ConocoPhillips
76 Broadway
Sacramento, California 95818

August 24, 2010

Alameda County Health Agency – Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Attention: Ms. Barbara Jakub

Re: **Revised - Additional Assessment Work Plan**
**76 Service Station #0843**
**1629 Webster Street**
**Alameda, CA**

Dear Ms. Jakub:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact me at (916) 558-7612.

Sincerely,

Bill Borgh
Site Manager – Risk Management and Remediation

Attachment

August 24, 2010

Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: **WORK PLAN FOR ADDITIONAL ASSESSMENT**
**1629 Webster Street**
**Alameda, California**
**Agency Case #RO450**

DELTA

Dear Ms. Jakub:

On behalf of ConocoPhillips Company (COP), Delta Consultants (Delta) is submitting this *Work Plan for Additional Assessment*, for the 76 Service Station 0843/2349, located at 1629 Webster Street in Alameda, California (Figure 1). Proposed activities are in response to the August 6, 2010 electronic mail letter (email) to COP requesting additional information prior to approving activities recommended by Delta in the April 7, 2010 *Corrective Action Plan.* A copy of the email correspondence document is provided as Appendix A.

Please contact James Barnard with Delta at (916) 503-1279 or Bill Borgh at 916-558-7612 if you have questions.

Sincerely,
**DELTA CONSULTANTS**

James B. Barnard, P.G.
Project Manager

cc: Mr. Bill Borgh - ConocoPhillips (electronic copy only)

a member of: Inogen Environmental Alliance

11050 White Rock Road Suite 110 Rancho Cordova, California 95670 USA
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**WORK PLAN FOR ADDITIONAL ASSESSMENT**

**76 Service Station No. 0843/2349**
**1629 Webster Street**
**Alameda, Alameda County, California**
**Agency Case #RO450**

**August 24, 2010**

**Prepared for**

**ConocoPhillips Company**
**76 Broadway**
**Sacramento, California**

The material and data in this report were prepared under the supervision and direction of the undersigned.

**Delta Consultants**

FOR

Alan Buehler
Staff Geologist

FOR

Caitlin Morgan
Staff Scientist

James B. Barnard

James B. Barnard, P.G.
Project Manager
California Registered Professional Geologist No. 7478

## 1.0 INTRODUCTION

On behalf of ConocoPhillips Company (COP), Delta Consultants (Delta) is submitting this *Work Plan for Additional Assessment*, for the 76 Service Station 0843/2349, located at 1629 Webster Street in Alameda, California (Figure 1). A site plan showing historical sampling locations and historical site structures is presented as Figure 2.

Proposed activities are in response to the August 6, 2010 electronic mail (email) letter to COP from Alameda County Environmental Health Department (ACEHD) requesting additional information prior to approving activities recommended by Delta in the April 7, 2010 *Corrective Action Plan.* A copy of the email correspondence document is provided as Appendix A.

ACEHD requested information regarding the following:

- The proposed boring locations. Locations of the proposed borings are shown on attached Figure 3.
- The area of the potential excavation. The location of the potential excavation is shown on Figure 3. Note that the material used for backfill of the possible excavation will be of a permeability and porosity similar to native material so as to minimize the creation of a preferential pathway.
- The location of the proposed injection points. The locations of the proposed sparge points are shown on attached Figure 4.

## 2.0 SITE DESCRIPTION

The site is located at the southwest corner of Webster Street and Pacific Avenue in Alameda, California (Figure 1). It is an inactive service station, with no existing USTs or onsite structures.

### 2.1 PREVIOUS ASSESSMENT

June 1998 - Tosco Marketing Company (Tosco, now COP) exhumed and removed two 10,000-gallon gasoline underground storage tanks (USTs), one 550-gallon used oil UST, product lines, and fuel dispensers. Two holes approximately ¾-inch in diameter were observed in the used oil tank during removal. Approximately 338 tons of hydrocarbon impacted soil and backfill were removed from beneath the former USTs, fuel dispensers, and product lines during the UST removal activities.

March 1999 – Four soil borings (B1 through B4) were advanced at the site and converted to monitor wells MW-1 through MW-4. Groundwater was encountered from 8 to 15 feet below ground surface (bgs). Static groundwater was observed at depths ranging from 4 and 6 feet bgs subsequent to well installation.

December 1999 – Two off-site soil borings (B5 and B6) were advanced and subsequently converted to monitor wells MW-5 and MW-6. Groundwater was initially present at approximately 10 feet bgs. Static groundwater was observed at a depth of approximately 7 feet bgs subsequent to well installation.

March 2001 - An underground utility survey was conducted to identify and locate underground utilities beneath and in the vicinity of the site that could provide potential preferential pathways for groundwater flow.

May 2001 - Five direct-push soil borings (GP-1 through GP-5) were advanced to evaluate whether underground utilities in the vicinity of the site are providing preferential pathways for groundwater flow and the migration of dissolved phase hydrocarbons. The results of the investigation indicated insufficient evidence that underground utility lines were providing preferential pathways for the off-site migration of dissolved phase hydrocarbons.

December 2001 - Twelve direct-push soil borings (GP-6 through GP-17) were advanced to further assess the extent of residual hydrocarbons in the vadose zone beneath the site. The results of the investigation indicated that the extent of the residual hydrocarbon impact reported in the previous investigations was limited.

December 2002 - One on-site monitoring well (MW-2) was destroyed during remedial excavation of hydrocarbon-impacted soil. Prior to destruction, monitoring well MW-2 was located near the former eastern dispenser island. During the remedial excavation, monitoring well MW-2 was replaced with on-site backfill monitoring well MW-2A. Approximately 292 tons of hydrocarbon-impacted soil was removed from beneath the former eastern dispenser island.

September 2003 - A *Request and Work Plan for Closure* prepared by ERI was submitted to the Alameda County Health Care Services Agency (ACHCSA), dated September 10, 2003. The report summarized why no further action is needed for the site; the report also included plans to destroy the existing wells upon regulatory acceptance for no further action. Closure was not granted.

June 2004 – A work plan was submitted for the installation of two additional monitor wells down-gradient of MW-5.

May 2005 – A work plan titled *Work Plan Addendum – Site Assessment Activity* dated May 17, 2005 was prepared by ATC Associates Inc. (ATC) for the installation of two off-site monitor wells.

September 2005 – A work plan was prepared by ATC titled *Work Plan Subsurface Investigation*, for the installation of one on-site monitor well.

September 2005 – Site environmental consulting responsibilities were transferred to Delta.

January 2007 - Delta submitted a work plan to the ACHCSA recommending the advancement of one soil boring and the installation of three ozone injection wells at the site.

August 2008 - Gregg Drilling under the supervision of a Delta field geologist advanced one soil boring to a depth of 55 feet bgs. The details of this investigation are described in the *Site Investigation Report* dated October 29, 2008.

May 2009 - RSI, under supervision of Delta, installed a total of seven groundwater monitoring wells (MW-1AR, MW-1BR, MW-7, MW-8, MW-9, MW-10, MW-11) and one ozone injection point well (TSP-1). Results of the investigation indicated that residual petroleum hydrocarbons remain at depths between 5 and 10 feet bgs in the eastern vicinity of the site (near MW-7 and the former dispenser island). During field activities one onsite monitoring well (MW-2A) was abandoned. Full results of this investigation and recommendations for future site activities were presented in the *Site Investigation and Well Installation Report*, submitted to ACEH on July 9, 2009.

September 2009 – Integral Engineering Services, Inc. (Integral) preformed daily ozone injection feasibility testing at the site. Continuous injection of ozone into test point TSP-1 occurred for eight hours per day at a rate of 0.45 lbs of ozone per day. Field parameters were also measured. Results indicated that ozone had the greatest influence on well MW-9. Following ozone injection, Delta recommended continued sampling and suspended remediation activities.

April 2010 – Delta prepared a corrective action plan focusing on best practice methods to remediate the onsite MTBE plume. Combined ozone/oxygen injection was ultimately proposed, as Delta found it is best available and the

most cost-effective corrective action. Limited assessment and excavation was suggested as additional method for remediation, following Agency review.

August 2010 – An email letter from Ms. Barbara Jakub (ACEH) to COP dated August 6, 2010, requested additional information on the proposed ozone/oxygen corrective action path. The letter is provided as Appendix A. A site map with the proposed ozone/oxygen sparge points is included as Figure 4.

### 2.2 SENSITIVE RECEPTOR

June/July 2002 - A groundwater receptor survey was conducted. Three irrigation wells were located within a one-half mile radius of the site. The wells are located approximately 1,980 feet west and 2,245 feet southwest of the site, cross-gradient and up-gradient of the site.

November 2006 – A survey entailing a visit to the DWR office in Sacramento was conducted to examine well log records and to identify domestic wells within the survey area. The DWR survey provided 15 potential receptors within one mile of the site; one domestic well located 0.5 miles southwest of the site; one domestic/irrigation well located 0.7 miles southeast of the site; 11 irrigation wells with three located 0.1 miles northwest, west, and southeast of the site; and two industrial wells located 0.3 miles southwest and 0.9 miles northeast of the site.

### 2.3 SITE GEOLOGY

The subject site is located on an island in the eastern portion of the San Francisco Bay and is underlain by interbedded Holocene marine beach and near shore deposits. These deposits are composed of unconsolidated sands and semi-consolidated deposits of well-graded to poorly-graded sand, silty sand/sandy silt, silt, and clayey sand.

Previous site investigations indicate that the subsurface lithology onsite is consistent with that described above (sand, silty sand/sandy silt, silt) to the maximum depth explored.

### 2.4 SITE HYDROGEOLOGY

Historically, first water has been encountered at depths between 9.5-19 feet below ground surface (bgs). First water could not be evaluated in borings locations MW-1AR, MW-1BR, MW-10, and TSP-1 due to a quickly rising column of sand up the annular space of the auger at depths of 17.5 feet bgs to 20.5 feet bgs. This type of sand, rising under pressure, is called heaving sands. Heaving sands are indicative of a pressurized, confined aquifer. The

confinement layer appears to be very silty sand or clayey sand with compacted pore spaces that essentially traps this pressurized aquifer within a defined zone. These heaving sands have not been documented in any previous boring investigation at this site.

Data from the quarterly groundwater monitoring conducted at the site indicate that static depth to groundwater varies from approximately 4.5 to 9.5 feet bgs. The groundwater flow direction is generally to the north-northeast with infrequent variations to the northwest.

Quarterly groundwater monitoring and sampling was initiated in March 1999. During the most recent (second quarter 2010) groundwater monitoring and sampling event conducted by TRC on June 7, 2010, depth to groundwater ranged from 5.39 feet (MW-5) to 7.28 (MW-1BR) below top of casing (TOC). The groundwater flow direction was interpreted to be to the northeast at a gradient of 0.005 foot per foot (ft/ft), as compared to the previous quarterly sampling event when the groundwater flow direction was interpreted to be to the northeast with a gradient of 0.025 ft/ft (02/05/10).

## 3.0 ADDITIONAL ASSESSMENT

### 3.1 PRE-FIELD ACTIVITIES

Before commencing field activities Delta will prepare a Health and Safety Plan in accordance with state and federal requirements for use during on-site assessment activities. In addition, drilling permits will be obtained from the Alameda County Public Works Agency (ACPWA). Prior to drilling, Delta will review available as-built drawings, notify Underground Service Alert (USA) and contract a private utility locator to clear the proposed boring locations for underground utilities. Prior to drilling, each location will be cleared to at least 5 feet bgs with an air vacuum or water vacuum to minimize potential impact to underground utilities.

### 3.2 SCOPE OF WORK

#### 3.2.1 Proposed Borings

To confirm previous analytical results, and in order to better assesses lateral dispersion of hydrocarbons surrounding MW-7, Delta proposes to advance a minimum of four borings (DP-1, DP-2, DP-3 and DP-4) in the vicinity of the former eastern dispenser island. A review of historical soil analytical results indicates a potential presence of remaining petroleum hydrocarbons at approximately 5 to 10 feet bgs in the area.

Three of the four borings are proposed to be advanced in a semi-circle at five foot intervals approximate 5 foot radial distance from MW-7. One boring will be advanced approximately 15 feet from MW-7, closer to the former MW-2/2A and the previously existing dispenser islands. All four proposed borings are to be advanced using direct push methodologies to a depth of 15 feet bgs.

Following analyses and review of results, additional borings may be recommended between the former MW-2/2A, the former dispenser island, and MW-7 in order to additionally assess the extent of the hydrocarbon impact. Results from these borings will also be use to evaluate limited soil excavation as a remedial alternative. The proposed area of possible (future) excavation activities is shown on Figure 3.

### 3.2.2 Soil Sampling

.

The proposed boring locations for DP-1 through DP-4 are to be advanced using a 2" diameter, dual tube direct push rod. Samples will be obtained using a 4', 1.5" acetate sampling liner. Soil samples will be logged using the Unified Soil Classification System (USCS) and field screened for the presence of volatile organic carbons by head space analysis, using a pre-calibrated photo-ionization detector (PID). Soil samples will be collected using lithologic interpretation and field screened at five foot intervals. A chain-of-custody will accompany the samples during transportation to the laboratory. The selected soil samples will be submitted to a California-certified laboratory for analyses of TPHg, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 8 oxygenates [methyl tert butyl ether (MTBE), tert butyl alcohol (TBA), ethyl tert butyl ether (ETBE), tert amyl methyl ether (TAME), isopropyl ether (DIPE), ethylene dibromide (EDB), 1,2 dichloroethane (1,2-DCA), and ethanol] by EPA method 8260B.

### 3.2.2 Groundwater Sampling

Groundwater samples will be collected at first water and at total depth of the boring. Non-disposable sampling equipment will be decontaminated between samples in a non-phosphate detergent and double rinsed with potable water.

Groundwater samples obtained from the borings will be decanted into properly labeled sample bottles and placed on ice as noted above pending transportation to a California Certified Laboratory. A chain-of-custody will accompany the samples during transportation to the laboratory. The collected groundwater samples will be analyzed for TPHg, BTEX, and 8 Oxygenates by EPA Method 8260**.** A chain-of-custody will accompany the samples during transportation to the laboratory. Subsequent to receiving the

laboratory analytical results, the drummed drill cuttings and wastewater will be profiled, transported, and disposed of at a COP approved facility.

### 3.3 DISPOSAL OF DRILL CUTTINGS AND WASTEWATER

Drill cuttings and wastewater generated during proposed soil, groundwater and soil vapor assessment activities will be placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums and temporarily stored at the service station site. Samples of the drill cuttings and wastewater will be collected, properly labeled and placed on ice for submittal to a California-certified laboratory and analyzed for TPHg, BTEX, and 8 Oxygenates by EPA Method 8260B. Additionally, soil samples will also be analyzed for CAM 17 metals by EPA Method 6010. A chain-of-custody will accompany the samples during transportation to the laboratory. Subsequent to receiving the laboratory analytical results, the drummed drill cuttings and wastewater will be profiled, transported, and disposed of at a COP approved facility.

### 3.4 REPORTING

Following completion of proposed additional assessment activities, a report will be prepared and submitted summarizing and discussing the work performed and providing recommendations for future site assessment and possible excavation activities. Required electronic submittals will be uploaded to the State of California GeoTracker database.

## 4.0 LIMITATIONS AND CERTIFICATIONS

This report was prepared in accordance with the scope of work outlined in Delta's contract and with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the site. It was prepared for the exclusive use of ConocoPhillips for the expressed purpose stated above. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to Delta. To the extent that this report is based on information provided to Delta by third parties, Delta may have made efforts to verify this third party information, but Delta cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied, are made by Delta.

**CONSULTANT:** Delta Consultants

*****

**Figures**

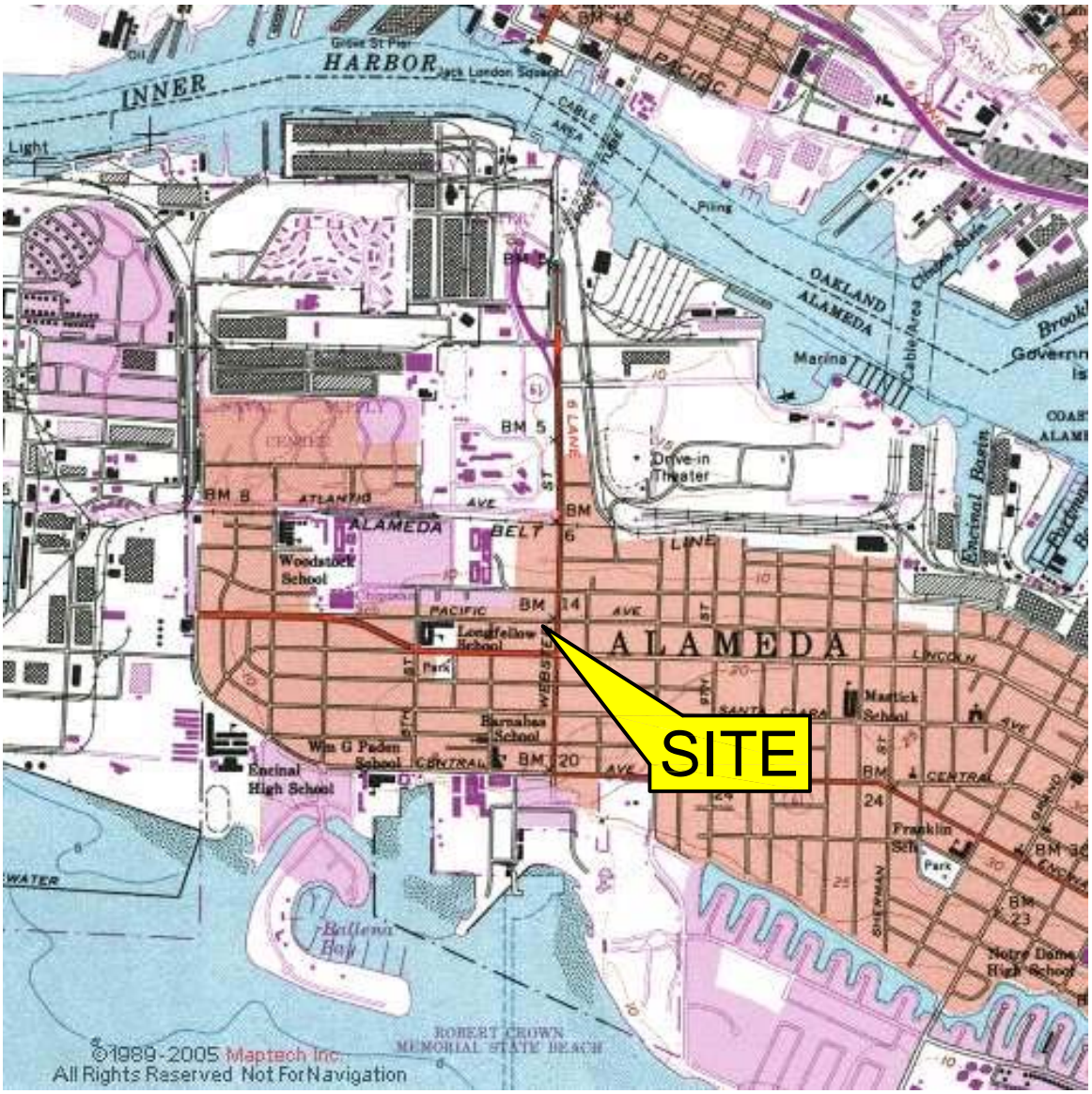
Figure 1 – Site Location Map
Figure 2 – Site Map with Historical Sampling Locations
Figure 3 – Site Map with Proposed Soil Boring Locations and Proposed Area of Future Excavation and Current Sampling Locations
Figure 4 – Site Map with Proposed Ozone/Oxygen Sparge Points

**Appendices**

**Appendix A –** Electronic Mail Correspondence, April 6, 2010

# FIGURES

**FIGURE 1**
Site Location Map




0 1000 FT 2000 FT

SCALE: 1 : 24,000

North

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND WEST QUADRANGLE, 1996

FIGURE 1

SITE LOCATION MAP

76 STATION NO. 0843
1629 WEBSTER STREET
ALAMEDA, CALIFORNIA

| | |
|---|---|
| PROJECT NO. C100-843 | DRAWN BY JH 03/18/09 |
| FILE NO. Site Locator 0843 | PREPARED BY CM |
| REVISION NO. 2 | REVIEWED BY JM |

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**FIGURE 2**
Site Map with Historical Sampling Locations

LEGEND:

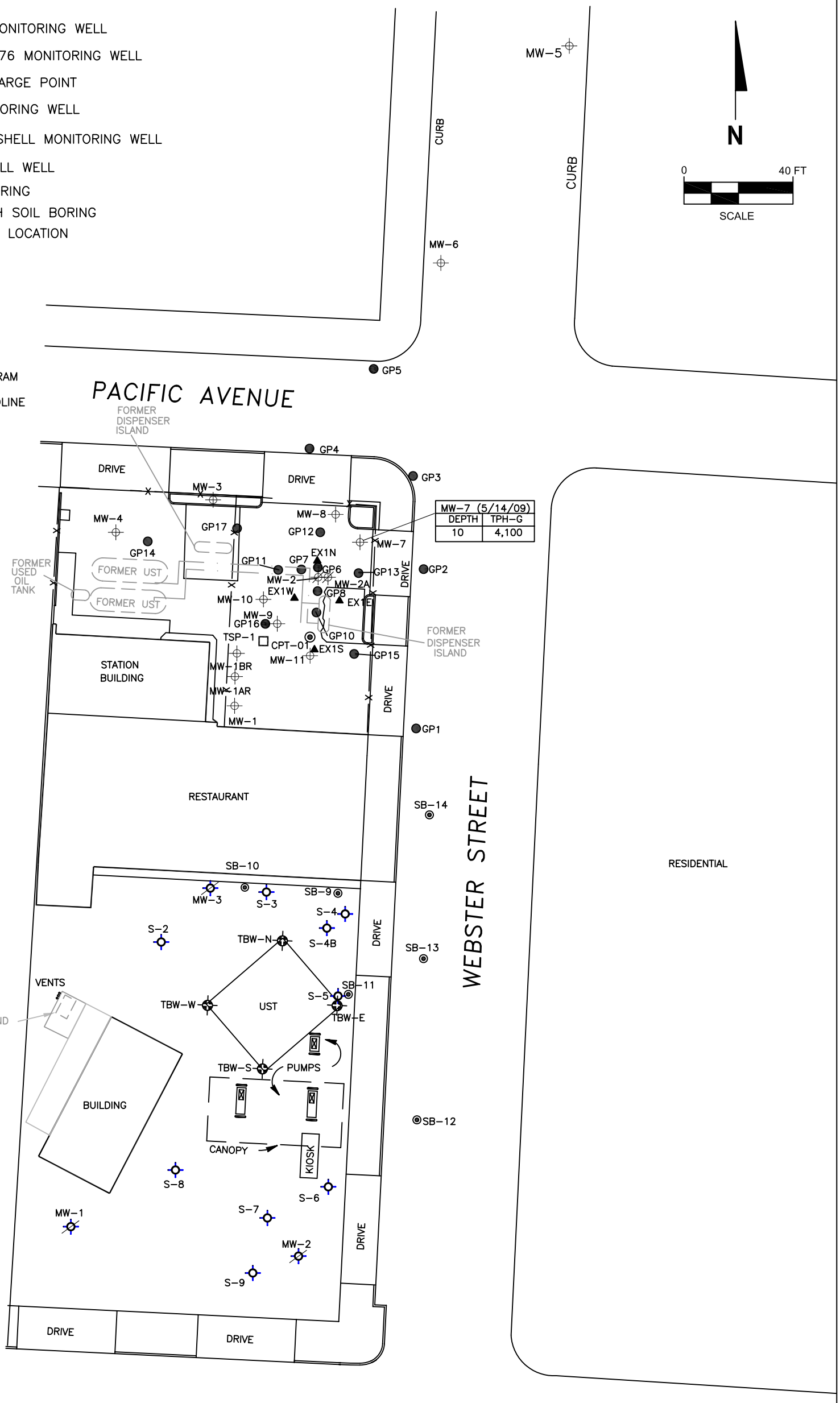
| | | |
|---|---|---|
| MW–1 | ⊕ | ACTIVE 76 MONITORING WELL |
| MW–2A | ⊕ | ABANDONED 76 MONITORING WELL |
| TSP–1 | □ | CURRENT SPARGE POINT |
| S–1 | ⊕ | SHELL MONITORING WELL |
| MW–1 | ⊕ | DESTROYED SHELL MONITORING WELL |
| TBW–N | ⊕ | TANK BACKFILL WELL |
| CPT–01 | ◉ | CPT SOIL BORING |
| GP1 | ● | DIRECT–PUSH SOIL BORING |
| EX1N | ▲ | SOIL SAMPLE LOCATION |

SOIL CONCENTRATION (mg/kg)

DEPTH = FEET
TPHg > 83 ug/L
BENZENE > 1.0 ug/L
MTBE > 1.0 ug/L

NOTES

mg/kg = MILLIGRAMS PER KILOGRAM
TPHg = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE




PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING DATED FEBRUARY 2009.

# FIGURE 2
## SITE MAP WITH HISTORICAL SAMPLING LOCATIONS
## FORMER 76 STATION NO. 0843
## 1629 WEBSTER ROAD
## ALAMEDA, CALIFORNIA

| PROJECT NO. | PREPARED BY | DRAWN BY |
|---|---|---|
| C102349217 | JBB | JH |
| DATE | REVIEWED BY | FILE NAME |
| 08/23/10 | | 76–0843–S |

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**FIGURE 3**

Site Map with Proposed Soil Boring Locations and Proposed Area of Future Excavation and Current Sampling Points

LEGEND:

MW–1 ACTIVE 76 MONITORING WELL

MW–2A ABANDONED 76 MONITORING WELL

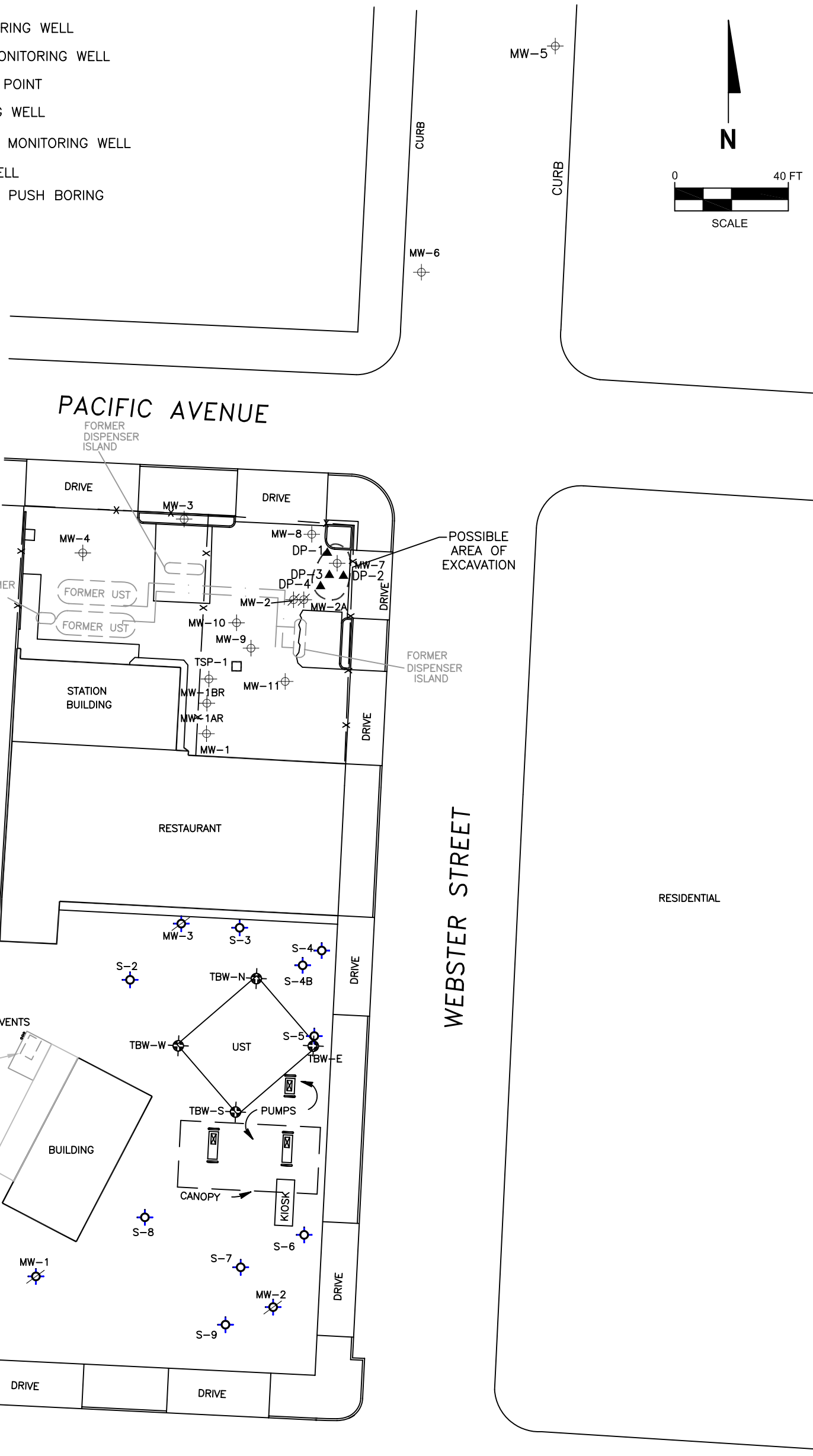
TSP–1 CURRENT SPARGE POINT

S–1 SHELL MONITORING WELL

MW–1 DESTROYED SHELL MONITORING WELL

TBW–N TANK BACKFILL WELL

DP–1 PROPOSED DIRECT PUSH BORING




PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING DATED FEBRUARY 2009.

FIGURE 3

SITE MAP WITH PROPOSED SOIL BORINGS, PROPOSED AREA OF EXCAVATION AND CURRENT SAMPLING LOCATIONS

FORMER 76 STATION NO. 0843
1629 WEBSTER ROAD
ALAMEDA, CALIFORNIA

| PROJECT NO. | PREPARED BY | DRAWN BY |
|---|---|---|
| C102349217 | JBB | JH |
| DATE | REVIEWED BY | FILE NAME |
| 08/23/10 | | 76–0843–S |

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**FIGURE 4**
Site Map with Proposed Ozone/Oxygen Sparge Points

LEGEND:

MW–1 ACTIVE 76 MONITORING WELL

MW–2A ABANDONED 76 MONITORING WELL

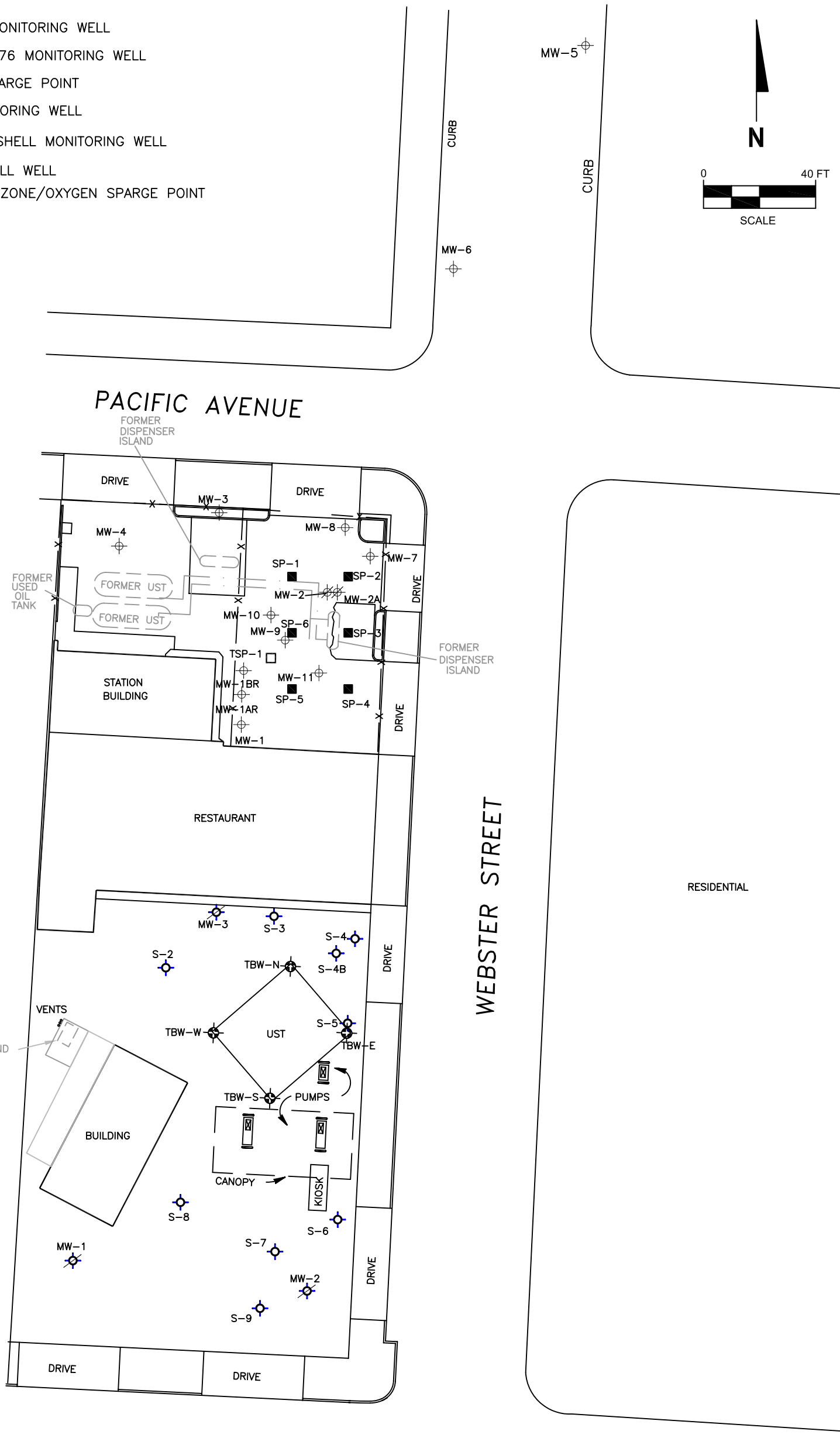
TSP–1 CURRENT SPARGE POINT

S–1 SHELL MONITORING WELL

MW–1 DESTROYED SHELL MONITORING WELL

TBW–N TANK BACKFILL WELL

SP–1 PROPOSED OZONE/OXYGEN SPARGE POINT




PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING DATED FEBRUARY 2009.

FIGURE 4
SITE MAP WITH PROPOSED
OZONE/OXYGEN SPARGE POINTS
FORMER 76 STATION NO. 0843
1629 WEBSTER ROAD
ALAMEDA, CALIFORNIA

| PROJECT NO. | PREPARED BY | DRAWN BY | |
|---|---|---|---|
| C102349217 | JBB | JH | |
| DATE | REVIEWED BY | FILE NAME | |
| 08/23/10 | | 76–0843–S | DELTA® |

TABLES

TABLE 1

**TABLE 1**
**HISTORICAL SOIL ANALYTICAL RESULTS**
76 Service Station No. 0843/2349
1629 Webster St
Alameda, California

| Sample ID | Depth | Date | TPHg (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Total Xylenes (mg/kg) | MTBE (mg/kg) | TBA (mg/kg) | ETBE (mg/kg) | TAME (mg/kg) | DIPE (mg/kg) | EDB (mg/kg) | 1,2-DCA (mg/kg) | Ethanol (mg/kg) | Sulfate (mg/kg) | Manganese (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S-10.5-B-1 | 10.5 | 3/2/1999 | <0.40 | <0.010 | <0.0020 | <0.0020 | <0.0020 | <0.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10.5-B-2 | 10.5 | 3/2/1999 | <2.0 | **0.0295** | **0.0658** | **0.0359** | **0.119** | **0.561** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10.5-B-3 | 10.5 | 3/2/1999 | <0.40 | <0.010 | <0.0020 | <0.0020 | <0.0020 | <0.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10.5-B-4 | 10.5 | 3/2/1999 | <0.40 | <0.010 | <0.0020 | <0.0020 | <0.0020 | **0.109** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-4-GP1 | 4 | 5/23/2001 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-5-GP-2 | 5 | 5/23/2001 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10-GP2 | 10 | 5/23/2001 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-5-GP3 | 5 | 5/23/2001 | <0.20 | <0.0050 | <0.0050 | <0.0050 | **0.011** | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-5-GP4 | 5 | 5/23/2001 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-4-GP5 | 4 | 5/23/2001 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10-GP5 | 10 | 5/23/2001 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | **0.18** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6.5-GP6 | 6.5 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6.5-GP7 | 6.5 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6-GP8 | 6 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6-GP9 | 6 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6.5-GP10 | 6.5 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6.5-GP11 | 6.5 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6-GP12 | 6 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.010 | **0.015** | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-12-GP12 | 12 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6.5-GP13 | 6.5 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-12-GP13 | 12 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-7-GP14 | 7 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6-GP15 | 6 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-16-GP-15 | 16 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6.5-GP-16 | 6.5 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-12-GP16 | 12 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-6.5-GP17 | 6.5 | 12/4/2001 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10-EX1N | 10 | 12/4/2002 | <50 | <0.25 | <0.25 | **0.73** | **4.9** | <0.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10-EX1S | 10 | 12/4/2002 | <1.0 | <0.0050 | <0.0050 | <0.0053 | <0.10 | <0.0050 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10-EX1W | 10 | 12/4/2002 | <1000 | <0.25 | **4.1** | **20** | **120** | <0.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| S-10-EX1E | 10 | 12/4/2002 | <50 | <0.25 | **1.2** | **0.34** | **0.82** | **0.36** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 7 | 8/14/2008 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.010 | <0.0050 | <0.050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <1.0 | -- | -- |
| CPT-1 | 7 | 8/14/2008 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.010 | <0.0050 | <0.050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <1.0 | -- | -- |
| MW-1AR | 20 | 5/14/2009 | **0.26** | <0.0050 | <0.0050 | <0.0050 | <0.010 | **0.25** | <0.050 | <0.0050 | <0.0050 | <0.0050 | -- | <0.0050 | <1.0 | **15** | **160** |
| MW-1BR | 20 | 5/14/2009 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | **0.15** | <0.050 | <0.0050 | <0.0050 | <0.0050 | -- | <0.0050 | <1.0 | **15** | **150** |
| MW-7 | 10 | 5/14/2009 | **4,100** | <0.50 | <0.50 | **38** | **770** | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | -- | <0.50 | <100 | **16** | **110** |
| MW-8 | 15 | 5/14/2009 | <0.20 | <0.0050 | <0.0050 | <0.0050 | <0.010 | <0.0050 | <0.050 | <0.0050 | <0.0050 | <0.0050 | -- | <0.0050 | <1.0 | **10** | **120** |
| MW-9 | 10 | 5/14/2009 | **46** | <0.12 | <0.12 | **2** | **9.5** | **<1.2** | <1.2 | <0.12 | <0.12 | <0.12 | -- | <0.12 | <25 | <10 | **190** |
| MW-10 | 10 | 5/14/2009 | **0.4** | <0.0050 | <0.0050 | <0.0050 | <0.010 | <0.0081 | <0.050 | <0.0050 | <0.0050 | <0.0050 | -- | <0.0050 | <1.0 | <10 | **180** |
| MW-11 | 10 | 5/14/2009 | **0.4** | <0.0050 | <0.0050 | <0.0050 | <0.010 | <0.0050 | <0.050 | <0.0050 | <0.0050 | <0.0050 | -- | <0.0050 | <1.0 | **51** | **190** |
| TSP-1 | 20 | 5/14/2009 | **0.24** | <0.0050 | <0.0050 | <0.0050 | <0.010 | **0.23** | <0.050 | <0.0050 | <0.0050 | <0.0050 | -- | <0.0050 | <1.0 | **18** | **140** |

TPHg = Total Petroleum Hydrocarbons as Gasoline MTBE = methyl tert butyl ether TBA = tert butyl alcohol ETBE = ethyl tert butyl ether DIPE = diisopropyl ether EDB = ethylene dibromide 1,2-DCA = 1,2 Dichloroethane
bold = above laboratory indicated reporting limit

# APPENDICES

# APPENDIX A

Electronic Mail Correspondence

**From:** Jakub, Barbara, Env. Health [barbara.jakub@acgov.org]
**Sent:** Friday, August 06, 2010 4:35 PM
**To:** James Barnard; 'bill.borgh@conocophillips.com'
**Cc:** 'skauto@alamedanet.net'
**Subject:** RO450, Corrective Action Plan- Additional Information requested

Dear Mr. Borgh,

ACEH has reviewed the Corrective Action Plan that was submitted by Delta Environmental and has determined that additional information is needed on the proposed corrective action before we can approve the CAP. The location of the proposed injection points should be submitted as well as the area of the proposed excavation. Also, let me know what material will be used to backfill the excavation to ensure that a preferential pathway is not created. Once this information is received and ACEH concurs with the remediation plan, the 30 day public participation period will begin. Following the end of the 30 day public participation period the CAP may be implemented provided that no comments opposing the CAP are received.

Barbara Jakub, P.G.
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Pky.
Alameda, CA 94502
Direct: 510-639-1287
Fax: 510-337-9335

PDF copies of case files can be downloaded at:

*http://www.acgov.org/aceh/lop/ust.htm*