June 15, 2012

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502



**Re: Kerry & Associates – Palace Garage**
**14336 Washington Avenue**
**San Leandro, California**
**ACEH Case No. RO0000208**

Dear Mr. Detterman,

I declare, under penalty of perjury, that the information and/or recommendations contained in the **Second Quarter 2012 Groundwater Monitoring Report** are true and correct to the best of my knowledge.

Sincerely,

Mr. Jeffrey Kerry

June 15, 2012

Mr. Mark Detterman
Alameda County Environmental Health
1000 San Leandro Boulevard, Suite 300
San Leandro, CA 94577

**Subject:** **Second Quarter 2012 Groundwater Monitoring Report**
**Palace Garage**
**14336 Washington Avenue**
**San Leandro, California**
**ACEH Case No. RO0000208**
**SFRWQCB LUFT Case No. 01-1133**

Dear Mr. Detterman:

On behalf of Kerry & Associates, Closure Solutions, Incorporated (Closure Solutions) has prepared this *Second Quarter 2012 Groundwater Monitoring Report* (Report) for the Palace Garage facility (the Site), located at 14336 Washington Avenue, in San Leandro, California (Figure 1).

## 1.0 SITE BACKGROUND SUMMARY

A 550-gallon gasoline underground storage tank (UST) was removed from the Site in 1991. Subsequent investigations included the installation of three monitoring wells (MW-1 through MW-3) and the drilling of 15 borings (B-1 through B-15). Based on data obtained from the wells and borings, impacted unsaturated-zone soil is confined to the area of the former dispenser pad and UST. The primary groundwater flow direction is toward the southwest.

In December 2002, Professional Service Industries, Inc. (PSI) conducted a soil and groundwater investigation to evaluate the lateral extent of petroleum hydrocarbons in the soil and groundwater at the Site. Borings B-16 and B-17 were advanced to between 20 and 24 feet below ground surface (bgs). Boring B-16 was converted into monitoring well MW-4. Concentrations of total petroleum hydrocarbons as gasoline (TPHg) and gasoline related contaminants were detected only in soil from boring B-17 and groundwater from wells MW-1 and MW-2. The locations of the monitoring wells and soil borings are presented on Figure 2.

Closure Solutions conducted a Sensitive Receptor Survey to identify all water supply wells and sensitive receptors within a 2,000-foot radius of the Site. The closest water supply wells are two industrial wells approximately 450 feet northwest (cross-gradient) of the Site. The closest domestic well is approximately 1,500 feet southeast (cross-gradient) of the Site. The closest

down-gradient well is an irrigation well approximately 1,400 feet southwest of the Site. No surface water bodies were identified within a 2,000 foot radius of the Site. Results of the Sensitive Receptor Survey are presented in the *Sensitive Receptor Survey* report dated August 27, 2008.

Closure Solutions prepared and submitted a *Site Conceptual Model* (SCM) dated September 30, 2008 for the Site. The preparation of the SCM was requested by Alameda County Environmental Health (ACEH) in their letter dated September 2, 2008.

In an email dated June 12, 2009, Mr. Steve Plunkett with the ACEH approved the reduction of groundwater monitoring to a Semi-annual basis conducted in second and fourth quarters. Mr. Plunkett also approved the recommendation to eliminate the fuel oxygenates from the suite of laboratory analytes.

On October 15, 2009, Closure Solutions discussed the Site status with ACEH. Data gaps presented in the SCM and other information that ACEH would require for site closure werre identified. Closure Solutions submitted the *Soil Vapor Probe and Additional Assessment Work Plan* on November 13, 2009 to address the work necessary to move the Site toward closure.

On May 14, 2010, Closure Solutions submitted a letter to the ACEH stating that Closure Solutions intended to proceed with the proposed scope of work pursuant to CCR Title 23, Division 3, Chapter 16, Section 2722 (e) which states "Implementation of the proposed workplan may begin sixty (60) calendar days after submittal, unless the responsible party is otherwise directed in writing by the regulatory agency". On May 21, 2010, the ACEH responded to Closure Solutions' letter of intent via email explaining that the ACEH has been largely precluded from generating letters on cases due to the work load imposed by SWRCB Resolution 2009-0042 and they will attempt to raise the review interval for the Site.

On July 26, 2010, a representative from Closure Solutions was on site to oversee the installation and sampling of three temporary soil vapor probes (SV-1 through SV-3) and advancement of one down-gradient soil boring (SB-18). A *Soil Vapor Testing and Additional Assessment Report* describing field activities and discussing analytical soil and soil vapor results was submitted to the ACEH on August 30, 2010.

On January 24, 2012, Closure Solutions supervised the advancement of two soil borings, collection of additional soil and groundwater data, and installation of wells MW-5 and MW-6. The work was completed in order undertake further corrective actions at the site. Collected soil and groundwater samples were analyzed for gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). Additionally, bioattenuation parameters were

analyzed for groundwater collected from well MW-5. A discussion of analytical results is presented in the *Groundwater Monitoring Well Installation Report* submitted on March 30, 2012

After completing the monitoring well installation a dual-phase extraction (DPE) pilot test was performed from February 21 through 25, 2012. The pilot test was conducted to evaluate whether DPE would be a viable technology to remediate soil and groundwater beneath the Site. High groundwater extraction rates were encountered during pilot testing conducted from MW-1. As a result subsurface soils could not be effectively dewatered to allow remediation via vapor extraction. Pilot testing from well MW-6, produced average groundwater extraction rates that were roughly two-thirds less than those observed during testing from MW-1. Subsequently, the technology was successful in lowering the groundwater table in the vicinity of well MW-6 and exposing the capillary fringe or "smear" zone. Based on the results of testing performed from MW-6, DPE appears to be a viable option for Site remediation.

Closure Solutions continues to conduct groundwater monitoring and sampling on a semi-annual basis during second and fourth quarters.

## 2.0 WORK PERFORMED AND WORK PROPOSED

Following is a summary of work performed this quarter and work proposed for next quarter:

**WORK PERFORMED THIS QUARTER:**

1. Prepared and Submitted *Dual Phase Extraction Pilot Test Report* on April 13, 2012.
2. Performed semi-annual groundwater monitoring event on May 9, 2012.

**WORK PROPOSED FOR NEXT QUARTER:**

1. The next groundwater monitoring event will be performed in fourth quarter 2012.

## 3.0 DISCUSSION OF RECENT ACTIVITIES

Closure Solutions performed this quarter's groundwater monitoring and sampling event at the Site on May 9, 2012. Gauging, purging and sampling were conducted in accordance with Closure Solution's Standard Operating Procedures (included in Attachment A). The collected groundwater samples were submitted to SunStar Laboratories for laboratory analysis under Chain-of-Custody protocols. The samples were analyzed for gasoline range organics (GRO) and benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8260B. Additionally, samples MW-2, MW-3 and MW-5 were analyzed for the following bio-attenuation parameters: ferrous iron by EPA Method 6010, total alkalinity by EPA Method 310.1, and sulfate and nitrate by EPA Method 300.0.

Following is a summary of the current status of the environmental program at the site:

| | |
|---|---|
| Current Phase of Project: | Monitoring |
| Groundwater Monitoring & Sampling: | Semi-Annual: MW-1 through MW-6 |
| Is Free Product (FP) Present On-Site: | No |
| Current Remediation Techniques: | Natural Attenuation |

Following is a summary of this quarter's field and analytical data:

| | |
|---|---|
| Average Depth to Groundwater (in feet bgs): | 13.47 |
| Groundwater Elevation (in feet above mean sea level) | 23.58 (MW-4) to 24.08 (MW-6) |
| Groundwater Gradient (direction): | Southwest |
| Groundwater Gradient (magnitude): | 0.002 feet per foot |
| GRO detected concentration range: | 4,300 µg/L (MW-2) to 34,000 µg/L (MW-6) |
| Benzene detected concentration range: | 21 µg/L (MW-2) to 190 µg/L (MW-1) |
| Toluene detected concentrations: | 0.65 µg/L (MW-2) and 310 µg/L (MW-6) |
| Ethylbenzene detected concentration range: | 23 µg/L (MW-2) to 1,700 µg/L (MW-6) |
| Xylenes detected concentration range: | 7.77 µg/L (MW-2) to 3,920 µg/L (MW-6) |

Laboratory procedures, chain of custody records, and the certified analytical reports are included as Attachment B. Groundwater elevation and analytical data are summarized in Tables 1 and 2. Bio-attenuation parameters are summarized in Table 3.

Purge water generated during the monitoring and sampling event was stored onsite pending characterization and disposal.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

Clayey soils with low hydraulic conductivity and effective porosity have been identified from near ground surface to approximately 12 feet bgs with the first water bearing zone located from approximately 12 to 20 feet bgs. Groundwater elevations appear to fluctuate seasonally between approximately 13 and 16 feet bgs. A review of the last six years of groundwater monitoring data suggests the fine-grained soils present beneath the Site may be restricting the vertical movement of petroleum hydrocarbon constituents.

As noted in a letter from the ACWD dated May 18, 2011, during periods of high groundwater elevation, reported concentrations of dissolved petroleum constituents in the vicinity of the source area (monitoring well MW-1) are greater than during periods of low groundwater elevation, suggesting loading of dissolved petroleum hydrocarbons to groundwater.

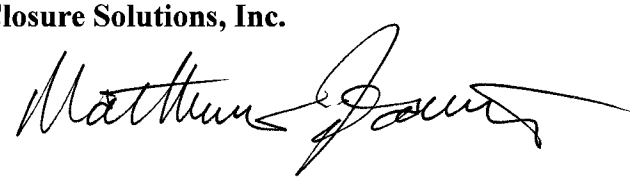
Approximately six months following a period of high groundwater elevation, concentrations in down-gradient well MW-2 undergo an increase; however the reported concentrations are an order of magnitude lower. Concentrations in recently installed well MW-5, located down-gradient from well MW-2, have been below laboratory reporting limits. This data suggests dissolved hydrocarbons concentrations are continuing to attenuate and do not extend off-site.

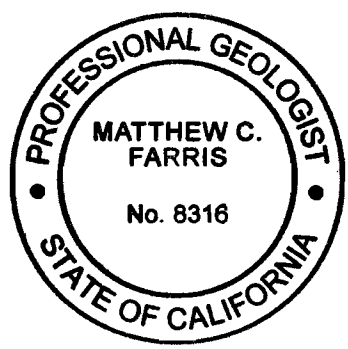
Bio-parameters will be sampled in the fourth quarter 2012, following which an evaluation of the data will be completed. In accordance with directive received by the ACEH, Closure Solutions will continue the Site groundwater monitoring and sampling on a semi-annual basis during the second and fourth quarters.

We appreciate the opportunity to present this document and trust that it meets with your approval. If you have any questions or concerns, please contact the undersigned at (916) 760-7579 or at mfarris@closuresolutions.com.

Sincerely,

**Closure Solutions, Inc.**



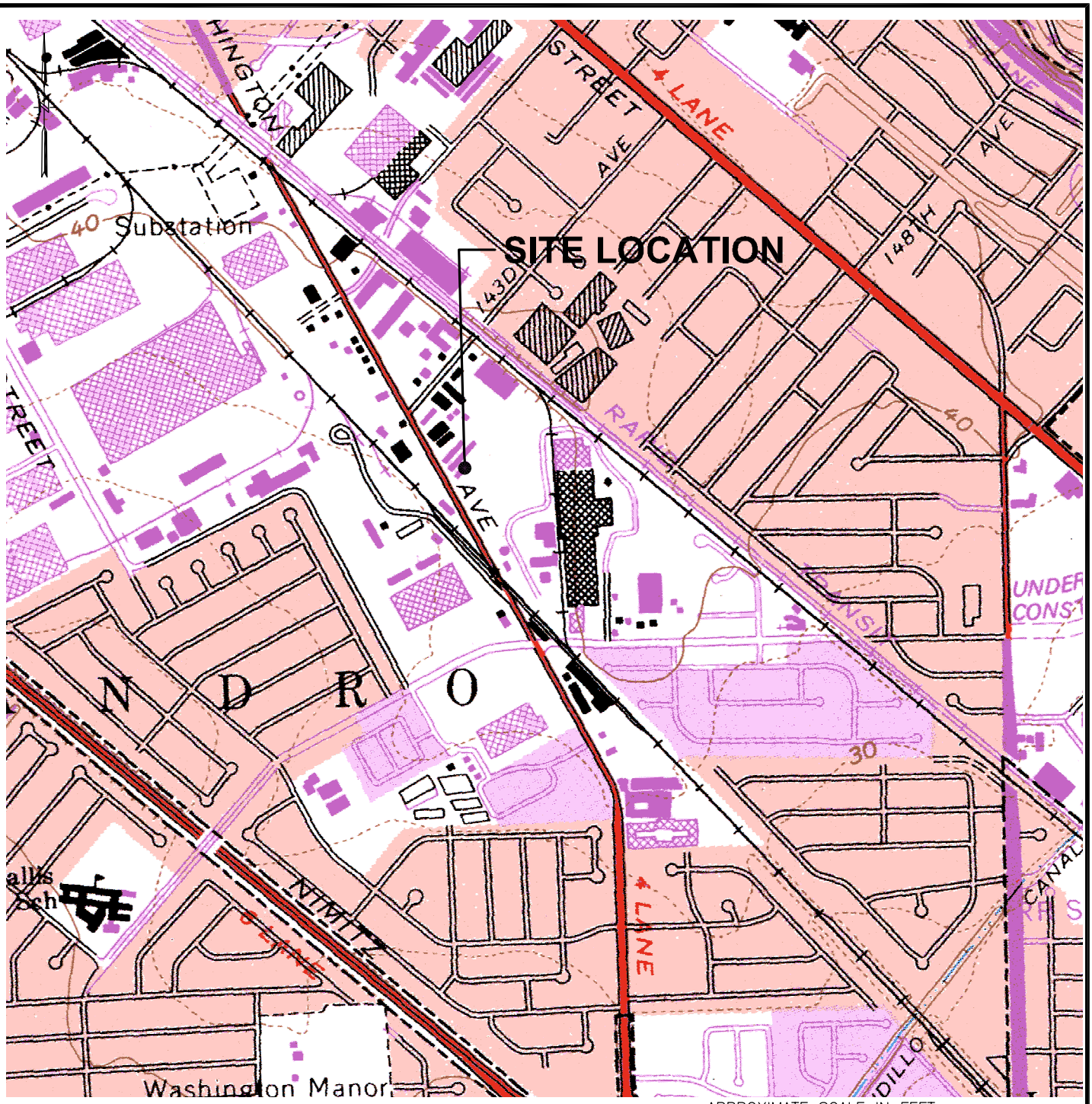



Matthew Farris, P.G.
Project Geologist

**ATTACHMENTS:**

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Second Quarter 2012 Groundwater Monitoring & Sampling Results – Groundwater Contour Map – May 9, 2012 |
| Table 1 | Groundwater Elevation and Analytical Data |
| Table 2 | Fuel Oxygenate & Lead Scavenger Analytical Data |
| Table 3 | Bio-Attenuation Parameters |
| Attachment A | Field Procedures and Field Data Sheets |
| Attachment B | Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records |

cc: Mr. Jeff Kerry, Kerry & Associates




REFERENCE:
USGS 7.5 MIN QUAD MAP TITLED:SAN LEANDRO, CALIFORNIA DATED: 1959 REV: 1980

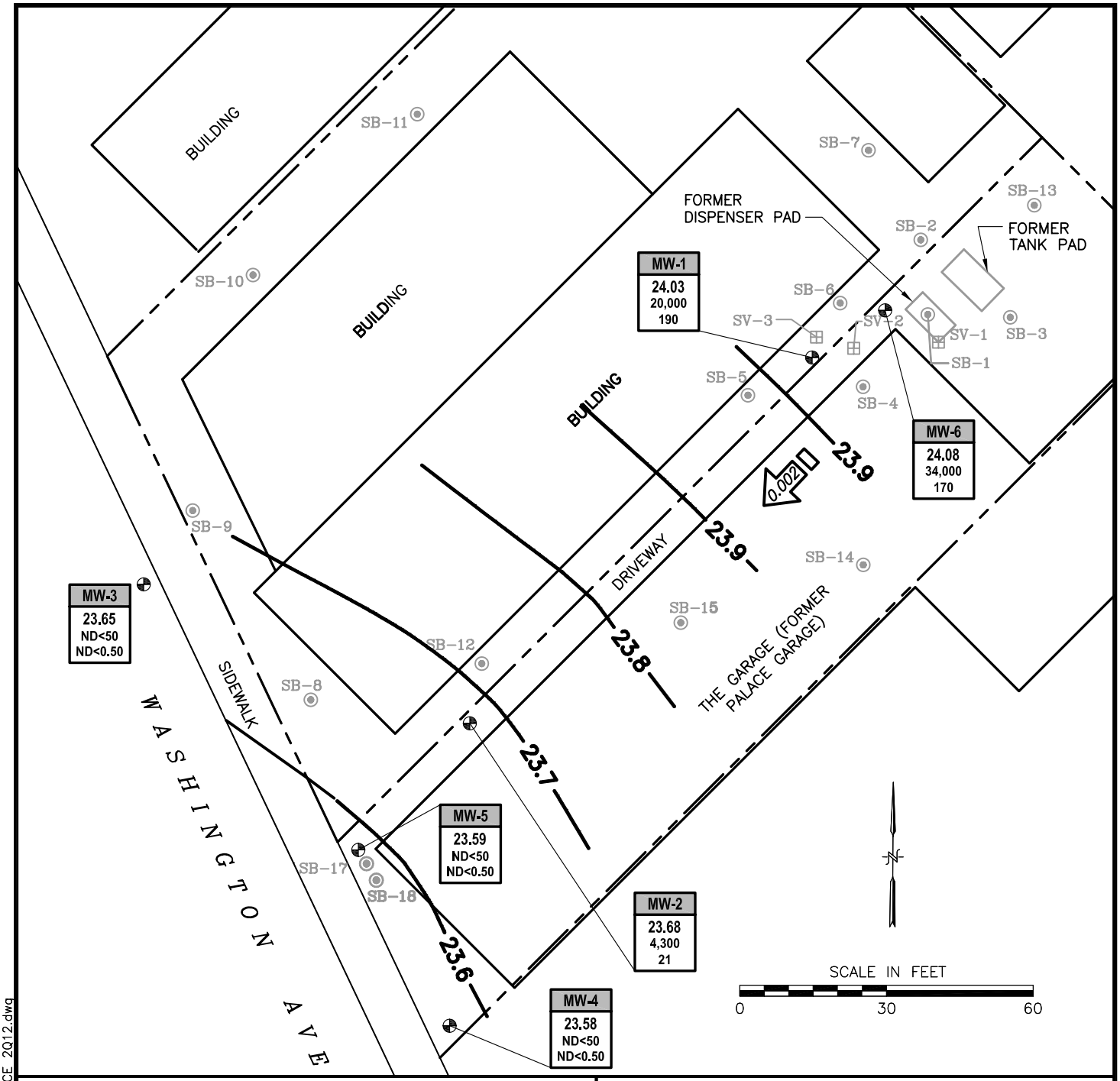
# FIGURE 1

## SITE LOCATION MAP

PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

20101130.14161396 D:\Client Drawings\Closure\palace garage\PALACE GARAGE VICINITY MAP.dwg




## LEGEND:

- GROUNDWATER MONITORING WELL LOCATION
- SOIL VAPOR PROBE
- SOIL BORING LOCATION LOCATION
- PROPERTY LINE
- WELL (ELEV / GRO / BENZENE) — WELL DESIGNATION; GROUNDWATER ELEVATION (FT ABOVE MSL); GRO and BENZENE CONCENTRATIONS (µg/L)
- 23.6 — GROUNDWATER ELEVATION CONTOURS (FEET ABOVE MEAN SEA LEVEL– NAVD 88)
- 0.002 — GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)

## NOTES:

1. BASEMAP SOURCE: MORROW SURVEYING, 2/05/03

# FIGURE 2

SECOND QUARTER 2012
GROUNDWATER MONITORING
& SAMPLING RESULTS

## GROUNDWATER CONTOUR MAP
## MAY 9, 2012

PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

**Table 1**
**Groundwater Elevation and Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | Casing Elevation (Feet MSL) | Depth To Water (Feet) | Groundwater Elevation (Feet) | TPHg/ GRO (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 12/31/2002 | 37.59 | 13.62 | 23.97 | 48,000 | 1,030 | 2,380 | 1,690 | 9,220 |
| | 9/22/2006 | | 13.33 | 24.26 | 44,000 | 870 | 2,200 | 720 | 9,700 |
| | 12/21/2006 | | 13.94 | 23.65 | 17,000 | 240 | 980 | 180 | 5,000 |
| | 3/29/2007 | | 13.71 | 23.88 | 2,000 | 30 | 85 | 23 | 550 |
| | 9/27/2007 | | 15.53 | 22.06 | 540 | 14 | 3.9 | 44 | 87 |
| | 12/20/2007 | | 15.69 | 21.90 | 280 | 4.3 | 1.3 | 15 | 37 |
| | 2/21/2008 | | 13.72 | 23.87 | 19,000 | 300 | 150 | 1,100 | 4,900 |
| | 5/15/2008 | | 14.60 | 22.99 | 7,200 | 140 | 50 | 370 | 2,040 |
| | 8/7/2008 | | 15.62 | 21.97 | 820 | 13 | 3.1 | 44 | 100 |
| | 11/13/2008 | | 16.14 | 21.45 | 670 | 10 | 2.1 | 31 | 110 |
| | 6/19/2009 | | 15.15 | 22.44 | 1,490 | 85.8 | 13.4 | 164 | 310 |
| | 11/3/2009 | | 15.98 | 21.61 | 75 | 6.0 | 0.70 | 12 | 40.5 |
| | 5/4/2010 | | 13.40 | 24.19 | 18,000 | 300 | 61 | 880 | 4,070 |
| | 11/8/2010 | | 15.83 | 21.76 | 170 | 4.9 | ND<0.50 | 7.7 | 24 |
| | 4/22/2011 | | 12.34 | 25.25 | 3,800 | 250 | 48 | 810 | 3,260 |
| | 12/15/2011 | | 14.77 | 22.82 | 1,500 | 21 | 0.88 | 29 | 4.6 |
| | **5/9/2012** | | **13.56** | **24.03** | **20,000** | **190** | **27** | **810** | **3,150** |

**Table 1**
**Groundwater Elevation and Analytical Data**
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14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | Casing Elevation (Feet MSL) | Depth To Water (Feet) | Groundwater Elevation (Feet) | TPHg/ GRO (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 12/31/2002 | 37.12 | 13.38 | 23.74 | 1,670 | 1,030 | 11.00 | 23 | 16.4 |
| | 9/22/2006 | | 13.25 | 23.87 | 1,800 | 53 | 1.40 | 14 | 7.5 |
| | 12/21/2006 | | 13.89 | 23.23 | -- | -- | -- | | -- |
| | 3/29/2007 | | 13.57 | 23.55 | 2,100 | 51 | 1.30 | -- | 4.5 |
| | 9/27/2007 | | 15.37 | 21.75 | 1,600 | 58 | 0.99 | 12 | 3.7 |
| | 12/20/2007 | | 15.40 | 21.72 | 1,500 | 63 | 1.1 | 16 | 4.9 |
| | 2/21/2008 | | 13.60 | 23.52 | 710 | 23 | ND<0.50 | 6.2 | 1.1 |
| | 5/15/2008 | | 14.47 | 22.65 | 1,600 | 84 | 1.4 | 28 | 9.8 |
| | 8/7/2008 | | 15.48 | 21.64 | 2,100 | 86 | 1.6 | 22 | 9.0 |
| | 11/13/2008 | | 15.99 | 21.13 | 2,300 | 46 | 1.1 | 15 | 4.5 |
| | 6/19/2009 | | 15.03 | 22.09 | 931 | 60.1 | ND<2.0 | 30 | 3.1 |
| | 11/3/2009 | | 15.87 | 21.25 | 220 | 22 | 0.55 | 9.4 | 5.05 |
| | 5/4/2010 | | 12.92 | 24.20 | 950 | 14 | 0.57 | 9.1 | 13.2 |
| | 11/8/2010 | | 15.71 | 21.41 | 1,900 | 45 | 1.6 | 44 | 9.28 |
| | 4/22/2011 | | 12.27 | 24.85 | 1,400 | 30 | 1.2 | 29 | 5.78 |
| | 12/15/2011 | | 14.86 | 22.26 | 4,300 | 160 | 26 | 480 | 790 |
| | **5/9/2012** | | **13.44** | **23.68** | **4,300** | **21** | **0.65** | **23** | **7.77** |

**Table 1**
**Groundwater Elevation and Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | Casing Elevation (Feet MSL) | Depth To Water (Feet) | Groundwater Elevation (Feet) | TPHg/ GRO (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 12/31/2002 | 37.01 | 13.29 | 23.72 | <50 | <0.5 | <0.5 | <0.5 | <1.0 |
| | 9/22/2006 | | 13.14 | 23.87 | <50 | <0.5 | <0.5 | <0.5 | <1.5 |
| | 12/21/2006 | | -- | -- | -- | -- | -- | -- | -- |
| | 3/29/2007 | | 13.47 | 23.54 | <50 | <0.5 | <0.5 | <0.5 | <1.5 |
| | 9/27/2007 | | 15.29 | 21.72 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 12/20/2007 | | 15.30 | 21.71 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 2/21/2008 | | --- | --- | --- | --- | --- | --- | --- |
| | 5/15/2008 | | 14.35 | 22.66 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.0 |
| | 8/7/2008 | | 15.39 | 21.62 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 11/13/2008 | | 15.90 | 21.11 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 6/19/2009 | | 14.94 | 22.07 | ND<50 | ND<1.0 | ND<1.0 | ND<1.0 | ND<2.0 |
| | 11/3/2009 | | 15.76 | 21.25 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.0 |
| | 5/4/2010 | | 13.20 | 23.81 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.5 |
| | 11/8/2010 | | 15.62 | 21.39 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.5 |
| | 4/22/2011 | | 12.17 | 24.84 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.5 |
| | 12/15/2011 | | 14.63 | 22.38 | 150 | 1.5 | ND<0.50 | 3.0 | 12.2 |
| | **5/9/2012** | | **13.36** | **23.65** | **ND<50** | **ND<0.50** | **ND<0.50** | **ND<0.50** | **ND<1.5** |

**Table 1**
**Groundwater Elevation and Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | Casing Elevation (Feet MSL) | Depth To Water (Feet) | Groundwater Elevation (Feet) | TPHg/ GRO (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW-4 | 12/31/2002 | 37.09 | 13.45 | 23.64 | <50 | <0.5 | <0.5 | <0.5 | <1.0 |
| | 9/22/2006 | | 13.40 | 23.69 | <50 | <0.5 | <0.5 | <0.5 | <1.5 |
| | 12/21/2006 | | 13.86 | 23.23 | <50 | <0.5 | <0.5 | <0.5 | <1.5 |
| | 3/29/2007 | | 13.69 | 23.40 | <50 | <0.5 | <0.5 | <0.5 | <1.5 |
| | 9/27/2007 | | 15.48 | 21.61 | ND<50 | 1.5 | ND<0.50 | 0.71 | 0.74 |
| | 12/20/2007 | | 15.28 | 21.81 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 2/21/2008 | | 13.56 | 23.53 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.0 |
| | 5/15/2008 | | 14.58 | 22.51 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.0 |
| | 8/7/2008 | | 15.57 | 21.52 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 11/13/2008 | | 16.09 | 21.00 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 6/19/2009 | | 15.15 | 21.94 | ND<50 | ND<1.0 | ND<1.0 | ND<1.0 | ND<2.0 |
| | 11/3/2009 | | 16.03 | 21.06 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.0 |
| | 5/4/2010 | | 13.11 | 23.98 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.5 |
| | 11/8/2010 | | 15.89 | 21.20 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.5 |
| | 4/22/2011 | | 12.40 | 24.69 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.5 |
| | 12/15/2011 | | 15.03 | 22.06 | 86 | ND<0.50 | ND<0.50 | ND<0.50 | 1.3 |
| | **5/9/2012** | | **13.51** | **23.58** | **ND<50** | **ND<0.50** | **0.84** | **ND<0.50** | **ND<1.5** |

**Table 1**
**Groundwater Elevation and Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | Casing Elevation (Feet MSL) | Depth To Water (Feet) | Groundwater Elevation (Feet) | TPHg/ GRO (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW-5 | 2/2/2012 | 37.27 | 15.06 | 22.21 | ND<50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<1.50 |
| | **5/9/2012** | | **13.68** | **23.59** | **ND<50** | **ND<0.50** | **ND<0.50** | **ND<0.50** | **ND<1.50** |
| MW-6 | 2/2/2012 | 37.34 | 14.63 | 22.71 | 17,000 | 340 | 57 | 1,900 | 2,100 |
| | **5/9/2012** | | **13.26** | **24.08** | **34,000** | **170** | **310** | **1,700** | **3,920** |

**Table 1**
**Groundwater Elevation and Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | Casing Elevation (Feet MSL) | Depth To Water (Feet) | Groundwater Elevation (Feet) | TPHg (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) |
|---|---|---|---|---|---|---|---|---|---|

ABBREVIATIONS:

| | |
|---|---|
| TPHg/ GRO | total petroleum hydrocarbons as gasoline. Gasoline range organics |
| B | Benzene |
| T | Toluene |
| E | Ethylbenzene |
| X | Total xylenes |
| µg/L | Micrograms per liter (parts per billion [ppb]) |
| --- | Not analyzed/measured/applicable |
| ND< | Not detected at or above specified laboratory reporting limit |
| **Bold** | Current sampling event |
| MSL | mean sea level |

LIMITATIONS:

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

**Table 2**
**Fuel Oxygenate & Lead Scavenger Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | MTBE (µg/L) | TBA (µg/L) | DIPE (µg/L) | ETBE (µg/L) | TAME (µg/L) | 1,2-DCA (µg/L) | EDB (µg/L) |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 12/31/2002 | <0.5 | -- | -- | -- | -- | -- | -- |
| | 9/22/2006 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 12/21/2006 | 3.9 | -- | -- | -- | -- | -- | -- |
| | 3/29/2007 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 9/27/2007 | 1.6 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 12/21/2007 | 1.5 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 2/21/2008 | ND<7.0 | ND<40 | ND<7.0 | ND<7.0 | ND<7.0 | ND<7.0 | ND<7.0 |
| | 5/15/2008 | ND<2.5 | ND<15 | ND<2.5 | ND<2.5 | ND<2.5 | ND<2.5 | ND<2.5 |
| | 8/7/2008 | 1.0 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | -- | -- |
| | 11/13/2008 | 1.1 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | -- | -- |
| MW-2 | 12/31/2002 | <0.5 | -- | -- | -- | -- | -- | -- |
| | 9/22/2006 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 12/21/2006 | -- | -- | -- | -- | -- | -- | -- |
| | 3/29/2007 | 1.10 | -- | -- | -- | -- | -- | -- |
| | 9/27/2007 | 0.89 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 12/20/2007 | 0.95 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 2/21/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 5/15/2008 | ND<0.90 | ND<5.0 | ND<0.90 | ND<0.90 | ND<0.90 | ND<0.90 | ND<0.90 |
| | 8/7/2008 | 0.59 | ND<5.0 | ND<0.90 | ND<0.90 | ND<0.90 | -- | -- |
| | 11/13/2008 | 0.53 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | -- | -- |

**Table 2**
**Fuel Oxygenate & Lead Scavenger Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | MTBE (µg/L) | TBA (µg/L) | DIPE (µg/L) | ETBE (µg/L) | TAME (µg/L) | 1,2-DCA (µg/L) | EDB (µg/L) |
|---|---|---|---|---|---|---|---|---|
| MW-3 | 12/31/2002 | <0.5 | -- | -- | -- | -- | -- | -- |
| | 9/22/2006 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 12/21/2006 | -- | -- | -- | -- | -- | -- | -- |
| | 3/29/2007 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 9/27/2007 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 12/20/2007 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 2/21/2008 | -- | -- | -- | -- | -- | -- | -- |
| | 5/15/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 8/7/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | -- | -- |
| | 11/13/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | -- | -- |
| MW-4 | 12/31/2002 | <0.5 | -- | -- | -- | -- | -- | -- |
| | 9/22/2006 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 12/21/2006 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 3/29/2007 | <1.0 | -- | -- | -- | -- | -- | -- |
| | 9/27/2007 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 12/20/2007 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 2/21/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 5/15/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 | ND<0.50 |
| | 8/7/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | -- | -- |
| | 11/13/2008 | ND<0.50 | ND<5.0 | ND<0.50 | ND<0.50 | ND<0.50 | -- | -- |

**Table 2**
**Fuel Oxygenate & Lead Scavenger Analytical Data**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | MTBE (µg/L) | TBA (µg/L) | DIPE (µg/L) | ETBE (µg/L) | TAME (µg/L) | 1,2-DCA (µg/L) | EDB (µg/L) |
|---|---|---|---|---|---|---|---|---|

ABBREVIATIONS:

| | |
|---|---|
| MTBE | Methyl Tertiary Butyl Ether |
| TBA | Tertiary Butyl Alcohol |
| DIPE | Diisopropyl Ether |
| ETBE | Ethyl Tertiary Butyl ether |
| TAME | Tertiary Amyl Methyl Ether |
| 1,2-DCA | 1,2-Dichloroethane |
| EDB | 1,2-Dibromoethane |
| µg/L | Micrograms per liter (parts per billion [ppb]) |
| --- | Not analyzed/measured/applicable |
| ND< | Not detected at or above specified laboratory reporting limit |

LIMITATIONS

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

**Table 3**
**Bio-Attenuation Parameters**
Palace Garage
14336 Washington Avenue
San Leandro, California

| Well ID | Date Sampled | Dissolved Oxygen (mg/L) | Alkalinity (pH) (mg/L) | Sulfate (mg/L) | Nitrate (mg/L) | Ferrous Iron (mg/L) |
|---|---|---|---|---|---|---|
| MW-1 | 12/15/2011 | 1.23 | 420 | 23.4 | 18.9 | 0.352 |
| MW-2 | 12/15/2011 | 1.86 | 370 | 53.8 | 44.0 | ND<0.100 |
| | 5/6/2012 | -- | 440 | 21.4 | 13.4 | 0.153 |
| MW-3 | 12/15/2011 | 1.23 | 200 | 37.2 | 42.3 | ND<0.100 |
| | 5/6/2012 | -- | 310 | 36.9 | 21.5 | ND<0.100 |
| MW-5 | 5/6/2012 | -- | 240 | 49.0 | 44.0 | ND<0.100 |

ABBREVIATIONS:

| | |
|---|---|
| mg/L | Milligrams per liter |
| --- | Not analyzed/measured/applicable |
| ND< | Not detected at or above specified laboratory reporting limit |

# Attachment A

# Field Procedures and Field Data Sheets

**Standard Operating Procedures: Basic Gauge, Purge, and Sample.**

**Routine Water Level Measurements**

**1.** Confirm that water or debris will not enter the well box upon removal of the well box lid.
**2.** Remove the cover using the appropriate tools.
**3.** Inspect the wellhead for deficiencies and document accordingly.
**4.** Confirm that water or debris will not enter the well upon removal of the well cap.
**5.** Unlock and remove the well cap lock (if applicable). If lock is not functional cut it off.
**6.** Loosen and remove the well cap. CAUTION: DO NOT PLACE YOUR FACE OR HEAD DIRECTLY OVER WELLHEAD WHEN REMOVING THE WELL CAP. WELL CAP MAY BE UNDER PRESSURE AND/OR MAY RELEASE ACCUMULATED AND POTENTIALLY HARMFULL VAPORS.
**7.** Verify and identify survey point as written on S.O.W.
TOC: If survey point is listed as Top of Casing (TOC), look for the exact survey point in the form of a notch or mark on the top of the casing. If no mark is present, use the north side of the casing as the measuring point.
TOB: If survey point is listed as Top of Box (TOB), the measuring point will be established manually. Place the inverted well box lid halfway across the well box opening and directly over the casing. The lower edge of the inverted cover directly over the casing will be the measuring point.
**8.** Put new Nitrile gloves on your hands.
**9.** Slowly lower the decontaminated water level meter probe into the well until it signals contact with water with a tone and/or flashing a light.
**10.** Gently raise the probe tip slightly above the water and hold it there. Wait momentarily to see if the meter emits a tone, signaling rising water in the casing. Gently lower the probe tip slightly below the water. Wait momentarily to see if the meter stops emitting a tone, signaling dropping water in the casing. Continue process until water level stabilizes indicating that the well has equilibrated.
**11.** While holding the probe at first contact with water and the tape against the measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on well gauging sheet under depth to water column.
**12.** Recover probe, replace and tighten well cap, replace lock (if applicable), replace well box cover and tighten hardware (if applicable).

**Purging With a Bailer (Teflon or Disposable)**

**1.** Attach bailer cord or string to bailer. Leave other end attached to spool.
**2.** Gently lower empty bailer into well until well bottom is reached.
**3.** Cut cord from spool. Tie a loop at end cord.
**4.** Gently raise full bailer out of well and clear of wellhead. Do not let the bailer or cord touch the ground.
**5.** Pour contents into graduated 5-gallon bucket or other graduated receptacle.
**6.** Repeat purging process.
**7.** Upon removal of first casing volume, fill clean parameter cup with purge water, empty the remainder of the purge water into the bucket, lower the bailer back into the well and secure the cord on the Sampling Vehicle.
**8.** Use the water in the cup to collect and record parameter measurements.
**9.** Continue purging until second casing volume is removed.

**10.** Collect parameter measurements.
**11.** Continue purging until third casing volume is removed.

**Purging With a Fixed Speed Electric Submersible Pump**
**1.** Position thoroughly decontaminated pump over the top of the well.
**2.** Gently unreel and lower the pump to the well bottom.
**3.** Raise the pump to client specified location within screened interval. If no direction is given the pump inlet will be placed 5 feet above the bottom of the well.
**4.** Secure the hose reel.
**5.** Begin purging.
**6.** Verify pump rate with flow meter or graduated 5-gallon bucket.
**7.** Upon removal of first casing volume, fill clean parameter cup with water.
**8.** Use the water in the cup to collect and record parameter measurements.
**9.** Continue purging until second casing volume is removed.
**10.** Collect parameter measurements.
**11.** Continue purging until third casing volume is removed.
**12.** Upon completion of purging, gently recover the pump and secure the reel.

**Sampling with a Bailer (Teflon or Disposable)**
**1.** Put new Latex or Nitrile gloves on your hands.
**2.** Determine required bottle set.
**3.** Fill out sample labels completely and attach to bottles.
**4.** Arrange bottles in filling order and loosen caps (see Determine Collection Order below).
**5.** Attach bailer cord or string to bailer. Leave other end attached to spool.
**6.** Gently lower empty bailer into well until water is reached.
**7.** As bailer fills, cut cord from spool and tie end of cord to hand.
**8.** Gently raise full bailer out of well and clear of wellhead. Do not let the bailer or cord touch the ground. If a set of parameter measurements is required, go to step 9. If no additional measurements are required, go to step 11.
**9.** Fill a clean parameter cup, empty the remainder contained in the bailer into the sink, lower the bailer back into the well and secure the cord on the sampling vehicle. Use the water in the cup to collect and record parameter measurements.
**10.** Fill bailer again and carefully remove it from the well.
**11.** Slowly fill and cap sample bottles. Fill and cap volatile compounds first, then semivolatile, then inorganic (see following steps). Return to the well as needed for additional sample material.
**12.** Fill 40-milliliter vials for volatile compounds as follows: Slowly pour water down the inside on the vial. Carefully pour the last drops creating a convex or positive meniscus on the surface. Gently screw the cap on eliminating any air space in the vial. Turn the vial over, tap several times and check for trapped bubbles. If bubbles are present, repeat the process.
**13.** Fill 1 liter amber bottles for semi-volatile compounds as follows: Slowly pour water into the bottle. Leave approximately 1 inch of headspace in the bottle. Cap bottle.
**14.** Field filtering of inorganic samples using a disposable bailer is performed as follows: Attach 0.45 micron filter to connector plug. Attach connector plug to bottom of full disposable bailer. Gravity feed water through the filter and into the sample bottle. If high turbidity level of water clogs filter, repeat process with new filter until bottle is filled. Leave headspace in the bottle. Cap bottle.
**15.** Bag samples and place in ice chest.
**16.** Note sample collection details on well data sheet and Chain of Custody.

# FIELD DATA SHEET-DEPTH TO WATER DATA

## SITE INFORMATION

Site Information

| Palace Garage | 5/6/12 | |
|---|---|---|
| Project Name | Date | Project Number |
| 14336 Washington Ave. | San Leandro | CA |
| Address | City | State |

Water Level Equipment — Kevin Dolan

[x] Electronic Indicator

[ ] Oil Water Interface Probe — 2Q 2012 - QMS Event

[ ] Other (specify) ___

## DEPTH TO WATER DATA

| DTW Order | Well ID | Time (24:00) | DTW (toc) | ~~Depth to SPH~~ Total Depth (toc) | SPH Thickness (toc) | Notes (describe SPH): |
|---|---|---|---|---|---|---|
| 5 | MW-1 | 1237 | 13.56 | 23.25 | ——— | |
| 4 | MW-2 | 1235 | 13.44 | 23.64 | ——— | |
| 2 | MW-3 | 1227 | 13.36 | 23.06 | ——— | |
| 1 | MW-4 | 1223 | 13.51 | 21.85 | ——— | 3/4" well |
| 3 | MW-5 | 1231 | 13.68 | 17.60 | ——— | |
| 6 | MW-6 | 1241 | 13.26 | 19.60 | ——— | |
| | | | | | | < 1 Full drum; 1 1/2 Full Drum on Site > Secure in Back Lot. |

Closure Solutions, INC.

# GROUNDWATER MONITORING WELL SAMPLING FIELD DATA SHEET

**Project Name/No.:** *Palace Garage - San Leandro, CA* **Date:** *May 6, 2012*

**Sample No.:** MW-1

**Samplers Name:** *Kevin Dolan*

**Purge Equipment:**

_____ Bailer: Disposable or Acrylic
_____ 12 v. Pump -
_____ Bladder Pump
_____ SS Monsoon #

**Sample Equipment:**

X Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

**Analyses Requested (circle all that apply):**

| TPH-G BTEX | **Number and Types of Bottle Used:** *3 Voa's w/ hcl* |
|---|---|
| | |

**Well Number:** MW-1
**Depth to Water:** 13.56 TOC
**Well Depth:** 23.25 BGS or TOC
**Height W-Column:** 9.69 feet (well depth - depth to water)
**Volume in Well:** 1.55 gallons (casing volume X height)
**Gallons to purge:** 4.65 gallons (volume X 3)

**Well Diameter:** 2" **with Casing Volume of:**
2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
8" = (2.61 Gallon/Feet)

**Lab:** *SunStar*

**Transportation:** *Golden State Overnight*

| Time (24 hr.) | Volume Purged (Gallons) | Temperature (°C) | Conductivity (ms/cm) | D.O. ~~(ppm)~~ | pH | TDS ~~(ppm)~~ | Turbidity: Color - Fines NTU | Micropurge Paramaters Stabilized |
|---|---|---|---|---|---|---|---|---|
| 1449 | Start | | | g/L | | g/L | | ORP |
| 1451 | 1.60 | 19.03 | 0.948 | 4.58 | 6.75 | 0.58 | 79 : clear, min | -78 |
| 1452 | 3.20 | 18.71 | 0.923 | 4.73 | 6.73 | 0.51 | 73 : ↓ ↓ | -73 |
| 1454 | 5 | 18.32 | 0.906 | 4.64 | 6.71 | 0.46 | 71 : ↓ ↓ | -72 |
| Stab. | Purge | Complete | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 15 | | | | | | |

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 9.69 x 0.8 = 7.75 - (Well Depth) 23.25 = Depth to water 15.50

Time: 1505 1st measured depth to water, 14.01 feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.

Is well within 80% of original well casing volume: Yes X No____
Is well within 80% of original well casing volume: Yes ____ No____
Is well within 80% of original well casing volume: Yes ____ No____

**Sample Well**

Time: 1505 Sample ID: MW-1 Depth: 14.01

Comments: Slight Hc odor - No Sheen

Well Condition: good

# GROUNDWATER MONITORING WELL SAMPLING FIELD DATA SHEET

**Project Name/No.:** *Palace Garage - San Leandro, CA* **Date:** *May 6, 2012*

**Sample No.:** MW-2

**Samplers Name:** *Kevin Dolan*

**Purge Equipment:**

_____ Bailer: Disposable or Acrylic
X 12 v. Pump -
_____ Bladder Pump
_____ SS Monsoon #

**Sample Equipment:**

X Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

| Analyses Requested (circle all that apply): | Number and Types of Bottle Used: |
|---|---|
| TPH-G BTEX | *3 Voa's w/ hcl* |
| + 5 10 Parameters | (1) 500 mL. Poly |

**Well Number:** MW-2

**Depth to Water:** 13.44 TOC

**Well Depth:** 23.64 BGS or TOC

**Height W-Column:** 10.20 feet (well depth - depth to water)

**Volume in Well:** 1.63 gallons (casing volume X height)

**Gallons to purge:** 4.89 gallons (volume X 3)

**Well Diameter:** 2" with Casing Volume of:

2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
8" = (2.61 Gallon/Feet)

**Lab:** *SunStar*

**Transportation:** *Golden State Overnight*

| Time (24 hr.) | Volume Purged (Gallons) | Temperature (°C) | Conductivity (ms/cm) | D.O. (~~ppm~~) | pH | TDS (~~ppm~~) | Turbidity: Color - Fines NTU | Micropurge Paramaters Stabilized |
|---|---|---|---|---|---|---|---|---|
| 1422 | Start | | | SIL | | SIL | | ORP mV |
| 1424 | 1.75 | 18.37 | 0.983 | 4.81 | 6.42 | 0.63 | 101: Clear, min | -103 |
| 1426 | 3.5 | 18.12 | 0.985 | 3.98 | 6.50 | 0.78 | 71: ↓ ↓ | -126 |
| 1428 | 5 | 17.95 | 0.988 | 3.91 | 6.58 | 0.80 | 63: ↓ ↓ | -134 |
| Stop. | Purge | Complete | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 10.20 x 0.8 = 8.16 - (Well Depth) 23.64 = Depth to water 15.48

Time: 1440 1st measured depth to water, 13.49 feet below TOC. Is well within 80% of original well casing volume: Yes X No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Sample Well

Time: 1440 Sample ID: MW-2 Depth: 13.49

Comments: No odor. No Sheen

Well Condition: Good

Closure Solutions INC. - QMS FDS

# GROUNDWATER MONITORING WELL SAMPLING FIELD DATA SHEET

**Project Name/No.:** *Palace Garage - San Leandro, CA* **Date:** *May 6, 2012*

**Sample No.:** MW-3

**Samplers Name:** *Kevin Dolan*

**Purge Equipment:**

_____ Bailer: Disposable or Acrylic
X 12 v. Pump -
_____ Bladder Pump
_____ SS Monsoon #

**Sample Equipment:**

X Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

**Analyses Requested (circle all that apply):**

| TPH-G BTEX | *3 Voa's w/ hcl* |
|---|---|
| | |

**Number and Types of Bottle Used:**

**Well Number:** MW-3
**Depth to Water:** 13.36 TOC
**Well Depth:** 23.06 BGS or TOC
**Height W-Column:** 9.70 feet (well depth - depth to water)
**Volume in Well:** 1.55 gallons (casing volume X height)
**Gallons to purge:** 4.65 gallons (volume X 3)

**Well Diameter:** 2" with Casing Volume of:
2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
8" = (2.61 Gallon/Feet)

**Lab:** *SunStar* **Transportation:** *Golden State Overnight*

| Time (24 hr.) | Volume Purged (Gallons) | Temperature (°C) | Conductivity (ms/cm) | D.O. ~~(ppm)~~ | pH | TDS ~~(ppm)~~ | Turbidity: Color - Fines | Micropurge Paramaters Stabilized |
|---|---|---|---|---|---|---|---|---|
| 1326 | Start | | | 9.2 | | 9.2 | | ORP MV |
| 1328 | 1.55 | 19.56 | 0.655 | 4.69 | 6.09 | 0.42 | 205' ; HAZY, gray, mod | 81 |
| 1330 | 3.20 | 18.91 | 0.618 | 4.73 | 6.21 | 0.40 | 93: ↓ ↓ | 63 |
| 1332 | 4.75 | 18.54 | 0.598 | 5.11 | 6.23 | 0.38 | 88' clear, min | 59 |
| Stbl. | Purge | Complete | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 9.70 x 0.8 = 7.76 - (Well Depth) 23.06 = Depth to water

Time: 1344 1st measured depth to water, 13.43 feet below TOC. Is well within 80% of original well casing volume: Yes X No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

**Sample Well**

Time: 1345 Sample ID: MW-3 Depth: 13.43

Comments: No odor - No sheen

Well Condition: Good

Closure Solutions INC. - QMS FDS

# GROUNDWATER MONITORING WELL SAMPLING FIELD DATA SHEET

**Project Name/No.:** *Palace Garage - San Leandro, CA* **Date:** *May 6, 2012*

**Sample No.:**

**Samplers Name:** *Kevin Dolan*

**Purge Equipment:**

_____ Bailer: Disposable or Acrylic
_____ 12 v. Pump - ✓ Foot valve ; tube
_____ Bladder Pump
_____ SS Monsoon #

✓ Foot valve

**Sample Equipment:**

_____/_____ Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

**Analyses Requested (circle all that apply):**

| | **Number and Types of Bottle Used:** |
|---|---|
| TPH-G BTEX | *3 Voa's w/ hcl* |
| | |

**Well Number:** MW-4

**Depth to Water:** 13.51 TOC

**Well Depth:** 21.85 BGS or TOC

**Height W-Column:** 8.34 feet (well depth - depth to water)

**Volume in Well:** 0.52 gallons (casing volume X height)

**Gallons to purge:** 1.56 gallons (volume X 3)

**Well Diameter:** 3/4" with Casing Volume of:

3/4 = (0.0625)

**2" = (0.16 Gallon/Feet)**
**4" = (0.65 Gallon/Feet)**
**5" = (1.02 Gallon/Feet)**
6" = (1.47 Gallon/Feet)
8" = (2.61 Gallon/Feet)

**Lab:** *SunStar*

**Transportation:** *Golden State Overnight*

| Time (24 hr.) | Volume Purged (Gallons) | Temperature (°C) | Conductivity (ms/cm) | D.O. ~~(ppm)~~ | pH | TDS ~~(ppm)~~ | Turbidity: Color - Fines | Micropurge Paramaters Stabilized |
|---|---|---|---|---|---|---|---|---|
| 1258 | Start | | | g/L | | g/L | | ORP MV |
| 1302 | .55 | 18.93 | 0.718 | 5.15 | 7.29 | 0.48 | 712 ; Brown, Many | N/A |
| 1305 | 1.10 | 18.60 | 0.623 | 5.03 | 7.20 | 0.47 | 506 ; ↓ | ↓ |
| 1307 | 1.60 | 18.53 | 0.619 | 4.67 | 7.16 | 0.48 | 412 ; Hazy ; Many | ↓ |
| Stop. | Purge | Complete | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | 157 | | | | | | |

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 8.34 x 0.8 = 6.67 - (Well Depth) 21.85 = Depth to water 15.18

Time: 1308 1st measured depth to water, 14.49 feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.
Time: _____ 1st measured depth to water, _____ feet below TOC.

Is well within 80% of original well casing volume: Yes X No____
Is well within 80% of original well casing volume: Yes ____ No____
Is well within 80% of original well casing volume: Yes ____ No____

**Sample Well**

Time: 1310 Sample ID: MW-4 Depth: 14.49

Comments: no odor - no Sheen

Well Condition: good -

# GROUNDWATER MONITORING WELL SAMPLING FIELD DATA SHEET

**Project Name/No.:** *Palace Garage - San Leandro, CA* **Date:** *May 6, 2012*

**Sample No.:**

**Samplers Name:** *Kevin Dolan*

**Purge Equipment:**

_____ Bailer: Disposable or Acrylic
X 12 v. Pump -
_____ Bladder Pump
_____ SS Monsoon #

**Sample Equipment:**

X Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

**Analyses Requested (circle all that apply):**

| TPH-G BTEX + Bio Parameters | 3 Voa's w/ hcl<br>500mL, Poly |
|---|---|

**Number and Types of Bottle Used:**

**Well Number:** MW-5
**Depth to Water:** 13.68 TOC
**Well Depth:** 17.60 BGS or TOC
**Height W-Column:** 3.92 feet (well depth - depth to water)
**Volume in Well:** 0.62 gallons (casing volume X height)
**Gallons to purge:** 1.88 gallons (volume X 3)

**Well Diameter:** 2" with Casing Volume of:
2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
8" = (2.61 Gallon/Feet)

**Lab:** *SunStar* **Transportation:** *Golden State Overnight*

| Time (24 hr.) | Volume Purged (Gallons) | Temperature (°C) | Conductivity (ms/cm) | D.O. (ppm) | pH | TDS (ppm) | Turbidity: Color - Fines NTU: | Micropurge Paramaters Stabilized |
|---|---|---|---|---|---|---|---|---|
| 1355 | Start | | | N/A | | N/A | | ORP no |
| 1356 | .75 | 17.17 | 0.718 | 5.17 | 6.12 | 0.46 | -5.0 ; HAZY Brown, many | 105 |
| 1358 | 1.50 | 18.93 | 0.699 | 4.81 | 6.16 | 0.46 | O/R ; ↓ ↓ | 104 |
| 1359 | 2.00 | 18.84 | 0.685 | 4.60 | 6.20 | 0.44 | O/R ; clear, mild | 103 |
| Stb | ; Purge Complete | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:

Original Height of Water Column = 3.92 x 0.8 = 3.14 - (Well Depth) 17.60 = Depth to water 14.46

Time: 1410 1st measured depth to water, 13.73 feet below TOC. Is well within 80% of original well casing volume: Yes X No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Sample Well

Time: 1411 Sample ID: MW-5 Depth: 13.73

Comments: No odor - No sheen

Well Condition: good

Closure Solutions INC. - QMS FDS

# GROUNDWATER MONITORING WELL SAMPLING FIELD DATA SHEET

**Project Name/No.:** *Palace Garage - San Leandro, CA* **Date:** *May 6, 2012*

**Sample No.:** MW-6

**Samplers Name:** *Kevin Dolan*

**Purge Equipment:**

_____ Bailer: Disposable or Acrylic
X 12 v. Pump -
_____ Bladder Pump
_____ SS Monsoon #

**Sample Equipment:**

X Disposable Bailer
_____ Whaler # _____
_____ Bladder Pump
_____ Submersible Pump

| **Analyses Requested (circle all that apply):** | **Number and Types of Bottle Used:** |
|---|---|
| TPH-G BTEX | *3 Voa's w/ hcl* |
| | |

**Well Number:** MW-6
**Depth to Water:** 13.26 TOC
**Well Depth:** 19.60 BGS or TOC
**Height W-Column:** 6.34 feet (well depth - depth to water)
**Volume in Well:** 1.01 gallons (casing volume X height)
**Gallons to purge:** 3.04 gallons (volume X 3)

**Well Diameter:** 2" **with Casing Volume of:**
2" = (0.16 Gallon/Feet)
4" = (0.65 Gallon/Feet)
5" = (1.02 Gallon/Feet)
6" = (1.47 Gallon/Feet)
8" = (2.61 Gallon/Feet)

**Lab:** *SunStar* **Transportation:** *Golden State Overnight*

| Time (24 hr.) | Volume Purged (Gallons) | Temperature (°C) | Conductivity (ms/cm) | D.O. (ppm) | pH | TDS (ppm) | Turbidity: Color - Fines | Micropurge Paramaters Stabilized |
|---|---|---|---|---|---|---|---|---|
| 1523 | Start | | | | | | | |
| 1525 | 1.10 | 17.71 | 0.960 | 5.02 | 6.76 | .52 | 419.; clear, min | -120 |
| 1526 | 2.20 | 17.56 | 0.812 | 4.98 | 6.75 | 0.49 | 525; ↓ ↓ | -131 |
| 1528 | 3.30 | 17.40 | 0.755 | 4.83 | 6.71 | 0.48 | 519; ↓ ↓ | -136 |
| Stop | Purge | Complete | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of orginal well volume:
Original Height of Water Column = 13.26 x 0.8 = 10.61 - (Well Depth) 19.60 = Depth to water 8.99

Time: 1538 1st measured depth to water, 13.41 feet below TOC. Is well within 80% of original well casing volume: Yes X No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____
Time: _____ 1st measured depth to water, _____ feet below TOC. Is well within 80% of original well casing volume: Yes ____ No____

Sample Well

Time: 1539 Sample ID: MW-6 Depth: 13.41

Comments: Moderate HC odor - No Sheen

Well Condition: Good

# Attachment B

## Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

**25712 Commercentre Drive**
**Lake Forest, California 92630**
**949.297.5020 Phone**
**949.297.5027 Fax**

23 May 2012

Matt Farris
Closure Solutions
2300 Clayton Rd. Suite 1435
Concord, CA 94520

RE: Palace Garage

Enclosed are the results of analyses for samples received by the laboratory on 05/11/12 10:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Daniel Chavez
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

**25712 Commercentre Drive**
**Lake Forest, California 92630**
**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| MW-1 | T120802-01 | Water | 05/09/12 15:05 | 05/11/12 10:05 |
| MW-2 | T120802-02 | Water | 05/09/12 14:40 | 05/11/12 10:05 |
| MW-3 | T120802-03 | Water | 05/09/12 13:45 | 05/11/12 10:05 |
| MW-4 | T120802-04 | Water | 05/09/12 13:10 | 05/11/12 10:05 |
| MW-5 | T120802-05 | Water | 05/09/12 14:11 | 05/11/12 10:05 |
| MW-6 | T120802-06 | Water | 05/09/12 15:39 | 05/11/12 10:05 |

SunStar Laboratories, Inc.

Daniel J Chavez

Daniel Chavez, Project Manager

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| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## MW-1

## T120802-01 (Water)

### SunStar Laboratories, Inc.

### Volatile Organic Compounds by EPA Method 8260B

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **190** | 12 | ug/l | 25 | 2051512 | 05/15/12 | 05/18/12 | EPA 8260B | |
| **Toluene** | **27** | 0.50 | " | 1 | " | " | " | " | |
| **Ethylbenzene** | **810** | 12 | " | 25 | " | " | " | " | |
| **m,p-Xylene** | **2900** | 25 | " | " | " | " | " | " | |
| **o-Xylene** | **250** | 12 | " | " | " | " | " | " | |
| **C6-C12 (GRO)** | **20000** | 50 | " | 1 | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *95.6 %* | *83.5-119* | | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *130 %* | *81-136* | | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *89.0 %* | *88.8-117* | | " | " | " | " | |

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| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## MW-2

## T120802-02 (Water)

### SunStar Laboratories, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SM 3500 Series Methods** | | | | | | | | | |
| **Ferrous Iron** | **0.153** | 0.100 | mg/l | 1 | 2051422 | 05/14/12 | 05/15/12 | EPA6010/SM 3500 | |
| **Volatile Organic Compounds by EPA Method 8260B** | | | | | | | | | |
| **Benzene** | **21** | 0.50 | ug/l | 1 | 2051512 | 05/15/12 | 05/18/12 | EPA 8260B | |
| **Toluene** | **0.65** | 0.50 | " | " | " | " | " | " | |
| **Ethylbenzene** | **23** | 0.50 | " | " | " | " | " | " | |
| **m,p-Xylene** | **6.9** | 1.0 | " | " | " | " | " | " | |
| **o-Xylene** | **0.87** | 0.50 | " | " | " | " | " | " | |
| **C6-C12 (GRO)** | **4300** | 50 | " | " | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *101 %* | *83.5-119* | | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *135 %* | *81-136* | | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *87.6 %* | *88.8-117* | | " | " | " | " | *S-GC* |
| **Conventional Chemistry Parameters by APHA/EPA/ASTM Methods** | | | | | | | | | |
| **Total Alkalinity** | **440** | 20 | mg/l | 1 | 2051112 | 05/11/12 | 05/11/12 | EPA 310.1 | |
| **Anions by EPA Method 300.0** | | | | | | | | | |
| **Sulfate as SO4** | **21.4** | 0.500 | mg/l | 1 | 2051111 | 05/11/12 | 05/18/12 | EPA 300.0 | |
| **Nitrate as NO3** | **13.4** | 0.500 | " | " | " | " | " | " | |

SunStar Laboratories, Inc.

Daniel J Chavez

Daniel Chavez, Project Manager

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**Lake Forest, California 92630**
**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## MW-3

### T120802-03 (Water)

### SunStar Laboratories, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SM 3500 Series Methods** | | | | | | | | | |
| Ferrous Iron | ND | 0.100 | mg/l | 1 | 2051422 | 05/14/12 | 05/15/12 | EPA6010/SM 3500 | |
| **Volatile Organic Compounds by EPA Method 8260B** | | | | | | | | | |
| Benzene | ND | 0.50 | ug/l | 1 | 2051512 | 05/15/12 | 05/18/12 | EPA 8260B | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.50 | " | " | " | " | " | " | |
| C6-C12 (GRO) | ND | 50 | " | " | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *104 %* | *83.5-119* | | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *114 %* | *81-136* | | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *101 %* | *88.8-117* | | " | " | " | " | |
| **Conventional Chemistry Parameters by APHA/EPA/ASTM Methods** | | | | | | | | | |
| **Total Alkalinity** | **310** | 20 | mg/l | 1 | 2051112 | 05/11/12 | 05/11/12 | EPA 310.1 | |
| **Anions by EPA Method 300.0** | | | | | | | | | |
| **Sulfate as SO4** | **36.9** | 0.500 | mg/l | 1 | 2051111 | 05/11/12 | 05/18/12 | EPA 300.0 | |
| **Nitrate as NO3** | **21.5** | 0.500 | " | " | " | " | " | " | |

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## MW-4

## T120802-04 (Water)

### SunStar Laboratories, Inc.

**Volatile Organic Compounds by EPA Method 8260B**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.50 | ug/l | 1 | 2051512 | 05/15/12 | 05/18/12 | EPA 8260B | |
| **Toluene** | **0.84** | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.50 | " | " | " | " | " | " | |
| C6-C12 (GRO) | ND | 50 | " | " | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *92.6 %* | *83.5-119* | | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *131 %* | *81-136* | | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *91.0 %* | *88.8-117* | | " | " | " | " | |

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Daniel J Chavez

Daniel Chavez, Project Manager

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**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## MW-5

### T120802-05 (Water)

### SunStar Laboratories, Inc.

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SM 3500 Series Methods** | | | | | | | | | |
| Ferrous Iron | ND | 0.100 | mg/l | 1 | 2051422 | 05/14/12 | 05/15/12 | EPA6010/SM 3500 | |
| **Volatile Organic Compounds by EPA Method 8260B** | | | | | | | | | |
| Benzene | ND | 0.50 | ug/l | 1 | 2051512 | 05/15/12 | 05/18/12 | EPA 8260B | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| m,p-Xylene | ND | 1.0 | " | " | " | " | " | " | |
| o-Xylene | ND | 0.50 | " | " | " | " | " | " | |
| C6-C12 (GRO) | ND | 50 | " | " | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *102 %* | *83.5-119* | | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *131 %* | *81-136* | | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *91.5 %* | *88.8-117* | | " | " | " | " | |
| **Conventional Chemistry Parameters by APHA/EPA/ASTM Methods** | | | | | | | | | |
| **Total Alkalinity** | **240** | 20 | mg/l | 1 | 2051112 | 05/11/12 | 05/11/12 | EPA 310.1 | |
| **Anions by EPA Method 300.0** | | | | | | | | | |
| **Sulfate as SO4** | **49.0** | 0.500 | mg/l | 1 | 2051111 | 05/11/12 | 05/18/12 | EPA 300.0 | |
| **Nitrate as NO3** | **44.0** | 0.500 | " | " | " | " | " | " | |

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Daniel Chavez, Project Manager

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| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## MW-6

## T120802-06 (Water)

### SunStar Laboratories, Inc.

**Volatile Organic Compounds by EPA Method 8260B**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **170** | 12 | ug/l | 25 | 2051512 | 05/15/12 | 05/18/12 | EPA 8260B | |
| **Toluene** | **310** | 2.5 | " | 5 | " | " | " | " | |
| **Ethylbenzene** | **1700** | 12 | " | 25 | " | " | " | " | |
| **m,p-Xylene** | **3300** | 25 | " | " | " | " | " | " | |
| **o-Xylene** | **620** | 12 | " | " | " | " | " | " | |
| **C6-C12 (GRO)** | **34000** | 50 | " | 1 | " | " | " | " | |
| *Surrogate: 4-Bromofluorobenzene* | | *91.8 %* | *83.5-119* | | " | " | " | " | |
| *Surrogate: Dibromofluoromethane* | | *126 %* | *81-136* | | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *89.9 %* | *88.8-117* | | " | " | " | " | |

SunStar Laboratories, Inc.

Daniel J Chavez

Daniel Chavez, Project Manager

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**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## Metals by SM 3500 Series Methods - Quality Control

## SunStar Laboratories, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 2051422 - EPA 3010A** | | | | | | | | | | |
| **Blank (2051422-BLK1)** | | | | Prepared: 05/14/12 Analyzed: 05/15/12 | | | | | | |
| Ferrous Iron | ND | 0.100 | mg/l | | | | | | | |
| **LCS (2051422-BS1)** | | | | Prepared: 05/14/12 Analyzed: 05/15/12 | | | | | | |
| Ferrous Iron | 0.441 | 0.100 | mg/l | 0.500 | | 88.2 | 80-120 | | | |
| **Matrix Spike (2051422-MS1)** | | **Source: T120802-03** | | Prepared: 05/14/12 Analyzed: 05/15/12 | | | | | | |
| Ferrous Iron | 0.362 | 0.100 | mg/l | 0.500 | 0.0681 | 58.9 | 75-125 | | | QM-05 |
| **Matrix Spike Dup (2051422-MSD1)** | | **Source: T120802-03** | | Prepared: 05/14/12 Analyzed: 05/15/12 | | | | | | |
| Ferrous Iron | 0.373 | 0.100 | mg/l | 0.500 | 0.0681 | 61.0 | 75-125 | 2.99 | 20 | QM-05 |

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Daniel J Chavez

Daniel Chavez, Project Manager

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**25712 Commercentre Drive**
**Lake Forest, California 92630**
**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

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

## SunStar Laboratories, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 2051512 - EPA 5030 GCMS** | | | | | | | | | | |
| **Blank (2051512-BLK1)** | | | | Prepared: 05/15/12 Analyzed: 05/17/12 | | | | | | |
| Benzene | ND | 0.50 | ug/l | | | | | | | |
| Toluene | ND | 0.50 | " | | | | | | | |
| Ethylbenzene | ND | 0.50 | " | | | | | | | |
| m,p-Xylene | ND | 1.0 | " | | | | | | | |
| o-Xylene | ND | 0.50 | " | | | | | | | |
| C6-C12 (GRO) | ND | 50 | " | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *8.69* | | " | *8.00* | | *109* | *83.5-119* | | | |
| *Surrogate: Dibromofluoromethane* | *10.2* | | " | *8.00* | | *128* | *81-136* | | | |
| *Surrogate: Toluene-d8* | *8.14* | | " | *8.00* | | *102* | *88.8-117* | | | |
| **LCS (2051512-BS1)** | | | | Prepared: 05/15/12 Analyzed: 05/18/12 | | | | | | |
| Benzene | 20.8 | 0.50 | ug/l | 20.0 | | 104 | 75-125 | | | |
| Toluene | 17.1 | 0.50 | " | 20.0 | | 85.4 | 75-125 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *7.24* | | " | *8.00* | | *90.5* | *83.5-119* | | | |
| *Surrogate: Dibromofluoromethane* | *9.96* | | " | *8.00* | | *124* | *81-136* | | | |
| *Surrogate: Toluene-d8* | *7.29* | | " | *8.00* | | *91.1* | *88.8-117* | | | |
| **Matrix Spike (2051512-MS1)** | **Source: T120817-01** | | | Prepared: 05/15/12 Analyzed: 05/18/12 | | | | | | |
| Benzene | 371 | 0.50 | ug/l | 20.0 | 454 | NR | 75-125 | | | QM-05 |
| Toluene | 357 | 0.50 | " | 20.0 | 246 | 554 | 75-125 | | | QM-05 |
| *Surrogate: 4-Bromofluorobenzene* | *7.38* | | " | *8.00* | | *92.2* | *83.5-119* | | | |
| *Surrogate: Dibromofluoromethane* | *9.09* | | " | *8.00* | | *114* | *81-136* | | | |
| *Surrogate: Toluene-d8* | *7.07* | | " | *8.00* | | *88.4* | *88.8-117* | | | *S-GC* |
| **Matrix Spike Dup (2051512-MSD1)** | **Source: T120817-01** | | | Prepared: 05/15/12 Analyzed: 05/18/12 | | | | | | |
| Benzene | 333 | 0.50 | ug/l | 20.0 | 454 | NR | 75-125 | 10.8 | 20 | QM-05 |
| Toluene | 334 | 0.50 | " | 20.0 | 246 | 438 | 75-125 | 6.69 | 20 | QM-05 |
| *Surrogate: 4-Bromofluorobenzene* | *7.55* | | " | *8.00* | | *94.4* | *83.5-119* | | | |
| *Surrogate: Dibromofluoromethane* | *9.08* | | " | *8.00* | | *114* | *81-136* | | | |
| *Surrogate: Toluene-d8* | *7.21* | | " | *8.00* | | *90.1* | *88.8-117* | | | |

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

**25712 Commercentre Drive**
**Lake Forest, California 92630**
**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control

## SunStar Laboratories, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 2051112 - General Preparation** | | | | | | | | | | |
| **Duplicate (2051112-DUP1)** | | **Source: T120802-02** | | Prepared & Analyzed: 05/11/12 | | | | | | |
| Total Alkalinity | 425 | 20 | mg/l | | 435 | | | 2.33 | 25 | |

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Daniel J Chavez

Daniel Chavez, Project Manager

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**Lake Forest, California 92630**
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| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## Anions by EPA Method 300.0 - Quality Control

## SunStar Laboratories, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 2051111 - General Preparation** | | | | | | | | | | |
| **Blank (2051111-BLK1)** | | | | Prepared: 05/11/12 Analyzed: 05/18/12 | | | | | | |
| Fluoride | ND | 0.500 | mg/l | | | | | | | |
| Chloride | ND | 0.500 | " | | | | | | | |
| Nitrite as NO2 | ND | 0.500 | " | | | | | | | |
| Sulfate as SO4 | ND | 0.500 | " | | | | | | | |
| Nitrate as NO3 | ND | 0.500 | " | | | | | | | |
| **LCS (2051111-BS1)** | | | | Prepared: 05/11/12 Analyzed: 05/18/12 | | | | | | |
| Chloride | 9.72 | 0.500 | mg/l | 10.0 | | 97.2 | 80-120 | | | |
| Sulfate as SO4 | 10.3 | 0.500 | " | 10.0 | | 103 | 80-120 | | | |
| Nitrate as NO3 | 10.9 | 0.500 | " | 11.1 | | 98.0 | 80-120 | | | |
| **Matrix Spike (2051111-MS1)** | **Source: T120799-01** | | | Prepared: 05/11/12 Analyzed: 05/18/12 | | | | | | |
| Chloride | 14.5 | 0.500 | mg/l | 10.0 | 4.53 | 99.4 | 80-120 | | | |
| Sulfate as SO4 | 20.0 | 0.500 | " | 10.0 | | 200 | 80-120 | | | QM-05 |
| Nitrate as NO3 | 19.0 | 0.500 | " | 11.1 | 7.22 | 106 | 80-120 | | | |
| **Matrix Spike Dup (2051111-MSD1)** | **Source: T120799-01** | | | Prepared: 05/11/12 Analyzed: 05/18/12 | | | | | | |
| Chloride | 14.2 | 0.500 | mg/l | 10.0 | 4.53 | 96.8 | 80-120 | 1.78 | 20 | |
| Sulfate as SO4 | 19.7 | 0.500 | " | 10.0 | | 197 | 80-120 | 1.42 | 20 | QM-05 |
| Nitrate as NO3 | 18.6 | 0.500 | " | 11.1 | 7.22 | 103 | 80-120 | 1.81 | 20 | |

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

**25712 Commercentre Drive**
**Lake Forest, California 92630**
**949.297.5020 Phone**
**949.297.5027 Fax**

| | | |
|---|---|---|
| Closure Solutions | Project: Palace Garage | |
| 2300 Clayton Rd. Suite 1435 | Project Number: [none] | **Reported:** |
| Concord CA, 94520 | Project Manager: Matt Farris | 05/23/12 16:42 |

## Notes and Definitions

| | |
|---|---|
| S-GC | Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s). |
| QM-05 | The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

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SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

# Chain of Custody Record

Client: CLOSURE SOLUTIONS INC
Address: 2300 Clayton Rd., St 1455, CONCORD, CA
Phone: 925-808-9290 Fax:
Project Manager: [redacted] MATT FARRIS

Date: 5/8/12 Page: 1 Of 1
Project Name: PALACE GARAGE
Collector: K. Dolan Client Project #:
Batch #: 2Q 2012 EDF #: T0600101043
I120802

| Sample ID | Date Sampled | Time | Sample Type | Container Type | 8260 <TPH.g/BTEX | 8260 + OXY | 8260 BTEX, OXY only | 8270 | 8021 BTEX | 8015M (gasoline) | 8015M (diesel) | 8015M Ext./Carbon Chain | 6010/7000 Title 22 Metals | 300 Nitrate, Sulfate | 6010 Ferrous, Iron | 310.1 Alkalinity | Laboratory ID # | Comments/Preservative | Total # of containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 5/9/12 | 1505 | GW | 3 VOA HCl | X | | | | | | | | | X | X | X | 01 | NO Bioparameters KD | |
| MW-2 | | 1440 | | | | | | | | | | | | X | X | X | 02 | + 1 500mL poly | |
| MW-3 | | 1345 | | | | | | | | | | | | X | X | X | 03 | " " | |
| MW-4 | | ~~1440~~ 1430 | | | | | | | | | | | | | | | 04 | | |
| MW-5 | | 1411 | | | | | | | | | | | | X | X | X | 05 | " " | |
| MW-6 | | 1539 | | | | | | | | | | | | | | | 06 | | |

STD. TAT
5/11/12

| | | | | | |
|---|---|---|---|---|---|
| Relinquished by: (signature) | Date / Time 5/10/12 1000 | Received by: (signature) | Date / Time 5-10-12 1025 | Total # of containers | 21 |
| Relinquished by: (signature) | Date / Time | Received by: (signature) | Date / Time | Chain of Custody seals Y/N/NA | Y |
| | | | | Seals intact? Y/N/NA | Y |
| Relinquished by: (signature) GSO | Date / Time 5/11/12 10:05 | Received by: (signature) | Date / Time 5/11/12 10:05 | Received good condition/cold | 10.5 |

Turn around time: STD

Notes
results to:
BBusch@ClosureSolutions.com
KDolan@ClosureSolutions.
MFarris@ClosureSolutions.com

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

COC 112832

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE



# SAMPLE RECEIVING REVIEW SHEET

**BATCH #** J120802

Client Name: Closure Solutions Project: Palace Garage

Received by: Brian Date/Time Received: 5/11/12 10:05

Delivered by : ☐ Client ☐ SunStar Courier ☑ GSO ☐ FedEx ☐ Other _____

Total number of coolers received 1 **Temp criteria = 6°C > 0°C (no frozen containers)**

Temperature: cooler #1 10.7 °C +/- the CF (- 0.2°C) = 10.5 °C corrected temperature

cooler #2 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

cooler #3 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

| | | | |
|---|---|---|---|
| Samples outside temp. but received on ice, w/in 6 hours of final sampling. | ☑ Yes | ☐ No* | ☐ N/A |
| Custody Seals Intact on Cooler/Sample | ☑ Yes | ☐ No* | ☐ N/A |
| Sample Containers Intact | ☑ Yes | ☐ No* | |
| Sample labels match COC ID's | ☑ Yes | ☐ No* | |
| Total number of containers received match COC | ☑ Yes | ☐ No* | |
| Proper containers received for analyses requested on COC | ☑ Yes | ☐ No* | |
| Proper preservative indicated on COC/containers for analyses requested | ☑ Yes | ☐ No* | ☐ N/A |

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☑ **Yes** ☐ **No***

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date KS 5/11/12

Comments:

_____

_____

_____

_____