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CONESTOGA-ROVERS
& ASSOCIATES

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June 25, 2009

Reference No. 612094

Mr. Roger Nye
Washington Department of Ecology
Northwest Regional Office
3190 – 160th Ave. SE
Bellevue, WA 98008-5452

Re: Workplan for Downgradient Soil and Groundwater Assessment
Chevron Service Station #9-8795
16010 Redmond Way
Redmond, Washington
Ecology ID# 39354263

Dear Mr. Nye:

Conestoga-Rovers & Associates (CRA) has prepared this *Work Plan for Downgradient Soil and Groundwater Assessment* on behalf of Chevron Environmental Management Company (Chevron) for the advancement of two offsite soil borings for the site referenced above. The proposed work is in response to e-mail correspondence between Mark Adams of the Department of Ecology (DOE) and CRA on June 14, 2007 requesting additional investigation downgradient of the current underground storage tanks (USTs) to close remaining data gaps and determine if site conditions warrant a no further action determination. Mr. Adam's correspondence is included as Attachment A. Presented below are the site background, a summary of previous investigations, and CRA's proposed scope of work.

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SITE BACKGROUND

Site Description: The site is an active service station located on the northeast corner of Redmond Way and 160th Avenue Northeast in Redmond, Washington (Figure 1). Three gasoline USTs, one used oil tank, and an additional tank with unknown contents were installed at the site in 1964. The tanks were removed from the site in 1988 and replaced with three 10,000-gallon gasoline tanks. An additional 10,000-gallon gasoline tank was added in May of 1994. The current facility consists of a station building, four dispenser islands, and four 10,000-gallon gasoline USTs. Three USTs share a common excavation near the southwest corner of the site and the fourth UST runs adjacent to the western site boundary. The topography in the vicinity of the site is relatively flat at an approximate elevation of 35 feet above mean sea level (msl), although the regional topography generally slopes from east to west toward Sammamish River.

The site is located in a commercially zoned area. Locations of current site features are presented on Figure 2.

Site Geology and Hydrogeology: According to boring logs from previous investigations at the site the subsurface consists of well graded medium grained sand with gravels to the total explored depth of 21.5 feet below grade (fbg). The nearest surface water body to the site is the Samammish River, located approximately 1,500 feet west (downgradient) of the site.

Environmental investigation and remediation at the site have been ongoing since 2003. To date, four groundwater monitoring wells and ten remediation injection points have been completed at the site. A chronological summary of activities conducted to date is presented in Attachment B.

PROPOSED SCOPE OF WORK

CRA proposes to advance two additional offsite soil borings (GP-1 and GP-2) and collect groundwater grab samples to assess the hydrocarbon concentrations downgradient of the UST complex (Figure 2). Further details regarding CRA's proposed scope of work are presented below.

Site Access: CRA will have all necessary access documentation onsite during drilling operations. A minimum of one week written notification will be given to the property owners consultants (Farallon Consulting) before initiation of drilling activities.

Site Health and Safety Plan: CRA will prepare a site health and safety plan (HASP) to inform site workers of known hazards and to provide health and safety guidance. The plan will be reviewed and signed by all site workers and visitors and will be kept onsite during field activities. Per Division of Occupational Safety and Health (WSHA/OSHA) requirements, each contractor working at the site must prepare a HASP. This HASP can be used by the contractors for guidance. Each contractor is solely responsible for the health and safety of its own employees.

Underground Utility Location: CRA will notify Washington One Call of drilling activities and use a private line locator to identify potential underground utilities. Before drilling activities, each location will be hand augured or vacuum excavated to 8 fbg to check for underground utilities in the area.

Soil Borings: CRA proposes advancing two soil boring using a truck-mounted direct push drilling rig. After clearing to 8 fbg, the boring will be advanced to approximately 20 fbg. Soil

will be logged continuously and sampled at approximately 5-foot intervals. Once all desired samples have been collected, each boring will be filled with bentonite chips and hydrated and the surface will be replaced to match existing grade.

Sampling and Analysis Plan: A minimum of one soil and one groundwater sample will be collected from each soil boring and submitted to a Washington State Certified Laboratory under chain of custody.

Soil samples will be selected for chemical analyses based on field screening for hydrocarbon vapors using a photo-ionization detector (PID), and visual observation of soil characteristics such as discoloration, sample depth relative to the capillary fringe, and soil-texture considerations.

Groundwater samples will be collected from approximately three feet below first encountered groundwater utilizing a peristaltic pump with a flow rate of less than 500 milliliters per minute. Groundwater parameters such as temperature, conductivity and pH, will be tracked during the purging process.

Soil and groundwater samples will be submitted for laboratory analysis of:

- Total Petroleum Hydrocarbons as gasoline range organics (TPH-GRO) by Northwest EPA Method TPHGx
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260B
- Total Lead by EPA Method 6011

Soil and Water Disposal: All soil cuttings or waste water generated during soil boring activities will be temporarily stored in 55-gallon steel drums on the Chevron facility. Soil and water drums will be removed within 60 days of completion of sampling activities and transported to a Chevron-approved disposal facility.

REPORTING

After the work has been completed, CRA will prepare a report including:

- A description of field activities
- A figure illustrating the soil boring locations
- Boring logs of the soil borings
- Tabulated soil and groundwater analytical results

- Analytical reports and chain-of-custody forms
- A description of soil and groundwater disposal methods
- CRA's conclusions and recommendations

SCHEDULE AND CLOSING

CRA will carry out this scope of work upon receiving written approval from DOE that the proposed scope is appropriate for defining site conditions. CRA will submit a subsurface investigation report approximately six weeks after receiving laboratory data.

CRA appreciates the opportunity to work with you on this project. Please contact Laura Genin at 425-212-5114 if you have any questions or comments.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Laura Genin, LG 2724

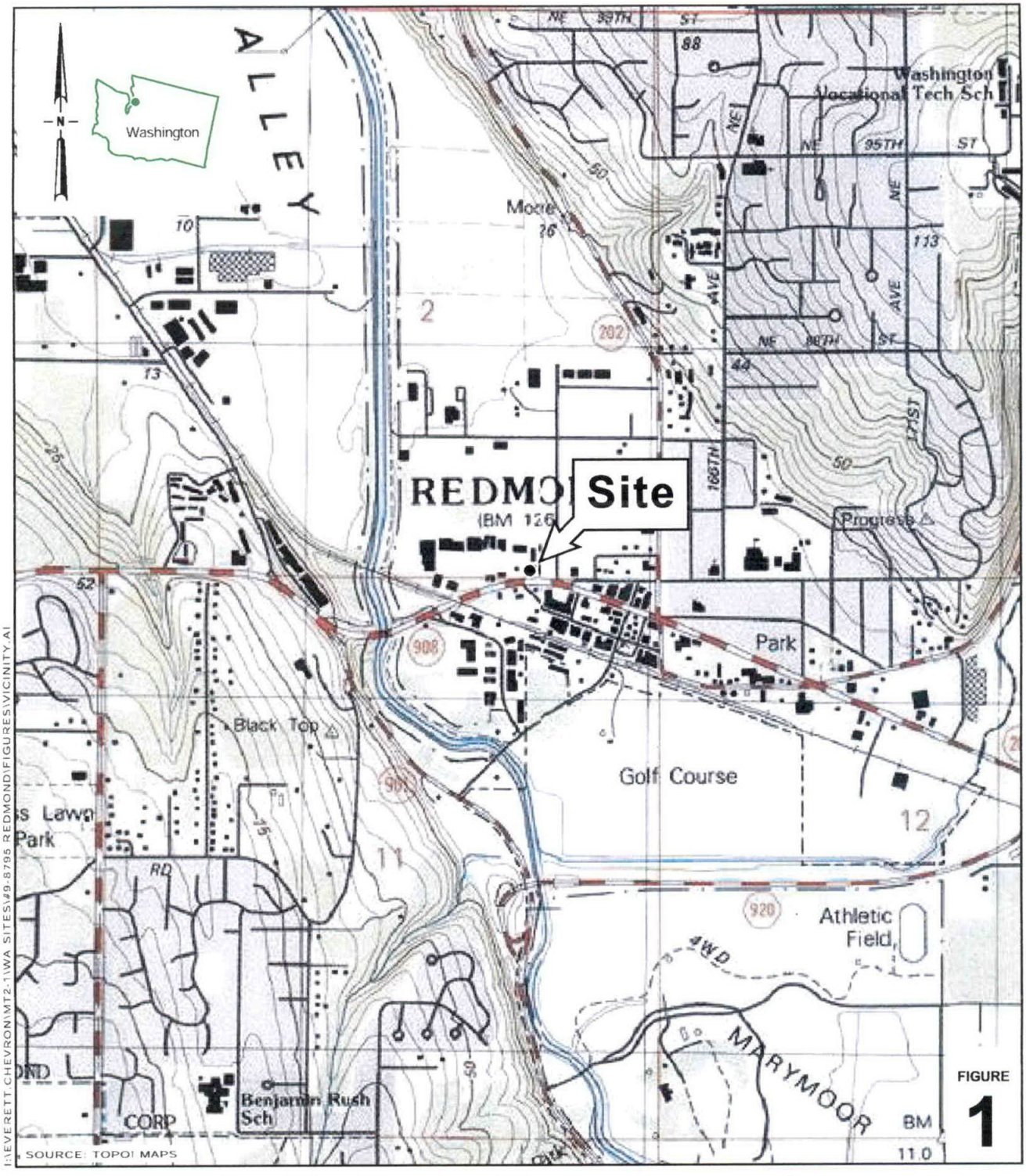
LG/cs/3
Encl.

Figure 1	Vicinity Map
Figure 2	Site Plan
Attachment A	Regulatory Correspondence
Attachment B	Summary of Previous Environmental Work

cc: Ms. Stacie Frerichs, Chevron Environmental Management Company

FIGURES

07/23/07



0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

FIGURE **1**

Chevron Service Station 9-8795

16010 Redmond Way

Redmond, Washington

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

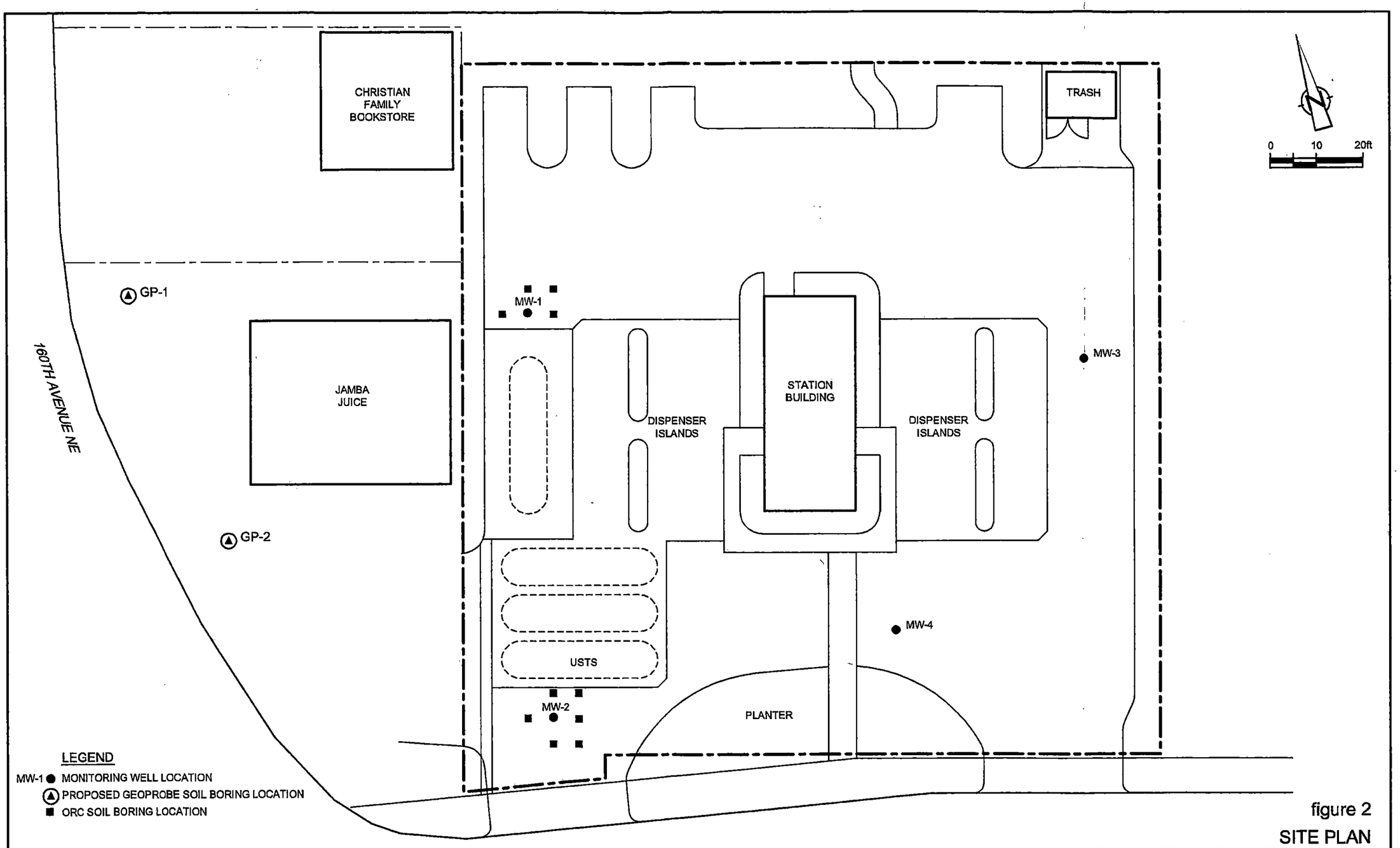


figure 2

SITE PLAN
CHEVRON SERVICE STATION 9-8795
16010 REDMOND WAY
Redmond, Washington

612094-201(PRES001)GN-WA001 FEB 29/2008

ATTACHMENT A

REGULATORY CORRESPONDENCE

From: Adams, Mark (ECY) [MADA461@ECY.WA.GOV]
Sent: Thursday, June 14, 2007 12:51 PM
To: Acklam, Nick
Subject: RE: Chevron Service Station 9#8795 16010 Redmond Way, Redmond, WA

Nick:

As I recall from my original look at this site a year or more ago, the issue was that there are no wells on the property downgradient of the most likely source of contamination - the UST nest. So another well downgradient of MW-2 would be fine, and perhaps even shed some additional light on the situation, but it would not address the main issue.

Mark

From: Acklam, Nick [mailto:nacklam@craworld.com]
Sent: Tuesday, June 12, 2007 2:57 PM
To: Adams, Mark (ECY)
Subject: RE: Chevron Service Station 9#8795 16010 Redmond Way, Redmond, WA

Hello Mark,

I was able to meet with the owner of the Jamba Juice located adjacent and downgradient to the Chevron Service Station 9-8795 located at 16010 Redmond Way, Redmond, WA. He has not signed an access agreement, but he seemed like he would be willing to after his environmental team looks over our historical data and reports. I wanted to know if you felt that one monitoring well located immediately downgradient of MW-2 would be sufficient to characterize possible ongoing/historical benzene releases in the area of MW-2. I had a utility locater locate the sidewalk along 106th, but there are far to many utilities put a monitoring well in the sidewalk. I would like to thank you for your ongoing help on this project.

Nicholas M. Acklam
Conestoga-Rovers & Associates (CRA)
8620 Holly Drive, Suite 210
Everett, Washington 98208
P. (425)212-5103
F. (425)212-5199
C. (425)325-6365

From: Adams, Mark (ECY) [mailto:MADA461@ECY.WA.GOV]
Sent: Thursday, January 18, 2007 9:01 AM
To: Acklam, Nick
Subject: FW: Chevron Service Station 9#8795 Redmond, WA

Nick:

Haven't the benzene levels typically risen above the CUL during one or more quarters each year for the past several years? If so it would be difficult to issue an NFA. As far as what else might be done, I'm not sure. There seems to be an ongoing benzene source near and/or upgradient of MW-2. The source could be from historical releases or perhaps an ongoing release. Maybe part of the paving at the station is cracked, and small gas spills by people filling their cars are getting in the cracks. In any case, the source needs to be found and fixed.

On the downgradient monitoring points, have you tried to get access to the street right-of-way west of Jamba? Might require night or weekend drilling to avoid traffic.

Mark

From: Acklam, Nick [mailto:nacklam@cambria-env.com]
Sent: Tuesday, December 19, 2006 2:47 PM
To: Adams, Mark (ECY)
Subject: RE: Chevron Service Station 9#8795 Redmond, WA
Hello Mr. Adams,

What I was wondering is that if I am unable to obtain an off site access agreement what further actions can we take to obtain a NFA? I feel that the site is pretty clean, with only total lead detected above MTCA in MW-1. Dissolved lead was detected at:

MW-1 .13 ppb

MW-2 .12 ppb

MW-3 .16 ppb

MW-4 .16 ppb

Thank you very much; I look forward to your reply.

Nick

From: Adams, Mark (ECY) [mailto:MADA461@ECY.WA.GOV]
Sent: Tuesday, December 19, 2006 2:06 PM
To: Acklam, Nick
Subject: RE: Chevron Service Station 9#8795 Redmond, WA

Nick:

Thank you for the information. What sort of reply were you looking for?

Regards, Mark

From: Acklam, Nick [mailto:nacklam@cambria-env.com]
Sent: Tue 12/19/2006 1:46 PM
To: Adams, Mark (ECY)
Subject: Chevron Service Station 9#8795 Redmond, WA
Hello Mr. Mark Adams,

On August 1st, 2006 at 8:30, Justin Foslien of Cambria Environmental meet with you to discuss site activities since corresponding with Ecology in March 2006 at Chevron Service Station 9#8795 Redmond, WA. You explained there are two issues at the site:

1) Inadequate well coverage down gradient of the tank pits; and
2) Detections of benzene from MW-2.

Site access agreements were sent out to the owners of the adjacent properties, but they did not respond to our letters. I looked at a property a little further down-gradient, the Redmond QFC Center across 160 TH Ave NE, but unfortunately the owner of that parcel, also owns the Jamba Juice adjacent to the Chevron. I sent out new site access agreements on October 30th, and again did not hear back from the property owners. I did call the owner of the Jamba Juice and was able to get a hold of him. He said had to asses the situation and would get back to me (Nov 22). He has not returned any of my calls since then. I was looking at pictures and due to the location of the USTs there is no way to get down-gradient coverage without going offsite. We wanted to put borings in the sidewalk, but do to the large number of utility conflicts, that does not look like a feasible option. I was wondering if you had any ideas for alternative options for this site.

Groundwater samples taken on 9/16/06 detected benzene at 40 ppb, but it has been below MTCA Method A cleanup levels the past four quarters. Our last sampling event; 8/17/2006 detected Benzene at 3 ppb in monitoring well MW-2, all other wells were non-detect for all constituents other than lead.

	Lead:
MW:1	15.2
MW-2.	8.3
MW-3	10.9
MW-4	11.1

I would like to thank you very much for your help; if you would like any further information or have any questions please let me know; I look forward to your reply.

Nicholas M. Acklam
Staff Geologist
Cambria Environmental Technology, Inc.
8620 Holly Drive, Suite 210
Everett, Washington 98208
(425) 353-6670 x110 direct
(425) 353-6443 fax
(425) 328-6365 cell

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ATTACHMENT B

SUMMARY OF PREVIOUS ENVIRONMENTAL WORK

SUMMARY OF PREVIOUS INVESTIGATIONS

September 2003 Site Assessment Report: SAIC installed groundwater monitoring wells MW-1 through MW-4 to total depths ranging from 20.13 to 21.5 feet below grade (fbg) at the site. These wells were installed to determine if any petroleum hydrocarbon contamination exists at the site. The monitoring wells were placed close to potential contamination sources. Eight soil samples and four groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G), total petroleum hydrocarbons as diesel (TPH-D), total petroleum hydrocarbons as Oil (TPH-O), benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE. No analytes were detected in soil. No groundwater samples exceeded MTCA Method A Cleanup Levels during the initial round of groundwater sampling. Benzene levels exceeded the MTCA Method A cleanup level in well MW-2 during the fourth quarter 2003 groundwater sampling event.

February 2004 Phase I Environmental Site Assessment: Ludlow & Associates completed a Phase I Assessment at the site for Wells Fargo. Historical reports were reviewed, and there were no documented releases for the property and no remedial work was needed at the time of the assessment. The only recommendations for further work were for continual monitoring of the monitoring wells on site. No properties adjacent to the subject property appeared to have any hazardous materials or environmentally significant operations associated with them.

July 2005 Groundwater Remediation Report: Cambria Environmental Technology, Inc. (Cambria) personnel observed the completion of ten borings around monitoring wells MW-1 and MW-2 on July 12, 2005 to inject oxygen release compound (ORC®). No samples were submitted for laboratory analysis.

Groundwater Monitoring: Groundwater has been sampled quarterly since well installation in 2003. Depth to groundwater ranges historically from 12 fbg to 16 fbg. The most recent groundwater sampling event took place in December 9, 2008. Total lead was not detected above the MTCA Method A clean up levels in any of the four wells; dissolved lead concentrations were below the laboratory detection limits. Historically, total lead concentrations in all wells periodically exceed the MTCA Method A cleanup levels during third and/or fourth quarter monitoring events. Groundwater flow direction is toward the west-northwest.