



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

June 15, 2011

Mr. Tom Allen  
Acme Fuels  
P.O. Box 7009  
Olympia, WA 98507

**Re: No Further Action at the following Site:**

- **Site Name:** Benedict Property
- **Site Address:** 19223 Denmark Street SW, Rochester, WA 98579
- **Facility/Site No.:** 3995580
- **VCP Project No.:** SW1100

Dear Mr. Allen:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Benedict Property (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

#### **Issue Presented and Opinion**

Is further remedial action necessary to clean up contamination at the Site?

**No. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.**

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

#### **Description of the Site**

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Diesel-range total petroleum hydrocarbons in the Soil and Groundwater.

Please note that a parcel of real property can be affected by multiple sites. At this time, we have no

information that the parcel(s) associated with this Site are affected by other sites.

### **Basis for the Opinion**

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This opinion is based on the information contained in the following document:

1. Report of Additional Site Investigation Requested by Ecology, Benedict Property Heating Oil Tank Release Site, 19223 Denmark Street SW, Rochester, WA dated April 11, 2011 by GeoScience Management, Inc.
2. Summary Report of Soil Remediation, including Excavation, Vapor Extraction, and Groundwater Monitoring Results, Benedict Property Heating Oil Tank Release Site, 19223 Denmark Street SW, Rochester, WA dated January 23, 2010 by GeoScience Management, Inc.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in this document is materially false or misleading.

### **Analysis of the Cleanup**

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Ecology has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

#### **1. Characterization of the Site.**

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described below.

The Site is a private residence consisting of approximately 8 acres, including a pasture, and a single family home. It is located at 19223 Denmark Street, Rochester, Thurston County, Washington. A 300-gallon heating oil above ground storage tank (AST) was located at the back of the residence. The AST developed corrosion holes resulting in a release of approximately 300 gallons of heating oil to the surrounding soils. Soil excavation in the area of the spill was undertaken and approximately 10 cubic yards of impacted soil were removed from the Site. Results from confirmation soil samples indicated that contamination above

MTCA Method A Cleanup Levels remained along the south wall near the foundation of the house, the bottom center of the excavation, and the western bottom of the excavation. Four soil borings were advanced to approximately 29 feet below ground surface (bgs) in and adjacent to the spill area. Groundwater was encountered at approximately 20 feet bgs. Site soils are described as sandy gravel with cobbles. Soil samples collected from the borings identified contamination greater than MTCA Method A Cleanup Levels for diesel-range total petroleum hydrocarbons (TPH-Dx) down to approximately 20 feet bgs immediately below the origin of the spill (boring B-1). Soil samples collected from borings advanced outside the spill area (B2, B3, and B4) did not exceed the MTCA Method A Cleanup Levels. Boring B2 (located 5 feet north of the spill area) was converted to a monitoring well (MW-1). An additional boring was also advanced in the center of the spill area (B5). Groundwater samples were collected from MW-1 and the existing domestic water supply well located to the west of the spill area. Groundwater samples were tested for benzene, toluene, ethylbenzene, xylenes (BTEX), and TPH-Dx. TPH-Dx was found in MW-1 at 0.27 milligrams per liter (mg/L). The inferred direction of groundwater flow is to the north towards Scatter Creek (approximately 1,200 feet to the north).

A vapor extraction system (VES) was designed and installed at the Site in December 2005. The system operated until December 2008. Groundwater samples were collected from MW-1 over that time period and exceedances of the MTCA criterion were noted in December 2005 (0.56 mg/L of TPH-Dx). Further samples collected from MW-1 (2007, 2008, and 2009) did not exceed the MTCA Method A Cleanup Levels for either BTEX or TPH-Dx. A soil boring was advanced within 1.5 feet of former borings B1 and B5 in September 2009, to assess the effectiveness of the VES. Results of the soil samples collected from this boring (B6) did not show any exceedances of the MTCA Method A Cleanup Levels for TPH-Dx.

In response to Ecology's opinion letter dated June 2010, GeoScience Management Inc., (GSM) collected soil samples from three areas that previously were noted as having concentrations of TPH-Dx above the MTCA Method A Cleanup Levels. Two soil samples were located underneath the building footprint (south wall), one was located at the base of the former excavation, and one was underneath the sewer pipe in the western area of the former excavation. The samples were submitted to the laboratory for analysis of TPH-Dx. None of the samples had concentrations of TPH-Dx greater than the MTCA Method A Cleanup Levels.

GSM also installed two monitoring wells (MW-2 and MW-3) in the perceived downgradient location of the former excavation. Soil samples were collected from the water table interface and submitted to the laboratory for analysis of TPH-Dx. Groundwater samples were also collected from the two new wells, the existing well (MW-1), and the pump house well. These were submitted to the laboratory for analysis of TPH-Dx and BTEX. None of the constituents, in either the soil or groundwater, were detected above the method detection limits.

The Site wells were surveyed to a local benchmark and depth to groundwater measurements were collected. These were plotted on a map to determine both flow direction and gradient. The general flow direction at the Site was determined to be to the northwest under a gradient of 0.03. Details of the property's water supply well were also furnished and included estimates of usage and general construction detail. It was noted that the well was screened in the shallow aquifer. Analytical results from the water supply well did not show any impact from the heating oil tank spill. Based on the pumping rate and location with respect to the former spill area, it is unlikely to be impacted by the release.

**2. Establishment of cleanup standards.**

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

**a. Cleanup levels.**

MTCA Method A Cleanup Levels for unrestricted land use for soil and groundwater were used to characterize the Site.

**b. Points of compliance.**

Standard points of compliance were used for the Site. The point of compliance for protection of groundwater was established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance was established in the soils throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater was established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

**3. Selection of cleanup action.**

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

Cleanup actions conducted at the Site to date have included soil excavation, soil and groundwater confirmation sample collection, and the installation and operation of a VES.

**4. Cleanup.**

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

A total of 10 cubic yards of petroleum-contaminated soil was excavated and disposed of at the TPS thermal desorption facility in Tacoma. A VES was also operated from 2005 through 2008. A soil confirmation boring advanced in the center of the excavated area did not identify constituents of concern above the MTCA Method A Cleanup Levels for TPH-Dx and BTEX. Additional confirmational soil samples collected in areas where impacted soils were noted during the initial excavation did not contain any detections above MTCA Method A Cleanup Levels. Groundwater immediately below the release area and further downgradient was not impacted by the release based on groundwater samples collected.

#### **Listing of the Site**

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Based on this opinion, Ecology will initiate the process of removing the Site from our lists of hazardous waste sites, including:

- Hazardous Sites List.
- Confirmed and Suspected Contaminated Sites List.

That process includes public notice and opportunity to comment. Based on the comments received, Ecology will either remove the Site from the applicable lists or withdraw this opinion.

#### **Limitations of the Opinion**

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**1. Opinion does not settle liability with the state.**

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

**2. Opinion does not constitute a determination of substantial equivalence.**

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-

Mr. Tom Allen  
June 15, 2011  
Page 6

supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

**3. State is immune from liability.**

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

**Termination of Agreement**

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Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1100).

For more information about the VCP and the cleanup process, please visit our web site: [www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm](http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm). If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at 360-407-7263 or e-mail at [TMID461@ecy.wa.gov](mailto:TMID461@ecy.wa.gov).

Sincerely,



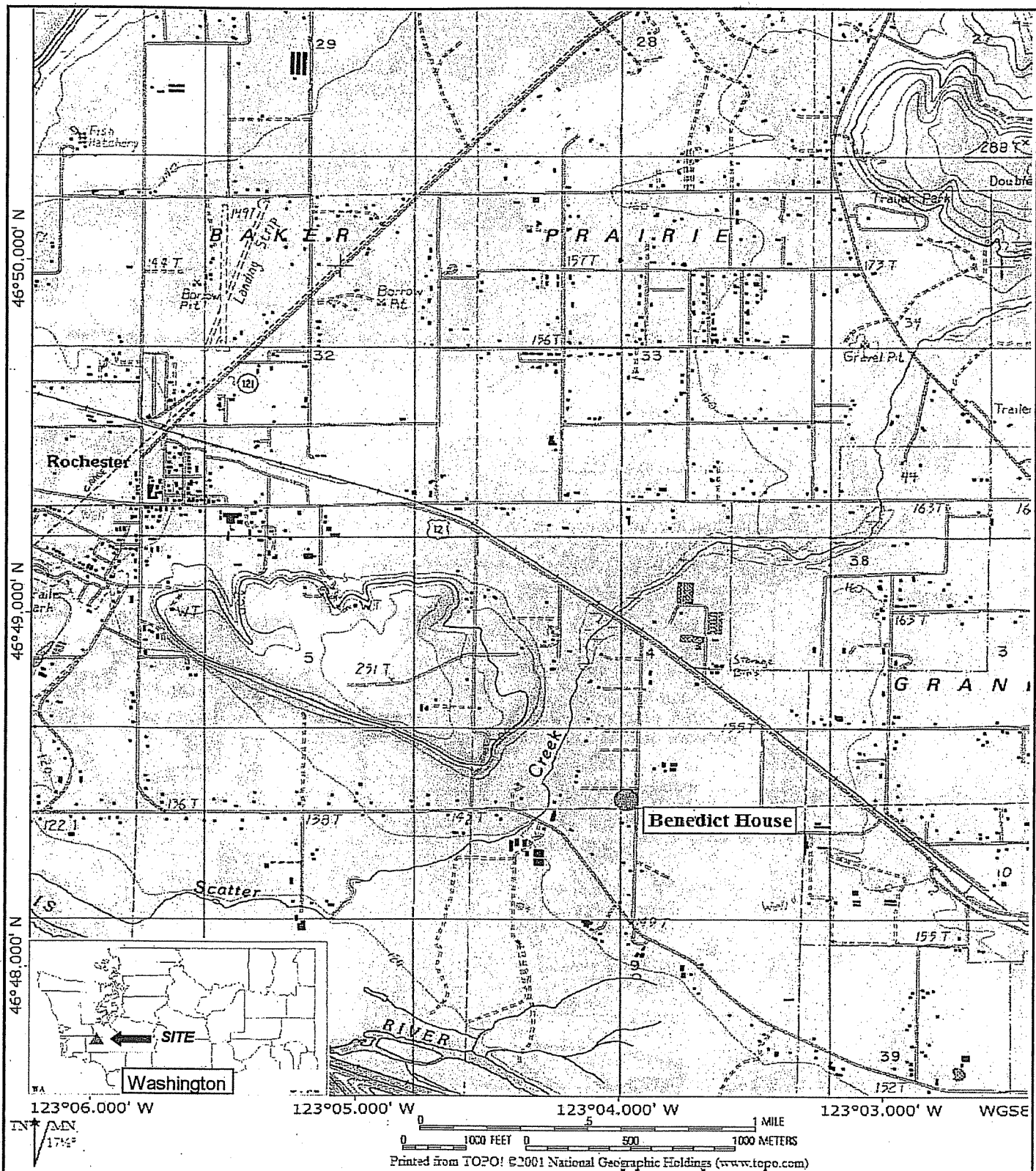
Thomas Middleton L.H.G.  
SWRO Toxics Cleanup Program

TMM/ksc:Benedict Property NFA

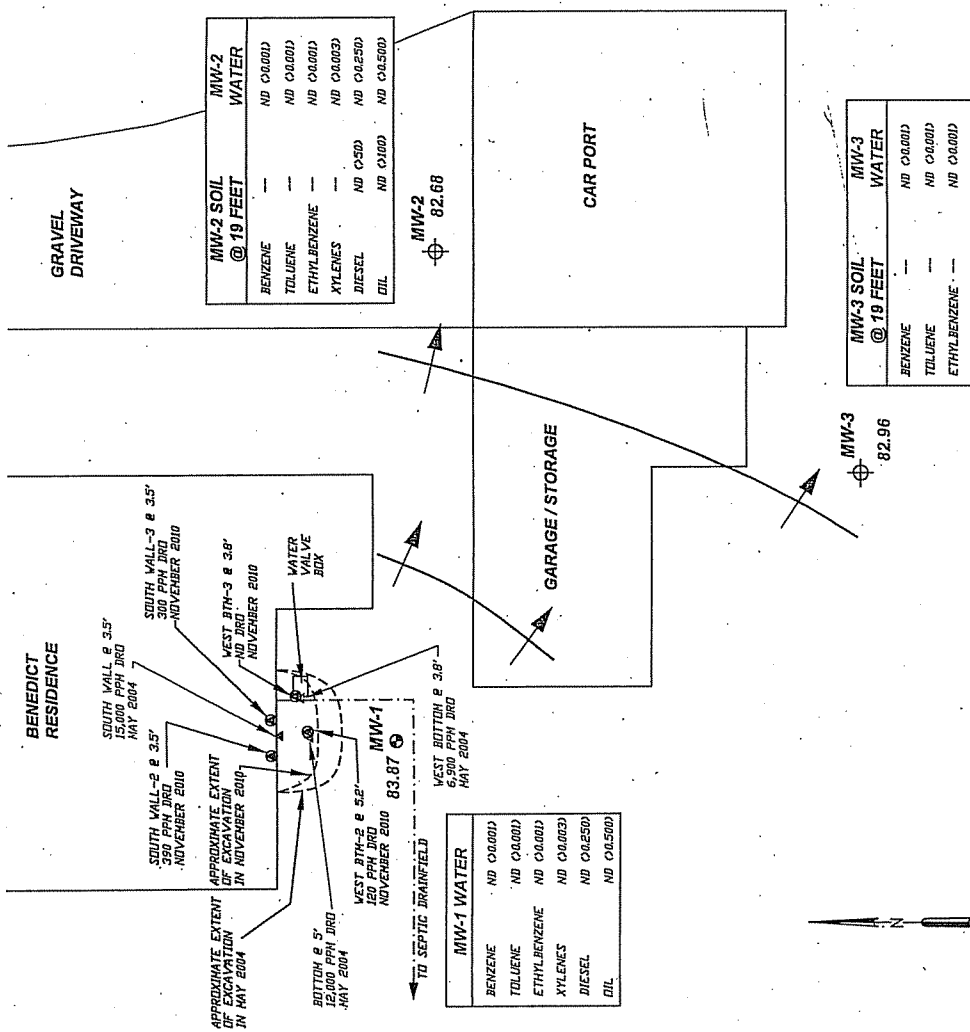
Enclosures:      Figure 1 – Vicinity Map  
                     Figure 2 – Former Excavation Limits, Soil Sampling Locations, and Goundwater  
                     Contour Map  
                     Table 1 – Relative Groundwater Elevations  
                     Table 2 – Laboratory Analytical Results

By certified mail: (7009 2820 0001 7160 8425)

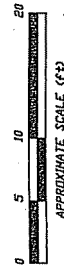
cc:      Mary Benedict  
         Gerald Tousley, Thurston Co Health Dept  
         Howard Small, GeoScience Management  
         Scott Rose – Ecology  
         Dolores Mitchell – Ecology (w/o enclosures)



**GEOSCIENCE MANAGEMENT, INC.**  
Environmental Consulting Services  
809 156th Street NE  
Arlington, WA 98223



Note: Site Plan prepared from field measurements and should not be considered accurate for construction purposes.



**GEOSCIENCE MANAGEMENT, INC.**  
 ENVIRONMENTAL CONSULTING SERVICES  
 809 156TH STREET NE  
 ARLINGTON, WA 98223

BENEDICT RESIDENCE FUEL OIL RELEASE  
 19223 DENMARK STREET SW, ROCHESTER, WA

**SITE PLAN SHOWING FORMER EXCAVATION LIMITS, NEW SOIL SAMPLING LOCATIONS AND NEW MONITORING WELLS**

FIGURE

2

PROJECT # BENEDICT DATED FEBRUARY 2011 DWN BY: HWS DRG # BENEDICT NEW WELLING

**Table 1**  
**Relative Groundwater Elevations**  
**Benedict Residence Heating Oil Release Site**  
**19223 Denmark Street SW, Rochester, WA**  
**Facility/Site No. 3995580, VCP Project No. SW1100**

| Sample Designation                                                                                                            | Sample Date | Depth to Water (Feet btoc) | Relative Elevation of Top of Casing | Relative Groundwater Elevation |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-------------------------------------|--------------------------------|
| MW-1                                                                                                                          | 1/14/2011   | 16.13                      | 100.00                              | 83.87                          |
| MW-2                                                                                                                          | 1/14/2011   | 17.21                      | 99.89                               | 82.68                          |
| MW-3                                                                                                                          | 1/14/2011   | 17.37                      | 100.33                              | 82.96                          |
| <b>Notes:</b><br>Top of the PVC casing on well MW-1 was selected as the site datum, and assigned an elevation of 100.00 feet. |             |                            |                                     |                                |

**Table 2**  
**Laboratory Analytical Results**  
**Soil Excavations in 2004 and 2010, and Groundwater in 2011**  
**Benedict Residence Heating Oil Release Site**  
**19223 Denmark Street SW, Rochester, WA**  
**Facility/Site No. 3995580, VCP Project No. SW1100**

| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Approximate Sample Location                                             | Date Sampled | Approximate Depth (feet) | Benzene (mg/kg) | Diesel (mg/kg) | Oil (mg/kg) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------|--------------------------|-----------------|----------------|-------------|
| <b>Soil Samples - Soil Excavation on May 25, 2004</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |              |                          |                 |                |             |
| South Wall@3.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Sidewall                                                                | 5/25/2004    | 3.5                      | —               | 15,000         | ND(<500)    |
| BTM@5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Bottom                                                                  | 5/25/2004    | 5                        | —               | 12,000         | ND(<500)    |
| WEST BTM@3.8'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Sidewall                                                                | 5/25/2004    | 3.8                      | —               | 6,900          | ND(<250)    |
| <b>Soil Samples - Soil Excavation on November 17, 2010</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                         |              |                          |                 |                |             |
| South Wall-2 @ 3.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sidewall beneath house foundation by South Wall @ 3.5' sample from 2004 | 11/17/2010   | 3.5                      | —               | 390            | ND (>100)   |
| South Wall-3 @ 3.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sidewall beneath house foundation by South Wall @ 3.5' sample from 2004 | 11/17/2010   | 3.5                      | —               | 300            | ND (>100)   |
| WEST BTM-2 @ 5.2'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Excavation Bottom by BTM @ 5' sample from 2004                          | 11/17/2010   | 5.2                      | —               | 120            | ND (>100)   |
| WEST BTM-3 @ 3.8'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sidewall below Water Valve Box by West BTM @ 3.8' sample from 2004      | 11/17/2010   | 3.8                      | —               | ND (>50)       | ND (>100)   |
| <b>Soil Samples - Drilling on December 3, 2010</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                         |              |                          |                 |                |             |
| MW-2-19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Boring for New Well MW-2                                                | 12/3/2010    | 19                       | —               | ND(<50)        | ND(<100)    |
| MW-3-19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Boring for New Well MW-3                                                | 12/3/2010    | 19                       | —               | ND(<50)        | ND(<100)    |
| <b>Groundwater Samples</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                         |              |                          |                 |                |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                         | Date Sampled |                          | Benzene (mg/L)  | Diesel (mg/L)  | Oil (mg/L)  |
| MW-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Existing Well Installed by GSM, 2004                                    | 12/16/2010   | N/A                      | —               | ND (>0.250)    | ND (>0.500) |
| MW-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Existing Well Installed by GSM, 2004                                    | 1/14/2011    | N/A                      | ND (>0.001)     | —              | —           |
| MW-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | New Well Installed by GSM, December 2010                                | 12/16/2010   | N/A                      | —               | ND (>0.250)    | ND (>0.500) |
| MW-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | New Well Installed by GSM, December 2010                                | 1/14/2011    | N/A                      | ND (>0.001)     | —              | —           |
| MW-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | New Well Installed by GSM, December 2010                                | 12/16/2010   | N/A                      | —               | ND (>0.250)    | ND (>0.500) |
| MW-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | New Well Installed by GSM, December 2010                                | 1/14/2011    | N/A                      | ND (>0.001)     | —              | —           |
| Pump House                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Existing Domestic Water Supply Well                                     | 12/16/2010   | N/A                      | —               | ND (>0.250)    | ND (>0.500) |
| Pump House                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Existing Domestic Water Supply Well                                     | 1/14/2011    | N/A                      | ND (>0.001)     | —              | —           |
| <b>Notes:</b><br>ND indicates that the analyte was not detected at the analytical method reporting limit.<br>— indicates that the sample was not analyzed for a particular constituent.<br>Bold red indicates that the result is above the MTCA Method A Cleanup level.<br>Benzene using EPA Method 8021/8260B.<br>Diesel-, and Oil-range hydrocarbons using Method NWTPH-Dx.<br>MTCA Method A cleanup levels for Diesel and Oil in Soil is 2,000 mg/kg, and 0.5 mg/L in groundwater, "Model Toxics Control Act (MTCA), WAC 173-340.<br>Data in mg/kg (soil) and mg/L (water) which approximates parts per million (ppm) concentrations. |                                                                         |              |                          |                 |                |             |