Roya C. Kambin
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6270
RKLG@chevron.com

Alameda County Health Care Services Agency
Environmental Health Department
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former 76 Service Station 1871
Union Oil 351644
96 MacArthur Boulevard
Oakland, California

I have reviewed the attached report dated October 21, 2011.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

Roya Kambin
Project Manager

Attachment: Interim Remediation Results Report

CONESTOGA-ROVERS & ASSOCIATES

5900 Hollis Street, Suite A
Emeryville, California 94608
Telephone: (510) 420-0700 Fax: (510) 420-9170
www.CRAworld.com

TRANSMITTAL

DATE: 10/21/11

REFERENCE NO.: 060727

PROJECT NAME: Former 76 Service Station 1871 (Union Oil 351644)

TO: Ms. Barbara Jakub
Alameda County Envrironmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Please find enclosed:
- ☐ Draft
- ☒ Originals
- ☐ Prints
- ☐ Final
- ☐ Other

Sent via:
- ☐ Mail
- ☐ Overnight Courier
- ☐ Same Day Courier
- ☒ Other Geotracker, ACEH FTP site, and Union Oil FTP site

QUANTITY	DESCRIPTION
1	Interim Remediation Results Report

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
Please call Kiersten Hoey at 510-420-3347 with any questions or comments

Copy to: Ms. Roya Kambin (electronic copy)

Ms. Barbara Bee Allen, 4567 Enterprise St, Fremont, CA 94538

Completed by: Kiersten Hoey [Please Print]

Signed: Kiersten Hoey

Filing: **Correspondence File**

INTERIM REMEDIATION RESULTS REPORT

76 PRODUCTS SERVICE STATION 1871 (UNION OIL 351644)
66 MACARTHUR BOULEVARD
(FORMERLY 96 MACARTHUR BOULEVARD)
OAKLAND, CALIFORNIA
ACHCS CASE NO. RO 0455

Prepared For:

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

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
Emeryville, California
U.S.A. 94608

Office: (510) 420-0700
Fax: (510) 420-9170

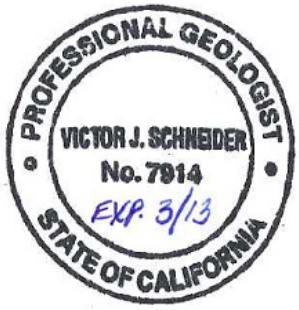
web: http:\\www.CRAworld.com

OCTOBER 21, 2011
REF. NO. 060727 (3)
This report is printed on recycled paper

INTERIM REMEDIATION RESULTS REPORT

76 PRODUCTS SERVICE STATION 1871 (UNION OIL 351644)
66 MACARTHUR BOULEVARD
(FORMERLY 96 MACARTHUR BOULEVARD)
OAKLAND, CALIFORNIA
ACHCS CASE NO. 0455

Kiersten Hoey



Jim Schneider, PG 7914

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
Emeryville, California
U.S.A. 94608

Office: (510) 420-0700
Fax: (510) 420-9170

web: http:\\www.CRAworld.com

OCTOBER 21, 2011
REF. NO. 060727 (3)
This report is printed on recycled paper

TABLE OF CONTENTS

LIST OF FIGURES
(Following Text)

LIST OF ATTACHMENTS

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) has prepared this *Interim Remediation Results Report* on behalf of Union Oil Company of California (Union Oil) for 76 Products Service Station 1871. As of July 1, 2011 ("Effective Date"), ConocoPhillips Company transferred the management of the environmental remediation activities at 66 MacArthur Boulevard (formerly 96 MacArthur Boulevard) in Oakland, California to Union Oil Company of California ("Union Oil"). From the Effective Date forward, Union Oil (or its designees or representatives, including Chevron Environmental Management Company) will manage the day-to-day corrective action/remediation obligations related to the referenced case. The purpose of this report is to provide an evaluation of the ozone sparge system effectiveness using dissolved hydrocarbon concentration trends and degradation rates. This report is in direct response to a received letter from Alameda County Health Care Services Agency (ACHCS) dated June 24, 2010 (Appendix A).

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION

The site is a former 76 Products Service Station currently branded as a QuikStop Service Station located on the northeast corner of MacArthur Boulevard and Harrison Avenue in the City of Oakland. Land use in the vicinity of the site is mixed residential and commercial with residential housing adjacent to the north, south, east and northwest, and Interstate 580 located to the southwest. A Former BP Service Station (RO0000456) currently branded as a 76 Products Service Station is located to the south (crossgradient). Current site facilities consist of a station building, three service bays, four dispenser islands, and two fuel underground storage tanks (USTs).

2.2 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Environmental assessment has been ongoing since 1992. During this time, 11 groundwater monitoring wells (4 have subsequently been destroyed) and 8 microsparge points have been installed. Additionally, 12 soil borings have been advanced. The used-oil UST, dispensers, and associated product piping have been replaced twice, and the fuel USTs have been replaced once. During the 1998 UST replacements, approximately 2,100 tons of soil was excavated and disposed offsite. An ozone sparge system has been operating since 2002 injecting into the eight microsparge

wells. A summary of previous environmental investigations and remediation are presented as Appendix B.

2.2 SITE GEOLOGY AND HYDROGEOLOGY

2.2.1 SITE GEOLOGY

The site is located approximately 80 feet above mean seal level (amsl) in the East Bay Plain Subbasin of the Santa Clara Valley Groundwater Basin. The East Bay Plain is characterized by westward sloping alluvial fan deposits.[1] Subsurface sediments consist of clay to approximately 5 to 7 feet below grade (fbg), underlain by a mixture of silt, silty sand, and poorly graded fine sand lenses to approximately 16 fbg. Clay was encountered beneath these layers to the total explored depth of 25.5 fbg.

2.2.2 SITE HYDROGEOLOGY

The site is located in the East Bay Plain Subbasin. The cumulative aquifer thickness in the region is approximately 1,000 feet, consisting of unconsolidated sediments. Groundwater in this region has been designated beneficial for potential commercial, industrial and residential uses.[2] Historic depths to groundwater have ranged between approximately 5 and 18 fbg and groundwater generally flows toward the west. The nearest surface water body is Glen Echo Creek approximately 1,000 feet northwest.

2.3 PRODUCT RELEASES AND HYDROCARBON SOURCE AREAS

Based on soil and groundwater data, the source of petroleum hydrocarbons was the fuel USTs removed in 1998. The highest hydrocarbon concentrations were detected on the southwestern sidewall of the UST tank excavation. The soil at this location was over-excavated due discoloration and hydrocarbon odor on the UST pit sidewall. No light non-aqueous phase liquids (LNAPL) have ever been observed at the site.

---

1 *California's Groundwater Bulletin 118*; The State of California Department of Water Resources; February 27, 2004.

2 Table 2-2 Existing and Potential Beneficial Uses in Groundwater in Identified Basins; *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*; California Regional Water Quality Control Board-San Francisco Bay Region, January 18, 2007.

3.0 HYDROCARBON DISTRIBUTION IN GROUNDWATER

The primary constituents of concern (COC) are total petroleum hydrocarbons as gasoline (TPHg), benzene, and methyl tertiary butyl ether (MTBE). Other COCs are total petroleum hydrocarbons as diesel (TPHd), toluene, ethylbenzene, and xylenes (TEX). The highest dissolved TPHg concentrations were historically detected in wells MW-1, MW-5, and MW-6 and the highest benzene concentrations were historically detected in onsite wells MW-1 and MW-2. The highest MTBE concentrations were historically detected in wells MW-1, MW-6, and MW-7. Results of the most recent groundwater monitoring event indicate that the dissolved TPHg and benzene plumes have decreased in size and mass and concentrations above Environmental Screening Levels (ESLs)[3] are now centered at MW-1. Data indicate the MTBE plume has detached and is now centered at offsite well MW-9. MTBE concentrations detected onsite are near or below the drinking water ESL. The TPHg, benzene, and MTBE results of the May 27, 2011 groundwater sampling event are presented below in Table A. Current and historical groundwater monitoring and sampling data is presented in Appendix C.

TABLE A: DISSOLVED HYDROCARBON CONCENTRATIONS MAY 27, 2011

Well-ID	*TPHg*	*Benzene*	*MTBE*
Concentrations in micrograms per liter (µg/L)			
ESL Table F-1a Drinking Groundwater ESLs	***100***	***1***	***5***
MW-1	**1,500**	**3.2**	**10**
MW-6	52	<0.50	**6.0**
MW-7	<50	<0.50	5.2
MW-8	<50	<0.50	1.1
MW-9	59	<0.50	**70**
MW-10	<50	<0.50	<0.50
MW-11	<50	<0.50	<0.50

3.1 CONCENTRATION TRENDS AND PROJECTIONS

CRA calculated the dissolved-phase TPHg concentration trends in wells MW-1, MW-7, and MW-9; benzene concentration trend in MW-1; and MTBE concentration trends in wells MW-1, MW-6, MW-7, MW-8, and MW-9 to estimate the time to reach drinking

[3] Environmental Screening Levels (Table F-1a) from the San Francisco Bay Regional Water Quality Control Board's *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* Interim Final November 2007 (Revised May 2008).

water ESLs (ESL Table F-1A). These trends were generated using historic peak concentrations through the most recent groundwater sampling event conducted on May 27, 2011. No TPHg was detected in well MW-7 during the May 27, 2011 sampling event.

When sample concentrations were not detected at or above laboratory detection limits, a conservative concentration value equal to the laboratory detection limit was used in the calculation. To estimate the time to meet RWQCB drinking water ESLs, CRA used the following first order exponential decay rate calculation[4] to estimate the time to meet the applicable ESLs:

$$y = be^{(ax)}$$

Where "a" is a decay constant, "b" is a concentration at time (x), y is concentration (ESL) and "x" is time. A summary of maximum and current concentrations, and projections to meet the ESLs are presented in Table B. Trend graphs and degradation calculations are presented as Appendix D.

TABLE B - SUMMARY OF DEGRADATION RATE CALCULATIONS

Well	*Analyte*	*Maximum Concentration (µg/L)*	*Current (Most Recent) Concentration (µg/L)*	*Year to Reach ESL*	*Time to Reach ESL (years)*
MW-1	TPHg	260,000	1,500	2026	15
	Benzene	9,910	3.2	2011	<1
	MTBE	120,000	10	2011	<1
MW-6	MTBE	71,000	6	2010	ESL ACHIEVED
MW-7	TPHg	25,000	<50	2009	ESL ACHIEVED
	MTBE	38,000	5.2	2009	ESL ACHIEVED
MW-8	MTBE	34,200	1.1	2009	ESL ACHIEVED
MW-9	TPHg	1,700	59	2009	ESL ACHIEVED
	MTBE	2,800	70	2015	4

Notes And Abbreviations

< = Less than laboratory reporting limit

Dissolved hydrocarbon concentrations in wells MW-1, MW-6, MW-7, and MW-8 have decreased at least three orders of magnitude. ESLs for the primary COCs have been achieved in wells MW-6, MW-7, and MW-8. Benzene and MTBE in MW-1 are expected to reach ESLs within 1 year and MTBE in MW-9 is expected to reach the ESL within 4 years. TPHg in MW-1 is expected to reach the ESL of 100 micrograms per liter (µg/L)

[4] EPA-Groundwater Issue; Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies; Charles J. Newell, et al., 2003.

in 15 years, which is a reasonable period of time according to the State Water Resource Control Board Resolution No. 2009-0042. These site data were also compared against the closure criteria outlined in the July 14, 2011 State Water Resources Control Board *UST Low-Threat Closure Policy* and pass this criteria for a low risk closure. The decreasing hydrocarbon concentrations and the shrinking dissolved hydrocarbon plume indicate that the ozone injection system has accomplished the goal of reducing hydrocarbon concentrations in groundwater.

4.0 OZONE SYSTEM OPERATION SUMMARY

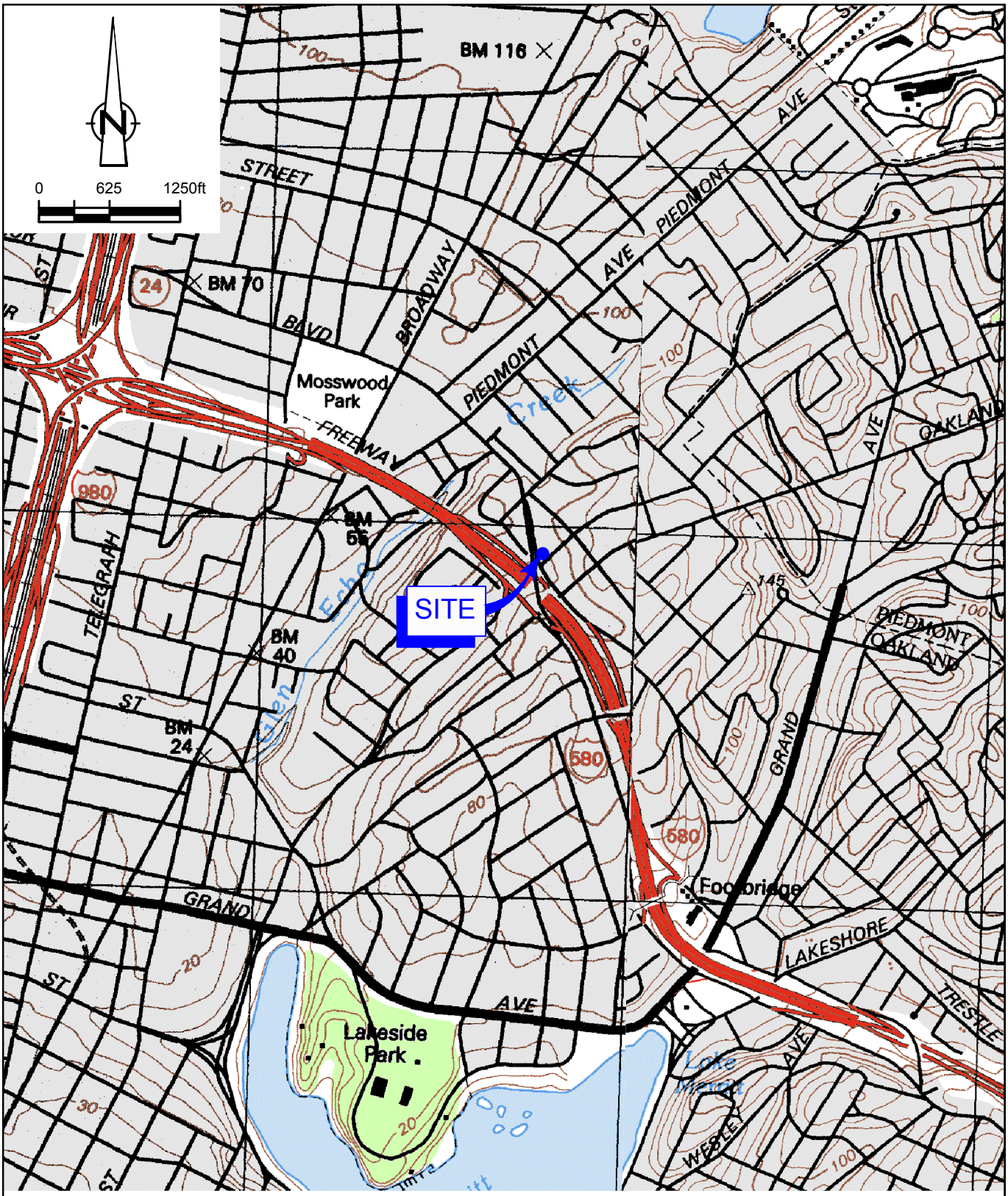
Environ Strategy Consultants operates the ozone sparge system on behalf of Union Oil. The following ozone system operation summary presents third quarter 2011 operation and maintenance activities through August 31, 2011. The reporting period for the summary is from June 1, 2011 through August 31, 2011. During this reporting period, the system operated at total of 92 days, equivalent to 2,183 hours. Since the system start up on June 23, 2003, the ozone sparge system has operated a total of 46,111 hours. During this reporting period, Well SP-C was turned off for one day on August 16, 2011 due to leaking tubing. A copy of Environ Strategy Consultant's *Third Quarter 2011 Ozone Injection System O&M Report* dated September 1, 2011 is included as Attachment E.

5.0 CONCLUSIONS AND RECOMMENDATIONS

TPHg, benzene, and MTBE concentrations are decreasing in all wells with the exception of MTBE in well MW-9 which remains stable. Trends in TPHg, benzene, and MTBE concentrations in wells MW-1 and MW-7 have been stable to decreasing since 2006. Drinking water ESLs at all downgradient wells, with the exception of MW-9, have been achieved.

Based on the declining concentrations, CRA recommends shutting down the ozone injection system and conducting quarterly groundwater monitoring for 1 year to monitor for rebound. After 1 year, concentration trends will again be evaluated. If the timeframe for achieving ESLs do not increase to greater than 50 years, then the ozone sparge system will be decommissioned and removed from the site. If timeframes increase, the system would be turned back on; however, ozone sparging will be focused to only the spargepoints in the vicinity of MW-1 to optimize cleanup of the residual source.

FIGURES

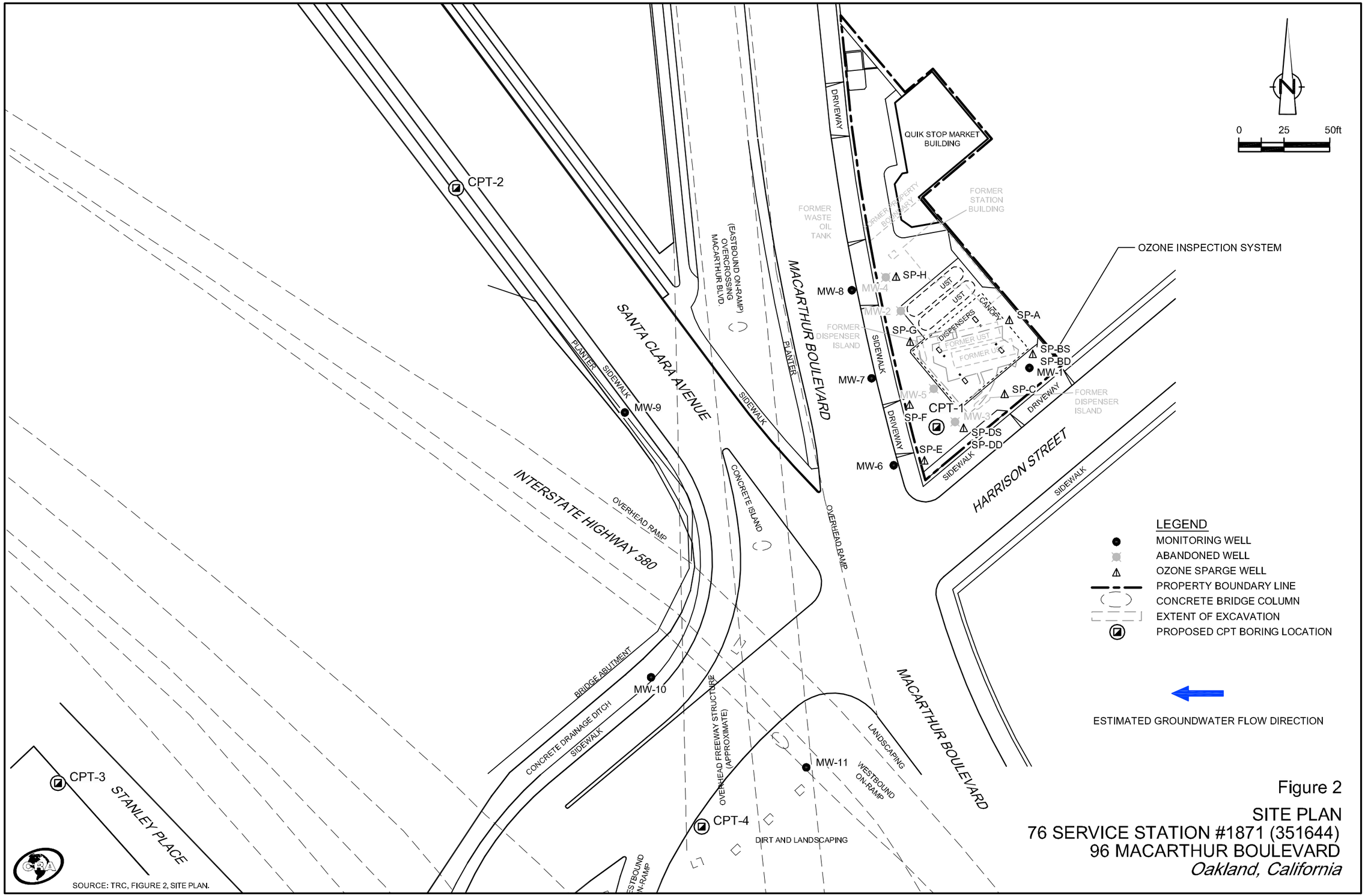


SOURCE: USGS QUADRANGLE MAPS: OAKLAND WEST, CA. & OAKLAND EAST, CA.

Figure 1

VICINITY MAP
76 SERVICE STATION #35-1644
96 MACARTHUR BOULEVARD
Oakland, California

60727-2011(001)GN-WA001 FEB 04/2011



SOURCE: TRC, FIGURE 2, SITE PLAN.

Figure 2

SITE PLAN
76 SERVICE STATION #1871 (351644)
96 MACARTHUR BOULEVARD
Oakland, California

60727-2011(002)GN-WA002 SEP 29/2011

APPENDIX A

REGULATORY LETTER

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

June 24, 2010

Eric Hettrick *(Sent via A-mail to: Eric.G.Hetrick@conocophillips.com)*
Conoco Phillips
76 Broadway Street
Sacramento, CA 95818

Myong and Song Son
100 MacArthur Blvd.
Oakland, CA 94612

Subject: Work Plan Approval for Fuel Leak Case No. RO0000455 and GeoTracker Global ID T0600101493, Unocal #1871, 96 MacArthur Blvd., Oakland, CA 94621

Dear Mr. Hettrick and Mr. and Ms. Son:

Thank you for submitting the document entitled, *Work Plan for CPT Vertical and Lateral Stratigraphic and Plume Definition* dated February 16, 2009, which was prepared by Antea Group formerly Delta Consultants for the subject site. Alameda County Environmental Health (ACEH) staff has reviewed the case file including the above-mentioned report/work plan for the above-referenced site.

The proposed scope of work may be implemented provided that the modifications requested in the technical comments below are addressed and incorporated prior to field implementation. Submittal of a revised Work Plan is not required unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed. However, ACEH requests a map of the proposed CPT borings be submitted prior to commencing field work.

TECHNICAL COMMENTS

1. **Soil and Groundwater Characterization** – The work plan proposes advancing CPT borings downgradient of MW-9 to determine if MTBE has migrated and using the results of the investigation to prepare cross-sections and a site conceptual model (SCM). The work plan states that four CPT borings will be advanced, one on-site and three off-site yet only one off-site boring is shown on the map. The on-site boring was proposed to help determine the vertical extent of contamination as well as to aid in preparing cross-sections for the site and thus determining any potential preferential pathways. Please submit a map showing the proposed location for the on-site CPT boring. Given the irregular flow direction at the site, ACEH would like you to advance three off-site CPT borings along Stanley Place since one boring may bypass the plume completely. Please submit the map by the due date requested below.

2. **Remediation Evaluation** – Ozone injection has been occurring at the site since 2003. Please provide an evaluation of system effectiveness and any recommendations for system optimization in the report requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Barbara Jakub), according to the following schedule:

- **July 8, 2011** – Revised CPT Boring Location Map
- **September 24, 2011** – Soil and Water Investigation Report w/ SCM
- **October 24, 2011** – Interim Remediation Results Report

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Barbara J Jakub

Digitally signed by Barbara J. Jakub
DN: cn=Barbara J. Jakub, o, ou, email=barbara.jakub@acgov.org, c=US
Date: 2011.06.24 10:00:59 -07'00'

Barbara J. Jakub
Hazardous Materials Specialist

Enclosure: Responsible Party(ies) Legal Requirements/Obligations
ACEH Electronic Report Upload (ftp) Instructions

cc: James Barnard, Antea Group, 11050 White Rock Road, Suite 110 Rancho Cordova, CA 95670 (*Sent via E-mail to:* James.Barnard@anteagroup.com)
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (*Sent via E-mail to: lgriffin@oaklandnet.com*)
Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Barbara Jakub, ACEH (*Sent via E-mail to: barbara.jakub@acgov.org*)
GeoTracker
File

Attachment 1

Responsible Party(ies) Legal Requirements/Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** July 20, 2010
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B

SUMMARY OF ENVIRONMENTAL INVESTIGATIONS AND REMEDIATION

SUMMARY OF ENVIRONMENTAL INVESTIGATIONS AND REMEDIATION
FORMER 76 SERVICE STATION 1871 (UNION OIL 351644)

1992 Dispenser and Piping Replacement

In May 1992, Roux Associates (Roux) removed and replaced the dispenser islands and associated product piping and collected soil samples D1 through D4, and D3-A from beneath the dispenser. During the product piping and dispenser replacement, approximately 18 cubic yards of soil was removed and transferred to the Redwood Landfill facility for disposal. An Underground Storage Unauthorized Release report was filed on July 16, 1992.

1992 Monitoring Well Installation

In October 1992, Roux installed onsite 4-inch diameter groundwater monitoring wells MW-1 through MW-3. Hydrocarbons were only detected in soil from MW-3, but was detected in groundwater from all three wells. Details are presented in Roux's December 17, 1992 *Site Assessment Report.*

1994 Used-Oil UST Removal

In August 1994, Kaprealian Engineering Inc (KEI) removed a 280-gallon single-wall steel used-oil UST and replaced it with a 550-gallon double-walled steel UST. No holes or cracks were observed on the tank. Soil samples WO1 was collected a 9 feet below grade (fbg) from beneath the tank. Due to observed soil staining, soil was overexcavated to 14 fbg over an area of 9 feet by 8 feet. Soil sample WO1(14) was collected at the bottom of the excavation and samples WOSW1 through WOSW4 were collected on the sidewalls of the excavation at 9 fbg. Details are presented in KEI's September 13, 1994 *Soil Sampling Report*.

In February 1996, the Alameda County Department of Environmental Health (ACEH) approved Unocal's request to reduce the groundwater monitoring and sampling frequency from quarterly to semiannually.

1996 Monitoring Well Installation

In March 1996, KEI installed monitoring wells MW-4 and MW-5 and advanced exploratory borings EB1 and EB2. Details are presented in KEI's May 17, 1996 *Continuing Soil and Groundwater Investigation Report*.

1998 Station Upgrade

In May 1998, Gettler-Ryan, Inc (G-R) observed John's Excavating of Santa Rosa, California remove two 12,000-gallon double-wall steel gasoline USTs, one 550-gallon double-wall steel used-oil UST, two hydraulic lifts, two dispenser islands and associated single-wall product piping, and one service station building. No holes or cracks were observed in the tanks. G-R personnel collected soil samples SW1 through SW-4, SW3-5 and SW-4-5 from the gasoline UST

pit at 11 to 11.5 fbg, WO1 from the used-oil UST pit at 11 fbg, and P1 and P2 from beneath the dispensers at 4 fbg, and grab-groundwater samples Water-FT from the gasoline UST pit and Water-WO from the used-oil UST pit. A total of 1,252.78 tons of soil were removed from the site during demolition activities and transported to Forward Landfill for disposal. Details are presented in G-R's October 19, 1998 *Underground Storage Tank and Product Piping Removal Report.*

1998 Well Destruction, Soil Boring, and RBCA

In September 1998, G-R destroyed wells MW-2 through MW-5 that were damaged during site demolition activities and backfilled the boreholes with neat cement to grade. In addition, G-R advanced onsite soil boring EB-3 to a total depth of 16.5 fbg and collected soil and groundwater samples for development of a Risk Based Corrective Action (RBCA). The RBCA evaluation concluded that, since the site was scheduled for construction of a fuel dispensing facility covered with concrete and asphalt and no groundwater receptors were located within a 1/4 mile radius of the site, the potential threat to public health and environment was not of significant concern. The RBCA was submitted on February 25, 1999 and subsequently revised in documents dated April 6, 19, and 20, 1999. The RBCA evaluation was approved by the ACEH in a letter dated May 4, 1999.

1999 Monitoring Well and Boring Investigation

In June 1999, G-R installed offsite monitoring wells MW-6 through MW-8, and advanced soil borings B-4 through B-12 on and near the site. Soil and groundwater samples were collected from all borings. Details are presented in G-R's August 6, 1999 *Limited Subsurface Investigation Report*.

2001 Monitoring Well Installation

In December 2001, G-R installed offsite monitoring wells MW-9 through MW-11 in CalTrans right-of-way to delineate dissolved hydrocarbons downgradient of the site. Details are presented in G-R's May 16, 2002 *Offsite Subsurface Investigation Report*.

2002 Ozone System Installation

In March 2002, G-R installed ozone microsparge wells SP-A, SP-BS/BD, SP-C, SP-DS/DD, SP-E, SP-F, SP-G and SP-H to depths ranging from 25 to 30 fbg. Wells SP-BS/BD and SP-DS/DD were constructed as dual completion wells. In April 2002, an ozone injection system was installed and activated at the site. Details are presented in G-R's May 20, 2002 *Ozone Microsparge Well and System Installation Report*.

As of August 31, 2011 the ozone sparge system has operated a total of 46,111 hours.

2007 Site Conceptual Model

At the request of the ACEH, TRC submitted a Site Conceptual Model dated November 1, 2007.

APPENDIX C

HISTORICAL GROUNDWATER DATA

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
MW-1														
11/3/1992	--	--	--	--	--	260000	--	2300	4600	3700	17000	--	--	--
1/25/1993	81.18	--	0	--	--	120000	--	2100	4600	4900	22000	--	--	--
4/29/1993	81.18	13.71	0	67.47	--	100000	--	850	2000	4300	19000	--	--	--
7/16/1993	81.18	14.51	0	66.67	-0.80	29000	--	590	560	980	4200	--	--	--
10/19/1993	81.18	15.20	0	65.98	-0.69	67000	--	1400	2600	2900	5000	--	--	--
1/20/1994	81.18	15.17	0	66.01	0.03	92000	--	1200	3000	3400	17000	--	--	--
4/13/1994	81.18	14.44	0	66.74	0.73	51000	--	1000	2600	3200	15000	--	--	--
7/13/1994	81.18	14.88	0	66.30	-0.44	35000	--	550	150	1400	5700	--	--	--
10/10/1994	81.18	15.55	0	65.63	-0.67	52000	--	1000	810	3300	12000	--	--	--
1/10/1995	81.18	12.44	0	68.74	3.11	810	--	16	18	59	250	--	--	--
4/17/1995	81.18	12.68	0	68.50	-0.24	48000	--	880	530	2500	11000	--	--	--
7/24/1995	81.18	13.97	0	67.21	-1.29	48000	--	1500	420	2700	9700	--	--	--
10/23/1995	81.18	14.85	0	66.33	-0.88	47000	--	780	210	2100	11000	270	--	--
1/18/1996	81.18	14.21	0	66.97	0.64	30000	--	1500	500	3500	13000	2400	--	--
4/18/1996	86.24	13.40	0	72.84	5.87	66000	--	2700	2200	3100	13000	57000	--	--
7/24/1996	86.24	14.15	0	72.09	-0.75	5600	--	2100	ND	160	160	24000	--	--
10/24/1996	86.24	14.85	0	71.39	-0.70	110000	--	7500	8000	3300	14000	58000	--	--
1/28/1997	86.24	11.25	0	74.99	3.60	94000	--	7700	19000	3100	15000	120000	--	--
7/29/1997	86.24	14.67	0	71.57	-3.42	ND	--	ND	ND	ND	ND	70000	--	--
1/14/1998	86.24	12.27	0	73.97	2.40	85000	--	6100	10000	3000	17000	110000	--	--
7/1/1998	86.24	14.32	0	71.92	-2.05	110000	--	8700	12000	2700	15000	110000	--	--
6/18/1999	86.24	13.93	0	72.31	0.39	49000	--	6900	6500	380	12000	72000	47000	--
1/21/2000	86.24	15.05	0	71.19	-1.12	63700	--	5520	2000	2640	13100	57100	--	--
7/10/2000	86.24	13.97	0	72.27	1.08	67800	--	9910	4120	3330	16100	67400	54000	--
1/4/2001	86.24	14.92	0	71.32	-0.95	63900	--	6270	784	2670	12900	--	38100	--
7/16/2001	86.24	14.32	0	71.92	0.60	66000	--	7100	330	2300	9800	36000	41000	--
1/31/2002	86.99	13.54	0	73.45	1.53	42000	--	5800	1800	2000	8200	26000	26000	--
4/11/2002	86.99	13.64	0	73.35	-0.10	58000	--	2900	1200	1800	10000	19000	--	--
7/11/2002	86.99	13.96	0	73.03	-0.32	--	5900	330	ND<10	230	600	--	3400	--
10/15/2002	86.99	14.71	0	72.28	-0.75	--	470	16	ND<2.5	14	16	--	390	--
1/14/2003	86.99	12.77	0	74.22	1.94	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	49	--
4/16/2003	86.99	13.18	0	73.81	-0.41	--	510	57	0.62	29	61	--	160	--
7/16/2003	86.99	14.26	0	72.73	-1.08	--	27000	260	23	730	3200	--	1200	--
10/2/2003	86.99	14.95	0	72.04	-0.69	--	45000	1400	32	2900	7600	--	3200	--
1/7/2004	86.99	12.30	0	74.69	2.65	--	34000	690	41	1600	5200	--	2600	--

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
4/2/2004	86.99	13.18	0	73.81	-0.88	--	350	1.8	ND<0.50	6.2	30	--	19	--
7/29/2004	86.99	14.61	0	72.38	-1.43	--	41000	550	ND<20	2000	6100	--	1200	--
11/24/2004	86.99	14.98	0	72.01	-0.37	--	55000	910	28	3100	11000	--	1600	--
1/24/2005	86.99	12.98	0	74.01	2.00	--	24000	240	ND<20	1100	3600	--	1800	--
6/23/2005	86.99	13.39	0	73.60	-0.41	--	24000	140	ND<25	1100	2900	--	600	--
9/28/2005	86.99	14.63	0	72.36	-1.24	--	8200	22	0.97	290	660	--	320	--
12/20/2005	86.99	11.42	0	75.57	3.21	--	10000	17	29	180	840	--	2400	--
3/10/2006	86.99	10.98	0	76.01	0.44	--	10000	35	ND<5.0	470	1300	--	960	--
6/23/2006	86.99	11.85	0	75.14	-0.87	--	11000	110	ND<5.0	610	1600	--	780	--
9/27/2006	86.99	14.11	0	72.88	-2.26	--	8500	22	ND<10	270	740	--	460	--
12/22/2006	86.99	13.66	0	73.33	0.45	--	7300	35	ND<5.0	370	850	--	210	--
3/23/2007	86.99	13.25	0	73.74	0.41	--	8800	28	ND<2.5	440	910	--	170	--
6/29/2007	86.99	13.47	0	73.52	-0.22	--	6300	16	ND<2.5	300	650	--	50	--
9/28/2007	86.99	13.92	0	73.07	-0.45	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	1.2	--
12/17/2007	86.99	14.57	0	72.42	-0.65	--	4700	ND<5.0	ND<5.0	71	160	--	18	--
3/25/2008	86.99	13.56	0	73.43	1.01	--	7400	28	ND<2.5	430	540	--	170	--
6/12/2008	86.99	14.07	0	72.92	-0.51	--	4900	6.4	ND<2.5	170	280	--	16	--
9/25/2008	86.99	14.55	0	72.44	-0.48	--	2200	2.1	ND<0.50	72	110	--	11	--
12/30/2008	86.99	14.16	0	72.83	0.39	--	3200	2.5	ND<0.50	100	150	--	8.3	--
3/24/2009	86.99	12.76	0	74.23	1.40	--	3500	6.8	ND<0.50	140	140	--	28	--
6/23/2009	86.99	13.88	0	73.11	-1.12	--	740	ND<2.5	ND<2.5	17	12	--	7.5	--
12/16/2009	86.99	14.32	0	72.67	-0.44	--	4600	10	ND<1.0	270	140	--	52	--
4/14/2010	86.99	12.12	0	74.87	2.20	--	1500	4.8	ND<1.0	100	36	--	20	--
MW-2														
11/3/1992	76.61	--	--	--	--	140	--	2.2	ND	ND	2.0	--	--	--
1/25/1993	76.61	--	--	--	--	2100	--	56	1.1	90	140	--	--	--
4/29/1993	76.61	9.73	0	66.88	--	1500	--	290	ND	33	11	--	--	--
7/16/1993	76.61	10.17	0	66.44	-0.44	510	--	17	0.60	3.2	2.5	--	--	--
10/19/1993	76.61	11.18	0	65.43	-1.01	670	--	24	1.1	7.7	23	--	--	--
1/20/1994	76.61	11.12	0	65.49	0.06	820	--	97	ND	12	ND	--	--	--
4/13/1994	76.61	10.12	0	66.49	1.00	550	--	71	ND	5.1	1.3	--	--	--
7/13/1994	76.61	10.86	0	65.75	-0.74	2000	--	490	ND	17	13	--	--	--
10/10/1994	76.61	11.48	0	65.13	-0.62	2300	--	340	ND	25	ND	--	--	--
1/10/1995	76.61	8.71	0	67.90	2.77	850	--	3.8	ND	8.5	1.3	--	--	--
4/17/1995	76.61	8.90	0	67.71	-0.19	1300	--	4.7	ND	8.3	1.2	--	--	--
7/24/1995	76.61	9.94	0	66.67	-1.04	960	--	20	ND	4.2	6.2	--	--	--

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)		Comments
10/23/1995	76.61	10.70	0	65.91	-0.76	ND	--	ND	ND	ND	ND	19	--	--	
1/18/1996	76.61	10.11	0	66.50	0.59	900	--	300	86	7.6	18	4300	--	--	
4/18/1996	81.66	9.27	0	72.39	5.89	18000	--	3600	680	890	4100	19000	--	--	
7/24/1996	81.66	10.02	0	71.64	-0.75	100000	--	13000	21000	2700	16000	120000	--	--	
10/24/1996	81.66	10.78	0	70.88	-0.76	800	--	110	17	11	20	20000	--	--	
1/28/1997	81.66	7.70	0	73.96	3.08	45000	--	2400	2900	2000	7600	29000	--	--	
7/29/1997	81.66	10.28	0	71.38	-2.58	ND	--	1.2	0.72	0.63	0.62	17000	--	--	
1/14/1998	81.66	8.63	0	73.03	1.65	14000	--	1000	150	790	3300	23000	--	--	
7/1/1998	81.66	9.53	0	72.13	-0.90	2700	--	100	ND	180	78	7100	--	--	
6/18/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well was destroyed
MW-3															
11/3/1992	77.48	--	--	--	--	2100	--	120	15	38	200	--	--	--	
1/25/1993	77.48	--	--	--	--	2300	--	80	1	55	52	--	--	--	
4/29/1993	77.48	11.37	0	66.11	--	4500	--	1700	ND	200	140	--	--	--	
7/16/1993	77.48	12.09	0	65.39	-0.72	4000	--	1100	28	52	70	--	--	--	
10/19/1993	77.48	12.69	0	64.79	-0.60	3800	--	42	ND	50	56	--	--	--	
1/20/1994	77.48	12.65	0	64.83	0.04	4200	--	11	ND	21	15	--	--	--	
4/13/1994	77.48	12.02	0	65.46	0.63	4200	--	210	ND	36	53	--	--	--	
7/13/1994	77.48	12.46	0	65.02	-0.44	1800	--	16	16	ND	21	--	--	--	
10/10/1994	77.48	12.98	0	64.50	-0.52	4300	--	11	ND	12	ND	--	--	--	
1/10/1995	77.48	10.42	0	67.06	2.56	310	--	4.6	ND	3.5	2.1	--	--	--	
4/17/1995	77.48	10.42	0	67.06	0.00	7800	--	ND	4.6	300	450	--	--	--	
7/24/1995	77.48	11.76	0	65.72	-1.34	3200	--	170	ND	22	16	--	--	--	
10/23/1995	77.48	12.50	0	64.98	-0.74	3900	--	55	ND	19	11	4500	--	--	
1/18/1996	77.48	11.79	0	65.69	0.71	2200	--	270	33	26	18	5500	--	--	
4/18/1996	82.55	11.30	0	71.25	5.56	6000	--	1800	ND	100	230	48000	--	--	
7/24/1996	82.55	12.17	0	70.38	-0.87	ND	--	2500	ND	ND	ND	71000	--	--	
10/24/1996	82.55	12.65	0	69.90	-0.48	3800	--	660	ND	15	ND	65000	--	--	
1/28/1997	82.55	9.50	0	73.05	3.15	4400	--	250	13	87	47	54000	--	--	
7/29/1997	82.55	11.99	0	70.56	-2.49	ND	--	3500	ND	220	ND	75000	--	--	
1/14/1998	82.55	10.30	0	72.25	1.69	ND	--	430	ND	100	380	37000	--	--	
7/1/1998	82.55	11.70	0	70.85	-1.40	ND	--	430	ND	ND	ND	45000	--	--	
6/18/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well was destroyed
MW-4															
4/18/1996	82.04	9.83	0	72.21	--	ND	--	630	ND	ND	ND	18000	--	--	
7/24/1996	82.04	10.47	0	71.57	-0.64	ND	--	ND	ND	ND	5.2	3900	--	--	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)		Comments
10/24/1996	82.04	11.14	0	70.90	-0.67	ND	--	ND	ND	ND	ND	6300	--	--	
1/28/1997	82.04	7.94	0	74.10	3.20	1200	--	490	ND	17	6.8	16000	--	--	
7/29/1997	82.04	10.86	0	71.18	-2.92	50	--	1.5	0.61	0.73	0.78	15000	--	--	
1/14/1998	82.04	8.73	0	73.31	2.13	ND	--	ND	ND	ND	ND	5200	--	--	
7/1/1998	82.04	10.51	0	71.53	-1.78	ND	--	ND	ND	ND	ND	640	--	--	
6/18/1999	82.04	--	--	--	--	--	--	--	--	--	--	--	--	--	Well was destroyed
MW-5															
4/18/1996	81.80	9.65	0	72.15	--	31000	--	5500	1400	1700	8100	66000	--	--	
7/24/1996	81.80	10.80	0	71.00	-1.15	32000	--	6400	ND	1600	6100	120000	--	--	
10/24/1996	81.80	11.40	0	70.40	-0.60	17000	--	6900	ND	970	130	84000	--	--	
1/28/1997	81.80	7.76	0	74.04	3.64	19000	--	6100	62	82	310	160000	--	--	
7/29/1997	81.80	11.58	0	70.22	-3.82	ND	--	ND	ND	ND	ND	71000	--	--	
1/14/1998	81.80	9.08	0	72.72	2.50	ND	--	3600	ND	ND	ND	80000	--	--	
7/1/1998	81.80	11.25	0	70.55	-2.17	6400	--	2100	21	120	330	61000	--	--	
6/18/1999	81.80	--	--	--	--	--	--	--	--	--	--	--	--	--	Well was destroyed
MW-6															
6/18/1999	78.91	9.30	0	69.61	--	2100	--	21	29	ND	47	97000	71000	--	
1/21/2000	78.91	9.37	0	69.54	-0.07	1880	--	143	31.2	106	196	41200	48800	--	
7/10/2000	78.91	8.94	0	69.97	0.43	5710	--	869	209	301	1430	22200	19500	--	
1/4/2001	78.91	9.21	0	69.70	-0.27	ND	--	ND	ND	ND	ND	--	9510	--	
7/16/2001	78.91	9.42	0	69.49	-0.21	4800	--	200	21	150	440	29000	34000	--	
1/31/2002	78.91	8.50	0	70.41	0.92	12000	--	250	92	500	1500	26000	31000	--	
4/11/2002	79.67	9.08	0	70.59	0.18	3600	--	42	32	39	280	120000	--	--	
7/11/2002	79.67	9.70	0	69.97	-0.62	--	12000	ND<100	ND<100	ND<100	ND<200	--	15000	--	
10/15/2002	79.67	9.96	0	69.71	-0.26	--	1300	ND<10	ND<10	ND<10	ND<20	--	3200	--	
1/14/2003	79.67	8.31	0	71.36	1.65	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	120	--	
4/16/2003	79.67	8.21	0	71.46	0.10	--	270	ND<0.50	ND<0.50	ND<0.50	1.3	--	15	--	
7/16/2003	79.67	9.43	0	70.24	-1.22	--	290	39	0.60	ND<0.50	15	--	150	--	
10/2/2003	79.67	9.92	0	69.75	-0.49	--	200	ND<1.0	ND<1.0	ND<1.0	ND<2.0	--	220	--	
1/7/2004	79.67	8.08	0	71.59	1.84	--	140	2.4	ND<1.0	8.6	13	--	86	--	
4/2/2004	79.67	8.63	0	71.04	-0.55	--	3200	ND<20	ND<20	ND<20	ND<40	--	5900	--	
7/29/2004	79.67	9.75	0	69.92	-1.12	--	170	ND<1.0	ND<1.0	ND<1.0	ND<2.0	--	160	--	
11/24/2004	79.67	9.59	0	70.08	0.16	--	80	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	45	--	
1/24/2005	79.67	8.33	0	71.34	1.26	--	100	1.1	ND<0.50	0.60	1.1	--	40	--	
6/23/2005	79.67	8.33	0	71.34	0.00	--	230	0.52	ND<0.50	3.6	9.6	--	200	--	
9/28/2005	79.67	9.56	0	70.11	-1.23	--	500	ND<0.50	ND<0.50	ND<0.50	1.2	--	980	--	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)		Comments
12/20/2005	79.67	7.82	0	71.85	1.74	--	640	0.79	ND<0.50	0.68	2.3	--	2400	--	
3/10/2006	79.67	6.83	0	72.84	0.99	--	970	1.2	ND<0.50	1.3	5.0	--	3600	--	
6/23/2006	79.67	8.13	0	71.54	-1.30	--	1700	ND<12	ND<12	ND<12	ND<25	--	1100	--	
9/27/2006	79.67	9.44	0	70.23	-1.31	--	ND<1200	ND<12	ND<12	ND<12	ND<12	--	620	--	
12/22/2006	79.67	8.60	0	71.07	0.84	--	9100	ND<10	ND<10	ND<10	ND<10	--	600	--	
3/23/2007	79.67	8.39	0	71.28	0.21	--	330	ND<0.50	ND<0.50	0.82	ND<0.50	--	680	--	
6/29/2007	79.67	9.02	0	70.65	-0.63	--	180	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	290	--	
9/28/2007	79.67	9.65	0	70.02	-0.63	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	--	
12/17/2007	79.67	9.62	0	70.05	0.03	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	21	--	
3/25/2008	79.67	8.63	0	71.04	0.99	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	12	--	
6/12/2008	79.67	9.47	0	70.20	-0.84	--	84	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	17	--	
9/25/2008	79.67	9.95	0	69.72	-0.48	--	66	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	15	--	
12/30/2008	79.67	8.96	0	70.71	0.99	--	55	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	12	--	
3/24/2009	79.67	8.02	0	71.65	0.94	--	73	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	10	--	
6/23/2009	79.67	9.33	0	70.34	-1.31	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	9.0	--	
12/16/2009	79.67	9.39	0	70.28	-0.06	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.7	--	
4/14/2010	79.67	8.13	0	71.54	1.26	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.1	--	
MW-7															
6/18/1999	79.92	8.70	0	71.22	--	ND	--	ND	ND	ND	ND	16000	13000	--	
1/21/2000	79.92	9.30	0	70.62	-0.60	ND	--	ND	ND	ND	ND	12300	18200	--	
7/10/2000	79.92	8.72	0	71.20	0.58	ND	--	ND	ND	ND	ND	16900	13800	--	
1/4/2001	79.92	9.17	0	70.75	-0.45	ND	--	ND	ND	ND	0.719	--	37.3	--	
7/16/2001	79.92	9.02	0	70.90	0.15	ND	--	ND	ND	ND	ND	7200	4700	--	
1/31/2002	79.92	7.91	0	72.01	1.11	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	8900	9900	--	
4/11/2002	80.67	--	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
7/11/2002	80.67	--	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
10/15/2002	80.67	9.81	0	70.86	--	--	ND<5000	ND<50	ND<50	ND<50	ND<100	--	12000	--	
1/14/2003	80.67	7.89	0	72.78	1.92	--	ND<25000	ND<250	ND<250	ND<250	ND<500	--	33000	--	
4/16/2003	80.67	8.04	0	72.63	-0.15	--	ND<25000	ND<250	ND<250	ND<250	ND<500	--	37000	--	
7/16/2003	80.67	9.19	0	71.48	-1.15	--	25000	ND<250	ND<250	ND<250	ND<500	--	38000	--	
10/2/2003	80.67	9.89	0	70.78	-0.70	--	17000	ND<100	ND<100	ND<100	ND<200	--	22000	--	
1/7/2004	80.67	7.27	0	73.40	2.62	--	ND<20000	ND<200	460	ND<200	540	--	19000	--	
4/2/2004	80.67	8.09	0	72.58	-0.82	--	3400	ND<20	ND<20	ND<20	ND<40	--	5100	--	
7/29/2004	80.67	9.40	0	71.27	-1.31	--	7400	ND<50	ND<50	ND<50	ND<100	--	11000	--	
11/24/2004	80.67	9.65	0	71.02	-0.25	--	6200	ND<50	ND<50	ND<50	ND<100	--	6800	--	
1/24/2005	80.67	7.92	0	72.75	1.73	--	ND<5000	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	13000	--	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)		Comments
6/23/2005	80.67	8.56	0	72.11	-0.64	--	8700	ND<25	ND<25	ND<25	ND<50	--	12000	--	
9/28/2005	80.67	9.37	0	71.30	-0.81	--	1200	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5700	--	
12/20/2005	80.67	6.31	0	74.36	3.06	--	1100	0.90	ND<0.50	24	37	--	8200	--	
3/10/2006	80.67	5.84	0	74.83	0.47	--	1200	24	ND<0.50	3.6	ND<1.0	--	4700	--	
6/23/2006	80.67	6.83	0	73.84	-0.99	--	1800	21	ND<12	ND<12	ND<25	--	1500	--	
9/27/2006	80.67	8.95	0	71.72	-2.12	--	ND<1200	ND<12	ND<12	ND<12	ND<12	--	350	--	
12/22/2006	80.67	8.35	0	72.32	0.60	--	24000	ND<50	ND<50	ND<50	ND<50	--	190	--	
3/23/2007	80.67	8.01	0	72.66	0.34	--	85	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	92	--	
6/29/2007	80.67	--	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
9/28/2007	80.67	9.05	0	71.62	--	--	50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	37	--	
12/19/2007	80.67	9.23	0	71.44	-0.18	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.2	--	
3/25/2008	80.67	8.45	0	72.22	0.78	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	7.3	--	
6/12/2008	80.67	8.92	0	71.75	-0.47	--	52	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	9.4	--	
9/25/2008	80.67	9.55	0	71.12	-0.63	--	65	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.6	--	
12/30/2008	80.67	8.99	0	71.68	0.56	--	130	ND<0.50	ND<0.50	ND<0.50	1.1	--	5.7	--	
3/24/2009	80.67	7.73	0	72.94	1.26	--	98	0.50	ND<0.50	ND<0.50	ND<1.0	--	9.2	--	
6/23/2009	80.67	9.05	0	71.62	-1.32	--	290	1.2	ND<0.50	ND<0.50	ND<1.0	--	6.7	--	
12/16/2009	80.67	9.42	0	71.25	-0.37	--	150	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.7	--	
4/14/2010	80.67	7.87	0	72.80	1.55	--	60	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	6.7	--	
MW-8															
6/18/1999	80.96	9.10	0	71.86	--	ND	--	ND	ND	ND	ND	290	160	--	
1/21/2000	80.96	10.00	0	70.96	-0.90	ND	--	ND	ND	ND	1.09	224	221	--	
7/10/2000	80.96	7.94	0	73.02	2.06	ND	--	ND	ND	ND	ND	234	223	--	
1/4/2001	80.96	9.76	0	71.20	-1.82	3790	--	141	8.92	128	375	--	34200	--	
7/16/2001	80.96	9.15	0	71.81	0.61	ND	--	ND	ND	ND	ND	66	70	--	
1/31/2002	80.96	7.99	0	72.97	1.16	5900	--	86	ND<10	630	390	670	700	--	
4/11/2002	81.71	9.00	0	72.71	-0.26	250	--	2.0	ND<0.50	38	2.2	410	--	--	
7/11/2002	81.71	9.60	0	72.11	-0.60	--	110	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	120	--	
10/15/2002	81.71	10.60	0	71.11	-1.00	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	21	--	
1/14/2003	81.71	8.63	0	73.08	1.97	--	ND<250	2.6	ND<2.5	18	ND<5.0	--	430	--	
4/16/2003	81.71	8.98	0	72.73	-0.35	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	18	--	
7/16/2003	81.71	9.63	0	72.08	-0.65	--	110	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	140	--	
10/2/2003	81.71	10.41	0	71.30	-0.78	--	75	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	78	--	
1/7/2004	81.71	8.21	0	73.50	2.20	--	ND<5000	ND<50	ND<50	ND<50	340	--	3700	--	
4/2/2004	81.71	8.51	0	73.20	-0.30	--	3000	ND<20	ND<20	ND<20	ND<40	--	5200	--	
7/29/2004	81.71	9.78	0	71.93	-1.27	--	3200	ND<25	ND<25	ND<25	ND<50	--	5500	--	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
11/24/2004	81.71	10.19	0	71.52	-0.41	--	2100	ND<10	ND<10	ND<10	ND<20	--	2400	--
1/24/2005	81.71	8.49	0	73.22	1.70	--	ND<2500	4.0	0.52	ND<0.50	29	--	1800	--
6/23/2005	81.71	8.34	0	73.37	0.15	--	490	ND<0.50	ND<0.50	1.5	ND<1.0	--	980	--
9/28/2005	81.71	9.61	0	72.10	-1.27	--	270	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	520	--
12/20/2005	81.71	7.35	0	74.36	2.26	--	2700	ND<0.50	ND<0.50	78	82	--	86	--
3/10/2006	81.71	6.63	0	75.08	0.72	--	190	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	51	--
6/23/2006	81.71	6.56	0	75.15	0.07	--	3600	ND<0.50	ND<0.50	100	57	--	ND<0.50	--
9/27/2006	81.71	9.64	0	72.07	-3.08	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	18	--
12/22/2006	81.71	9.42	0	72.29	0.22	--	ND<50	ND<0.50	ND<0.50	ND<0.50	0.50	--	16	--
3/23/2007	81.71	8.68	0	73.03	0.74	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	12	--
6/29/2007	81.71	9.10	0	72.61	-0.42	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	17	--
9/28/2007	81.71	9.89	0	71.82	-0.79	--	99	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	21	--
12/17/2007	81.71	9.81	0	71.90	0.08	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	16	--
3/25/2008	81.71	8.40	0	73.31	1.41	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	14	--
6/12/2008	81.71	9.53	0	72.18	-1.13	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	14	--
9/25/2008	81.71	10.24	0	71.47	-0.71	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.6	--
12/30/2008	81.71	9.72	0	71.99	0.52	--	50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.7	--
3/24/2009	81.71	8.43	0	73.28	1.29	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	4.4	--
6/23/2009	81.71	9.63	0	72.08	-1.20	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	4.7	--
12/16/2009	81.71	10.08	0	71.63	-0.45	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.4	--
4/14/2010	81.71	8.28	0	73.43	1.80	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.4	--
MW-9														
1/31/2002	82.07	14.72	0	67.35	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	680	910	--
4/11/2002	82.07	14.85	0	67.22	-0.13	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	620	--	--
7/11/2002	82.07	15.39	0	66.68	-0.54	--	580	ND<5.0	ND<5.0	ND<5.0	ND<10	--	580	--
10/15/2002	82.07	16.16	0	65.91	-0.77	--	570	ND<5.0	ND<5.0	ND<5.0	ND<10	--	1400	--
1/14/2003	82.07	14.75	0	67.32	1.41	--	ND<200	ND<2.0	ND<2.0	ND<2.0	ND<4.0	--	220	--
4/16/2003	82.07	14.51	0	67.56	0.24	--	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<10	--	860	--
7/16/2003	82.07	15.54	0	66.53	-1.03	--	ND<2500	ND<25	ND<25	ND<25	ND<50	--	1300	--
10/2/2003	82.07	16.28	0	65.79	-0.74	--	820	ND<5.0	ND<5.0	ND<5.0	ND<10	--	990	--
1/7/2004	82.07	14.65	0	67.42	1.63	--	ND<1000	ND<10	ND<10	ND<10	ND<20	--	1200	--
4/2/2004	82.07	15.08	0	66.99	-0.43	--	510	ND<5.0	ND<5.0	ND<5.0	ND<10	--	850	--
7/29/2004	82.07	15.81	0	66.26	-0.73	--	ND<1000	ND<10	ND<10	ND<10	ND<20	--	1300	--
11/24/2004	82.07	16.25	0	65.82	-0.44	--	1100	ND<5.0	ND<5.0	ND<5.0	ND<10	--	1300	--
1/24/2005	82.07	14.96	0	67.11	1.29	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2300	--
6/23/2005	82.07	14.40	0	67.67	0.56	--	1500	ND<5.0	ND<5.0	ND<5.0	ND<10	--	2000	--

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
9/28/2005	82.07	15.67	0	66.40	-1.27	--	ND<2500	ND<25	ND<25	ND<25	ND<50	--	2400	--
12/20/2005	82.07	14.61	0	67.46	1.06	--	560	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2800	--
3/10/2006	82.07	13.39	0	68.68	1.22	--	1100	ND<5.0	ND<5.0	ND<5.0	ND<10	--	2100	--
6/23/2006	82.07	13.68	0	68.39	-0.29	--	1700	ND<12	ND<12	ND<12	ND<25	--	1700	--
9/27/2006	82.07	14.83	0	67.24	-1.15	--	ND<1200	ND<12	ND<12	ND<12	ND<12	--	1400	--
12/22/2006	82.07	14.75	0	67.32	0.08	--	680	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	1100	--
3/23/2007	82.07	14.52	0	67.55	0.23	--	240	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	660	--
6/29/2007	82.07	14.89	0	67.18	-0.37	--	210	ND<0.50	ND<0.50	ND<0.50	0.52	--	410	--
9/28/2007	82.07	15.48	0	66.59	-0.59	--	390	ND<2.5	ND<2.5	ND<2.5	ND<2.5	--	430	--
12/17/2007	82.07	15.72	0	66.35	-0.24	--	190	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	480	--
3/25/2008	82.07	14.91	0	67.16	0.81	--	250	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	340	--
6/12/2008	82.07	15.70	0	66.37	-0.79	--	180	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	270	--
9/25/2008	82.07	16.48	0	65.59	-0.78	--	170	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	320	--
12/30/2008	82.07	16.16	0	65.91	0.32	--	160	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	230	--
3/24/2009	82.07	15.23	0	66.84	0.93	--	120	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	180	--
6/23/2009	82.07	15.95	0	66.12	-0.72	--	110	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	190	--
12/16/2009	82.07	16.47	0	65.60	-0.52	--	86	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	130	--
4/14/2010	82.07	14.68	0	67.39	1.79	--	100	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	160	--
MW-10														
1/31/2002	74.98	8.02	0	66.96	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	1.2	--
4/11/2002	74.98	7.60	0	67.38	0.42	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--
7/11/2002	74.98	8.91	0	66.07	-1.31	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1.1	--
10/15/2002	74.98	11.49	0	63.49	-2.58	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
1/14/2003	74.98	8.47	0	66.51	3.02	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
4/16/2003	74.98	7.92	0	67.06	0.55	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
7/16/2003	74.98	7.03	0	67.95	0.89	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
10/2/2003	74.98	7.63	0	67.35	-0.60	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
1/7/2004	74.98	6.22	0	68.76	1.41	--	54	ND<0.50	ND<0.50	1.3	4.5	--	ND<2.0	--
4/2/2004	74.98	7.49	0	67.49	-1.27	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1.0	--
7/29/2004	74.98	7.41	0	67.57	0.08	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
11/24/2004	74.98	7.55	0	67.43	-0.14	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.5	--
1/24/2005	74.98	6.40	0	68.58	1.15	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.71	--
6/23/2005	74.98	6.46	0	68.52	-0.06	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
9/28/2005	74.98	7.52	0	67.46	-1.06	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
12/20/2005	74.98	6.04	0	68.94	1.48	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.57	--
3/10/2006	74.98	5.86	0	69.12	0.18	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
6/23/2006	74.98	6.42	0	68.56	-0.56	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.50	--
9/27/2006	74.98	6.92	0	68.06	-0.50	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	48	--
12/22/2006	74.98	5.90	0	69.08	1.02	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	8.5	--
3/23/2007	74.98	6.48	0	68.50	-0.58	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	0.54	--
6/29/2007	74.98	6.78	0	68.20	-0.30	--	ND<50	ND<0.50	ND<0.50	0.76	1.6	--	5.6	--
9/28/2007	74.98	7.24	0	67.74	-0.46	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	15	--
12/17/2007	74.98	6.92	0	68.06	0.32	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.6	--
3/25/2008	74.98	6.74	0	68.24	0.18	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1.3	--
6/12/2008	74.98	7.11	0	67.87	-0.37	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.6	--
9/25/2008	74.98	7.70	0	67.28	-0.59	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1.8	--
12/30/2008	74.98	6.73	0	68.25	0.97	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.80	--
3/24/2009	74.98	6.41	0	68.57	0.32	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
6/23/2009	74.98	7.07	0	67.91	-0.66	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.60	--
12/16/2009	74.98	6.59	0	68.39	0.48	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
4/14/2010	74.98	6.16	0	68.82	0.43	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
MW-11														
1/31/2002	77.31	11.71	0	65.60	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<1.0	--
4/11/2002	77.31	11.95	0	65.36	-0.24	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	--
7/11/2002	77.31	12.79	0	64.52	-0.84	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
10/15/2002	77.31	13.67	0	63.64	-0.88	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
1/14/2003	77.31	13.31	0	64.00	0.36	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
4/16/2003	77.31	14.08	0	63.23	-0.77	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
7/16/2003	77.31	12.98	0	64.33	1.10	--	65	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
10/2/2003	77.31	12.96	0	64.35	0.02	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	--
1/7/2004	77.31	16.20	0	61.11	-3.24	--	63	ND<0.50	ND<0.50	0.68	2.2	--	ND<2.0	--
4/2/2004	77.31	18.01	0	59.30	-1.81	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
7/29/2004	77.31	14.39	0	62.92	3.62	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
11/24/2004	77.31	16.72	0	60.59	-2.33	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
1/24/2005	77.31	17.44	0	59.87	-0.72	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
6/23/2005	77.31	12.37	0	64.94	5.07	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
9/28/2005	77.31	16.78	0	60.53	-4.41	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
12/20/2005	77.31	17.06	0	60.25	-0.28	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
3/10/2006	77.31	16.20	0	61.11	0.86	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
6/23/2006	77.31	12.65	0	64.66	3.55	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--
9/27/2006	77.31	14.78	0	62.53	-2.13	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	--
12/22/2006	77.31	13.48	0	63.83	1.30	--	55	ND<0.50	ND<0.50	2.1	5.4	--	ND<0.50	--

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

April 14, 2010
76 Station 1871

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)		Comments
3/23/2007	77.31	13.78	0	63.53	-0.30	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	--	
6/29/2007	77.31	15.58	0	61.73	-1.80	--	ND<50	ND<0.50	ND<0.50	ND<0.50	0.62	--	ND<0.50	--	
9/28/2007	77.31	16.02	0	61.29	-0.44	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	--	
12/17/2007	77.31	15.75	0	61.56	0.27	--	ND<50	ND<0.50	ND<0.50	ND<0.50	1.0	--	ND<0.50	--	
3/25/2008	77.31	15.74	0	61.57	0.01	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	
6/12/2008	77.31	13.87	0	63.44	1.87	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	
9/25/2008	77.31	16.30	0	61.01	-2.43	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	
12/30/2008	77.31	15.82	0	61.49	0.48	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	
3/24/2009	77.31	15.58	0	61.73	0.24	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	
6/23/2009	77.31	13.98	0	63.33	1.60	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	
12/16/2009	77.31	15.03	0	62.28	-1.05	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	
4/14/2010	77.31	15.48	0	61.83	-0.45	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	--	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	pH (lab) ()	Post-purge Dissolved Oxygen ()	Pre-purge Dissolved Oxygen ()	Pre-purge ORP ()	Comments
MW-1													
6/18/1999	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	
7/16/2001	--	ND	ND	ND	--	ND	ND	ND	--	--	--	--	
1/14/2003	--	ND<100	ND<500	ND<2.0	--	ND<2.0	ND<2.0	ND<2.0	--	--	--	--	
7/16/2003	--	--	ND<10000	--	--	--	--	--	--	--	--	--	
10/2/2003	--	--	ND<25000	--	--	--	--	--	--	25.1	45.7	80.1	
1/7/2004	--	--	ND<20000	--	--	--	--	--	--	12.12	12.31	142	
4/2/2004	--	--	ND<50	--	--	--	--	--	--	11.33	13.42	36	
7/29/2004	--	--	ND<2000	--	--	--	--	--	--	5.37	5.51	-2	
11/24/2004	--	--	ND<2000	--	--	--	--	--	6.58	3.08	4.73	-43	
1/24/2005	--	--	ND<2000	--	--	--	--	--	--	14.3	17.0	100	
6/23/2005	--	--	ND<50000	--	--	--	--	--	--	--	4.79	-103	
9/28/2005	--	--	ND<1000	--	--	--	--	--	--	3.45	4.73	-91	
12/20/2005	--	--	ND<250	--	--	--	--	--	--	4.16	2.76	-210	
3/10/2006	--	--	ND<2500	--	--	--	--	--	--	1.45	1.64	-511	
6/23/2006	--	--	ND<2500	--	--	--	--	--	--	--	4.31	-030	
9/27/2006	--	--	ND<5000	--	--	--	--	--	--	4.50	4.72	-32	
12/22/2006	--	--	ND<2500	--	--	--	--	--	--	6.80	2.35	-121	
3/23/2007	--	--	ND<1200	--	--	--	--	--	--	3.22	3.45	-135	
6/29/2007	--	--	ND<1200	--	--	--	--	--	--	6.64	7.11	-131	
9/28/2007	--	--	ND<250	--	--	--	--	--	--	--	7.84	-167	
12/17/2007	--	--	ND<2500	--	--	--	--	--	--	9.74	6.51	-63	
3/25/2008	--	--	ND<1200	--	--	--	--	--	--	6.70	6.50	-60	
6/12/2008	--	330	ND<1200	--	--	--	--	--	--	--	4.33	65	
9/25/2008	--	740	ND<250	--	--	--	--	--	--	--	1.16	105	
12/30/2008	--	400	ND<250	--	--	--	--	--	--	2.44	0.91	0	
3/24/2009	--	390	ND<250	--	--	--	--	--	--	1.60	1.31	-29	
6/23/2009	--	500	ND<1200	--	--	--	--	--	--	--	0.86	-28	
12/16/2009	--	ND<20	ND<500	--	--	--	--	--	--	0.66	--	--	
4/14/2010	--	500	ND<500	--	--	--	--	--	--	2.48	--	--	
MW-4													
4/18/1996	110	--	--	--	--	--	--	--	--	--	--	--	
7/24/1996	ND	--	--	--	--	--	--	--	--	--	--	--	
10/24/1996	ND	--	--	--	--	--	--	--	--	--	--	--	
1/28/1997	210	--	--	--	--	--	--	--	--	--	--	--	
7/29/1997	ND	--	--	--	--	--	--	--	--	--	--	--	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	pH (lab) ()	Post-purge Dissolved Oxygen ()	Pre-purge Dissolved Oxygen ()	Pre-purge ORP ()	Comments
1/14/1998	ND	--	--	--	--	--	--	--	--	--	--	--	
7/1/1998	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-6													
6/18/1999	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	
7/16/2001	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	
7/11/2002	--	ND<1000	ND<5000	ND<100	ND<100	ND<200	ND<100	ND<100	--	--	--	--	
1/14/2003	--	ND<100	ND<500	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	--	--	--	--	
7/16/2003	--	--	ND<500	--	--	--	--	--	--	--	--	--	
10/2/2003	--	--	ND<1000	--	--	--	--	--	--	15.5	26.2	139	
1/7/2004	--	--	ND<1000	--	--	--	--	--	--	12.63	14.29	-12	
4/2/2004	--	--	ND<2000	--	--	--	--	--	--	12.63	12.72	9	
7/29/2004	--	--	ND<100	--	--	--	--	--	--	4.74	4.79	-19	
11/24/2004	--	--	ND<50	--	--	--	--	--	6.99	2.81	5.54	-29	
1/24/2005	--	--	ND<50	--	--	--	--	--	--	14.5	15.3	72	
6/23/2005	--	--	ND<1000	--	--	--	--	--	--	1.86	1.73	70	
9/28/2005	--	--	ND<1000	--	--	--	--	--	--	2.63	2.57	-74	
12/20/2005	--	--	ND<250	--	--	--	--	--	--	1.52	2.30	-280	
3/10/2006	--	--	ND<250	--	--	--	--	--	--	5.25	0.80	173	
6/23/2006	--	--	ND<6200	--	--	--	--	--	--	--	3.39	-105	
9/27/2006	--	--	ND<6200	--	--	--	--	--	--	2.54	3.01	-109	
12/22/2006	--	--	ND<5000	--	--	--	--	--	--	1.22	4.03	-46	
3/23/2007	--	--	ND<250	--	--	--	--	--	--	3.64	3.62	-101	
6/29/2007	--	--	ND<250	--	--	--	--	--	--	8.49	6.78	171	
9/28/2007	--	--	ND<250	--	--	--	--	--	--	8.36	8.40	167	
12/17/2007	--	--	ND<250	--	--	--	--	--	--	10.19	9.38	-23	
3/25/2008	--	--	ND<250	--	--	--	--	--	--	10.03	10.10	-20	
6/12/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	0.80	30	
9/25/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	1.05	118	
12/30/2008	--	ND<10	ND<250	--	--	--	--	--	--	4.50	1.62	14	
3/24/2009	--	ND<10	ND<250	--	--	--	--	--	--	1.79	1.87	104	
6/23/2009	--	ND<10	ND<250	--	--	--	--	--	--	1.96	2.12	64	
12/16/2009	--	ND<10	ND<250	--	--	--	--	--	--	1.55	--	--	
4/14/2010	--	ND<10	ND<250	--	--	--	--	--	--	3.19	--	--	
MW-7													
6/18/1999	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	
7/16/2001	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	pH (lab) ()	Post-purge Dissolved Oxygen ()	Pre-purge Dissolved Oxygen ()	Pre-purge ORP ()	Comments
1/14/2003	--	ND<50000	ND<250000	ND<1000	ND<1000	ND<1000	ND<1000	ND<1000	--	--	--	--	
7/16/2003	--	--	ND<250000	--	--	--	--	--	--	--	--	--	
10/2/2003	--	--	ND<100000	--	--	--	--	--	--	24.3	28.2	109	
1/7/2004	--	--	ND<200000	--	--	--	--	--	--	10.79	10.85	23	
4/2/2004	--	--	ND<2000	--	--	--	--	--	--	12.41	11.32	24	
7/29/2004	--	--	ND<5000	--	--	--	--	--	--	4.10	3.96	17	
11/24/2004	--	--	ND<5000	--	--	--	--	--	6.60	1.99	3.29	-43	
1/24/2005	--	--	ND<5000	--	--	--	--	--	--	17.2	14.5	71	
6/23/2005	--	--	ND<50000	--	--	--	--	--	--	2.84	2.18	-37	
9/28/2005	--	--	ND<1000	--	--	--	--	--	--	3.45	3.63	-81	
12/20/2005	--	--	ND<250	--	--	--	--	--	--	2.04	2.03	-263	
3/10/2006	--	--	ND<250	--	--	--	--	--	--	1.28	0.95	164	
6/23/2006	--	--	ND<6200	--	--	--	--	--	--	--	3.95	-119	
9/27/2006	--	--	ND<6200	--	--	--	--	--	--	3.16	3.98	-107	
12/22/2006	--	--	ND<25000	--	--	--	--	--	--	2.25	2.03	-86	
3/23/2007	--	--	ND<250	--	--	--	--	--	--	3.38	3.75	-49	
9/28/2007	--	--	ND<250	--	--	--	--	--	--	8.16	7.96	30	
12/19/2007	--	--	ND<250	--	--	--	--	--	--	6.70	6.72	-17	
3/25/2008	--	--	ND<250	--	--	--	--	--	--	4.77	4.81	-30	
6/12/2008	--	30	ND<250	--	--	--	--	--	--	--	3.96	55	
9/25/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	1.11	115	
12/30/2008	--	ND<10	ND<250	--	--	--	--	--	--	4.13	1.81	-14	
3/24/2009	--	ND<10	ND<250	--	--	--	--	--	--	2.70	2.39	159	
6/23/2009	--	16	ND<250	--	--	--	--	--	--	0.42	0.84	-8	
12/16/2009	--	ND<10	ND<250	--	--	--	--	--	--	1.08	--	--	
4/14/2010	--	ND<10	ND<250	--	--	--	--	--	--	0.78	--	--	
MW-8													
6/18/1999	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	
7/16/2001	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	
1/14/2003	--	ND<500	ND<2500	ND<10	ND<10	ND<10	ND<10	ND<10	--	--	--	--	
7/16/2003	--	--	ND<500	--	--	--	--	--	--	--	--	--	
10/2/2003	--	--	ND<500	--	--	--	--	--	--	23.6	28.5	188	
1/7/2004	--	--	ND<50000	--	--	--	--	--	--	9.94	13.13	-15	
4/2/2004	--	--	ND<2000	--	--	--	--	--	--	13.37	12.82	-10	
7/29/2004	--	--	ND<2500	--	--	--	--	--	--	3.68	3.73	18	
11/24/2004	--	--	ND<1000	--	--	--	--	--	6.67	3.97	2.71	-36	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	pH (lab) ()	Post-purge Dissolved Oxygen ()	Pre-purge Dissolved Oxygen ()	Pre-purge ORP ()	Comments
1/24/2005	--	--	ND<2500	--	--	--	--	--	--	41.6	41.2	56	
6/23/2005	--	--	ND<1000	--	--	--	--	--	--	2.05	2.13	58	
9/28/2005	--	--	ND<1000	--	--	--	--	--	--	2.12	1.98	-40	
12/20/2005	--	--	ND<250	--	--	--	--	--	--	2.02	3.72	-402	
3/10/2006	--	--	ND<250	--	--	--	--	--	--	1.51	0.99	-182	
6/23/2006	--	--	ND<250	--	--	--	--	--	--	--	2.81	-135	
9/27/2006	--	--	ND<250	--	--	--	--	--	--	4.87	4.91	-155	
12/22/2006	--	--	ND<250	--	--	--	--	--	--	1.80	2.40	16	
3/23/2007	--	--	ND<250	--	--	--	--	--	--	3.52	3.90	25	
6/29/2007	--	--	ND<250	--	--	--	--	--	--	5.35	5.29	98	
9/28/2007	--	--	ND<250	--	--	--	--	--	--	7.18	7.24	16	
12/17/2007	--	--	ND<250	--	--	--	--	--	--	6.95	5.26	26	
3/25/2008	--	--	ND<250	--	--	--	--	--	--	5.22	5.15	70	
6/12/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	9.40	38	
9/25/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	1.33	98	
12/30/2008	--	ND<10	ND<250	--	--	--	--	--	--	1.78	2.19	11	
3/24/2009	--	ND<10	ND<250	--	--	--	--	--	--	2.07	1.87	103	
6/23/2009	--	ND<10	ND<250	--	--	--	--	--	--	0.55	0.90	73	
12/16/2009	--	ND<10	ND<250	--	--	--	--	--	--	1.24	--	--	
4/14/2010	--	ND<10	ND<250	--	--	--	--	--	--	0.92	--	--	
MW-9													
1/31/2002	--	ND<140	ND<3600	ND<7.1	ND<7.1	ND<7.1	ND<7.1	ND<7.1	--	--	--	--	
1/14/2003	--	ND<400	ND<2000	ND<8.0	ND<8.0	ND<8.0	ND<8.0	ND<8.0	--	--	--	--	
7/16/2003	--	--	ND<25000	--	--	--	--	--	--	--	--	--	
10/2/2003	--	--	ND<5000	--	--	--	--	--	--	29.5	28.4	201	
1/7/2004	--	--	ND<10000	--	--	--	--	--	--	10.45	12.00	9	
4/2/2004	--	--	ND<500	--	--	--	--	--	--	16.37	13.21	12	
7/29/2004	--	--	ND<1000	--	--	--	--	--	--	--	--	--	
11/24/2004	--	--	ND<500	--	--	--	--	--	6.47	3.24	1.71	-68	
1/24/2005	--	--	ND<1000	--	--	--	--	--	--	26.0	22.5	-45	
6/23/2005	--	--	ND<10000	--	--	--	--	--	--	1.50	1.44	-136	
9/28/2005	--	--	ND<50000	--	--	--	--	--	--	2.51	1.67	-94	
12/20/2005	--	--	ND<250	--	--	--	--	--	--	5.05	4.67	-102	
3/10/2006	--	--	ND<2500	--	--	--	--	--	--	2.82	2.13	160	
6/23/2006	--	--	ND<6200	--	--	--	--	--	--	--	0.84	-65	
9/27/2006	--	--	ND<6200	--	--	--	--	--	--	0.68	0.75	-61	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	pH (lab) ()	Post-purge Dissolved Oxygen ()	Pre-purge Dissolved Oxygen ()	Pre-purge ORP ()	Comments
12/22/2006	--	--	ND<250	--	--	--	--	--	--	9.00	4.89	-44	
3/23/2007	--	--	ND<250	--	--	--	--	--	--	6.85	5.33	-114	
6/29/2007	--	--	ND<250	--	--	--	--	--	--	6.87	6.25	23	
9/28/2007	--	--	ND<1200	--	--	--	--	--	--	7.17	7.04	30	
12/17/2007	--	--	ND<250	--	--	--	--	--	--	5.05	4.81	-27	
3/25/2008	--	--	ND<1200	--	--	--	--	--	--	6.55	6.67	-10	
6/12/2008	--	250	ND<250	--	--	--	--	--	--	--	2.55	86	
9/25/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	1.44	26	
12/30/2008	--	21	ND<250	--	--	--	--	--	--	5.47	5.43	52	
3/24/2009	--	24	ND<250	--	--	--	--	--	--	2.80	2.69	66	
6/23/2009	--	14	ND<250	--	--	--	--	--	--	1.88	1.42	-20	
12/16/2009	--	22	ND<250	--	--	--	--	--	--	0.99	--	--	
4/14/2010	--	ND<10	ND<250	--	--	--	--	--	--	1.41	--	--	
MW-10													
1/31/2002	--	ND<20	ND<500	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	--	--	--	
1/14/2003	--	ND<100	ND<500	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	--	--	--	--	
7/16/2003	--	--	ND<500	--	--	--	--	--	--	--	--	--	
10/2/2003	--	--	ND<500	--	--	--	--	--	--	24.8	25.7	192	
1/7/2004	--	--	ND<500	--	--	--	--	--	--	10.04	11.62	35	
4/2/2004	--	--	ND<50	--	--	--	--	--	--	11.91	12.02	42	
7/29/2004	--	--	ND<50	--	--	--	--	--	--	4.81	4.83	83	
11/24/2004	--	--	ND<50	--	--	--	--	--	6.89	2.59	3.07	-39	
1/24/2005	--	--	ND<50	--	--	--	--	--	--	27.5	25.5	87	
6/23/2005	--	--	ND<1000	--	--	--	--	--	--	7.83	176	40	
9/28/2005	--	--	ND<1000	--	--	--	--	--	--	6.95	2.37	-66	
12/20/2005	--	--	ND<250	--	--	--	--	--	--	3.85	3.45	59	
3/10/2006	--	--	ND<250	--	--	--	--	--	--	2.52	4.48	87	
6/23/2006	--	--	ND<250	--	--	--	--	--	--	--	1.49	-68	
9/27/2006	--	--	ND<250	--	--	--	--	--	--	1.79	1.55	-85	
12/22/2006	--	--	ND<250	--	--	--	--	--	--	3.20	3.00	107	
3/23/2007	--	--	ND<250	--	--	--	--	--	--	5.09	5.01	-60	
6/29/2007	--	--	ND<250	--	--	--	--	--	--	9.12	6.27	165	
9/28/2007	--	--	ND<250	--	--	--	--	--	--	8.34	8.21	124	
12/17/2007	--	--	ND<250	--	--	--	--	--	--	4.97	4.46	-15	
3/25/2008	--	--	ND<250	--	--	--	--	--	--	4.35	4.40	-10	
6/12/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	1.42	75	

Table 2a
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	pH (lab) ()	Post-purge Dissolved Oxygen ()	Pre-purge Dissolved Oxygen ()	Pre-purge ORP ()	Comments
9/25/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	52.15	94	
12/30/2008	--	ND<10	ND<250	--	--	--	--	--	--	5.89	3.18	181	
3/24/2009	--	ND<10	ND<250	--	--	--	--	--	--	4.37	4.07	144	
6/23/2009	--	ND<10	ND<250	--	--	--	--	--	--	3.17	1.64	57	
12/16/2009	--	ND<10	ND<250	--	--	--	--	--	--	3.31	--	--	
4/14/2010	--	ND<10	ND<250	--	--	--	--	--	--	1.61	--	--	
MW-11													
1/31/2002	--	ND<20	ND<500	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	--	--	--	
1/14/2003	--	ND<100	ND<500	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	--	--	--	--	
7/16/2003	--	--	ND<500	--	--	--	--	--	--	--	--	--	
10/2/2003	--	--	ND<500	--	--	--	--	--	--	33.7	23.2	202	
1/7/2004	--	--	ND<500	--	--	--	--	--	--	11.69	13.82	99	
4/2/2004	--	--	ND<50	--	--	--	--	--	--	11.94	14.08	-1	
7/29/2004	--	--	ND<50	--	--	--	--	--	--	--	--	--	
11/24/2004	--	--	ND<50	--	--	--	--	--	6.75	3.85	4.32	82	
1/24/2005	--	--	ND<50	--	--	--	--	--	--	30.01	32.6	79	
6/23/2005	--	--	ND<1000	--	--	--	--	--	--	2.17	2.16	76	
9/28/2005	--	--	ND<1000	--	--	--	--	--	--	4.97	4.59	-4	
12/20/2005	--	--	ND<250	--	--	--	--	--	--	5.16	4.77	35	
3/10/2006	--	--	ND<250	--	--	--	--	--	--	5.11	9.99	68	
6/23/2006	--	--	ND<250	--	--	--	--	--	--	--	7.74	-26	
9/27/2006	--	--	ND<250	--	--	--	--	--	--	5.72	5.98	32	
12/22/2006	--	--	ND<250	--	--	--	--	--	--	3.81	4.35	46	
3/23/2007	--	--	ND<250	--	--	--	--	--	--	5.47	5.85	38	
6/29/2007	--	--	ND<250	--	--	--	--	--	--	7.87	7.80	242	
9/28/2007	--	--	ND<250	--	--	--	--	--	--	7.24	7.30	280	
12/17/2007	--	--	ND<250	--	--	--	--	--	--	8.71	8.01	47	
3/25/2008	--	--	ND<250	--	--	--	--	--	--	8.41	8.40	45	
6/12/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	3.33	160	
9/25/2008	--	ND<10	ND<250	--	--	--	--	--	--	--	4.28	115	
12/30/2008	--	ND<10	ND<250	--	--	--	--	--	--	2.74	2.67	195	
3/24/2009	--	ND<10	ND<250	--	--	--	--	--	--	2.27	2.20	185	
6/23/2009	--	ND<10	ND<250	--	--	--	--	--	--	3.62	4.14	67	
12/16/2009	--	ND<10	ND<250	--	--	--	--	--	--	4.62	--	--	
4/14/2010	--	ND<10	ND<250	--	--	--	--	--	--	4.15	--	--	

Table 2b
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	Post-purge ORP ()	Comments
MW-1		
6/18/1999	--	
7/16/2001	--	
1/14/2003	--	
7/16/2003	--	
10/2/2003	21.0	
1/7/2004	24	
4/2/2004	34	
7/29/2004	-4	
11/24/2004	-39	
1/24/2005	96	
6/23/2005	--	
9/28/2005	-94	
12/20/2005	-328	
3/10/2006	-615	
6/23/2006	--	
9/27/2006	-25	
12/22/2006	-72	
3/23/2007	-141	
6/29/2007	-65	
9/28/2007	--	
12/17/2007	-46	
3/25/2008	-64	
6/12/2008	--	
9/25/2008	--	
12/30/2008	-2	
3/24/2009	-32	
6/23/2009	--	
12/16/2009	38	
4/14/2010	55	
MW-4		
4/18/1996	--	
7/24/1996	--	
10/24/1996	--	
1/28/1997	--	
7/29/1997	--	

Table 2b
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	Post-purge ORP ()	Comments
1/14/1998	--	
7/1/1998	--	
MW-6		
6/18/1999	--	
7/16/2001	--	
7/11/2002	--	
1/14/2003	--	
7/16/2003	--	
10/2/2003	175	
1/7/2004	24	
4/2/2004	23	
7/29/2004	-8	
11/24/2004	-12	
1/24/2005	70	
6/23/2005	71	
9/28/2005	-80	
12/20/2005	-217	
3/10/2006	224	
6/23/2006	--	
9/27/2006	-104	
12/22/2006	-67	
3/23/2007	-92	
6/29/2007	84	
9/28/2007	154	
12/17/2007	-14	
3/25/2008	-18	
6/12/2008	--	
9/25/2008	--	
12/30/2008	8	
3/24/2009	91	
6/23/2009	79	
12/16/2009	116	
4/14/2010	108	
MW-7		
6/18/1999	--	
7/16/2001	--	

Table 2b
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	Post-purge ORP ()	Comments
1/14/2003	--	
7/16/2003	--	
10/2/2003	153	
1/7/2004	5	
4/2/2004	10	
7/29/2004	18	
11/24/2004	-24	
1/24/2005	48	
6/23/2005	-32	
9/28/2005	-85	
12/20/2005	-256	
3/10/2006	-179	
6/23/2006	--	
9/27/2006	-95	
12/22/2006	-101	
3/23/2007	-47	
9/28/2007	26	
12/19/2007	-13	
3/25/2008	-34	
6/12/2008	--	
9/25/2008	--	
12/30/2008	-19	
3/24/2009	138	
6/23/2009	-33	
12/16/2009	118	
4/14/2010	112	
MW-8		
6/18/1999	--	
7/16/2001	--	
1/14/2003	--	
7/16/2003	--	
10/2/2003	197	
1/7/2004	21	
4/2/2004	16	
7/29/2004	30	
11/24/2004	-20	

Table 2b
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	Post-purge ORP ()	Comments
1/24/2005	60	
6/23/2005	56	
9/28/2005	-26	
12/20/2005	-326	
3/10/2006	-181	
6/23/2006	--	
9/27/2006	-139	
12/22/2006	12	
3/23/2007	22	
6/29/2007	92	
9/28/2007	22	
12/17/2007	24	
3/25/2008	77	
6/12/2008	--	
9/25/2008	--	
12/30/2008	14	
3/24/2009	109	
6/23/2009	55	
12/16/2009	75	
4/14/2010	120	
MW-9		
1/31/2002	--	
1/14/2003	--	
7/16/2003	--	
10/2/2003	203	
1/7/2004	27	
4/2/2004	32	
7/29/2004	--	
11/24/2004	-67	
1/24/2005	-45	
6/23/2005	-144	
9/28/2005	-119	
12/20/2005	-42	
3/10/2006	161	
6/23/2006	--	
9/27/2006	-43	

Table 2b
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	Post-purge ORP ()	Comments
12/22/2006	-70	
3/23/2007	-82	
6/29/2007	22	
9/28/2007	30	
12/17/2007	-35	
3/25/2008	-14	
6/12/2008	--	
9/25/2008	--	
12/30/2008	38	
3/24/2009	58	
6/23/2009	-30	
12/16/2009	102	
4/14/2010	49	
MW-10		
1/31/2002	--	
1/14/2003	--	
7/16/2003	--	
10/2/2003	213	
1/7/2004	59	
4/2/2004	45	
7/29/2004	102	
11/24/2004	-29	
1/24/2005	84	
6/23/2005	44	
9/28/2005	-64	
12/20/2005	58	
3/10/2006	83	
6/23/2006	--	
9/27/2006	-65	
12/22/2006	85	
3/23/2007	--	
6/29/2007	172	
9/28/2007	126	
12/17/2007	-2	
3/25/2008	-12	
6/12/2008	--	

Table 2b
ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 1871

Date Sampled	Post-purge ORP ()	Comments
9/25/2008	--	
12/30/2008	184	
3/24/2009	160	
6/23/2009	68	
12/16/2009	118	
4/14/2010	112	
MW-11		
1/31/2002	--	
1/14/2003	--	
7/16/2003	--	
10/2/2003	255	
1/7/2004	103	
4/2/2004	108	
7/29/2004	--	
11/24/2004	143	
1/24/2005	83	
6/23/2005	82	
9/28/2005	-1	
12/20/2005	070	
3/10/2006	97	
6/23/2006	--	
9/27/2006	40	
12/22/2006	44	
3/23/2007	34	
6/29/2007	223	
9/28/2007	244	
12/17/2007	46	
3/25/2008	44	
6/12/2008	--	
9/25/2008	--	
12/30/2008	195	
3/24/2009	190	
6/23/2009	67	
12/16/2009	160	
4/14/2010	143	

APPENDIX D

GROUNDWATER CONCENTRATION TREND GRAPHS

Table A - Summary of Degradation Rate Calculations
76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

Well	Analyte	Maximum Concentration (ug/L)	Current Concentration (ug/L)	Half-Life (years)	Date to Reach WQO	Years to reach WQO
MW-1	TPHg	260,000	1,500	3.49	Sep 2026	15
	Benzene	9,910	3.2	0.99	May 2011	0
	MTBE	120,000	10	0.91	Feb 2011	-1
	TBA	740	< 50	0.72	Oct 2012	1
MW-6	MTBE	71,000	6.0	0.84	Apr 2010	WQO MET
MW-7	TPHg	25,000	< 50	0.80	Apr 2009	WQO MET
	MTBE	38,000	5.2	0.48	Oct 2009	WQO MET
MW-8	MTBE	34,200	1.1	0.98	Jul 2009	WQO MET
MW-9	TPHg	1,700	59	1.17	Nov 2009	WQO MET
	MTBE	2,800	70	1.11	May 2015	4
	TBA	250 a	< 10	1.13	Jul 2010	WQO MET

Notes and Abbreviations:
< = Less than laboratory reporting limit
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
TBA = Tert-Butyl Alcohol
ug/L = Micrograms per liter
WQO = Water Quality Objective
a = value is maximum detection above the reporting limit

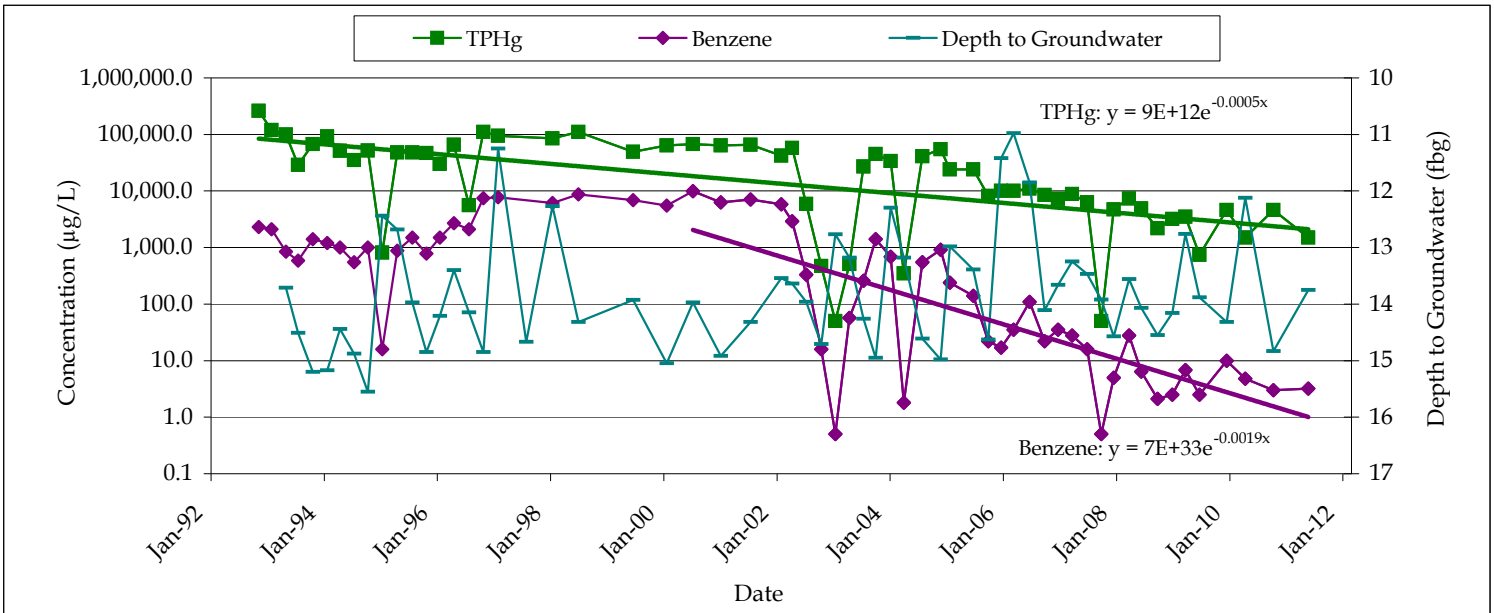
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-1

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

	Constituent	Total Petroleum Hydrocarbons as Gasoline (TPHg)	Benzene
Given			
WQO :	y	100	1.0
Constant:	b	8.68E+12	7.39E+33
Constant:	a	-5.44E-04	-1.92E-03
Starting date for current trend:		11/13/1992	7/10/2000
Calculate			
Attenuation Half Life (years):	(-ln(2)/a)/365.25	3.49	0.99
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	Sep 2026	May 2011



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-1: TPHg AND BENZENE CONCENTRATIONS AND DEPTH TO GROUNDWATER

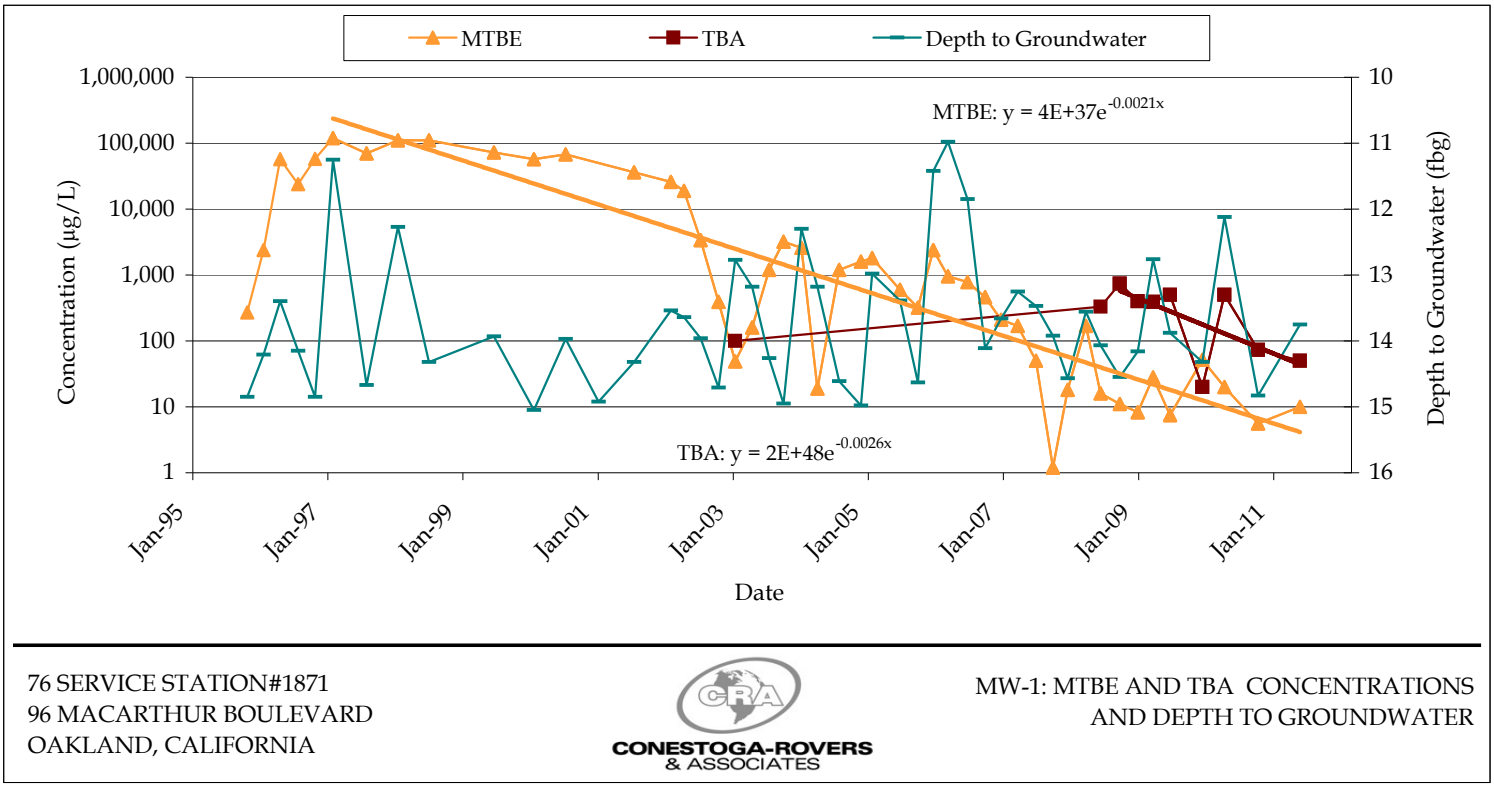
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-1

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

	Constituent	Methyl Tertiary Butyl Ether (MTBE)	Tert-Butyl Alcohol (TBA)
Given			
WQO :	y	5	12
Constant:	b	4.13E+37	1.60E+48
Constant:	a	-2.09E-03	-2.63E-03
Starting date for current trend:		1/28/1997	9/25/2008
Calculate			
Attenuation Half Life (years):	(-ln(2)/a)/365.25	0.91	0.72
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	Feb 2011	Oct 2012



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-1: MTBE AND TBA CONCENTRATIONS AND DEPTH TO GROUNDWATER

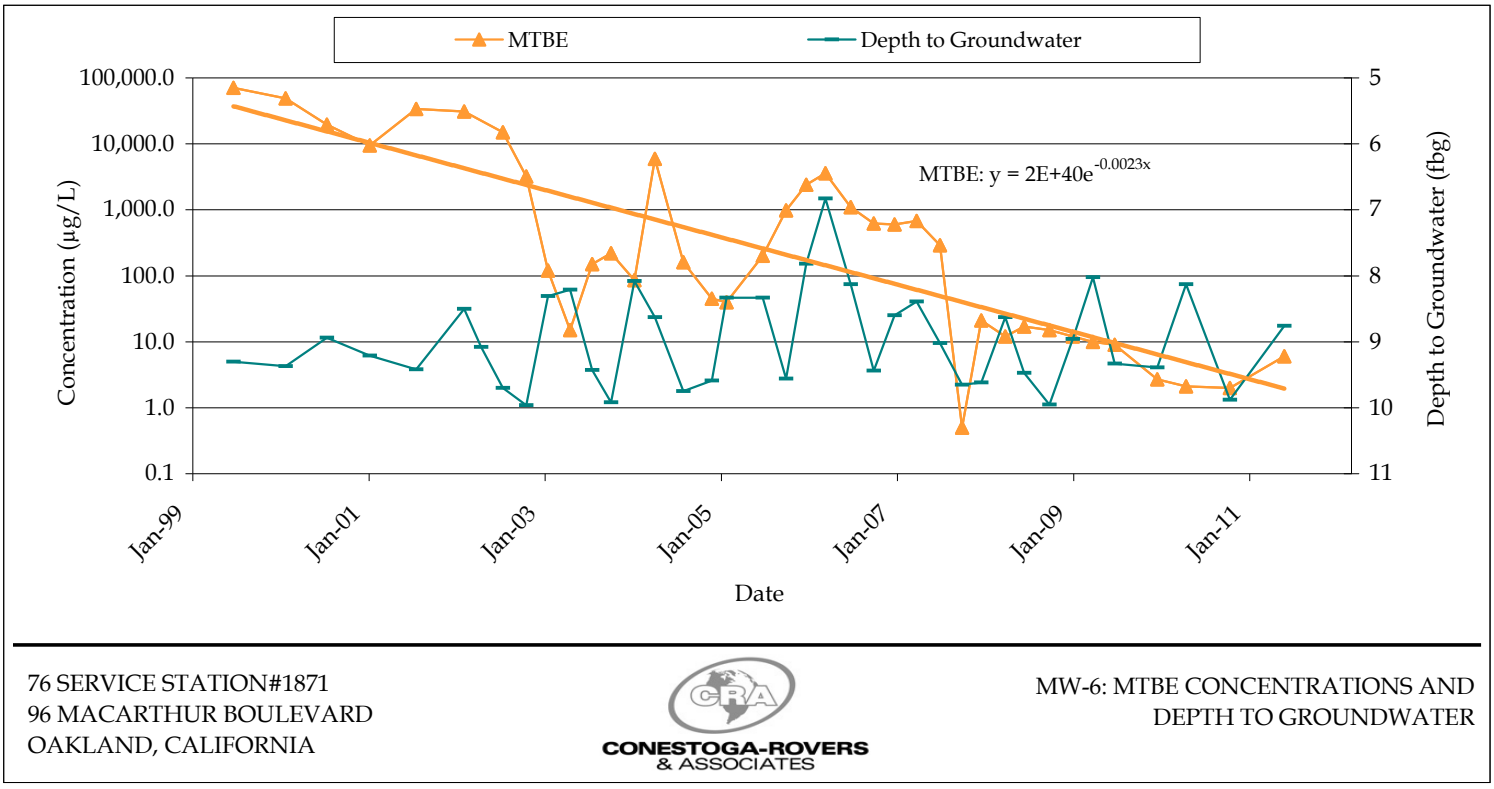
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-6

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

		Constituent: Methyl Tertiary Butyl Ether (MTBE)
Given		
WQO :	y	5
Constant:	b	1.64E+40
Constant:	a	-2.26E-03
Starting date for current trend:		6/18/1999
Calculate		
Attenuation Half Life (years):	(-ln(2)/a)/365.25	0.84
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	Apr 2010



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-6: MTBE CONCENTRATIONS AND DEPTH TO GROUNDWATER

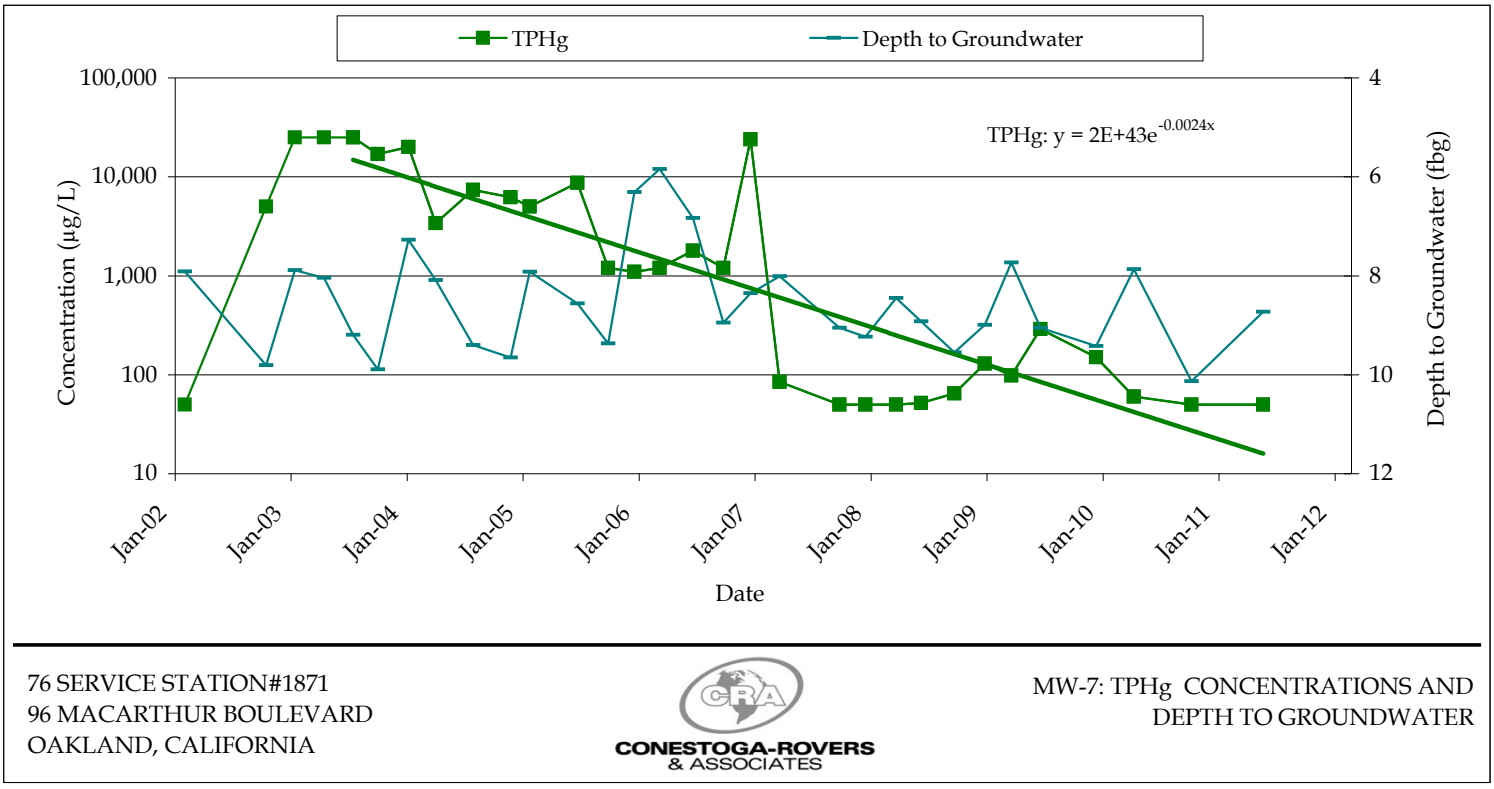
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-7

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

		Constituent: Total Petroleum Hydrocarbons as Gasoline (TPHg)
Given		
WQO :	y	100
Constant:	b	1.81E+43
Constant:	a	-2.38E-03
Starting date for current trend:		7/16/2003
Calculate		
Attenuation Half Life (years):	(-ln(2)/a)/365.25	0.80
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	Apr 2009



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-7: TPHg CONCENTRATIONS AND DEPTH TO GROUNDWATER

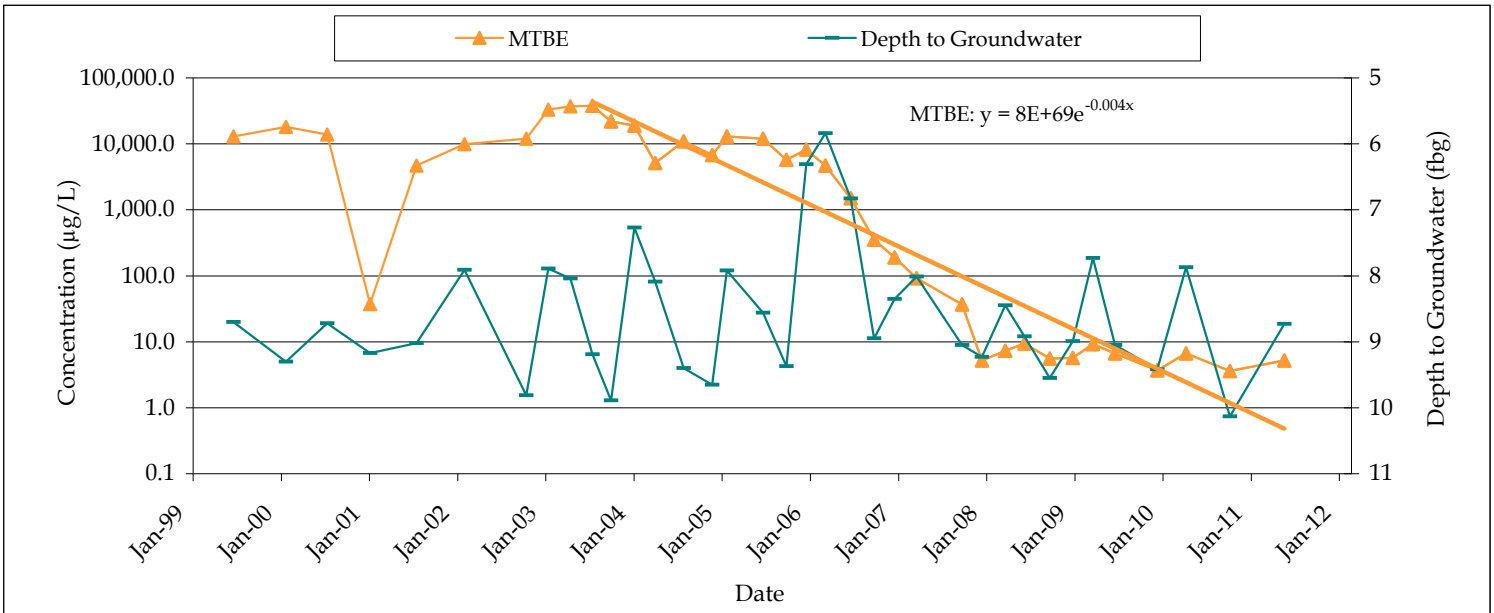
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-7

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

		Constituent: Methyl Tertiary Butyl Ether (MTBE)
Given		
WQO :	y	5
Constant:	b	7.75E+69
Constant:	a	-3.97E-03
Starting date for current trend:		7/16/2003
Calculate		
Attenuation Half Life (years):	(-ln(2)/a)/365.25	0.48
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	Oct 2009



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-7: MTBE CONCENTRATIONS AND DEPTH TO GROUNDWATER

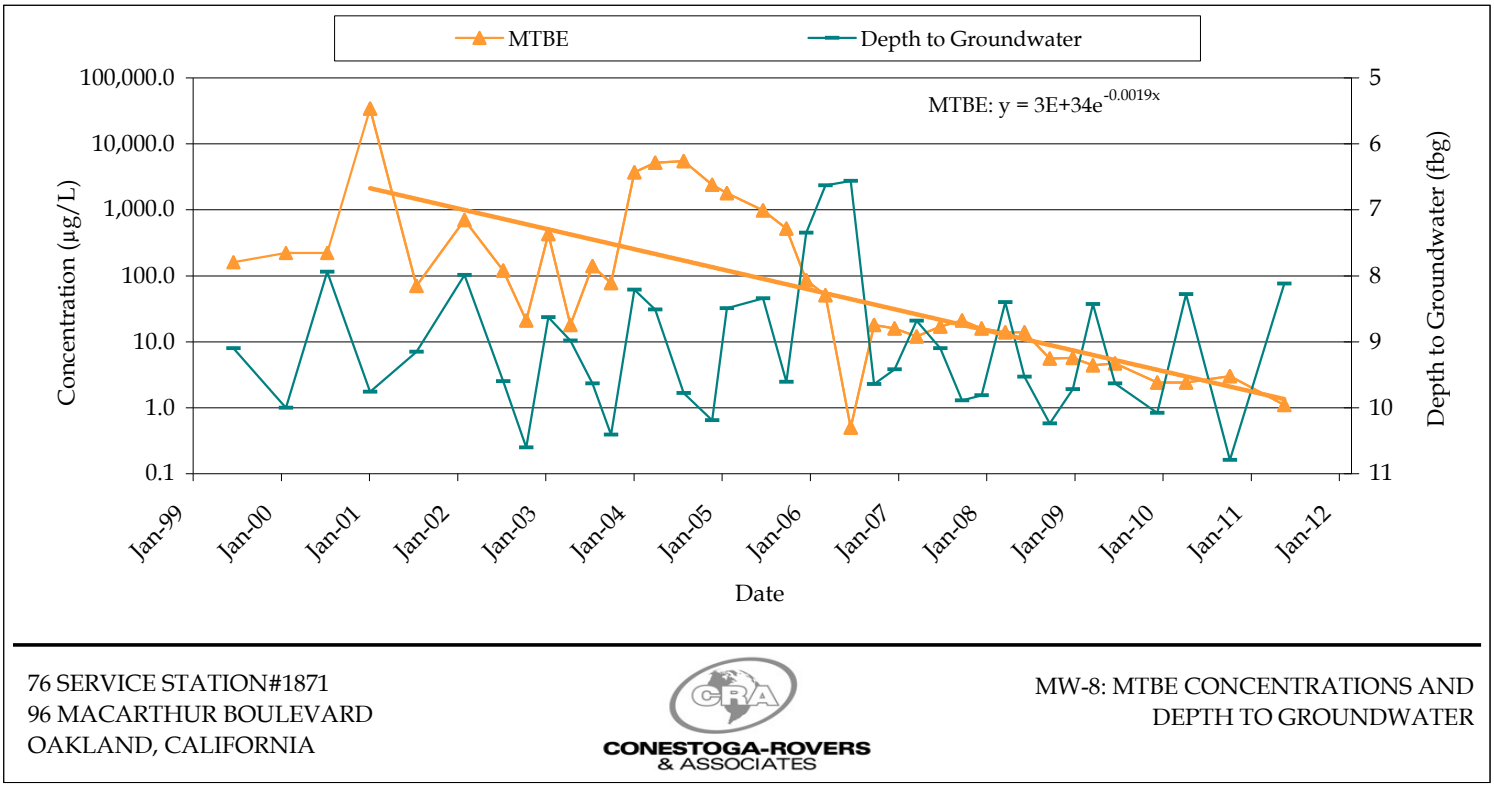
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-8

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

		Constituent: Methyl Tertiary Butyl Ether (MTBE)
Given		
WQO :	y	5
Constant:	b	2.57E+34
Constant:	a	-1.94E-03
Starting date for current trend:		1/4/2001
Calculate		
Attenuation Half Life (years):	(-ln(2)/a)/365.25	0.98
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	Jul 2009



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-8: MTBE CONCENTRATIONS AND DEPTH TO GROUNDWATER

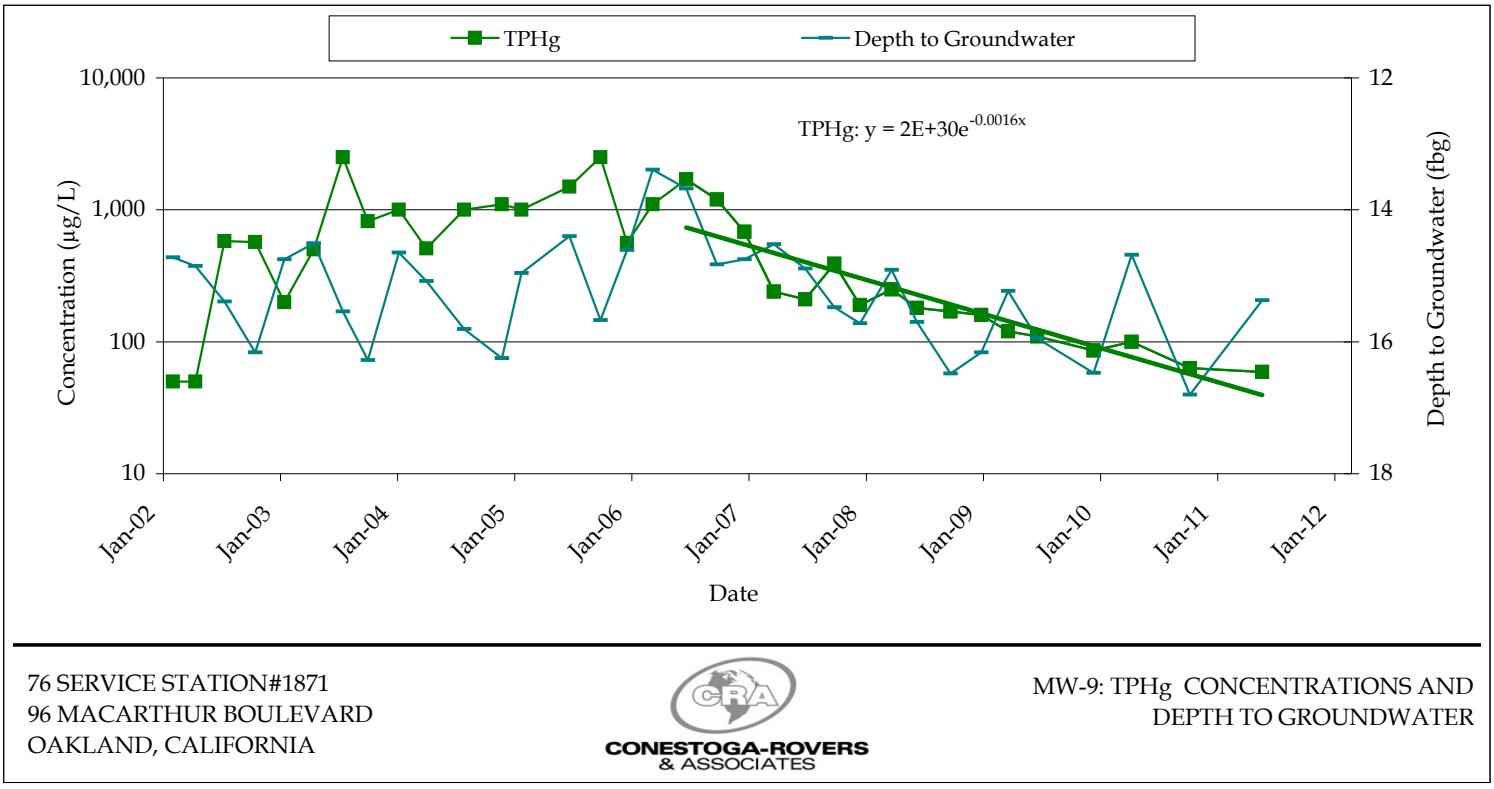
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-9

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

		Constituent: Total Petroleum Hydrocarbons as Gasoline (TPHg)
Given		
WQO :	y	100
Constant:	b	2.05E+30
Constant:	a	-1.62E-03
Starting date for current trend:		6/23/2006
Calculate		
Attenuation Half Life (years):	(-ln(2)/a)/365.25	1.17
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	Nov 2009



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-9: TPHg CONCENTRATIONS AND DEPTH TO GROUNDWATER

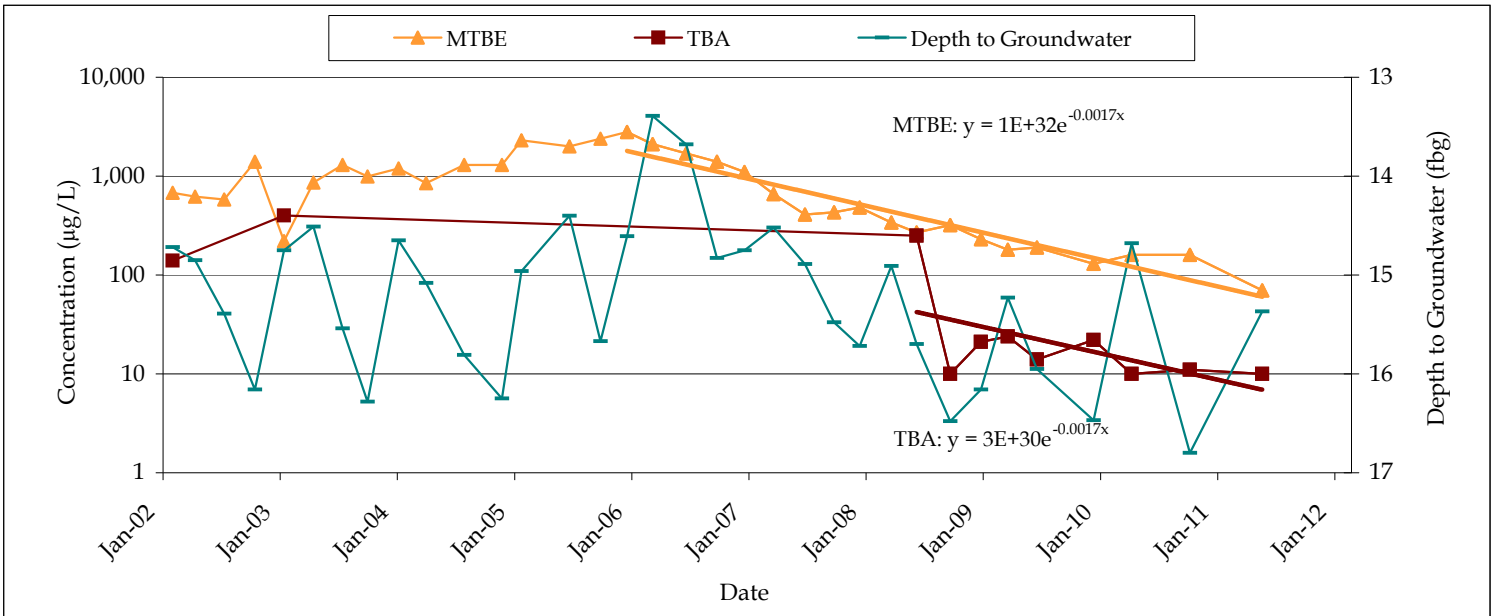
Predicted Time to Reach Water Quality Objectives (WQO) in Well MW-9

76 Service Station #1871, 96 MacArthur Boulevard, Oakland, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

	Constituent	Methyl Tertiary Butyl Ether (MTBE)	Tert-Butyl Alcohol (TBA)
Given			
WQO :	y	5	12
Constant:	b	1.05E+32	2.98E+30
Constant:	a	-1.71E-03	-1.68E-03
Starting date for current trend:		12/20/2005	6/12/2008
Calculate			
Attenuation Half Life (years):	(-ln(2)/a)/365.25	1.11	1.13
Estimated Date to Reach WQO:	(x = ln(y/b) / a)	May 2015	Jul 2010



76 SERVICE STATION#1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-9: MTBE AND TBA CONCENTRATIONS AND DEPTH TO GROUNDWATER

APPENDIX E

ENVIRON STRATEGY CONSULTANTS THIRD QUARTER 2011 OZONE INJECTION SYSTEM O&M REPORT dated SEPTEMBER 1, 2011

environ strategy consultants, inc.

1036 W. Taft Avenue
Orange, Californina 92865
Tel 714-919-6500
Fax 714-919-6501
www.environstrategy.com

September 1, 2011

Kiersten Hoey
Conestoga-Rovers & Associates (CRA)
5900 Hollis Street, Suite A
Emeryville, CA 94608

Project No. 696-A

Third Quarter 2011
Ozone Injection System O&M Report
76 Service Station No. 1871
96 MacArthur Boulevard
Oakland, California

Dear Mr. Hoey:

Environ Strategy Consultants, Inc. is pleased to submit this ozone injection system operation and maintenance (O&M) report for 76 Service Station No. 1871, located at 96 MacArthur Boulevard, Oakland, California (Figure 1). An ozone injection system was started on June 23, 2003 to remediate hydrocarbon-impacted groundwater (Table 1).

Environ Strategy appreciates the opportunity to be of service. If you have any questions or require additional information regarding this report, please do not hesitate to contact us at (714) 919-6525, or by email at dane@environstrategy.com.

Respectfully submitted,

Dane Nygaard
Project Manager

Jinghui Niu, P.E.
Principal Engineer

Third Quarter 2011 O&M Report
76 Service Station No. 1871
September 1, 2011

Ozone Injection System

KVA Ozone Injection System

Reporting Period: June 1, 2011 – August 31, 2011

Days of Operation: Operated 92 days during the period

Hours of Operation: 2,183

System Operation Data Since Startup on June 23, 2003:

Total Hours of Operation: 46,111

Notes:
Well SP-C off on August 16, 2011 due to leaking tubing.
Third Quarter 2011 – Period hours includes dates May 31, 2011 to August 30, 2011.

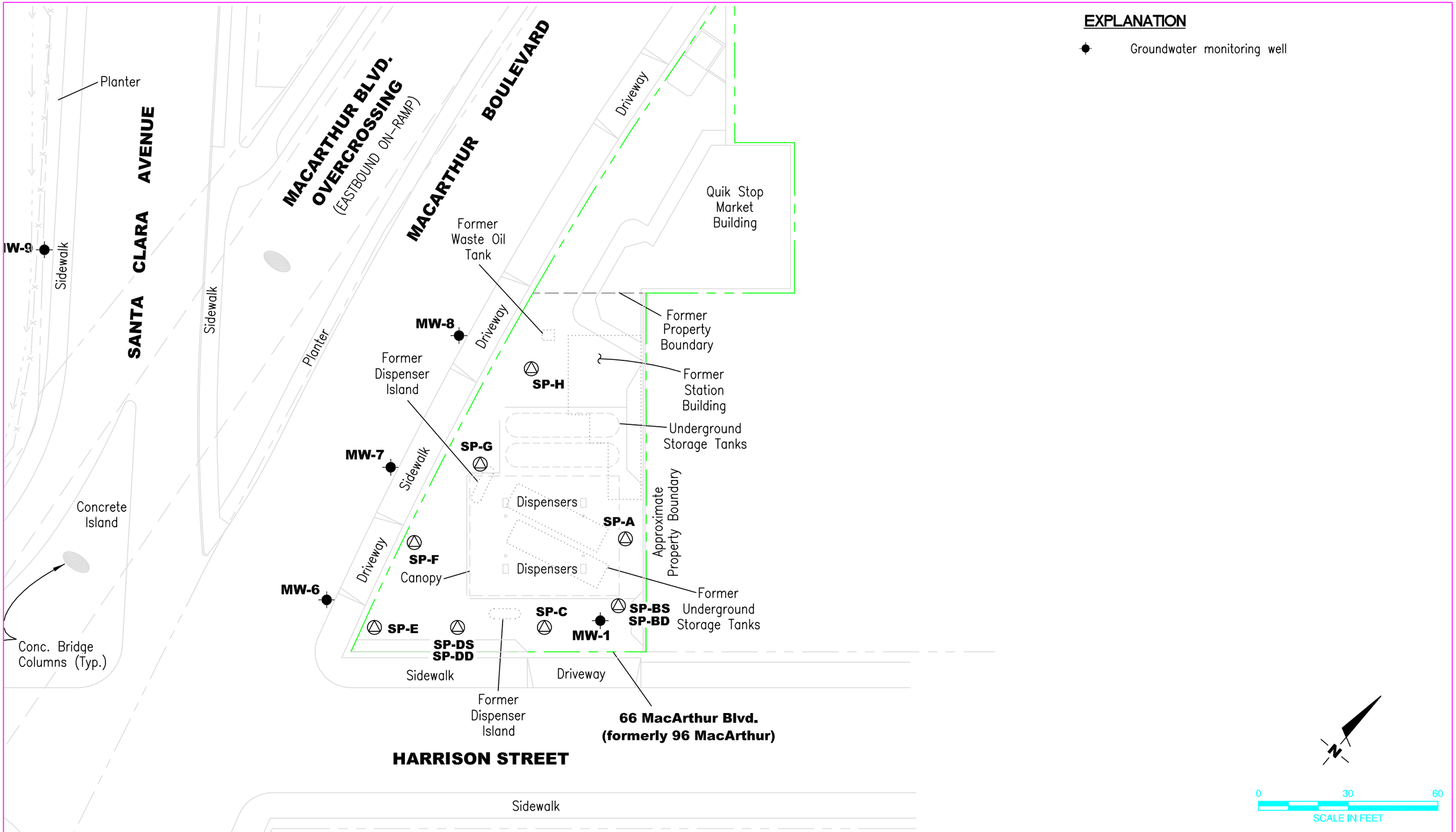
Attachments: Figure - Site Plan

Table 1 - Ozone Injection - System Operation Data
Table 2 - Ozone Injection - Groundwater Monitoring Data

Graph 1 - MW-1 TPHg, Benzene, and MTBE Groundwater Concentrations
Graph 2 - MW-7 TPHg, Benzene, and MTBE Groundwater Concentrations

Appendix A - Field Notes

Figure



Source: Caltrans As-Built Plans and Right of Way Maps confirmed by field observations

DRAWN BY:	MD
CHECKED:	AD
APPROVED:	RB
DATE:	3/22/04 PR
JOB NO.:	77CP.60004.01
CAD FILE:	SITEPLAN

PREPARED BY:

environ strategy consultants, inc. es

1036 W. TAFT AVE, SUITE 200
ORANGE, CA 92865

PREPARED FOR:

76 STATION #1871

96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

FIGURE 1

SITE PLAN

20110822.08381271 X:\HASPs\1871\CP 1871 SITE PLAN.dwg

X:\HASPs\1871\CP 1871 SITE PLAN.dwg

Tables

Table 1
Ozone Injection - System Operation Data
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California

Date	Notes	OZONE SPARGE SYSTEM						SP-A	SP-BS	SP-BD	SP-C	SP-DS	SP-DD	SP-E	SP-F	SP-G	SP-H
		System Status (On/Off)		Hourmeter	Period Online	Cumulative	Ozone Injected	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure
		Arrival	Departure	Reading	Factor	Online Factor	(lbs)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
6/23/03		On	On	8807.26	--	0.95	--	20	18	19	20	21	23	20	26	14	26
7/16/03		**Off**	On	8850.46	0.09	0.91	0.39	27	18	31	40	28	29	31	38	24	25
8/30/03		On	On	9180.61	0.35	0.86	2.97	17	15	17	19	19	19	20	26	19	26
9/18/03		On	On	9327.43	0.37	0.84	1.32	13.5	14.7	17.0	16.3	16.0	19.7	16.8	19.8	15.7	20
10/16/03		On	On	--	--	0.84	--	27.0	19.5	40.8	39.0	40.8	38.5	34.2	46.4	24.2	39.8
11/17/03		On	On	9696.55	0.29	0.81	--	11.0	20.0	17.0	18.0	17.5	17.0	16.0	21.0	51.0	22.0
12/5/03		On	On	9804.98	0.29	0.80	0.98	33.0	21.0	44.0	40.0	43.0	39.0	33.5	44.0	26.0	33.0
1/16/04		On	On	10471.28	0.76	0.79	6.00	12.5	11.0	18.5	16.5	17.5	17.0	16.0	20.0	16.0	20.0
2/3/04		On	On	10727.69	0.68	0.79	2.31	12.3	11.5	18.2	16.5	18.2	17.3	16.0	19.0	16.0	18.2
3/24/04		On	On	11424.95	0.66	0.78	6.28	31.0	18.3	37.5	26.0	34.0	33.2	32.3	41.5	23.0	31.0
4/14/04		On	On	11676.10	0.57	0.77	2.26	32.0	19.0	38.7	26.0	37.7	37.1	32.8	41.8	23.8	29.5
4/15/04	a	On	On	11685.29	0.44	0.77	0.08	--	--	--	--	--	--	--	--	--	--
4/16/04	a	On	On	11693.80	0.41	0.77	0.08	--	--	--	--	--	--	--	--	--	--
4/19/04	a	On	On	11742.90	0.78	0.77	0.44	--	--	--	--	--	--	--	--	--	--
4/23/04	a	On	On	11773.10	0.36	0.77	0.27	--	--	--	--	--	--	--	--	--	--
5/4/04		**Off**	On	11837.70	0.28	0.76	0.58	32.2	20.5	39.4	36.2	38.1	32.0	33.5	60.0	25.8	33.1
5/11/04		On	On	11950.51	0.77	0.76	1.02	32.5	20.0	38.5	29.8	38.8	39.5	34.8	60.0	23.5	35.9
6/14/04	b,c	On	On	12464.64	0.72	0.76	4.63	20.0	21.0	38.8	27.2	37.0	38.2	35.2	60.0	24.0	32.1
7/29/04	d	On	On	844.62	0.99	0.77	7.60	22	15	--	26	35	34	35	--	25	33
8/12/04	e	On	On	1075.97	0.98	0.78	2.08	--	--	--	--	--	--	--	--	--	--
9/10/04		On	On	1490.23	0.85	0.78	3.73	32	32	33	33	21	24	30	20	26	30
10/5/04		On	On	1868.83	0.90	0.78	3.41	31	32	33	31	22	23	31	21	26	28
11/5/04		On	On	2360.90	0.93	0.79	4.43	22	26	12	18	12	22	30	32	26	22
12/2/04	f	**Off**	**Off**	2802.02	0.97	0.79	3.97	--	--	--	--	--	--	--	--	--	--
1/13/05		**Off**	On	2802.07	0.00	0.76	0.00	23	27	15	20	15	23	31	34	28	25
2/25/05	g	**Off**	**Off**	2802.42	0.00	0.73	0.00	--	--	--	--	--	--	--	--	--	--
3/8/05	h,i	**Off**	**Off**	2802.42	0.00	0.72	0.00	--	--	--	--	--	--	--	--	--	--
4/5/05	i	**Off**	**Off**	2802.42	0.00	0.70	0.00	--	--	--	--	--	--	--	--	--	--
5/4/05	j	**Off**	On	2802.49	0.00	0.69	0.00	14	11	16	12	20	27	25	29	25	31
6/2/05	k	On	On	3407.97	1.00	0.69	5.45	35	25	**Off**	40	41	36	35	34	27	25
7/7/05	k,l,m	On	On	4067.42	1.29	0.71	5.94	31	23	**Off**	30	**Off**	26	32	28	25	**Off**
8/26/05	n	On	On	4665.98	0.81	0.72	5.39	13	13	**Off**	14	**Off**	13	12	12	13	**Off**
9/23/05	o	On	On	4947.97	0.69	0.71	2.54	16	15	**Off**	**Off**	**Off**	16	16	16	16	**Off**
10/23/05	p	On	On	5264.28	0.72	0.71	2.85	16	16	**Off**	**Off**	**Off**	16	16	16	16	**Off**
11/11/05	q,r	On	**Off**	0.90	--	0.71	--	--	--	**--**	**--**	**--**	--	--	--	--	**--**
11/15/05	s	**Off**	On	0.90	0.00	0.71	0.00	35	16	16	22	23	18	23	23	23	24
12/6/05	t	**Off**	On	2.49	0.00	0.70	0.01	22	20	19	24	24	22	26	23	24	25
1/4/06	u	**Off**	On	6	0.01	0.69	0.03	20	20	18	17	23	20	25	19	22	20
1/18/06	u	**Off**	On	203	0.67	0.69	1.77	22	19	19	20	19	18	21	22	22	23
2/1/06	v	**Off**	On	316	0.38	0.68	1.02	20	20	18	22	22	18	23	23	22	25
2/15/06	v	**Off**	On	344	0.10	0.68	0.25	20	19	18	17	19	20	23	19	22	20
3/1/06	v	**Off**	On	417	0.25	0.67	0.66	21	20	19	19	21	17	24	23	21	21

Table 1
Ozone Injection - System Operation Data
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California

		OZONE SPARGE SYSTEM						SP-A	SP-BS	SP-BD	SP-C	SP-DS	SP-DD	SP-E	SP-F	SP-G	SP-H
		System Status (On/Off)		Hourmeter	Period Online	Cumulative	Ozone Injected	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure
Date	Notes	Arrival	Departure	Reading	Factor	Online Factor	(lbs)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
3/16/06	u	**Off**	On	501	0.27	0.67	0.76	20	19	18	17	19	20	23	20	22	20
3/29/06	u	**Off**	On	560	0.22	0.67	0.53	20	20	19	19	20	21	25	21	22	21
4/16/06	u	**Off**	On	624	0.17	0.66	0.58	20	19	18	17	19	20	23	20	23	21
4/25/06	u	**Off**	On	718	0.50	0.66	0.85	20	20	19	18	20	22	24	21	22	20
5/9/06	u	**Off**	On	776	0.20	0.65	0.52	20	19	19	17	19	21	22	20	22	20
5/23/06	u	**Off**	On	834	0.20	0.65	0.52	19	20	18	18	20	20	23	20	23	21
6/6/06	u	**Off**	On	1,042	0.71	0.65	1.87	20	19	18	17	19	20	23	20	22	20
6/20/06	w	**Off**	On	1,206	0.56	0.65	1.48	19	20	18	18	19	20	25	21	23	21
7/7/06	x	**Off**	**Off**	1,313	0.30	0.65	0.96	--	--	**--**	**--**	**--**	--	--	--	--	**--**
7/28/06	y	**Off**	On	1,313	0.00	0.64	0.00	19	17	16	19	24	17	22	19	21	23
8/15/06	u	**Off**	On	1,616	0.80	0.64	2.73	19	17	17	16	19	19	23	19	21	21
8/29/06	u	**Off**	On	1,801	0.63	0.64	1.67	19	19	17	17	21	18	21	19	22	23
9/12/06	u	**Off**	On	2,022	0.75	0.64	1.99	23	19	17	16	19	19	25	19	22	21
9/22/06	u	**Off**	On	2,204	0.87	0.64	1.64	21	21	19	20	23	21	26	23	25	27
10/4/06	u	**Off**	On	2,313	0.43	0.64	0.98	18	18	17	18	18	18	25	23	22	21
10/18/06	u	**Off**	On	2,401	0.30	0.64	0.79	20	19	17	16	18	19	20	20	21	27
10/31/06	w	**Off**	On	2,516	0.42	0.63	1.04	22	20	19	20	19	19	23	21	25	23
11/14/06	u	**Off**	On	2,636	0.41	0.63	1.08	18	18	17	17	18	18	22	24	22	24
11/28/06	u	**Off**	On	2,744	0.37	0.63	0.97	20	20	19	20	22	21	25	25	22	23
12/14/06	u	**Off**	On	2,801	0.17	0.63	0.51	19	19	18	18	19	19	22	22	23	22
12/26/06	u	**Off**	On	2,906	0.42	0.62	0.95	20	20	19	20	21	20	25	25	20	24
1/15/07	u	**Off**	On	2,983	0.18	0.62	0.69	19	20	18	18	19	19	22	23	22	22
1/29/07	v	**Off**	On	3,076	0.32	0.62	0.84	20	20	19	20	20	20	24	21	23	24
2/6/07	u	**Off**	On	3,156	0.48	0.62	0.72	19	20	18	17	19	19	21	24	21	23
2/21/07	u	**Off**	On	3,303	0.47	0.62	1.32	20	21	20	20	18	21	23	21	25	23
3/5/07	u	**Off**	On	3,378	0.30	0.61	0.68	19	20	18	18	18	20	21	23	22	22
3/19/07	u	**Off**	On	3,476	0.33	0.61	0.88	20	21	20	19	18	21	23	24	23	24
4/4/07	u	**Off**	On	3,515	0.12	0.61	0.35	19	20	18	17	18	19	21	21	21	22
4/18/07	u	**Off**	On	3,606	0.31	0.60	0.82	21	21	20	20	18	21	24	24	24	23
5/10/07	u	**Off**	On	3,676	0.15	0.60	0.63	19	20	19	17	18	19	20	23	20	21
5/25/07	u	**Off**	On	3,758	0.26	0.60	0.74	22	21	20	19	19	21	22	22	22	23
6/4/07	u	**Off**	On	3,801	0.18	0.59	0.39	18	20	18	18	17	19	19	20	21	20
6/18/07		On	On	4,137	1.00	0.60	3.02	20	20	19	19	19	20	22	22	20	22
7/2/07		On	On	4,373	0.70	0.60	2.12	15	21	19	18	20	19	24	21	21	23
7/16/07		On	On	4,409	0.11	0.59	0.32	18	20	20	19	21	20	26	23	22	25
8/8/07		On	On	4,961	1.00	0.60	4.97	13	20	20	18	20	18	29	22	20	24
8/27/07		On	On	5,411	0.99	0.60	4.05	14	21	19	20	21	19	30	20	21	21
9/13/07		On	On	5,822	1.00	0.61	3.70	22	21	21	23	21	22	30	20	21	21
9/27/07		On	On	6,155	0.99	0.61	3.00	28	25	25	27	25	26	32	21	26	25
10/29/07		On	On	6,917	0.99	0.62	6.86	28	25	24	25	33	32	32	21	30	30
11/26/07		On	On	7,591	1.00	0.62	6.07	26	22	24	25	31	30	32	22	30	30
12/31/07		On	On	8,425	0.99	0.63	7.51	26	20	24	24	30	32	32	30	28	30
1/28/08		On	On	9,103	1.01	0.63	6.10	26	21	22	21	26	30	28	26	27	27
2/25/08		On	On	9,778	1.00	0.64	6.08	23	19	22	20	25	30	30	28	27	28

Table 1
Ozone Injection - System Operation Data
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California

		OZONE SPARGE SYSTEM						SP-A	SP-BS	SP-BD	SP-C	SP-DS	SP-DD	SP-E	SP-F	SP-G	SP-H
		System Status (On/Off)		Hourmeter	Period Online	Cumulative	Ozone Injected	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure
Date	Notes	Arrival	Departure	Reading	Factor	Online Factor	(lbs)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
3/24/08		On	On	10,475	1.00	0.64	6.27	25	20	21	20	24	30	28	27	26	27
4/28/08		On	On	11,317	1.00	0.65	7.58	24	22	20	22	22	30	29	24	26	26
5/26/08		On	On	11,992	1.00	0.65	6.08	23	20	22	22	23	30	30	25	27	28
6/30/08		On	On	12,828	1.00	0.66	7.52	25	22	21	23	22	31	29	26	27	26
7/28/08		On	On	13,498	1.00	0.66	6.03	22	26	24	28	23	30	22	27	29	21
8/25/08		On	On	14,261	1.00	0.66	6.87	18	15	25	14	19	22	23	25	24	20
9/29/08		On	On	15,100	1.00	0.67	7.55	20	14	15	16	18	28	28	20	19	22
10/27/08	z	On	On	15,358	0.38	0.67	2.32	20	16	16	17	20	28	28	18	19	21
11/24/08		On	On	16,028	1.00	0.67	6.03	20	15	15	15	18	25	25	18	16	20
12/29/08		On	On	16,869	1.00	0.67	7.57	20	15	17	16	20	24	22	19	14	20
1/26/09		On	On	17,542	1.00	0.68	6.06	22	17	16	16	21	25	20	18	15	22
2/23/09		On	On	18,214	1.00	0.68	6.05	21	18	19	18	20	23	21	19	16	20
3/30/09		On	On	19,005	0.94	0.69	7.12	20	19	17	17	22	22	21	18	16	21
4/27/09		On	On	19,727	1.00	0.69	6.50	21	21	18	18	21	22	20	19	18	20
5/25/09		On	On	20,400	1.00	0.69	6.06	22	20	17	16	20	21	21	20	19	19
6/22/09		On	On	21,072	1.00	0.70	6.05	20	20	17	18	17	20	21	19	20	20
7/27/09		On	On	21,912	1.00	0.70	7.56	22	21	18	19	16	22	22	21	19	18
8/3/09		On	Off	22,080	1.00	0.70	1.51	21	20	20	21	18	21	20	20	21	19
11/4/09		Off	On	22,080	0.00	0.68	0.00	20	19	19	20	17	20	19	18	19	17
12/30/09		On	On	23,424	1.00	0.68	12.10	23	21	21	23	20	22	23	21	22	21
1/27/10		On	On	24,096	1.00	0.69	6.05	21	20	20	22	21	24	23	20	24	23
2/24/10		On	On	24,767	1.00	0.69	6.04	22	24	22	21	22	25	24	21	26	24
3/30/10		On	On	25,607	1.00	0.69	7.56	20	21	22	23	19	23	22	22	25	23
4/27/10		On	On	26,280	1.00	0.70	6.06	21	22	21	22	20	21	20	20	24	21
5/25/10		On	On	26,953	1.00	0.70	6.06	22	24	23	21	21	22	21	22	23	22
6/29/10		On	On	27,795	1.00	0.70	7.58	24	21	22	24	22	20	21	22	24	23
7/27/10		On	On	28,467	1.00	0.71	6.05	21	18	20	22	20	17	19	18	21	20
8/31/10		On	On	29,308	1.00	0.71	7.57	12	18	24	15	13	14	16	10	17	8
9/28/10		On	On	29,980	1.00	0.71	6.05	11	18	15	19	20	17	23	16	15	20
10/26/10		On	On	30,652	1.00	0.71	6.05	9	18	18	20	21	17	21	10	19	17
11/30/10		On	On	31,492	1.00	0.72	7.56	13	22	19	18	28	20	19	15	17	19
12/28/10		On	On	32,163	1.00	0.72	6.04	14	19	18	18	26	21	20	18	18	18
1/25/11		On	On	32,834	1.00	0.72	6.04	18	17	15	21	24	17	19	21	20	15
2/22/11		On	On	33,506	1.00	0.72	6.05	20	21	18	25	21	23	28	25	22	20
3/29/11		On	On	34,342	1.00	0.73	7.52	19	20	18	22	23	22	25	24	23	20
4/26/11		On	On	35,012	1.00	0.73	6.03	22	21	19	20	21	21	23	24	23	22
5/31/11		On	On	35,851	1.00	0.73	7.55	20	20	20	21	20	20	21	22	21	21
6/28/11		On	On	36,523	1.00	0.73	6.05	21	22	21	19	20	22	19	20	23	20
7/26/11		On	On	37,196	1.00	0.74	6.06	19	20	20	21	18	20	16	22	21	22
8/30/11		On	On	38,034	1.00	0.74	7.54	25	31	26	-	30	34	27	28	22	24
							(6/23/2003-present) Sparge time per cycle (min)	7	7	7	7	7	7	7	7	7	7
							Number of Cycles per Day	20	20	20	20	20	20	20	20	20	20

Reporting Period: Third Quarter 2011 (06/01/2011 to 08/31/2011)
Total Hours Operational: 46,111
Total Pounds Ozone Injected: 415
Period Hours Operational: 2183
Period Percent Operational: 100%
Period Pounds Ozone Injected: 20

Table 1
Ozone Injection - System Operation Data
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California

Definitions:

psi	Pounds per square inch
--	Data not available
NA	Not applicable
lbs	Pounds

Notes:

	Hour Meter Formula adjusted 12/19/07
	June 4, 2007 - Control Panel retrofit installed.
	August 3, 2009 - Ozone down by request of COP PM
	November 4, 2009 - System restarted
	System cycles through program 18 times per day, for 53% utilization
a	Troubleshooting time counter
b	Hourmeter replaced
c	Solenoid 8 has high pressure, taken offline
d	Solenoid 3 leaking, taken off line
e	Pressures not properly recorded
f	Ozone generator hose ruptured on effluent side to solenoid manifold. No Readings.
g	System down due to bad GFI
h	New GFI was installed.
i	Fan in compressor broken and tubing from compressor to manifold needs to be replaced. System left off until repairs made.
j	Installed new motor fan and manifold fittings, restarted system.
k	OZ-3 turned off due to high pressure of over 60 psi.
l	OZ-5 too brittle. Left off until lines are replaced.
m	OZ-10 turned off due to leak in secondary containment
n	Hourmeter reading not correct, will check next visit
o	Hourmeter not working properly.
p	Pressure gauge stuck at 16 psi.
q	New hourmeter, panel fan, and GFCI installed
r	Fuse blown in ozone generator, system left off
s	Replaced tubing to all wells and replaced ozone generator circuit board and pressure gauge
t	System down due to tripped GFI; foam on door may have been pressing reset button. Foam removed.
u	Ozone sensor tripped; system restarted.
v	Rainbird meter malfunction.
w	System down time due to tripped GFI; system restarted.
x	System off due to bad compressor.
y	Compressor repaired; system restarted.
z	September 10-27,2008 - System down for well repair.

Table 2
Ozone Injection - Groundwater Monitoring Data
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California

		Monitoring Well: MW-1								Monitoring Well: MW-7							
Date	Notes	ORP (mV)	DO (mg/l)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (total) (µg/L)	MtBE (µg/L)	ORP (mV)	DO (mg/l)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (total) (µg/L)	MtBE (µg/L)
4/16/03	a	NM	NM	510	57	0.62	29	61	160	NM	NM	<25,000	<250	<250	<250	<500	37,000
6/23/03	a	NM	NM	75	<0.50	<0.50	<0.50	5.3	12	NM	NM	20,000	260	<0.50	<0.50	<1.0	20,000
8/29/03	a	NM	NM	11,000	64	<10	330	1,400	440	NM	NM	<10,000	<100	<100	<100	<200	24,000
9/18/03		NM	NM	390	2.3	<0.50	3.6	31	30	NM	NM	--	--	--	--	--	--
10/16/03		NM	NM	2,100	6.0	<0.50	24.0	120	110	NM	NM	--	--	--	--	--	--
11/17/03		NM	NM	130	0.51	<0.50	2.1	7.9	43	NM	NM	16,000	<130	<130	<130	<250	17,000
12/5/03		NM	NM	<50	<0.50	<0.50	<0.50	<1.0	36	NM	NM	12,000	<100	<100	<100	<200	19,000
1/16/04	b	NM	NM	<50	<0.50	<0.50	<0.50	<1.0	<2.0	NM	NM	17,000	160	270	<130	<250	19,000
2/3/04		238	NM	<50	<0.50	<0.50	<0.50	<1.0	<2.0	72	NM	10,000	<25	<25	<25	<50	15,000
3/24/04	b	169	NM	**55**	<0.50	<0.50	**0.80**	**2.9**	**7.8**	56	NM	**13,000**	<100	<100	<100	<200	**15,000**
4/14/04	b	0.4	NM	**23,000**	**310**	**10**	**590**	**2400**	**1700**	42	NM	**9,000**	<50	<50	<50	<100	**11,000**
5/11/04		c	NM	**7,800**	**160**	<10	**170**	**700**	**720**	-3	NM	**8,300**	<50	<50	<50	<100	**11,000**
6/14/04		20	5.25	**110**	<0.50	<0.50	**1.0**	**6.4**	**3.4**	35	1.45	<5,000	<50	<50	<50	<100	**6,500**
7/26/04		NM	NM	<50	<0.50	<0.50	<0.50	<1.0	**3.2**	NM	NM	<5,000	<50	<50	<50	<100	**3,100**
8/12/04		171	0.07	<50	<0.50	<0.50	<0.50	<1.0	**0.80**	117	0.06	**2,100**	<10	<10	<10	<20	**2,700**
9/10/04		180	0.08	<50	<0.50	<0.50	<0.50	<1.0	**5.7**	122	0.07	**3,100**	<13	<13	<13	<25	**4,400**
10/5/04		175	0.09	<50	<0.50	<0.50	<0.50	<1.0	<0.50	117	0.08	<50	<0.50	<0.50	<0.50	<1.0	**7.1**
11/5/04	d	117	0.05	<50	<0.50	<0.50	<0.50	<1.0	**0.89**	210	0.06	**50**	<0.50	<0.50	<0.50	<1.0	**1.1**
12/2/04		109	0.03	**83**	**0.83**	<0.50	<0.50	**1.2**	**44**	214	0.03	**180**	**1.6**	<0.50	**66**	**4.5**	**51**
1/13/05		105	0.04	**1,100**	**26**	**1.2**	**2.10**	**70**	**630**	201	0.05	**1,000**	**25**	**1**	**1.9**	**68**	**460**
2/25/05	c,f	--	2.67	**24,000**	**350**	**10**	**820**	**2,200**	**1,300**	21	2.05	**680**	<2.0	<2.0	**2.3**	**58**	**2,500**
3/8/05	g	-35	4.43	**23,000**	**410**	<10	**1,100**	**2,300**	**1,300**	NR	NR	--	--	--	--	--	--
4/5/05		-30	4.56	**34,000**	**300**	<10	**910**	**2,000**	**1,100**	135	6.53	<5,000	<.50	<.50	<.50	<1.00	**19,000**
5/4/05		-59	2.40	**26,000**	**220**	**7.4**	**790**	**2,100**	**860**	-24	1.13	<2,000	<0.50	<0.50	<0.50	<1.0	**7,100**
6/2/05		-20	7.34	<50	<0.50	<0.50	<0.50	<1.0	**3.5**	-12	1.01	**3500**	<0.50	<0.50	<0.50	<1.0	**4,000**
7/7/05	i,j	142	7.42	<50	<0.50	<0.50	<0.50	<1.0	**0.61**	154	1.40	**5000**	<0.50	<0.50	<0.50	<1.0	**8,900**
9/23/05		16	7.77	<50	<0.50	<0.50	<0.50	<1.0	<0.50	56	1.39	<500	<5.0	<5.0	<5.0	<10	**1,900**
10/23/05		154	7.13	<50	<0.50	<0.50	<0.50	<1.0	**0.56**	191	1.59	<250	<2.5	<2.5	<2.5	<5	**680**
11/1/05	k	--	--	--	--	--	--	--	**--**	--	--	--	--	--	--	--	**--**
12/20/05		--	--	**10000**	**17**	**29**	**180**	**840**	**2400**	--	--	**1100**	**0.90**	<0.50	**24**	**37**	**8200**
3/10/06		--	--	**10000**	**35**	<0.50	**470**	**1300**	**960**	--	--	**1200**	**24**	<0.50	**3.6**	<1.0	**4700**
6/23/06		--	--	**11000**	**110**	<0.50	**610**	**1600**	**780**	--	--	**1800**	**21**	<0.50	<0.50	<1.0	**1500**
9/27/06		--	--	**8500**	**22**	<0.50	**270**	**740**	**460**	--	--	<2,000	<0.50	<0.50	<0.50	<1.0	**350**
12/22/06		--	--	**7300**	**35**	<0.50	**370**	**850**	**210**	--	--	**24000**	<0.50	<0.50	<0.50	<1.0	**190**
3/23/07		--	--	**8800**	**28**	<0.50	**440**	**910**	**170**	--	--	**85**	<0.50	<0.50	<0.50	<1.0	**92**
6/26/07		--	--	**6300**	**16**	<0.50	**300**	**650**	**50**	--	--	--	--	--	--	--	**--**
9/28/07		--	--	<50	<0.50	<0.50	<0.50	<1.0	**1.2**	--	--	50	<0.50	<0.50	<0.50	<1.0	**37**
12/17/07		--	--	**4700**	<0.50	<0.50	**71**	**160**	**18**	--	--	--	--	--	--	--	**--**
3/25/08		--	--	**7400**	**28**	<0.50	**430**	**540**	**170**	--	--	<50	<0.50	<0.50	<0.50	<1.0	**7.3**
6/12/08		--	--	**4900**	**6.4**	<0.50	**170**	**280**	**16**	--	--	**52**	<0.50	<0.50	<0.50	<1.0	**9.4**
9/25/08		--	--	**2200**	**2.1**	<0.50	**72**	**110**	**11**	--	--	**65**	<0.50	<0.50	<0.50	<1.0	**5.6**
12/30/08		--	--	**3200**	**2.5**	<0.50	**100**	**150**	**8.3**	--	--	**130**	<0.50	<0.50	<0.50	**1.1**	**5.7**
3/24/09		--	--	**3500**	**6.8**	<0.50	**140**	**140**	**28**	--	--	**98**	**0.50**	<0.50	<0.50	<1.0	**9.2**
6/23/09		--	--	**740**	<0.50	<0.50	**17**	**12**	**8**	--	--	**290**	**1.2**	<0.50	<0.50	<1.0	**6.7**
12/16/09		--	--	**4600**	**10**	<0.50	**270**	**140**	**52**	--	--	**150**	<0.50	<0.50	<0.50	<1.0	**3.7**
4/14/10		54	1.88	**1500**	**5**	<1.00	**100**	**36**	**20**	110	0.97	**60**	<0.50	<0.50	<0.50	<1.0	**2.1**
10/13/10		--	--	**4600**	**3**	<0.50	**180**	**73**	**6**	--	--	<50	<0.50	<0.50	<0.50	<1.0	**3.6**
5/27/11				**1500**	**3**	<2.50	**86**	**14**	**10**			<50	<0.50	<0.50	<0.50	<1.0	**5.2**

Definitions:

TPHg = Total petroleum hydrocarbons as gasoline
MtBE = Methyl tert-butyl ether
µg/L = Micrograms per liter

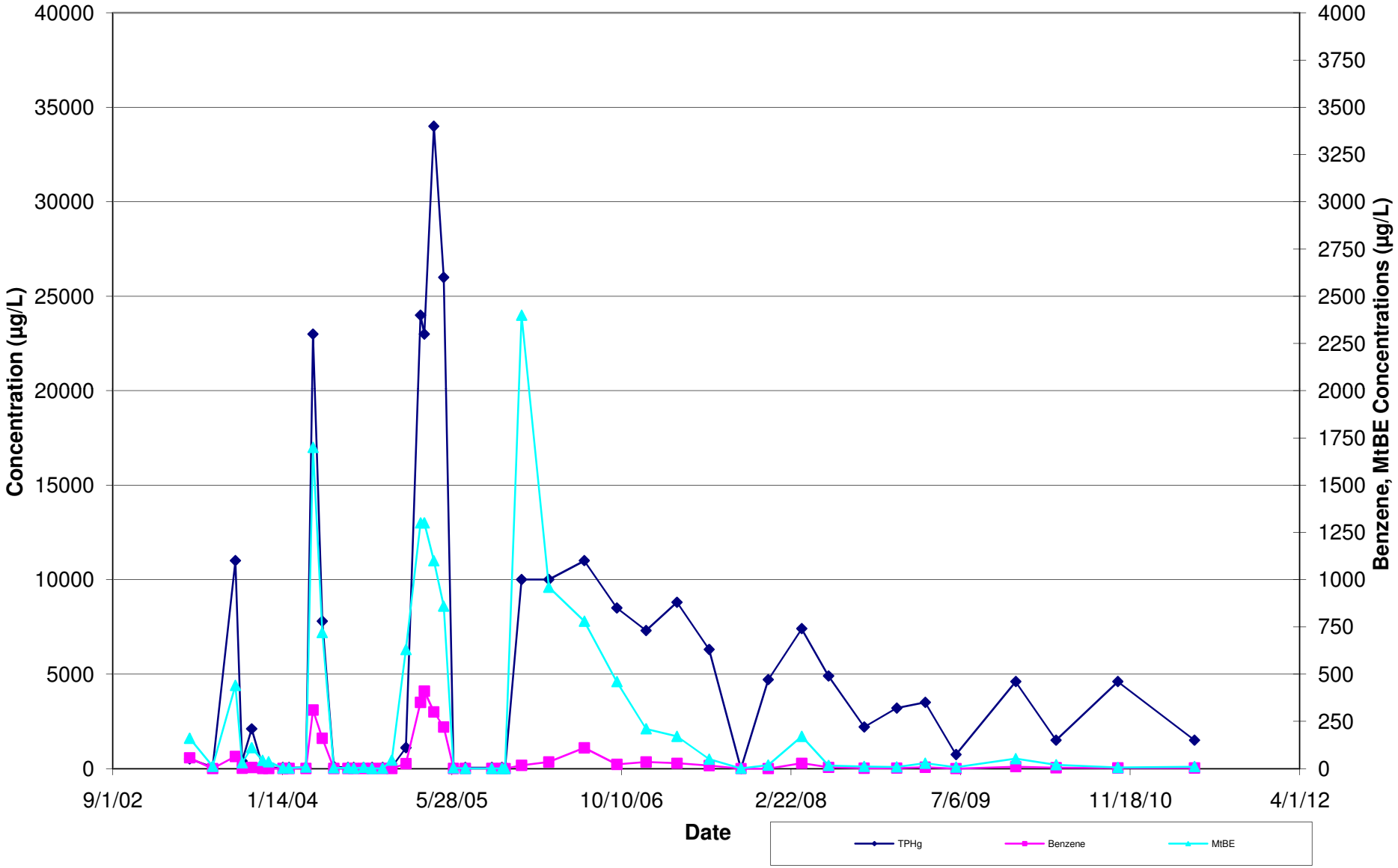
ORP = Oxidation Reduction Potential
DO = Dissolved Oxygen
mV = Millivolts
mg/l = Milligrams per liter

Notes:

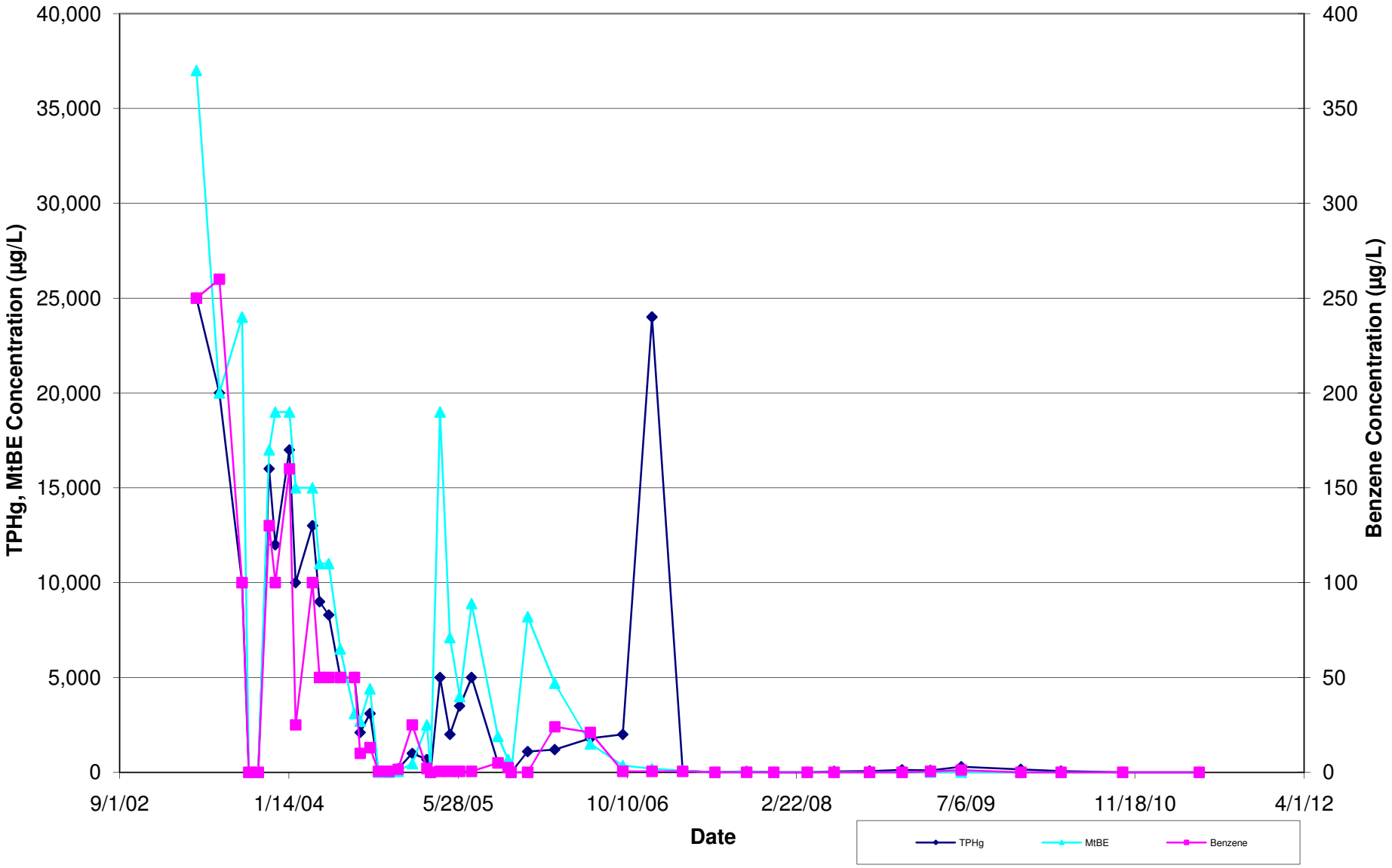
--	Data not available
NM	Not Measured
a	Sampled by Gettler-Ryan, Inc.
b	Hydrocarbon in gasoline range does not match laboratory gasoline standard.
c	ORP reading under the range
d	Quantity of unknown hydrocarbon(s) in sample based on gasoline.
e	Data not available at time of reporting
f	MW-7 Estimated value of MtBE; concentration exceeded the calibration of analysis
g	Car parked on MW-7.
h	Data not available at time of reporting
i	Siloxane peaks were found in the sample which are not believed to be gasoline related. If they were to be quantified as gasoline, the concentration would be 58 ug/L. (MW-1).
j	The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern. (MW-1)
k	Monthly sampling discontinued at the request of ConocoPhillips

Graphs

Graph 1
MW-1 TPHg, Benzene, and MtBE Groundwater Concentrations
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California



Graph 2
MW-7 TPHg, Benzene, and MtBE Groundwater Concentrations
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California



Appendix A
Field Notes

Ozone Injection System Data Sheet

Station No.: **1871**

City: **Oakland**

Date	Notes	Status ON/OFF	Cycles/ Day	Hour Meter	Well I.D. 02-1				Well I.D. 02-2				Well I.D. 02-3			
					Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)
26 June 11		on/un	20	36523	21		7		22		7		21		7	
26 July 11		on/un	20	37196	19		7		20		7		20		7	
30 Aug 11		on/un	20	38034	25		7		31		7		26		7	

Date	Well I.D. 02-4				Well I.D. 02-5				Well I.D. 02-6				Well I.D. 02-7			
	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)
26 June 11	19		7		20		7		22		7		19		7	
26 July 11	21		7		18		7		20		7		16		7	
30 Aug 11	—		NR		30		7		34		7		27		7	

Date	Well I.D. 02-8				Well I.D. 02-9				Well I.D. 02-10				Well I.D.			
	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)	Pressure (psi)	Temp. (°F)	Run Time (min)	Flow Rate (acfm)
26 June 11	20		7		20		7		20		7					
26 July 11	22		7		21		7		22		7					
30 Aug 11	26		7		22		7		24		7					

Ozone System Maintenance and Inspection Log

Date	Check/ Repair Leaks	Check Hoses Fittings & Pipes	Check Air Filter (Document Date Replaced)	Check & Test Safety Interlock	Check Sparge Blower V-Belt Tension & Conditions	Check Controller Program	Change Blower Oil	Sparge Blower Grease Bearings	Sparge Blower Repair/Replace	Comments
26 June 11	ok	ok	ok	ok	NR	ok	NR	NR	ok	02-4 off on 16 Aug 11
26 July 11	ok	ok	ok	ok	NR	ok	NR	NR	ok	Due to leaky Tubing
30 Aug 11	ok	ok	ok	ok	NR	ok	NR	NR	ok	

Notes: A = System down-breaker thrown B = Compressor Overload. C = Ozone sensor Tripped. D = Temp. sensor tripped.