



Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 1257
San Ramon, California 94583
Phone: (925) 275-3801
Fax: (925) 275-3815

15 June 2009

Re: Response to Request for Site Conceptual Model and Soil & Water Investigation Work Plan
Atlantic Richfield Company (a BP affiliated company) Station #276
10600 MacArthur Boulevard
Oakland, California
ACEH Case #RO0002565

RECEIVED

1:24 pm, Jun 16, 2009

Alameda County
Environmental Health



"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Submitted by:

Paul Supple
Environmental Business Manager

15 June 2009

Project No. 06-88-601

Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583
Submitted via ENFOS

Attn.: Mr. Paul Supple

Re: Response To Request For Site Conceptual Model and Soil and Water Investigation Work Plan, Atlantic Richfield Company Station No.276, 10600 MacArthur Boulevard, Oakland, Alameda County, California; ACEH Case No.RO0002565.

Dear Mr. Supple:

Provided herein is a response to the Alameda County Environmental Health (ACEH) directive letter dated 16 April 2009. In this letter, ACEH requested the preparation of a site conceptual model and soil and water investigation work plan for Atlantic Richfield Company Station No. 276 located at 10600 MacArthur Boulevard, Oakland, California (Site). A copy of the ACEH letter is attached. Technical comments are addressed, in turn, in the following sections.

Soil and Ground-Water Characterization

In the ACEH directive letter, concerns were expressed regarding concentrations of gasoline range organics (GRO) in well MW-2 (460 µg/L) and Methyl tert-butyl ether (MTBE) in well MW-8 (260 µg/L) observed during the Fourth Quarter of 2008. ACEH stated that “based on the locations of the monitoring wells in relation to the calculated ground-water flow direction, it appears that the ground-water contaminant plume is undefined in the down-gradient direction.”

Since the Fourth Quarter 2008 sampling event, ground-water samples have been collected from wells MW-2 and MW-8 during the first and second quarters of 2009. GRO were detected at concentrations of 200 µg/L on 20 January 2009 and 74 µg/L on 21 April 2009 in well MW-2. MTBE was detected at concentrations of 35 µg/L on 20 January 2009 and 48 µg/L on 21 April 2009 in well MW-8. As evident from the most recent ground-water sampling event, GRO and MTBE concentrations within wells MW-2 and MW-8, respectively, have decreased significantly since Fourth Quarter 2008. Attached figures 1-6 depict concentrations of GRO, benzene, and MTBE and ground-water elevations versus time for wells MW-2, MW-4, MW-5, MW-6, MW-7, and MW-8. It should be noted that non-detect concentrations are plotted on the graphs as half of the

laboratory reporting limit. Following a review of Figures 1 and 5, it appears that concentrations within wells MW-2 and MW-8 have decreased by an order of magnitude since monitoring activities began in 2003. Based on these observations, further characterization of ground water in the down-gradient direction does not appear warranted due to low concentrations and the overall declining trends observed within wells MW-2 and MW-8.

Site Conceptual Model

Preparation of a site conceptual model (SCM) in order to further assist in “identifying or developing site cleanup objectives and goals” was requested within the 16 April 2009 letter from ACEH. At this time, completion of a SCM does not appear to be warranted based on current concentrations and contaminant trends. Further discussion regarding the technical comment suggesting the development of a SCM is provided below.

Contaminant concentrations observed on-site have steadily decreased since ground-water monitoring/sampling began in December 2000 (See Figures 1-6). This downward trend appears to suggest that natural attenuation is occurring on-site. The main constituents present within the ground-water at the Site include GRO and MTBE. Recent laboratory analytical results from samples collected in wells associated with the Site indicate that the majority of the contaminant concentrations are below the Environmental Screening Levels (ESLs) established by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB). A summary table with the concentration range of GRO, benzene, and MTBE observed at the Site over the last year and the ESLs for each constituent is provided below.

Constituent of Concern	Concentration Range – 8/12/2008 – 4/21/2009 (µg/L)	ESL (µg/L)
GRO	<50 – 4,700	210
Benzene	<0.50 – 3.5	46
MTBE	<0.50 – 310	1,800

µg/L = micrograms per liter

Concentrations of benzene and MTBE associated with the Site have not exceeded their respective ESLs during the past four quarters of ground-water monitoring and sampling. GRO concentrations associated with the Site have exceeded the ESL within wells MW-2 (460 µg/L – 10/21/2008), MW-6 (250 µg/L – 8/12/2009 and 240 µg/L – 1/20/2009) and MW-7 (2,300 µg/L – 8/12/2008 and 4,700 µg/L – 1/20/2009). Historic detected concentrations of GRO within wells MW-6 and MW-7 have been qualified in past laboratory analytical reports. Samples collected from wells MW-6 and MW-7 and analyzed for GRO during the first quarter of 2008 were qualified by the laboratory with the following statement: “The hydrocarbon pattern in the sample does not match that of the gasoline standard used to calculate results. The values reported for these samples are

in part due to the tetrachloroethene peak that falls within the GRO (C6-C12) window.” GRO concentrations detected within well MW-6 have also been qualified by the analytical laboratories during the first quarter 2009 and the first and third quarters of 2007 stating “quantitation of unknown hydrocarbon(s) in sample based on gasoline” and “hydrocarbon results partly due to individual peak(s) in quantitation range,” respectively. It appears that the elevated concentrations of GRO may be attributed to the presence of PCE. Observed GRO, benzene, and MTBE concentrations within the remaining wells associated with the Site have been below the established ESLs for ground water that is not a current or potential source of drinking water since 12 August 2008.

The ACEH letter also states that the presence of tetrachloroethylene (PCE) within on-site wells could suggest that a completed exposure pathway may exist due to volatilization to indoor air. The contaminant plume of PCE beneath the Site and conduct of a vapor intrusion assessment are not the responsibility of Atlantic Richfield Company (ARCO). It has been documented that the former Young Cleaners (Geotracker ID SL 18344764 and ACEH Case RO0002580) located within the Foothill Square Shopping Center at 10700 MacArthur Boulevard, immediately southeast of Station No. 276, is the responsible party for the PCE contaminant plume. The former truck manufacturing plant located to the southeast of the Site could also have contributed to the PCE contamination. The highest observed PCE concentrations associated with Station No. 276 have been detected within wells MW-5, located along the southeastern boundary of the Site, and MW-6, located off-site to the east-southeast on the Foothill Square Shopping Center property. A PCE iso-concentration contour map containing data from First Quarter 2009 is provided as Drawing 1. This map suggests that the PCE present at the Site is due to migration from an off-site source to the southeast. Consequently, it is requested that a vapor intrusion assessment near the station building be performed by the former Young’s Cleaners and/or the former truck manufacturing plant responsible parties.

A site conceptual model and vapor intrusion assessment conducted by Atlantic Richfield Company do not appear to be necessary based on the decreasing concentration trends observed within ground-water monitoring wells associated with the Site, detected concentrations below ESLs in a majority of the wells, and the apparent off-site PCE source. At this time, monitored natural attenuation is the most appropriate remedial method at the Site for the petroleum hydrocarbon contaminants.

Should you have any questions or concerns, please do not hesitate to contact me at (530) 566-1400.

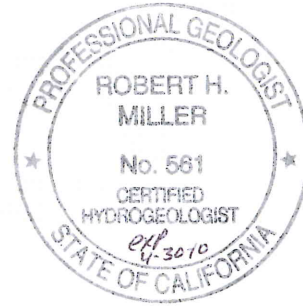
Sincerely,
BROADBENT & ASSOCIATES, INC.



Jason Duda.
Project Scientist



Robert H. Miller, P.G., C.HG.
Principal Hydrogeologist



Attachments:

ACEH Letter dated 16 April 2009

Figure 1: MW-2 Concentrations and Ground-Water Elevations vs. Time

Figure 2: MW-4 Concentrations and Ground-Water Elevations vs. Time

Figure 3: MW-5 Concentrations and Ground-Water Elevations vs. Time

Figure 4: MW-6 Concentrations and Ground-Water Elevations vs. Time

Figure 5: MW-7 Concentrations and Ground-Water Elevations vs. Time

Figure 6: MW-8 Concentrations and Ground-Water Elevations vs. Time

Drawing 1: PCE Iso-Concentration Contours Map, 20 January 2009

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp Site)
Electronic copy uploaded to GeoTracker

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

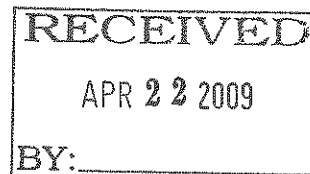
DAVID J. KEARS, Agency Director



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

April 16, 2009

Paul Supple
Atlantic Richfield Company
(A BP Affiliated Company)
P.O. Box 1257
San Ramon, CA 94583



Subject: Fuel Leak Case No. RO0002565 and GeoTracker Global ID T0600108312, ARCO
#0276, 10600 MacArthur Boulevard, Oakland, CA 94605

Dear Mr. Supple:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the recently submitted document entitled, "Fourth Quarter 2008 Ground-Water Monitoring Report," dated January 23, 2009, which was prepared by Broadbent & Associates, Inc. (BAI) for the subject site. The report details the most recent groundwater sampling event conducted at the site. Groundwater Sample analytical results detected maximum TPH-g, benzene, MTBE and PCE concentrations at 460 µg/L, <5.0 µg/L, 260 µg/L, and 520 µg/L, respectively.

ACEH requests that you address the following technical comments and send us the technical work plan and reports requested below.

TECHNICAL COMMENTS

1. **Soil and Groundwater Characterization** – During the most recent groundwater sampling event conducted on October 21, 2008, TPH-g was detected as high as 460 µg/L in a groundwater sample collected from monitoring well MW-2 and MTBE was detected as high as 260 µg/L in a groundwater sampling collected from monitoring well MW-8. Based on the locations of the monitoring wells in relation to the calculated groundwater flow direction, it appears that the groundwater contaminant plume is undefined in the down-gradient direction. Please justify that the groundwater contaminant plume is defined or submit a scope of work to address the above-mentioned concerns by the date specified below.
2. **Site Conceptual Model** – At this juncture, it may be advantageous to develop a site conceptual model (SCM), which synthesizes all the analytical data and evaluates all potential exposure pathways and potential receptors that may exist at the site, including identifying or developing site cleanup objectives and goals. At a minimum, the SCM should include:
 - (1) Local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.) extent of contamination, direction and rate of groundwater flow, potential preferential pathways, and locations of receptors;

(2) Geologic cross section maps that illustrate subsurface features, man-made conduits, and lateral and vertical extent of contamination;

(3) Plots of chemical concentrations versus time;

(4) Plots of chemical concentrations versus distance from the source;

(5) Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor); and

(6) Well logs, boring logs, and well survey maps;

(7) Discussion of likely contaminant fate and transport.

Based on the groundwater analytical data, it appears that contaminant volatilization to indoor air from PCE exposure may be a completed exposure pathway and hence, may be a data gap that needs to be addressed. If additional data gaps (i.e. post remediation confirmation sampling, etc.) are identified in the SCM, please include a proposed scope of work to address those data gaps in the work plan due by the date specified below. Once all data gaps have been addressed, the site may qualify for case closure consideration.

NOTIFICATION OF FIELDWORK ACTIVITIES

Please schedule and complete the fieldwork activities by the date specified below and provide ACEH with at least three (3) business days notification prior to conducting the fieldwork.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Paresh Khatri), according to the following schedule:

- **June 15, 2009** – SCM & Soil and Water Investigation Work Plan
- **Due within 30 Days of Sampling** – Quarterly Monitoring Report (2nd Quarter 2009)
- **Due within 30 Days of Sampling** – Quarterly Monitoring Report (3rd Quarter 2009)
- **Due within 30 Days of Sampling** – Quarterly Monitoring Report (4th Quarter 2009)
- **Due within 30 Days of Sampling** – Quarterly Monitoring Report (1st Quarter 2010)

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.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml).

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

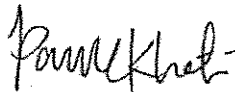
Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

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.

If you have any questions, please call me at (510) 777-2478 or send me an electronic mail message at paresh.khatri@acgov.org.

Sincerely,



Paresh C. Khatri
Hazardous Materials Specialist



Donna L. Drogos, PE
Supervising Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Tom Venus, Broadbent & Associates, 1324 Mangrove Avenue, Suite 212, Chico, CA 95926
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA
94612-2032
Donna Drogos, ACEH
Paresh Khatri, ACEH
GeoTracker
File

Figure 1
MW-2 Concentrations and Ground-Water Elevations vs. Time
Atlantic Richfield Company Station #276
10600 MacArthur Boulevard, Oakland, California

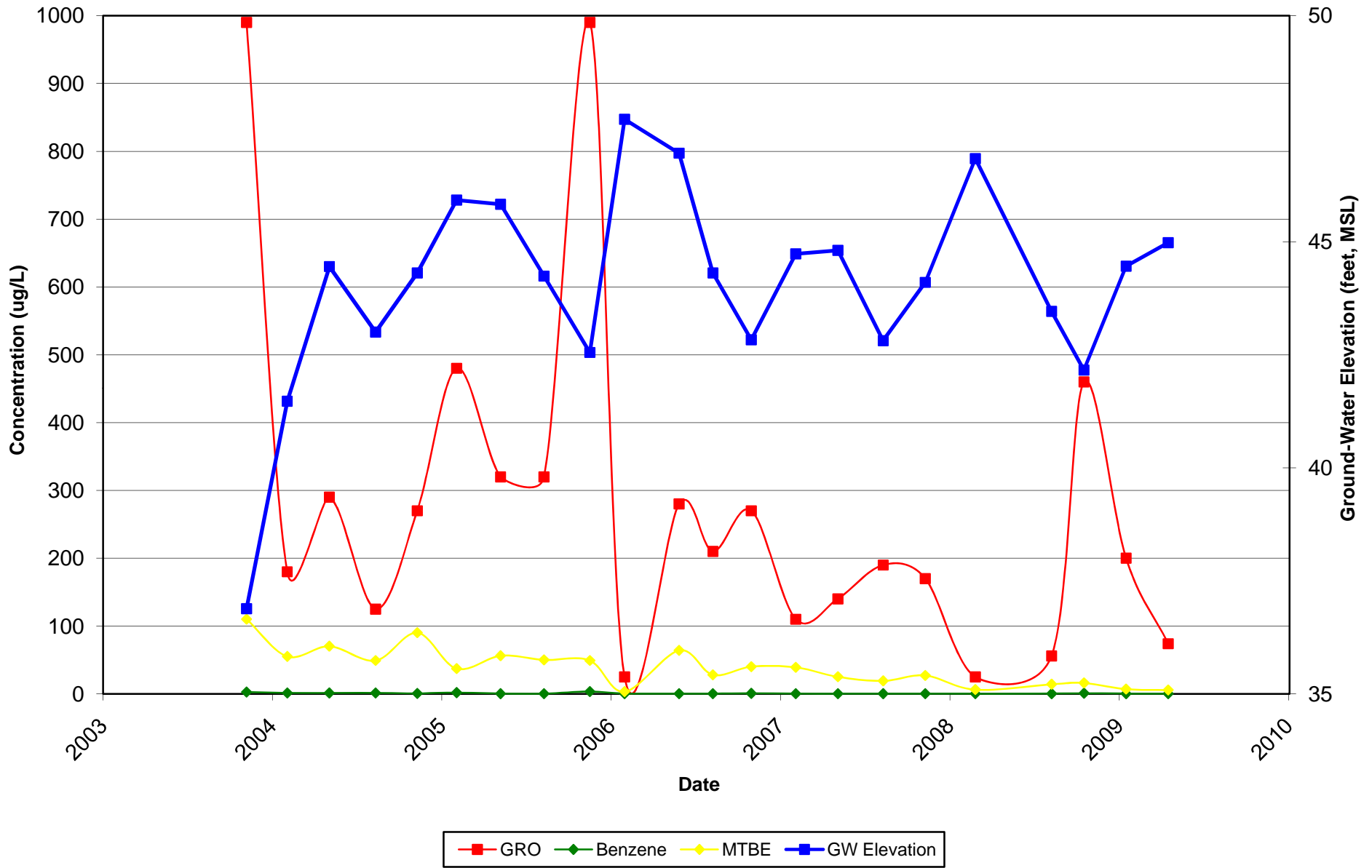


Figure 2
MW-4 Concentrations and Ground-Water Elevations vs. Time
Atlantic Richfield Company Station #276
10600 MacArthur Boulevard, Oakland, California

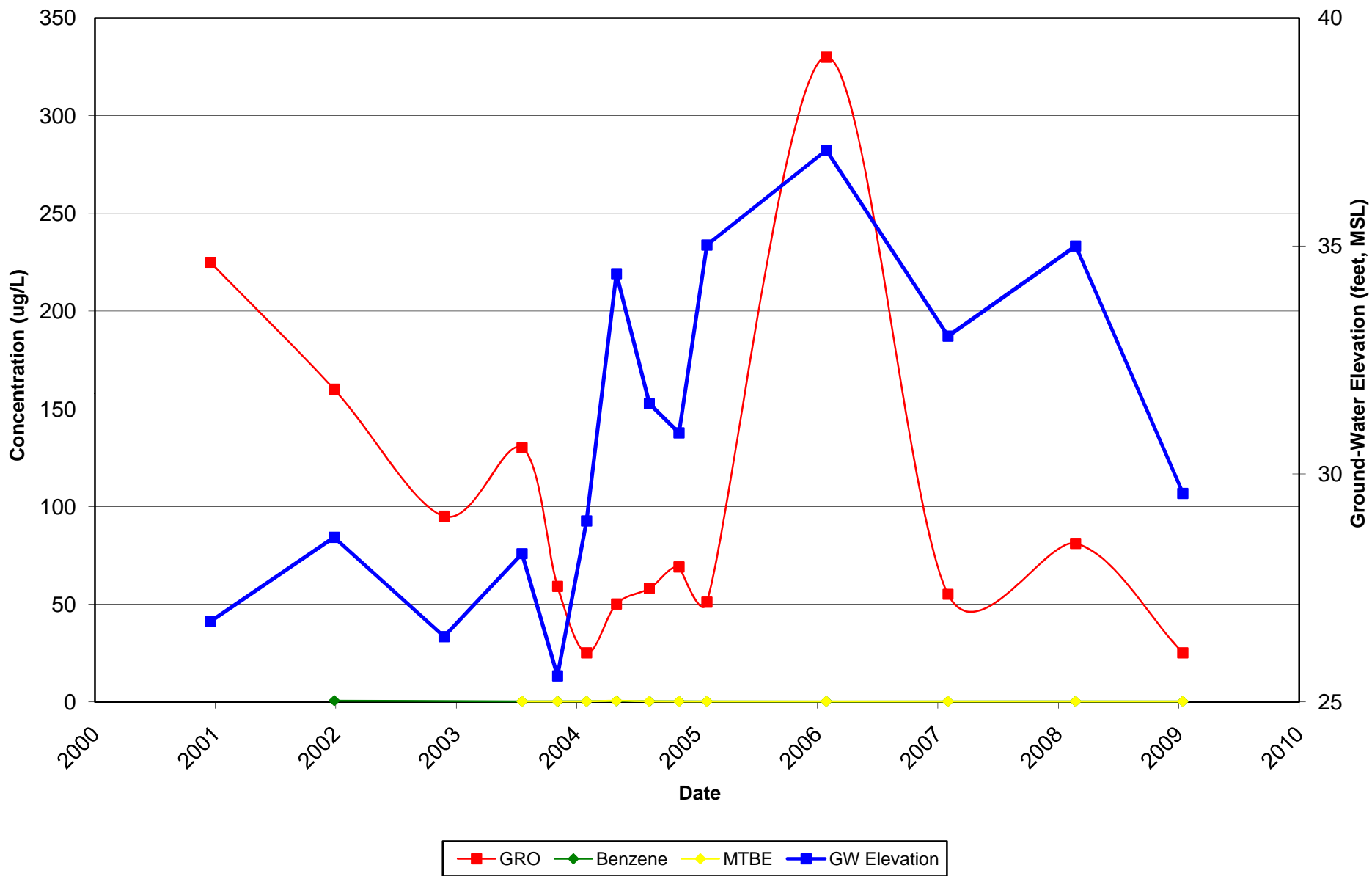


Figure 3
MW-5 Concentrations and Ground-Water Elevations vs. Time
Atlantic Richfield Company Station #276
10600 MacArthur Boulevard, Oakland, California

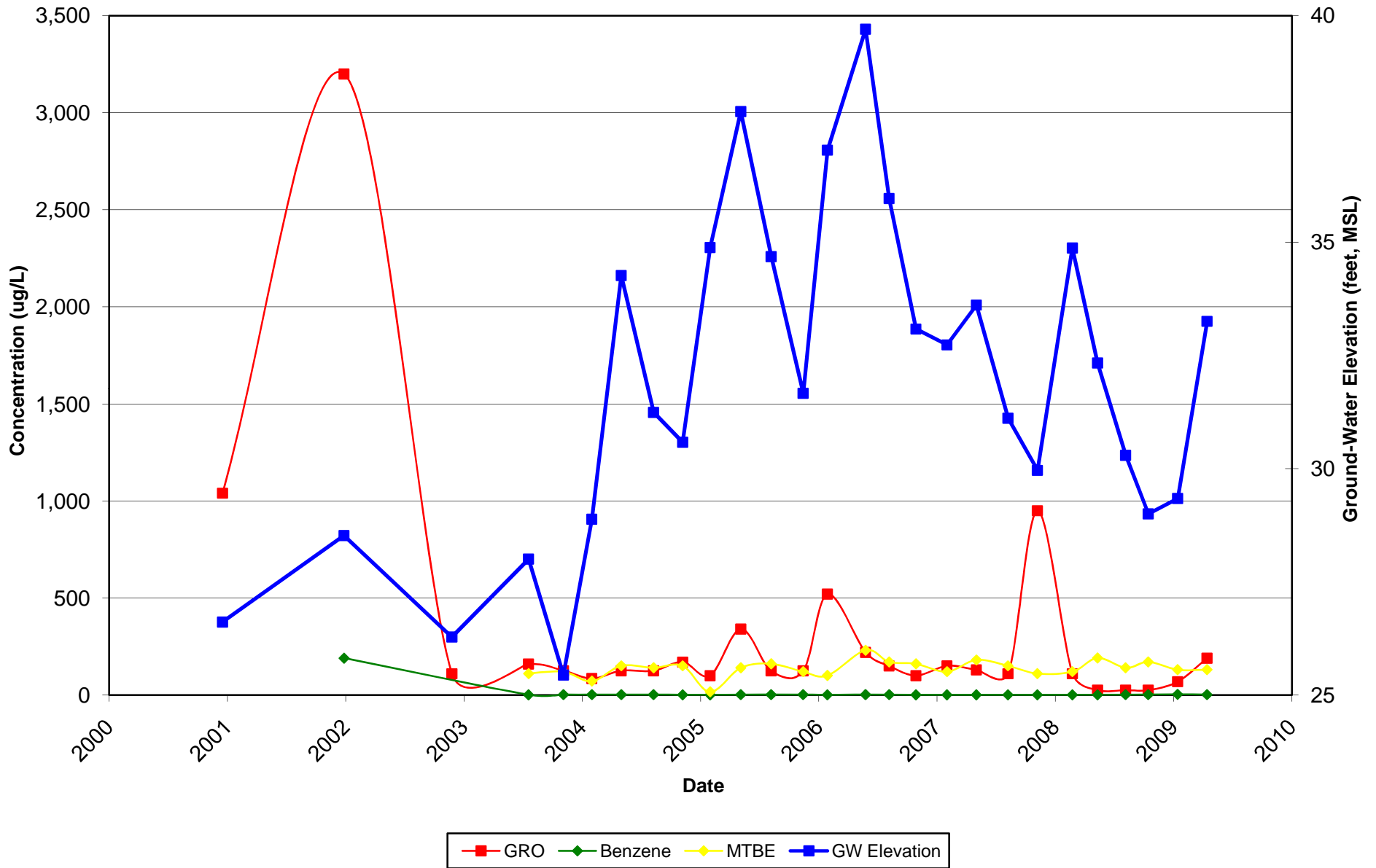


Figure 4
MW-6 Concentrations and Ground-Water Elevations vs. Time
Atlantic Richfield Company Station #276
10600 MacArthur Boulevard, Oakland, California

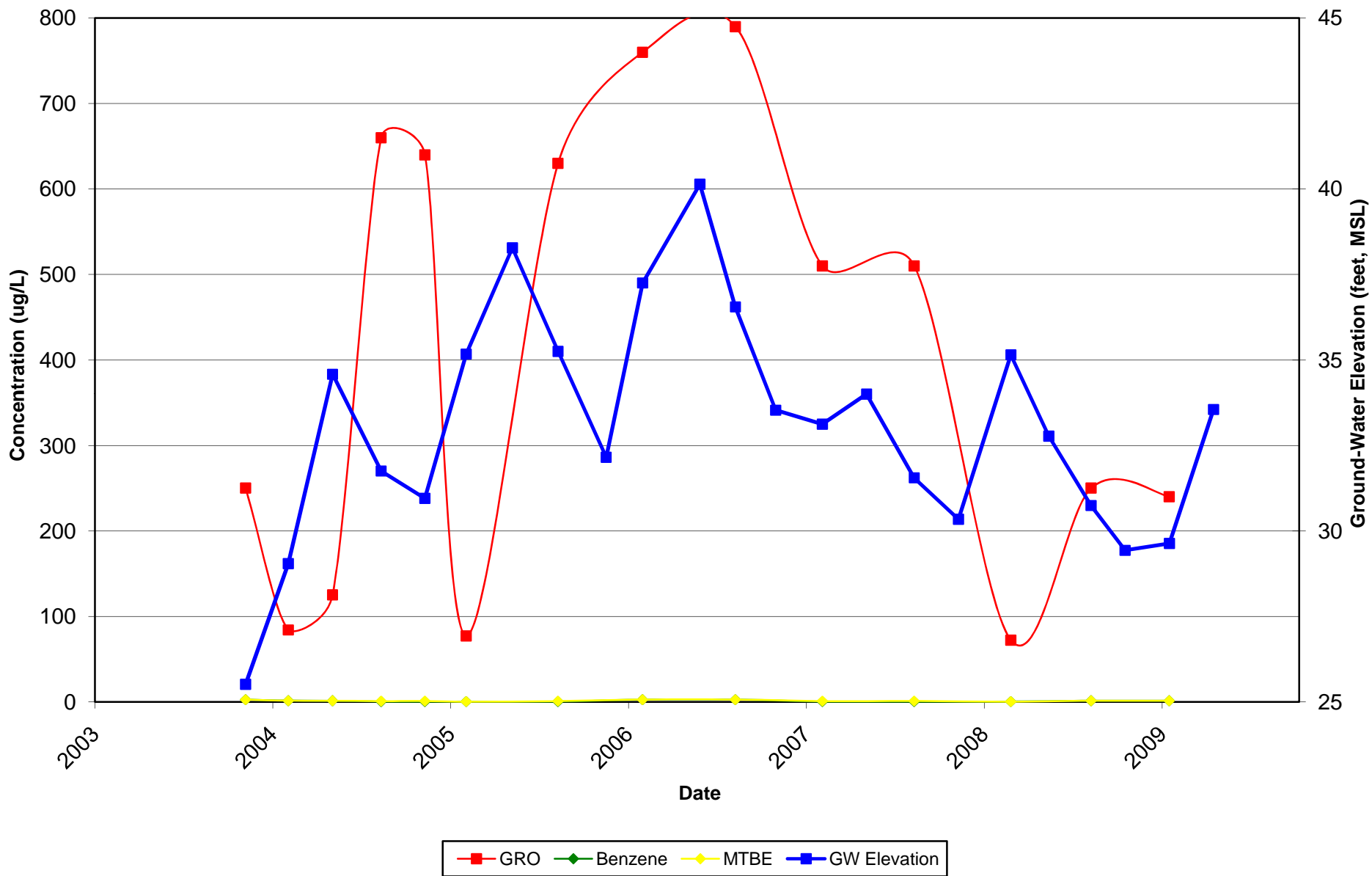


Figure 5
MW-7 Concentrations and Ground-Water Elevations vs. Time
Atlantic Richfield Company Station #276
10600 MacArthur Boulevard, Oakland, California

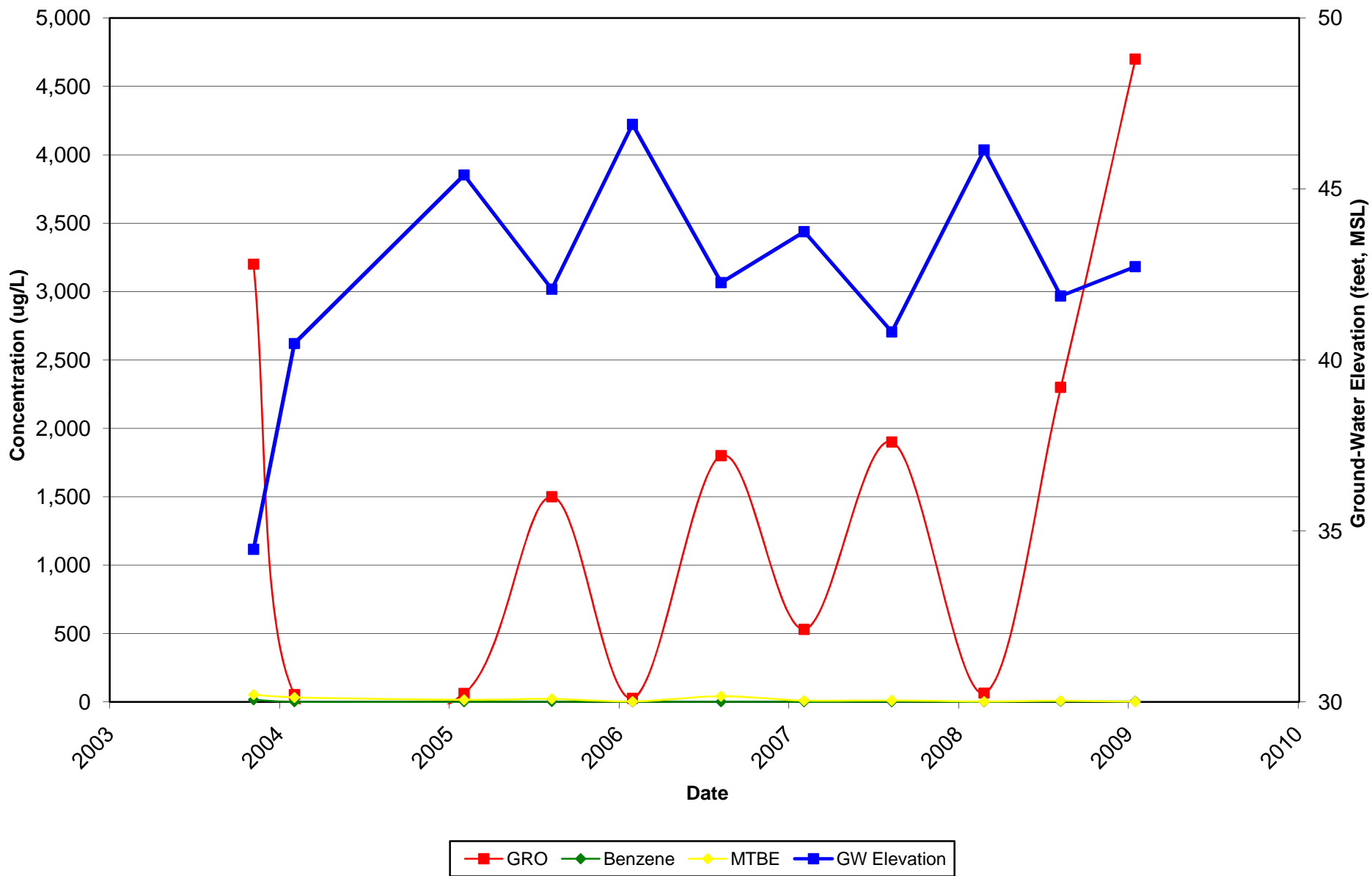
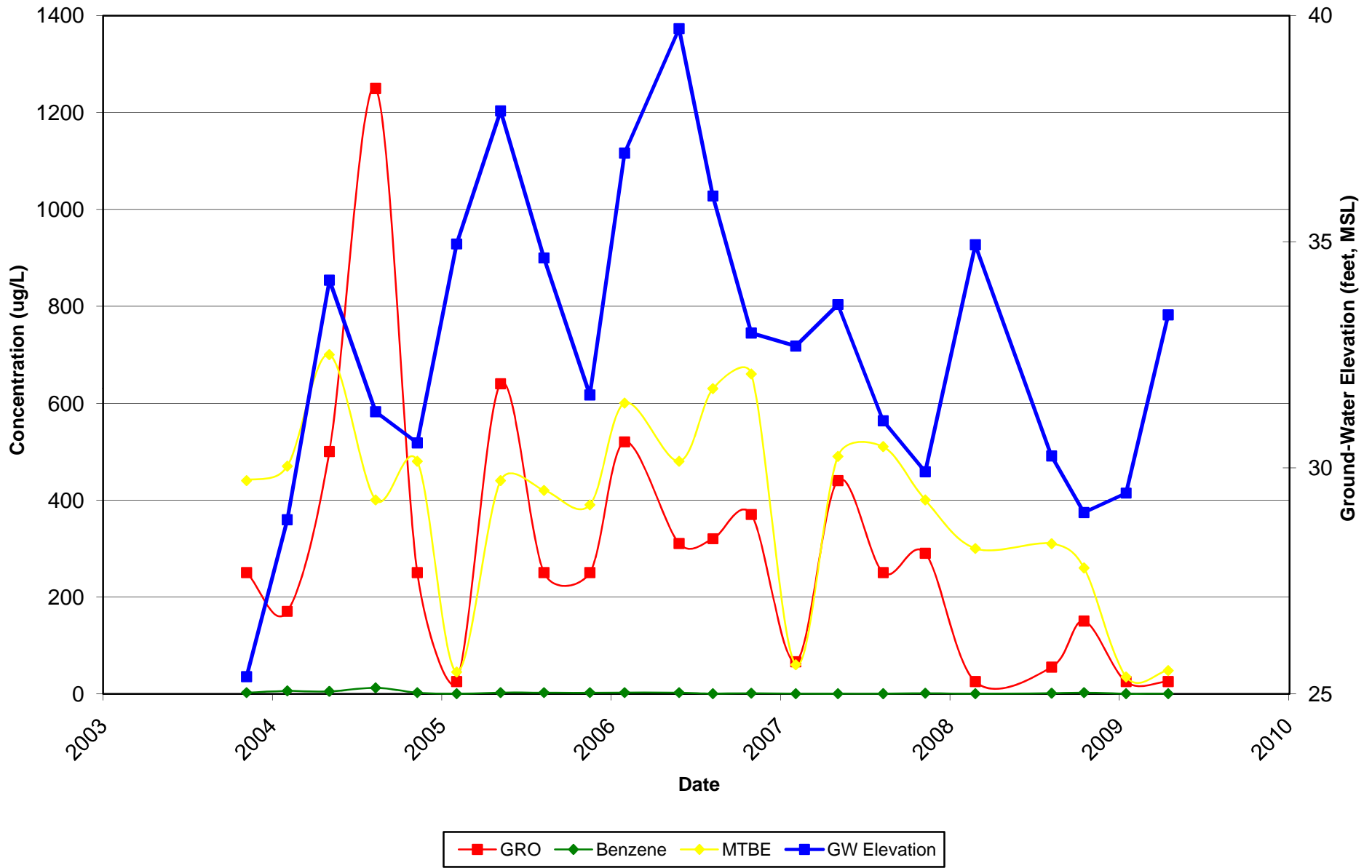
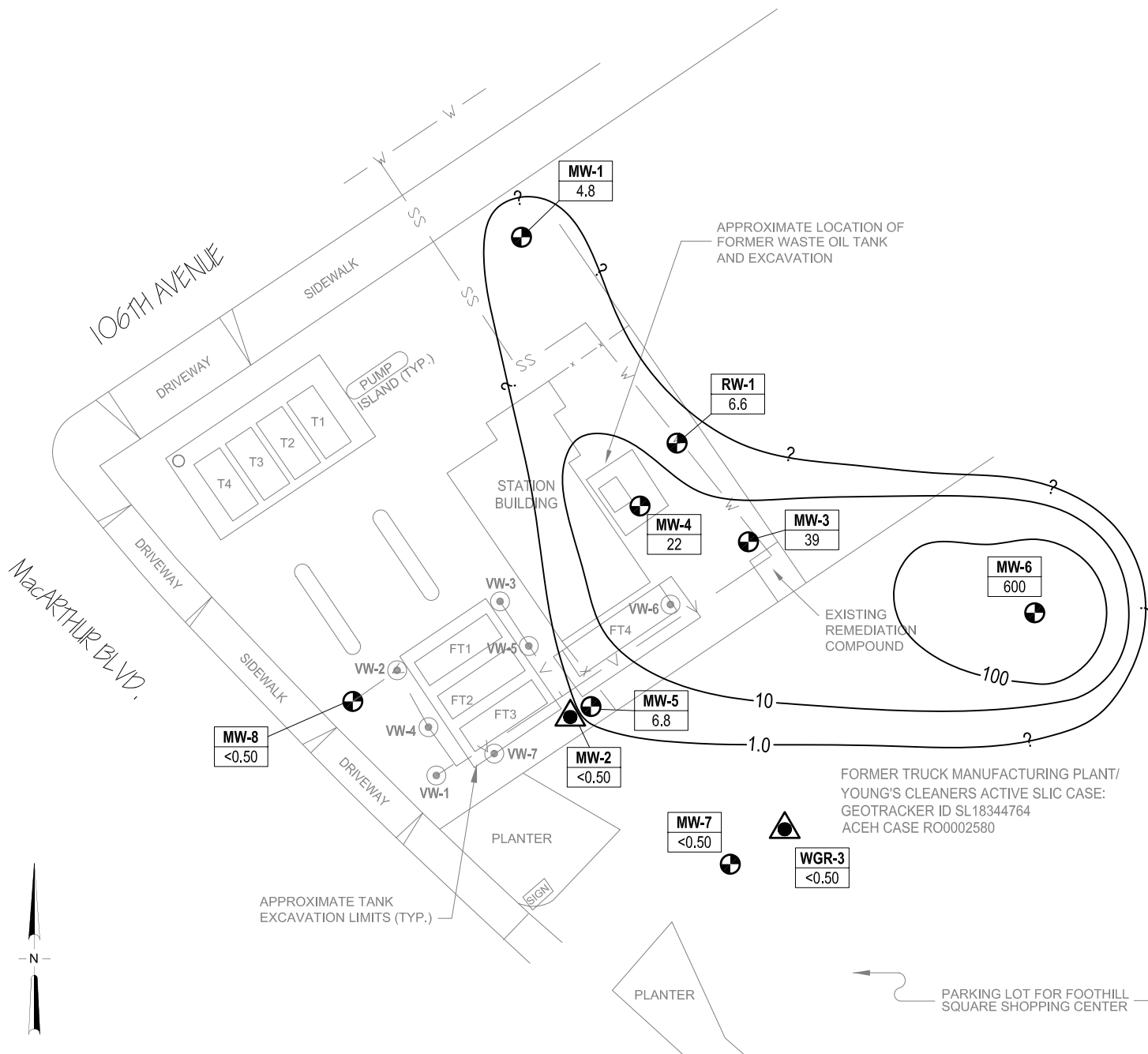


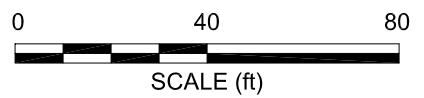
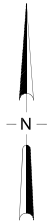
Figure 6
MW-8 Concentrations and Ground-Water Elevations vs. Time
Atlantic Richfield Company Station #276
10600 MacArthur Boulevard, Oakland, California





- LEGEND**
- TANK PIT WELL
 - ▲ SHALLOW MONITORING WELL
 - ⊕ MONITORING WELL
 - ⊙ VAPOR EXTRACTION WELL
 - 100 PCE ISOCONCENTRATION CONTOUR (µg/L)
 - Well** WELL DESIGNATION
 - PCE** PCE CONCENTRATIONS (µg/L)
 - < NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
 - ? CONTOURS WITHIN REGIONS NOT BOUNDED BY MONITORING POINTS. ALL CONTOURS DEPICTED ARE APPROXIMATE.
 - x- FENCE LINE
 - ss- SANITARY SEWER LINE
 - v- VAPOR LINE
 - w- WATER LINE

FORMER TRUCK MANUFACTURING PLANT/
 YOUNG'S CLEANERS ACTIVE SLIC CASE:
 GEOTRACKER ID SL18344764
 ACEH CASE RO0002580



BROADBENT & ASSOCIATES, INC.
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
 1324 Mangrove Ave. Suite 212, Chico, California
 Project No.: 06-88-601 Date: 6/11/09

Station #276
 10600 MacArthur Boulevard
 Oakland, California

PCE Iso-Concentration Contours Map
 20 January 2009