>J</sup>	-	<0.5	<0.5	<0.5	<1.0	<0.5	
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			
	6/25/2013				DRY			
	12/3/2013				DRY			
	6/17/2014				DRY			
	12/3/2014				DRY			
	6/25/2015				DRY			
	11/16/2015				DRY			
	3/10/2016				DRY			
	5/4/2016	5,600 <sup>A01</sup>	-	9,400 <sup>A01</sup>	12 <sup>A01</sup>	82 <sup>A01</sup>	24 <sup>A01</sup>	24 <sup>A01</sup>
	8/26/2016	2,600 <sup>A01</sup>	-	4,000 <sup>A01</sup>	31 <sup>A01</sup>	120 <sup>A01</sup>	50 <sup>A01</sup>	21 <sup>A01</sup>
12/29/2016	5,600 <sup>A01</sup>	-	4,600 <sup>A01</sup>	31 <sup>A01</sup>	72 <sup>A01</sup>	31 <sup>A01</sup>	11 <sup>A01</sup>	
5/24/2017	3,800 <sup>A01</sup>	-	2,800 <sup>A01</sup>	17 <sup>A01</sup>	96 <sup>A01</sup>	100 <sup>A01</sup>	<12 <sup>A01</sup>	

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
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						
	6/25/2013	DRY						
	12/3/2013	DRY						
	6/17/2014	DRY						
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	DRY						
5/4/2016	2,700 <sup>A01</sup>	-	590 <sup>A01</sup>	16 <sup>A01</sup>	45 <sup>A01</sup>	34 <sup>A01</sup>	37 <sup>A01</sup>	
8/26/2016	-	-	-	-	-	-	-	
12/29/2016	2,300	-	200	12	49	28	24	
5/23/2017	1,300 <sup>A01</sup>	-	260 <sup>A01</sup>	5.8 <sup>A01</sup>	30 <sup>A01</sup>	17 <sup>A01</sup>	39 <sup>A01</sup>	
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	<1.0
	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
	6/25/2013	3,500	-	660	27	230	310	<20
	12/5/2013	3,100	-	390	32	120	190	3.9
	6/17/2014	2,300	-	790	37	100	210	0.51
	12/3/2014	1,800	-	1,600	39	130	270	<0.5
	6/26/2015	1,800	-	260	11	41	82	6.4
	11/17/2015	1,800	-	380	9.6	54	110	6.9
	3/10/2016	-	-	-	-	-	-	-
5/5/2016	2,200 <sup>A01</sup>	-	430 <sup>A01</sup>	13 <sup>A01</sup>	41 <sup>A01</sup>	58 <sup>A01</sup>	<5.0 <sup>A01</sup>	
8/26/2016	-	-	-	-	-	-	-	
12/29/2016	1,500 <sup>A01</sup>	-	170 <sup>A01</sup>	5.9 <sup>A01</sup>	25 <sup>A01</sup>	35 <sup>A01</sup>	<2.5 <sup>A01</sup>	
5/23/2017	2,400 <sup>A01</sup>	-	84 <sup>A01</sup>	4.8 <sup>A01</sup>	18 <sup>A01</sup>	57 <sup>A01</sup>	<2.5 <sup>A01</sup>	

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**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
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
	6/25/2013	37,000	-	13,000	120	900	970	57
	12/5/2013	12,000	-	3,400	30	270	370	28
	6/17/2014	9,900	-	4,300	63	200	120	41
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	1,000 <sup>A01</sup>	-	630 <sup>A01</sup>	2.4 <sup>A01</sup>	35 <sup>A01</sup>	51 <sup>A01</sup>	3.1 <sup>A01</sup>
	5/3/2016	2,000 <sup>A01</sup>	-	1,700 <sup>A01</sup>	1.9 <sup>J,A01</sup>	84 <sup>A01</sup>	29 <sup>A01</sup>	5.7 <sup>A01</sup>
8/26/2016	-	-	-	-	-	-	-	
12/29/2016	1,200	-	670 <sup>A01</sup>	2.7	150 <sup>A01</sup>	66	3.1	
5/23/2017	1,500 <sup>A01</sup>	-	1,400 <sup>A01</sup>	3.8 <sup>A01</sup>	130 <sup>A01</sup>	94 <sup>A01</sup>	10 <sup>A01</sup>	
MW-206	10/16/2006	<50	-	0.72	<0.5	<0.5	<0.5	-
	4/18/2007	<50	-	0.96	<0.5	<0.5	<0.5	<1.0
	12/19/2007	84	-	0.71	<0.5	<0.5	<1.0	<2.0
	4/8/2008	60	-	1.8	<0.5	<0.5	<1.0	<5.0
	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	-
	6/24/2013	78	-	2.3	0.87	0.44	0.62	1.8
	12/4/2013	68	-	3.0	<0.5	<0.5	<1.0	1.2
	6/17/2014	73	-	0.87	<0.5	<0.5	<1.0	1.3
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	-	-	-	-	-	-	-
	5/3/2016	18 <sup>J</sup>	-	0.18 <sup>J</sup>	<0.5	<0.5	<1.0	<0.5
	8/26/2016	-	-	-	-	-	-	-
12/29/2016	<50	-	0.29 <sup>J</sup>	<0.5	<0.5	<1.0	0.12 <sup>J</sup>	
5/23/2017	<50	-	<0.5	<0.5	<0.5	<1.0	<0.5	

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Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
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
	6/24/2013	25,000	-	12,000	77	300	180	120
	12/4/2013	13,000	-	7,200	68	330	210	93
	6/17/2014	6,600	-	5,900	53	240	110	84
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	2,300 <sup>A01</sup>	-	1,900 <sup>A01</sup>	9.8 <sup>A01</sup>	93 <sup>A01</sup>	110 <sup>A01</sup>	38 <sup>A01</sup>
5/4/2016	4,300 <sup>A01</sup>	-	3,500 <sup>A01</sup>	13 <sup>A01</sup>	160 <sup>A01</sup>	64 <sup>A01</sup>	49 <sup>A01</sup>	
8/26/2016	2,100 <sup>A01</sup>	-	2,200 <sup>A01</sup>	13 <sup>A01</sup>	130 <sup>A01</sup>	73 <sup>A01</sup>	52 <sup>A01</sup>	
12/29/2016	3,000 <sup>A01</sup>	-	2,400 <sup>A01</sup>	27 <sup>A01</sup>	330 <sup>A01</sup>	200 <sup>A01</sup>	48 <sup>A01</sup>	
5/24/2017	2,900 <sup>A01</sup>	-	2,700 <sup>A01</sup>	16 <sup>A01</sup>	240 <sup>A01</sup>	62 <sup>A01</sup>	71 <sup>A01</sup>	
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
	6/24/2013	5,000	-	1,100	18	34	50	45
	12/4/2013	5,300	-	540	15	150	84	17
	6/17/2014	3,300	-	1,100	34	77	110	31
	12/3/2014	DRY						
	6/25/2015	DRY						
	11/16/2015	DRY						
	3/10/2016	-	-	-	-	-	-	-
5/4/2016	4,700 <sup>A01</sup>	-	230 <sup>A01</sup>	16 <sup>A01</sup>	260 <sup>A01</sup>	64 <sup>A01</sup>	30 <sup>A01</sup>	
8/26/2016	-	-	-	-	-	-	-	
12/29/2016	2,100 <sup>A01</sup>	-	320 <sup>A01</sup>	9.8 <sup>A01</sup>	160 <sup>A01</sup>	52 <sup>A01</sup>	27 <sup>A01</sup>	
5/23/2017	2,300 <sup>A01</sup>	-	2,400 <sup>A01</sup>	10 <sup>A01</sup>	110 <sup>A01</sup>	32 <sup>A01</sup>	36 <sup>A01</sup>	

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**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
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	<5.0
	4/8/2011	2,880	-	657	32.3	93.5	262	<5.0
	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	-
	6/25/2013	6,100	-	2,000	87	220	480	<20
	12/5/2013	1,600	-	270	31	94	230	<0.5
	6/17/2014	3,000	-	1,300	96	62	390	9
	12/3/2014	2,000	-	1,500	53	120	250	<0.5
	6/26/2015	810	-	69	4.2	33	60	-
	11/17/2015	1,200	-	110 <sup>A01</sup>	5.6	51	86	-
	3/10/2016	-	-	-	-	-	-	-
	5/5/2016	570	-	70	2.5	31	53	<0.5
	8/26/2016	-	-	-	-	-	-	-
12/29/2016	370	-	20 <sup>A01</sup>	2.1	19	26	<0.5	
5/23/2017	180	-	40	0.99	12	18	<0.5	
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	<5.0
	4/8/2011	862	-	193	10.4	27.6	69.1	<5.0
	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	-
	6/25/2013	1,800	-	560	12	41	75	<20
	12/4/2013	2,700	-	1,200	21	88	240	0.36
	6/17/2014	2,300	-	940	36	130	150	3.8
	12/3/2014	640	-	140	4.2	49	67	<0.5
	6/26/2015	420	-	170	1.6	12	21	-
	11/16/2015	780	-	130 <sup>A01</sup>	1.7	27	26	-
	3/10/2016	-	-	-	-	-	-	-
	5/3/2016	280	-	58	0.91	18	15	<0.5
	8/26/2016	-	-	-	-	-	-	-
12/29/2016	290	-	57	0.94	25	21	<0.5	
5/23/2017	100	-	38	0.34 <sup>J</sup>	10	5.6	<0.5	

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>MW-306</b>	10/16/2006	<50	-	<0.5	<0.5	<0.5	<0.5	-
	4/18/2007	<50	-	<b>3.1</b>	<0.5	<0.5	<0.5	<1.0
	12/20/2007	<50	-	<b>0.54</b>	<0.5	<0.5	<1.0	<2.0
	4/7/2008	<50	-	<0.5	<0.5	<0.5	<1.0	<5.0
	4/8/2011	<50	-	<b>10.4</b>	<0.5	<0.5	<1.0	<0.5
	10/26/2011	<b>75</b>	-	<b>0.5</b>	<0.3	<0.3	<0.6	-
	5/30/2012	-	-	-	-	-	-	-
	11/21/2012	<b>44</b>	-	<b>1.2</b>	<0.3	<0.3	<0.6	-
	6/24/2013	<50	-	<b>0.8</b>	<0.3	<0.3	<b>0.24</b>	<1.0
	12/4/2013	<b>47</b>	-	<0.5	<0.5	<0.5	<1.0	<0.5
	6/17/2014	-	-	-	-	-	-	-
	12/3/2014	<b>21</b>	-	<b>2.3</b>	<b>0.34</b>	<0.5	<b>0.52</b>	<0.5
	6/25/2015	<50	-	<0.3	<0.3	<0.3	<0.6	-
	11/16/2015	<50	-	<0.3	<0.3	<0.3	<0.6	-
	3/10/2016	-	-	-	-	-	-	-
	5/3/2016	<b>12<sup>J</sup></b>	-	<0.5	<0.5	<0.5	<1.0	<0.5
	8/26/2016	-	-	-	-	-	-	-
	12/29/2016	<50	-	<0.5	<0.5	<0.5	<1.0	<0.5
	5/23/2017	<b>11<sup>J</sup></b>	-	<0.5	<0.5	<0.5	<1.0	<0.5
	<b>MW-307</b>	10/19/2006	<50	-	<b>2.3</b>	<b>1.5</b>	<0.5	<b>4.7</b>
4/18/2007		<4000	-	<b>1,300</b>	<b>250</b>	<b>78</b>	<b>310</b>	<80
12/19/2007		<b>1,500</b>	-	<b>200</b>	<b>50</b>	<b>59</b>	<b>140</b>	<40
4/7/2008		<b>2,500</b>	-	<b>720</b>	<b>110</b>	<b>69</b>	<b>160</b>	<25
4/8/2011		<b>70</b>	-	<b>24.3</b>	<b>3.8</b>	<b>0.6</b>	<b>3.3</b>	<0.5
10/26/2011		-	-	-	-	-	-	-
5/29/2012		<b>2,000</b>	-	<b>540</b>	<b>4.2</b>	<b>57</b>	<b>110</b>	<b>4.5</b>
11/19/2012		-	-	-	-	-	-	-
6/24/2013		<b>1,300</b>	-	<b>480</b>	<b>7.2</b>	<b>43</b>	<b>54</b>	<20
12/3/2013		-	-	-	-	-	-	-
6/17/2014		<b>1,100</b>	-	<b>520</b>	<b>8.3</b>	<b>43</b>	<b>28</b>	<b>1.6</b>
12/3/2014		<b>460</b>	-	<b>230</b>	<b>8.4</b>	<b>49</b>	<b>42</b>	<0.5
6/26/2015		<b>290</b>	-	<b>76</b>	<b>1.2</b>	<b>18</b>	<b>16</b>	-
11/16/2015		<b>730</b>	-	<b>150<sup>A01</sup></b>	<b>2.5</b>	<b>26</b>	<b>26</b>	-
3/10/2016		-	-	-	-	-	-	-
5/4/2016		<b>320</b>	-	<b>64</b>	<b>0.80</b>	<b>17</b>	<b>16</b>	<0.5
8/26/2016		-	-	-	-	-	-	-
12/29/2016		<b>420</b>	-	<b>120<sup>A01</sup></b>	<b>1.6</b>	<b>27</b>	<b>22</b>	<0.5
5/24/2017		<b>120</b>	-	<b>46</b>	<b>0.51</b>	<b>10</b>	<b>8.1</b>	<0.5

**TABLE 7**  
**Summary of Historical Groundwater Analytical Data**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Wells	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>MW-308</b>	10/16/2006	<50	-	<0.5	<0.5	<0.5	<0.5	-
	4/19/2007	<10,000	-	<b>1,600</b>	<100	<100	<100	<200
	12/19/2007	<b>190</b>	-	<b>25</b>	<b>1.5</b>	<b>7.2</b>	<b>8.4</b>	<4.0
	4/7/2008	<b>770</b>	-	<b>150</b>	<b>10</b>	<b>48</b>	<b>45</b>	<5.0
	4/8/2011	<b>3,240</b>	-	<b>1,230</b>	<b>18.6</b>	<b>187</b>	<b>125</b>	<10
	10/26/2011	<b>2,900</b>	-	<b>610</b>	<b>9.2</b>	<b>73</b>	<b>53</b>	-
	5/29/2012	<b>1,200</b>	-	<b>89</b>	<b>5.1</b>	<b>18</b>	<b>25</b>	-
	11/21/2012	<b>4,800</b>	-	<b>930</b>	<b>46</b>	<b>160</b>	<b>210</b>	-
	6/24/2013	<b>2,600</b>	-	<b>610</b>	<b>22</b>	<b>110</b>	<b>87</b>	<20
	12/12/2013	<b>3,200</b>	-	<b>520</b>	<b>14</b>	<b>140</b>	<b>75</b>	<b>0.6</b>
	6/17/2014	<b>3,000</b>	-	<b>1,300</b>	<b>20</b>	<b>110</b>	<b>58</b>	<b>9.1</b>
	12/3/2014	<b>1,000</b>	-	<b>92</b>	<b>3.0</b>	<b>39</b>	<b>20</b>	<b>0.21</b>
	6/25/2015	<b>1,400</b>	-	<b>2.5</b>	<b>1.2</b>	<b>3.1</b>	<b>1.2</b>	-
	11/16/2015	<b>1,200</b>	-	<b>70</b>	<b>3.2</b>	<b>24</b>	<b>23</b>	-
	3/10/2016	-	-	-	-	-	-	-
	5/4/2016	<b>420</b>	-	<b>34</b>	<b>1.8</b>	<b>12</b>	<b>8.6</b>	<0.5
	8/26/2016	-	-	-	-	-	-	-
12/29/2016	<b>860</b>	-	<b>85</b>	<b>3.5</b>	<b>18</b>	<b>14</b>	<0.5	
5/23/2017	<b>500</b>	-	<b>89</b>	<b>1.3</b>	<b>16</b>	<b>9.8</b>	<0.5	
<b>MW-404</b>	10/19/2006	<b>1,700</b>	-	<b>120</b>	<b>73</b>	<b>27</b>	<b>280</b>	-
	4/18/2007	<10,000	-	<b>1,400</b>	<b>440</b>	<b>130</b>	<b>550</b>	<200
	12/19/2007	<b>2,200</b>	-	<b>160</b>	<b>63</b>	<b>92</b>	<b>300</b>	<40
	4/8/2008	not sampled						
	4/8/2011	<b>119</b>	-	<b>90.8</b>	<b>1.4</b>	<b>1.0</b>	<b>2.6</b>	<0.5
	10/26/2011	<b>1,500</b>	-	<b>400</b>	<b>9.1</b>	<b>46</b>	<b>65</b>	-
	5/30/2012	<b>1,200</b>	-	<b>260</b>	<b>11</b>	<b>34</b>	<b>80</b>	-
	11/19/2012	<b>1,100</b>	-	<b>230</b>	<6.0	<b>46</b>	<b>84</b>	-
	6/25/2013	<b>98</b>	-	<b>840</b>	<b>22</b>	<b>60</b>	<b>140</b>	<20
	12/5/2013	<b>2,500</b>	-	<b>540</b>	<b>57</b>	<b>140</b>	<b>290</b>	<b>3.2</b>
	6/17/2014	<b>6,500</b>	-	<b>4,500</b>	<b>100</b>	<b>130</b>	<b>240</b>	<b>21</b>
	12/3/2014	<b>980</b>	-	<b>270</b>	<b>11</b>	<b>50</b>	<b>93</b>	<0.5
	6/25/2015	-	-	-	-	-	-	-
	11/16/2015	-	-	-	-	-	-	-
	3/10/2016	-	-	-	-	-	-	-
5/3/2016	-	-	-	-	-	-	-	
8/26/2016	-	-	-	-	-	-	-	
12/29/2016	-	-	-	-	-	-	-	
5/23/2017	<b>160</b>	-	<b>75</b>	<b>1.1</b>	<b>17</b>	<b>19</b>	<0.5	

pre- 2006 data adapted from *Environmental Sampling Services 5/27/04 Groundwater Monitoring Report*

"-" = not analyzed

<sup>J</sup> = estimated Value (CLP Flag)

<sup>A01</sup> = detection and quantitation limits are raised due to sample dilution



**TABLE 8**  
**Summary of Field Parameters**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California

Date	W-1s					W-3s					W-Bs					W-Es					W-1				
	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO
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	6.30	917	19.0	-164.3	0.40
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	-	-	-	-	-	6.45	1073	17.8	-60.9	0.20
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	-	-	-	-	-	6.71	1062	20.7	-98.7	0.95
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	-	-	-	-	-	7.04	965	17.3	-97.0	0.12
6/24/2013	6.71	1333	21.9	-159.8	0.07	6.43	1243	20.3	-60.2	1.03	6.75	919	21.2	-92.1	0.84	7.09	951	21.8	160.6	0.61	6.73	1156	20.5	-110.6	0.28
12/3-5/2013	6.73	1086	20.4	-50.0	0.35	6.57	1003	18.4	72.8	1.27	6.86	810	19.4	-53.1	1.19	-	-	-	-	-	6.82	1051	20.5	-135.6	0.16
6/16-17/2014	6.47	1309	21.3	-79.0	0.31	-	-	-	-	-	7.05	803	21.0	-50.1	1.64	-	-	-	-	-	6.70	1097	21.1	-101.3	0.18
12/2-3/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/9-10/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/25/15 - 6/26/15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.80	1376	21.7	-107.2	NC
9/15/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/16/15 - 11/17/15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/10/2016	6.89	890	21.2	-14.8	0.50	-	-	-	-	-	6.94	505	20.5	-67.1	1.7	-	-	-	-	-	6.81	978	20.3	-95.9	0.86
5/4/16 - 5/5/16	7.37	933	21.3	-29.7	2.51	6.91	1112	21.2	42.3	1.39	7.16	620	21.0	17.3	2.31	7.31	928	21.3	102.1	1.81	7.16	1342	21.1	-169.3	0.62
8/26/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/28/16 - 12/29/16	6.99	1108	20.5	-160.3	1.35	-	-	-	-	-	6.96	497	20.5	-57.7	3.03	7.11	970	19.2	117.9	1.36	6.79	1470	16.3	-62.4	1.73
5/22/17 - 5/24/17	7.01	1142	20.8	22.2	1.20	7.40	1107	20.2	48.3	0.66	7.4	1121	20.7	1.8	0.18	7.43	909	23.2	89.3	1.07	6.50	1436	20.6	-68.9	0.27

Date	W-3					W-A					MW-9					MW-10					EW-2				
	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO
4/7-8/2011	6.94	928	18.3	-185.7	0.10	6.85	907	18.9	-254.5	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/26/2011	-	-	-	-	-	6.70	1019	18.0	-120.2	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/30/2012	-	-	-	-	-	6.83	1127	20.3	-90.3	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/19/2012	-	-	-	-	-	6.92	1185	18.0	-139.9	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/24/2013	-	-	-	-	-	6.84	1255	20.5	-124.1	1.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/3-5/2013	-	-	-	-	-	7.03	1210	20.2	-118.1	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/16-17/2014	-	-	-	-	-	6.42	1352	20.7	-135.0	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/2-3/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/9-10/2015	-	-	-	-	-	-	-	-	-	-	6.86	1091	19.9	122.1	3.12	6.70	1070	19.6	121.4	3.68	-	-	-	-	-
6/25-26/2015	-	-	-	-	-	6.77	1466	21.2	-90.4	NC	7.18	972	19.9	122.5	3.94	7.30	964	19.8	105.2	4.44	6.75	1122	21.8	-78.3	NC
9/15/2015	-	-	-	-	-	-	-	-	-	-	6.66	970	20.1	90.3	3.19	7.08	967	19.8	94.8	4.51	-	-	-	-	-
11/16-17/15	-	-	-	-	-	-	-	-	-	-	6.97	1089	20.2	101.4	3.42	6.96	1084	19.6	142.8	4.21	6.84	1053	19.8	-118.2	0.58
3/10/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/4/16 - 5/5/16	-	-	-	-	-	7.02	1452	20.9	-98.8	2.05	7.69	1101	19.8	47.0	3.55	7.69	1098	20.0	44.7	3.20	7.24	1340	21.1	-97.2	0.42
8/26/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.04	1297	20.2	-60.2	0.70
12/28/16 - 12/29/16	-	-	-	-	-	7.11	1179	20.1	-213.1	1.57	7.42	1101	19.4	27.0	5.86	7.66	1116	15.8	26.8	6.00	6.92	1225	20.0	-217.1	1.21
5/22/17 - 5/24/17	-	-	-	-	-	7.53	1164	20.5	-141.6	0.63	7.08	1117	20.6	78.8	5.40	7.25	1115	20.0	122.1	6.43	7.15	1165	20.6	-144.5	0.50

Date	MW-4					MW-5					MW-6					MW-7					MW-8				
	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO
5/22/17 - 5/24/17	7.43	1302	21.8	-48.7	0.50	7.13	1016	21.1	-37.6	1.02	-	-	-	-	-	7.27	1687	22.1	-69.9	0.61	6.93	1157	20.7	-121.3	1.03

Date	MW-104					MW-105					MW-106					MW-107					MW-108				
	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO
12/28/16 - 12/29/16	7.01	1384	16.5	-138.0	1.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.75	1151	16.4	-153.0	1.17
5/22/17 - 5/24/17	7.36	1306	21.3	-65.3	1.71	-	-	-	-	-	-	-	-	-	-	7.12	1369	22.1	-79.3	1.21	6.80	1107	21.1	-133.6	1.09

Date	MW-204					MW-205					MW-206					MW-207					MW-208				
	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO
12/28/16 - 12/29/16	7.64	1079	16.5	-174.6	1.57	6.97	994	12.5	-130.3	1.58	7.27	1099	17.9	13.4	3.07	7.18	1384	17.6	-134.2	1.27	-	-	-	-	-
5/22/17 - 5/24/17	7.55	1103	20.7	-143.9	1.63	7.22	1337	19.2	-73.2	1.29	-	-	-	-	-	7.08	1389	22.1	-94.7	-	6.51	1325	22.4	-87.9	1.09

Date	MW-304					MW-305					MW-306					MW-307					MW-308				
	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO	pH	E.C.	Temp °C	ORP	DO
12/28/16 - 12/29/16	7.18	1103	15.3	-97.9	3.69	7.61	1129	14.9	-27.8	4.95	7.44	1105	16.7	-1.0	6.98	7.43	1118	14.3	-78.0	4.50	7.30	1113	19.2	-182.7	2.15
5/22/17 - 5/24/17	7.24	1073	21.0	-57.8	3.21	6.47	1110	20.2	147.6	1.97	-	-	-	-	-	7.78	1106	21.1	260.8	0.67	7.21	1116	22.8	39.6	0.92

Date	MW-404				
	pH	E.C.	Temp °C	ORP	DO
5/22/17 - 5/24/17	7.13	1005	20.8	4.2	3.91

" - " = insufficient data no result reported

**TABLE 9**  
**Summary of DPE System Soil Vapor Extraction Data**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California

Well	Date	TPH-Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	PID
		mg/m <sup>3</sup>	mg/m <sup>3</sup>	mg/m <sup>3</sup>	mg/m <sup>3</sup>	mg/m <sup>3</sup>	ppm
<b>SVE-INF</b>	12/8/2011	<b>2,380</b>	<b>7.1</b>	<b>5.6</b>	<b>2.9</b>	<b>15.5</b>	200
	1/5/2012	<b>3,360</b>	<b>29.8</b>	<b>15.8</b>	<b>23.6</b>	<b>70.4</b>	262
	3/8/2012	<b>3,490</b>	<b>30.4</b>	<b>28.6</b>	<b>12</b>	<b>55.2</b>	282
	5/16/2012	<b>251</b>	<b>7.86</b>	<b>4.43</b>	<b>2.34</b>	<b>9.56</b>	51.1
	4/11/2013	<b>37</b>	<b>13</b>	<b>2.9</b>	<b>2.1</b>	<b>5.9</b>	-
	9/23/2014	<b>2,000</b>	<b>12</b>	<b>6.4</b>	<b>1.9</b>	<b>11</b>	737
	10/2/2014	<b>12,000</b>	<b>36</b>	<b>10</b>	<b>&lt;50</b>	<b>37</b>	248
	11/6/2014	<b>10,000</b>	<b>52</b>	<b>22</b>	<b>20</b>	<b>140</b>	1917
	12/2/2014	<b>13,000</b>	<b>97</b>	<b>22</b>	<b>16</b>	<b>110</b>	1772
	3/11/2015	<b>3,800</b>	<b>26</b>	<b>13</b>	<b>8.2</b>	<b>26</b>	390
	8/18/2015	<b>20,000</b>	<b>66</b>	<b>22</b>	<b>36</b>	<b>120</b>	1001
	9/15/2015	<b>19,000</b>	<b>62</b>	<b>14</b>	<b>41</b>	<b>140</b>	1208
	1/11/2016	<b>11,000</b>	<b>22</b>	<b>8.9</b>	<b>1.5</b>	<b>12</b>	1610
	3/16/2016	<b>170</b>	<b>0.18</b>	<b>0.48</b>	<b>0.31</b>	<b>3.5</b>	-
	5/31/2016	<b>8.5</b>	<b>0.47</b>	<b>0.026</b>	<b>0.081</b>	<b>0.24</b>	7.8
5/2/2017	<b>140</b>	<b>1.8</b>	<b>0.098</b>	<b>1.3</b>	<b>4.1</b>	600	
<b>SVE-INF UPPER</b>	8/22/2013*	<b>13</b>	<b>0.064</b>	<b>0.076</b>	<b>0.0096</b>	<b>0.078</b>	12.5
(EW-1 & W-1s)	9/3/2013	<b>130</b>	<b>2.2</b>	<b>2.2</b>	<b>4.3</b>	<b>19</b>	23.8
	9/20/2013*	<b>330</b>	<b>0.85</b>	<b>1.5</b>	<b>&lt;2.5</b>	<b>1.3</b>	36.9
	10/11/2013	<b>91</b>	<b>2.4</b>	<b>1.6</b>	<b>4.0</b>	<b>14</b>	32.9
	10/22/2013*	<b>210</b>	<b>1.5</b>	<b>3.7</b>	<b>&lt;2.5</b>	<b>2.6</b>	51.1
	11/6/2013	<b>44</b>	<b>0.77</b>	<b>1.2</b>	<b>3.7</b>	<b>12</b>	35.9
	1/15/2014*	<b>600</b>	<b>1.3</b>	<b>1.2</b>	<b>0.09</b>	<b>1.3</b>	72.9
	1/30/2014	<b>31</b>	<b>1.5</b>	<b>2.6</b>	<b>0.19</b>	<b>0.32</b>	85.2
	2/11/2014*	<b>250</b>	<b>0.72</b>	<b>0.79</b>	<b>0.093</b>	<b>0.52</b>	45.1
	7/25/2014	<b>1,100</b>	<b>3.4</b>	<b>0.58</b>	<b>0.57</b>	<b>3.2</b>	150
	8/12/2014	<b>190</b>	<b>0.31</b>	<b>0.17</b>	<b>0.046</b>	<b>0.69</b>	358
<b>SVE-INF LOWER</b>	8/22/2013	<b>410</b>	<b>59</b>	<b>13</b>	<b>4.9</b>	<b>22</b>	73.6
(W-1 & W-A)	9/3/2013*	<b>710</b>	<b>38</b>	<b>9.5</b>	<b>8.3</b>	<b>28</b>	81.4
	9/20/2013	-	-	-	-	-	-
	10/11/2013*	<b>99</b>	<b>12</b>	<b>2.7</b>	<b>3.1</b>	<b>8.6</b>	69.1
	10/22/2013	<b>410</b>	<b>29</b>	<b>7.1</b>	<b>0.87</b>	<b>4.2</b>	130
	11/6/2013*	<b>120</b>	<b>15</b>	<b>4.5</b>	<b>7.7</b>	<b>22</b>	60.9
	1/15/2014	<b>1,800</b>	<b>50</b>	<b>12</b>	<b>2.2</b>	<b>12</b>	205
	1/30/2014*	<b>180</b>	<b>19</b>	<b>42</b>	<b>2</b>	<b>3.7</b>	220
	2/11/2014	<b>200</b>	<b>&lt;1</b>	<b>3.2</b>	<b>0.44</b>	<b>1.5</b>	149.2
	3/18/2014	<b>0.89</b>	<b>&lt;20</b>	<b>0.01</b>	<b>0.011</b>	<b>0.041</b>	-
	4/1/2014	<b>85</b>	<b>16</b>	<b>1.8</b>	<b>4.6</b>	<b>10</b>	-
	4/15/2014	<b>1,100</b>	<b>46</b>	<b>11</b>	<b>17</b>	<b>49</b>	99.9
	4/28/2014	<b>560</b>	<b>21</b>	<b>4.5</b>	<b>4.3</b>	<b>12</b>	-
	5/9/2014	<b>1,000</b>	<b>76</b>	<b>12</b>	<b>13</b>	<b>28</b>	159
	6/26/2014	<b>1,200</b>	<b>15</b>	<b>1.7</b>	<b>1.9</b>	<b>5.6</b>	290
	7/10/2014	<b>170</b>	<b>7.5</b>	<b>8.5</b>	<b>11</b>	<b>31</b>	294
	8/12/2014	<b>61</b>	<b>0.15</b>	<b>0.19</b>	<b>ND&lt;0.5</b>	<b>0.51</b>	183
<b>W-1 SVE-INF</b>	5/16/2013	<b>100</b>	<b>16</b>	<b>4.8</b>	<b>5.2</b>	<b>11</b>	48.1
<b>W-A SVE-INF</b>	5/16/2013	<b>39</b>	<b>2.3</b>	<b>0.64</b>	<b>0.83</b>	<b>1.7</b>	16.1
<b>EW-1 SVE-INF</b>	5/16/2013	<b>22</b>	<b>0.065</b>	<b>0.069</b>	<b>0.12</b>	<b>0.54</b>	7.6
<b>W-1s SVE-INF</b>	5/16/2013	<b>85</b>	<b>&lt;0.08</b>	<b>0.16</b>	<b>0.35</b>	<b>1.4</b>	32.6

\* = sample collected following 2 weeks of extraction from the upper/lower zone

**TABLE 10**  
**Estimation of Mass Removal Via Soil Vapor Extraction**

Sullins (Arrow Rentals)  
 187 North L Street  
 Livermore, California

Sample Date	Flow	TPH-G	Meter	Operational Period	Days	Operation Duration			Volume Removed		Pounds Removed	
	CFM	mg/m3		days	total days	days in period	hours	min	cubic feet	cubic meters	pounds	
11/15/11			10,382	0	0							
12/08/11	90	2,380	10,437	23	2	2	55	3,300	297,000	8,410	44	
01/05/12	136	3,360	10,961	28	24	22	524	31,440	4,275,840	121,078	897	
03/08/12	152	3,490	11,841	63	61	37	880	52,800	8,025,600	227,259	1,749	
05/16/12	99	251	13,496	69	130	69	1,655	99,300	9,830,700	278,374	154	
04/11/13	56	37	16,119	330	239	109	2,623	157,380	8,813,280	249,564	20	
08/22/13	133	130	17,925	133	314	75	1,806	108,360	14,411,880	408,098	117	
09/03/13	65	710	18,211	12	326	12	286	17,160	1,115,400	31,585	49	
09/20/13	127	330	18,619	17	343	17	408	24,480	3,108,960	88,036	64	
10/11/13	102.5	99	18,957	21	357	14	338	20,280	2,078,700	58,862	13	
10/22/13	95	210	19,221	11	368	11	264	15,840	1,504,800	42,611	20	
11/06/13	80	120	19,584	15	383	15	363	21,780	1,742,400	49,339	13	
01/15/14	155	600	20,281	70	412	29	697	41,820	6,482,100	183,552	243	
01/30/14	87.5	180	20,640	15	427	15	359	21,540	1,884,750	53,370	21	
02/11/14	125	250	20,928	12	439	12	288	17,280	2,160,000	61,164	34	
03/18/14	28	0.9	21,266	35	454	14	338	20,280	567,840	16,079	0.03	
04/01/14	102.5	85	21,601	14	467	14	335	20,100	2,060,250	58,340	11	
04/15/14	28	1,100	21,604	14	468	0	3.0	180	5,040	143	0.35	
04/28/14	125	560	21,914	13	481	13	310	18,600	2,325,000	65,837	81	
05/09/14	95	1,000	21,916	11	481	0	2.0	120	11,400	323	0.71	
06/26/14	60	1,200	21,968	48	483	2	52	3,120	187,200	5,301	14	
07/10/14	72.5	170	21,975	14	483	0	7.0	420	30,450	862	0.32	
07/25/14	87.5	1,100	21,979	15	483	0	4.0	240	21,000	595	1.44	
08/12/14	76	190	22,410	18	501	18	431	25,860	1,965,360	55,653	23	
09/23/14	110	2,000	22,688	42	513	12	278	16,680	1,834,800	51,956	229	
10/02/14	103	12,000	22,735	9	515	2	47	2,820	290,460	8,225	218	
11/06/14	110	10,000	23,041	35	527	13	306	18,360	2,019,600	57,189	1,261	
12/02/14	105	13,000	23,059	26	528	1	18	1,080	113,400	3,211	92	
03/11/15	36	3,800	24,009	99	568	40	950	57,000	2,052,000	58,106	487	
08/18/15	91	20,000	24,776	160	600	32	767	46,020	4,187,820	118,586	5,229	
09/15/15	105	19,000	24,881	28	604	4	105	6,300	661,500	18,732	785	
1/11/2016	151	11,000	25,444	118	628	23	563	33,804	5,104,404	144,540	3,505	
3/16/2016	32	170	25,488	65	629	2	43	2,586	82,752	2,343	1	
5/31/2016	31	8.5	25,654	76	636	7	166	9,966	308,946	8,748	0.2	
5/2/2017	45	140	26,571	336	675	38	917	55,026	2,476,170	70,117	22	
<b>TOTAL</b>												<b>15,398</b>

**TABLE 11**  
**Estimation of Mass Removal Via Groundwater Extraction**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California

Date/Time	Meter	Total Days	Operation Hours in period	Total Operation Hours	Total Operation Days	GW Removed		Lab (ug/L)	Removal Calculations			
						Cummulative (gallons)	In Period (gallons)		(grams/L)	(grams/gal.)	(lbs./gal.)	(lbs./period)
12/7/2011	10428		-			0		-	-	-	-	0.00
12/13/2011	10442	6	13.5	13.5	0.6	1060	1060	2400	0.00240	0.00063	0.00000140	0.67
1/13/2012	11137	31	695.1	708.6	29.5	1378	318	6400	0.00640	0.00169	0.00000373	0.54
1/18/2012	11244	5	106.9	815.5	34.0	1445	67	3800	0.00380	0.00100	0.00000221	0.07
1/19/2012	11256	1	11.7	827.2	34.5	3180	1735	2800	0.00280	0.00074	0.00000163	1.28
3/8/2012	11841	49	585.7	1412.9	58.9	7700	4520	190	0.00019	0.00005	0.00000011	0.23
4/3/2012	12466	26	624.6	2037.5	84.9	19873	12173	810	0.00081	0.00021	0.00000047	2.60
5/3/2012	13186	30	719.8	2757.3	114.9	38308	18435	1000	0.00100	0.00026	0.00000058	4.87
5/16/2012	13496	13	310.6	3067.9	127.8	43854	5546	2800	0.00280	0.00074	0.00000163	4.10
6/7/2012	13498	22	1.8	3069.7	127.9	43993	139	5000	0.00500	0.00132	0.00000291	0.18
7/9/2012	13661	32	163.2	3232.9	134.7	46169	2176	2600	0.00260	0.00069	0.00000151	1.49
8/16/2012	14369	38	707.9	3940.8	164.2	55565	9396	2300	0.00230	0.00061	0.00000134	5.71
9/13/2012	15041	28	671.4	4612.2	192.2	69172	13607	1800	0.00180	0.00048	0.00000105	6.47
10/16/2012	15073	33	32.3	4644.5	193.5	70660	1488	1800	0.00180	0.00048	0.00000105	0.71
12/13/2012	15532	58	459.2	5103.7	212.7	83968	13308	1800	0.00180	0.00048	0.00000105	6.33
2/4/2013	16107	53	574.6	5678.3	236.6	83968	0	1300	0.00130	0.00034	0.00000076	0.00
2/14/2013	16113	10	6.5	5684.8	236.9	84680	712	1300	0.00130	0.00034	0.00000076	0.24
4/10/2013	16114	55	0.8	5685.6	236.9	84680	0	2000	0.00200	0.00053	0.00000116	0.00
4/26/2013	16322	16	208.0	5893.6	245.6	86053	1373	2000	0.00200	0.00053	0.00000116	0.73
5/3/2013	16490	7	167.6	6061.2	252.6	86810	757	1600	0.00160	0.00042	0.00000093	0.32
5/16/2013	16527	13	37.0	6098.2	254.1	89138	2328	1600	0.00160	0.00042	0.00000093	0.98
6/6/2013	* 16585	21	58.1	6156.3	256.5	92164	3026	2071	0.00207	0.00055	0.00000121	1.66
6/26/2013	* 16729	20	144.5	6300.8	262.5	96926	4762	2071	0.00207	0.00055	0.00000121	2.61
7/31/2013	* 17395	35	665.7	6966.5	290.3	134007	37081	2071	0.00207	0.00055	0.00000121	20.29
8/22/2013	* 17925	22	530.0	7496.5	312.4	146673	12666	2071	0.00207	0.00055	0.00000121	6.93
9/3/2013	18211	12	285.8	7782.3	324.3	170214	23541	1200	0.00120	0.00032	0.00000070	7.46
9/27/2013	18623	24	412.1	8194.4	341.4	170214	0	1300	0.00130	0.00034	0.00000076	0.00
10/11/2013	18957	14	334.0	8528.4	355.4	202421	32207	870	0.00087	0.00023	0.00000051	7.40
10/22/2013	19221	11	264.1	8792.5	366.4	202421	0	1700	0.00170	0.00045	0.00000099	0.00
11/6/2013	19584	15	363.0	9155.5	381.5	236820	34399	1400	0.00140	0.00037	0.00000082	12.72
1/15/2014	20281	70	697.0	9852.5	410.5	236820	0	2600	0.00260	0.00069	0.00000151	0.00
1/30/2014	20640	15	359.0	10211.5	425.5	262180	25360	2500	0.00250	0.00066	0.00000146	16.75
2/11/2014	20928	12	288.0	10499.5	437.5	262180	0	1700	0.00170	0.00045	0.00000099	0.00
2/25/2014	21263	14	335.5	10835.0	451.5	267519	5339	1700	0.00170	0.00045	0.00000099	2.40
3/18/2014	21266	21	3.0	10838.0	451.6	267705	186	2600	0.00260	0.00069	0.00000151	0.13
4/1/2014	21601	14	335.0	11173.0	465.5	289708	22003	340	0.00034	0.00009	0.00000020	1.98
4/15/2014	21604	14	2.5	11175.5	465.6	290023	315	2000	0.00200	0.00053	0.00000116	0.17
4/28/2014	21914	13	310.6	11486.1	478.6	307746	17723	1800	0.00180	0.00048	0.00000105	8.43
5/9/2014	21916	11	1.6	11487.7	478.7	307746	0	2300	0.00230	0.00061	0.00000134	0.00
6/26/2014	21968	48	52.0	11539.7	480.8	307746	0	610	0.00061	0.00016	0.00000036	0.00
7/10/2014	21975	14	7.0	11546.7	481.1	311948	4202	2,000	0.00200	0.00053	0.00000116	2.22
8/12/2014	22410	33	435.0	11981.7	499.2	311956	8	2,500	0.00250	0.00066	0.00000146	0.01
9/23/2014	22688	42	278.0	12259.7	510.8	312643	687	2,200	0.00220	0.00058	0.00000128	0.40
11/6/2014	23041	44	353.0	12612.7	525.5	314037	1394	1,700	0.00170	0.00045	0.00000099	0.63
12/2/2014	23059	26	18.0	12630.7	526.3	314037	0	2,700	0.00270	0.00071	0.00000157	0.00
3/11/2015	24009	99	950.0	13580.7	565.9	317846	3809	4,100	0.00410	0.00108	0.00000239	4.13
8/18/2015	24,776	160	767.0	14347.7	597.8	323557	5711	6,700	0.00670	0.00177	0.00000390	10.11
9/15/2015	24,881	28	105.0	14452.7	602.2	325723	2166	900	0.00090	0.00024	0.00000052	0.51
1/11/2016	25,444	118	563.0	15015.7	625.7	328360	2637	2,900	0.00290	0.00077	0.00000169	2.02
2/16/2016	25,446	36	1.5	15017.2	625.7	328370	10	1,800	0.00180	0.00048	0.00000105	0.00
5/31/2016	25,654	105	208.1	15225.3	634.4	332846	4476	890	0.00089	0.00024	0.00000052	1.05
5/2/2017	26,571	336	917.1	16142.4	672.6	372557	39711	280	0.00028	0.00007	0.00000016	2.94
<b>Total</b>												<b>150</b>

\* = TPH-G concentration for this date is an average of the lab data from all previous events

**TABLE 12**  
**Summary of DPE System Groundwater Extraction Data**

Sullins (Arrow Rentals)  
187 North L Street  
Livermore, California

Well	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-Gasoline	MTBE
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
<b>GW-INF</b>	12/13/2011	<b>110</b>	<b>9.4</b>	<b>2.5</b>	<b>510</b>	<b>2,400</b>	-
(GW INF KO)	1/13/2012	<b>110</b>	<b>120</b>	<b>74</b>	<b>510</b>	<b>6,400</b>	-
	1/18/2012	<b>44</b>	<b>54</b>	<b>39</b>	<b>360</b>	<b>3,800</b>	-
	1/19/2012	<b>37</b>	<b>43</b>	<b>39</b>	<b>280</b>	<b>2,800</b>	-
	3/8/2012	<b>7.3</b>	<b>8.3</b>	<b>2.3</b>	<b>19</b>	<b>190</b>	-
	4/3/2012	<b>8.6</b>	<b>9.7</b>	<b>3.4</b>	<b>36</b>	<b>810</b>	-
	5/3/2012	<b>300</b>	<b>160</b>	<b>26</b>	<b>280</b>	<b>2,800</b>	-
	6/7/2012	<b>72</b>	<b>89</b>	<b>23</b>	<b>260</b>	<b>5,000</b>	-
	7/9/2012	<b>110</b>	<b>51</b>	<b>21</b>	<b>120</b>	<b>2,600</b>	-
	8/16/2012	<b>47</b>	<b>35</b>	<b>19</b>	<b>99</b>	<b>2,300</b>	-
	9/13/2012	<b>74</b>	<b>26</b>	<b>14</b>	<b>70</b>	<b>1,800</b>	-
	10/16/2012	<b>140</b>	<b>44</b>	<b>46</b>	<b>110</b>	<b>1,800</b>	-
	2/4/2013	<b>130</b>	<b>40</b>	<b>32</b>	<b>110</b>	<b>1,300</b>	-
	4/10/2013	<b>200</b>	<b>58</b>	<b>48</b>	<b>160</b>	<b>2,000</b>	-
	5/7/2013	<0.3	<0.3	<0.3	<0.6	<50	-
	5/16/2013	<b>96</b>	<b>30</b>	<b>32</b>	<b>110</b>	<b>1,600</b>	<b>5.5</b>
	8/22/2013	<0.3	<0.3	<0.3	<0.6	<50	-
	9/3/2013*	<b>190</b>	<b>35</b>	<b>26</b>	<b>150</b>	<b>1,200</b>	-
	9/27/2013	<b>94</b>	<b>30</b>	<b>12</b>	<b>120</b>	<b>1,300</b>	-
	10/11/2013*	<b>99</b>	<b>18</b>	<b>24</b>	<b>88</b>	<b>870</b>	-
	10/22/2013	<b>130</b>	<b>62</b>	<b>30</b>	<b>210</b>	<b>1,700</b>	-
	11/6/2013*	<b>120</b>	<b>22</b>	<b>35</b>	<b>140</b>	<b>1,400</b>	-
	1/15/2014	<b>43</b>	<b>18</b>	<b>19</b>	<b>150</b>	<b>2,600</b>	-
	1/30/2014	<b>98</b>	<b>30</b>	<b>45</b>	<b>170</b>	<b>2,500</b>	<b>2.4</b>
	2/11/2014	<b>100</b>	<b>35</b>	<b>20</b>	<b>150</b>	<b>1,700</b>	<12
	2/25/2014	<b>150</b>	<b>45</b>	<b>27</b>	<b>180</b>	<b>1,700</b>	<b>4.2</b>
	3/18/2014	<b>61</b>	<b>14</b>	<b>18</b>	<b>80</b>	<b>2,600</b>	-
	4/1/2014	<b>19</b>	<b>2.6</b>	<b>4.9</b>	<b>19</b>	<b>340</b>	-
	4/15/2014	<b>52</b>	<b>10</b>	<b>14</b>	<b>53</b>	<b>2,000</b>	-
	4/28/2014	<b>17</b>	<b>3</b>	<b>7.7</b>	<b>22</b>	<b>1,800</b>	-
	5/9/2014	<b>98</b>	<b>22</b>	<b>33</b>	<b>120</b>	<b>2,300</b>	<b>3.4</b>
	6/26/2014	<b>17</b>	<b>1</b>	<b>2.5</b>	<b>9.1</b>	<b>610</b>	<b>0.87</b>
	7/10/2014	<b>96</b>	<b>17</b>	<b>34</b>	<b>170</b>	<b>2,000</b>	ND<0.5
	8/12/2014	<b>81</b>	<b>41</b>	<b>18</b>	<b>350</b>	<b>2,500</b>	-
	9/23/2014	<b>97</b>	<b>51</b>	<b>38</b>	<b>450</b>	<b>2,200</b>	-
	11/6/2014	<b>130</b>	<b>42</b>	<b>28</b>	<b>460</b>	<b>1,700</b>	<b>1.3</b>
	12/2/2014	<b>190</b>	<b>65</b>	<b>50</b>	<b>550</b>	<b>2,700</b>	<b>2.0</b>
	3/11/2015	<b>200</b>	<b>120</b>	<b>99</b>	<b>510</b>	<b>4,100</b>	ND<5
	8/18/2015	<b>210</b>	<b>72</b>	<b>8.3</b>	<b>890</b>	<b>6,700</b>	ND<5
	9/15/2015	<b>430</b>	<b>84</b>	<b>190</b>	<b>2,000</b>	<b>9,000</b>	<b>3.2</b>
	1/11/2016	<b>40</b>	<b>25</b>	<b>14</b>	<b>190</b>	<b>2,900</b>	<b>1.4</b>
	2/16/2016	<b>7.1</b>	<b>16</b>	<b>5.1</b>	<b>69</b>	<b>1,800</b>	ND<0.5
	5/31/2016	<b>8.2</b>	<b>0.46</b>	<b>3.5</b>	<b>28</b>	<b>890</b>	<b>0.5</b>
	5/2/2017	<b>10</b>	<b>0.42</b>	<b>1.7</b>	<b>9.3</b>	<b>280</b>	<b>0.12</b>
<b>W-1 GW-INF</b>	5/16/2013	<b>96</b>	<b>30</b>	<b>32</b>	<b>110</b>	<b>1,600</b>	<b>5.5</b>
<b>W-A GW-INF</b>	5/16/2013	<b>67</b>	<b>15</b>	<b>16</b>	<b>54</b>	<b>1,000</b>	<b>2.6</b>

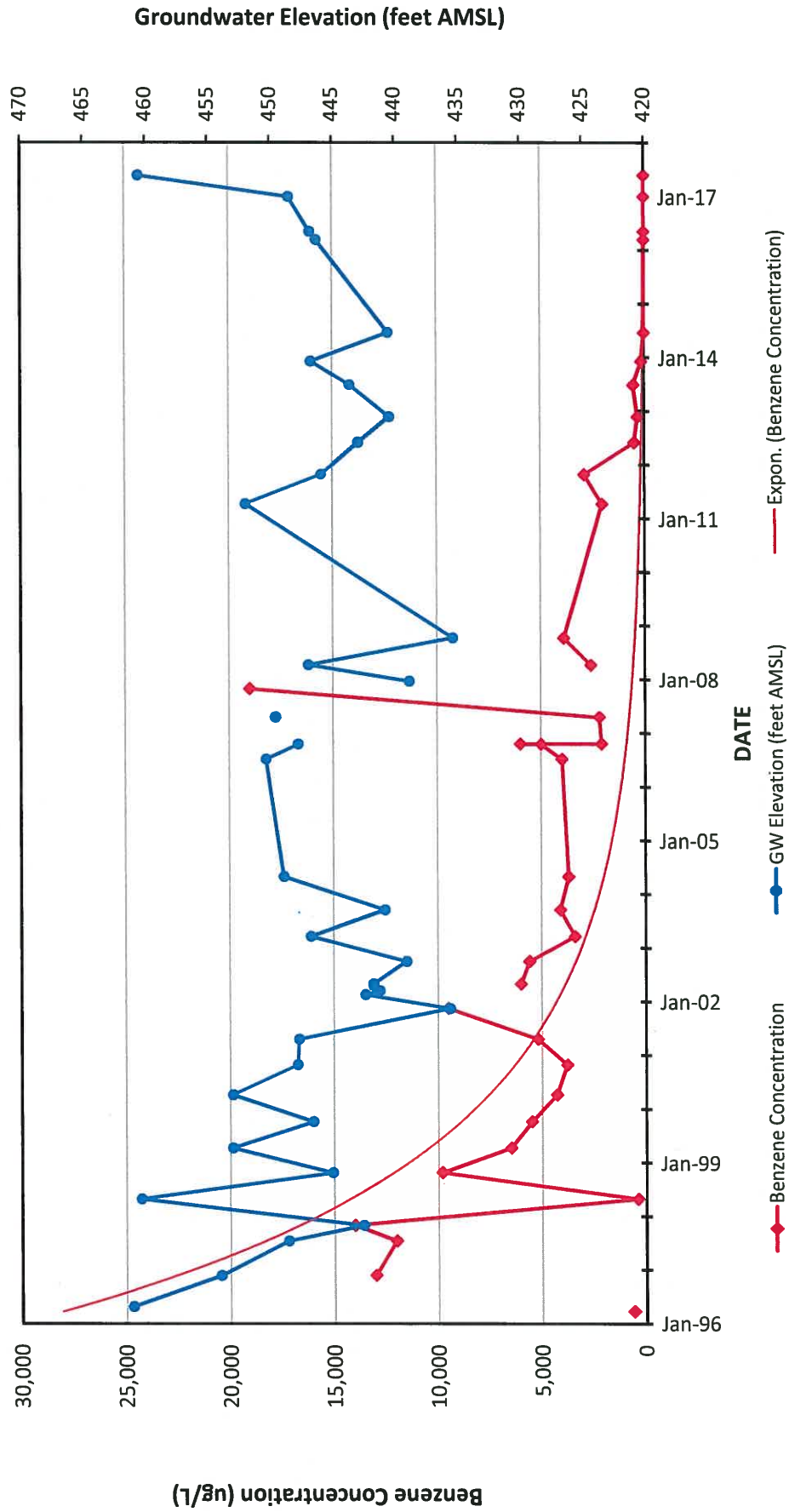
\* = sample collected following 2 weeks of extraction from the upper/lower zone

## **CHARTS**

# CHART 1

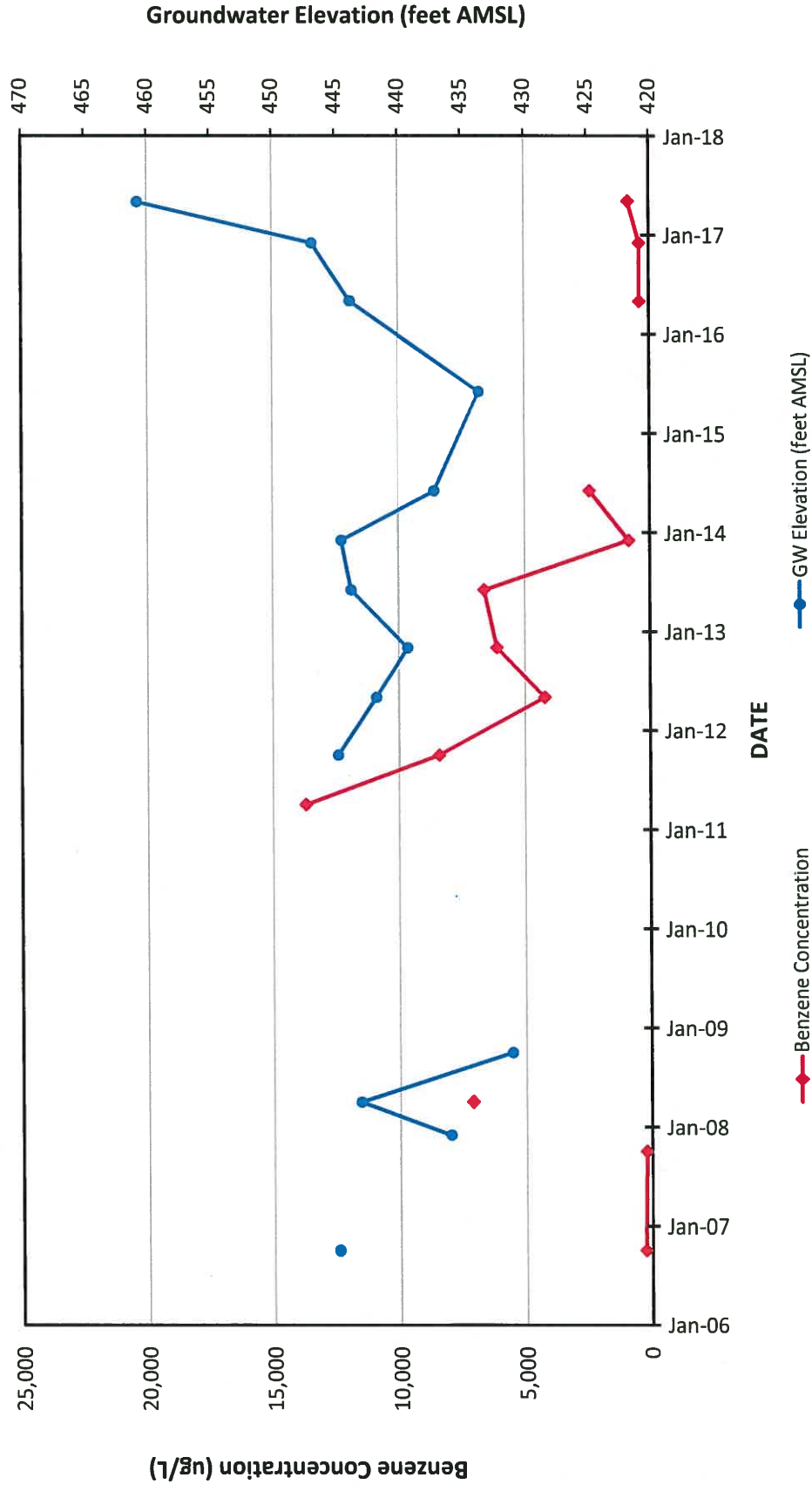
## W-1s: Benzene Concentration Groundwater Elevation Vs. Time

Sullins (Arrow Rentals)  
187 N. L Street  
Livermore, California



**CHART 2**  
**MW-104: Benzene Concentration Groundwater Elevation Vs. Time**

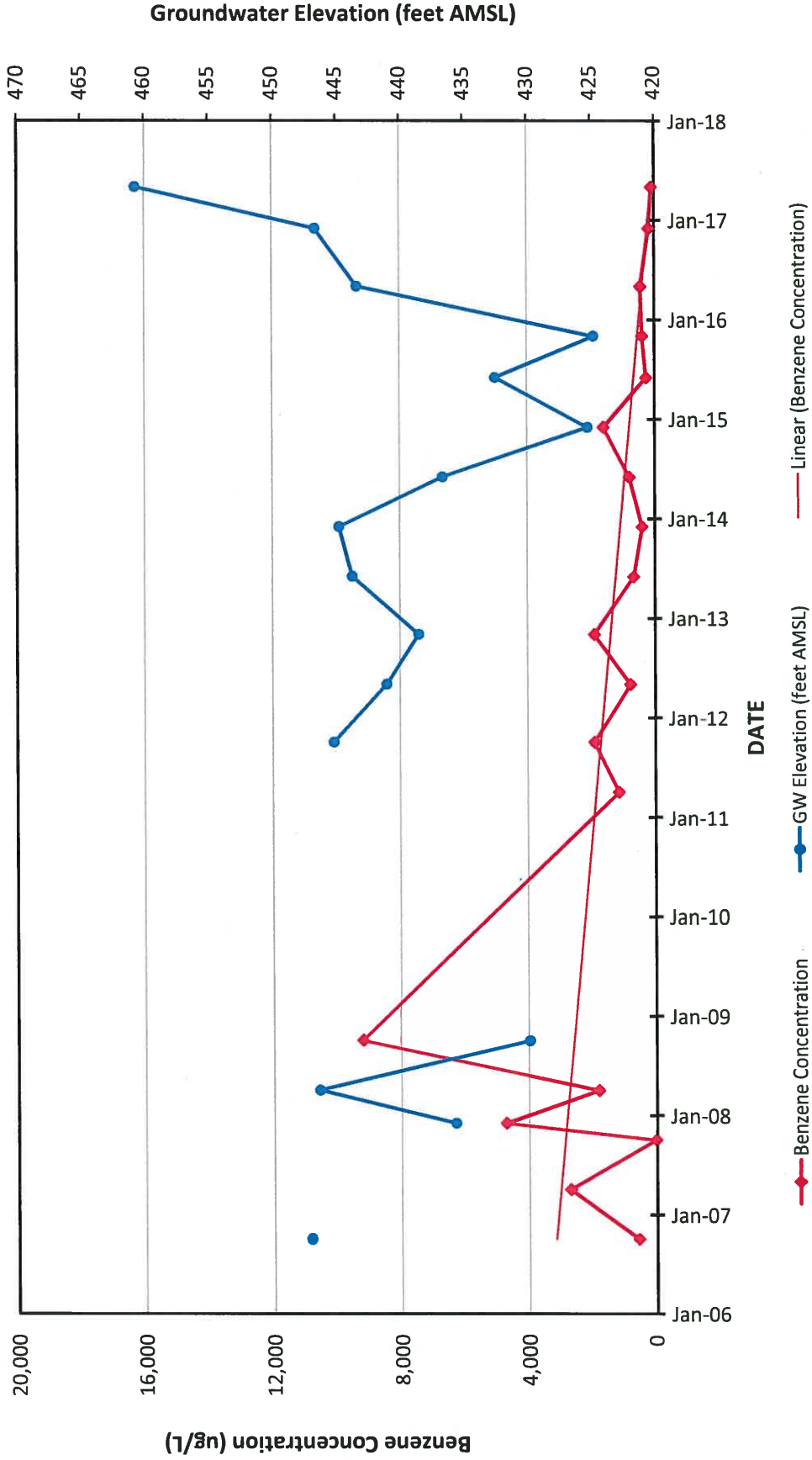
Sullins (Arrow Rentals)  
 187 N. L Street  
 Livermore, California





**CHART 3**  
**MW-204: Benzene Concentration Groundwater Elevation Vs. Time**

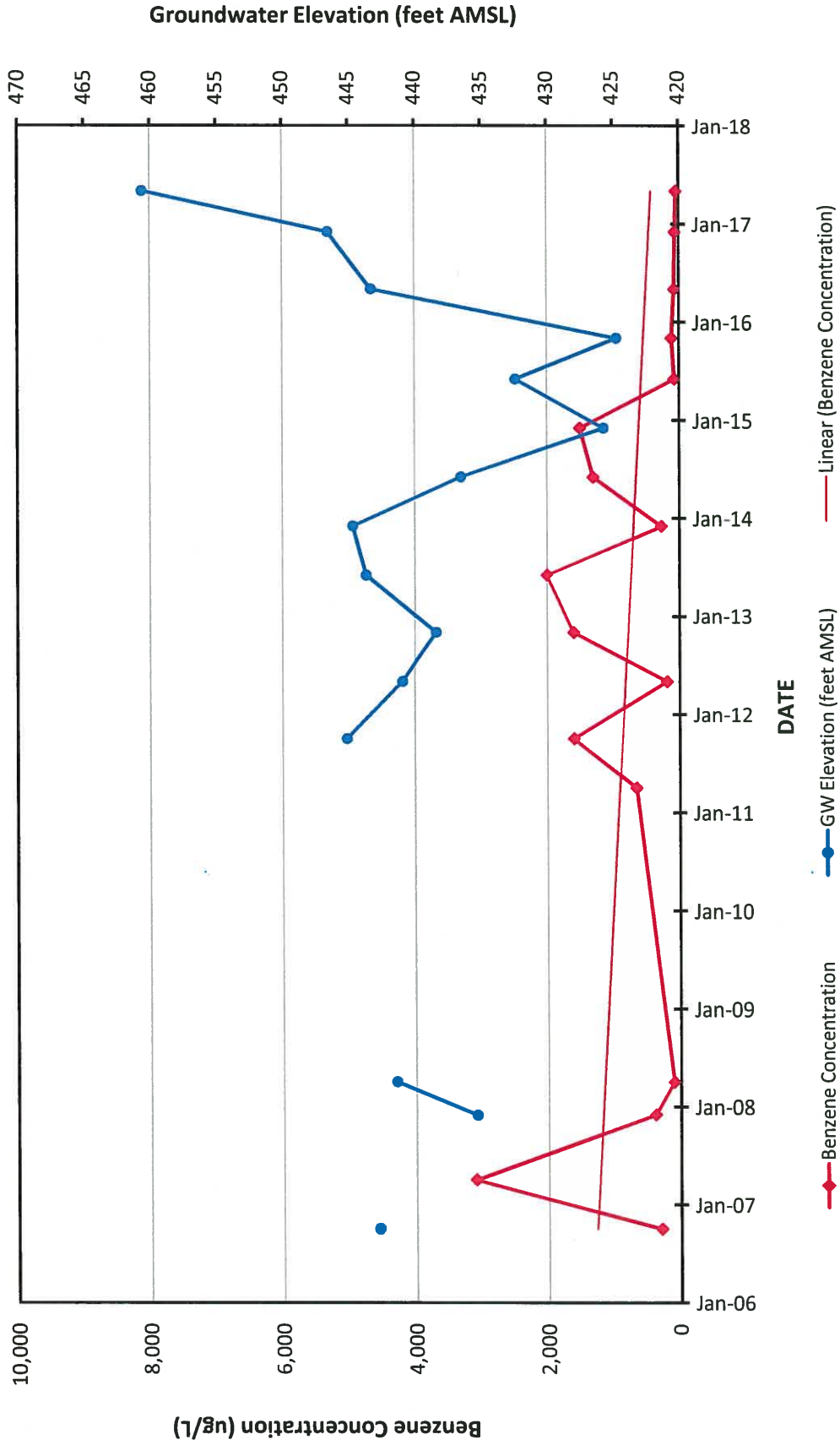
Sullins (Arrow Rentals)  
 187 N. L Street  
 Livermore, California



# CHART 4

## MW-304: Benzene Concentration Groundwater Elevation Vs. Time

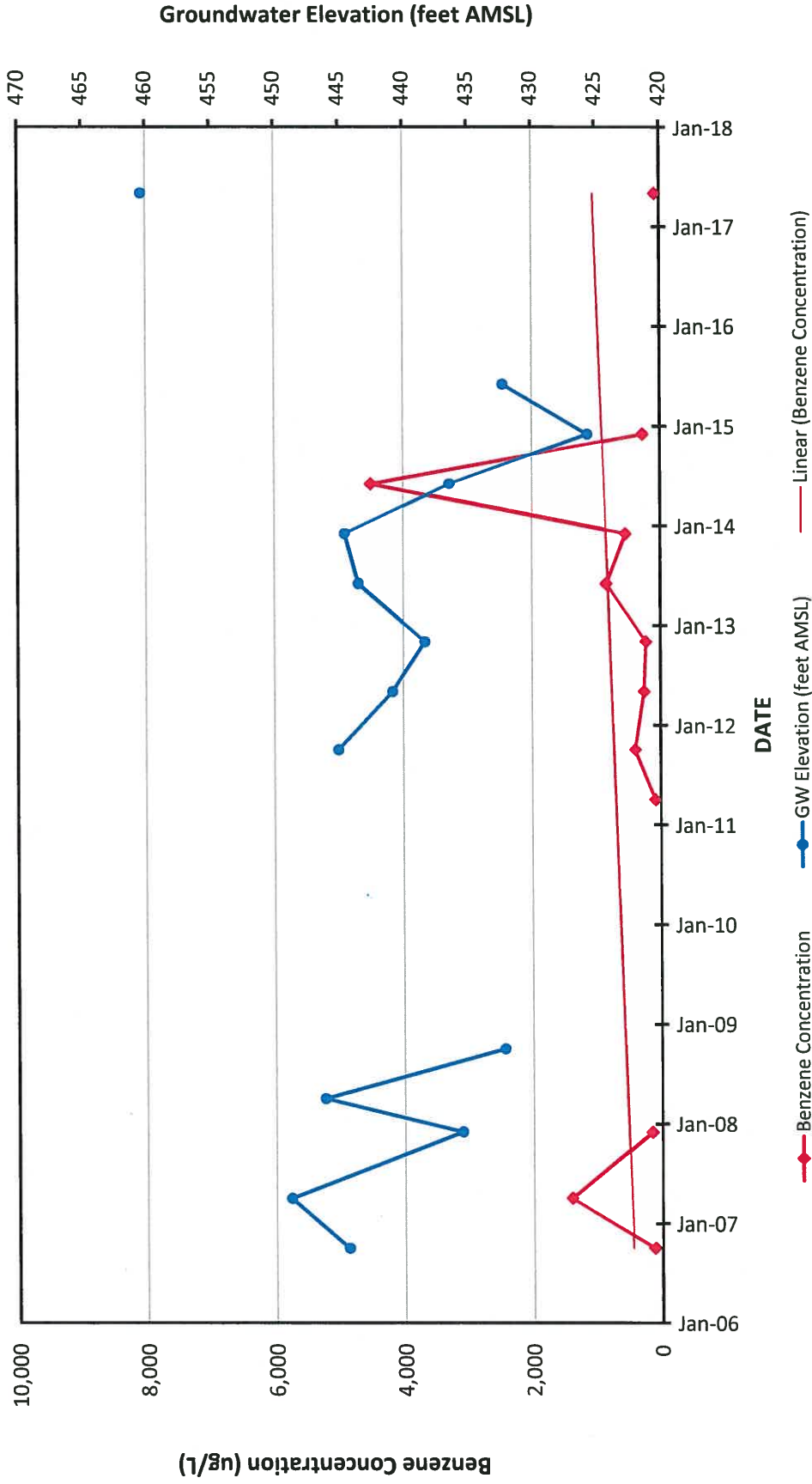
Sullins (Arrow Rentals)  
187 N. L Street  
Livermore, California



### CHART 5

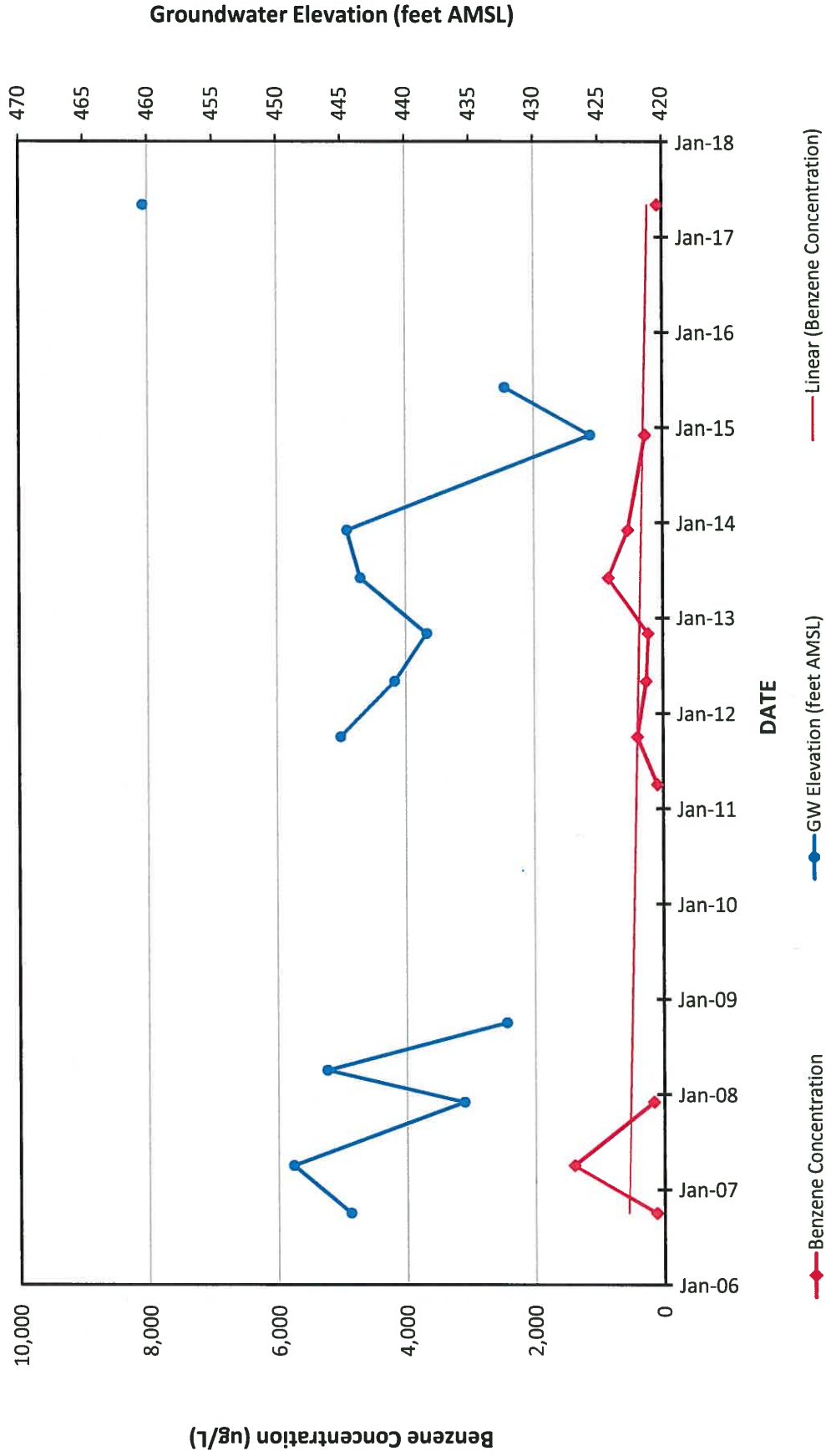
## MW-404: Benzene Concentration Groundwater Elevation Vs. Time

Sullins (Arrow Rentals)  
187 N. L Street  
Livermore, California



**CHART 6**  
**MW-404: Benzene Concentration Groundwater Elevation Vs. Time (Less Outlier)**

Sullins (Arrow Rentals)  
 187 N. L Street  
 Livermore, California



**CHART 7**  
**MW-9: Benzene Concentration Groundwater Elevation Vs. Time**

Sullins (Arrow Rentals)  
 187 N. L Street  
 Livermore, California

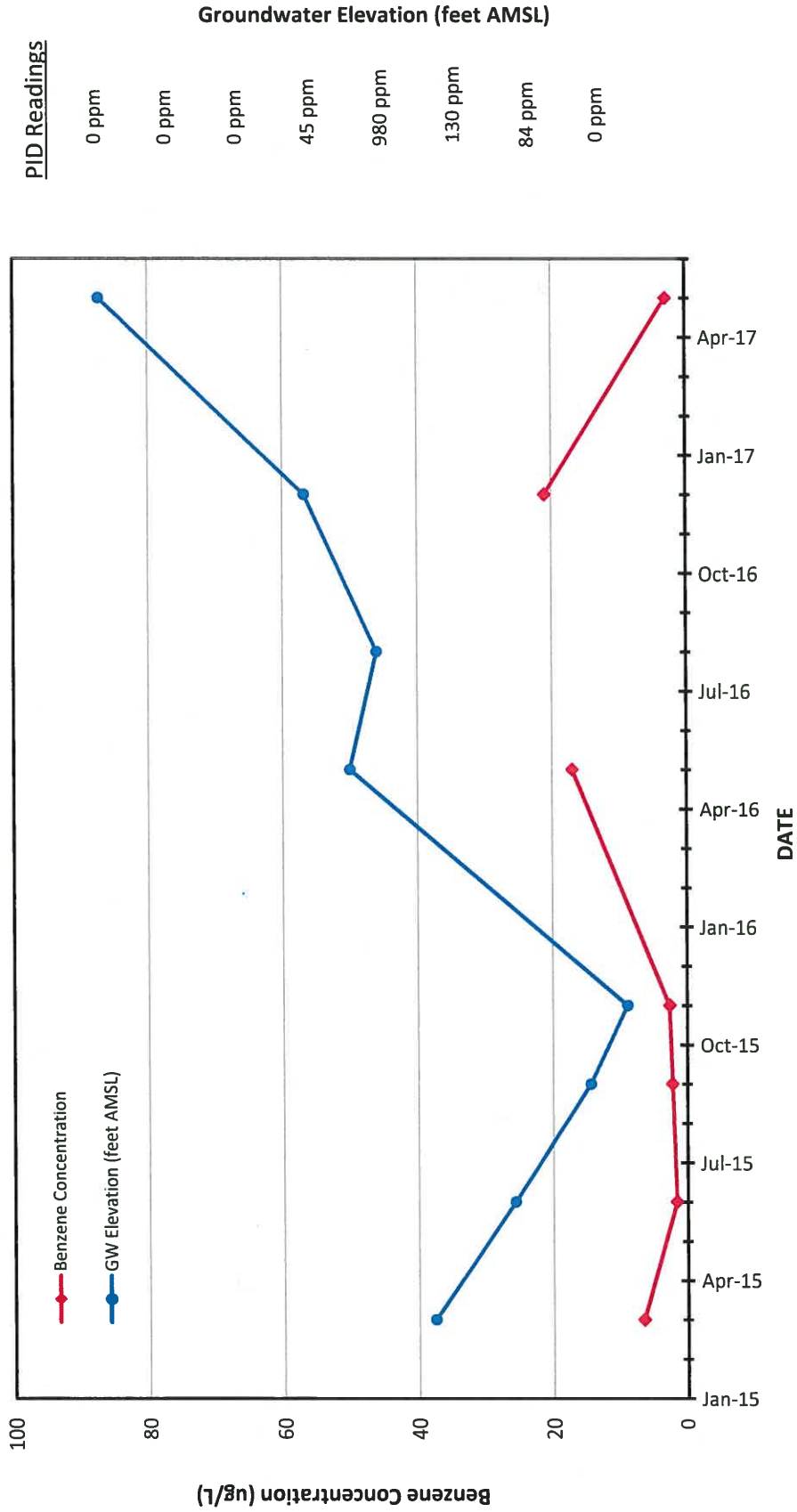
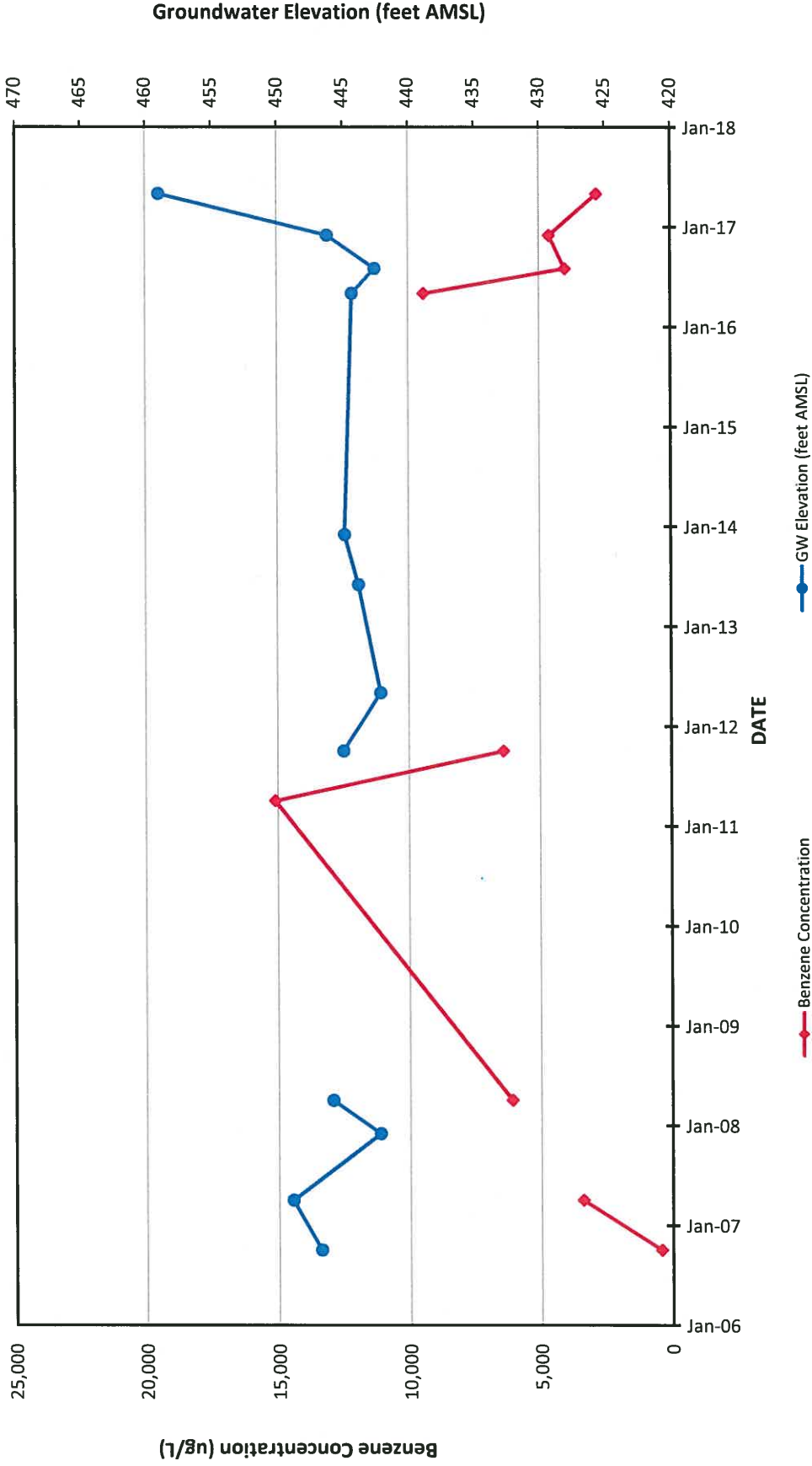


CHART 8

MW-107: Benzene Concentration Groundwater Elevation Vs. Time

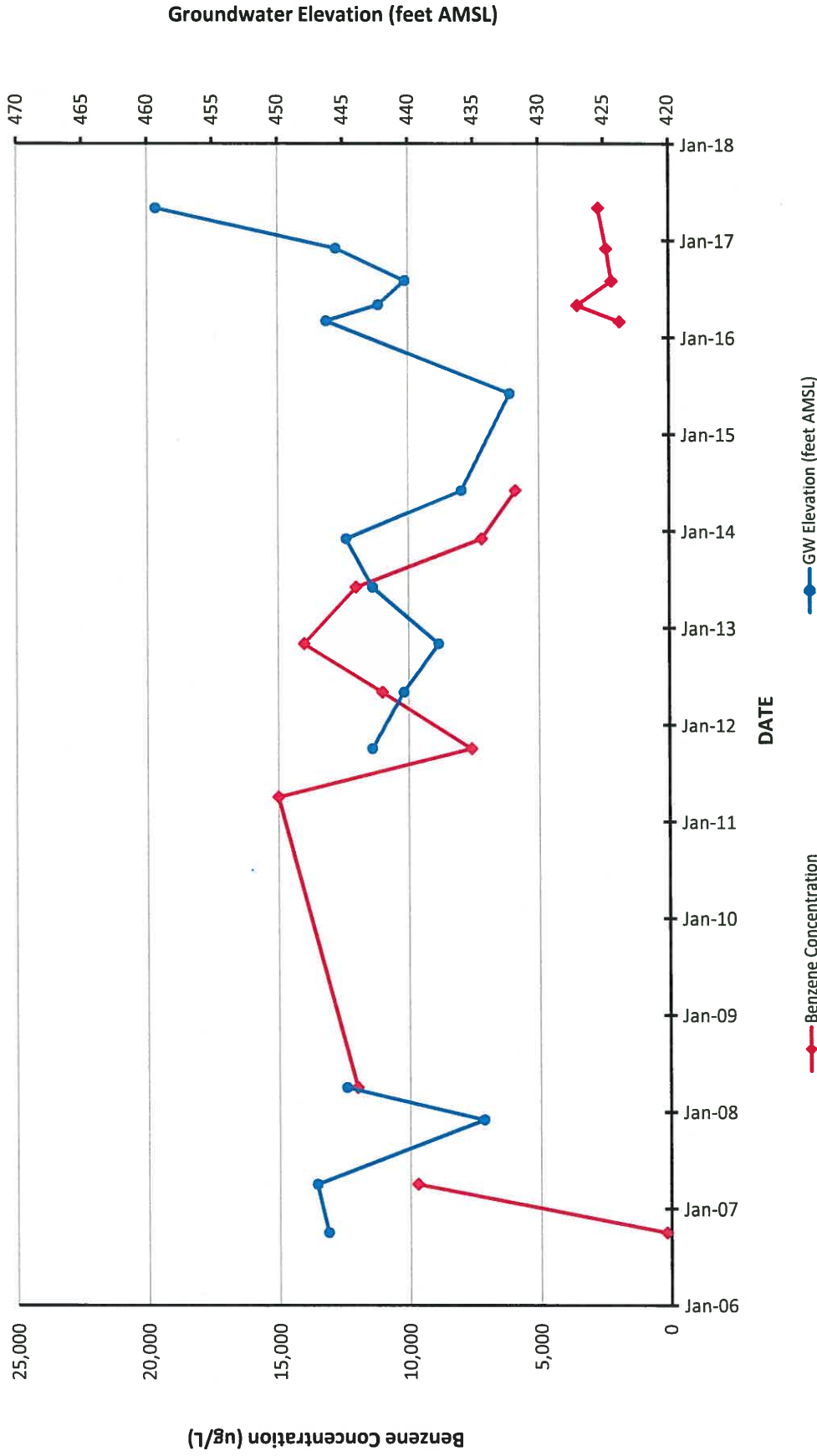
Sullins (Arrow Rentals)  
187 N. L Street  
Livermore, California



### CHART 9

## MW-207: Benzene Concentration Groundwater Elevation Vs. Time

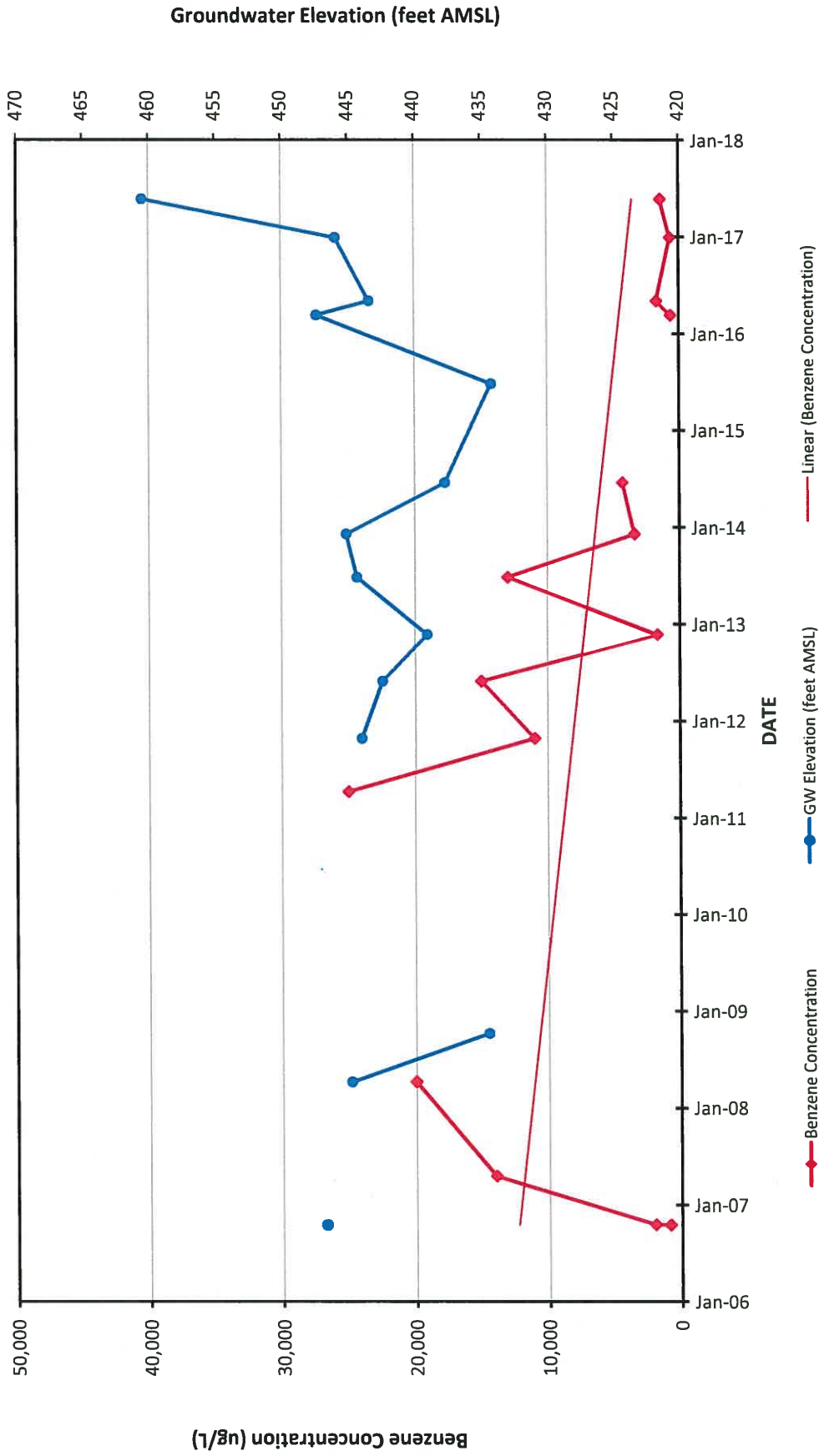
Sullins (Arrow Rentals)  
187 N. L Street  
Livermore, California



# CHART 10

## MW-205: Benzene Concentration Groundwater Elevation Vs. Time

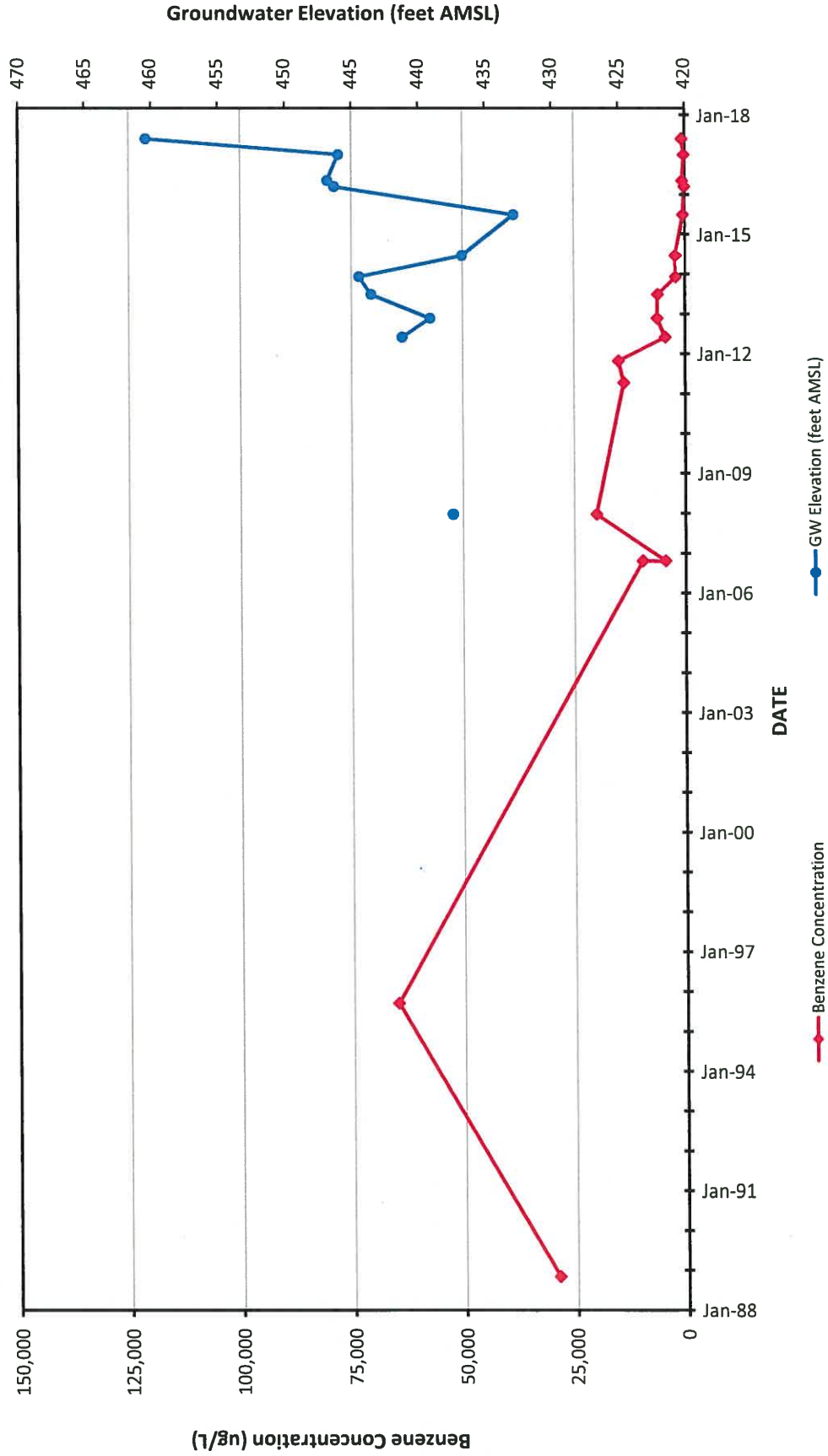
Sullins (Arrow Rentals)  
187 N. L Street  
Livermore, California





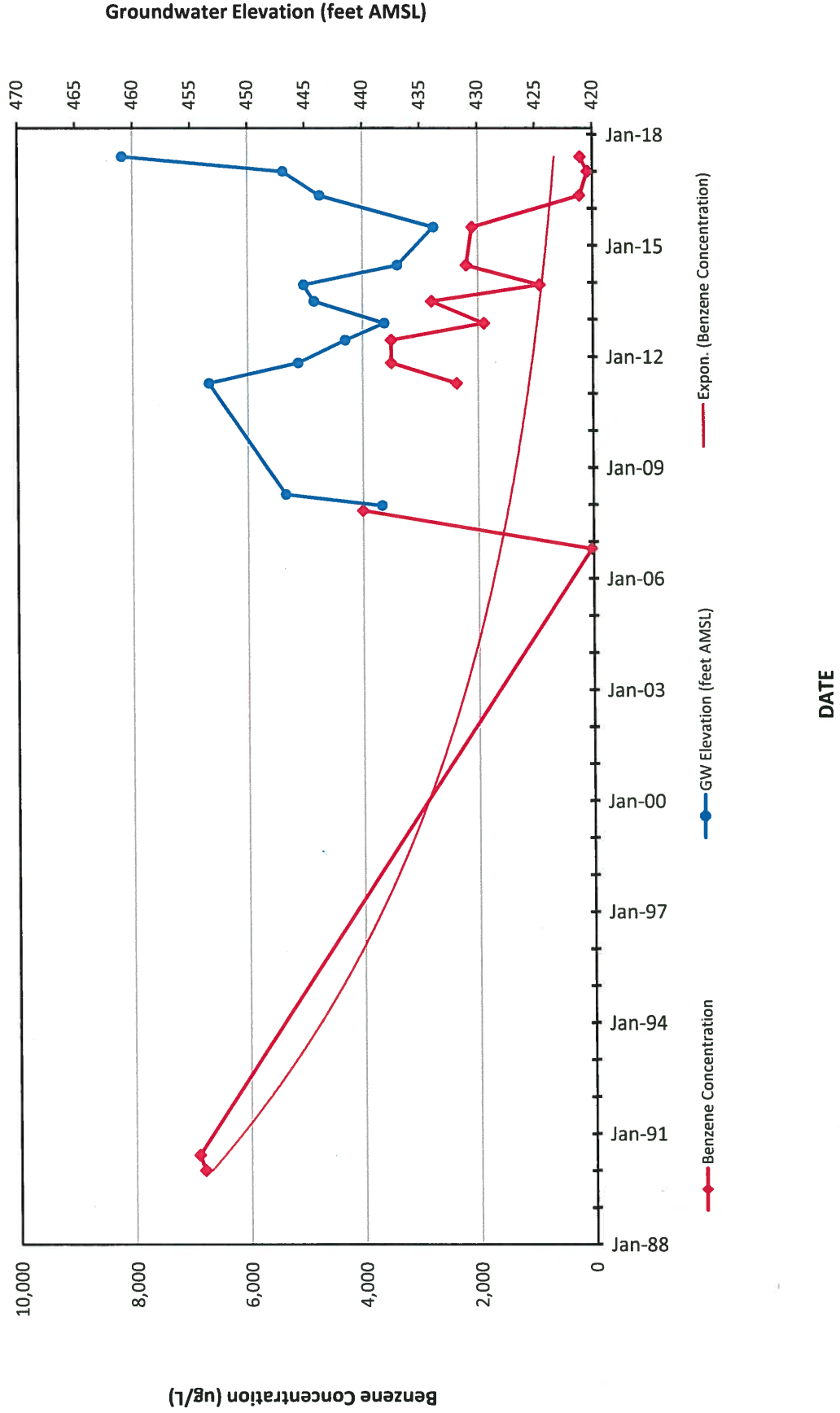
**CHART 11**  
**W-1: Benzene Concentration Groundwater Elevation Vs. Time**

Sullins (Arrow Rentals)  
 187 N. L Street  
 Livermore, California



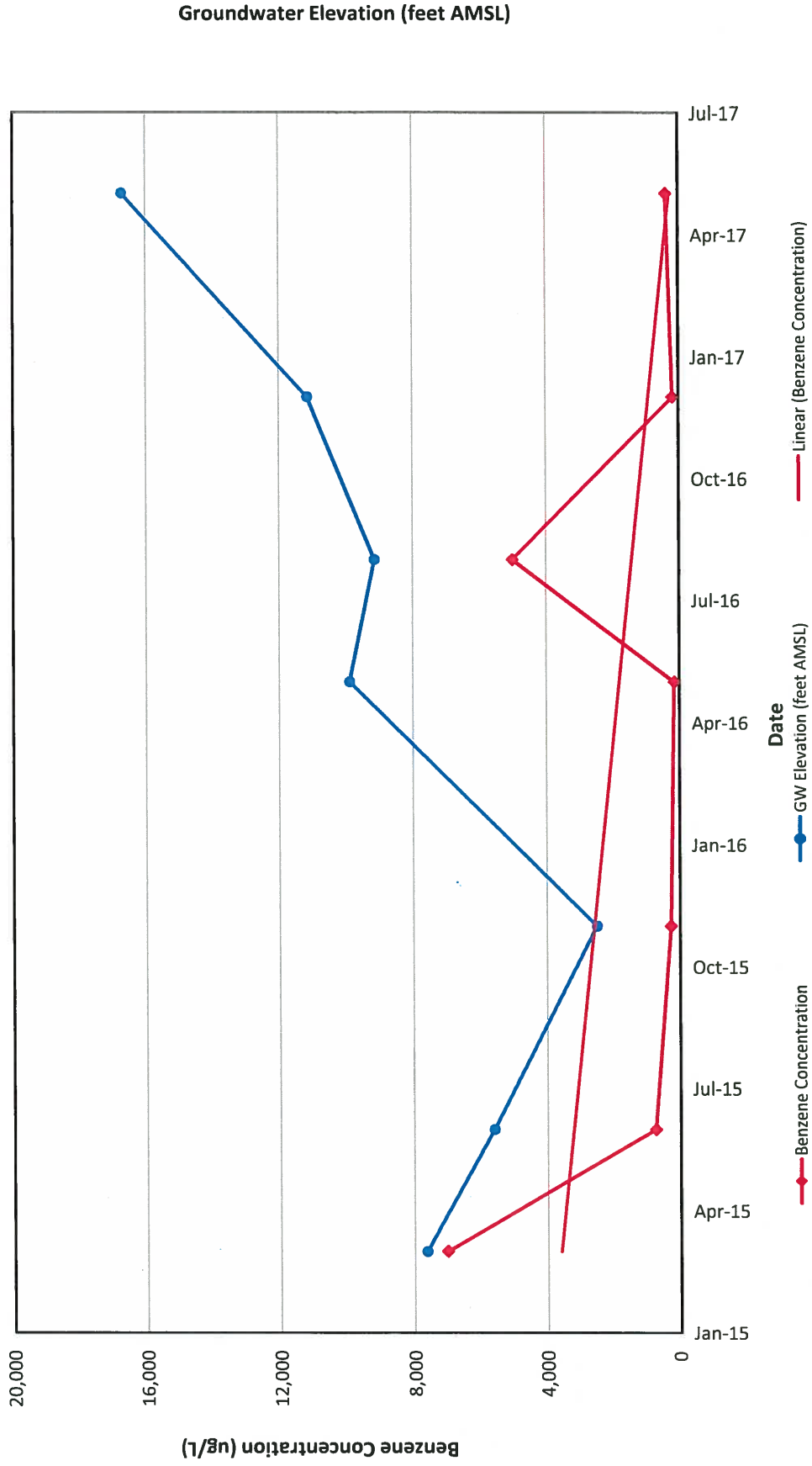
**CHART 12**  
**W-A: Benzene Concentration Groundwater Elevation Vs. Time**

Sullins (Arrow Rentals)  
 187 N. L Street  
 Livermore, California



**CHART 13**  
**EW-2: Benzene Concentration Groundwater Elevation Vs. Time**

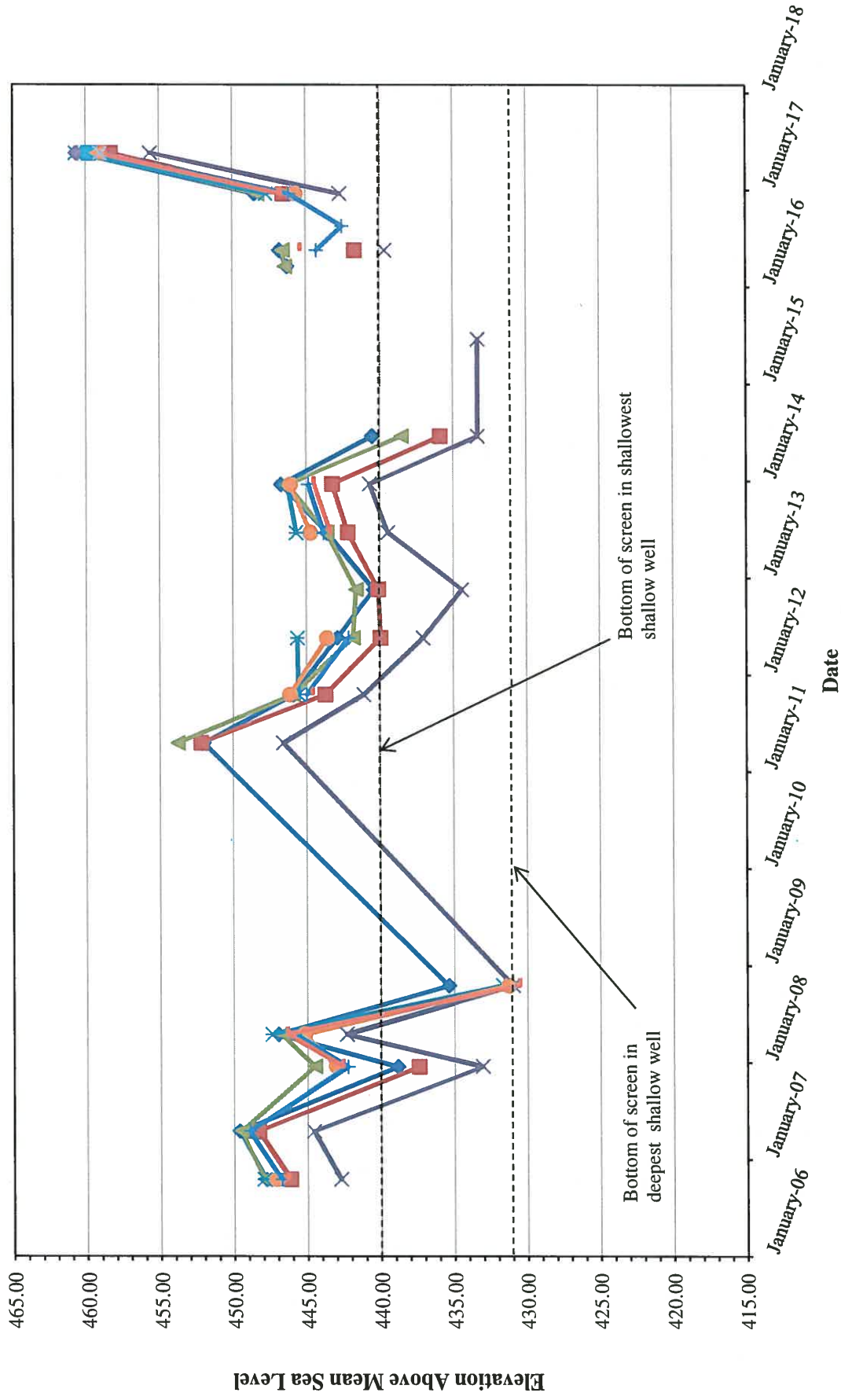
Sullins (Arrow Rentals)  
 187 N. L Street  
 Livermore, California



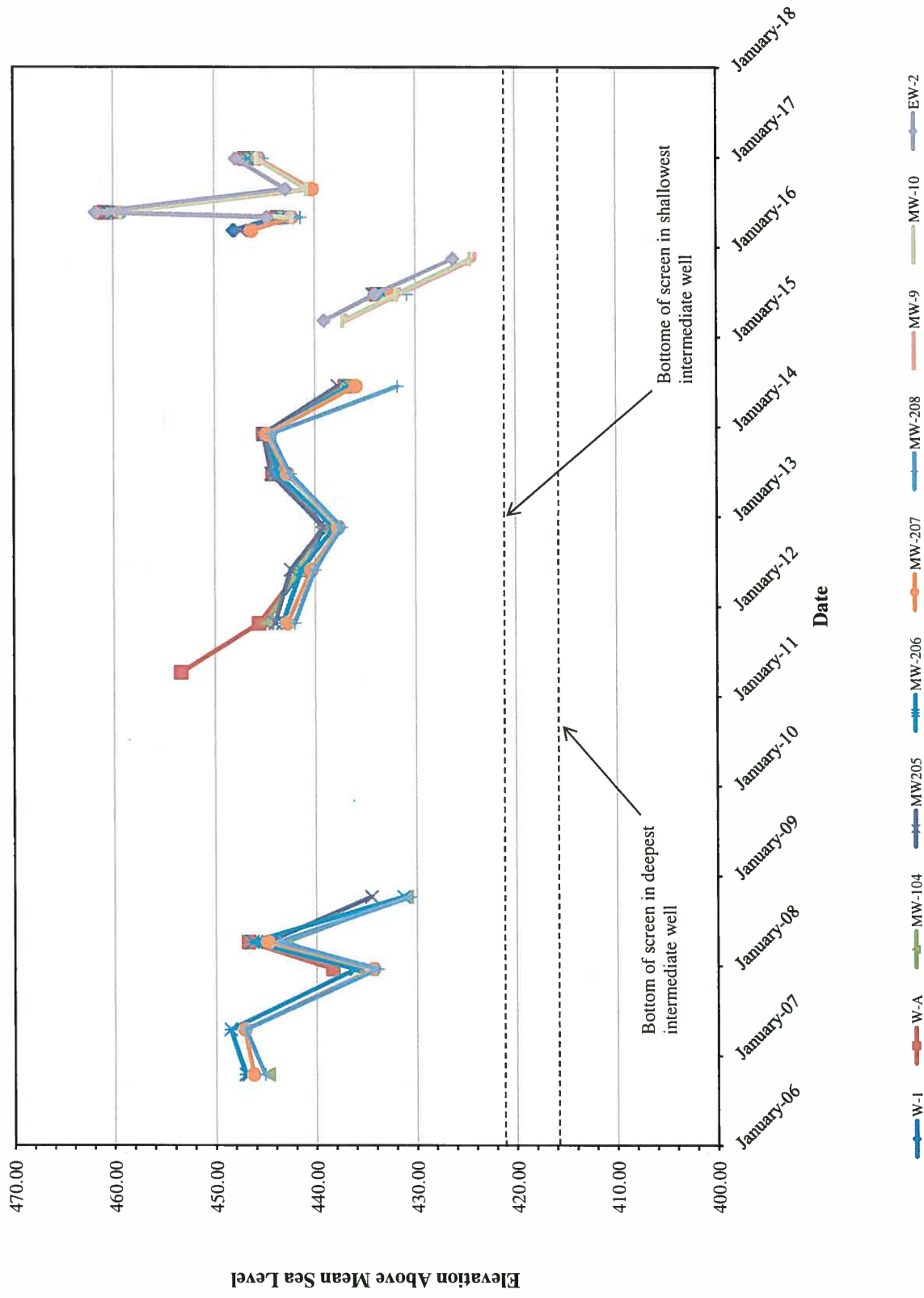
# **ATTACHMENT A**

## **Hydrographs**

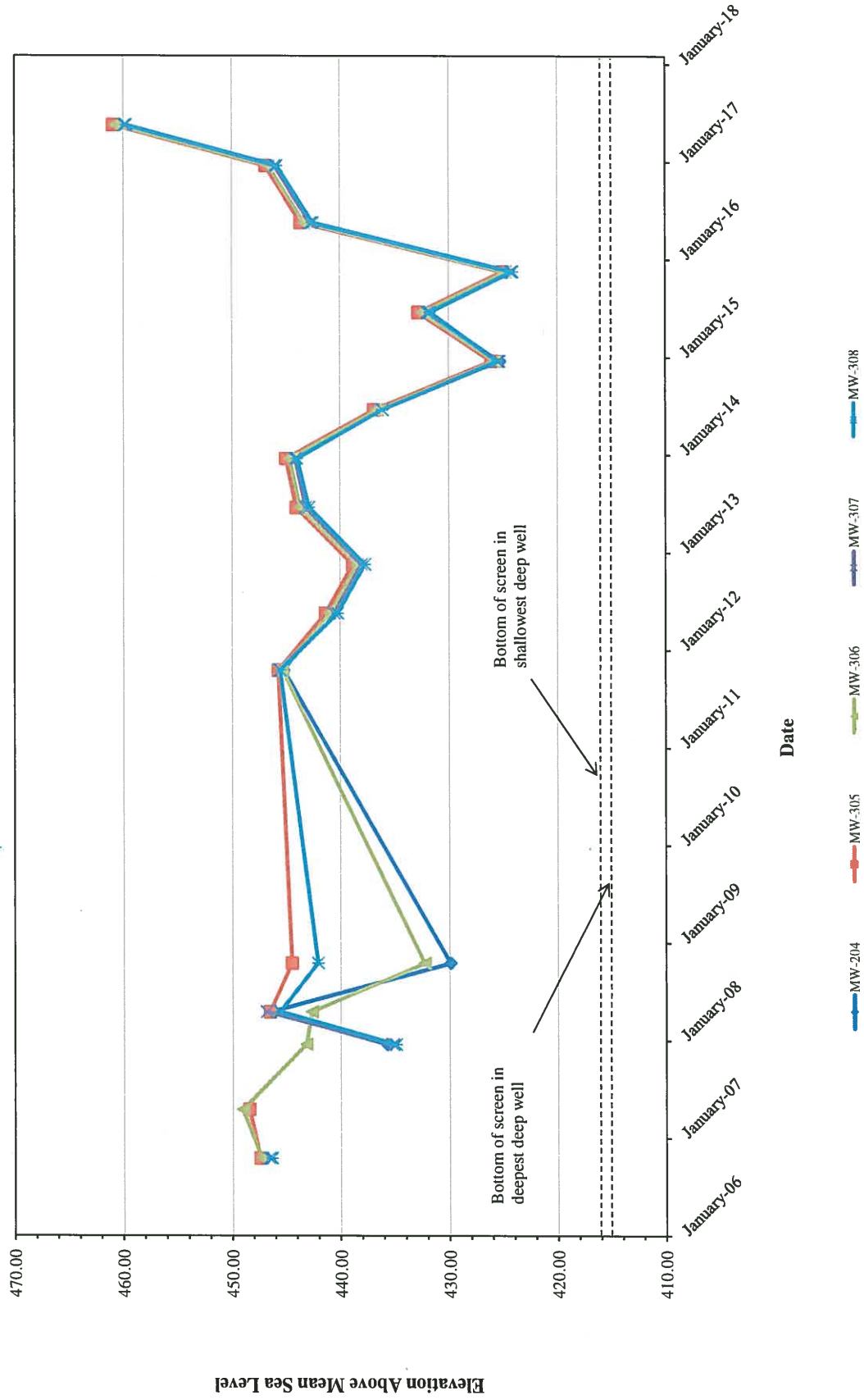
# Hydrograph: Shallow Groundwater Monitoring Wells



# Hydrograph: Intermediate Groundwater Monitoring Wells



# Hydrograph: Deep Groundwater Monitoring Wells



# **ATTACHMENT B**

## **Groundwater Monitoring Field Notes**



# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: W-1

Project No.: 1262.2

Date: 5/29/17

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
0859	6.0						Slight Gasoline odor
0917	12.0						Yellowish color
0949	18.0	20.55	1436	6.50	-68.9	2.7	No silt
1005							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Disposable Bailer

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	56.50'
* Well TD (ft):	54.01
Silt Thickness (ft):	
Initial DTW (ft):	20.38
Water column height (ft):	33.63
One casing volume (gal):	5.7
** Final DTW (ft):	21.50
Casing diameter (in):	2"

97%

Sample Containers used: 4 # VOAs 8 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Andy Swann

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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

CMT 7  
W-1s  
W-1  
EW-2

Project Name: Sullins (L St)

Well I.D.: W-1s

Project No.: 1262.2

Date: 5/24/17

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
0817	0	20.42	1157	7.34	-90.4	1.24	Slight Gas odor
0939	35.0	20.70	1151	7.40	-1.9	.92	water clear
1025	70.0	20.73	1145	7.19	10.9	.90	✓
1042	110.0	20.78	1142	7.01	22.2	1.2	OK
1055							Sampled
							Replaced foot valve 0949

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	45.00
* Well TD (ft):	44.50
Silt Thickness (ft):	
Initial DTW (ft):	20.63
Water column height (ft):	23.87
One casing volume (gal):	35.3
** Final DTW (ft):	20.90
Casing diameter (in):	6"

Sample Containers used: 4 # VOAs 0 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Swann

Sample Method: Waterra  Bailor  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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-3s

Project No.: 1262.2

Date: 5-23-2017

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
1100	0	20.60	1104	7.76	37.2	1.53	BROWN, NO ODOOR, V. FEW SEEDS
1123	14.75	20.24	1105	7.33	53.4	0.52	CLEAR, AA
1148	29.50	20.25	1106	7.38	45.2	0.64	CLEAR, AA
1215	34.25	20.24	1107	7.40	48.3	0.66	CLEAR, AA
1220							

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	45.00
* Well TD (ft):	43.35'
Silt Thickness (ft):	
Initial DTW (ft):	20.81'
Water column height (ft):	22.54'
One casing volume (gal):	14.65
** Final DTW (ft):	21.00'
Casing diameter (in):	4"

Sample Containers used: 4 # VOAs HCL preserved \_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: ANDREW DORN *Andrew 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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-4

Project No.: 1262.2

Date: 5/27/17

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
1459	0							Water clear
1504	1.0	21.75		1302	7.43	-48.7	0.50	Very slight Gasoline odor
1510								Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PARASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>30.00'</u>
* Well TD (ft):	<u>29.64</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.29</u>
Water column height (ft):	<u>9.35</u>
One casing volume (gal):	<u>1</u>
** Final DTW (ft):	<u>20.32</u>
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs  preserved  non-preserved  
 \_\_\_\_\_ # amber liters  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: A.Dorn Anthony Dorn

Sample Method: Waterra  Bailer  Other

\* = measured \*\* = @ sampling

Purged Water Drummed:  Yes  No

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

No. of Drums: \_\_\_\_\_

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-5

Project No.: 1262.2

Date: 5/23/17

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
0750	.2	21.05		1016	7.13	-37.6	1.02	Water, no odor
0800								Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>27.00'</u>
* Well TD (ft):	<u>26.60</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.44</u>
Water column height (ft):	<u>6.16</u>
One casing volume (gal):	<u>.1</u>
** Final DTW (ft):	
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs  preserved  non-preserved  
 \_\_\_\_\_ # amber liters  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved

Notes: \_\_\_\_\_

Sampled By: A. [Signature]

Sample Method: CMT Waterra  Bailer  Other   
.011

\* = measured \*\* = @ sampling

Purged Water Drummed:  Yes  No

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

No. of Drums: \_\_\_\_\_

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-6 5

Project No.: 1262.2

Date: 5/23/17

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
0927	.2							Water to Brownie site, w odor
0935								Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	30.00'
* Well TD (ft):	30.73
Silt Thickness (ft):	
Initial DTW (ft):	21.03
Water column height (ft):	9.7
One casing volume (gal):	.1
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs     x preserved     non-preserved  
    # amber liters     preserved     non-preserved  
    # polys     preserved     non-preserved  
    # polys     preserved     non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Stumm

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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-7 4

Project No.: 1262.2

Date: 5/24/17

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
1240	.1							no sdh depth well
1250	.2							dry
1300								Sampled
1325		22.09		1687	7.27	-69.9	.61	

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	30.00'
* Well TD (ft):	29.52
Silt Thickness (ft):	
Initial DTW (ft):	21.72
Water column height (ft):	7.8
One casing volume (gal):	.1
** Final DTW (ft):	21.72
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs  preserved  non-preserved  
 \_\_\_\_\_ # amber liters  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: Anthony Juan

Sample Method: Waterra  Bailor  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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L. St)

Well I.D.: MW-8 4

Project No.: 1262.2

Date: 5/23/17

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
1200	.1	20.65	1157	6.93	-121.3	1.03	Greenish gray no silt
1205	.3						Slight gasoline odor dry, AM cont
1245							Sample

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PARASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	30.00'
* Well TD (ft):	29.29
Silt Thickness (ft):	
Initial DTW (ft):	21.62
Water column height (ft):	7.67
One casing volume (gal):	.1
** Final DTW (ft):	21.64'
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs x preserved      non-preserved  
 \_\_\_\_\_ # amber liters      preserved      non-preserved  
 \_\_\_\_\_ # polys      preserved      non-preserved  
 \_\_\_\_\_ # polys      preserved      non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: A.Dorn Anthony Dorn

Sample Method: Waterra  Bailer  Other

Purged Water Drummed:  Yes  No  
 No. of Drums: \_\_\_\_\_

\* = 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



# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-9

Project No.: 1262.2

Date: 5-22-2017

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
1443	0	20.21	1136	6.93	69.3	4.03	L. BROWN, NO ODOR, V. FEW SEDS
1450	7.75	20.56	1119	7.05	74.8	4.75	CLEARISH BROWN, NO ODOR, NO SEDS
1456	15.50	20.59	1117	7.07	78.9	5.45	AA
1502	23.25	20.58	1117	7.08	78.8	5.40	AA
1505							COLLECTED SAMPLE

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>65.00'</u>
* Well TD (ft):	<u>65.17'</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.60'</u>
Water column height (ft):	<u>44.57</u>
One casing volume (gal):	<u>7.75'</u>
** Final DTW (ft):	<u>20.89'</u>
Casing diameter (in):	<u>2"</u>

Sample Containers used: 4 # VOAs HCL preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: ANDREW DORN *Andrew 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: \_\_\_\_\_

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-10

Project No.: 1262.2

Date: 5-22-2017

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
1400	0	19.73	1131	6.03	173.8	5.45	CLEARISH BROWN, NO ODOR, V. FEW SEDS
1407	7.75	19.96	1115	6.37	160.9	6.19	AA
1415	15.50	20.02	1115	7.20	127.3	6.50	AA
1424	23.25	20.01	1115	7.25	122.1	6.43	AA
1430							COLLECTED SAMPLE

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	65.00'
* Well TD (ft):	64.95'
Silt Thickness (ft):	
Initial DTW (ft):	20.61'
Water column height (ft):	44.34'
One casing volume (gal):	7.54
** Final DTW (ft):	20.83'
Casing diameter (in):	2"

Sample Containers used: 4 # VOAs HCL preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: ANDREW DORN *Andrew 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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-104

Project No.: 1262.2

Date: 5/23/17

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
1435	.5						Slight Geo odor
1440	1.0						Ground odor
1444	2.0	21.32	1306	7.36	-65.3	1.71	↳
1450							Sampled

Purge Method:  Dedicated Watterra  Centrifugal pump with dedicated tubing  Other PARASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>50.50'</u>
* Well TD (ft):	<u>50.50'</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.11</u>
Water column height (ft):	<u>30.39</u>
One casing volume (gal):	<u>.3</u>
** Final DTW (ft):	<u>21.01'</u>
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs 8 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Truon

Sample Method: Watterra  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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-105 3

Project No.: 1262.2

Date: 5/23/17

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
1126	.2							slight Geo Odor
1129	.4							↳ Greenish silt.
1133	.6							↓
1140								Sample

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PARASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>37.00'</u>
* Well TD (ft):	<u>36.55'</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.42</u>
Water column height (ft):	<u>16.13</u>
One casing volume (gal):	<u>.2</u>
** Final DTW (ft):	<u>20.47</u>
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs 8 preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved

Notes: \_\_\_\_\_

Sampled By: Anthony J. [Signature]

Sample Method: CMT .011 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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-106 4

Project No.: 1262.2

Date: 5/23/17

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
0912	.2							Water clear
0915	.2							no odor
↓	.4							dry.
0920								Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>37.00</u>
* Well TD (ft):	<u>37.63</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>21.71</u>
Water column height (ft):	<u>15.92</u>
One casing volume (gal):	<u>.2</u>
** Final DTW (ft):	
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs HCl preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: Anthony J. [Signature]

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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-107 3

Project No.: 1262.2

Date: 5/24/17

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
1214	0						water clear
1217	.2						slight gas odor
1220	.4						↓
1224	.6	22.10	1369	7.12	-79.3	1.21	
1230							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	40.00'
* Well TD (ft):	40.00
Silt Thickness (ft):	
Initial DTW (ft):	21.95
Water column height (ft):	18.05
One casing volume (gal):	.2
** Final DTW (ft):	21.95
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs 8 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Storm

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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-108 3

Project No.: 1262.2

Date: 5/23/17

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
1106	.2						dry
							Recharge
1148	.8	21.07	1107	6.90	-133.6	1.09	
1153							Sample

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PAPASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>40.00'</u>
* Well TD (ft):	<u>40.00'</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>21.57</u>
Water column height (ft):	<u>18.43</u>
One casing volume (gal):	<u>.2</u>
** Final DTW (ft):	<u>21.60'</u>
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs 8 preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Jones

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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-204 3

Project No.: 1262.2

Date: 5/27/17

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
1415	.5						Grey oil
1420	1.0						Slight Green odor
1426	1.5	20.73	1103	7.55	-143.9	1.63	↓
1430							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PARASTALTIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	66.50'
* Well TD (ft):	66.50'
Silt Thickness (ft):	
Initial DTW (ft):	20.12
Water column height (ft):	46.38
One casing volume (gal):	.5
** Final DTW (ft):	21.17'
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs  preserved  non-preserved  
 \_\_\_\_\_ # amber liters  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_  preserved  non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: Anthony Sumner

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



# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-205

Project No.: 1262.2

Date: 5/23/17

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
0713	.2						CS Break out
0717	.4						Slight Gas odor
0721	.6	19.19	1337	7.22	-73.2	1.29	
0727							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	48.00'
* Well TD (ft):	48.01
Silt Thickness (ft):	
Initial DTW (ft):	20.64
Water column height (ft):	.2
One casing volume (gal):	
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved

Notes: \_\_\_\_\_

Sampled By: Anthony Stone

Sample Method: CMT 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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-206 3

Project No.: 1262.2

Date: 5/23/17

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
0848	.3							Water clear
0851	.6							no odor
0855	.9							↓
0905								Sample

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>50.00'</u>
* Well TD (ft):	<u>49.93</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.91</u>
Water column height (ft):	<u>29.02</u>
One casing volume (gal):	<u>3</u>
** Final DTW (ft):	
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs  preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_

Sampled By: Anthony J. [Signature]

Sample Method: Waterra  Bailor  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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-207 2

Project No.: 1262.2

Date: 5/24/17

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
1149	0						Water clear
1154	3						Slight Gas od
1159	.6						1
1204	.6	22.08	1389	7.08	-94.7		
1210							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	50.00'
* Well TD (ft):	50.00
Silt Thickness (ft):	
Initial DTW (ft):	21.59
Water column height (ft):	28.41
One casing volume (gal):	3
** Final DTW (ft):	21.59
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs 8 preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: Anthony Stone

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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-208 2

Project No.: 1262.2

Date: 5/23/17

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
1035	.3						5/23/17
	1.0	22.4	1325	6.51	-87.9	1.09	
1040							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PARASATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>52.00'</u>
* Well TD (ft):	<u>51.97</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>21.62</u>
Water column height (ft):	<u>30.35</u>
One casing volume (gal):	<u>.3</u>
** Final DTW (ft):	<u>21.62'</u>
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs 8 preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Fiume

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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-304 2

Project No.: 1262.2

Date: 5/23/17

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
1347	.6						Brownish silt
1355	1.2						Stripped Gasoline odor
1402	1.8	21.00	1073	7.24	-57.8	3.21	JT
1407							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

PARASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>75.50'</u>
* Well TD (ft):	<u>75.06</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.24</u>
Water column height (ft):	<u>54.76</u>
One casing volume (gal):	<u>.6</u>
** Final DTW (ft):	<u>20.26'</u>
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs 8 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Simon

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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-305

Project No.: 1262.2

Date: 5/23/17

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
0630	.5						Lt Brownish silt
0637	1.0						organic odor
0644	1.5	20.15	1110	6.47	647.6	1.97	✓
0655							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	66.00'
* Well TD (ft):	65.93
Silt Thickness (ft):	
Initial DTW (ft):	20.19
Water column height (ft):	45.74
One casing volume (gal):	.5
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs 0 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Jones

Sample Method: Waterra  Bailer  Other

\* = measured \*\* = @ sampling

Purged Water Drummed:  Yes  No

No. of Drums: \_\_\_\_\_

Gallons per foot of casing. CMT = 0.011, 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-306 1

Project No.: 1262.2

Date: 5/23/17

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
0825	1.5						water clear
0828	1.0						w/ odor
0832	1.5						
0840							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	66.00'
* Well TD (ft):	65.83
Silt Thickness (ft):	
Initial DTW (ft):	20.03
Water column height (ft):	45.80
One casing volume (gal):	1.5
** Final DTW (ft):	
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs ✓ preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Jim

Sample Method: Waterra  Bailer  Other

\* = measured \*\* = @ sampling

Purged Water Drummed:  Yes  No  
 No. of Drums: \_\_\_\_\_

Gallons per foot of casing. CMT = 0.011, 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-307 <sup>1</sup>

Project No.: 1262.2

Date: 5/24/17

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
1121	0						Water clear
1126	.5						Slight Gasoline odor
1131	1.0						↓
1136	1.5	21.08	1106	7.78	560.8	.67	
1140							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	66.00'
* Well TD (ft):	66.00'
Silt Thickness (ft):	
Initial DTW (ft):	21.02
Water column height (ft):	44.98
One casing volume (gal):	.5
** Final DTW (ft):	21.02
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs 8 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_

Sampled By: Anthony J. [Signature]

Sample Method: Waterra  Bailer  Other

\* = measured \*\* = @ sampling

Purged Water Drummed:  Yes  No

No. of Drums: \_\_\_\_\_

Gallons per foot of casing. CMT = 0.011, 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48



# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-308 1

Project No.: 1262.2

Date: 5/23/17

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
1008	.5						water clear
1012	1.0						slight green color
1015	1.5	22.77	1116	7.21	39.6	.92	↓
1620							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PARASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	66.00'
* Well TD (ft):	66.10
Silt Thickness (ft):	
Initial DTW (ft):	20.97
Water column height (ft):	45.23
One casing volume (gal):	.5
** Final DTW (ft):	20.90'
Casing diameter (in):	CMT

Sample Containers used: 4 # VOAs X preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_

Sampled By: Anthony Stone

Sample Method: Waterra  Bailer  Other

\* = measured \*\* = @ sampling

Purged Water Drummed:  Yes  No

No. of Drums: \_\_\_\_\_

Gallons per foot of casing. CMT = 0.011, 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: MW-404 1

Project No.: 1262.2

Date: 5/23/17

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
1321	.7						
1335	2.1	20.79	1005	7.13	4.2	3.91	Grey 1st silt. 57.1st Ground odor
1340							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other PARASTATIC

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	<u>81.50'</u>
* Well TD (ft):	<u>81.50</u>
Silt Thickness (ft):	
Initial DTW (ft):	<u>20.50</u>
Water column height (ft):	<u>61.00</u>
One casing volume (gal):	<u>7</u>
** Final DTW (ft):	<u>20.93</u>
Casing diameter (in):	<u>CMT</u>

Sample Containers used: 4 # VOAs Y preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony J...

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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: W-A

Project No.: 1262.2

Date: 5-23-17

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
1359	0	20.71	1075	7.29	-119.5	3.24	CLEARISH BLACK, MILD ODOR, NO SEDS
1418	21.5	20.52	1161	7.69	-138.6	1.49	AA
1438	43.0	20.53	1163	7.55	-142.0	0.76	AA
1500	64.5	20.53	1164	7.53	-141.6	0.63	AA
1910							COLLECTED SAMPLES

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	63.00
* Well TD (ft):	53.00'
Silt Thickness (ft):	
Initial DTW (ft):	20.15'
Water column height (ft):	32.85'
One casing volume (gal):	21.33
** Final DTW (ft):	21.00'
Casing diameter (in):	4"

Sample Containers used: 4 # VOAs HCL preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved

Notes: ALLOWED RECHARGE PRIOR TO SAMPLING. MAX DRAWDOWN TO 26.3' BTOC. ACTUAL SAMPLE TIME 1521

Sampled By: ANDREW DORN *Andrew 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:

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: W-Bs

Project No.: 1262.2

Date: 5-23-17

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
1227	0	20.77	1136	7.50	-52.1	0.18	CLEAR, NO ODOR, NO SEDS
1252	34.5	20.70	1123	7.47	-2.5	0.27	AA
1320	69.0	20.71	1123	7.41	2.2	0.23	AA
1353	103.5	20.69	1121	7.40	1.8	0.18	AA
1420							COLLECTED SAMPLE

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	45.00
* Well TD (ft):	44.40'
Silt Thickness (ft):	
Initial DTW (ft):	21.05'
Water column height (ft):	23.35'
One casing volume (gal):	34.5
** Final DTW (ft):	21.07
Casing diameter (in):	6"

Sample Containers used: 4 # VOAs HCL preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # amber liters \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved  
 \_\_\_\_\_ # polys \_\_\_\_\_ preserved \_\_\_\_\_ non-preserved

Notes: ALLOWED RECHARGE PRIOR TO SAMPLING  
MAX. DRAWDOWN TO 23.9' BTWC  
 Sampled By: ANDREW DORN *Andrew Dorn*

Sample Method: Waterra  Bailor  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

# Ground Zero Analysis, Inc.

## Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: W-Es

Project No.: 1262.2

Date: 5-22-2017

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
1505	0	22.98	899	7.60	87.0	0.75	CLEARISH BROWN, NO ODOR, V. FEW SEDS
1510	4	23.11	901	7.66	88.9	1.00	AA
1515	8	23.15	897	7.53	87.9	0.89	AA, TURBID
1520	12	23.15	909	7.43	89.3	1.07	AA
1525							COLLECTED SAMPLE

Purge Method:  Dedicated Watterra  Centrifugal pump with dedicated tubing  Other BAILER

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	45.00
* Well TD (ft):	44.20'
Silt Thickness (ft):	
Initial DTW (ft):	21.15'
Water column height (ft):	23.05'
One casing volume (gal):	3.92
** Final DTW (ft):	21.15'
Casing diameter (in):	2"

Sample Containers used: 4 # VOAs HCL preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 Sampled By: ANDREW DORN *Andrew Dorn*

Sample Method: Watterra  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

# Ground Zero Analysis, Inc.

# Groundwater Monitoring Field Log

Project Name: Sullins (L St)

Well I.D.: EW-2

Project No.: 1262.2

Date: 5/24/17

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
0700	0	20.63	1210	7.29	-140.0	1.48	Greenix side
0708	7.0	20.61	1171	7.05	-144.8	.79	51.74 Greenix side
0716	14.0	20.58	1166	7.18	-148.2	.91	
0724	21.0	20.57	1165	7.15	-144.5	.50	
0735							Sampled

Purge Method:  Dedicated Waterra  Centrifugal pump with dedicated tubing  Other

Pumping Rate: \_\_\_\_\_ gal/min

Well Constructed TD (ft):	60.00'
* Well TD (ft):	59.53
Silt Thickness (ft):	
Initial DTW (ft):	19.48
Water column height (ft):	40.05
One casing volume (gal):	6.8
** Final DTW (ft):	20.70
Casing diameter (in):	2"

Sample Containers used: 4 # VOAs 8 preserved \_\_\_ non-preserved  
 \_\_\_ # amber liters \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved  
 \_\_\_ # polys \_\_\_ preserved \_\_\_ non-preserved

Notes: \_\_\_\_\_  
 Sampled By: Anthony Turner

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

## Water Level Monitoring Record

Project Name SULLING  
 Date 5-22-2017

Project No. 1262.2  
 Technician A. DORN

MP = Measuring Point  
 I = Inaccessible  
 GL = Ground Level

Well Condition\*:  
 G = Good    F=fair  
 P = Poor    R=Replace

Well No.	Sample Order	Time	Well Casing Dia.	Water Level Below MP (100th/foot)	Total Depth (100th/foot)	Depth to Floating Product (100th/foot)	Floating Product Thickness (100th/foot)	Surficial Seal* (Grout)	Concrete Seal*	Lid Secure*	Gasket*	Lock*	Expanding Cap*	Water in Well Box (Y or N)	Remarks
W-ES		1119	2"	21.15'	44.20'										NO WATER TUBING OR VALVE
MW-10		1141	2"	20.61'	64.95'										
MW-9		1144	2"	20.60'	65.17'										
W-3s		1147	4"	20.81'	43.35'										REPLACED WATER TUBING & VALVE
W-8s		1152	6"	21.05'	44.40'										
W-1s		1158	6"	20.63'	44.50'										
W-A		1200	4"	20.15'	53.0'										
W-1		1203	2"	20.38'	54.01'										
EW-2		1207	2"	19.48'	59.53'										

Notes: \_\_\_\_\_

# Water Level Monitoring Record

Project Name SULLINS  
 Date 5-22-2017

Project No. 1262.2  
 Technician A. DORN

MP = Measuring Point  
 I = Inaccessible  
 GL = Ground Level

~~WATER~~  
 COLUMN

Well Condition\*:  
 G = Good    F=fair  
 P = Poor    R=Replace

Well No. (SLOT#)	Sample Order	Time	Well Casing Dia.	Water Level Below MP (100th/foot)	Total Depth (100th/foot)	<del>Depth to Floating Product (100th/foot)</del>	Floating Product Thickness (100th/foot)	Surficial Seal* (Grout)	Concrete Seal*	Lid Secure*	Gasket*	Lock*	Expanding Cap*	Water in Well Box (Y or N)	Remarks
MW-306 <sup>1</sup>		1214	CMT	20.03'	65.83'	45.8'									
MW-206 <sup>3</sup>		1216	CMT	20.91'	49.93'	29.02'									
MW-106 <sup>4</sup>		1218	CMT	21.71'	37.63'	2'									
MW-6 <sup>5</sup>		1220	CMT	21.03'	30.73'	9.70'									
MW-308 <sup>1</sup>		1224	CMT	20.87'	66.10'										
MW-208 <sup>2</sup>		1226	CMT	21.62'	51.97'	30.35'									
MW-108 <sup>3</sup>		1228	CMT	21.57'	40.00'	18.43'									
MW-8 <sup>4</sup>		1230	CMT	21.62'	29.29'										
MW-305 <sup>1</sup>		1233	CMT	20.19'	65.93'										
MW-205 <sup>2</sup>		1235	CMT	20.64'	48.01'	27.37'									
MW-105 <sup>3</sup>		1237	CMT	20.42'	36.55'										
MW-5 <sup>4</sup>		1240	CMT	20.44'	26.60'										

Notes: \_\_\_\_\_



## Water Level Monitoring Record

Project Name SULLINS  
 Date 5-22-2017

Project No. 1262.2  
 Technician A. DORN

MP = Measuring Point  
 I = Inaccessible  
 GL = Ground Level

Well Condition\*:  
 G = Good    F=fair  
 P = Poor    R=Replace

Well No.	Sample Order	Time	Well Casing Dia.	Water Level Below MP (100th/foot)	Total Depth (100th/foot)	Depth to Floating Product (100th/foot)	Floating Product Thickness (100th/foot)	Surficial Seal* (Grout)	Concrete Seal*	Lid Secure*	Gasket*	Lock*	Expanding Cap*	Water in Well Box (Y or N)	Remarks
MW-404	1	1243	CMT	20.50'	81.50'										REPLACED TUBING
MW-304	2	1245		20.24'	75.00'										
MW-204	3	1247		20.12'	66.50'										
MW-104	4	1249		20.11'	50.50'										
MW-4	5	1251		20.29'	29.64'										
MW-307	1	1254		21.02'	66.00'										
MW-207	2	1256		21.59'	50.00'										
MW-107	3	1258		21.75'	40.00'										
MW-7	4	1300	↓	21.72'	29.52'										

Notes: \_\_\_\_\_

## Daily Field Record

Project Sullivan's  
 Project # 5262 Task 3  
 Location \_\_\_\_\_  
 Weather Sunny

Date 5/22/17  
 Time on job 0618 to 1700  
 Record Keeper A. Scam  
 Wind 3 Temp 100°F

PERSONNEL ONSITE		TIME ONSITE	
Name	Company	In	Out
Anthony Scam	GZA	0830	1548

0618	Prep
0648	Levy Modesto
0830	arrived on site
	opened all well lids and removed extraction tubing from Ev. 2, W-1, W-A.
	removed CMT tubing from all wells.
	andrew down arrived on site
	together we monitored D/W in all wells
	Put hoses back down CMT wells.
	Scene set
1548	Levy set
1700	End of day

## Daily Field Record

Project Sullins  
 Project # 5262 Fork 3  
 Location \_\_\_\_\_  
 Weather Sunny

Date 5/23/17  
 Time on job 0518 to 1648  
 Record Keeper A. Swann  
 Wind 3 Temp 100%

PERSONNEL ONSITE		TIME ONSITE	
Name	Company	In	Out
<u>Anthony Swann</u>	<u>GZA</u>	<u>0618</u>	<u>1542</u>

Time	Field Activities
<u>0518</u>	<u>Leah Escobar</u>
<u>0618</u>	<u>on site</u>
	<u>Purge &amp; Sample CMT wells.</u>
	<u>Andrew on site to help purge &amp; sample wells</u>
	<u>CMT wells Sampled 305, 205, 105, MW-5,</u>
	<u>MW-306, 206, 106, MW-6, MW-308, 208, 108, MW-8</u>
	<u>MW, 404, 304, 204, 104, MW-4</u>
	<u>Seneca</u>
<u>1542</u>	<u>Leah Sit</u>
<u>1648</u>	<u>Escobar off</u>

## Daily Field Record

Project Sullivan  
 Project # 5262  
 Location \_\_\_\_\_  
 Weather \_\_\_\_\_

Date 5/24/17  
 Time on job 0530 to 1500  
 Record Keeper A. Scam  
 Wind \_\_\_\_\_ Temp \_\_\_\_\_

PERSONNEL ONSITE		TIME ONSITE	
Name	Company	In	Out
Anthony Scam	GZA	0636	1336

Time	Field Activities
0530	Leaving Escalor
0636	arrived on site
	Water pump used on wells EW-2, W-15 = Sampled
	Disposal Bails used on well W-1 = Sampled
	Purged + Sampled cmt wells MW-307, 207, 107, MW-7
	Contained purge water in the 55 gallon poly's in compartment
	Drum Count: 8 Baker Tank full
	3mt Poly's
	3 full Poly's Purge Water
	2 poly's 25 gal in each drum
	Leaving Site 1336
1448	Modesto office unhook off 1500

# **ATTACHMENT C**

## **Laboratory Analytical Data Sheets**



Date of Report: 05/10/2017

Project Manager

Ground Zero Analysis, Inc.

1172 Kansas Avenue

Modesto, CA 95351

Client Project: 5262

BCL Project: Sullins

BCL Work Order: 1712089

Invoice ID: B267062

Enclosed are the results of analyses for samples received by the laboratory on 5/3/2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon  
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Page 1 of 1

GROUND ZERO ANALYSIS, INC. 1172 Kansas Avenue Modesto, CA (209) 522-4119 Fax 522-4227 E-mail: gza@groundzeroanalysis.com

Chain of Custody

Form containing project details, sampling info, analysis requested, and signature fields. Includes handwritten data for Project # 5262, Site Address 187 N. L Street, Livramento, CA, and analysis for TPH, MTH, BTEX (70-15) and (8260).

Rev. 3/2014

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BC LABORATORIES INC. COOLER RECEIPT FORM. Page 1 of 2

Submission #: 17-12089

**SHIPPING INFORMATION**  
 Fed Ex  UPS  Ontrac  Hand Delivery   
 BC Lab Field Service  Other  (Specify) \_\_\_\_\_

**SHIPPING CONTAINER**  
 Ice Chest  None  Box   
 Other  (Specify) \_\_\_\_\_

**FREE LIQUID**  
 YES  NO   
 (W) / S

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals Ice Chest  Containers  None  Comments: \_\_\_\_\_  
 Intact? Yes  No  Intact? Yes  No

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

COC Received  YES  NO Emissivity: 0.97 Container: PE Thermometer ID: 208 Date/Time: 5/3/2000  
 Temperature: (A) 2.2 °C / (C) 25 °C Analyst Init: GSP

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>6</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL		ABC								
QT EPA 1664										
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										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG		ABC								
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_  
 Sample Numbering Completed By: \_\_\_\_\_ Date/Time: 5/3/2000  
 = Actual / C = Corrected

Rev 21 05/23/2016  
 [S:\WPDoc\WordPerfect\LAB\_DOCS\FORMS\SAMRECrev 20]



BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 of 2

Submission #: 17-12089

**SHIPPING INFORMATION**  
 Fed Ex  UPS  Ontrac  Hand Delivery   
 BC Lab Field Service  Other  (Specify) \_\_\_\_\_

**SHIPPING CONTAINER**  
 Ice Chest  None  Box   
 Other  (Specify) \_\_\_\_\_

**FREE LIQUID**  
 YES  NO   
 (A) W / S

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals Ice Chest  Containers  None  Comments: \_\_\_\_\_  
 Intact? Yes  No  Intact? Yes  No

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

COC Received  YES  NO  
 Emissivity: - Container: Tedlar Thermometer ID: - Date/Time 5/3 2000  
 Temperature: (A) Room °C / (C) Temp °C Analyst Init GSP

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>6</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
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										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_  
 Sample Numbering Completed By: \_\_\_\_\_ Date/Time: 5/3 2000  
 A = Actual / C = Corrected



Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 05/10/2017 11:19  
**Project:** Sullins  
**Project Number:** 5262  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1712089-01</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> SVE-INF <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/03/2017 22:00 <b>Sampling Date:</b> 05/02/2017 11:30 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Air <b>Sample Type:</b> Vapor or Air Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): SVE-INF Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	--

<b>1712089-02</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> GW-INF <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/03/2017 22:00 <b>Sampling Date:</b> 05/02/2017 12:25 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): GW-INF Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	---	--

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 05/10/2017 11:19  
**Project:** Sullins  
**Project Number:** 5262  
**Project Manager:** Project Manager

### Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID: 1712089-01		Client Sample Name: Sullins, SVE-INF, 5/2/2017 11:30:00AM, AD						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	1800	ug/m3	40	8.4	EPA-TO-15	ND	A01	1
Ethylbenzene	1300	ug/m3	100	5.6	EPA-TO-15	ND	A01	1
Methyl t-butyl ether	ND	ug/m3	40	5.2	EPA-TO-15	ND	A01	1
Toluene	98	ug/m3	40	6.4	EPA-TO-15	ND	A01	1
p- & m-Xylenes	3300	ug/m3	100	12	EPA-TO-15	ND	A01	1
o-Xylene	740	ug/m3	100	5.0	EPA-TO-15	ND	A01	1
Total Xylenes	4100	ug/m3	200	17	EPA-TO-15	ND	A01	1
Total Petroleum Hydrocarbons	140000	ug/m3	4000	780	EPA-TO-15	ND	A01	1
4-Bromofluorobenzene (Surrogate)	109	%	70 - 130 (LCL - UCL)		EPA-TO-15			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-TO-15	05/04/17	05/04/17 16:21	MJB	MS-A2	20	B E0464

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 05/10/2017 11:19  
**Project:** Sullins  
**Project Number:** 5262  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1712089-02	<b>Client Sample Name:</b> Sullins, GW-INF, 5/2/2017 12:25:00PM, AD
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	10	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	1.7	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	0.12	ug/L	0.50	0.11	EPA-8260B	ND	J	1
Toluene	0.42	ug/L	0.50	0.093	EPA-8260B	ND	J	1
Total Xylenes	9.3	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	6.7	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	2.6	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	280	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	109	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	93.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	05/08/17	05/09/17 09:15	JMS	MS-V14	1	B[E0903

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 05/10/2017 11:19  
**Project:** Sullins  
**Project Number:** 5262  
**Project Manager:** Project Manager

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[E0903]</b>						
Benzene	B[E0903-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	B[E0903-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	B[E0903-BLK1	ND	ug/L	0.50	0.11	
Toluene	B[E0903-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	B[E0903-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	B[E0903-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	B[E0903-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	B[E0903-BLK1	ND	ug/L	50	7.2	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[E0903-BLK1</b>	<b>106</b>	<b>%</b>	<b>75 - 125 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>B[E0903-BLK1</b>	<b>102</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[E0903-BLK1</b>	<b>89.3</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 05/10/2017 11:19  
Project: Sullins  
Project Number: 5262  
Project Manager: Project Manager

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	Quals
								Percent Recovery	RPD		
<b>QC Batch ID: B[E0903</b>											
Benzene	B[E0903-BS1	LCS	25.992	25.000	ug/L	104		70 - 130			
Toluene	B[E0903-BS1	LCS	24.950	25.000	ug/L	99.8		70 - 130			
1,2-Dichloroethane-d4 (Surrogate)	B[E0903-BS1	LCS	10.370	10.000	ug/L	104		75 - 125			
Toluene-d8 (Surrogate)	B[E0903-BS1	LCS	9.9800	10.000	ug/L	99.8		80 - 120			
4-Bromofluorobenzene (Surrogate)	B[E0903-BS1	LCS	9.0700	10.000	ug/L	90.7		80 - 120			

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

Reported: 05/10/2017 11:19  
Project: Sullins  
Project Number: 5262  
Project Manager: Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
<b>QC Batch ID: B[E0903</b>		Used client sample: N								
Benzene	MS	1711955-05	ND	26.660	25.000	ug/L		107		70 - 130
	MSD	1711955-05	ND	26.716	25.000	ug/L	0.2	107	20	70 - 130
Toluene	MS	1711955-05	ND	25.382	25.000	ug/L		102		70 - 130
	MSD	1711955-05	ND	25.009	25.000	ug/L	1.5	100	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	MS	1711955-05	ND	11.210	10.000	ug/L		112		75 - 125
	MSD	1711955-05	ND	10.720	10.000	ug/L	4.5	107		75 - 125
Toluene-d8 (Surrogate)	MS	1711955-05	ND	10.110	10.000	ug/L		101		80 - 120
	MSD	1711955-05	ND	10.060	10.000	ug/L	0.5	101		80 - 120
4-Bromofluorobenzene (Surrogate)	MS	1711955-05	ND	9.0700	10.000	ug/L		90.7		80 - 120
	MSD	1711955-05	ND	9.4700	10.000	ug/L	4.3	94.7		80 - 120

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 05/10/2017 11:19  
Project: Sullins  
Project Number: 5262  
Project Manager: Project Manager

## Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[E0464</b>						
Benzene	B[E0464-BLK1	ND	ug/m3	2.0	0.42	
Ethylbenzene	B[E0464-BLK1	ND	ug/m3	5.0	0.28	
Methyl t-butyl ether	B[E0464-BLK1	ND	ug/m3	2.0	0.26	
Toluene	B[E0464-BLK1	ND	ug/m3	2.0	0.32	
p- & m-Xylenes	B[E0464-BLK1	ND	ug/m3	5.0	0.61	
o-Xylene	B[E0464-BLK1	ND	ug/m3	5.0	0.25	
Total Xylenes	B[E0464-BLK1	ND	ug/m3	10	0.86	
Total Petroleum Hydrocarbons	B[E0464-BLK1	ND	ug/m3	200	39	
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[E0464-BLK1</b>	<b>98.0</b>	<b>%</b>	<b>70 - 130 (LCL - UCL)</b>		

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

Reported: 05/10/2017 11:19  
Project: Sullins  
Project Number: 5262  
Project Manager: Project Manager

## Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
<b>QC Batch ID: B[E0464</b>										
Benzene	B[E0464-BS1	LCS	15.878	15.974	ug/m3	99.4		70 - 130		
	B[E0464-BSD1	LCSD	15.399	15.974	ug/m3	96.4	3.1	70 - 130	30	
Ethylbenzene	B[E0464-BS1	LCS	23.795	21.711	ug/m3	110		70 - 130		
	B[E0464-BSD1	LCSD	23.838	21.711	ug/m3	110	0.2	70 - 130	30	
Toluene	B[E0464-BS1	LCS	20.463	18.842	ug/m3	109		70 - 130		
	B[E0464-BSD1	LCSD	20.726	18.842	ug/m3	110	1.3	70 - 130	30	
p- & m-Xylenes	B[E0464-BS1	LCS	49.631	43.421	ug/m3	114		70 - 130		
	B[E0464-BSD1	LCSD	48.892	43.421	ug/m3	113	1.5	70 - 130	30	
o-Xylene	B[E0464-BS1	LCS	24.880	21.711	ug/m3	115		70 - 130		
	B[E0464-BSD1	LCSD	24.359	21.711	ug/m3	112	2.1	70 - 130	30	
Total Xylenes	B[E0464-BS1	LCS	74.511	65.132	ug/m3	114		70 - 130		
	B[E0464-BSD1	LCSD	73.252	65.132	ug/m3	112	1.7	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	B[E0464-BS1	LCS	72.2	71.6	ug/m3	101		70 - 130		
	B[E0464-BSD1	LCSD	71.1	71.6	ug/m3	99.3	1.6	70 - 130		

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 05/10/2017 11:19  
**Project:** Sullins  
**Project Number:** 5262  
**Project Manager:** Project Manager

**Notes And Definitions**

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A01 Detection and quantitation limits are raised due to sample dilution.



Date of Report: 06/06/2017

Project Manager

Ground Zero Analysis, Inc.

1172 Kansas Avenue

Modesto, CA 95351

Client Project: 1262.2

BCL Project: Sullins

BCL Work Order: 1714379

Invoice ID: B269664

Enclosed are the results of analyses for samples received by the laboratory on 5/25/2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon  
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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17-14379

Chain of Custody

GROUND ZERO ANALYSIS, INC.  
1172 Kansas Avenue  
Modesto, CA  
(209) 522-4119 Fax 522-4227  
E-mail: gza@groundzeroanalysis.com

GROUND ZERO ANALYSIS, INC.  
1172 Kansas Avenue  
Modesto, CA  
(209) 522-4119 Fax 522-4227  
E-mail: gza@groundzeroanalysis.com

Project #:		Project Name:		Billing To: Ground Zero Analysis, Inc.		Analysis Requested	
1262.2		SULLINS		197 N. L STREET, LIVERMORE, CA			
Site Address:		Global ID No.:		EDF Report:		Turnaround Time:	
197 N. L STREET, LIVERMORE, CA		T0600100116		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Standard 1 day 2 day 3 day 5 day	
Client: Ground Zero Analysis, Inc.		Rpt. Att: Ground Zero Analysis, Inc.		Email Lab Report (.pdf):		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1172 Kansas Avenue		Type of Event: (S/M) Sys Maintaining Drilling Other		Email EDF Lab Report (.zip):		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Modesto, CA 95351		Client Email: gza@groundzeroanalysis.com		Mail Lab Report:		Yes <input type="checkbox"/> No <input type="checkbox"/>	
(209) 522-4119		Client Fax: (209) 522-4227		Special Instructions / Remarks			
Sampling Info:		Sampled By (initials):		AD, GZA			
Date	Time	EDF Field ID	Sample I.D./Description / Location	No. of Containers	Matrix (Soil, Water, Gas, Other)	Preservation Type	
5-22-2017	1430	-1	MW-10	1	W	HCL	
	1505	-2	MW-9				
	1525	-3	W-E5				
5-23-2017	1220	-4	W-35				
	1420	-5	W-B5				
	1510	-6	W-A				
	1510	-7	MW-14				
	1450	-8	MW-104				
	1430	-9	MW-204				
	1407	-10	MW-304				
	1340	-11	MW-404				
	800	-12	MW-5				
	1140	-13	MW-105				
	0727	-14	MW-205				
	0655	-15	MW-305				
Received / Relinquished by:		Signature		Print Name		Company	
Andrew Dorn				ANDREW DORN		GROUND ZERO	
Received / Relinquished by:		Signature		Print Name		Company	
Jose Barcena				JOSE BARCENA		BCLABS	
Received / Relinquished by:		Signature		Print Name		Company	
Jose Barcena				JOSE BARCENA		BCLABS	
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17-14379

Chain of Custody

**GROUND ZERO ANALYSIS, INC.**  
1172 Kansas Avenue  
Modesto, CA  
(209) 522-4119 Fax 522-4227  
E-mail: gza@groundzeroanalysis.com

Project #: [Blank]		Project Name: [Blank]		Billing To: Ground Zero Analysis, Inc.		Analysis Requested		Laboratory: BC LABS	
Site Address: [Blank]		Global ID No.: [Blank]		EDF Report: <input type="checkbox"/> Yes <input type="checkbox"/> No		Purchase Order #		Turnaround Time: <input checked="" type="checkbox"/> Standard 1 day 2 day 3 day 5 day	
Client: Ground Zero Analysis, Inc.		Client Address: 1172 Kansas Avenue		Types of Event: GWM <input type="checkbox"/> Sp. Monitoring <input type="checkbox"/> Drilling <input type="checkbox"/> Other <input type="checkbox"/>		Email Lab Report (.pdf): <input type="checkbox"/> Yes <input type="checkbox"/> No		Email EDF Lab Report (.zip): <input type="checkbox"/> Yes <input type="checkbox"/> No	
City, State, Zip: Modesto, CA 95351		Client Email: gza@groundzeroanalysis.com		Client Fax: (209) 522-4227		Mail Lab Report: <input type="checkbox"/> Yes <input type="checkbox"/> No		Special Instructions / Remarks	
Sampling Info:		Sampled By (initials): [Blank]		GZA		No. of Containers		Matrix (Soil, Water, Gas, Other)	
Date	Time	EDF Field ID	Sample I.D./Description / Location						
5-23-17	0935	-16	MW-6			4	M		
	0920	-17	MW-106						
	0905	-18	MW-206						
	0840	-19	MW-306						
	1205	-20	MW-8						
	1155	-21	MW-108						
	1040	-22	MW-208						
	1020	-23	MW-308						
5-24-17	0735	-24	Ew-2						
	1005	-25	W-1						
	1055	-26	W-15						
	1325	-27	MW-7						
	1230	-28	MW-107						
	1210	-29	MW-207						
	1140	-30	MW-307						
Signature: Andrew Dorn		Signature: [Blank]		Signature: [Blank]		Print Name		Date	
Received / Requisitioned by: Andrew Dorn		Received / Requisitioned by: [Blank]		Received / Requisitioned by: [Blank]		ANDREW DORN		5-25-17	
Received / Requisitioned by: [Blank]		Received / Requisitioned by: [Blank]		Received / Requisitioned by: [Blank]		JOSE BARCENA		5/25/17 15:50	
Received / Requisitioned by: [Blank]		Received / Requisitioned by: [Blank]		Received / Requisitioned by: [Blank]		JOSE BARCENA		5/25/17 2000	

Rev. 3/2014

Please return cooler / ice chest to Ground Zero Analysis, Inc.

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BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 3

Submission #: 17-14379

SHIPPING INFORMATION: Fed Ex, UPS, Ontrac, Hand Delivery, BC Lab Field Service. SHIPPING CONTAINER: Ice Chest, None, Box, Other. FREE LIQUID: YES, NO, W/S.

Refrigerant: Ice, Blue Ice, None, Other. Comments:

Custody Seals: Ice Chest, Containers, Intact? Yes/No.

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: YSA. Thermometer ID: 208. Date/Time: 5/25/2016. Analyst Init: BSL. Temperature: (A) 0.3 °C / (C) 0.4 °C.

Table with columns for SAMPLE CONTAINERS and SAMPLE NUMBERS (1-10). Rows include various sample types like QT PE UNPRES, PT CYANIDE, etc. Handwritten 'ABCD' is present in the first row of the sample numbers column.

Comments: Sample Numbering Completed By: [Signature] Date/Time: 5/26/17 1200 Rev 21 05/23/2016



BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 of 3

Submission #: 17-14379

SHIPPING INFORMATION
Fed Ex [ ] UPS [ ] Ontrac [ ] Hand Delivery [ ]
BC Lab Field Service [x] Other [ ] (Specify) \_\_\_\_\_

SHIPPING CONTAINER
Ice Chest [x] None [ ] Box [ ]
Other [ ] (Specify) \_\_\_\_\_

FREE LIQUID
YES [x] NO [ ]
W/S

Refrigerant: Ice [x] Blue Ice [ ] None [ ] Other [ ] Comments:

Custody Seals Ice Chest [ ] Containers [ ]
Intact? Yes [ ] No [ ] Intact? Yes [ ] No [ ]

All samples received? Yes [ ] No [ ] All samples containers intact? Yes [x] No [ ] Description(s) match COC? Yes [x] No [ ]

COC Received [x] YES [ ] NO [ ]
Emissivity: 0.95 Container: VSA Thermometer ID: 208 Date/Time: 5/25/2020
Temperature: (A) 0.3 °C / (C) 0.4 °C Analyst Init: BSL

Table with columns for SAMPLE CONTAINERS and SAMPLE NUMBERS (1-20). Rows include various sample types like QT PE UNPRES, QT INORGANIC CHEMICAL METALS, etc. Sample numbers 1-20 contain handwritten labels like ABCD.

Comments: \_\_\_\_\_
Sample Numbering Completed By: [Signature] Date/Time: 5/26/17 1200 Rev 21 05/23/2016



BC LABORATORIES INC. COOLER RECEIPT FORM Page 3 Of 3

Submission #: 17-14379

SHIPPING INFORMATION		SHIPPING CONTAINER		FREE LIQUID
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/>	Hand Delivery <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
BC Lab Field Service <input checked="" type="checkbox"/>		Other <input type="checkbox"/> (Specify) _____		<u>(W) S</u>

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals Ice Chest  Containers  None  Comments: \_\_\_\_\_

Intact? Yes  No  Intact? Yes  No

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: VOA Thermometer ID: 208 Date/Time: 5/25/2020

Temperature: (A) 0.3 °C / (C) 0.4 °C Analyst Init: GSF

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	21	22	23	24	25	26	27	28	29	30
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>6</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>	<u>ABCD</u>
QT EPA 1664										
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										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_

Sample Numbering Completed By: CSA Date/Time: 5/26/17 1200 Rev 21 05/23/2016

A = Actual / C = Corrected

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1714379-01</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-10 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/22/2017 14:30 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-10 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-02</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-9 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/22/2017 15:05 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-9 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-03</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> W-ES <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/22/2017 15:25 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): W-ES Matrix: W Sample QC Type (SACode): CS Cooler ID:
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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-04</b>	<b>COC Number:</b> ---	<b>Receive Date:</b> 05/25/2017 22:20
	<b>Project Number:</b> Sullins	<b>Sampling Date:</b> 05/23/2017 12:20
	<b>Sampling Location:</b> ---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b> W-3S	<b>Lab Matrix:</b> Water
	<b>Sampled By:</b> AD of GTIM	<b>Sample Type:</b> Groundwater
		Delivery Work Order:
		Global ID: T0600100116
		Location ID (FieldPoint): W-3S
		Matrix: W
		Sample QC Type (SACode): CS
		Cooler ID:

<b>1714379-05</b>	<b>COC Number:</b> ---	<b>Receive Date:</b> 05/25/2017 22:20
	<b>Project Number:</b> Sullins	<b>Sampling Date:</b> 05/23/2017 14:20
	<b>Sampling Location:</b> ---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b> W-BS	<b>Lab Matrix:</b> Water
	<b>Sampled By:</b> AD of GTIM	<b>Sample Type:</b> Groundwater
		Delivery Work Order:
		Global ID: T0600100116
		Location ID (FieldPoint): W-BS
		Matrix: W
		Sample QC Type (SACode): CS
		Cooler ID:

<b>1714379-06</b>	<b>COC Number:</b> ---	<b>Receive Date:</b> 05/25/2017 22:20
	<b>Project Number:</b> Sullins	<b>Sampling Date:</b> 05/23/2017 15:10
	<b>Sampling Location:</b> ---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b> W-A	<b>Lab Matrix:</b> Water
	<b>Sampled By:</b> AD of GTIM	<b>Sample Type:</b> Groundwater
		Delivery Work Order:
		Global ID: T0600100116
		Location ID (FieldPoint): W-A
		Matrix: W
		Sample QC Type (SACode): CS
		Cooler ID:

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-07</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-4 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 15:10 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-4 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-08</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-104 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 14:50 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-104 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-09</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-204 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 14:30 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-204 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-10</b>	<b>COC Number:</b> ---	<b>Receive Date:</b> 05/25/2017 22:20
	<b>Project Number:</b> Sullins	<b>Sampling Date:</b> 05/23/2017 14:07
	<b>Sampling Location:</b> ---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b> MW-304	<b>Lab Matrix:</b> Water
	<b>Sampled By:</b> AD of GTIM	<b>Sample Type:</b> Groundwater
		Delivery Work Order:
		Global ID: T0600100116
		Location ID (FieldPoint): MW-304
		Matrix: W
		Sample QC Type (SACode): CS
		Cooler ID:

<b>1714379-11</b>	<b>COC Number:</b> ---	<b>Receive Date:</b> 05/25/2017 22:20
	<b>Project Number:</b> Sullins	<b>Sampling Date:</b> 05/23/2017 13:40
	<b>Sampling Location:</b> ---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b> MW-404	<b>Lab Matrix:</b> Water
	<b>Sampled By:</b> AD of GTIM	<b>Sample Type:</b> Groundwater
		Delivery Work Order:
		Global ID: T0600100116
		Location ID (FieldPoint): MW-404
		Matrix: W
		Sample QC Type (SACode): CS
		Cooler ID:

<b>1714379-12</b>	<b>COC Number:</b> ---	<b>Receive Date:</b> 05/25/2017 22:20
	<b>Project Number:</b> Sullins	<b>Sampling Date:</b> 05/23/2017 08:00
	<b>Sampling Location:</b> ---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b> MW-5	<b>Lab Matrix:</b> Water
	<b>Sampled By:</b> AD of GTIM	<b>Sample Type:</b> Groundwater
		Delivery Work Order:
		Global ID: T0600100116
		Location ID (FieldPoint): MW-5
		Matrix: W
		Sample QC Type (SACode): CS
		Cooler ID:

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-13</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-105 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 11:40 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-105 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-14</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-205 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 07:27 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-205 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-15</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-305 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 06:55 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-305 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-16</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-6 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 09:35 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-6 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-17</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-106 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 09:20 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-106 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-18</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-206 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 09:05 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-206 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-19</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-306 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 08:40 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-306 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-20</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-8 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 12:05 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-8 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-21</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-108 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 11:55 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-108 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-22</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-208 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 10:40 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-208 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-23</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-308 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/23/2017 10:20 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-308 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-24</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> EW-2 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/24/2017 07:35 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): EW-2 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-25</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> W-1 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/24/2017 10:05 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): W-1 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-26</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> W-1S <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/24/2017 10:55 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): W-1S Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-27</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-7 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/24/2017 13:25 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-7 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
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<b>1714379-28</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-107 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/24/2017 12:30 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-107 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-29</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-207 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/24/2017 12:10 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-207 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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<b>1714379-30</b>	<b>COC Number:</b> --- <b>Project Number:</b> Sullins <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-307 <b>Sampled By:</b> AD of GTIM	<b>Receive Date:</b> 05/25/2017 22:20 <b>Sampling Date:</b> 05/24/2017 11:40 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): MW-307 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-01	<b>Client Sample Name:</b> Sullins, MW-10, 5/22/2017 2:30:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>39</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND	<b>J</b>	1
1,2-Dichloroethane-d4 (Surrogate)	114	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	95.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	94.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 13:09	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-02	<b>Client Sample Name:</b> Sullins, MW-9, 5/22/2017 3:05:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	2.9	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>70</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND		1
1,2-Dichloroethane-d4 (Surrogate)	118	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	92.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 13:27	IO1	MS-V12	1	B[E3191

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-03	<b>Client Sample Name:</b> Sullins, W-ES, 5/22/2017 3:25:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	113	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	91.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 13:45	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-04	<b>Client Sample Name:</b> Sullins, W-3S, 5/23/2017 12:20:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>16</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	<b>ND</b>	<b>J</b>	<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	115	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.4	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	107	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 14:03	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-05	<b>Client Sample Name:</b> Sullins, W-BS, 5/23/2017 2:20:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>17</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	<b>ND</b>	<b>J</b>	<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	117	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.4	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	80.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 14:21	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-06	<b>Client Sample Name:</b> Sullins, W-A, 5/23/2017 3:10:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	220	ug/L	5.0	0.83	EPA-8260B	ND	A01	1
Ethylbenzene	53	ug/L	0.50	0.098	EPA-8260B	ND		2
Methyl t-butyl ether	2.0	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene	5.8	ug/L	0.50	0.093	EPA-8260B	ND		2
Total Xylenes	130	ug/L	1.0	0.36	EPA-8260B	ND		2
p- & m-Xylenes	100	ug/L	0.50	0.28	EPA-8260B	ND		2
o-Xylene	21	ug/L	0.50	0.082	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons	1800	ug/L	50	7.2	Luft-GC/MS	ND		2
1,2-Dichloroethane-d4 (Surrogate)	98.1	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	123	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	92.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.9	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	97.8	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 15:18	IO1	MS-V12	10	B[E3191
2	EPA-8260B	06/01/17	06/01/17 21:36	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
Project: Sullins  
Project Number: 1262.2  
Project Manager: Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-07	<b>Client Sample Name:</b> Sullins, MW-4, 5/23/2017 3:10:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
<b>Ethylbenzene</b>	<b>0.38</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.098</b>	<b>EPA-8260B</b>	ND	J	1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>90</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND		1
1,2-Dichloroethane-d4 (Surrogate)	112	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	88.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 14:39	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-08	<b>Client Sample Name:</b> Sullins, MW-104, 5/23/2017 2:50:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	830	ug/L	10	1.7	EPA-8260B	ND	A01	1
Ethylbenzene	180	ug/L	2.5	0.49	EPA-8260B	ND	A01	2
Methyl t-butyl ether	21	ug/L	2.5	0.55	EPA-8260B	ND	A01	2
Toluene	25	ug/L	2.5	0.46	EPA-8260B	ND	A01	2
Total Xylenes	1400	ug/L	20	7.2	EPA-8260B	ND	A01	1
p- & m-Xylenes	1200	ug/L	10	5.6	EPA-8260B	ND	A01	1
o-Xylene	220	ug/L	10	1.6	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	5600	ug/L	250	36	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	99.3	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.3	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	87.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	86.7	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 11:03	IO1	MS-V12	20	B[E3191
2	EPA-8260B	06/01/17	06/01/17 18:31	IO1	MS-V12	5	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-09	<b>Client Sample Name:</b> Sullins, MW-204, 5/23/2017 2:30:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	84	ug/L	2.5	0.42	EPA-8260B	ND	A01	1
Ethylbenzene	18	ug/L	2.5	0.49	EPA-8260B	ND	A01	1
Methyl t-butyl ether	ND	ug/L	2.5	0.55	EPA-8260B	ND	A01	1
Toluene	4.8	ug/L	2.5	0.46	EPA-8260B	ND	A01	1
Total Xylenes	57	ug/L	5.0	1.8	EPA-8260B	ND	A01	1
p- & m-Xylenes	47	ug/L	2.5	1.4	EPA-8260B	ND	A01	1
o-Xylene	11	ug/L	2.5	0.41	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	2400	ug/L	250	36	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Surrogate)	110	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 18:57	IO1	MS-V12	5	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-10	<b>Client Sample Name:</b> Sullins, MW-304, 5/23/2017 2:07:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	40	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	12	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	0.99	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	18	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	15	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	2.9	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	180	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	91.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 14:57	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-11	<b>Client Sample Name:</b> Sullins, MW-404, 5/23/2017 1:40:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	75	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	17	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	1.1	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	19	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	16	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	2.6	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	160	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	99.3	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	76.1	%	80 - 120 (LCL - UCL)		EPA-8260B		S09	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 17:20	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-12	<b>Client Sample Name:</b> Sullins, MW-5, 5/23/2017 8:00:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	4.4	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>21</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND	<b>J</b>	1
1,2-Dichloroethane-d4 (Surrogate)	112	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	95.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	87.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 15:15	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
Project: Sullins  
Project Number: 1262.2  
Project Manager: Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-13	<b>Client Sample Name:</b> Sullins, MW-105, 5/23/2017 11:40:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	2.9	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	0.48	ug/L	0.50	0.098	EPA-8260B	ND	J	1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
<b>Total Xylenes</b>	<b>0.58</b>	<b>ug/L</b>	<b>1.0</b>	<b>0.36</b>	<b>EPA-8260B</b>	ND	J	1
<b>p- &amp; m-Xylenes</b>	<b>0.36</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.28</b>	<b>EPA-8260B</b>	ND	J	1
<b>o-Xylene</b>	<b>0.22</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.082</b>	<b>EPA-8260B</b>	ND	J	1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>74</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND		1
1,2-Dichloroethane-d4 (Surrogate)	111	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.3	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	92.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 17:38	IO1	MS-V12	1	B[E3191

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-14	<b>Client Sample Name:</b> Sullins, MW-205, 5/23/2017 7:27:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	1400	ug/L	10	1.7	EPA-8260B	ND	A01	1
Ethylbenzene	130	ug/L	2.5	0.49	EPA-8260B	ND	A01	2
Methyl t-butyl ether	10	ug/L	2.5	0.55	EPA-8260B	ND	A01	2
Toluene	3.8	ug/L	2.5	0.46	EPA-8260B	ND	A01	2
Total Xylenes	94	ug/L	5.0	1.8	EPA-8260B	ND	A01	2
p- & m-Xylenes	82	ug/L	2.5	1.4	EPA-8260B	ND	A01	2
o-Xylene	12	ug/L	2.5	0.41	EPA-8260B	ND	A01	2
Total Purgeable Petroleum Hydrocarbons	1500	ug/L	250	36	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	97.5	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	95.6	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	99.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.9	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	97.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	84.5	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 11:21	IO1	MS-V12	20	B[E3191
2	EPA-8260B	06/01/17	06/01/17 19:14	IO1	MS-V12	5	B[E3191

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Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-15	<b>Client Sample Name:</b> Sullins, MW-305, 5/23/2017 6:55:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	38	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	10	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	0.34	ug/L	0.50	0.093	EPA-8260B	ND	J	1
<b>Total Xylenes</b>	<b>5.6</b>	<b>ug/L</b>	<b>1.0</b>	<b>0.36</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>p- &amp; m-Xylenes</b>	<b>4.5</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.28</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>o-Xylene</b>	<b>1.2</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.082</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>100</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	<b>ND</b>		<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	102	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	91.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 21:18	IO1	MS-V12	1	B[E3191

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1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-16	<b>Client Sample Name:</b> Sullins, MW-6, 5/23/2017 9:35:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>19</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND	<b>J</b>	1
1,2-Dichloroethane-d4 (Surrogate)	117	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	95.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	95.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 15:33	IO1	MS-V12	1	B[E3191

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1172 Kansas Avenue  
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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-17	<b>Client Sample Name:</b> Sullins, MW-106, 5/23/2017 9:20:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>21</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND	<b>J</b>	1
1,2-Dichloroethane-d4 (Surrogate)	112	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	91.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	81.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 15:51	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
Project: Sullins  
Project Number: 1262.2  
Project Manager: Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-18	<b>Client Sample Name:</b> Sullins, MW-206, 5/23/2017 9:05:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	108	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	88.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 16:08	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-19	<b>Client Sample Name:</b> Sullins, MW-306, 5/23/2017 8:40:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>11</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	<b>ND</b>	<b>J</b>	<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	112	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	94.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	88.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 16:26	IO1	MS-V12	1	B[E3191

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**Reported:** 06/06/2017 17:07  
Project: Sullins  
Project Number: 1262.2  
Project Manager: Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-20	<b>Client Sample Name:</b> Sullins, MW-8, 5/23/2017 12:05:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	26	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	6.1	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	0.87	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	0.78	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	5.3	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	4.0	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	1.4	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	420	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	124	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	94.3	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 17:56	IO1	MS-V12	1	B[E3192

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1172 Kansas Avenue  
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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-21	<b>Client Sample Name:</b> Sullins, MW-108, 5/23/2017 11:55:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	260	ug/L	2.5	0.42	EPA-8260B	ND	A01	1
Ethylbenzene	30	ug/L	2.5	0.49	EPA-8260B	ND	A01	1
Methyl t-butyl ether	39	ug/L	2.5	0.55	EPA-8260B	ND	A01	1
Toluene	5.8	ug/L	2.5	0.46	EPA-8260B	ND	A01	1
Total Xylenes	17	ug/L	5.0	1.8	EPA-8260B	ND	A01	1
p- & m-Xylenes	14	ug/L	2.5	1.4	EPA-8260B	ND	A01	1
o-Xylene	3.3	ug/L	2.5	0.41	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	1300	ug/L	250	36	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Surrogate)	110	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	82.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 19:32	IO1	MS-V12	5	B[E3192

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-22	<b>Client Sample Name:</b> Sullins, MW-208, 5/23/2017 10:40:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	2400	ug/L	25	4.2	EPA-8260B	ND	A01	1
Ethylbenzene	110	ug/L	5.0	0.98	EPA-8260B	ND	A01	2
Methyl t-butyl ether	36	ug/L	5.0	1.1	EPA-8260B	ND	A01	2
Toluene	10	ug/L	5.0	0.93	EPA-8260B	ND	A01	2
Total Xylenes	32	ug/L	10	3.6	EPA-8260B	ND	A01	2
p- & m-Xylenes	24	ug/L	5.0	2.8	EPA-8260B	ND	A01	2
o-Xylene	8.0	ug/L	5.0	0.82	EPA-8260B	ND	A01	2
Total Purgeable Petroleum Hydrocarbons	2300	ug/L	500	72	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	94.6	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	99.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.6	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	95.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	94.1	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 11:39	IO1	MS-V12	50	B[E]3192
2	EPA-8260B	06/01/17	06/01/17 19:50	IO1	MS-V12	10	B[E]3192

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-23	<b>Client Sample Name:</b> Sullins, MW-308, 5/23/2017 10:20:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	89	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	16	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	1.3	ug/L	0.50	0.093	EPA-8260B	ND		1
<b>Total Xylenes</b>	<b>9.8</b>	<b>ug/L</b>	<b>1.0</b>	<b>0.36</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>p- &amp; m-Xylenes</b>	<b>7.4</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.28</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>o-Xylene</b>	<b>2.4</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.082</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>500</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	<b>ND</b>		<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	115	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	87.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 21:54	IO1	MS-V12	1	B[E3192

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-24	<b>Client Sample Name:</b> Sullins, EW-2, 5/24/2017 7:35:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	370	ug/L	2.5	0.42	EPA-8260B	ND	A01	1
Ethylbenzene	63	ug/L	2.5	0.49	EPA-8260B	ND	A01	1
Methyl t-butyl ether	ND	ug/L	2.5	0.55	EPA-8260B	ND	A01	1
Toluene	10	ug/L	2.5	0.46	EPA-8260B	ND	A01	1
Total Xylenes	220	ug/L	5.0	1.8	EPA-8260B	ND	A01	1
p- & m-Xylenes	160	ug/L	2.5	1.4	EPA-8260B	ND	A01	1
o-Xylene	61	ug/L	2.5	0.41	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	2200	ug/L	250	36	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	82.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 20:07	IO1	MS-V12	5	B[E3192

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-25	<b>Client Sample Name:</b> Sullins, W-1, 5/24/2017 10:05:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	680	ug/L	10	1.7	EPA-8260B	ND	A01	1
Ethylbenzene	160	ug/L	2.5	0.49	EPA-8260B	ND	A01	2
Methyl t-butyl ether	15	ug/L	2.5	0.55	EPA-8260B	ND	A01	2
Toluene	23	ug/L	2.5	0.46	EPA-8260B	ND	A01	2
Total Xylenes	900	ug/L	5.0	1.8	EPA-8260B	ND	A01	2
p- & m-Xylenes	790	ug/L	2.5	1.4	EPA-8260B	ND	A01	2
o-Xylene	110	ug/L	2.5	0.41	EPA-8260B	ND	A01	2
Total Purgeable Petroleum Hydrocarbons	6600	ug/L	250	36	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	93.4	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	111	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	93.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.1	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	89.4	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	78.3	%	80 - 120 (LCL - UCL)		EPA-8260B		S09	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 14:25	IO1	MS-V12	20	B[E3192
2	EPA-8260B	06/01/17	06/01/17 20:25	IO1	MS-V12	5	B[E3192

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-26	<b>Client Sample Name:</b> Sullins, W-1S, 5/24/2017 10:55:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>18</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND	<b>J</b>	1
1,2-Dichloroethane-d4 (Surrogate)	115	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 16:44	IO1	MS-V12	1	B[F0097

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-27	<b>Client Sample Name:</b> Sullins, MW-7, 5/24/2017 1:25:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	85	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	0.88	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	0.26	ug/L	0.50	0.093	EPA-8260B	ND	J	1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>91</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	ND		1
1,2-Dichloroethane-d4 (Surrogate)	97.5	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	92.3	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/01/17 17:02	IO1	MS-V12	1	B[F0097

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-28	<b>Client Sample Name:</b> Sullins, MW-107, 5/24/2017 12:30:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	2800	ug/L	25	4.2	EPA-8260B	ND	A01	1
Ethylbenzene	96	ug/L	12	2.4	EPA-8260B	ND	A01	2
Methyl t-butyl ether	ND	ug/L	12	2.8	EPA-8260B	ND	A01	2
Toluene	17	ug/L	12	2.3	EPA-8260B	ND	A01	2
<b>Total Xylenes</b>	<b>100</b>	<b>ug/L</b>	<b>25</b>	<b>9.0</b>	<b>EPA-8260B</b>	<b>ND</b>	<b>A01</b>	<b>2</b>
<b>p- &amp; m-Xylenes</b>	<b>86</b>	<b>ug/L</b>	<b>12</b>	<b>7.0</b>	<b>EPA-8260B</b>	<b>ND</b>	<b>A01</b>	<b>2</b>
<b>o-Xylene</b>	<b>15</b>	<b>ug/L</b>	<b>12</b>	<b>2.0</b>	<b>EPA-8260B</b>	<b>ND</b>	<b>A01</b>	<b>2</b>
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>3800</b>	<b>ug/L</b>	<b>1200</b>	<b>180</b>	<b>Luft-GC/MS</b>	<b>ND</b>	<b>A01</b>	<b>2</b>
1,2-Dichloroethane-d4 (Surrogate)	93.1	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	93.5	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	96.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.7	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	83.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	91.7	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 14:43	IO1	MS-V12	50	B[F0097
2	EPA-8260B	06/01/17	06/01/17 20:43	IO1	MS-V12	25	B[F0097

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-29	<b>Client Sample Name:</b> Sullins, MW-207, 5/24/2017 12:10:00PM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	2700	ug/L	25	4.2	EPA-8260B	ND	A01	1
Ethylbenzene	240	ug/L	12	2.4	EPA-8260B	ND	A01	2
Methyl t-butyl ether	71	ug/L	12	2.8	EPA-8260B	ND	A01	2
Toluene	16	ug/L	12	2.3	EPA-8260B	ND	A01	2
Total Xylenes	62	ug/L	25	9.0	EPA-8260B	ND	A01	2
p- & m-Xylenes	55	ug/L	12	7.0	EPA-8260B	ND	A01	2
o-Xylene	6.5	ug/L	12	2.0	EPA-8260B	ND	J,A01	2
Total Purgeable Petroleum Hydrocarbons	2900	ug/L	1200	180	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	80.0	%	75 - 125 (LCL - UCL)		EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	93.4	%	75 - 125 (LCL - UCL)		EPA-8260B			2
Toluene-d8 (Surrogate)	95.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.8	%	80 - 120 (LCL - UCL)		EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	87.4	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	80.9	%	80 - 120 (LCL - UCL)		EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 15:00	IO1	MS-V12	50	B[F0097
2	EPA-8260B	06/01/17	06/01/17 21:00	IO1	MS-V12	25	B[F0097

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**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1714379-30	<b>Client Sample Name:</b> Sullins, MW-307, 5/24/2017 11:40:00AM, AD
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Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	46	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	10	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	0.51	ug/L	0.50	0.093	EPA-8260B	ND		1
<b>Total Xylenes</b>	<b>8.1</b>	<b>ug/L</b>	<b>1.0</b>	<b>0.36</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>p- &amp; m-Xylenes</b>	<b>7.0</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.28</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>o-Xylene</b>	<b>1.1</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.082</b>	<b>EPA-8260B</b>	<b>ND</b>		<b>1</b>
<b>Total Purgeable Petroleum Hydrocarbons</b>	<b>120</b>	<b>ug/L</b>	<b>50</b>	<b>7.2</b>	<b>Luft-GC/MS</b>	<b>ND</b>		<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	108	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	93.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	06/01/17	06/02/17 10:45	IO1	MS-V12	1	B[F0097

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Modesto, CA 95351

Reported: 06/06/2017 17:07  
Project: Sullins  
Project Number: 1262.2  
Project Manager: Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
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**QC Batch ID: B[E3191]**

Benzene	B[E3191-BLK1]	ND	ug/L	0.50	0.083	
Ethylbenzene	B[E3191-BLK1]	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	B[E3191-BLK1]	ND	ug/L	0.50	0.11	
Toluene	B[E3191-BLK1]	ND	ug/L	0.50	0.093	
Total Xylenes	B[E3191-BLK1]	ND	ug/L	1.0	0.36	
p- & m-Xylenes	B[E3191-BLK1]	ND	ug/L	0.50	0.28	
o-Xylene	B[E3191-BLK1]	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	B[E3191-BLK1]	ND	ug/L	50	7.2	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[E3191-BLK1]</b>	<b>116</b>	<b>%</b>	<b>75 - 125 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>B[E3191-BLK1]</b>	<b>96.7</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[E3191-BLK1]</b>	<b>94.6</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		

**QC Batch ID: B[E3192]**

Benzene	B[E3192-BLK1]	ND	ug/L	0.50	0.083	
Ethylbenzene	B[E3192-BLK1]	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	B[E3192-BLK1]	ND	ug/L	0.50	0.11	
Toluene	B[E3192-BLK1]	ND	ug/L	0.50	0.093	
Total Xylenes	B[E3192-BLK1]	ND	ug/L	1.0	0.36	
p- & m-Xylenes	B[E3192-BLK1]	ND	ug/L	0.50	0.28	
o-Xylene	B[E3192-BLK1]	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	B[E3192-BLK1]	ND	ug/L	50	7.2	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[E3192-BLK1]</b>	<b>114</b>	<b>%</b>	<b>75 - 125 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>B[E3192-BLK1]</b>	<b>94.6</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[E3192-BLK1]</b>	<b>87.1</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		

**QC Batch ID: B[F0097]**

Benzene	B[F0097-BLK1]	ND	ug/L	0.50	0.083	
Ethylbenzene	B[F0097-BLK1]	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	B[F0097-BLK1]	ND	ug/L	0.50	0.11	
Toluene	B[F0097-BLK1]	ND	ug/L	0.50	0.093	
Total Xylenes	B[F0097-BLK1]	ND	ug/L	1.0	0.36	
p- & m-Xylenes	B[F0097-BLK1]	ND	ug/L	0.50	0.28	
o-Xylene	B[F0097-BLK1]	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	B[F0097-BLK1]	ND	ug/L	50	7.2	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[F0097-BLK1]</b>	<b>113</b>	<b>%</b>	<b>75 - 125 (LCL - UCL)</b>		

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1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**Project:** Sullins  
**Project Number:** 1262.2  
**Project Manager:** Project Manager

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[F0097]</b>						
Toluene-d8 (Surrogate)	B[F0097-BLK1	95.4	%	80 - 120 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	B[F0097-BLK1	110	%	80 - 120 (LCL - UCL)		

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

Reported: 06/06/2017 17:07  
Project: Sullins  
Project Number: 1262.2  
Project Manager: Project Manager

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	Control Limits		Lab
							RPD	RPD	
<b>QC Batch ID: B[E3191]</b>									
Benzene	B[E3191-BS1]	LCS	23.650	25.000	ug/L	94.6		70 - 130	
Toluene	B[E3191-BS1]	LCS	24.120	25.000	ug/L	96.5		70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	B[E3191-BS1]	LCS	9.8000	10.000	ug/L	98.0		75 - 125	
Toluene-d8 (Surrogate)	B[E3191-BS1]	LCS	9.8200	10.000	ug/L	98.2		80 - 120	
4-Bromofluorobenzene (Surrogate)	B[E3191-BS1]	LCS	8.5400	10.000	ug/L	85.4		80 - 120	
<b>QC Batch ID: B[E3192]</b>									
Benzene	B[E3192-BS1]	LCS	25.340	25.000	ug/L	101		70 - 130	
Toluene	B[E3192-BS1]	LCS	26.250	25.000	ug/L	105		70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	B[E3192-BS1]	LCS	9.9100	10.000	ug/L	99.1		75 - 125	
Toluene-d8 (Surrogate)	B[E3192-BS1]	LCS	10.010	10.000	ug/L	100		80 - 120	
4-Bromofluorobenzene (Surrogate)	B[E3192-BS1]	LCS	8.6700	10.000	ug/L	86.7		80 - 120	
<b>QC Batch ID: B[F0097]</b>									
Benzene	B[F0097-BS1]	LCS	22.820	25.000	ug/L	91.3		70 - 130	
Toluene	B[F0097-BS1]	LCS	23.160	25.000	ug/L	92.6		70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	B[F0097-BS1]	LCS	10.800	10.000	ug/L	108		75 - 125	
Toluene-d8 (Surrogate)	B[F0097-BS1]	LCS	9.8500	10.000	ug/L	98.5		80 - 120	
4-Bromofluorobenzene (Surrogate)	B[F0097-BS1]	LCS	9.4600	10.000	ug/L	94.6		80 - 120	

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Ground Zero Analysis, Inc.
1172 Kansas Avenue
Modesto, CA 95351

Reported: 06/06/2017 17:07
Project: Sullins
Project Number: 1262.2
Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

Table with columns: Constituent, Source Type, Source Sample ID, Source Result, Result, Spike Added, Units, RPD, Percent Recovery, Control Limits RPD, Control Limits Percent Recovery, Lab Quals. Includes three QC batches: B[E3191], B[E3192], and B[F0097].

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Ground Zero Analysis, Inc.  
1172 Kansas Avenue  
Modesto, CA 95351

**Reported:** 06/06/2017 17:07  
**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
- PQL Practical Quantitation Limit
- A01 Detection and quantitation limits are raised due to sample dilution.
- S09 The surrogate recovery on the sample for this compound was not within the control limits.



## **ATTACHMENT D**

### **Remedial Operation and Maintenance Field Logs**

## Daily Field Record

Project SULLINS  
 Project # 1762.2  
 Location 187 N. L STREET, LIVERMORE, CA  
 Weather SUNNY / WINDY

Date 3-31-2017  
 Time on job 0830 to 1430  
 Record Keeper ANDREW DORN  
 Wind 5-20 MPH      Temp 60°

PERSONNEL ONSITE		TIME ONSITE	
Name	Company	In	Out
ANDREW DORN	GROUND ZERO	1015	1135

Time	Field Activities
1015	ARRIVED ON-SITE
	DPE SYSTEM IN OPERATION, EXTRACTING FROM EW-2
1050	REMOVED OBSTRUCTION FROM CMT WELL 4, MW-404 (SLOT 1)
1105	MONITORED DPE SYSTEM - SEE LOG
1115	COLLECTED "GW-DIS" SAMPLE FROM PORT AFTER LAST CARBON VESSEL AND PRIOR TO DISCHARGE TO SEWER
1135	LEFT SITE



# W O R K O R D E R

Prepared By: Andrew Dorn  
 Date: June 2, 2016

Scheduled: \_\_\_\_\_ [G/E/Tech]  
 Completed: 3-31-17 AD [G/E/Tech]

Performed By: ~~Mark~~ *ANDREW*  
 Cc: Jenny

<b>Site:</b>	<b>Sullins</b> (Arrow Rentals) 187 North L Street, Livermore, CA		
<b>Task:</b>	<b>March 2017 Sewer Discharge Sampling</b>		
<b>Special Equipment:</b>	Tool bag, log book, cooler w/ ice, COC and labels, sample containers (see list below)		
<b>Vapor Sample Collection:</b>	None		
<b>GW Sample Collection:</b>	GW Discharge		
<b>Project Number:</b>	5262	<b>Lab &amp; PO No.:</b>	NA
<b>Site Elevation:</b>	N/A	<b>Task Code:</b>	7 (sampling)
<b>Global ID:</b>	N/A	<b>Schedule for:</b>	March 31, 2017
<b>Number of People:</b>	1	<b>Number of Hours</b>	1 Days

**Record the following in the log book:**

- Date and Time
- PG&E hours
- Propane percentage
- GW Discharge gallon totalizer

**Groundwater Discharge to Sewer Sampling**

- Collect the **GW-DIS** sample from the sample port in the PVC line exiting the second carbon tank. (labeled GW-DIS). Label sample "**GW-DIS**".
- Sample containers
  - (6) VOA's preserved w/ HCl (3 for method 8260 and 3 for method 624)
  - (1) Amber Liter w/o preservative (method 625)
  - (1) Amber Liter w/o preservative (method 608)
  - (1) 500-mL poly w/o preservative (method 150.1)
- Complete COC

- Send groundwater samples to BC Labs for the following analysis:
  - EPA 8260: BTEX, TPH-g, MTBE, DIPE, ETBE, TAME and TBA
  - EPA 150.1: pH
  - EPA 624 & 625: Total Toxic Organics
  - EPA 608: Organochlorine Pesticides and PCBs

Note: This will need to be completed while the storage tank is pumping water to the air stripper and the air stripper is pumping water through the carbon tanks to the sewer. **DO NOT FORGET TO TURN THE SWITCHES BACK TO AUTO!**



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

# Chain of Custody

625 7day  
624 7day, 14 w/ PRES  
Page 1 of 1  
608 7day

Project #: 5262				Project Name: SULLINS				Billing To: Ground Zero Analysis, Inc.				Analysis Requested				Laboratory: BC LABS									
Site Address: 187 N. L STREET, LIVERMORE, CA								EDF Report: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								Purchase Order #									
Global ID No.: T0600100116				Client: Ground Zero Analysis, Inc.				Rpt Attn: Ground Zero Analysis, Inc.				Turnaround Time: <input checked="" type="checkbox"/> Standard				1 day 2 day 3 day 5 day									
Client Address: 1172 Kansas Avenue				City, State, Zip: Modesto, CA 95351				Type of Event: GWM <input checked="" type="checkbox"/> Sys Monitoring <input type="checkbox"/> Drilling <input type="checkbox"/> Other				Email Lab Report (.pdf): <input type="checkbox"/> Yes <input type="checkbox"/> No				Email EDF Lab Report (.zip): <input type="checkbox"/> Yes <input type="checkbox"/> No									
Client Phone: (209) 522-4119				Client Email: gza@groundzeroanalysis.com				Client Fax: (209) 522-4227				Mail Lab Report: <input type="checkbox"/> Yes <input type="checkbox"/> No				Special Instructions / Remarks									
Sampling Info:		Sampled By (initials): AD, GZA		Date: 3-31-17		Time: 1115		EDF Field ID:		Sample I.D./Description / Location: GW-DIS		No. of Containers: 9		Matrix (Soil, Water, Gas, Other): W						Preservation Type: VARIES		8260B *		PH (150.1)	
* 8260B INCLUDES: TPHg, BTEX, MTHg, DIPE, ETBE, TAME, TRA																									
Received / Relinquished by: <i>Andrew Dorn</i>				Signature: <i>Andrew Dorn</i>				Print Name: ANDREW DORN				Company: GROUND ZERO				Date: 3-31-17				Time: 1355					
Received / Relinquished by: <i>Ross Dickoy</i>				Signature: <i>Ross Dickoy</i>				Print Name: ROSS DICKOY				Company: BCLAB				Date: 3-31-17				Time:					

## Daily Field Record

Project SULLINS  
 Project # 1262.2  
 Location 187 N. L STREET, LIVERMORE, CA  
 Weather SUNNY

Date 5-2-2017  
 Time on job 0930 to 1430  
 Record Keeper A. DORN  
 Wind ~ 5 MPH      Temp \_\_\_\_\_

PERSONNEL ONSITE		TIME ONSITE	
Name	Company	In	Out
ANDREW DORN	GROUND ZERO	1055	1240

Time	Field Activities
1055	ARRIVED ON-SITE - SYSTEM NOT OPERATING TO THE PG&E ELECTRICITY SERVICE INTERRUPTION
1059	START-UP DPE SYSTEM
1104	BEGAN EMPTYING KO DRUM
1107	DPE BEGAN EMITTING BLACK SMOKE - CALLED R. LARSEN (MAKO) HE SUGGESTED I ALLOWED SOME DILUTION AIR INTO THE LIQUID RING PUMP DURING START UP - ELIMINATED BLACK SMOKE
1115	RESTARTED DPE SYSTEM
1118	BEGAN FILLING KO DRUM
1130	COLLECTED SVE-INF VAPOR SAMPLE      PID = ~600 PPM RANGE 520-680 PPM
1140	SVE-EFF PID = 2.6 PPM RECORDED READINGS IN LOG BOOK PERFORMED MONTHLY MAINTENANCE WATCHED AIR STRIPPER RUN THRU COMPLETE CYCLE
1240	LEFT SITE



# W O R K O R D E R

Prepared By: Andrew Dorn  
 Date: May 1, 2017

Completed: AD 5-2-17 [G/E/Tech]

Performed By: Andrew  
 Cc: Jenny

<b>Site:</b>	<b>Sullins</b> (Arrow Rentals) 187 North L Street, Livermore, CA		
<b>Task:</b>	<b>Monthly DPE O&amp;M</b>		
<b>Special Equipment:</b>	Tool bag, site map, log book, PID, pump, dedicated tedlar bags, ext. cord, fresh tedlar bag, 4 VOAs, ice chest, <i>USB</i>		
<b>Vapor Sample Collection:</b>	SVE-INF		
<b>GW Sample Collection:</b>	GW-INF		
<b>Project Number:</b>	5262	<b>Lab &amp; PO No.:</b>	NA
<b>Site Elevation:</b>	N/A	<b>Task Code:</b>	7 (O&M and sampling)
<b>Global ID:</b>	N/A	<b>Schedule for:</b>	May 2, 2017
<b>Number of People:</b>	1	<b>Number of Hours</b>	4-6 hours

## Monthly System Monitoring

1. System Maintenance
  - Check entrainment separator filter and clean out
  - Lube butterfly valves
  - Check oil level in sight tube on liquid-ring pump (fill as necessary by vacuum).
  - Grease motor and zirk fittings with a grease gun (2 squirts each)
  - Check level switches for proper operation
  
2. Monitor the system while the system is running - Record the following in the log book:
  - Date and Time
  - PG&E hours
  - Propane percentage
  - Thermal oxidizer temperature from control panel
  - Hour meter from control panel
  - Flow Rate
  - Vacuum (read from meter on the right side of l. ring pump)
  - LEL meter (at the meter, NOT on the control panel)
  - GW Discharge gallon totalizer
  - Well configuration (upon arrival and upon leaving – if changed)

3. Collect the following samples for PID analysis.

- SVE-EFF sample collected from the sample port on the NW side of the thermox stack, facing the shop. 2.6 ppm
- SVE-INF sample collected from the sample port located on the SVE piping above the liquid ring pump ~600 ppm (VARIES 520 ppm TO 680 ppm)

4. Collect a “SVE-INF” sample from the piping above the liquid ring pump and submit it for the following laboratory analysis (Eurofins/Air Toxics):

- TPH-G, MTBE & BTEX (TO-15) 11:30 AM

5. If groundwater is being extracted by the system, a GW-INF sample will need to be collected. First manually turn on the KO drum pump and remove all GW from the KO drum. Allow freshly extracted GW to accumulate in the KO drum and then collect a “GW-INF” sample from the piping just after the KO tank pump. **Collect 4 VOAs** and submit them for the following laboratory analysis (BC Labs):

- TPH-G, BTEX & MTBE (8260) 12:25 PM

Note: This will need to be completed while the storage tank is pumping water to the air stripper and the air stripper is pumping water through the carbon tanks to the sewer. **DO NOT FORGET TO TURN THE SWITCHES BACK TO AUTO!**



