

2015



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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April 30, 2015

Mr. David Knudsen  
The Ostrom Farms  
8323 Steilacoom Road SE  
Olympia, WA 98513

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

- **Site Name:** The Ostrom Co
- **Site Address:** 8322 Steilacoom Road SE, Lacey
- **Facility/Site No.:** 1386
- **Cleanup Site ID No.:** 5033
- **VCP Project No.:** SW1283

Dear Mr. Knudsen:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Ostrom Farms facility (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**

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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**

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

- Petroleum hydrocarbons and related constituents into the Soil.

**Enclosure A** includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note 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 documents:

1. Insight Geologic, Inc., Subsurface Environmental Assessment Report, Ostrom Mushroom Farm, November 14, 2014.
2. Insight Geologic, Inc., Report of Supplemental Environmental Services, Ostrom's Mushroom Facility, Lacey Washington. September 17, 2012.
3. Department of Ecology, Site Hazard Assessment Report for the Ostrom Company. June 29, 2010.
4. Department of Ecology, Environmental Report and Tracking System (ERTS) report # 601343, August 2, 2010.
5. Insight Geologic, Inc., Petroleum-Contaminated Soil Remediation Report, Ostrom's Mushroom Farm, Lacey, Washington. April 25, 2008.
6. The Ostrom Farms, Re: Ostrom Farms – Subsurface Environmental Assessment. December 17, 2007.
7. Insight Geologic, Inc., Report Subsurface Environmental Assessment, Ostrom's Mushroom Farm, Steilacoom, Washington. July 17, 2007.
8. Insight Geologic, Inc., Phase I Environmental Site Assessment, 8322 Steilacoom Road SE, Lacey, Washington. June 10, 2007.

Those 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 those documents 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 above and in **Enclosure A**.

The Ostrom Farms Site is located at 8322 Steilacoom Road SE, in Lacey, WA, and the parcel number is 11814140500. The 34-acre property has operated as a mushroom farm since the 1960s, and it is still operated for the commercial production of mushrooms. Included in the operation is the production of compost used as the growing media for mushrooms, and stormwater is used for compost production as well as for landscape irrigation.

A Site investigation was conducted at the Site in June 2007, including drilling 16 exploratory borings (B1 through B9, and B11 through B17) to 16 to 20 feet below ground surface (bgs), and digging 12 test pits (see Figure 2 in Enclosure A) to 1 to 4 feet bgs. Soil samples were collected from the borings and the test pits. Groundwater was encountered only at B11 and B12 among all the borings and groundwater samples were collected from both borings. Groundwater samples and selected soil samples were analyzed for gasoline-, diesel-, and oil-range petroleum hydrocarbons (TPH-G, TPH-D, and TPH-O), volatile organic compounds (VOCs), lead, and chlorinated pesticides.

A soil sample from boring B-6 at 4 feet bgs in the fueling area detected TPH-D at a concentration of 7,900 milligram per kilogram (mg/kg), and a soil sample collected from boring B-11 at 8 feet bgs detected TPH-O at a concentration of 4,100 mg/kg, both exceeded the MTCA Method A cleanup level of 2,000 mg/kg. TPH-G, VOCs, and lead were either non-detect or detected at concentrations below the MTCA Method A cleanup levels. The chlorinated pesticide DDT (dichloro-diphenyl-trichloroethene) and its breakdown products DDD (dichloro-diphenyl-dichloroethylene) and DDE (dichloro-diphenyl-dichloroethene) were detected in the soil samples collected from the wastewater



disposal pond area (two each from Boring B-11 and B-12) at concentrations less than the MTCA Method A cleanup level for the sum of the three compounds. All groundwater samples were either non-detect or detected below the MTCA Method A cleanup levels for TPH-G, TPH-D, TPH-O, VOCs, and chlorinated pesticides.

A cleanup action was conducted in June 2012 and an unspecified volume of soil was excavated from an area around borehole B-11 (Insight Geologic, Inc. Sept. 17, 2012). However, since the previous Site investigation report (Insight Geologic, Inc., July 17, 2007) mistakenly reported the heavy oil TPH exceedance was detected in B-12 at 11 feet bgs, Ecology concluded the cleanup action had taken place at a wrong location.

Ecology issued a Further Action opinion letter to the Site on May 23, 2013 based on the information provided and requested further Site investigation and cleanup: 1) further define the extent of the soil contamination; 2) clean up the soil contamination detected at boring locations B-12 and B-6.

On February 20, 2014, Ecology received a "Petroleum-contaminated Soil Remediation Report" for Ostrom's Mushroom Farm dated April 25, 2008. This report, which had not previously been provided for review, indicated that the soil contamination at the boring location B-6 was excavated on February 25, 2008. A total of 20 yards of soil was removed from where boring B-6 was located, and confirmation soil samples indicated that the B-6 location had been cleaned up (see Section 4 of this letter for details).

On May 0, 2014, Ecology received a revised version of the July 17, 2007 Subsurface Environmental Assessment Report. The corrections were made on page 4 and Table 2, and the revised version showed that it was B-11 at 8 feet bgs, instead of B-12 at 11 feet bgs, that detected heavy oil TPH at 4,100 mg/kg. As such, the June 28, 2012 soil excavation had cleaned up the soil contamination at the boring B-11 location (See Section 4 of this letter for details).

As such, the two locations with detected TPH contamination have been cleaned up with sufficient soil confirmation sampling, and the extent of soil contamination is therefore defined.

Groundwater contamination was not detected at the Site.

Ecology has determined that the previous investigations were sufficient to characterize the Site and no further Site investigation is necessary.

**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.

MTCA Method A cleanup levels for soil and groundwater were used to characterize and determine compliance for the Site.

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 lower 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 to date included contaminated soil excavation. The disposal of the contaminated soil was off Site (see Section 4 of this letter for details).

**4. Cleanup.**

Ecology has determined the cleanup you performed has met MTCA cleanup standards at the Site. Cleanup actions conducted to date have included contaminated soil excavation and off-Site disposal:

- An unknown amount of soil was excavated in June 2012 from an area around borehole B-11, which was drilled and sampled during June 2007 Site investigation. The area was excavated to 6 to 9 feet bgs. The soil excavated appeared to be fill, containing a large percentage of trash, including oil filters, tires, bits of metals, glass, and bricks.

Four confirmation soil samples (TP1 through TP4) were collected from the four walls of the excavation pit at 8 to 9 feet bgs. All samples were non-detect for TPH-Gx, TPH-Dx, mineral oil-range TPH, and oil-range TPH.



- Twenty yards of soil was excavated from where boring B-6 was located in a rectangular-shaped excavation pit approximately 3.5 feet deep. A performance soil sample (022508-6) collected from 0.5 feet bgs detected heavy oil-range TPH at the concentration of 4,880 mg/kg. This location was further excavated and removed. The final excavation ended at 3.5 feet bgs. Four confirmation soil samples (022508-1 through 022508-4), one each from each side of the sidewalls, and one bottom soil sample (022508-5) and a duplicate (022508-5 Dup), were collected. All five confirmation soil samples were non-detect for diesel and heavy oil.

Ecology has concluded that a No Further Action (NFA) determination is appropriate for the Site.

### **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.**

Mr. David Knudsen  
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Page 7

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-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).

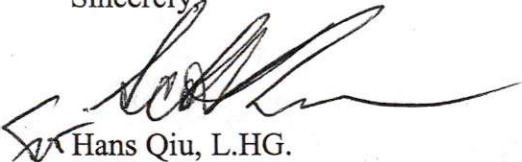
**Termination of Agreement**

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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 (#SW1283).

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) 407-6265 or via email at [hqiu461@ecy.wa.gov](mailto:hqiu461@ecy.wa.gov).

Sincerely,



Hans Qiu, L.H.G.  
Site Manager  
SWRO Toxics Cleanup Program

SIR: knf

Enclosures: A – Description and Diagrams of the Site

By certified mail: 70102780000025039084

cc: William E. Halbert, Insight Geologic, Inc.  
Gerald Tousley, Thurston County Health Department  
Dolores Mitchell – Ecology  
Scott Rose – Ecology

## **Enclosure A**

### **Description and Diagrams of the Site**

## Site Description

The Ostrom Farms Site is located at 8322 Steilacoom Road SE, in Lacey, WA, and the parcel number is 11814140500. The 34-acre property is operated as a mushroom farm since the 1960s. The property is surrounded by residential properties to the east and north, a middle school across Marvin Road to the west, and a Regional Athletic Complex facility across Steilacoom Road to the south. The Regional Athletic Complex facility was previously an Ostrom-owned agricultural property, but was developed into the current sports facility in 2008 to 2009.

The Ostrom Farms facility is operated for the commercial production of mushrooms. Included in the operation is the production of compost used as the growing media for mushrooms, and stormwater is used for compost production as well as for landscape irrigation.

On-Site drillings indicated that the soil from surface to 20 feet below ground surface (bgs) is loose or dense silty gravel, silty sand, with lenses of sand, and gravelly silt. Groundwater was encountered at 10 to 15 feet bgs.

There is a stormwater catch basin and a wastewater disposal pond at the Site. The stormwater catch basin has an Ecology issued stormwater discharge permit, #ST6217.

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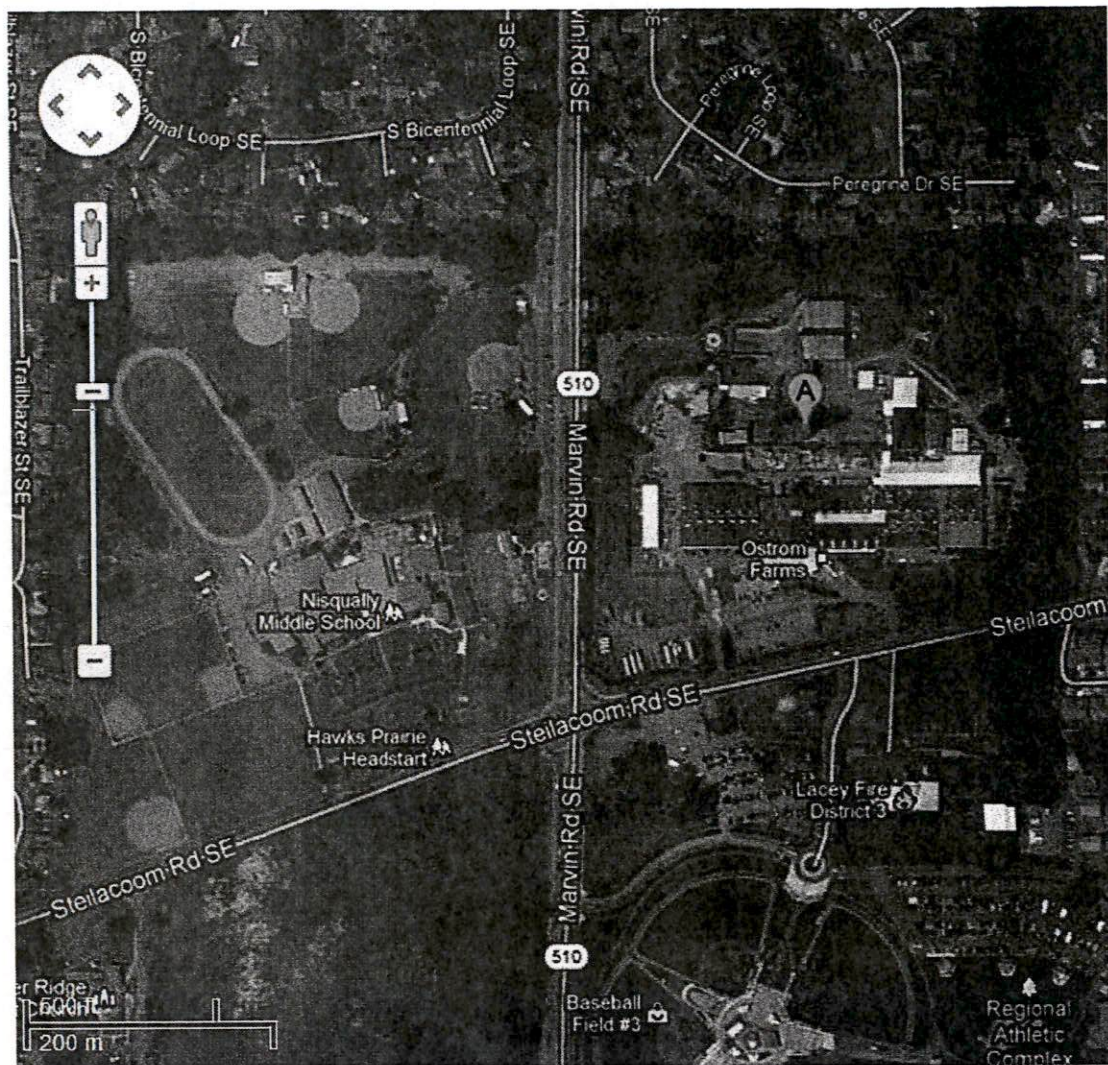


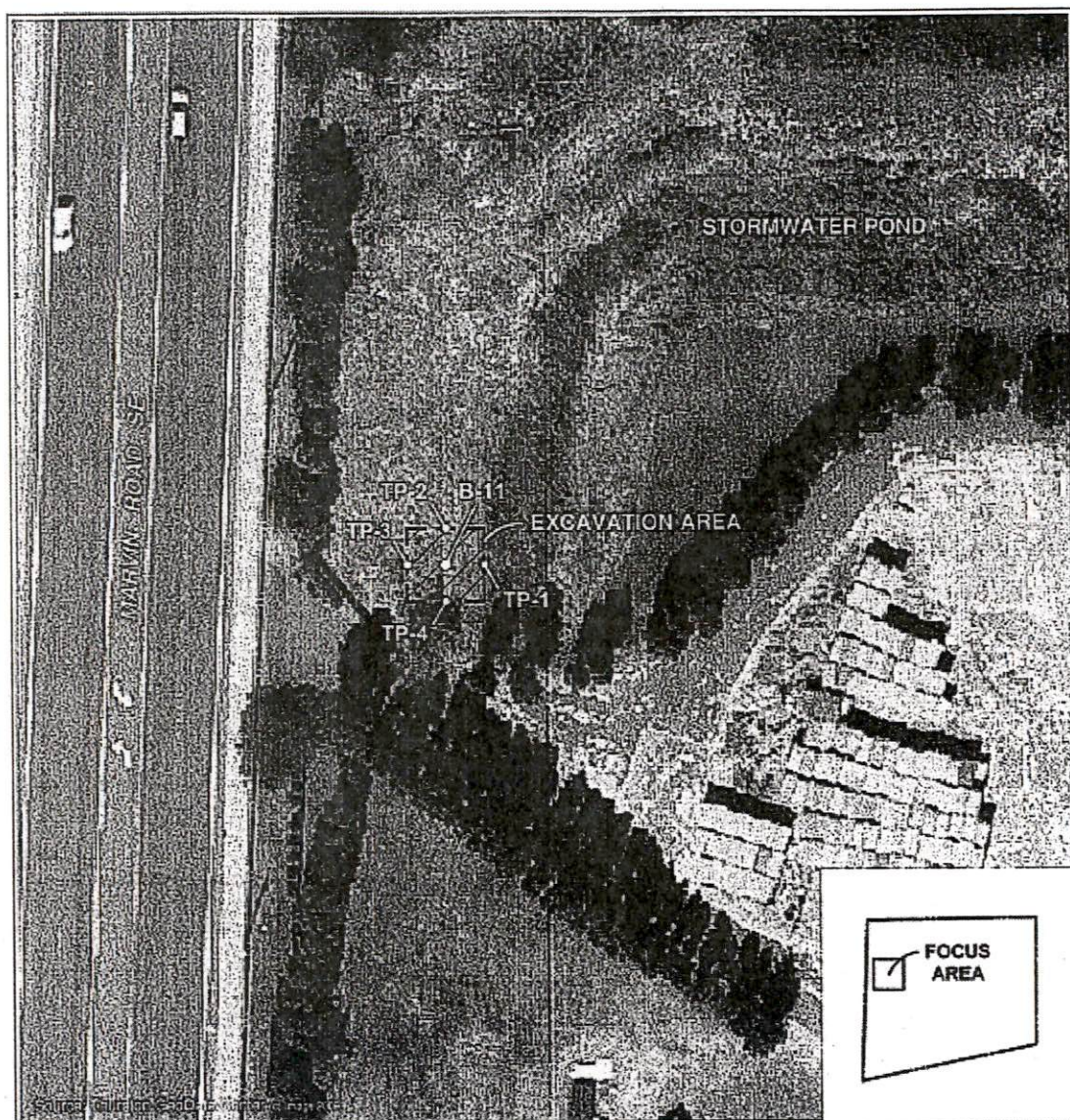
Fig 1. Location of Ostrom Farms Site (from Google Maps)





Figure 2. Ostrom Farm Subsurface Environmental Site Assessment Sampling locations (Insight Geologic, Inc., 2007)





**LEGEND:**

- B-11 • APPROXIMATE BORING LOCATION
- TP-1 • APPROXIMATE TEST PIT LOCATION
- APPROXIMATE PROJECT BOUNDARY

**OSTROM'S FARMS**  
LACEY, WASHINGTON



INSIGHT GEOLOGIC, INC.

**Figure 2**  
**Site Plan**

Figure 3. Soil Excavation around Boring B-11 at Ostrom Farm in June 2012 (Insight Geologic, Inc. 2012).

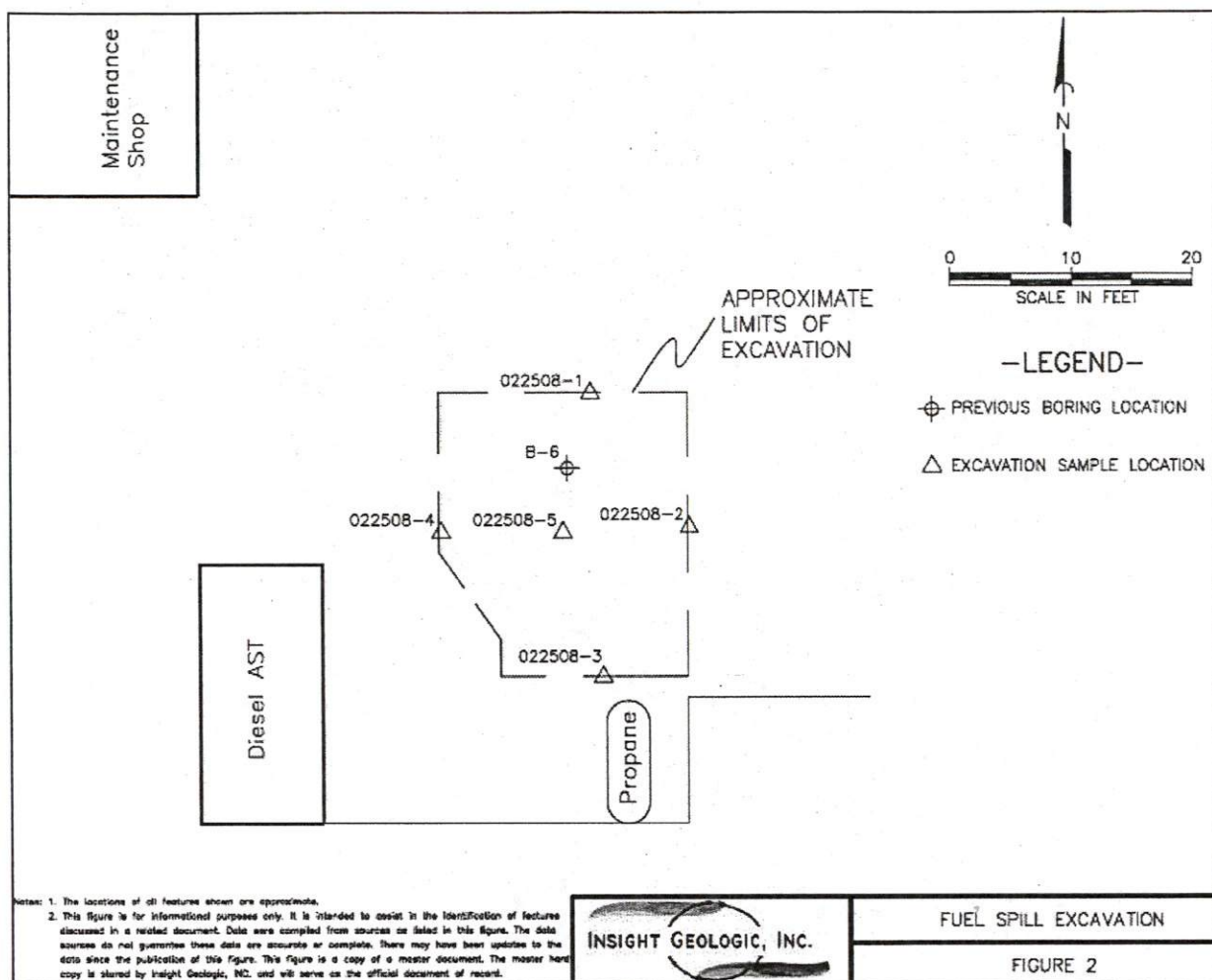


Figure 4. Soil Excavation and Confirmation Sampling locations around Boring B-6 (Insight Geologic, Inc., 2008)



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**MR DAVID KNUDSEN  
 THE OSTROM FARMS  
 8323 STEILACOOM RD SE  
 OLYMPIA WA 98513**

PS Form 3800, August 2000

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<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>		<p>A. Signature</p> <p><input checked="" type="checkbox"/> <i>Chris LeGrand</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>MR DAVID KNUDSEN            THE OSTROM FARMS            8323 STEILACOOM RD SE            OLYMPIA WA 98513</p> </div>		<p>B. Received by (Printed Name) <input type="checkbox"/> C. Date of Delivery</p> <p><i>Chris LeGrand</i></p>	
<p>2. Article Number            (Transfer from service label)</p> <p>7010 2780 0000 2503 9084</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If YES, enter delivery address below:</p>	
		<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>	
		<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



# Voluntary Cleanup Program

Washington State Department of Ecology  
Toxics Cleanup Program

## VCP INTERNAL REVIEW CHECKLIST

Site Name: Ostrom Farms **If applicable (property-specific):**  
Facility / Site No.: 1386 Tax Parcel(s) No.:  
VCP Project No.: SW1283 Property Address: 8322 Steilacoom Road SE, Lacey, WA  
Site Manager: Hans Qiu Date submitted for review: 3/24/2015

### What opinion are you providing the Applicant in the attached draft Letter?

- |   |  |
|---|--|
| <input type="checkbox"/> Site Likely NFA  | <i>PROPERTY-SPECIFIC</i>                                 |
| <input type="checkbox"/> Site Likely FA   | <input type="checkbox"/> Property Likely FA              |
| <input checked="" type="checkbox"/> NFA at Site (Please attach all previous opinion letters for review) | <input type="checkbox"/> Property Likely NFA, FA at Site |
| <input type="checkbox"/> Partial Sufficiency, FA at Site  | <input type="checkbox"/> Further Action at Property      |
| <input type="checkbox"/> Further Action at Site   | <input type="checkbox"/> Property NFA, FA at Site        |
| <input type="checkbox"/> Other (Please identify, such as Proposed or Completed RI, FS, etc.):           |  |

- Have you informed the VCP Unit Manager and the Data Coordinator of information submitted by applicant?  
☒ Yes ☐ No – If No, please do so to ensure a Project Activity is created in ISIS.

Report Received Date/Project Activity Initiation Date: 2/20/2014

Due Date for Response to Applicant (90 days from Initiation Date): 5/21/2014

- Were reports entered into DSARS? ☐ Yes ☒ No If No, reason?
- VCP application reviewed to ensure all information is current? ☒ Yes ☐ No  
If No, please be sure to provide the Data Coordinator with any changes needed.
- BARTS: If issuing NFA opinion, notify applicant that letter will be held until final payment is received.  
Have you completed your site logs? ☐ Yes ☒ No
- Is this a *regulated* UST/LUST site? ☐ Yes ☒ No If Yes, coordinate with LUST staff.
- Do any other government agencies or Ecology Programs have interest in site activities?  
☒ Yes ☐ No If Yes, please be sure to cc: the appropriate agency/program contact.
- Has the environmental sampling data been entered into EIM?  
☐ Yes ☒ No If Yes, when? Date:  
Will additional data be generated requiring EIM submittal?  
☐ Yes ☒ No
- If site is to be de-listed based on an NFA opinion, have you coordinated with COEES?  
☒ Yes ☐ No ☐ Not Applicable
- Has the lateral and vertical nature and extent of contamination at the site been adequately characterized for all media?  
☒ Yes ☐ No If No, please be sure data gaps are clearly identified in the opinion letter.
- Is the site located within the projected boundary of the Tacoma Smelter Plume Site?  
☐ Yes ☒ No If Yes, please be sure surface soil is analyzed for lead and arsenic as appropriate.



- Are institutional controls, such as an environmental covenant, needed for the site?

☐ Yes ☒ No ☐ Unknown at this time (Feasibility Study not completed yet)

If *Yes*, is a compliance monitoring plan required to be submitted?

☐ Yes ☐ No If *Yes* to both, include an explanation of the requirements in the opinion letter.

If an environmental covenant was generated, has it been signed by Ecology, filed with the appropriate county, and included as an attachment to the NFA? ☐ Yes ☐ No

- Are periodic reviews necessary at the Site (e.g., where institutional and/or engineered controls, and/or non-permanent remedies are part of the cleanup action)?

☐ Yes ☒ No If *Yes*, when should the first review be completed? Date:

- Was geologic, hydrogeologic, or engineering work stamped by a licensed professional?

☒ Yes ☐ No ☐ Not Applicable

If *No*, please include a comment in your opinion letter indicating that these types of work when submitted to Ecology for review must be under the seal of an appropriately licensed professional, as required by Chapters 18.43 and 18.220 RCW.

- Has a Terrestrial Ecological Evaluation Form been submitted? ☐ Yes ☒ No

Has it been accepted? ☐ Yes ☒ No

If *No* to either question, please include a comment in your opinion letter.

Comments or responses not related to the opinion letter (*Document relevant information*):

### **Sign and Date, When Approved for Transmittal**

If you have comments, do not sign. Check the comments box and fill in the date. Check the comments resolved box when applicable, then sign and date.

#### **Peer Reviewer (if applicable)**

☐ Comments, see attached Date:

☐ Comments Resolved



Date

4/27/15

#### **Unit Supervisor**

☐ Comments, see attached Date:

☐ Comments Resolved



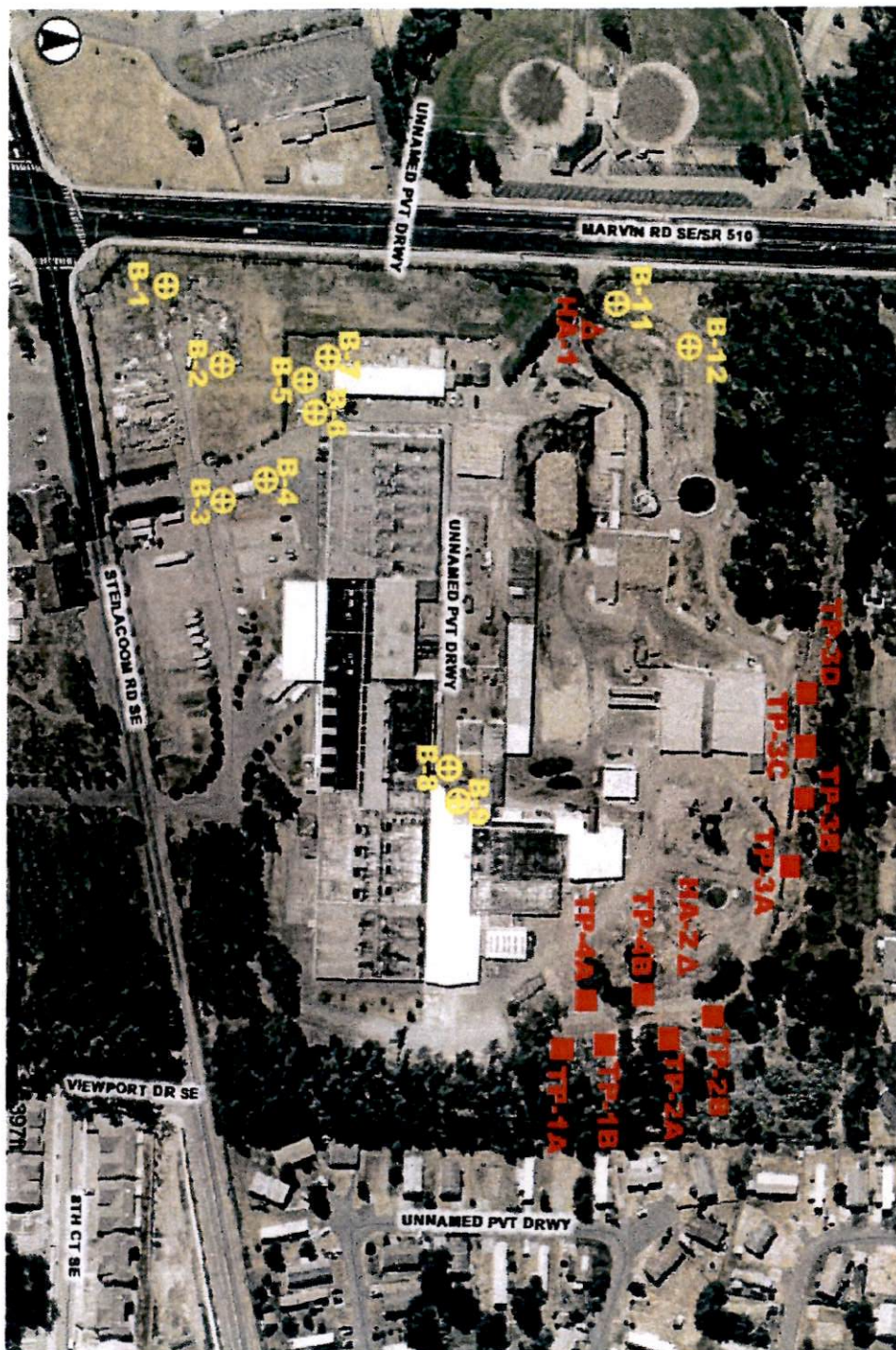
Date

4/27/15

#### **Section Manager (if not delegated)**

☐ Comments, see attached Date:

☐ Comments Resolved



INSIGHT GEOLOGIC, INC.

SUBSURFACE EXPLORATION  
LOCATIONS  
FIGURE



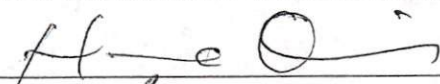
**WASHINGTON STATE DEPARTMENT OF ECOLOGY**  
**TOXICS CLEANUP PROGRAM**  
**The Ostrom Co. SITE LOG**

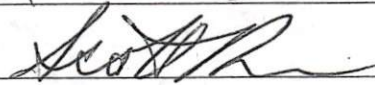
<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2015
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> March
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL 1-15</b> <input type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD 16-31</b> <input checked="" type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
3/23/2013	1.5	Revising opinion letter

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"><li>• If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li><li>• If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li></ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE**  **DATE** 04/02/2015

**SUPERVISOR'S SIGNATURE**  **DATE** 4/2/15

2014

## **Qiu, Hans (ECY)**

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**From:** Bill Halbert [billh@insightgeologic.com]  
**Sent:** Tuesday, September 16, 2014 4:34 PM  
**To:** Qiu, Hans (ECY)  
**Cc:** dknudsen@ostromfarms.com; Rose, Scott (ECY)  
**Subject:** RE: SW1283-Ostrom Farm

Hans,

Forgive my delay in getting this information to you.

With regard to the reports, the second report was updated to correct the identification number of the boring in which diesel-range hydrocarbons were found near the storm water pond. Our original report identified the boring as B-12 when, in fact, the diesel-contaminated soil was found in boring B-11. The updated report was changed to reflect this correction. If you need the corrected report to be identified as "UPDATED" or "REVISED" we are happy to provide that to you. Please let me know.

With regard to the 2008 report discussing the cleanup of soil near the fueling area, I do not have an explanation why that was not submitted with the VCP application. An oversight on our part.

I hope these responses are sufficient to provide clarification to your questions.

Please contact me if you have any additional questions regarding Ostrom Farms pending NFA determination.

Bill Halbert

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**From:** Qiu, Hans (ECY) [mailto:HQUI461@ecy.wa.gov]  
**Sent:** Tuesday, May 13, 2014 8:31 AM  
**To:** Bill Halbert  
**Cc:** dknudsen@ostromfarms.com; Rose, Scott (ECY)  
**Subject:** RE: SW1283-Ostrom Farm

Bill,

I called you yesterday and left a message to your secretary. Here I forward the email I sent to you May 1, after we met you at the Farm. Ecology have received the new set of reports. But we still in need a of memo as we have requested it during the meeting and in my email attached. This memo should specify:

1. what you have changed in these reports. Because the newly submitted reports are the same titles, dated the same, but content has been updated, yet without a memo, they look like duplicate reports. We also need the memo for justification.
2. The Phase II Subsurface Environmental Assessment was conducted in 2007, and the Farm (Site) was enrolled into VCP in Feb. 2013. The newly submitted cleanup report for boring B-6 location was dated April 25, 2008. Please explain why this report was not submitted together with the VCP application.

An email explanation will be sufficient.

Thank you,

Hans

---

**From:** Qiu, Hans (ECY)  
**Sent:** Thursday, May 01, 2014 1:55 PM  
**To:** 'Bill Halbert'  
**Cc:** 'dknudsen@ostromfarms.com'; Rose, Scott (ECY)  
**Subject:** FW: SW1283-Ostrom Farm

Hello, Bill,

Thank you for meeting with us this morning at the Ostrom Farm Site. Our meeting was effective and fruitful. A boring log map provided to us was helpful to clarify the relative location of borings versus the spills, above ground storage tanks, the stormwater pond, and excavation locations.

As discussed during the meeting, you will provide a memo to clarify the discrepancies Ecology found. Including: 1) mislabeling of a hot soil sample (B-12 or B-11?) that detected diesel at 4,100 mg/kg; 2) provide a larger site map to include original boring locations and the extent for both excavations around B-6 and B-11; and 3) Please submit all the reports in electronic copies as well in addition to their hard copies.

Once these have been resolved, Ecology can proceed with drafting a No Further Action determination.

Thank you,

***Hans Qiu, L.HG***  
***Site Manager***  
***Toxics Cleanup Program***  
***Southwest Regional Office***  
***Washington Dept. of Ecology***  
***(360) 407-6265***  
***[hqiu461@ecy.wa.gov](mailto:hqiu461@ecy.wa.gov)***



**WASHINGTON STATE DEPARTMENT OF ECOLOGY  
TOXICS CLEANUP PROGRAM  
The Ostrom Co. SITE LOG**

<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2014
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> May
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL</b> 1-15 <input checked="" type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD</b> 16-31 <input type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
5/1/2014	2.5	prepare for the Site visit, site visit and meet with Bill Halbert and David Knudsen; Summary of the site visit and request a memo and reports from Bill Halbert.
5/9/2014	1.2	Review Site investigation (Phase II) and site remedial Action reports
5/12/2014	1.8	Drafting Opinion letter, call Bill Halbert and left a message requesting the previously requested memo.
5/13/2014	0.8	Review documents, email Bill Halbert again requesting for a memo documenting the change of the reports so Ecology can continue the review of the Site.
Total	6.3	

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"><li>If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li><li>If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li></ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE**  **DATE** 5/16/14

**SUPERVISOR'S SIGNATURE**  **DATE** 5/19/14





1015 East 4<sup>th</sup> Avenue  
Olympia, WA 98506  
Telephone: 360.754.2128  
Fax: 360.754.9299

## LETTER OF TRANSMITTAL

**To:** Washington State Department of Ecology  
Toxics Cleanup Program, Southwest Regional Office  
300 Desmond Drive SE  
Lacey, Washington 98503  
Hans Qiu, L. HG, Site Manager

**Date:** May 6, 2014

**File #:** 335

**Regarding:** Ostroms Farm SW1283

**We are sending:** ☒ Attached

☐ Under Separate Cover

Copies	Description
1	Phase I Environmental Site Assessment Report – Hardcopy
1	Phase I Environmental Site Assessment Report – CD PDF
1	Subsurface Environmental Assessment (Phase II) – Hardcopy
1	Subsurface Environmental Assessment (Phase II) – CD PDF
1	Petroleum-contaminated Soil Remediation Report - Hardcopy
1	Petroleum-contaminated Soil Remediation Report – CD PDF
1	Supplemental Environmental Services Report – Hardcopy
1	Supplemental Environmental Services Report – CD PDF

**RECEIVED**

MAY 06 2014

**These are transmitted as checked below:**

☐ For Your Use

☒ As Requested

☐ Returned

☐ For Review and Comment

☐ Other (see remarks)

**We are sending via:**

☐ US Mail

☐ Overnight

☒ Courier

☐ Fax

**Remarks:**

**Copy To:**

Signed: \_\_\_\_\_

WA State Department  
of Ecology (SWRO)



**WASHINGTON STATE DEPARTMENT OF ECOLOGY  
TOXICS CLEANUP PROGRAM  
The Ostrom Co. SITE LOG**

<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2014
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> April
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL</b> 1-15 <input type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD</b> 16-31 <input checked="" type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
4/23/2014	1.4	Review newly submitted cleanup reports (Petroleum-Contaminated Soil Remediation Report, dated April 25, 2008, received by Ecology on Feb. 20, 2014); Internal discussion of discrepancies found in the reports and need for further communication with consultant Bill Halbert.

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"><li>• If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li><li>• If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li></ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE**  **DATE** 5/1/2014

**SUPERVISOR'S SIGNATURE**  **DATE** 5/5/14



## **Qiu, Hans (ECY)**

---

**From:** Bill Halbert [billh@insightgeologic.com]  
**Sent:** Thursday, February 20, 2014 9:17 AM  
**To:** Qiu, Hans (ECY)  
**Cc:** Rose, Scott (ECY)  
**Subject:** RE: Ostrom Farm Further Action  
**Attachments:** 335-001-03R.PDF

Hans,

With regard to your previous email we are providing the following:

1. The remediation report for the fueling area spill is attached. A hard copy will be mailed to Ecology today.
2. The contamination found in the area of the storm water pond was in the area of **B-11** located near the southwest corner of the pond and not in **B-12** as identified in our investigation report. This area was excavated and the soil disposed of at the Weyerhaeuser facility in Cowlitz County. The excavated soil appeared to be fill and contained an abundant amount of debris and trash. We have provided Ecology with the remediation report in both electronic and hard copies.
3. The area of the storm water pond was extensively over excavated and expanded, and subsequently lined with a plastic liner to provide storage for storm water runoff used in the processing of compost. It would be extremely difficult and cost prohibitive to collect additional subsurface soil samples from the area of the pond.

We look forward to your favorable review of the work performed at the Ostrom's site and we request a determination of No Further Action for these areas.

Respectfully,

Bill Halbert, LHG, LEG

---

**From:** Qiu, Hans (ECY) [mailto:HQIU461@ecy.wa.gov]  
**Sent:** Thursday, June 13, 2013 3:58 PM  
**To:** billh@insightgeologic.com  
**Cc:** Rose, Scott (ECY)  
**Subject:** Ostrom Farm Further Action

Hello, Bill,

Just want to summary the meeting today so we can have a follow up on what to do for the site next, please correct me if I miss anything out or say anything incorrect. Thank you.

1. The previously contaminated area as indicated by B-6 at the concrete apron fueling area had been excavated either in 2007 or 2008, for some reason this soil excavation report or information has not been submitted to Ecology.
2. The previously contamination found in borehole B-12, was actually in B-11. The Site investigation report misspelled the bore hole number. Area around B-11 has been excavated and the report was submitted and in Ecology's central file.
3. The stormwater pond is double lined and no soil sample can be collected right now.

Insight Geologic will provide to Ecology a report or an addendum to the previous remediation report to include the about information with supporting documentation (QA/QC, etc) so that Ecology can provide another opinion letter.



Thank you,

***Hans Qiu, L.HG***  
***Site Manager***  
***Toxics Cleanup Program***  
***Southwest Regional Office***  
***Washington Dept. of Ecology***  
***(360) 407-6265***  
***[hqiu461@ecy.wa.gov](mailto:hqiu461@ecy.wa.gov)***

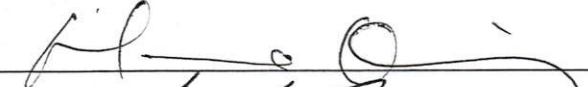
**WASHINGTON STATE DEPARTMENT OF ECOLOGY  
TOXICS CLEANUP PROGRAM  
The Ostrom Co. SITE LOG**

<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2015
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> January
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL 1-15</b> <input type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD 16-31</b> <input checked="" type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
1/22/2015	1.9	Review Subsurface Environmental Assessment Report; Review the Petroleum-contaminated soil remediation report
1/23/2015	5.9	Drafting Opinion letter, phone call and Email communication with Bill Hulburt, drafting opinion letter
1/26/2015	2.1	Drafting opinion letter

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"> <li>If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li> <li>If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li> </ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE** 
**DATE** 2/2/2014

**SUPERVISOR'S SIGNATURE** 
**DATE** 2/3/15



2013


**WASHINGTON STATE DEPARTMENT OF ECOLOGY**  
**TOXICS CLEANUP PROGRAM**  
**The Ostrom Co. SITE LOG**

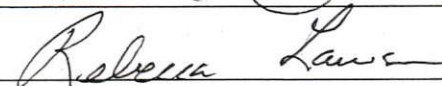
<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2013
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> June
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL</b> 1-15 <input checked="" type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD</b> 16-31 <input type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
6/10/2013	0.2	Listen to phone message, call back and phone conversation, meeting set up.
6/13/2013	0.8	Prepare the meeting and attend the meeting with Bill Halbert of Insight Geologic. Inc, on FA items and Bill explained pond lining and Site excavation.

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"><li>If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li><li>If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li></ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE**  **DATE** 06/17/13

**SUPERVISOR'S SIGNATURE**  **DATE** 6/17/13







STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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

May 23, 2013

Mr. David Knudsen  
8323 Steilacoom Road SE  
Olympia, WA 98513

**Re: Further Action at the following Site:**

- **Site Name:** The Ostrom Farms
- **Site Address:** 8322 Steilacoom Road SE
- **Facility/Site No.:** 1386
- **Cleanup Site ID No.:** 5033
- **VCP Project No.:** SW1283

Dear Mr. Knudsen:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Ostrom Farms facility (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?

**YES. Ecology has determined that 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:

- Petroleum hydrocarbons and related constituents into the Soil.

**Enclosure A** includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note 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**

---

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

1. Insight Geologic, Inc., Report of Supplemental Environmental Services, Ostrom's Mushroom Facility, Lacey Washington. September 17, 2012.
2. Department of Ecology, Site Hazard Assessment Report for the Ostrom Company. June 29, 2010.
3. Department of Ecology, Environmental Report and Tracking System (ERTS) report # 601343, August 2, 2010.
4. The Ostrom Farms, Re: Ostrom Farms – Subsurface Environmental Assessment. December 17, 2007.
5. Insight Geologic, Inc., Report Subsurface Environmental Assessment, Ostrom's Mushroom Farm, Steilacoom, Washington. July 17, 2007.

Those 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 those documents is materially false or misleading.

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### **Analysis of the Cleanup**

---

Ecology has concluded that **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 not sufficient to establish cleanup standards and select a cleanup action.



The Ostrom Farm Site is located at 8322 Steilacoom Road SE, Lacey, Washington. The 34-acre property has operated as a mushroom farm since the 1960s. The property is surrounded by residential properties, a sports facility, and a middle school.

A Site investigation was conducted at the Site in June 2007, including drilling 16 exploratory borings (B1 through B9, and B11 through B17) to 16 – 20 feet below ground surface (bgs), and digging five test pits (TP1 through TP4, and HA1). Soil samples were collected from the borings and the test pits, and selected samples were sent to a laboratory for chemical analysis. Groundwater was encountered only at B11 and B12 among all the borings. Groundwater samples were collected from both B11 and B12 borings. The parameters analyzed for soil and groundwater included gasoline- diesel-, and oil range total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), lead, and chlorinated pesticides.

The laboratory results indicated that a soil sample collected from boring B-6 at 4 feet bgs in the fueling area detected diesel-range TPH (TPH-Dx) at a concentration of 7,900 milligram per kilogram (mg/kg), and a soil sample collected from boring B-12 at 11 feet bgs detected heavy oil-range TPH at a concentration of 4,100 mg/kg, both exceeded the MTCA Method A cleanup level of 2,000 mg/kg.

Gasoline-range TPH (TPH-Gx), VOCs, and lead were either non-detect or detected at concentrations below the MTCA Method A cleanup levels. The chlorinated pesticide DDT (dichloro-diphenyl-trichloroethene) and its breakdown products DDD (dichloro-diphenyl-dichloroethylene) and DDE (dichloro-diphenyl-dichloroethene) were detected in the soil samples collected from the wastewater disposal pond area (two each from Boring B-11 and B-12) at concentrations less than the MTCA Method A cleanup level for the sum of the three compounds. Additionally, all TPH-Gx, TPH-Dx, VOCs and chlorinated pesticides were either non-detect or detected below the MTCA Method A cleanup levels for groundwater samples.

An interim cleanup action was conducted at the Site in June 2012 (see Section 4 of this letter for detail) and four confirmation soil samples were collected from the excavation pit.

Based on a review of Site investigation and interim cleanup action conducted at the Site, Ecology has determined the investigations were not sufficient to characterize the Site and has the following comments:

1. The June 2007 Site investigation report did not provide a map to illustrate the layout and relative locations with regard to the fueling area apron, stormwater catch basin, and the wastewater disposal pond. Without such information, it is difficult to determine whether the soil sampling was sufficient to characterize the fuel spill plume.

2. As described in the Insight Geologic, Inc. report, the fuel spill from the fuel apron area was likely responsible for the soil contamination with a flow route towards stormwater catch basin, and eventually the wastewater disposal pond. Soil near the wastewater disposal pond was found contaminated (Borehole B12 at 11 feet bgs). Soil at the banks/sidewalls of the stormwater catch basin and wastewater disposal pond may have potentially been contaminated as well. Soil samples are needed from the banks/sidewalls of the stormwater catch basin and wastewater disposal pond.
3. A Terrestrial Ecological Evaluation (TEE) needs to be completed for the Site. Please fill out the form on our website and submit it to Ecology (along with any supporting documentation, as appropriate) for review. The form can be found at: <http://www.ecy.wa.gov/biblio/ecy090300.html>.
4. In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website <http://www.ecy.wa.gov/eim>. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Please be sure to submit all data in this format. Data collected prior to August 2005 (effective date of this policy) is not required to be submitted; however, you are encouraged to do so if it is available. Be advised that Ecology requires up to two weeks to process the data once it is received.

## 2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA. Additional characterization of soil to define the boundary of the contamination is needed prior to establishing points of compliance.

---

The MTCA Method A cleanup levels for unrestricted land uses for soil and groundwater are being used for the Site.

Standard points of compliance are currently being used for the Site. The point of compliance for protection of groundwater shall be 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 shall be established in the soils throughout the Site from the ground surface to 15 feet bgs.



**3. Selection of cleanup action.**

Ecology has determined the cleanup actions you selected for the Site have not met the substantive requirements of MTCA.

Cleanup actions selected to date included soil excavation.

Additional characterization is warranted prior to selecting a final cleanup action.

**4. Cleanup.**

Ecology has determined the cleanup you performed has not met any cleanup standards at the Site. The cleanup activities conducted so far at the Site included:

- An unknown amount of soil was excavated in June 2012 from an area around borehole B-11, which was drilled and sampled during June 2007 Site investigation. The area was excavated to the depth of 6 to 9 feet bgs. The soil excavated appeared to be fill, containing a large percentage of trash, including oil filters, tires, bits of metals, glass, and bricks.
  - Four confirmation soil samples (TP1 through TP4) were collected from the four walls of the excavation pit at 8 – 9 feet bgs. All samples were non-detect for TPH-Gx, TPH-Dx, mineral oil-range TPH, and oil-range TPH.
  - A stormwater pond improvement work was also conducted in summer of 2012 (no specific date available), including expanding and lining of the pond, yet no information was provided on whether such improvement work has removed any contaminated soil. One soil sample was collected from the stormwater catch basin at 6 inches bgs on June 29, 2012 and detected oil-range TPH at 1,150 mg/kg, below MTCA Method A cleanup level. However, it is not clear this sample was collected before or after the pond improvement, since the layout of the oil spill versus the stormwater catch basin was not provided, it is also not clear whether the soil sample was representative.
- 

Based on the soil excavation and the June 2007 Site investigation, Ecology has the following comments:

1. The June 2007 Site investigation detected TPH-Dx and heavy oil-range TPH at boreholes B6 and B12. The soil excavation, however, was conducted around borehole B-11. Cleanup is still warranted in the vicinity of borings B6 and B12.
2. The confirmation soil samples were only from sidewalls. Ecology requires that a bottom soil sample(s) also be collected.

Even though an interim cleanup action was taken at the Site, the Site remains insufficiently characterized, and the soil excavation did not excavate the detected soil contamination at boreholes B-6 and B-12. Further characterization of soil contamination is needed prior to identifying a final cleanup action.

### **Limitations of the Opinion**

---

**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-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).

### **Contact Information**

---

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

Mr. David Knudsen  
May 23, 2013  
Page 7

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, please contact me by phone at (360) 407-6265 or by e-mail at [hqiu461@ecy.wa.gov](mailto:hqiu461@ecy.wa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Hans Qiu', with a stylized flourish at the end.

Hans Qiu, L.HG.  
Site Manager  
SWRO Toxics Cleanup Program

HQ/ksc:SW1283 Site FA Ostrom Farms

Enclosures: A – Description and Diagrams of the Site

By certified mail: (7012 1010 0003 0195 9302)

cc: William E. Halbert, Insight Geologic, Inc.  
Gerald Tousely, Thurston County Health Department  
Dolores Mitchell – Ecology  
Scott Rose – Ecology

---



## **Enclosure A**

### **Description and Diagrams of the Site**

---

## Site Description

The Ostrom Farms Site is located at 8322 Steilacoom Road SE, in Lacey, WA, and the parcel number is 11814140500. The 34-acre property is operated as a mushroom farm since the 1960's. The property is surrounded by residential properties to the east and north, a middle school across Marvin Road to the west, and a Regional Athletic Complex facility across Steilacoom Road to the south. The Regional Athletic Complex facility was previously an Ostrom-owned agricultural property, but was developed into the current sports facility in 2008 to 2009.

The Ostrom Farms facility is operated for the commercial production of mushrooms, included in the operation is the production of compost used as the growing media for mushrooms, stormwater is used for compost production, landscape irrigation, or being recycled.

On-Site drillings indicated that the soil from surface to 20 feet below ground surface (bgs) is loose or dense silty gravel, silty sand, with lenses of sand, and gravelly silt. Groundwater was encountered at 10 feet to 15 feet bgs.

There is a stormwater catch basin and a wastewater disposal pond at the Site. The stormwater catch basin has an Ecology issued stormwater discharge permit, #ST6217.

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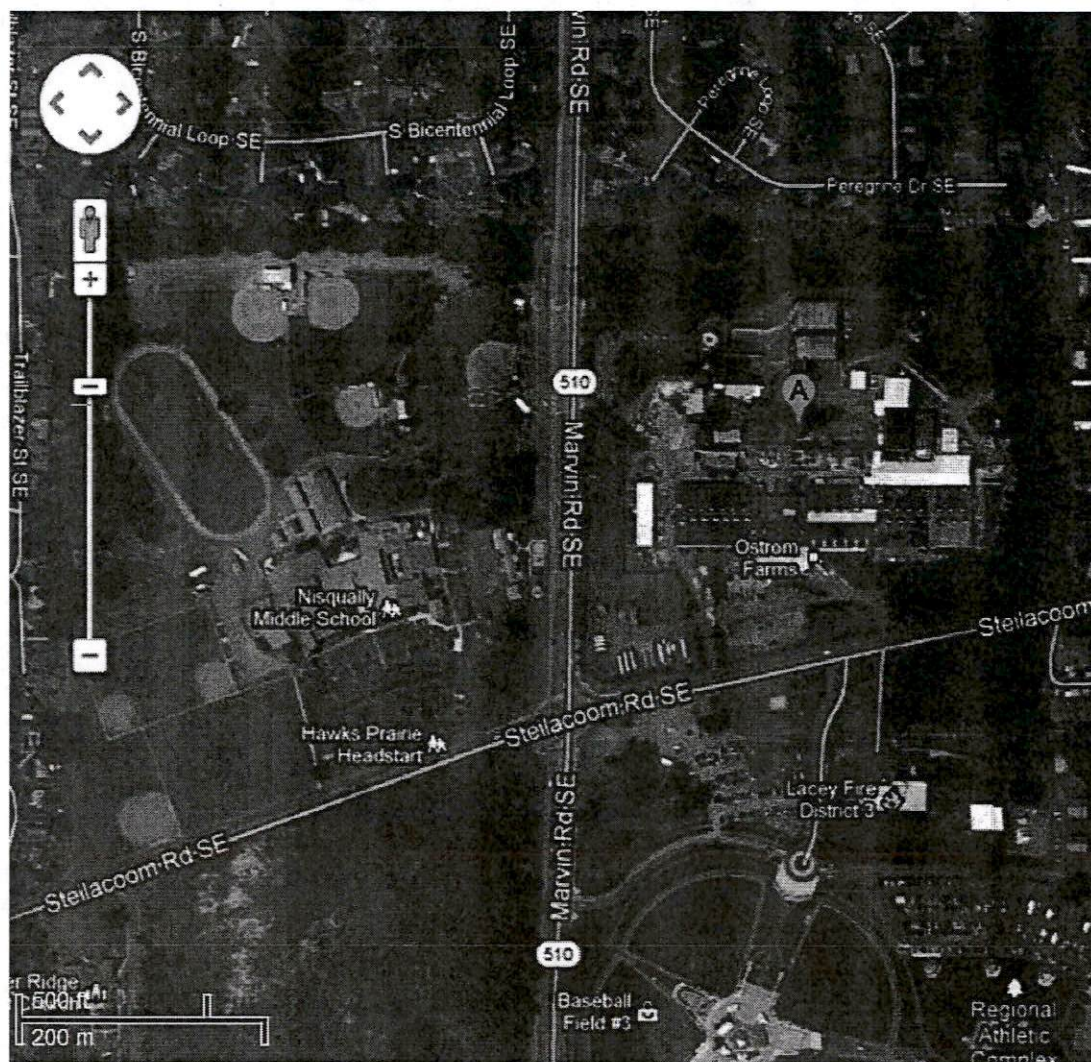


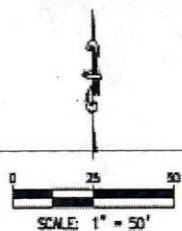
Fig 1. Location of Ostrom Farms Site (from Google Maps)





**LEGEND:**

- B-11 • APPROXIMATE BORING LOCATION
- TP-1 • APPROXIMATE TEST PIT LOCATION
- APPROXIMATE PROJECT BOUNDARY



**OSTROM'S FARMS**  
LACEY, WASHINGTON

INSIGHT GEOLOGIC, INC.

**Figure 2**  
**Site Plan**

Figure 2. The Location of the Soil Excavation at Ostrom Farm in June 2012



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For delivery information visit our website at [www.usps.com](http://www.usps.com)®

*Hans Qiu SW1283*

Postage	\$ 1.12
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Restricted Delivery Fee (Endorsement Required)	—
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 JUN 4 2013  
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Mr. David Knudsen  
 8323 Steilacoom Road SE  
 Olympia, WA 98513

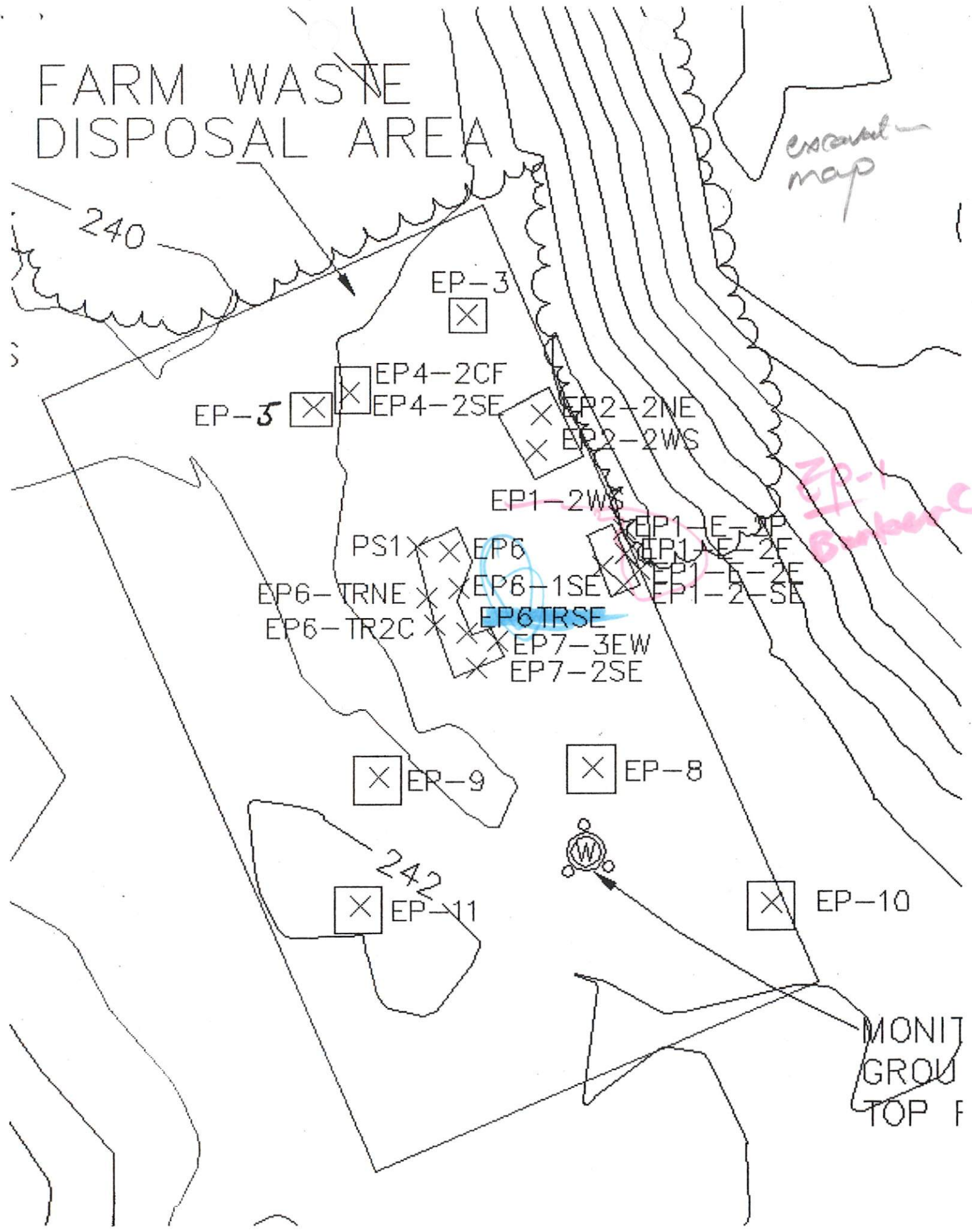
2012 1010 0003 0195 9302

See reverse for instructions

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  <i>x Denise Haynes</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)  <i>Denise Haynes</i></p> <p>C. Date of Delivery  <i>6-5-13</i></p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No        If YES, enter delivery address below:</p>
<p>1. Article Addressed to:</p> <p>Mr. David Knudsen          8323 Steilacoom Road SE          Olympia, WA 98513  <i>8322</i></p>	<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from):</p> <p>7012 1010 0003 0195 9302</p>	<p><i>SW1283</i></p>
<p>PS Form 3811, February 2004 Domestic Return Receipt <i>Hans Qiu</i> 102595-02-M-1540</p>	

# FARM WASTE DISPOSAL AREA

excavated map



MONIT  
GROU  
TOP F



23

FOUND 5/3

41-157-5X

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SS-13X-5  
SS-15-5

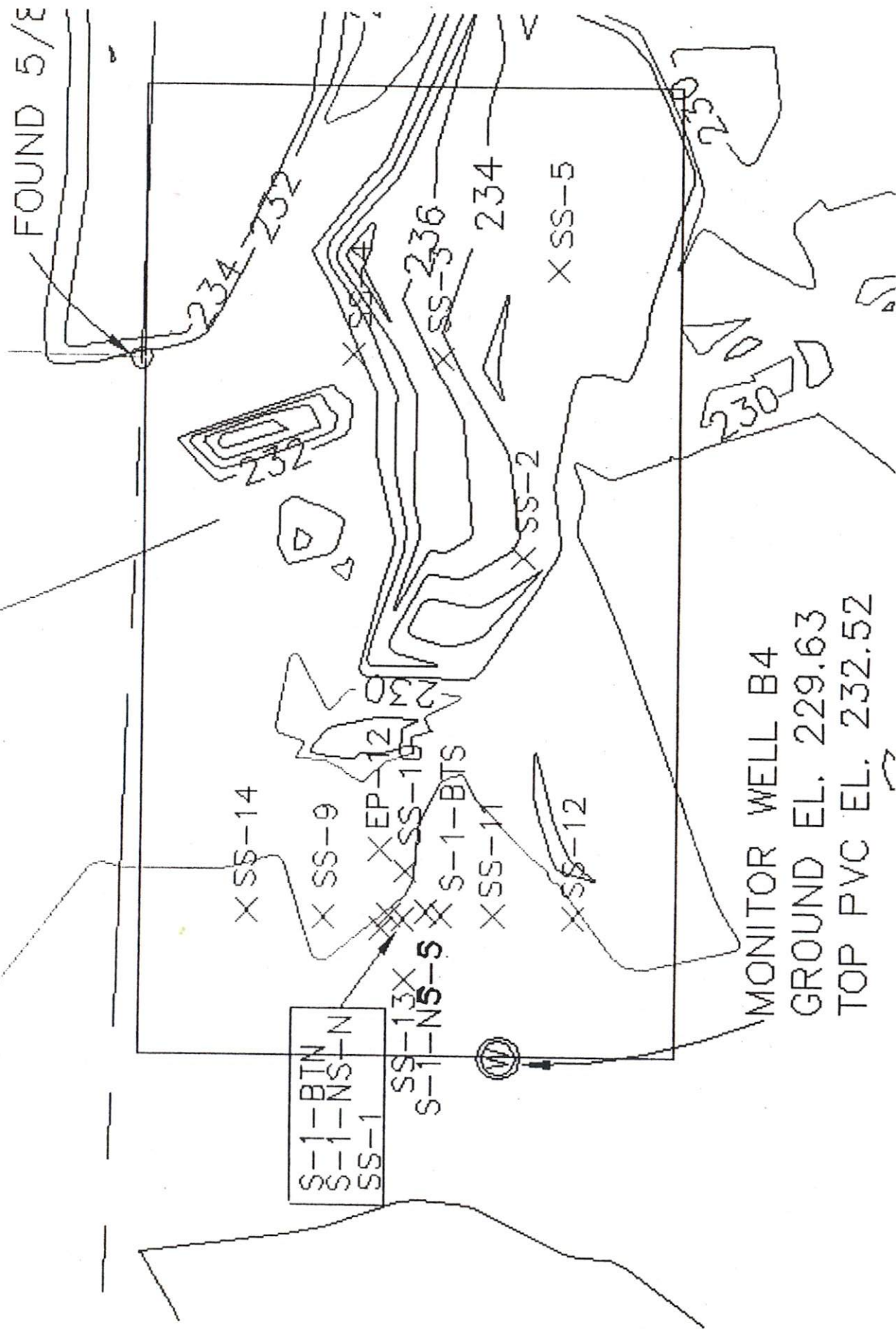
~~XXEP-12~~  
~~XXSS-10~~  
~~XS-1-BTS~~

~~5-5-X~~

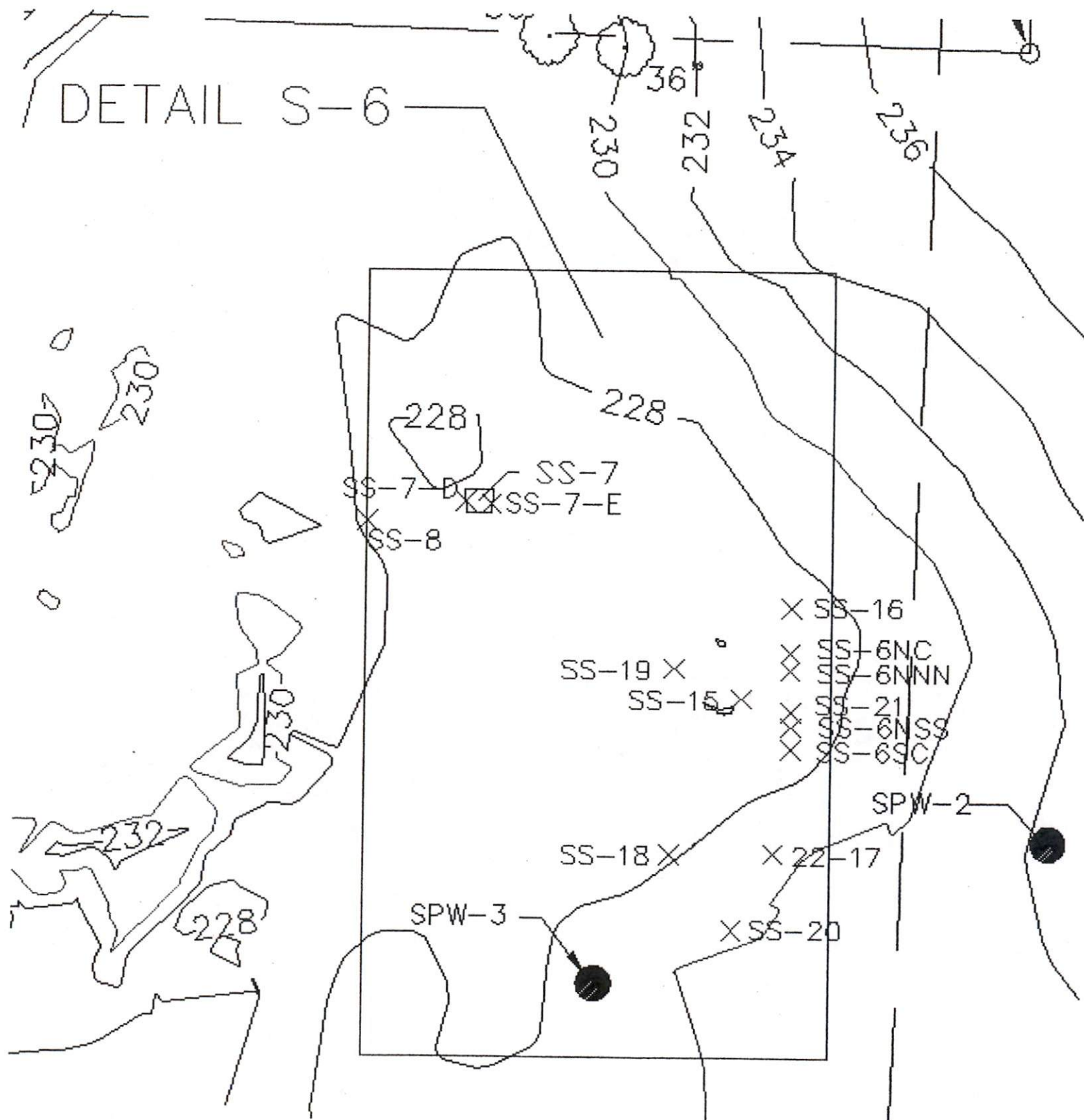
5-12

☐ 1  
☒ 2  
☒ 3  
☒ 4

MONITOR WELL B4  
GROUND EL. 229.63  
TOP PVC EL. 232.52

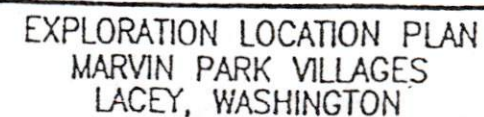


DETAIL S-6





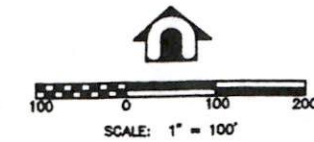
RESTAURANTS  
OIL PRODUCT





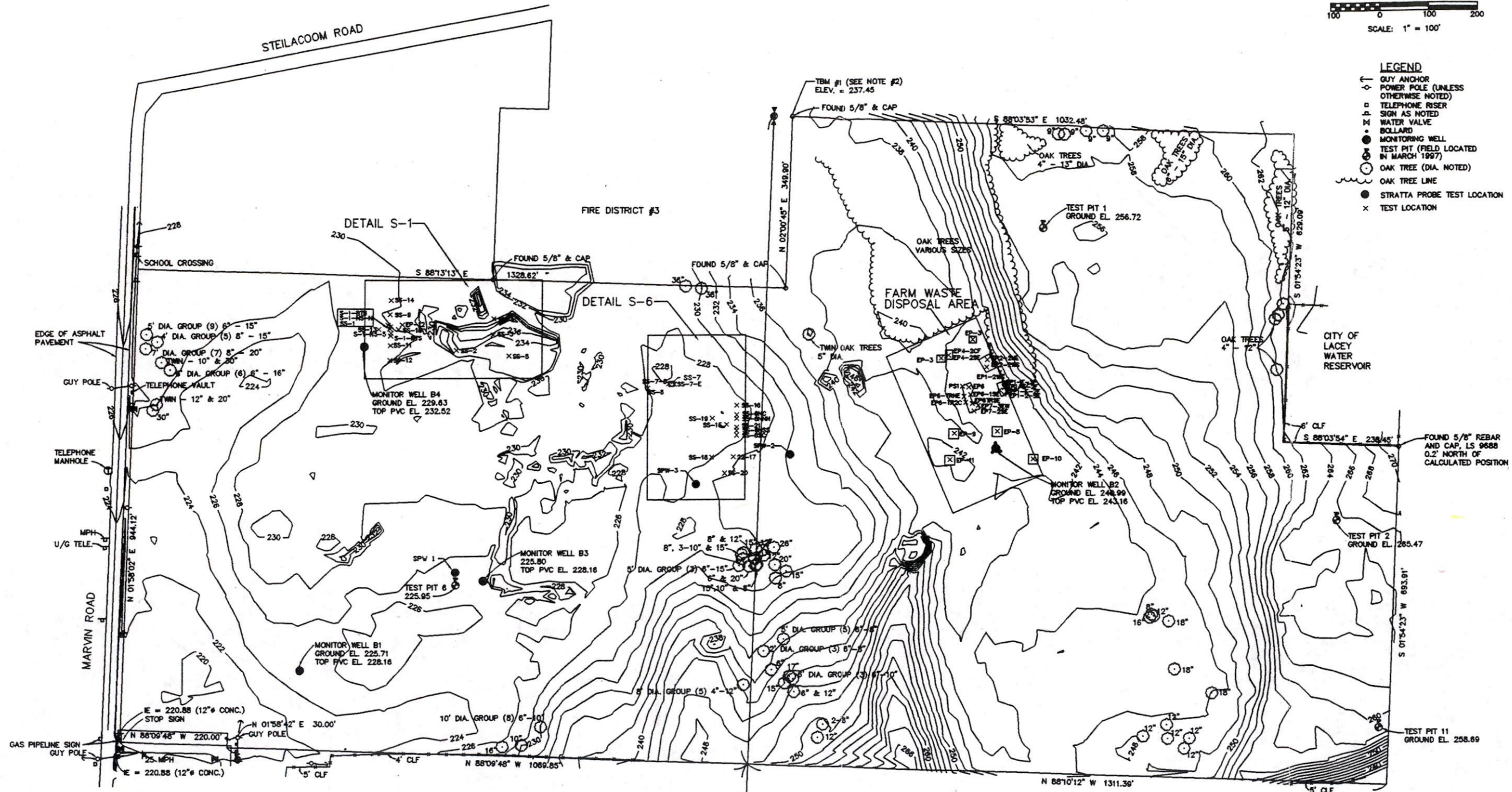
PORTIONS OF THE NW 1/4 OF THE SW 1/4 OF SEC. 13  
AND NE 1/4 OF THE SE 1/4 OF SEC. 14,  
ALL IN T. 18 N., R. 1 W., W.M.  
THURSTON COUNTY, WASHINGTON

Nov. 1997

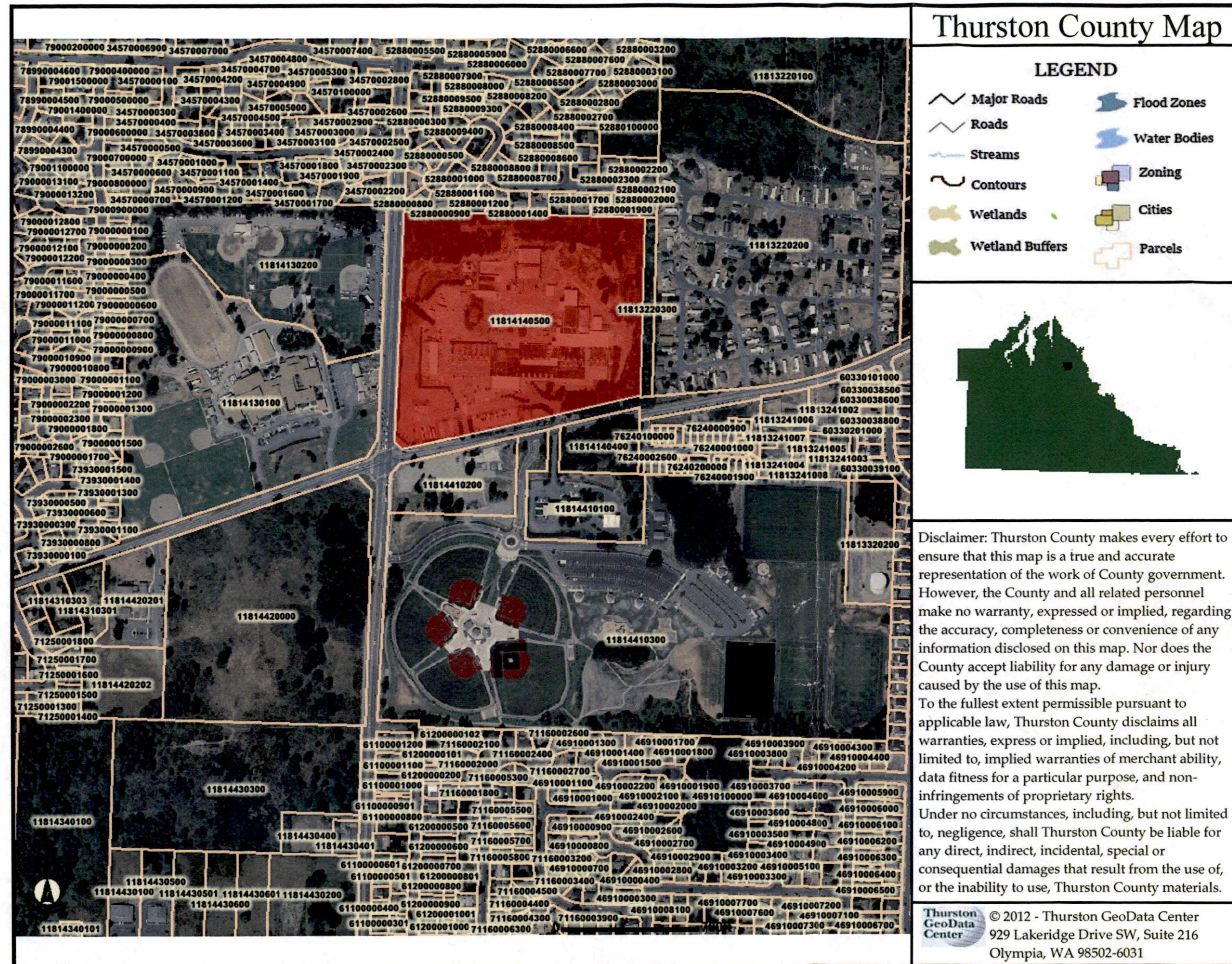


LEGEND

- GUY ANCHOR
- POWER POLE (UNLESS OTHERWISE NOTED)
- TELEPHONE RISER
- SIGN AS NOTED
- WATER VALVE
- BOLLARD
- MONITORING WELL
- TEST PIT (FIELD LOCATED IN MARCH 1997)
- OAK TREE (DIA. NOTED)
- OAK TREE LINE
- STRATTA PROBE TEST LOCATION
- x TEST LOCATION











# Voluntary Cleanup Program

## Washington State Department of Ecology Toxics Cleanup Program

### VCP INTERNAL REVIEW CHECKLIST

Site Name: Ostrom Farms **If applicable (property-specific):**  
Facility / Site No.: 1386 Tax Parcel(s) No.:  
VCP Project No.: SW1283 Property Address: 8322 Steilacoom Road SE, Lacey, WA  
Site Manager: Hans Qiu Date submitted for review: 04/30/2013

#### What opinion are you providing the Applicant in the attached draft Letter?

- |   |   |
|---|---|
| <input type="checkbox"/> Site Likely NFA  | <i>PROPERTY-SPECIFIC</i>  |
| <input type="checkbox"/> Site Likely FA   | <input type="checkbox"/> <i>Property Likely FA</i>              |
| <input type="checkbox"/> NFA at Site (Please attach all previous opinion letters for review)  | <input type="checkbox"/> <i>Property Likely NFA, FA at Site</i> |
| <input type="checkbox"/> Partial Sufficiency, FA at Site                                      | <input type="checkbox"/> <i>Further Action at Property</i>      |
| <input checked="" type="checkbox"/> Further Action at Site                                    | <input type="checkbox"/> <i>Property NFA, FA at Site</i>        |
| <input type="checkbox"/> Other (Please identify, such as Proposed or Completed RI, FS, etc.): |   |

- Have you informed the VCP Unit Manager and the Data Coordinator of information submitted by applicant?  
☒ Yes ☐ No – If No, please do so to ensure a Project Activity is created in ISIS.

**Report Received Date/Project Activity Initiation Date:** 2/22/2013

**Due Date for Response to Applicant (90 days from Initiation Date):** 05/26/2013

- Were reports entered into DSARS? ☐ Yes ☒ No If No, reason? Has not been electronically submitted
- VCP application reviewed to ensure all information is current? ☒ Yes ☐ No

If No, please be sure to provide the Data Coordinator with any changes needed.

- BARTS: If issuing NFA opinion, notify applicant that letter will be held until final payment is received.

Have you completed your site logs? ☐ Yes ☒ No

- Is this a *regulated* UST/LUST site? ☐ Yes ☒ No If Yes, coordinate with LUST staff.

- Do any other government agencies or Ecology Programs have interest in site activities?  
☒ Yes ☐ No If Yes, please be sure to cc: the appropriate agency/program contact.

- Has the environmental sampling data been entered into EIM?

☐ Yes ☒ No If Yes, when? Date:

Will additional data be generated requiring EIM submittal?

☒ Yes ☐ No

- If site is to be de-listed based on an NFA opinion, have you coordinated with COEES?  
☐ Yes ☐ No ☒ Not Applicable

- Has the lateral and vertical nature and extent of contamination at the site been adequately characterized for all media?

☐ Yes ☒ No If No, please be sure data gaps are clearly identified in the opinion letter.

- Is the site located within the projected boundary of the Tacoma Smelter Plume Site?

☐ Yes ☒ No If Yes, please be sure surface soil is analyzed for lead and arsenic as appropriate.



- Are institutional controls, such as an environmental covenant, needed for the site?  
☐ Yes    ☐ No    ☒ Unknown at this time (Feasibility Study not completed yet)  
 If *Yes*, is a compliance monitoring plan required to be submitted?  
☐ Yes    ☐ No    If *Yes* to both, include an explanation of the requirements in the opinion letter.  
 If an environmental covenant was generated, has it been signed by Ecology, filed with the appropriate county, and included as an attachment to the NFA?    ☐ Yes    ☐ No
- Are periodic reviews necessary at the Site (e.g., where institutional and/or engineered controls, and/or non-permanent remedies are part of the cleanup action)?  
☐ Yes    ☒ No    If *Yes*, when should the first review be completed? Date:
- Was geologic, hydrogeologic, or engineering work stamped by a licensed professional?  
☒ Yes    ☐ No    ☐ Not Applicable  
 If *No*, please include a comment in your opinion letter indicating that these types of work when submitted to Ecology for review must be under the seal of an appropriately licensed professional, as required by Chapters 18.43 and 18.220 RCW.
- Has a Terrestrial Ecological Evaluation Form been submitted?    ☐ Yes    ☒ No  
 Has it been accepted?    ☐ Yes    ☒ No  
 If *No* to either question, please include a comment in your opinion letter.

Comments or responses not related to the opinion letter (*Document relevant information*):

### **Sign and Date, When Approved for Transmittal**

If you have comments, do not sign. Check the comments box and fill in the date. Check the comments resolved box when applicable, then sign and date.

#### **Peer Reviewer (if applicable)**

- ☐ Comments, see attached    Date:  
☐ Comments Resolved

**Date**

#### **Unit Supervisor**

- ☒ Comments, see attached    Date: 5/8/13, 5/9/13  
☒ Comments Resolved

**Date**

#### **Section Manager (if not delegated)**

- ☐ Comments, see attached    Date:  
☐ Comments Resolved

**Date**


**WASHINGTON STATE DEPARTMENT OF ECOLOGY  
TOXICS CLEANUP PROGRAM  
The Ostrom Co. SITE LOG**

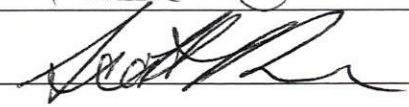
<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2013
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> May
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL</b> 1-15 <input checked="" type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD</b> 16-31 <input type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
5/8/2013	1.0	Revising internally reviewed opinion letter
5/9/2013	0.7	Revising opinion letter and printing it for a second look.
5/13/2013	0.2	Reviewing the approved letter and sent it to Kim for R. Lawson Approval.

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"><li>If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li><li>If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li></ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE**  **DATE** 05/16/13

**SUPERVISOR'S SIGNATURE**  **DATE** 5/19/13





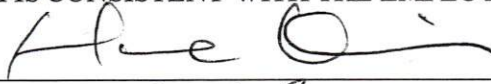
**WASHINGTON STATE DEPARTMENT OF ECOLOGY  
TOXICS CLEANUP PROGRAM  
The Ostrom Co. SITE LOG**

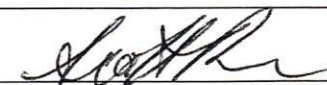
<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2013
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> April
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL</b> 1-15 <input type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD</b> 16-31 <input checked="" type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
04/30/2013	3.8	Developing opinion letter, filling out the checklist, printed it for internal review

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"> <li>If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li> <li>If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li> </ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE** 
**DATE** 5/2/13

**SUPERVISOR'S SIGNATURE** 
**DATE** 5/2/13





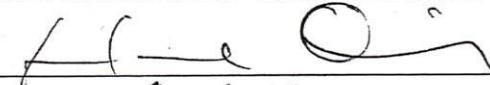
**WASHINGTON STATE DEPARTMENT OF ECOLOGY  
TOXICS CLEANUP PROGRAM  
The Ostrom Co. SITE LOG**


<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2013
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> April
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL</b> 1-15 <input checked="" type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD</b> 16-31 <input type="checkbox"/>

DATE	HOURS	ACTIVITY DESCRIPTION
4/1/2013	0.6	Review Terra Associates, Inc. Report, June 10, 1997
4/2/2013	4.3	Review Terra Associates, Inc. Report, June 10, 1997; Review ERTS #601343, Site Hazard Assessment report
4/3/2013	3.6	Review July 2007 Insight Geologic Report, start developing draft opinion letter
4/5/2013	4.3	Develop opinion letter
4/8/2013	1.5	Develop opinion letter

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"><li>• If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li><li>• If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li></ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE**  **DATE** 04/16/13

**SUPERVISOR'S SIGNATURE**  **DATE** 4/16/13



**WASHINGTON STATE DEPARTMENT OF ECOLOGY**  
**TOXICS CLEANUP PROGRAM**  
**The Ostrom Co. SITE LOG**

<b>SITE NAME:</b> The Ostrom Co., Lacey, Thurston County	
<b>FACILITY / SITE NUMBER:</b> 1386	<b>YEAR:</b> 2013
<b>SUPER INDEX CODE (SIC) NUMBER:</b> JV501	<b>MONTH:</b> March
<b>VCP PROJECT NUMBER (IF APPLICABLE):</b> SW1283	<b>PAYROLL</b> 1-15 <input type="checkbox"/>
<b>EMPLOYEE'S NAME:</b> Hans Qiu	<b>PERIOD</b> 16-31 <input checked="" type="checkbox"/>

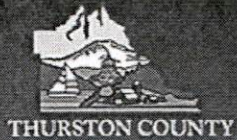
DATE	HOURS	ACTIVITY DESCRIPTION
3/26/2013	0.5	Document review: application
3/27/2013	2.2	Reviewed Independent Remedial Action Report by Stemen Environmental, Nov. 3, 1997
3/28/2013	0.9	Review documents

<b>ON-DEMAND BILLING FOR VCP</b> <i>Delete this section if not applicable.</i>	<i>For use only by the Site Manager assigned to the VCP project, not other staff or attorneys working on the project.</i>
<ul style="list-style-type: none"> <li>If this site log contains your final charges for this VCP project and you want to use on-demand billing to invoice those charges, then check the following box: <input type="checkbox"/></li> <li>If other staff or attorneys need to submit site logs before final invoicing can occur, then also check the following box: <input type="checkbox"/> If so, how many <b>other site logs</b> need to be submitted? [      ]</li> </ul>	

DATA ON THIS FORM IS CONSISTENT WITH THE EMPLOYEE'S TIMESHEET.

**EMPLOYEE'S SIGNATURE** Hans Qiu      **DATE** 03/28/13  
**SUPERVISOR'S SIGNATURE** Rebecca Lawton      **DATE** 4/2/13



**OFFICE OF THE ASSESSOR**  
STEVEN J. DREW, ASSESSORBasic information  
Property: 11814140500

Use these buttons to display different information for this property

New Search	Basic Info	Structures	Land	Map Info	Sales
Values	<b>NEW</b> Cost Val Rpt	Taxes	Printable	Useful Links	Feedback

**Owner/Taxpayer Information**

Role	Pct	Name Street	City	State Country	Zip
Owner	100%	OSTROM MUSHROOM CO INC 8322 STEILACOOM RD SE	OLYMPIA	WA	98513
Taxpayer	100%	OSTROM MUSHROOM CO INC 8322 STEILACOOM RD SE	OLYMPIA	WA	98513

**Parcel Information**

**Situs Address:** 8322 STEILACOOM RD SE, OLYMPIA  
**Legal Description:** Section 14 Township 18 Range 1W Quarter SOUTHEAST  
QUARTER OF THE NORTHEAST QUARTER LYING NORTHERLY OF  
STEILACOOM ROAD  
**Sect/Town/Range:** 14 18 1W  
**Size:** 33.86  
**Use Code:** 83 Cur - Use - Ag  
**TCA Number:** 239  
**Taxable:** Yes  
**Neighborhood:** 71S1  
**Property Type:** AGR  
**Total Apartments:** 0  
**Located on:** [99200148700](#)

Clicking this link will open a new  
browser window, displaying  
information  
about the parcel upon which this  
real property is located

**Fire District:** FIRE DISTRICT #03  
**School District:** NORTH THURSTON S.D. #3  
**Sewer Type:** SEPTIC  
**Associations:** [99200148700](#)

OSTROM MUSHROOM CO INC

**Office of the Assessor**  
2000 Lakeridge Drive SW - Olympia, WA 98502  
**Customer Service (360)867-2200 -- Fax (360)867-2201 -- TDD (360)754-2933**

2012





# Voluntary Cleanup Program

## Washington State Department of Ecology Toxics Cleanup Program

### APPLICATION FORM

Under the Voluntary Cleanup Program (VCP), the Department of Ecology (Ecology) may provide informal site-specific technical consultations to persons conducting independent remedial actions at a hazardous waste site. Ecology may provide such consultations under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC.

To enter the VCP, complete and submit to the Department of Ecology (Ecology) a VCP Application. The Application consists of the following two documents:

1. Application Form (including required attachments). ← **THIS DOCUMENT**
2. Agreement.

For guidance on how to complete your Application, please refer to the Application Instructions, which are available separately on the VCP web site: [www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm](http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm).

RECEIVED

FEB 15 2013

WA State Department of Ecology (SWRO)

#### Part 1 - ADMINISTRATION

**A. Customer Information.** The Customer is the person or organization requesting services from Ecology under the VCP, and is responsible for paying the costs incurred by Ecology. The authority and duty of the Customer are explained in the Agreement.

Name of Customer: Ostrom Farms

What type of entity is the Customer?

☐ Person

*If the Customer is a "person," then the Customer shall serve as both the Manager and Billing Contact for the Project. When identifying the Project Manager below, please enter the name of the Customer and his or her contact information.*

☒ Organization

*If the Customer is an "organization," then please identify below both a Manager and Billing Contact for the Project. Those persons must be employed by the organization.*

What is the Customer's involvement at the Site? Please check all that apply.

- ☒ Property owner  
☐ Past property owner  
☐ Future property owner  
☐ Property lessee  
☐ Other – please specify: \_\_\_\_\_

- ☒ Business owner (operator)  
☐ Mortgage holder  
☐ Consultant  
☐ Attorney

If not the current property owner, is the Customer acting as the agent for the property owner?

☐ Yes ☐ No

If not the current property owner, is the Customer authorized to grant access to the property?

☐ Yes ☐ No

SWRO, TCP # SW/283

F/S 1386



## Part 1 – ADMINISTRATION continued

**B. Project Manager Information.** Ecology will send this person all official correspondence. Please enter the required information below.

Name: David Knudsen		Title: CEO	
Mailing address: 8322 Steilacoom Road SE			
City: Olympia		State: WA	Zip: 98513
Phone: 360.491.1410	Fax: 360.438.2594		E-mail: dknudsen@ostromfarms.com

**C. Project Billing Contact Information.** Ecology will send this person monthly invoices.

Is the Project Billing Contact the same as the Project Manager?

- ☒ Yes    *If you answered "YES," then skip to the next question.*  
☐ No    *If you answered "NO," then please enter the required information below.*

Name:		Title:	
Mailing address:			
City:		State:	Zip:
Phone:	Fax:		E-mail:

**D. Project Consultant Information.**

Is the Customer a consultant?

- ☐ Yes    *If you answered "YES," then skip to the next question.*  
☒ No    *If you answered "NO" and the Customer hired a consultant to conduct the independent remedial action, then enter the required information below.*

Name:		Title:	
Organization:			
Mailing address:			
City:		State:	Zip:
Phone:	Fax:		E-mail:

Do you want Ecology to contact the Project Consultant?

- ☐ Yes    ☐ No

**E. Property Owner Information.**

Is the Customer the owner of the property where independent remedial action is being conducted?

- ☒ Yes    *If you answered "YES," then enter the type of entity and skip to the next question.*  
☐ No    *If you answered "NO," then please enter all of the required information below.*

Name:		Title:	
Organization:			
Mailing address:			
City:		State:	Zip:
Phone:	Fax:		E-mail:



## Part 1 – ADMINISTRATION continued

What type of entity is the property owner? Please check only one.

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Private            | <input type="checkbox"/> County        |
| <input type="checkbox"/> Tribal                        | <input type="checkbox"/> Municipal     |
| <input type="checkbox"/> Federal                       | <input type="checkbox"/> Mixed         |
| <input type="checkbox"/> State                         | <input type="checkbox"/> Public School |
| <input type="checkbox"/> Other – please specify: _____ |  |

### F. Request for Written Opinion.

Are you requesting a written opinion at this time?

- ☒ Yes   ☐ No

If you answered “YES,” on what planned or completed remedial action do you want a written opinion?  
We are requesting an opinion as to the completeness of remediation efforts for the fueling area spill  
as well as the remediation of impacted fill in the area of the stormwater pond.

**Please attach to this Application any additional remedial action plans or reports you want Ecology to review.** Ecology will base its opinion on the information contained in the Site file, including any information attached to this Application.

If you answered “NO,” please explain why you are enrolling in the VCP at this time and when you expect to request a written opinion from Ecology.

Attach additional pages if necessary.

### G. Reporting Requirements.

Please comply with the following reporting requirements when requesting written opinions on planned or completed remedial actions:

- ☐ **Licensing.** Documents submitted containing geologic, hydrologic, or engineering work must be under the seal of an appropriately licensed professional, as required by Chapters 18.43 and 18.220 RCW.
- ☐ **Data Submittal.** Environmental sampling data must be submitted in both a printed form and an electronic form capable of being transferred into Ecology’s data management systems. For instructions on how to submit the data, please refer to the following Ecology web site:  
[www.ecy.wa.gov/programs/tcp/data\\_submittal/Data\\_Requirements.htm](http://www.ecy.wa.gov/programs/tcp/data_submittal/Data_Requirements.htm).

Failure to comply with these requirements may result in unnecessary delays. **Ecology will not issue a No Further Action (NFA) opinion unless these requirements are satisfied.**

## Part 2 - DESCRIPTION OF THE SITE

**A. Name of the Site.** If Ecology has already identified the Site, enter the name provided by Ecology. Otherwise, enter a suggested name for the Site. You may also include an alternate name.

Name: Ostrom Farms

Alternate Name:

### B. Location of Property where the Releases Occurred (Source Property).

The "source property" is the property where hazardous substances were released into the environment. For example, if petroleum was released from a leaking UST, the source property is the property where the UST was located.

Do you know on which property the releases occurred?

☒ Yes

*If you answered "YES," then please refer to the source property when answering the following questions.*

☐ No

*If you answered "NO," then please refer to the property addressed by your remedial action (cleanup) when answering the following questions.*

**Physical Address.** Please enter the physical address of the property below.

Street Address: 8322 Steilacoom Road SE

City: Olympia

State: WA

Zip: 98513

**Geographic Position.** Please enter the geographical position of the property below. For additional guidance on how to complete this part, please refer to instructions on the VCP web site.

COORDINATES	LATITUDE:	Degrees: 47.048807	Minutes:	Seconds:
	LONGITUDE :	Degrees: - 122.761942	Minutes:	Seconds:
LOCATION ON PROPERTY: [e.g., point of release or center of parcel]		Center of Parcel		
COLLECTION METHOD: [e.g., GPS or address matching]		Coordinates from GoogleEarth		
COLLECTION SOURCE: [i.e., map scale]		Aerial Photograph		
HORIZONTAL DATUM: [i.e., base reference for coordinate system]		WGS84		
ACCURACY LEVEL: [i.e., +/- feet or meters]		+/- 50 feet		

### Legal Descriptions.

TRS DATA:	Township: 18	Range: 1W	Section: 14	Quarter-Quarter: --
TAX PARCEL #(s):	1181410500			



## Part 2 - DESCRIPTION OF THE SITE continued

### C. Identification of Properties affected by the Releases (Affected Properties).

An "affected property" is a property affected by the release of hazardous substances on the source property. For example, petroleum released from a leaking UST on one property (source property) may migrate through the soil or ground water onto an adjacent property (affected property).

Do any of the releases affect any properties adjacent to the source property?

☐ Yes

*If you answered "YES," then please identify below each property that you know has been affected by the releases on the source property. If you need to identify additional properties, please attach additional pages.*

☒ No

*If you answered "NO," then skip to the next question.*

☐ Unknown

*If you answered "UNKNOWN," then skip to the next question.*

1.	Address:
	Tax Parcel(s):
2.	Address:
	Tax Parcel(s):
3.	Address:
	Tax Parcel(s):
4.	Address:
	Tax Parcel(s):

### D. Identification of Public Right-of-Ways affected by the Releases.

Do any of the releases affect any public right-of-ways (e.g., streets)?

☐ Yes

☒ No

☐ Unknown

If you answered "YES" above, please specify below. Otherwise, skip to the next question.


Attach additional pages if necessary.

### E. Extent of the Site.

What is the approximate areal extent of the Site? Please check only one.

- ☐ < 5,000 square feet  
☐ > 5,000 square feet, but < 1 acre  
☐ > 1 acre, but < 10 acres  
☒ > 10 acres  
☐ Unknown

## Part 2 - DESCRIPTION OF THE SITE continued

### F. Description of Release(s) at the Site.

#### Source of Release(s).

What are the source(s) of the release(s) at the Site? Please check all that apply.

- ☐ Point source (e.g., leaking tank)
- ☒ Non-point source (e.g., contaminated soil used as fill)
- ☐ Area-wide lead and arsenic soil contamination (see questions below)
- ☒ Other – please specify: Fuel Spill
- ☐ Unknown

To the extent known, please describe the source(s) of the release(s):

NW Stormwater Pond - Apparently contaminated fill soil

Fueling Area - Spills during fueling

Attach additional pages if necessary.

**Circumstances of Release(s).** To the extent known, please describe below the circumstances of the release(s).

Unknown

Attach additional pages if necessary.

**Circumstances of Release Discovery.** To the extent known, please describe below the circumstances of the discovery of the release(s).

Insight Geologic, Inc. conducted a Phase II Assessment of the Property in 2007. Areas of contamination were discovered at that time.

Attach additional pages if necessary.



## Part 2 - DESCRIPTION OF THE SITE continued

**Area-Wide Soil Contamination.** For information about the area-wide soil contamination project, please refer to the following web site: [www.ecy.wa.gov/programs/tcp/area\\_wide/area\\_wide\\_hp.html](http://www.ecy.wa.gov/programs/tcp/area_wide/area_wide_hp.html). For information about the Tacoma Smelter Plume (TSP) and the associated Management Plan, please refer to the following web site: [www.ecy.wa.gov/programs/tcp/sites/tacoma\\_smelter/ts\\_hp.htm](http://www.ecy.wa.gov/programs/tcp/sites/tacoma_smelter/ts_hp.htm).

Is the Site located within an area affected by smelter emissions, such as the TSP area?

☐ Yes ☒ No ☐ Unknown

To determine whether your Site is located within the TSP area, please refer to the map on the TSP web site identified above.

Is the Site located on a former apple or pear orchard in operation prior to 1947?

☐ Yes ☒ No ☐ Unknown

Is the Site impacted by area-wide arsenic and/or lead soil contamination?

☐ Yes ☒ No ☐ Unknown

**G. Nature and Extent of Hazardous Substances Released at the Site.** The following questions refer to conditions after the release, but prior to any cleanup, of the hazardous substances at the Site.

**Hazardous Substances and Affected Media.** To the extent known, please identify in the following table the hazardous substances released at the Site and the media (e.g., soil) impacted by those substances. Use the codes at the bottom of the table.

HAZARDOUS SUBSTANCE	AFFECTED MEDIA				
	SOIL	GROUND WATER	SURFACE WATER	SEDIMENT	AIR
EXAMPLE: Benzene	C	S	N/A	N/A	B
Diesel Fuel	C	U	N	N	N
Heavy Oil	C	U	N	N	N

When identifying the affected media in the table above, please use one of the following codes:

- C = confirmed, above cleanup level
- B = confirmed, below cleanup level
- O = confirmed, not present
- S = suspected
- N/A = not suspected
- U = unknown

## Part 2 - DESCRIPTION OF THE SITE continued

### **Drinking Water.**

Does any of the contamination at the Site pose a threat or potential threat to an existing drinking water source (ground water or surface water)?

☐ Yes    ☒ No    ☐ Unknown

If you answered "YES" above, what type of drinking water system is threatened by the contamination? Please check all that apply.

☐ Single Family  
☐ Community

### **Indoor Air.**

Are contaminant odors present in any buildings, manholes, or other confined spaces?

☐ Yes    ☒ No    ☐ Unknown

If you answered "YES" above, please specify:

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Attach additional pages if necessary.

### **H. Maps of the Site.**

Please attach to this application map(s) that identify, to the extent known, the following:

- ☐ The location of the site.
- ☐ The properties, and any public right-of ways, affected by the site.
- ☐ The source(s) of the release(s) at the site.
- ☐ The nature and extent of contamination at the site.
- ☐ Any human or ecological receptors impacted by the site (e.g., drinking water wells).
- ☐ The physical characteristics of the site (e.g., property lines, building and road outlines, surface water bodies, water supply wells, ground water flow direction, and utility right-of-ways).
- ☐ The properties adjacent to the site and the uses of those properties (e.g., gas station, dry cleaner, residential).



## Part 3 – OPERATIONAL HISTORY OF THE SITE

**A. Current Use of Source Property.** *Note that the following questions refer only to the Source Property, not other properties affected by the Site. Answer these questions to the best of your ability.*

**Current Property Owners.** To the extent known, please identify below the current owner of the source property.

Name: Ostrom Farms	Title:	
Organization:		
Mailing address: 8322 Steilacoom Road SE		
City: Olympia	State: WA	Zip code: 98513
Phone:		

**Current Business Owner (Operator).** To the extent known, please identify below the current owner of the business located on the source property.

Name: Same	Title:	
Organization:		
Mailing address:		
City:	State:	Zip code:
Phone:		

**Current Business Operations.** To the extent known, please identify below the current operations of the business located on the source property.

What is the current land use of the source property? Please check all that apply.

- |  |   |
|--|---|
| <input type="checkbox"/> Residential                   | <input type="checkbox"/> School             |
| <input type="checkbox"/> Commercial                    | <input type="checkbox"/> Childcare facility |
| <input type="checkbox"/> Industrial                    | <input type="checkbox"/> Park               |
| <input checked="" type="checkbox"/> Agricultural       |   |
| <input type="checkbox"/> Other – please specify: _____ |   |

Is there a currently operational commercial or industrial business located on the source property?

- ☒ Yes    ☐ No    ☐ Unknown

If you answered "YES" above, please identify in the following table the current business operations using the North American Industry Classification System (NAICS) codes and specifying the operations.

NAICS CODE	DESCRIPTION OF OPERATIONS
EX: 447110	Gasoline Stations with Convenience Stores
111411	Mushroom Farming

### Part 3 – OPERATIONAL HISTORY OF THE SITE continued

Is there a solid waste handling facility located on the Source Property?

☐ Yes ☒ No ☐ Unknown

If you answered "YES" above, please identify:

Attach additional pages if necessary.

Is there a dangerous waste treatment, storage, or disposal facility located on the Source Property?

☐ Yes ☒ No ☐ Unknown

If you answered "YES" above, please identify:

Attach additional pages if necessary.

#### **Regulation of Current Business Operations.**

Does the business operate under any federal, state, or local permits related to the release of hazardous substances into the environment (e.g., NPDES permit)?

☒ Yes ☐ No ☐ Unknown

If you answered "YES" above, please specify the regulated operation, the name of the permit, and the date it was issued in the table below.

REGULATED OPERATION	PERMIT	DATE ISSUED
EX: Wastewater discharge	NPDES permit	02/02/02
State Wastewater Discharge Permit	ST6217	2007

Has a state or federal notice of enforcement action (e.g., notice of violation) ever been issued related to the release of hazardous substances at the business?

☒ Yes ☐ No ☐ Unknown

If you answered "yes" above, please specify (notice and year issued): 2010

Have business operations resulted in any other spills or other unpermitted releases on the source property?

☐ Yes ☐ No ☒ Unknown

If you answered "YES" above, please specify in the table below.

RELEASE	DATE OF RELEASE	STATUS OF RELEASE



## Part 3 – OPERATIONAL HISTORY OF THE SITE continued

**Storage Tank Information.** In table below, please identify all above ground storage tanks (AST) and underground storage tanks (UST) that have been used for storing hazardous substances on the source property, irrespective of whether the tanks are still in use or in place. *If you are unable to provide answers to specific questions regarding a tank, please enter "U" for unknown.*

IDENTIFICATION				STATUS AND CLOSURE				RELEASES	
Hazardous Substance	Type (AST/UST)	Size (Gallons)	TANK ID	DATE INSTALL	IN USE (Y/N)	DATE CLOSED	CLOSURE METHOD (*)	PAST (Y/N)	CURRENT (Y/N)
EX: Diesel	UST	10,000	4	02/87	N	05/98	Removed	Y	N

(\*) Options = Removed or Closed in Place

**B. Past Use of Source Property.** *Note that the following questions refer only to the Source Property, not other properties affected by the Site. Please answer these questions to the best of your ability.*

**Past Property Owners.** To the extent known, please identify below the owner of the source property at the time the release occurred.

Name:		Title:
Organization:		
Mailing address:		
City:	State:	Zip code:
Phone:	Fax:	E-mail:

**Past Business Owners (Operators).** To the extent known, please identify below the owner of the business (operator) at the time the release occurred.

Name:		Title:
Organization:		
Mailing address:		
City:	State:	Zip code:
Phone:	Fax:	E-mail:

**Identification of Past Business Operations.** Please identify in the following table the past operations of businesses located on the source property using the North American Industry Classification System (NAICS) codes and/or specifying the operations.

NAICS CODE	DESCRIPTION OF OPERATIONS
EX: 447110	Gasoline Stations with Convenience Stores

### Part 3 – OPERATIONAL HISTORY OF THE SITE continued

**C. Future Use of Source and Affected Properties.** The following questions refer to both source and affected properties. Please answer these questions to the best of your ability.

Will any ownership interest in the source or affected properties be conveyed prior to, or upon completion of, the cleanup?

☐ Yes    ☒ No    ☐ Unknown

If you answered "YES" above, please specify:

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Attach additional pages if necessary.

Will any of the source or affected properties, or portions of those properties, be redeveloped as part of the cleanup?

☐ Yes    ☒ No    ☐ Unknown

If you answered "YES" above, please specify the proposed land use below. Please check all that apply.

- |  |   |
|--|---|
| <input type="checkbox"/> Residential             | <input type="checkbox"/> School             |
| <input type="checkbox"/> Commercial              | <input type="checkbox"/> Childcare facility |
| <input type="checkbox"/> Industrial              | <input type="checkbox"/> Park               |
| <input type="checkbox"/> Agricultural            |   |
| <input type="checkbox"/> Other – please specify: |   |

Please also specify the activities proposed for that land use:

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Attach additional pages if necessary.



#### Part 4 – ADMINISTRATIVE HISTORY OF THE SITE

Have you previously reported the release(s) of hazardous substances at the Site to Ecology?

☐ Yes – If so, when? \_\_\_\_\_ ☒ No ☐ Unknown

Has the cleanup of the Site, or any portion of the Site, ever been managed under the VCP?

☐ Yes – If so, please specify the VCP Project Number: \_\_\_\_\_  
☒ No  
☐ Unknown

Has the cleanup of the Site, or any portion of the Site, ever been managed under a federal or state order or decree?

☒ Yes – If so, please specify the type and docket number: AO7684  
☐ No  
☐ Unknown

#### Part 5 – DESCRIPTION OF INDEPENDENT REMEDIAL ACTIONS AT THE SITE

##### A. Scope of Remedial Actions.

Do you plan to characterize and address all of the contamination at the Site, including any contamination located on affected adjacent properties, as part of the VCP project?

☒ Yes ☐ No ☐ Unknown

If you answered "NO" above, please describe below the scope of the VCP project, including the contamination (properties, portions of a property, media and/or hazardous substances) that you DO NOT plan on characterizing and/or addressing as part of the VCP project. Please include additional pages if necessary.

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Attach additional pages if necessary.

## Part 5 – DESCRIPTION OF INDEPENDENT REMEDIAL ACTIONS AT THE SITE continued

### B. Status of Remedial Actions.

What is the current status of remedial actions at the site? Please check all that apply in the table below.

REMEDIAL ACTION	PLANNED	ONGOING	COMPLETED	NOT APPLICABLE
INITIAL RESPONSE (UST ONLY)				NA
INTERIM ACTION				NA
REMEDIAL INVESTIGATION			2007	
FEASIBILITY STUDY			2007	
CLEANUP ACTION		2012		

### C. Documentation of Remedial Actions.

Please list in the table below all known remedial action plans or reports produced for the site, including:

- The title of the plan or report,
- The author (e.g. consulting firm) of the plan or report,
- The date the plan or report was produced,
- Whether the plan or report has been submitted to Ecology,
- The date the plan or report was submitted to Ecology.

	TITLE	AUTHOR	DATE	SUBMITTED TO ECOLOGY	
				Y/N?	DATE
EX:	John Doe's Site: Remedial Investigation Work Plan	Mom's Consulting Firm	02/20/05	NO	N/A
1.	Subsurface Environmental Assessment	Insight Geologic, Inc	7/17/2007	N	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					



## Part 6 – STATEMENT AND SIGNATURE

**A. Statement and Signature.** The undersigned affirms that the information contained in this application is true and accurate to the best of his or her knowledge. Please note that someone other than the Customer may sign this Application Form.

Name: William E. Halbert

Title: Principal

Signature:

Date: 7/23/12

Organization: Insight Geologic, Inc.

Mailing address: 1015 - 4th Avenue E

City: Olympia

State: WA

Zip code: 98506

Phone: 360.943.5003

Fax:

E-mail:

### B. Affiliation.

What is the signatory's involvement at the Site? Please check all that apply.

- ☐ Customer
- ☐ Property Owner
- ☒ Consultant
- ☐ Attorney
- ☐ Other – please specify: \_\_\_\_\_

## VCP AGREEMENT



**INSTRUCTIONS:** Submit this Agreement (original) to Ecology as part of your Application. Before submitting, enter the Customer's name and the Site's address on the first page and sign the Agreement on the second page. If your Application is accepted, then Ecology will do the following: 1) identify the Site and VCP project in the box below; 2) sign the Agreement; and 3) send you a copy of the completed Agreement.

This document constitutes an Agreement between the State of Washington Department of Ecology (Ecology) and Ostrom Mushroom Farms

(Customer) to provide informal site-specific technical consultations under the Voluntary Cleanup Program (VCP) for the Site identified below and associated with the following address:

8322 Steilacoom Road SE, Olympia, WA 98513

The purpose of this Agreement is to facilitate independent remedial action at the Site. Ecology is entering into this Agreement under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC. If a term in this Agreement is defined in MTCA or Chapter 173-340 WAC, then that definition shall govern.

### Services Provided by Ecology

Upon request, Ecology agrees to provide the Customer informal site-specific technical consultations on the independent remedial actions proposed for or performed at the Site consistent with WAC 173-340-515(5). Those consultations may include assistance in identifying applicable regulatory requirements and opinions on whether the remedial actions proposed for or conducted at the Site meet those requirements.

Ecology may use any appropriate resource to provide the Customer with the requested consultative services. Those resources may include, but shall not be limited to, those of Ecology and the Office of the Attorney General. However, Ecology shall not use independent contractors unless the Customer provides Ecology with prior written authorization.

In accordance with RCW 70.105D.030(1)(i), any opinions provided by Ecology under this Agreement are advisory only and not binding on Ecology. Ecology, the state, and officers and employees of the state are immune from all liability. Furthermore, no cause of action of any nature may arise from any act or omission in providing, or failing to provide, informal advice and assistance under the VCP.

### Payment for Services by Customer

The Customer agrees to pay all costs incurred by Ecology in providing the informal site-specific technical consultations requested by the Customer consistent with WAC 173-340-515(6) and 173-340-550(6). Those costs may include the costs incurred by attorneys or independent contractors used by Ecology to provide the requested consultative services. Ecology's hourly costs shall be determined based on the method in WAC 173-340-550(2).

Ecology shall mail the Customer a monthly itemized statement of costs (invoice) by the tenth day of each month (invoice date) that there is a balance on the account. The invoice shall include a summary of the costs incurred, payments received, identity of staff involved, and amount of time staff spent on the project.

The Customer shall pay the required amount by the due date, which shall be thirty (30) calendar days after the invoice date. If payment has not been received by the due date, then Ecology shall withhold

FOR COMPLETION BY ECOLOGY ONLY	Facility / Site Name:
	Facility / Site No.:
	VCP Project No.:







RECEIVED

FEB 15 2013  
WA State Department  
of Ecology (SWRO)

1015 East 4<sup>th</sup> Avenue  
Olympia, WA 98506  
Telephone: 360.754.2128  
Fax: 360.754.9299

## LETTER OF TRANSMITTAL

To: Department of Ecology  
PO Box 47775  
Olympia, Washington 98504  
Attn: Scott Rose

Date: February 13, 2013

File #: 335-001-04

Regarding: Ostrom's Farms

We are sending: ☒ Attached

☐ Under Separate Cover

Copies	Description
1	Ostrom's Mushroom Facility Supplemental Environmental Services Report
1	VCP Application

These are transmitted as checked below:

☒ For Your Use

☐ As Requested

☐ Returned

☐ For Review and Comment

☐ Other (see remarks)

We are sending via:

☒ US Mail

☐ Overnight

☐ Courier

☐ Fax

Remarks:

Copy To:

Signed: \_\_\_\_\_



# VCP AGREEMENT



**INSTRUCTIONS:** Submit this Agreement (original) to Ecology as part of your Application. Before submitting, enter the Customer's name and the Site's address on the first page and sign the Agreement on the second page. If your Application is accepted, then Ecology will do the following: 1) identify the Site and VCP project in the box below; 2) sign the Agreement; and 3) send you a copy of the completed Agreement.

This document constitutes an Agreement between the State of Washington Department of Ecology (Ecology) and \_\_\_\_\_ (Customer) to provide informal site-specific technical consultations under the Voluntary Cleanup Program (VCP) for the Site identified below and associated with the following address:

The purpose of this Agreement is to facilitate independent remedial action at the Site. Ecology is entering into this Agreement under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC. If a term in this Agreement is defined in MTCA or Chapter 173-340 WAC, then that definition shall govern.

## Services Provided by Ecology

Upon request, Ecology agrees to provide the Customer informal site-specific technical consultations on the independent remedial actions proposed for or performed at the Site consistent with WAC 173-340-515(5). Those consultations may include assistance in identifying applicable regulatory requirements and opinions on whether the remedial actions proposed for or conducted at the Site meet those requirements.

Ecology may use any appropriate resource to provide the Customer with the requested consultative services. Those resources may include, but shall not be limited to, those of Ecology and the Office of the Attorney General. However, Ecology shall not use independent contractors unless the Customer provides Ecology with prior written authorization.

In accordance with RCW 70.105D.030(1)(i), any opinions provided by Ecology under this Agreement are advisory only and not binding on Ecology. Ecology, the state, and officers and employees of the state are immune from all liability. Furthermore, no cause of action of any nature may arise from any act or omission in providing, or failing to provide, informal advice and assistance under the VCP.

## Payment for Services by Customer

The Customer agrees to pay all costs incurred by Ecology in providing the informal site-specific technical consultations requested by the Customer consistent with WAC 173-340-515(6) and 173-340-550(6). Those costs may include the costs incurred by attorneys or independent contractors used by Ecology to provide the requested consultative services. Ecology's hourly costs shall be determined based on the method in WAC 173-340-550(2).

Ecology shall mail the Customer a monthly itemized statement of costs (invoice) by the tenth day of each month (invoice date) that there is a balance on the account. The invoice shall include a summary of the costs incurred, payments received, identity of staff involved, and amount of time staff spent on the project.

The Customer shall pay the required amount by the due date, which shall be thirty (30) calendar days after the invoice date. If payment has not been received by the due date, then Ecology shall withhold

FOR COMPLETION BY ECOLOGY ONLY	Facility / Site Name:	The Ostrom Co.
	Facility / Site No.:	1386
	VCP Project No.:	SW1283



any requested opinions and notify the Customer by certified mail that the debt is past due. If payment has not been received within sixty (60) calendar days of the invoice date, then Ecology shall stop all work under the Agreement and may, as appropriate, assign the debt to a collection agency under Chapter 19.16 RCW. The Customer agrees to pay the collection agency fee incurred by Ecology in the course of debt collection.

### Reservation of Rights / No Settlement

This Agreement does not constitute a settlement of liability to the state under MTCA. This Agreement also does not protect a liable person from contribution claims by third parties for matters addressed by the Agreement. The state does not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). Ecology's signature on this Agreement in no way constitutes a covenant not to sue or a compromise of any Ecology rights or authority.

Ecology reserves all rights under MTCA, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health and the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site.

### Effective Date, Modifications, and Severability

The effective date of this Agreement shall be the date on which this Agreement is signed by the Toxics Cleanup Program's Section Manager or delegated representative. This Agreement may be amended by mutual agreement of Ecology and the Customer. Amendments shall be in writing and shall be effective when signed by the Toxics Cleanup Program's Section Manager or delegated representative. If any provision of this Agreement proves to be void, it shall in no way invalidate any other provision of this Agreement.

### Termination of Agreement

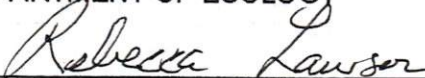
Either party may terminate this Agreement without cause by sending written notice by U.S. mail to the other party. The effective date of termination shall be the date Ecology sends notice to the Customer or the date Ecology receives notice from the Customer, whichever occurs first. Unless otherwise directed, issuance of a No Further Action opinion, either for the Site as a whole or for a portion of the real property located within the Site, shall constitute notice of termination by Ecology.

Under this Agreement, the Customer is only responsible for costs incurred by Ecology before the effective date of termination. However, termination of this Agreement shall not affect any right Ecology may have to recover its costs under MTCA or any other provision of law.

### Representations and Signatures

The undersigned representative of the Customer hereby certifies that he or she is fully authorized to enter into this Agreement and to execute and legally bind the Customer to comply with the Agreement.

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

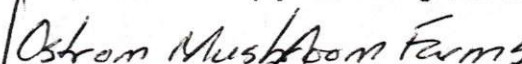
  
Signature


REBECCA LAWSON  
Printed Name

Section Manager, SWRO

Toxics Cleanup Program Section

Date: 2/25/13

  
Name of Customer

  
Signature

David C. Knudsen  
Printed Name of Signatory

President & CEO

Title of Signatory

Date: 2/22/2013

If you need this document in an alternative format, please call the Toxics Cleanup Program at 360-407-7170. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

ECY 070-324 (revised July 2008)





STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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

February 26, 2013

Mr. David Knudsen  
Ostrom Farms  
8322 Steilacoom Rd SE  
Olympia WA 98513

Dear Mr. Knudsen:

Your complete application for the Voluntary Cleanup Program (VCP) was accepted on February 25, 2013. The purpose of this letter is to acknowledge receipt of your application and to provide you with the name of the Site manager assigned to your cleanup site.

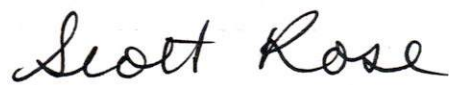
Site Name: Ostrom Farms  
Site Manager: Hans Qiu  
VCP Identification: SW1283

Our database has been updated to reflect your participation in the Voluntary Cleanup Program. I have enclosed a signed copy of the VCP agreement for this project for your records. If you have any questions, your Site Manager can be reached at 360-407-6265.

I need to advise you of our new Data Submittal Requirements defined in Policy 840 (enclosed). This policy mandates that all Environmental Monitoring Data generated during Contaminate Site Investigation and Cleanup activities shall be required to be submitted to Ecology in both written and electronic format. Policy Item #3 (attached) applies to the Voluntary Cleanup Program and reads: *"All reports on Independent Remedial Actions submitted after October 1, 2005, under Ecology's VCP program shall not be reviewed until the data have been submitted in compliance with this policy."* Questions regarding this policy and how it affects your Voluntary Cleanup Program project can be discussed with your site manager.

Thank you for your commitment to the environment and the Voluntary Cleanup Program.

Sincerely,

*for* 

Scott Rose, L.G.  
Acting VCP Unit Manager  
Southwest Regional Office  
Toxics Cleanup Program

SR/ksc:acceptance letter SW1283

Enclosures

cc: William E. Halbert, Insight Geologic, Inc.  
Hans Qiu, Ecology  
Dolores Mitchell, Ecology



## VCP Application Process Sheet

**Site Name:** The Ostrom Co

**VCP #:** SW1283

**Ecology F/S No.:** 1386

**Please assign the attached VCP application to:**

- ☐ Scott Rose
- ☐ Tom Middleton
- ☐ Gene Radcliff
- ☒ Hans Qiu
- ☐ Steve Teel (NW Pipeline meter stations only)
- ☐ Paul Turner (LUST Site only)
- ☐ Carol Johnston (LUST Sites only)
- ☐ Elizabeth Weldin (TSP Sites only)

☒ Yes ☐ No **Is this VCP Site within the Tacoma Smelter Plume (TSP) area?**

☐ Yes ☒ No **Is this VCP Site a Puget Sound Initiative Site (PSI)?**

☒ Yes ☐ No **Has VCP agreement been signed by the applicant?**

☒ Yes ☐ No **Has VCP agreement been signed by Ecology?**

☒ Yes ☐ No **Were reports included with the application?**

**Type of Opinion Requested:** Opinion on Site Cleanup



RECEIVED

MAY 06 2014

WA State Department  
of Ecology (SWRO)

September 17, 2012

Ostrom's Farms  
8323 Steilacoom Road SE  
Lacey, Washington 98512  
Attention: David Knudsen

Report  
Supplemental Environmental Services  
Ostrom's Mushroom Facility  
Lacey, Washington  
Insight Geologic Project No. 335-001-04

## INTRODUCTION

Insight Geologic, Inc. is pleased to provide our report of environmental services for the Ostrom's Farms mushroom growing and composting facility located at 8323 Steilacoom Road SE in Lacey, Washington. The property comprises approximately 34 acres northeast of the intersection between Marvin Road and Steilacoom Road in Lacey. The property is shown relative to surrounding physical features on the Vicinity Map, Figure 1.

Insight Geologic conducted a subsurface investigation of the property in 2007. The results of our investigation indicated the presence of petroleum hydrocarbons in soil adjacent to a stormwater pond located in the northwest portion of the facility. The petroleum hydrocarbons were detected in boring B-11 at concentrations exceeding the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup level of 2,000 milligrams per kilogram (mg/kg) and were assumed to be related to stormwater infiltration in this area.

Pond improvement work was conducted during the summer of 2012. The work consisted of expanding and lining the pond to serve as additional containment for wastewater from the facility. Soil remediation in this area occurred during improvement activities.

## SCOPE OF SERVICES

The purpose of our services was to evaluate and remove petroleum hydrocarbons-affected soil in the area of the stormwater pond during expansion. Our specific scope of services included the following tasks:

1. Prepared a Health and Safety Plan in accordance with 40CFR 1920.1 that outlines the possible health effects of exposure to the compounds and details appropriate personal protective equipment (PPE) to be worn while on the site.

2. Excavated soil in the area of the 2007 investigation to determine the extent of petroleum hydrocarbon-containing soil and remove the affected soil for disposal. Insight Geologic subcontracted a remediation contractor to remove petroleum contaminated soil using appropriate heavy equipment. Petroleum-containing soil was stockpiled on plastic and covered, pending transport and disposal to a proper facility.
3. Coordinated acceptance of the soil into the disposal facility and arranged for transportation of the soil to the facility under a general bill of lading.
4. Collected representative soil samples from the remediated areas for laboratory analysis and confirmed that residual hydrocarbon concentrations were less than the 2,000 mg/kg cleanup level.
5. Provided for the analysis of the confirmatory soil samples for the presence of diesel- and heavy oil-range hydrocarbons using Ecology Method NWTPH-Dx.
6. Prepared a report describing our activities on the site and the result of our soil sample analyses.

## **METHODOLOGY**

### **General**

Insight Geologic Inc. mobilized to the site on June 28, 2012 to begin excavation work. Gary's Bulldozing LLC was contracted to conduct the soil excavation as well as transporting the soil to the Weyerhaeuser Regional Landfill in Castle Rock, Washington for disposal. The soil was excavated and stockpiled using a track-mounted excavator.

## **FINDINGS**

### **Soil**

The soils exposed during excavation activities appeared to be fill containing a large percentage of trash including oil filters, tires, bits of metal, glass and brick. The petroleum hydrocarbons detected in soil in this area during the 2007 investigation appear to be related to this fill soil. The fill material was excavated to depths of between 6 and 9 feet below ground surface (bgs) and stockpiled on plastic and covered, pending transport to the Weyerhaeuser Regional Landfill in Castle Rock, Washington.

Confirmatory soil samples were collected from the base of the excavation to demonstrate that soil cleanup levels for diesel and heavy oil-range hydrocarbons had been achieved. Soil samples were collected into laboratory supplied glass jars using a stainless steel scoop from the excavation surface. The soil was packed tightly into the sample jar, then sealed, labeled and placed into an ice chest containing frozen Blue Ice for transport to the analytical laboratory. Chain of custody forms were completed in the field and accompanied the samples to the laboratory. The general sample locations are shown in Figure 2.

### **Laboratory Results**

Soil samples were submitted to Libby Environmental, Inc in Olympia, Washington for analysis of diesel- and heavy oil-range hydrocarbons using Ecology method NWTPH-Dx. The laboratory



reported that diesel- and heavy oil-range hydrocarbons were not detected in any of the confirmatory soil samples. A copy of the laboratory report is contained in Attachment A.

## CONCLUSIONS

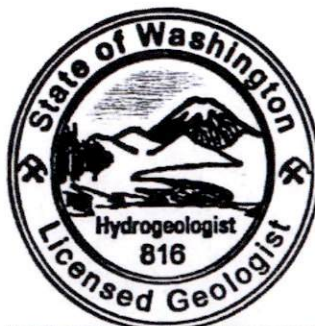
Insight Geologic has conducted our environmental services for the Ostrom's Farms mushroom growing and composting facility located in Lacey, Washington in general accordance with our proposal dated June 20, 2012 and authorized by Ostrom's Farms. The purpose of our services was to evaluate and remove oil contaminated soil that was previously discovered in an area adjacent to the stormwater pond. The excavated soils appeared to be fill containing a large percentage of trash and debris. The previously detected hydrocarbons appear to have been related to this fill soil. The soil was removed, stockpiled and subsequently transported to the Weyerhaeuser Regional Landfill in Castle Rock, Washington for disposal. Confirmatory soil samples collected from the base and sidewalls of the excavation did not contain detectable concentrations of petroleum hydrocarbons.



We appreciate the opportunity to be of continued service to Ostrom's Farms on this project. Please contact us if you have questions regarding the information presented above, or if we may provide additional assistance.

Respectfully Submitted,  
INSIGHT GEOLOGIC, INC.

William E. Halbert, L.G., L.HG.  
Principal Hydrogeologist

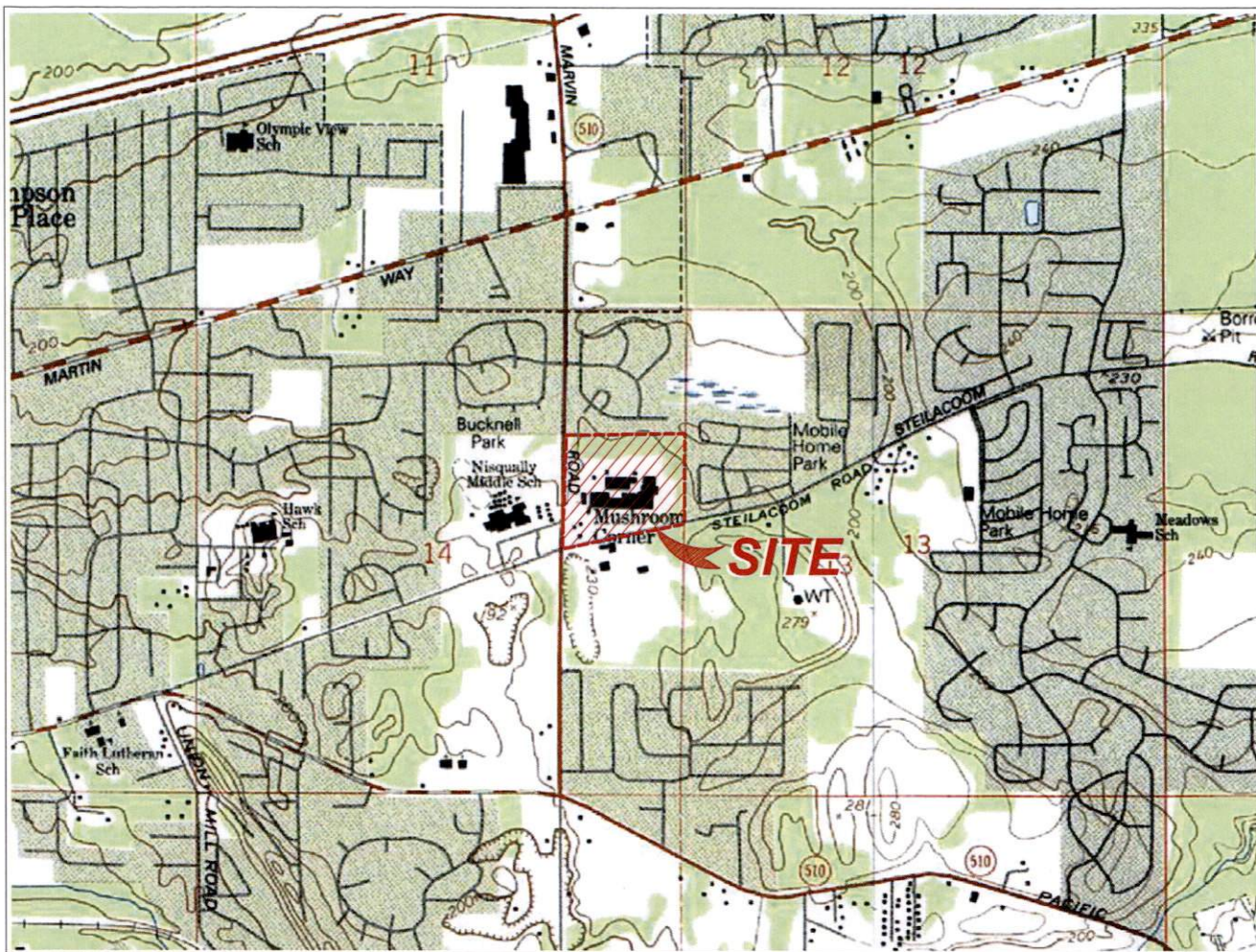


William E. Halbert

Attachments

## FIGURES





Source: Maptech, Inc. (c) 1997

LACEY, WASHINGTON  
7.5 MINUTE QUADRANGLE  
Year Created 1959, Revised 1994

SCALE: 1: 24000

OSTROM'S FARMS  
LACEY, WASHINGTON



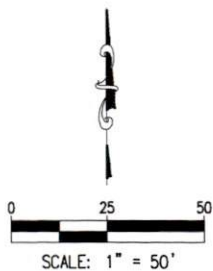
Figure 1  
Vicinity Map





### LEGEND:

- B-11 •** APPROXIMATE BORING LOCATION
- TP-1 •** APPROXIMATE TEST PIT LOCATION
- APPROXIMATE PROJECT BOUNDARY



**OSTROM'S FARMS**  
LACEY, WASHINGTON



**Figure 2**  
**Site Plan**



**APPENDIX A**  
**LABORATORY ANALYTICAL REPORT**

# Libby Environmental, Inc.

OSTROMS FARM PROJECT  
Insight Geologic  
Lacey, Washington  
Libby Project # L120628-2

4139 Libby Road NE  
Olympia, WA 98506  
Phone: (360) 352-2110  
FAX: (360) 352-4154  
Email: libbyenv@aol.com

## Hydrocarbon Identification by NWTPH-HCID for Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)	Diesel (mg/kg)	Mineral Oil (mg/kg)	Oil (mg/kg)
Method Blank	6/29/12	118	nd	nd	nd	nd
TP-1 9'	6/29/12	84	nd	nd	nd	nd
TP-2 8'	6/29/12	91	nd	nd	nd	nd
TP-3 8'	6/29/12	115	nd	nd	nd	nd
TP-4 8'	6/29/12	113	nd	nd	nd	nd
TP-4 8' Dup	6/29/12	118	nd	nd	nd	nd
Storm Pond 6"	6/29/12	116	nd	nd	nd	D
Practical Quantitation Limit			20	50	100	100

"nd" Indicates not detected at listed detection limits.

"D" Indicates detected above the listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kyle Williams



# Libby Environmental, Inc.

OSTROMS FARM PROJECT  
Insight Geologic  
Lacey, Washington  
Libby Project # L120628-2

4139 Libby Road NE  
Olympia, WA 98506  
Phone: (360) 352-2110  
FAX: (360) 352-4154  
Email: libbyenv@aol.com

## Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Mineral Oil (mg/kg)	Oil (mg/kg)
Method Blank	6/29/12	118	nd	nd	nd
Storm Pond 6"	6/29/12	116	33	nd	1150
Practical Quantitation Limit			25	40	40

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kyle Williams

2010



SITE HAZARD ASSESSMENT  
WORKSHEET 1  
Summary Score Sheet

**RECEIVED**

AUG 02 2010

WA State Department  
of Ecology (SWRO)

**SITE INFORMATION:**

**Name:** The Ostrom Company  
**Address:** 8323 Steilacoom Road SE  
**City:** Lacey                      **County:** Thurston                      **State:** WA                      **Zip:** 98513  
**Section/Township/Range:** S14/T18/R1W  
**Latitude:** 47.04861      **Longitude:** -122.76204  
**TCP ID #1386**  
**Date Scored:** June 29, 2010

**SITE DESCRIPTION:**

The Ostrom Company (Ostrom's) is located on the corner of Marvin Road SW and Steilacoom Road SW in Lacey, Washington. The site comprises 34 acres and has been operated by Ostrom's since the 1960's. The majority of the site has been cleared of trees and presently contains numerous structures related to mushroom production, including growing facilities, compost production, maintenance structures, etc. Surrounding land use consists primarily of residential developments. The site is underlain by recessional outwash deposits consisting of sand and gravel. Groundwater in the area has been encountered at depths of approximately 40 feet below ground surface (bgs). However, groundwater near an onsite storm water retention/infiltration pond has been encountered at depths of 20-30 feet bgs.

There are three phases of mushroom production at the site; compost production, growing, and harvesting/packaging. Compost is prepared from wheat straw, gypsum, and dry poultry waste. The components are mixed with water and the material is moved to storage areas until the composting process is complete. During the growing operation, finished compost is inoculated with mushroom spawn and covered with a mixture of peat moss and sugar beet lime. After the mushroom pins are formed, the mushrooms are moved through a succession of growing rooms with carefully controlled climates. After approximately 10 days, the first mushrooms are ready for harvest. The final process involves harvesting, washing, and packing.

Waste water is produced in two primary production areas; compost production, and the growing/washing rooms. The waste water from these areas is directed to a holding/settling tank, then into a retention pond. Water is then disposed on site by land application through a sprinkler system or through infiltration beneath the retention pond. The site is permitted to apply approximately 22,500 gallons of waste water per day in accordance with a State Waste Discharge Permit.

**PREVIOUS INVESTIGATIONS:**

In March 2007, a Phase I Environmental Site Assessment (ESA) was conducted at the site. The results of the ESA identified several areas of environmental concern including:

- The facility has contained a series of underground storage tanks (UST). Some have been removed or abandoned in place, while one existing UST currently contains stand-by boiler fuel.
- At least one spill of diesel fuel from the existing above-ground storage tank has occurred.

- Soil located outside the oil storage area was observed to be heavily stained with oil, likely resulting from spills during deliveries.
- A series of historic and active infiltration areas for waste water and storm water are, or have been, located in the northern portion of the site. Waters are not treated prior to discharge.

In June, 2007, a Subsurface Environmental Assessment was conducted at the site. Eleven geoprobe borings and 12 hand auger borings were completed in the previously identified areas of environmental concern. These areas included the wastewater retention pond, former maintenance shop, current and former boiler house, current fueling area, and current underground storage tank area. Soil and groundwater samples were analyzed for the presence of volatile organic compounds (VOCs), chlorinated pesticides, and total petroleum hydrocarbons (TPH). Results are summarized below.

**TABLE 1: SOIL ANALYTICAL RESULTS**

Sample #	Location	Depth (ft. bgs)	Diesel-range Hydrocarbons	Oil-range Hydrocarbons
B6-4	Fueling Area	4.0	<b>7,900</b>	nd
B12-11	Wastewater Pond	11.0	nd	<b>4,100</b>
MTCA <sup>1</sup>			2,000	2,000

<sup>1</sup>MTCA Method A Cleanup Level for Unrestricted Land Uses.

Bold entries indicate MTCA exceedances.

All results are reported in milligrams per kilogram (mg/kg)

nd – not detected above the method detection limit

**TABLE 2: GROUNDWATER ANALYTICAL RESULTS**

Sample #	Location	DDD	DDE	DDT	Sum of listed constituents
B11-W	Wastewater Pond	0.049	0.045	0.023	0.117
B12-W	Wastewater Pond	0.036	0.047	0.062	0.145
MTCA <sup>1</sup>					0.3

<sup>1</sup>MTCA Method A Cleanup Level.

Bold entries indicate MTCA exceedances

All results are reported in micrograms per liter (ug/L)

## CONCLUSION

Diesel-range hydrocarbons were detected in shallow soil in the fueling area at concentrations exceeding the Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup level. It was suspected that a recent fuel spill is the likely source of contamination.

Oil-range hydrocarbons were detected in soil at a depth of 11 feet bgs in the waste/storm water retention pond at concentrations exceeding MTCA Method A cleanup levels. Storm water was observed to flow from a concrete apron outside the maintenance building to catch basins, then onto the retention pond without any treatment. It was believed that oil-range hydrocarbons from spills and maintenance conducted on the apron was the source of contamination. Groundwater beneath the retention pond did not appear to be impacted by petroleum hydrocarbons, VOCs, or lead.



DDT, DDD, and DDE were detected in subsurface soil and groundwater samples from the retention pond area. Contaminant levels did not exceed MTCA Method A cleanup levels and appear to be relics of the historic use of DDT on the property prior to 1972, when its use was banned in the United States.

#### **SPECIAL CONSIDERATIONS**

In February 2010, Insight Geologic, Inc. submitted a work plan to Ecology to evaluate the practicality of reducing or eliminating wastewater discharge at the site. The plan outlined steps to recycle wastewater into the compost production process. As of June 2010, the plan remained under review by Ecology.

#### **ROUTE SCORES:**

Surface Water/Human Health: 26.5  
Air/Human Health: 32.1  
Groundwater/Human Health: 47.9

Surface Water/Environmental: 25.1  
Air/Environmental: 14.9  
**OVERALL RANK: 1**

WORKSHEET 2  
Route Documentation

**1. SURFACE WATER ROUTE**

- a. List those substances to be considered for scoring: Source: 1  
Diesel-range hydrocarbons (TPH-D)
- b. Explain basis for choice of substance(s) to be used in scoring.  
TPH-D was confirmed in excess of MTCA Method A cleanup levels in shallow subsurface soils
- c. List those management units to be considered for scoring: Source: 1  
Contaminated soil
- d. Explain basis for choice of unit to be used in scoring:  
Documented presence of TPH-D in excess of MTCA Method A cleanup levels in soil.

**2. AIR ROUTE**

- e. List those substances to be considered for scoring: Source: 1  
TPH-D
- f. Explain basis for choice of substance(s) to be used in scoring:  
TPH-D was confirmed in excess of MTCA Method A cleanup levels in shallow subsurface soils  
List those management units to be considered for scoring: Source: 1  
Contaminated soil
- g. Explain basis for choice of unit to be used in scoring:  
Documented presence of TPH-D in excess of MTCA Method A cleanup levels in soil.

**3. GROUNDWATER ROUTE**

- h. List those substances to be considered for scoring: Source: 1  
TPH-D, DDT, DDD, DDE
- i. Explain basis for choice of substance(s) to be used in scoring:  
Documented presence of these substances in subsurface soils.
- j. List those management units to be considered for scoring: Source: 1  
Groundwater
- k. Explain basis for choice of unit to be used in scoring:  
Documented presence of these substances in subsurface soils. Potential groundwater contaminant.



## WORKSHEET 4

### Surface Water Route

#### 1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity										
Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value	
							WOE	PF*		
1	TPH-Diesel	160	4	490 rat	5	0.004	5	ND	ND	-
2										

\*Potency Factor, ND=No Data

Source: 2, 3

Highest Value: 5

(Max = 10)

Plus 2 Bonus Points? No

**Final Toxicity Value: 5**

(Max = 12)

1.2 Environmental Toxicity (X) Freshwater ( ) Marine					
Substance			Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity
			(µg/L)	Value	(mg/kg) Value
1	TPH-Diesel		2350	2	
2					
3					
4					

Source: 2, 3

**Highest Value: 2**

(Max = 10)

1.3 Substance Quantity (areal extent)	
Explain Basis: Unknown. Use default value = 1	Source: 1 <b>Value: 1</b> (Max = 10)

## 2.0 MIGRATION POTENTIAL

		Source	Value
2.1	<b>Containment:</b> Contaminated soil at the surface with no run-on/runoff control. <b>Explain basis:</b> Documented release to shallow subsurface soils.	1	<b>10</b> (Max = 10)
2.2	<b>Surface Soil Permeability:</b> Sand and gravel with variable amounts of silt	1	<b>7</b> (Max = 7)
2.3	<b>Total Annual Precipitation:</b> 50.81 inches	4	<b>4</b> (Max = 5)
2.4	<b>Max 2yr/24hr Precipitation:</b> 3.0 inches	2	<b>3</b> (Max = 5)
2.5	<b>Flood Plain:</b> Not in a flood plain	6	<b>0</b> (Max = 2)
2.6	<b>Terrain Slope:</b> 2-5%	6	<b>2</b> (Max = 5)

## 3.0 TARGETS

		Source	Value
3.1	<b>Distance to Surface Water:</b> <1000 ft. Storm water infiltration pond on site	1	<b>10</b> (Max = 10)
3.2	<b>Population Served within 2 miles:</b> 53 domestic single intakes (53 x 4 per household = 210 people est. 1 domestic multiple intake (5 households x 4 people each = 20 people est.) Total population = 230. $\sqrt{230}=15.2$	8	<b>15</b> (Max = 75)
3.3	<b>Area Irrigated by surface water within 2 miles:</b> 265 acres. $0.75\sqrt{265}=12.2$	8	<b>12</b> (Max = 30)
3.4	<b>Distance to Nearest Fishery Resource:</b> 6,500 ft. Woodland Creek	6	<b>3</b> (Max = 12)
3.5	<b>Distance to, and Name(s) of, Nearest Sensitive Environment(s):</b> 1500 ft. Freshwater wetland and municipal park	6	<b>9</b> (Max = 12)

## 4.0 RELEASE

<b>Explain Basis:</b> Documented release to surface water pond	Source: 1 <b>Value: 5</b> (Max = 5)
--	---



## WORKSHEET 5

### Air Route

#### 1.0 SUBSTANCE CHARACTERISTICS

##### 1.1 Introduction

1.2 Human Toxicity										
	Substance	Air Standard ( $\mu\text{g}/\text{m}^3$ )	Value	Acute Toxicity ( $\text{mg}/\text{m}^3$ )	Value	Chronic Toxicity ( $\text{mg}/\text{kg}/\text{day}$ )	Value	Carcinogenicity		Value
								WOE	PF*	
1	TPH-Diesel	166.5	4	ND	-	ND	-	ND	ND	-
2										
3										
4										

\* Potency Factor, ND=No Data

Source: 2, 3

Highest Value: 4

(Max = 10)

Plus 2 Bonus Points? No

**Final Toxicity Value: 4**

(Max = 12)

1.3 Mobility (Use numbers to refer to above listed substances)				
1.3.1 Gaseous Mobility		1.3.2 Particulate Mobility		
Vapor Pressure(s) (mmHg)		Soil Type	Erodibility	Climatic Factor
1	8.2E-02, Value 3			
2				
3				
4				

Source: 2, 3

**Value: 3**

(Max = 4)

Source:

**Value:**

(Max = 4)

#### 1.4 Highest Human Health Toxicity/ Mobility Matrix Value (from Table A-7)

TPH-Diesel: Toxicity = 4, Mobility = 3, Final Value = 6

**Final Matrix Value: 6**

(Max = 24)

<b>1.5 Environmental Toxicity/Mobility</b>						
<b>Substance</b>		<b>Non-human Mammalian Inhalation Toxicity (mg/m<sup>3</sup>)</b>	<b>Acute Value</b>	<b>Mobility (mmHg)</b>	<b>Value</b>	<b>Matrix Value</b>
<b>1</b>	TPH-Diesel	ND	-	8.2E-02	3	-
<b>2</b>						

Highest Environmental Toxicity/Mobility Matrix Value (from Table A-7) = **Final Matrix Value: NS**  
(Max = 24)

<b>1.6 Substance Quantity (areal extent)</b>	
<b>Explain Basis:</b> Unknown. Use default value = 1	Source: 1 <b>Value: 1</b> (Max = 10)

## 2.0 MIGRATION POTENTIAL

	<b>Source</b>	<b>Value</b>
<b>2.1 Containment:</b> Liquids visible (staining on the ground surface)	1	<b>10</b> (Max = 10)

## 3.0 TARGETS

	<b>Source</b>	<b>Value</b>
<b>3.1 Nearest Population:</b> Less than 1000 feet.	6	<b>10</b> (Max = 10)
<b>3.2 Distance to [and name(s) of] nearest sensitive environment(s) [fisheries excluded]:</b> Freshwater wetland and municipal park. 1500 feet.	6	<b>6</b> (Max = 7)
<b>3.3 Population within 0.5 miles:</b> $\sqrt{3842}=61.9$	6	<b>62</b> (Max = 75)

## 4.0 RELEASE

<b>Explain Basis for scoring a release to air:</b> Confirmed release to ground surface	Source: 1 <b>Value: 5</b> (Max = 5)
--	---



WORKSHEET 6  
Groundwater Route

**1.0 SUBSTANCE CHARACTERISTICS**

**1.2 Human Toxicity**

Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
							WOE	PF*	
1 TPH-Diesel	160	4	490 (rat)	5	0.004	3	ND	ND	-
2 DDD	ND	-	113 (rat)	5	ND	-	0.8	0.192	5
3 DDE	ND	-	880 (rat)	5	ND	-	0.8	0.272	5
4 DDT	ND	-	87 (rat)	8	0.0005	5	0.8	0.272	5

\* Potency Factor, ND=No Data

Source: 2, 3

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? No

**Final Toxicity Value: 8**

(Max = 12)

**1.2 Mobility (use numbers to refer to above listed substances)**

Cations/Anions [Coefficient of Aqueous Migration (K)]	OR	Solubility (mg/L)
1=	1=	TPH-Diesel, 3.0E+01, Value 1
2=	2=	DDD, 1.0E-01, Value 0
3=	3=	DDE, 4.0E-02, Value 0
4=	4=	DDT, 5.0E-03, Value 0

Source: 2, 3

**Value: 1**

(Max = 3)

**1.3 Substance Quantity (volume):**

Explain basis: Unknown. Use default value = 1	Source: 1 <b>Value: 1</b> (Max=10)
---	--

## MIGRATION POTENTIAL

		Source	Value
2.1	<b>Containment (explain basis):</b> Spills	1	<b>10</b> (Max = 10)
2.2	<b>Net precipitation:</b> Nov-Apr (inches): 38.54" total precipitation, 11.74" evapotranspiration rate, 38.54-11.74 = 26.80 net precip.	5	<b>3</b> (Max = 5)
2.3	<b>Subsurface hydraulic conductivity:</b> sand and gravel with silt. $>10^{-3}$	6	<b>4</b> (Max = 4)
2.4	<b>Vertical depth to groundwater:</b> < 25feet	1	<b>8</b> (Max = 8)

## 2.0 TARGETS

		Source	Value
3.1	<b>Groundwater usage:</b> Private and public supply with alternate sources available	7	<b>4</b> (Max = 10)
3.2	<b>Distance to nearest drinking water well:</b> <600ft, Group A Water System on site.	7	<b>5</b> (Max = 5)
3.3	<b>Population served within 2 miles:</b> >10,000 people	7	<b>100</b> (Max = 100)
3.4	<b>Area irrigated by (groundwater) wells within 2 miles:</b> 501 acres. $0.75\sqrt{501} = 16.8$	8	<b>17</b> (Max = 50)

## 3.0 RELEASE

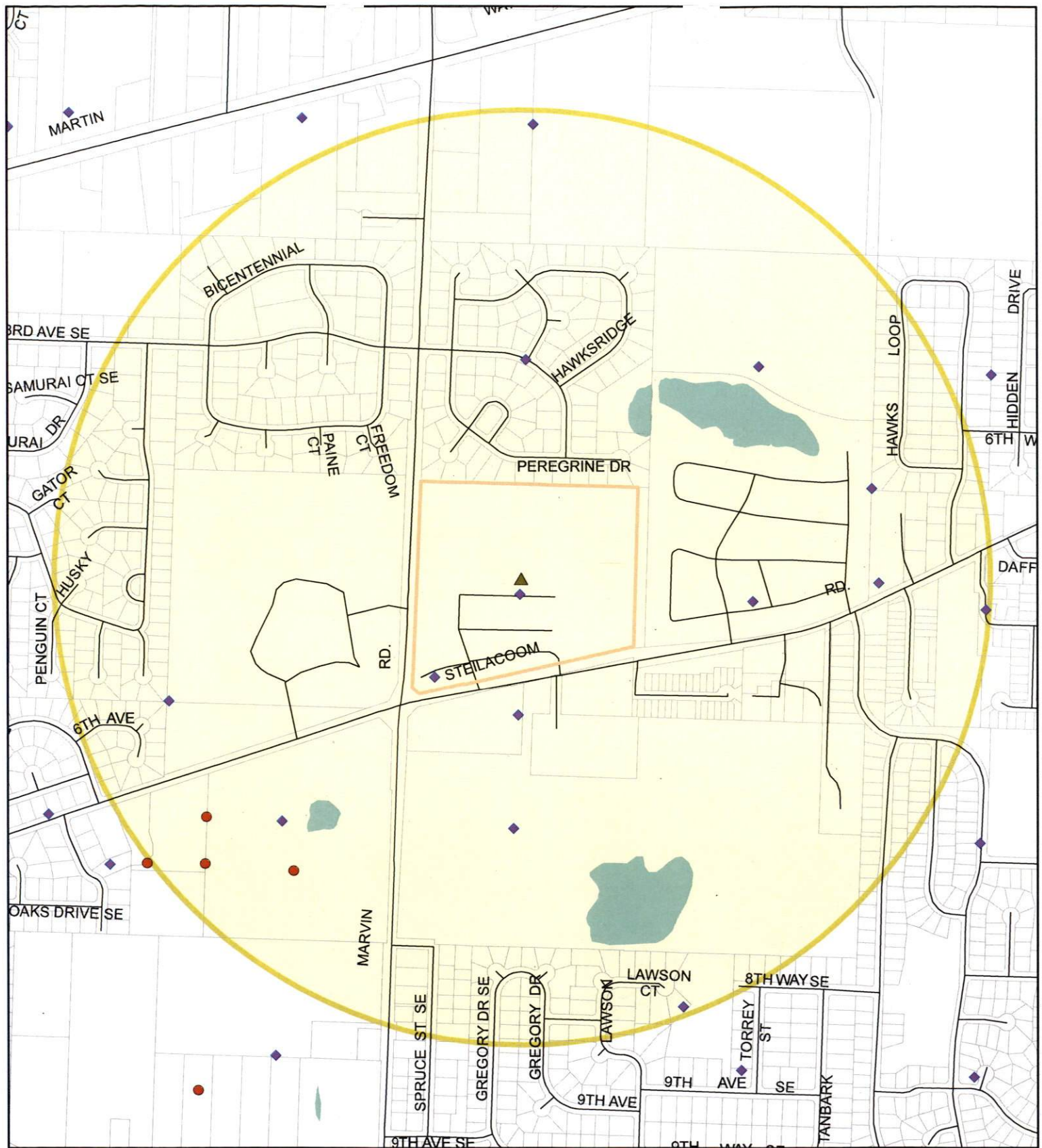
		Source	Value
	<b>Explain basis for scoring a release to groundwater:</b> No confirmed release	1	<b>0</b> (Max = 5)

## SOURCES USED IN SCORING

1. Insight Geologic, Inc., *Subsurface Environmental Assessment, Ostrom's Mushroom Farm*, William E. Halbert, July 17, 2007.
2. Washington State Department of Ecology, *Toxicology Database for Use in Washington Ranking Method Scoring*, January 1992.
3. Washington State Department of Ecology, *WARM Scoring Manual*, April 1992.
4. Western Regional Climate Center, Precipitation data from the Olympia, Washington Airport, June 1948 to September 2005.
5. Table 16-Estimated Evapotranspiration, E.M. 2462, p. 42, for Thurston County Airport.
6. Thurston County Geodata Center, Roads and Transportation Division, August 2009.
7. Washington State Department of Health, Drinking Water Division, Sentry Database, August 2009.
8. Washington State Department of Ecology, Water Resources Program, Water Right Tracking System (WRTS), August 2009.
9. Washington State Department of Ecology, *Technical Memorandum, Groundwater Contamination Potential at Ostrom Mushrooms*, Denis Erickson, October 13, 2005.
10. Washington State Department of Ecology, *Inspection Report, Ostrom Mushroom Farms*, A. Mahar, S. Eberl, D. Erickson, August 10, 2005.
11. Insight Geologic, Inc., *Work Plan, Wastewater Discharge Evaluation, Ostrom's Farm Growing Facility*, William E. Halbert, February 15, 2010.

where to find this?





Half Mile Radius Around Site

Ostrom's Farm

Wetland

Sensitive Species Location

Well

Stream

Roads

THURSTON COUNTY  
Ostrom's Farm  
Ecology Site ID #1386  
Half Mile Radius Analysis

Approximate Population (2000 Census) within 3842

0 500 1,000  
Feet



Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map.

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Map Created on 06/18/2010 abc





- Two Mile Radius Around Site
- Ostrom's Farm
- Wetland
- Sensitive Species Location
- Well
- Stream
- Roads

**THURSTON COUNTY**  
**Ostrom's Farm**  
**Ecology Site ID #1386**  
**Two Mile Radius Analysis**

Approximate Population (2000 Census) within Radius: 22,979

0 0.5 1 Miles



Thurston  
GeoData  
Center



Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map.

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Map Created on 06/18/2010 abc





STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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

June 22, 2010

The Ostrom Company  
Attn: Chris Street  
8323 Steilacoom Road SE  
Lacey, WA 98512

Subject: Site Hazard Assessment – The Ostrom Company  
Ecology Facility Site ID: 1386

Dear Mr. Street:

The Department of Ecology (Ecology) will conduct a site hazard assessment (SHA) of the Ostrom Company site, 8323 Steilacoom Road SE, Lacey, under the Model Toxics Control Act (MTCA), Chapter 173-340-320 WAC. This site has been on Ecology's Confirmed and Suspected Contaminated Sites (CSCS) List with a status of "Awaiting SHA". This assessment will be performed by Brad Zulewski, Thurston County Environmental Health. He will contact you in the near future to arrange a suitable time for a site visit, as necessary.

The purpose of a SHA is to gather information on past/present waste management activities, along with other basic site-specific environmental data, in order to score the site following the Washington Ranking Method Scoring Manual guidelines. Potential/actual threats to human health and the environment are evaluated for each applicable migration route, with a resultant "hazard ranking" for the site determined.

Sites are ranked on a scale of one (1) to five (5), with 1 representing the highest level of concern, and 5 the lowest relative to all other assessed/ranked sites in the state. The site and ranking are then placed on Ecology's Hazardous Sites List. Depending on the results of the SHA, a recommendation of "No Further Action" (NFA) could be made. In this case the site is not listed.

For your information, Ecology will publish a notice that a SHA is scheduled for this site in an upcoming issue of the *Site Register* – a semi-monthly Ecology publication for cleanup activities. Likewise, the SHA outcome, either as a ranked site or a determination of NFA, will be published in the *Site Register*.

In addition to any required fieldwork, the following information will be considered in scoring this site:

- Ecology Southwest Regional Office site files
- Thurston County Environmental Health site files



You are asked to submit any additional environmental information regarding this site to:

Brad Zulewski, R.S.  
Thurston County Public Health & Social Services  
Environmental Health Division  
412 Lilly Road NE  
Olympia, WA 98506-5132

Additional data could include any environmental assessment work or laboratory analyses conducted regarding this site not previously submitted to Ecology. Every attempt will be made to obtain the most recent and accurate data for scoring your site. If you have different information, or comments on the adequacy of the data already collected, please advise us as soon as possible. The final site rank and eventual site priority will be based on the information used in the scoring. Your active participation in the assessment and scoring process is important to insure that the best data available is used.

Fact sheets describing Site Hazard Assessments, the Washington Ranking Method and the Hazardous Sites List are enclosed for your information, as well as a copy of the Integrated Site Information System Site Data Summary Sheet for this site. If you have questions please call me at (360) 407-6388 (e-mail: [cris.matthews@ecy.wa.gov](mailto:cris.matthews@ecy.wa.gov)) or Brad Zulewski at (360) 867-2584 (e-mail: [zulewsb@co.thurston.wa.us](mailto:zulewsb@co.thurston.wa.us)).

Sincerely,



Cris Matthews  
Site Hazard Assessments  
Toxics Cleanup Program  
Southwest Regional Office  
Washington Department of Ecology

CM/ksc:Ostrom SHA Early Notice

Enclosures (4)

By certified mail: (7009 2820 0001 7160 9088)

cc: Brad Zulewski, R.S., Thurston County Public Health & Social Services  
Bill Halbert, Insight Geologic, Inc.  
Ted Benson, Ecology



2008



RECEIVED  
MAY 06 2014  
WA State Department  
of Ecology (SWRO)

April 25, 2008

Ostrom's Farms  
8323 Steilacoom Road SE  
Lacey, Washington 98512  
Attn: Chris Street

Report  
Petroleum-contaminated Soil Remediation  
Ostrom's Mushroom Farm  
Lacey, Washington  
Project No. 335-001-03

## INTRODUCTION

Insight Geologic, Inc. is pleased to provide our report of subsurface investigation activities for the Ostrom's Farms mushroom growing and composting facility located at 8323 Steilacoom Road SE in Lacey, Washington. The property comprises approximately 34 acres northeast of the intersection between Marvin Road and Steilacoom Road in Lacey. The property is shown relative to surrounding physical features on the Vicinity Map, Figure 1.

Water is supplied by a water supply well and through an intertie with the City of Lacey. Sanitary wastes are disposed of through on-site septic tanks and drainfields. Stormwater is either recycled and used for compost production or is used to spray irrigate landscaped areas. Growing room wash down water is generally disposed of directly into the ground.

The subject site is generally flat with a gentle slope to the north. Elevations range from approximately 230 feet above mean sea level (MSL) in the southern portion to about 212 MSL at the northern property line. The majority of the property has been cleared of trees for the development of the growing facility buildings, drive areas and compost production. Surrounding land use consists of single family residential housing to the north and east. Nisqually Middle School is located to the west of the facility, across Marvin Road.

Insight Geologic performed a Phase I Environmental Site Assessment (ESA) of the Ostrom's Farms Mushroom Facility in March 2007. The results of our Phase I ESA indicated several areas of potential environmental concern. The facility has had a series of underground storage tanks (USTs) located on the property. Some USTs have been removed, others have been abandoned in place, and at least one is still active for standby boiler fuel. The facility has had at least one diesel fuel spill related to the existing aboveground storage tank. Stored batteries in the shop area could potentially contaminate local ground water from metals, such as leached lead, via the stormwater system. Stained soil was observed directly outside of the bulk lubricating oil storage area at the time of our



site reconnaissance. The facility has historic and active infiltration areas for wash water and stormwater. These areas have the potential for receiving water containing pesticides including DDT. In the early 1990s, treated soil from previous environmental remediation projects was used in landscape berms in several areas of the property.

At the request of Ostrom's Farms, Insight Geologic conducted subsurface sampling and analysis of soil and ground water in the areas identified during the Phase I ESA. Work on the site was completed on June 14 and 20, 2007. We collected and analyzed soil and ground water samples from 11 probe rig borings and 12 hand auger borings in the areas of potential environmental concern. The result of this round of sampling identified two impacted areas. The aboveground fueling station had a limited shallow impact by diesel. The bulk lubricating oil storage area, located behind the shop, had a shallow impact by heavy oil.

Further investigation of the fueling station was conducted on September 14, 2007. Six boring were advanced to a depth of about 8 feet around sample site B-6 of the initial investigation. Field observation of the soil samples indicated a limited extent of contamination. This was further confirmed by samples analyzed by an off-site laboratory.

Subsequently, Insight Geologic, Inc. was contracted to assist in the removal of contaminated soil from the fueling area and the bulk lubricating oil storage area.

### **SCOPE OF SERVICES**

The purpose of our services was to assist in the removal of impacted soil in the areas of the identified environmental concerns on the property. We conducted the following tasks for this phase of the project:

1. Prepare a Health and Safety Plan for Insight Geologic's representatives while on-site.
2. Conduct utility location at the site to assess the presence of potential subsurface obstructions.
3. Observe the removal of impacted soil by means of an excavator from the two identified locations. Collect representative soil samples from the bottom and the sidewalls of the excavation areas.
4. Provide for the chemical analysis of select soil samples for the presence of diesel- and oil-range hydrocarbons using Ecology Method NWTPH-Dx (extended).
5. Evaluate the laboratory results with respect to current Ecology Model Toxics Control Act (MTCA) Method A cleanup levels.

### **SUMMARY OF ACTIVITIES**

Ostrom's Farms undertook remedial action at the Ostrom's Mushroom Farm on February 25, 2008. Cairone Enterprises was contracted to excavate the impacted soil, while Insight Geologic conducted project oversight and sample collection. Representative soil samples were collected from each excavation area where the soil appeared most impacted. Confirmation samples were also taken from the bottom and sidewalls of the excavations. All soil samples were placed into laboratory supplied jars which were sealed, labeled and placed into an ice chest for storage pending analysis.

Soil from the excavation areas were described by the field geologist in general accordance with the Unified Soil Classification System. Logs of the soils encountered are contained in Attachment A.

The materials encountered appeared to be glacial outwash and ablation till deposited during the waning stages of the Vashon Stade of the Fraser glaciation, which ended between 10,000 and 15,000 years ago.

### **CHEMICAL ANALYSIS**

Soil samples were analyzed by Libby Environmental for the presence of diesel- and oil-range hydrocarbons using Ecology Method NWTPH-Dx (extended).

Analyses results did not indicate the presence of diesel- or oil-range hydrocarbons at or above MTCA Method A cleanup levels in the confirmation soil samples collected from the base and sidewalls of the remedial excavation areas (see Table 1). A copy of the laboratory reports are contained in Attachment B.

### **CONCLUSIONS**

Twenty yards of soil were removed from the locations of the fueling area and the bulk lubricating oil storage area on February 25, 2008. Soil samples collected from the limits of the remedial excavations, following the removal of impacted soils, did not contain detectable concentrations of petroleum hydrocarbons. The limited extent of petroleum hydrocarbons in the soil at each site would not appear to pose a threat to ground water at the site.

### **LIMITATIONS**

We have prepared this report for use by Ostrom's Farm and their agents regarding the removal of petroleum-contaminated soil encountered at the Ostrom's Mushroom Farm facility located in Lacey, Washington. This report may be made available to regulatory agencies.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Attachment C titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

————— ◀ ▶ —————



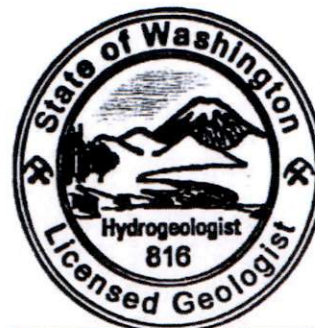
Ostrom's Mushroom Farm  
Petroleum-contaminated Soil Remediation  
April 25, 2008

We trust this report meets your current requirements. Please contact us if you have questions regarding information presented in this report, or if you require additional information. We appreciate the opportunity to be of service to you on this project.

Respectfully Submitted,  
INSIGHT GEOLOGIC, INC.



William E. Halbert, L.E.G., L.H.G.  
Principal Hydrogeologist

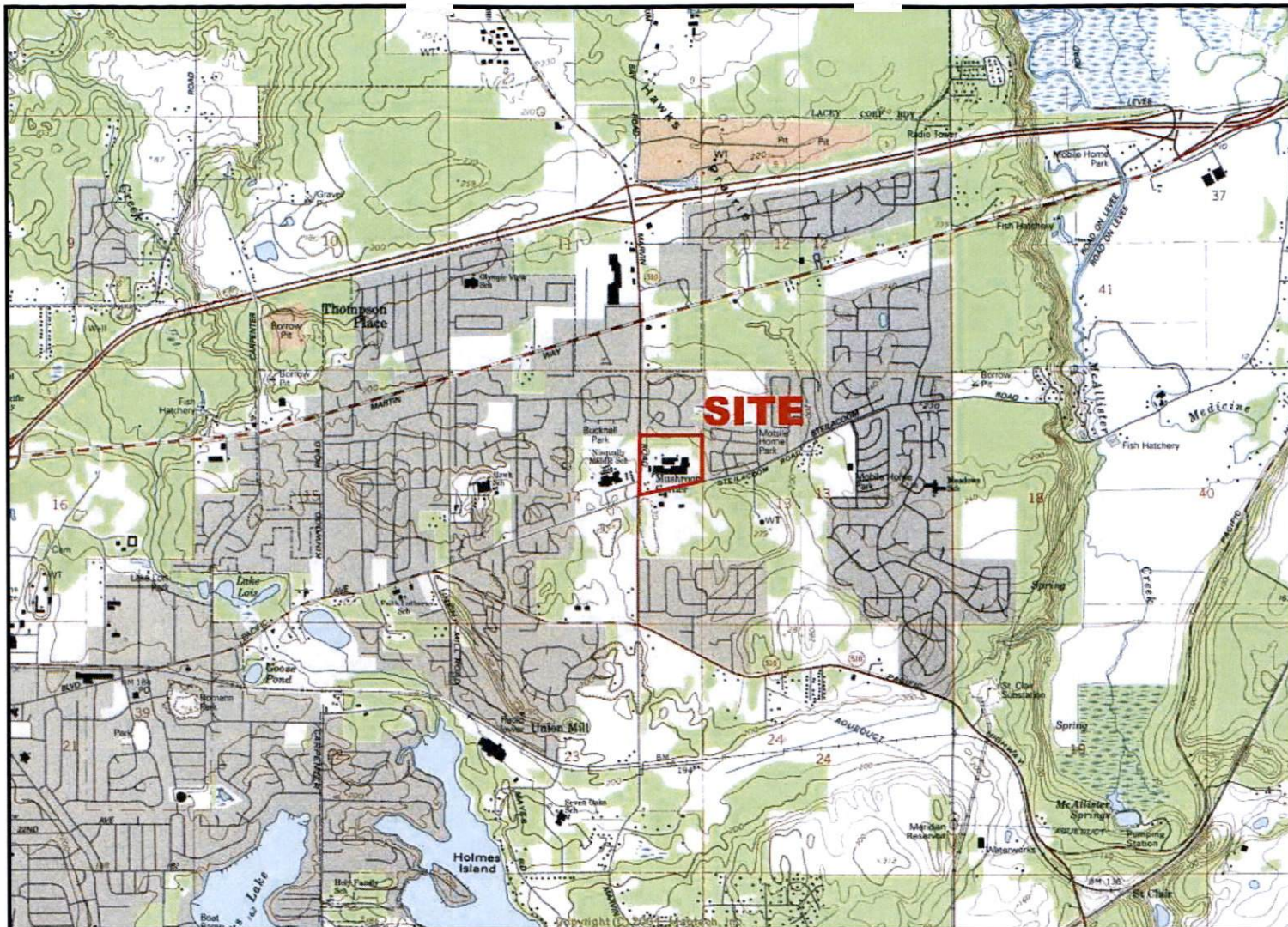


William E. Halbert

Attachments

## FIGURES





Source: Maptech CD, Lacey, Washington 7.5 minute quadrangle, 1955, photorevised 1994



Approximate Scale 1 inch = 4,000 feet



VICINITY MAP

FIGURE 1

Maintenance Shop

APPROXIMATE  
LIMITS OF  
EXCAVATION

022508-1

B-6

022508-4

022508-5

022508-2

Diesel AST

022508-3

Propane

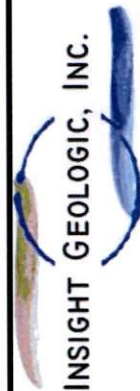


—LEGEND—

⊕ PREVIOUS BORING LOCATION

△ EXCAVATION SAMPLE LOCATION

Notes: 1. The locations of all features shown are approximate.  
2. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by Insight Geologic, INC. and will serve as the official document of record.



FUEL SPILL EXCAVATION

FIGURE 2



## TABLES

**TABLE 1**  
**Summary of Laboratory Analysis - SOIL**  
Ostrom's Farms  
Lacey, Washington

Sample Number	Date Sampled	Depth (feet)	Diesel-range Hydrocarbons	Oil-range Hydrocarbons
022508-1	2/25/2008	2.50	<25	NA
022508-2	2/25/2008	2.50	<25	NA
022508-3	2/25/2008	2.50	<25	NA
022508-4	2/25/2008	2.50	<25	NA
022508-5	2/25/2008	3.50	<25	NA
022508-6	2/25/2008	0.50	<25	4880*
MTCA Method A Cleanup Level			2,000	2,000

**Notes:**

Laboratory Analyses by Libby Environmental Laboratory, Olympia, Washington

All values presented in milligrams per kilogram (mg/kg)

Diesel- and Oil-range hydrocarbons analyzed using Ecology Method NWTPH-Dx/Dx Extended

" < " Indicates the analyte was not detected at the listed detection limit

NA - Indicates the sample was not analyzed for this parameter.

Shaded values indicate exceedence of the MTCA Method A cleanup level.

" < " Indicates the analyte was not detected at the listed detection limit

\* Oil stained soil confirmation sample



**ATTACHMENT A**  
**LABORATORY REPORTS**

## **ATTACHMENT A**

### **CHEMICAL ANALYTICAL PROGRAM**

#### **ANALYTICAL METHODS**

Chain-of-custody procedures were followed during the transfer of field samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality assurance/quality control (QA/QC) records are included in this Attachment. The analytical results are also summarized in the text of this report.

#### **ANALYTICAL DATA REVIEW**

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries, and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report.

#### **ANALYTICAL DATA REVIEW SUMMARY**

Based on our data quality review, it is our opinion that the analytical data are of acceptable quality for their intended use.



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS FUEL SPILL PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Project No.L080225-2

### Analyses of Diesel (NWTPH-Dx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)
Method Blank	2/25/2008	93	nd
022508-1	2/25/2008	100	nd
022508-2	2/25/2008	75	nd
022508-3	2/25/2008	103	nd
022508-4	2/25/2008	77	nd
022508-5	2/25/2008	96	nd
022508-5 Dup	2/25/2008	72	nd
Practical Quantitation Limit			25

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS FUEL SPILL PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Project No.L080225-2

### Analyses of Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Oil (mg/kg)
Method Blank	2/25/2008	93	nd
022508-6	2/25/2008	89	4880
Practical Quantitation Limit			40

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS FUEL SPILL PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Project No.L080226-4

### Analyses of Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Oil (mg/kg)
Method Blank	2/26/2008	88	nd
A	2/26/2008	92	nd
B	2/26/2008	102	nd
B Dup	2/26/2008	68	nd
Practical Quantitation Limit			40

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

**ATTACHMENT B**  
**LIMITATIONS AND GUIDELINES FOR USE**



## **ATTACHMENT B**

### **REPORT LIMITATIONS AND GUIDELINES FOR USE<sup>1</sup>**

This attachment provides information to help you manage your risks with respect to the use of this report.

#### **ENVIRONMENTAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS**

This report has been prepared for the exclusive use of Ostrom's Farms and their authorized agents. This report may be made available to regulatory agencies for review. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

Insight Geologic, Inc. structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Ostrom's Farms should rely on this environmental report without first conferring with Insight Geologic, Inc. This report should not be applied for any purpose or project except the one originally contemplated.

#### **THIS ENVIRONMENTAL REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS**

This report has been prepared for the Ostrom's Mushroom Facility located at 8323 Steilacoom Road SE in Lacey, Washington. Insight Geologic, Inc. considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless Insight Geologic, Inc. specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, Insight Geologic, INC. should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

#### **RELIANCE CONDITIONS FOR THIRD PARTIES**

Our report was prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

---

<sup>1</sup> Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; [www.asfe.org](http://www.asfe.org).



### **ENVIRONMENTAL REGULATIONS ARE ALWAYS EVOLVING**

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. Insight Geologic, Inc. cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

### **UNCERTAINTY MAY REMAIN EVEN AFTER THIS PHASE II ESA IS COMPLETED**

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

### **SUBSURFACE CONDITIONS CAN CHANGE**

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or ground water fluctuations. Always contact Insight Geologic, Inc. before applying this report to determine if it is still applicable.

### **SOIL AND GROUND WATER END USE**

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or ground water). Note that hazardous substances may be present in some of the site soil and/or ground water at detectable concentrations that are less than the referenced cleanup levels. Insight Geologic, Inc. should be contacted prior to the export of soil or ground water from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or ground water from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

### **MOST ENVIRONMENTAL FINDINGS ARE PROFESSIONAL OPINIONS**

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Insight Geologic, Inc. reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

### **DO NOT REDRAW THE EXPLORATION LOGS**

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.



### **READ THESE PROVISIONS CLOSELY**

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. Insight Geologic, Inc. includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with Insight Geologic, Inc. if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

### **GEOTECHNICAL, GEOLOGIC AND GEOENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED**

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

### **BIOLOGICAL POLLUTANTS**

Insight Geologic, Inc's Scope of Work specifically excludes the investigation, detection, or assessment of the presence of Biological Compounds which are Pollutants in or around any structure. Accordingly, this report includes no interpretations, recommendations, findings, or conclusions for the purpose of detecting, assessing, or abating Biological Pollutants. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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

**CERTIFIED MAIL**

February 19, 2008

Mr. Chris Street  
Ostrom Farms  
8323 Steilacoom Road SE  
Lacey Washington 98513

Dear Mr. Street:

RE: Early Notice Letter Regarding the Release of Hazardous Substances at Ostrom Farms (site name) located at 8323 Steilacoom Road SE, Lacey Washington 98513; Facility Site Identification #: 1386 (existing)

Under Chapter 70.105 Revised Code of Washington (RCW) The Department of Ecology(Ecology) is required to conduct an Initial Investigation, of properties where we have received a report that there has been a release or threatened release of hazardous substance that could pose a threat to human health or the environment.

Ecology maintains a list of sites where an initial investigation has found that further testing and possible cleanup is needed. We call this our "database of Confirmed or Suspected Contaminated Sites". As a result of the initial investigation conducted by the Thurston County Health Department this property has been **updated**/added to the database as a State Cleanup Site and assigned a Facility Site Identification number of 8323. Please note that inclusion in this database does not mean Ecology has determined you liable for cleanup of the site, as that is a separate determination under the law.

This site has been added to our database because soil and groundwater contaminated with Petroleum Hydrocarbons and Pesticides have been confirmed on this property. Our report indicates that Ostrom's hired insight Geologic Inc. to conduct a subsurface environmental assessment in 2007 and contamination was documented. The purpose of the initial investigation is to confirm or deny the possibility of contamination on site.

In the future, Ecology may conduct a more detailed inspection of this property including testing for possible contamination. This inspection is called a "Site Hazard Assessment". At that time, Ecology will assess whether action will be needed and if necessary establish a priority for the work.





Ecology's policy is to work cooperatively with individuals to accomplish prompt and effective cleanups. Your cooperation with Ecology in planning or conducting a remedial action is not an admission of guilt or liability. Please be aware of state laws that must be adhered to if you decide to proceed with cleanup work on your own. The primary law is Chapter 70.105D RCW and the implementing regulations, the Model Toxics Control Act Cleanup Regulation (MTCA or Chapter 173-340 WAC). These laws can be found at Ecology's Toxics Cleanup Program website, <http://www.ecy.wa.gov/toxicscleanup/policy>.

If you would like a printed copy of the MTCA regulations or if you have questions call me at (360) 407-6240. These rules and how they impact each site can be confusing and complicated there are Environmental Consultants that can be employed to assist property owners with the cleanup and site assessment process.

Ecology's Voluntary Cleanup Program is designed to provide technical assistance, for a fee, to cleanup sites that qualify. If you would like additional information regarding this program you can find information on our website at <http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm> or you can contact Scott Rose at 360-407-6347.

Sincerely,



Kim Cross  
Toxics Cleanup Program  
Southwest Regional Office

ksc:ENL 021908 OSTROM FARMS TC

cc: Gerald Tousley, Thurston County Environmental Health  
Cris Matthews, Department of Ecology  
Michael Spencer, Department of Ecology

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Mr. Chris Street  
 Ostrom Farms  
 8323 Steilacoom Road SE  
 Lacey Washington 98513

7006 2760 0000 0402 5872

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Chris Street  
 Ostrom Farms  
 8323 Steilacoom Road SE  
 Lacey Washington 98513

2. Article Number 7006 2760 0000 0402 5872  
 (Transfer from service label)

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature ☐ Agent  
☒ Addressee

B. Received by (Printed Name) DUANE BASTMAN C. Date of Delivery 2-21-02

D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☒ No

3. Service Type  
☒ Certified Mail ☐ Express Mail  
☐ Registered ☐ Return Receipt for Merchandise  
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? ☐ Yes

Kim Cross



2007



RECEIVED

DEC 17 2007

Washington State  
Department of Ecology

Mr. Aziz Mahar  
Environmental Engineer  
SW Regional Office  
Water Quality Program

Re: Ostrom Farms – Subsurface Environmental Assessment

Dear Aziz,

The following are comments, by point, in response to Ecology's letter of November 7, 2007.

1. A statement was made to, or interpreted in error by Insight Geologic during the initial Phase-1 site survey. To our knowledge the septic is not connected to any drain other than the restroom facilities at the Maintenance. I've been unable to secure anything pro-positive in the way of drawings to support this and the County has no septic plan for this specific septic system we can get hold of.
2. Ostrom's utilizes a number of battery systems the largest of which power transport carts that move our growing trays from one growing area to the next. The batteries noted during the Phase-1 site survey were no longer in use and were placed outside in a holding area to be delivered to South Sound Steel, our local recycling firm. Subsequent to this Ostrom's has determined to provide a covering over any batteries that would be held in this, or any other area for disposal.
3. Battery fluids are typically captured via use of absorbent compounds dispersed so as to prevent such fluids from getting into our drains and stormwater collection systems. To this effect, and as part of Ostrom's Safety Program, training programs have been utilized with success here, provided by Industrial Battery Systems, 211 South Austin St, Seattle, WA 98108; 206 763-9170. Ostrom's will seek further guidance from Ecology's Haz-Mat website to see how we might tighten up our Best Management Practices in this area.

Please do not hesitate to contact me with any questions you might have in this regard. Ostrom's has always sought to maintain a proactive position with respect to our neighbors, our environment and our customers all whose support is very necessary to our continued existence.

Sincerely,

Christopher Street  
**OSTROM FARMS**  
Compliance & Projects Mgr.

Ostrom Farms  
Mushroom Growers and Packers  
Since 1928



ERTS # 601343

## Department of Ecology - Environmental Report Tracking System

## Initial Report

External Reference #

## Caller Information

## Where did it happen

First Last  
Name CHRIS STREET  
Business Name OSTROM FARMS  
Street Address 8323 STEILACOOM RD SE  
Other Address  
City OLYMPIA State WA Zip 98513  
E-mail Confidential\_FL ☐  
Phone Ext Type  
(360) 491-1410 246 Business

Berth Anchorage  
Location Name OSTROMS MUSHROOM FARM  
Street Address 8322 STEILACOOM RD SE  
Other Address  
City/Place LACEY State WA Zip  
County - Region THURSTON SWRO FS ID  
WIRA #  
Waterway Type  
Latitude Longitude  
Topo Quad 1:24:000 LACEY  
Direction/Landmark (mile post, cross roads, township/range)

## What happened

Spills Program Oil Spill? N

Incident Date Received Date 10/11/2007 14:37  
Medium SOIL  
Material CHEMICAL  
Quantity Unit  
Source COMMERCIAL  
Cause OTHER  
Incident Type  
Activity OTHER  
Impact SOIL CONTAMINATION  
Vessel Name  
Hull Number

## Primary Potentially Responsible Party Information

First Last  
Name  
Business Name OSTROMS MUSHROOM FARM  
Street Address 8322 STEILACOOM RD SE  
Other Address  
City LACEY State WA Zip  
Phone Ext Type  
E-mail

## Additional Contact Information

Name Phone Ext Type

## More Information

SOIL AND GROUND WATER CONTAMINATION CONFIRMED AT THIS SITE AFTER SUBSURFACE ENVIRONMENTAL  
ASSESSMENT CONDUCTED BY INSIGHT GEOLOGIC INC.

Entry Person TOPE, BARB

Entry Date 10/11/2007



ERTS # 601343

## Referral

Referral Method		Person Referred to	TOUSLEY, GERALD	Referral #	105810
<input type="radio"/> E-mail ERTS number		Phone	(360)754-4111	Fax	(360)754-2954
<input checked="" type="radio"/> E-mail attachment		E-mail	TOUSLEG@co.thurston.wa.us		
<input type="radio"/> Print		Program/Organization	TOXICS CLEANUP		
<input type="radio"/> Telephone		Address	Thurston County Health		
		City	Olympia	Wa	98502-
		Region/Location	swro		
		Referral Date	10/11/2007		
		Primary	<input type="checkbox"/>		



ERTS # 601343

## Followup

**Inspector Information**

Referral # 105810  
 Lead Inspector TOUSLEY, GERALD  
 Program/Organization TOXICS CLEANUP

\* Region/Location swro

# of Ecology Staff

Overtime ☐**Action**

FIELD RESPONSE - INVESTIGATION  
 TCP - SIS

Start Date

6/14/2007

End Date

6/14/2007

2/5/2008

2/5/2008

**Where did it happen**

Berth Anchorage  
 Location Name OSTROMS MUSHROOM FARM  
 Street Address 8323 STEILACOOM RD SE  
 Other Address  
 City/Place LACEY State WA Zip 98513-  
 County THURSTON Region SWRO FS ID 1386  
 Waterway Type  
 WRIA #

**What happened**

Spills Program Oil Spill? N

Latitude 47.048611

Longitude

122.761944

Incident Date

Topo Quad 1:24,000 LACEY

Direction/Landmark (mile post, cross roads, township/range)

Medium

SOIL

Material

CHEMICAL

Quantity Unit

Est.

**Potentially Responsible Party Information**Check if the primary PRP provided notice to Ecology ☐Primary ☐

First

Last

Name CHRIS

STREET

Business Name OSTROMS MUSHROOM FARM

Street Address 8323 STEILACOOM RD SE

Other Address

City LACEY

State WA

Zip 98513-

Phone (360) 491-1410

Ext

Type Business

E-mail

Source

COMMERCIAL

Cause

OTHER

Incident TypeActivity

OTHER

Impact

SOIL CONTAMINATION

Vessel**Narrative**

COMPLAINT (Brief Summary of ERTS): Soil and Ground water contamination confirmed at this site after subsurface environmental assessment conducted by insight Geologic Inc.

SITE STATUS (Brief Summary of site condition(s) after investigation): The results of the investigation indicate the presence of diesel-range hydrocarbons in shallow soil in the fueling area of the property that exceeds MTCA Method A cleanup level. Oil-range hydrocarbons were detected in soil at a depth of 11 bgs in the area of the wastewater disposal pond. Also, DDT, DDD and DDE were detected in soil and ground water at this site. The consultant's report has been attached to this report.

Investigator: Gerald L. Tousley

Date Submitted: 2/5/08

**OBSERVATIONS**

Description of past practices likely to be responsible for contamination: The consultant has performed a subsurface investigation of suspected areas within the Mushroom facility. The results of the investigation indicate the presence of diesel-range hydrocarbons in shallow soil in the fueling area of the property exceeding MTCA Method A cleanup level. It was indicated that a fuel spill occurred in the fueling area several years ago and is the likely source of contamination. Oil-range hydrocarbons were detected in soil at a depth of 11 feet below ground surface in the area of the wastewater disposal pond at concentrations exceeding MTCA clean up level. The storm water flows from the concrete apron area outside the maintenance building to stormwater catch basins and then to the wastewater disposal pond without any pretreatment. It appears that oil-range hydrocarbons from spills and maintenance conducted on the apron area have migrated to the waste water disposal pond and impacted shallow soils. Ground water in this area does not appear to have been affected by fuel or oil-range hydrocarbons, VOC's or lead. DDT, DDD and DDE were detected in soil and groundwater samples collected from the area of the waste water disposal pond at concentrations slightly less than their respective cleanup levels.

Various chemicals are used and stored on site. They include malathion, diazinon, permethrin, formaldehyde, "BFW-31" a corrosion inhibitor, various drums of sanitizers, bulk lubricating oil and diesel fuel. During the investigation and remediation of spent mushroom compost disposed of on the south side of Steilacoom Road, the following pesticides were detected: Aldrin, alpha-BHC, chlordane, DDT, DDE, DDD, dieldrin, endosulfan I and II, endrin, heptachlor epoxide and methoxychlor. The detection of these compounds in and near the



ERTS # 601343

spent mushroom compost indicates that they have been used in the past at the production facility. Thurston County recommends that the site be listed and a Site Hazard Assessment be conducted.  
Description of past practices likely to be responsible for contamination: spills, machine maintenance and use of pesticides in the activities of growing mushrooms.

SITE ASSESSMENT COMPLETED. SITE RECOMMENDED FOR LISTING. SEE INITIAL INVESTIGATION DOCUMENTATION ON FILE IN THE CENTRAL FILES ROOM, SWRO FOR DETAILS.

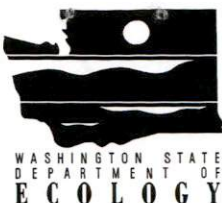
Entry Person: TOPE, BARB

Entry Date 3/7/2008



# Initial Investigation Close-Out Router

<b>ERTS #: 601343</b>		<b>Site Name: Ostrom Farm</b>	
<b>1</b>	Recommended Action: Circle the appropriate categories:		
	NFA	<u>Listing on SIS</u>	High Priority SHA
Initial Investigator: Gerald L. Tousley TCHD <i>Gerald L. Tousley</i> 2/6/08			
<b>2</b>	Unit Supervisor: <i>CM</i>		
<b>3</b>	Final Action: Circle the appropriate categories:		
	NFA	<u>Listing on SIS</u>	High Priority SHA
Section Manager: <i>Marion L. Abbott</i>			
<b>NFAs go Directly to the Incident Tracker, and Then the File Room; Others Follow the Process Below</b>			
<b>4</b>	Entered on SIS: <input checked="" type="checkbox"/>		
	Date: <i>02/19/08</i>		
	SIS Site Number:	Facility Site Number: <i>1386 (existing FS#)</i>	
	Date Early Notice Letter Sent: <i>02/19/08</i>	FS/SIS Coordinator: <i>Kim Cross</i>	
<b>5</b>	Incident Tracker: <i>Barb Lape</i>		
	Date: <i>07 MAR 08</i>		
<b>6</b>	File Room:		
	County:		
	File Type:		



# INITIAL INVESTIGATION FLD REPORT

ERTS Number: 601343

Parcel #: 11814140500

COUNTY: Thurston

## SITE INFORMATION

Site Name (e.g., Co. name over door): Ostrom Farms	Site Address (including City and Zip+4): 8323 Steilacoom Road SE Lacey, WA 98513	Site Phone: 360-491-1410
Site Contact and Title: Chris Street	Site Contact Address: Same as above	Site Contact Phone: same
Site Owner:	Site Owner Address:	Site Owner Phone:
Site Owner Contact:	Site Owner Contact Address:	Owner Contact Phone:
Alternate Site Name(s):	Comments:	Is property > 10 acres? Yes x No <input type="checkbox"/>
Previous Site Owner(s):	Comments:	

Location: Quarter-Quarter:	Section: 14	Township: 18	Range: 1W
Longitude: Degrees: 122	Minutes: 45	Seconds: 43	122.76204
Latitude: Degrees: 47	Minutes: 02	Seconds: 55	47.04861

## INSPECTION INFORMATION

Inspection Date: June 14 & 20, 2007	Inspection Time: all day	Entry Notice: Announced x Unannounced <input type="checkbox"/>
Photographs Yes <input type="checkbox"/> No x	Weather: Clear <input type="checkbox"/> Rain <input type="checkbox"/> Temperature: _____ ° F	
Samples – by consultant Yes x No <input type="checkbox"/>	Wind Direction: Wind Speed:	

## RECOMMENDATION

<b>No Further Action</b> (Indicate NFA in box below):	<b>LIST on ISIS</b> (Indicate in box below):
Release or threatened release does not pose a threat <input type="checkbox"/>	Site Hazard Assessment x
No release or threatened release <input type="checkbox"/>	Interim Action <input type="checkbox"/>
Educational mailing <input type="checkbox"/>	Emergency Action <input type="checkbox"/>
Refer to program/agency (Name: _____) <input type="checkbox"/>	Independent Cleanup Action In progress <input type="checkbox"/>
Independent Cleanup Action Completed (i.e., contam, removed) <input type="checkbox"/>	

COMPLAINT (Brief Summary of ERTS): Soil and Ground water contamination confirmed at this site after subsurface environmental assessment conducted by insight Geologic Inc.

SITE STATUS (Brief Summary of site condition(s) after investigation): The results of the investigation indicate the presence of diesel-range hydrocarbons in shallow soil in the fueling area of the property that exceeds MTCA Method A cleanup level. Oil-range hydrocarbons were detected in soil at a depth of 11 bgs in the area of the wastewater disposal pond. Also, DDT, DDD and DDE were detected in soil and ground water at this site. The consultant's report has been attached to this report.

Investigator: Gerald L. Tousley	Date Submitted: 2/5/08
---------------------------------	------------------------



Description of past practices likely to be responsible for contamination: The consultant has performed a subsurface investigation of suspected areas within the Mushroom facility. The results of the investigation indicate the presence of diesel-range hydrocarbons in shallow soil in the fueling area of the property exceeding MTCA Method A cleanup level. It was indicated that a fuel spill occurred in the fueling area several years ago and is the likely source of contamination. Oil-range hydrocarbons were detected in soil at a depth of 11 feet below ground surface in the area of the wastewater disposal pond at concentrations exceeding MTCA clean up level. The storm water flows from the concrete apron area outside the maintenance building to stormwater catch basins and then to the wastewater disposal pond without any pretreatment. It appears that oil-range hydrocarbons from spills and maintenance conducted on the apron area have migrated to the waste water disposal pond and impacted shallow soils. Ground water in this area does not appear to have been affected by fuel or oil-range hydrocarbons, VOC's or lead. DDT, DDD and DDE were detected in soil and groundwater samples collected from the area of the waste water disposal pond at concentrations slightly less than their respective cleanup levels.

Description of past practices likely to be responsible for contamination: spills, machine maintenance and use of pesticides in the activities of growing mushrooms.

Spill	<input checked="" type="checkbox"/>	LUST	<input type="checkbox"/>
Pesticide disposal	<input type="checkbox"/>	Tank	<input type="checkbox"/>
Landfill	<input type="checkbox"/>	Improper handling	<input type="checkbox"/>
Drums	<input type="checkbox"/>	Improper disposal	<input type="checkbox"/>
Other – Describe:			

Standard Industrial Code(s)

AFFECTED MEDIA	CONTAMINANTS (#1-16: See contaminants key) Enter letter designating status of contaminant: C = Confirmed (above cleanup levels); S = Suspected; R= Remediated															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ground Water						C	C									
Surface Water																
Drinking Water																
Soil						C	C									
Sediment																
Air																
1 Base/neutral organics			7 Petroleum products			13 Corrosive wastes										
2 Halogenated organic compounds			8 Phenolic compounds			14 Radioactive wastes										
3 Metals - Priority pollutants			9 Non-halogenated solvents			15 Conventional contaminants, organic										
4 Metals - Other			10 Dioxin			16 Conventional contaminants, inorganic										
5 Polychlorinated biPhenyls (PCBs)			11 Polynuclear aromatic hydrocarbons (PAHs)													
6 Pesticides			12 Reactive wastes													

**SITE INFORMATION**

Soil type: Everett very gravelly sandy loam

Slope: 3 to 15%

Site vegetation/cover present:

Forest ☐Bare soil ☒Brush ☐Landscaped ☐Pasture/open field ☐Wetlands ☐Pavement ☒Surface water ☐

Other – Describe:

Are there any drinking water systems affected?

☐ Yes☒ No

Municipal, private, or both? (Circle one)

How many people are estimated to be affected? \_\_\_\_\_

Is there a potential for a release or threatened release to affect a drinking water source?

☒ Yes☐ No

Are there monitoring wells in the vicinity?

☐ Yes☒ No

Are there dry wells in the vicinity?

☐ Yes☒ No**CONTAMINANT PATHWAYS AND TARGETS**

	Ingestion	Inhalation	Contact
Ground Water			
Surface Water			
Drinking Water			
Soil	X		X
Sediment			
Air			
Targets possible:		Residential	<input type="checkbox"/>
Human, adult	<input checked="" type="checkbox"/>	Industrial	<input type="checkbox"/>
Human, children	<input type="checkbox"/>	Commercial	<input checked="" type="checkbox"/>
Sensitive environments (See WARM Scoring Manual for definition):		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, describe:			
General Comments:			



**SITE MAP/DIAGRAM**

Site Name: Ostrom Farms

## Thurston County Map



Approximate scale: 1 inch = 388 feet

ERTS Number: 601343

County: Thurston

Inspector: Gerald L. Tousley

Date: 2/05/08



# Department of Ecology - Environmental Report Tracking System

ERTS # 601343

## Department of Ecology - Environmental Report Tracking System

### Initial Report

External Reference #

#### Caller Information

#### Where did it happen

First Name CHRIS  
Last Name STREET  
Business Name OSTROM FARMS  
Street Address 8323 STEILACOOM RD SE  
Other Address  
City OLYMPIA State WA Zip 98513  
E-mail  
Phone (360) 491-1410 Ext 246 Type Business  
Confidential\_FL ☐

Berth  
Location Name OSTROMS MUSHROOM FARM  
Street Address 8322 STEILACOOM RD SE  
Other Address  
City/Place LACEY State WA Zip  
County - Region THURSTON SWRO FS ID  
WIRA #  
Waterway Type  
Latitude Longitude  
Topo Quad 1:24:000 LACEY  
Direction/Landmark (mile post, cross roads, township/range)

#### What happened

Spills Program Oil Spill? N

Incident Date Received Date 10/11/2007 14:37

Medium SOIL

Material CHEMICAL

Quantity Unit

Source COMMERCIAL

Cause OTHER

Incident Type

Activity OTHER

Impact SOIL CONTAMINATION

Vessel Name

Hull Number

#### Primary Potentially Responsible Party Information

First Name Last Name  
Business Name OSTROMS MUSHROOM FARM  
Street Address 8322 STEILACOOM RD SE  
Other Address  
City LACEY State WA Zip  
Phone Ext Type  
E-mail

#### Additional Contact Information

Name Phone Ext Type

#### More Information

SOIL AND GROUND WATER CONTAMINATION CONFIRMED AT THIS SITE AFTER SUBSURFACE ENVIRONMENTAL ASSESSMENT CONDUCTED BY INSIGHT GEOLOGIC INC.

Entry Person TOPE, BARB

Entry Date 10/11/2007

2/5/08- Not in VCP yet.

12/27/07- Called DOE- No application yet for VCP.

10/30/07- Not Yet

Spoke to the consultant and he told me they would enter the VCP. the application

Thursday, October 11, 2007

\*\*\* The Initial report contains only information provided to Ecology from the complainant.

Page 1 of 2

goes to Ostrom today. 10/14/07 1008am yet. 10/24/07- Not in database yet (VCP)



## Department of Ecology - Environmental Report Tracking System

ERTS # 601343

### Referral

<b>Referral Method</b>		<b>Person Referred to</b> TOUSLEY, GERALD	<b>Referral #</b> 105810
<input type="radio"/> E-mail ERTS number		<b>Phone</b> (360)754-4111 <b>Fax</b> (360)754-2954	<b>Primary</b> <input type="checkbox"/>
<input checked="" type="radio"/> E-mail attachment		<b>E-mail</b> TOUSLEG@co.thurston.wa.us	
<input type="radio"/> Print		<b>Program/Organization</b> TOXICS CLEANUP	
<input type="radio"/> Telephone		<b>Address</b> Thurston County Health	
		<b>City</b> Olympia <b>Wa</b> 98502-	
		<b>Region/Location</b> swro	
		<b>Referral Date</b> 10/11/2007	

**Data for Parcel No. 11814140500**[Zoom Map to Parcel](#)[View Assessor's Data for Parcel or look at Parcel Summary Page](#)

Owner(s):

OSTROM MUSHROOM CO INC

---

Address:	8323 STEILACOOM RD SE
City:	OLYMPIA
State:	WA, 98513

---

Parcel No.:	11814140500
Site Address:	8322 STEILACOOM RD SE
Site City:	OLYMPIA
Site Zip:	98513

---

Section:	s14181W
Legal Description:	Section 14 Township 18 Range 1W Quarter SOUTHEAST QUARTER OF THE NORTHEAST QUARTER LYING NORTHERLY OF STEILACOOM ROAD
Usecode:	83 - CUR-USE-AG
Tax Code Area:	239
Taxable:	Yes
Annual Tax:	\$60,845.93
Property Type:	AGR
Total Acres:	33.86
Land Value:	<a href="#">View Assessor's Data for Parcel</a>
Building Value:	<a href="#">View Assessor's Data for Parcel</a>
Total Value:	<a href="#">View Assessor's Data for Parcel</a>
Current Use:	Y
Exemptions:	None

---

Wetlands:	Unknown
Floodzone:	NO
Flood of 1999:	Unknown
Winter Flooding of 1996:	Unknown
High Groundwater Flood Hazards:	HGW Hazard-300' Buffer

---

Zoning:	LD 0-4, Low-Density Residential; LD 3-6, Low-Density Residential
Commissioner District:	Diane Oberquell - District 2



Historic Site:	No
Permitting Jurisdiction:	COUNTY
Jurisdiction of Influence:	LACUGA
Stormwater Rate:	Yes
No Shooting Zone:	No
Animal Control:	Ordinance No. 12989. Contact Animal Services (360-352-2510).
<hr/>	
Weed Containment Zone:	No
Steep Slopes:	Unknown
Ground Water Sensitive Areas:	No
DNR Natural Heritage Data:	Unknown
Critical Buffers:	200' Wetland
Shoreline Management Areas:	No
Waterbody & Wetland Buffers:	Yes
FEMA Panel No.:	195
<hr/>	
Wellhead Protection Area:	No
Area of Groundwater Concern:	No
Elevated Nitrates:	No
Soil Type:	Everett very gravelly sandy loam, 3 to 15% slopes;  Spana gravelly loam; Spanaway gravelly sandy loam, 0 to 3% slopes
Hydric Soil:	No
Watershed:	HENDERSON INLET,NISQUALLY RIVER
Water Service Area:	LACEY WATER DEPARTMENT
School District:	NORTH THURSTON
Elementary School:	SEVEN OAKS
Middle School:	NISQUALLY
High School:	RIVER RIDGE
Fire Response District:	LACEY
Medic Response District:	Medic 3
Residential Outdoor Burning:	Residential Outdoor Burning is banned within the city limits and urban growth areas.
Planning Region:	2
Census Tract:	012330
Radio or Cell Tower:	No
Airport Zone:	No

July 17, 2007

Ostrom's Farms  
8323 Steilacoom Road SE  
Lacey, Washington 98512

Attention: Chris Street

Report  
Subsurface Environmental Assessment  
Ostrom's Mushroom Farm  
Steilacoom, Washington  
File No. 0335-01-03

## **INTRODUCTION**

Insight Geologic, Inc. is pleased to provide this report regarding our subsurface investigation activities at the Ostrom's Farms Mushroom Facility located at 8322 Steilacoom Road SE in Lacey, Washington. The Ostrom's Farm property is located northeast of the intersection between Marvin Road SW and SW Steilacoom Road in the city of Lacey. The property occupies approximately 34 acres of land zoned as low-density residential. The site is generally flat with a gentle slope to the north. Site elevations range from approximately 230 feet above mean sea level (MSL) in the southern portion to about 212 MSL at the northern property line. The majority of the property has been cleared of trees for the development of the growing facility buildings, drive areas and compost production. Surrounding land use consists of single family residential housing to the north and east, Nisqually Middle School is located to the west of the facility across Marvin Road. The site is shown relative to surrounding physical features in the Vicinity Map, Figure 1.

\* The facility is operated for the commercial production of mushrooms. Included in the operation is the production of compost used as the growing media for the mushrooms. Water is supplied by a water supply well and through an intertie with the City of Lacey. Sanitary wastes are disposed of through onsite septic tanks and drainfields. Stormwater is either recycled and used for compost production or is used to spray irrigate landscaped areas. Growing room wash down water is generally disposed of to ground.

Various chemicals are used and stored on site. They include malathion, diazinon, permethrin, formaldehyde, "BFW-31" a corrosion inhibitor, various drums of sanitizers, bulk lubricating oil and diesel fuel. During the investigation and remediation of spent mushroom compost disposed of on the south side of Steilacoom Road the following pesticides were detected: aldrin, alpha-BHC, chlordane, DDT, DDD, DDE, dieldrin, endosulfan I and II,



endrin, heptachlor epoxide and methoxychlor. The detection of these compounds in and near the spent mushroom compost indicates that they have been used in the past at the production facility.

Insight Geologic performed a Phase I Environmental Site Assessment (ESA) of Ostrom's Farms' Lacey, Washington growing facility in March 2007. The results of our Phase I ESA indicated several areas of potential environmental concern including:

1. The facility has had a series of underground storage tanks located on the property. Some have been removed, others have been abandoned in place and at least one is still active for standby boiler fuel. Because of the exempt status of the tanks for agricultural purposes, periodic tightness testing is not conducted. No information could be found in the Washington State Department of Ecology (Ecology) files regarding the closure of underground tanks at the site, and therefore, no information is available regarding soil and/or ground water conditions adjacent to the tanks.
2. At least one spill of diesel fuel from the existing above ground storage tank has occurred. The fuel reportedly flowed to a catch basin that drains to the septic system in the northwest portion of the site.
3. Several batteries were observed in the fueling area exposed to the elements. Metals, particularly lead, can leach from the batteries and enter the stormwater system or migrate to ground water.
4. Soil outside the bulk lubricating oil storage area was observed to be heavily stained with oil, likely as the result of spills during deliveries.
5. A series of historic and active infiltration areas for wash water and stormwater are, or have been, located in the northern portion of the property. These infiltration facilities are unlined and the influent does not receive treatment prior to discharge. These facilities have the potential to have historically received water containing pesticides including DDT.
6. Treated soil from previous environmental remediation projects in the early 1990s was used in landscape berms in several areas of the property.

At the request of Ostroms Farms, Insight Geologic performed subsurface sampling and analysis of soil and ground water samples from the areas identified during the Phase I ESA.

### **SCOPE OF SERVICES**

The purpose of our services was to evaluate soil and ground water conditions in the areas of the identified environmental concerns on the property. We conducted the following tasks for this phase of the project:

1. Prepare a Health and Safety Plan for Insight Geologic's representatives while on site.

2. Conduct utility location at the site to assess the presence of potential subsurface obstructions.
3. Drill 12 exploratory borings on the site using a truck mounted drilling rig to collect representative soil and ground water samples from the borings.
4. Collect representative soil samples from 12 hand-augered borings in the area of the waste water disposal ponds and treated soil stockpiles (berms).
5. Provide for the chemical analysis of selected soil and ground water samples for the presence of gasoline-range hydrocarbons using Ecology method NWTPH-Gx, diesel- and oil-range hydrocarbons using Ecology Method NWTPH-Dx (extended), volatile organic compounds (VOCs) using EPA Method 8260, chlorinated pesticides using EPA Method 8081 and lead using EPA 7000 series methodology.
6. Evaluate the laboratory results with respect to current Ecology Model Toxics Control Act (MTCA) Method A cleanup levels.

## SUMMARY OF ACTIVITIES

### GENERAL

We visited the site on June 14 and 20 2007 to collect representative soil and ground water samples from several areas of potential environmental concern identified on the property during our Phase I ESA conducted in March 2007. The areas of environmental concern included the former maintenance shop, the former boiler house, the current fueling area, the current underground storage tank for the existing boiler, and areas containing treated petroleum-containing soil used for landscaping. Borings were drilled using an AMS Power Probe rig that uses a combination of hydraulic and vibratory methods to advance a 4-foot long sampler having acetate liners into the ground. Upon retrieval, the sampler is opened and the soil contained inside the sampler is observed for visual and olfactory indications of contamination. A representative sample is collected from each sampled interval, placed into a jar which is sealed, labeled and placed into an ice chest for storage pending analysis. The soil from the sampled interval is described by the field geologist in general accordance with the Unified Soil Classification System on boring logs. The logs of the borings conducted at the Ostrom's Farm facility are contained in Attachment A to this report.

If ground water was encountered in a boring, a sample was collected using polyethylene tubing inserted down the inside of the drill string and connected to a peristaltic pump. The water was pumped from the boring until it was relatively clear and free of suspended sediment. When purging was complete, representative ground water samples were collected into laboratory-supplied containers appropriate for the intended analyses. The samples were delivered to an on-site mobile laboratory for analysis operated by Libby Environmental of Olympia, Washington.



## **SOIL**

Eleven borings and 12 hand auger borings were conducted at the site in the locations depicted in Figure 2. In general, the soils encountered in the borings consisted of loose to dense sand and gravel containing variable amounts of silt. The materials encountered appeared to be glacial outwash and ablation till deposited during the waning stages of the Vashon Stage of the Fraser glaciation which ended between 10,000 and 15,000 years ago.

## **GROUND WATER**

Ground water was encountered at depths between about 10 and 15 feet below ground surface in two borings (B-11 and B-12) located near the waste water disposal pond in the northeastern portion of the site. Ground water samples were collected from each of the borings and submitted for analysis. Ground water was not encountered in any of the other borings conducted.

## **CHEMICAL ANALYSIS**

Soil and ground water samples were analyzed by Libby Environmental for the presence of gasoline-, diesel- and oil-range hydrocarbons using Ecology Method NWTPH-G and NWTPH-Dx (extended), for volatile aromatic hydrocarbons (VOCs) using EPA Method 8260 and for lead using EPA method 7000 series methodology. Selected soil and ground water samples were also analyzed for the presence of chlorinated pesticides using EPA Method 8081. Laboratory reports are contained in Attachment B. Laboratory results are summarized in Tables 1 – 5.

## **RESULTS**

### **SOIL**

Laboratory reports indicated the presence of diesel-range hydrocarbons in the soil sample collected from boring B-6 at a depth of 4 feet below ground surface in the fueling area at a concentration of 7,900 milligrams per kilogram (mg/kg). The Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup level for diesel in soil is 2,000 mg/kg. Oil-range hydrocarbons were detected in boring B-12 near the wastewater disposal pond at a depth of 11 feet below ground surface at a concentration of 4,100 mg/kg. The MTCA Method A cleanup level for oil-range hydrocarbons is 2,000 mg/kg. Diesel- and oil-range hydrocarbons either were not detected or were detected at concentrations less than the respective cleanup levels in the remaining samples analyzed. Gasoline-range hydrocarbons were not detected in any of the soil samples. Lead and VOCs either were not detected, or were detected at concentrations less than individual cleanup levels. The chlorinated pesticide DDT (dichloro-diphenyl-trichloroethane) and breakdown products DDD (dichloro-diphenyl-dichloroethylene) and DDE (dichloro-diphenyl-dichloroethene) were detected in the four soil samples analyzed from borings B-11 and B-12 in the area of the

wastewater disposal pond at concentrations less than Ecology's MTCA Method A cleanup level of 3.0 mg/kg for the sum of the three compounds.

## GROUND WATER

DDT, DDD and DDE were detected in the two ground water samples collected from borings B-11 and B-12 at concentrations less than Ecology's MTCA Method A cleanup level of 0.3 micrograms per liter ( $\mu\text{g/l}$ ) for the sum of the three compounds. Gasoline-, diesel- and oil-range hydrocarbons were not detected in the water samples. VOCs and lead were not detected in the water samples.

## CONCLUSIONS

Insight Geologic has performed a subsurface investigation of suspected areas of environmental concern at the Ostrom's Farms Mushroom Facility in Lacey, Washington. The subsurface investigation was performed following our completion of a Phase I environmental site assessment of the property in March 2007.

The results of our subsurface investigation indicate the presence of diesel-range hydrocarbons in shallow soil in the fueling area of the property at concentrations exceeding Ecology's MTCA Method A cleanup level of 2,000 mg/kg. We understand that a fuel spill occurred in the fueling area several years ago and it is our opinion that this is the likely source of contamination in this area.

Oil-range hydrocarbons were detected in soil at a depth of 11 feet below ground surface in the area of the wastewater disposal pond at concentrations exceeding Ecology's MTCA Method A cleanup level of 2,000 mg/kg. We understand that storm water flows from the concrete apron area outside the maintenance building to stormwater catch basins and then to the wastewater disposal pond without any pre treatment. It appears that oil-range hydrocarbons from spills and maintenance conducted on the apron area have migrated to the waste water disposal pond and impacted shallow soils. Ground water in this area does not appear to have been affected by fuel or oil-range hydrocarbons, VOCs or lead.

DDT, DDD and DDE were detected in soil and ground water samples collected from the area of the waste water disposal pond at concentrations slightly less than their respective cleanup levels. These compounds appear to be relics of the historic use of DDT on the property prior to 1972 when it was banned for use in the United States.

Soil in the area of the former maintenance shop, the former boiler house and underground storage tank, and the present boiler house and stand-by fuel tank does not appear to have been impacted by fuel- or oil-range hydrocarbons, VOCs or lead.

Soil remediated in the early 1990s to remove petroleum hydrocarbons and subsequently used in landscape berms in the north and east portions of the property does not appear to contain petroleum hydrocarbons, VOCs or lead at concentrations greater than Ecology's MTCA Method A cleanup levels for these compounds.



Based on the results of our subsurface investigation, we recommend remediation of petroleum-contaminated soil detected in the fueling area and in the waste water disposal pond. Remediation should be conducted under Ecology's oversight through the Voluntary Cleanup Program (VCP) so that a determination of "No Further Action" (NFA) may be obtained when remediation is completed. Given the relatively shallow depth of the impacted soil, excavation and disposal appears to be the most cost effective option for cleanup.

### LIMITATIONS

We have prepared this report for use by Ostrom's Farms regarding the subsurface investigation of areas of suspected environmental concern at their mushroom growing facility located at 8322 Steilacoom Road SE in Lacey, Washington. This report may be made available to regulatory agencies.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

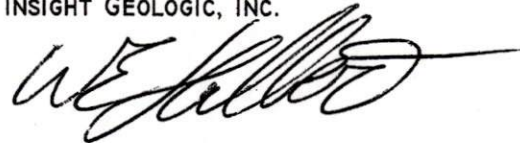
Please refer to Attachment C titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

————— ◆ —————

We trust this report meets your current requirements. Please contact us if you have questions regarding information presented in this report, or if you require additional information. We appreciate the opportunity to be of service to you on this project.

Yours very truly,

INSIGHT GEOLOGIC, INC.



William E. Halbert, L.G., L.H.G.  
Principal Hydrogeologist

Attachments

**TABLE 1**  
**Summary of Chemical Analytical Results - Soil<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Gasoline-range Hydrocarbons <sup>2</sup>	Volatile Organic Compounds <sup>3</sup>				1,3,5-Trimethylbenzene <sup>4</sup>	Isopropyltoluene <sup>5</sup>	n-Butylbenzene <sup>6</sup>	Lead <sup>7</sup>
				B	E	T	X				
B1-14'	6/14/07	14.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B1-20'	6/14/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B2-14'	6/14/07	14.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B2-20'	6/14/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B3-16'	6/20/07	16.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B4-20'	6/20/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B5-12'	6/20/07	12.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B6-4'	6/20/07	4.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<b>0.1200</b>	<b>0.0600</b>	<b>0.100</b>	<5.0
B7-12'	6/20/07	12.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B8-20	6/20/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B11-8'	6/14/07	8.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B11-15'	6/14/07	15.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B12-11'	6/14/07	11.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B12-16'	6/14/07	16.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP1A-4'	6/14/07	4.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP1B-3.5'	6/14/07	3.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP2A-3.5'	6/14/07	3.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP2B-4'	6/14/07	4.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP3A-2.5'	6/14/07	2.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP3B-3'	6/14/07	3.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<b>5.6</b>
TP3C-2.5'	6/14/07	2.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP3D-2'	6/14/07	2.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<b>6.0</b>
TP4A-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP4B-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
HA1-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<b>0.3100</b>	<0.030	<0.0200	<0.0200	<0.0200	<5.0
HA2-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
MTCA Method A cleanup levels			30/100	0.03	6.0	7.0	9.0	N/A	N/A	N/A	250

**Notes:**

<sup>1</sup> Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.

<sup>2</sup> Analysis of gasoline-range hydrocarbons was conducted using method NWTPH-Gx.

<sup>3</sup> Analysis of volatile organic compounds was conducted using EPA method 8260B.

<sup>4</sup> Analysis of 1,3,5-Trimethylbenzene was conducted using EPA method 8260B.

<sup>5</sup> Analysis of Isopropyltoluene was conducted using EPA method 8260B.

<sup>6</sup> Analysis of n-Butylbenzene was conducted using EPA method 8260B.

<sup>7</sup> Analysis of lead was conducted using EPA 7000 series methodology.

<sup>8</sup> The lower of the two cleanup levels shown for gasoline-range hydrocarbons applies if benzene is present in the same sample.

All analytical results presented in the above table are expressed in milligrams per kilogram (mg/kg).

B-benzene, E-ethylbenzene, T-toluene, X-total xylenes.

"<5.00" - indicates that the analyte was not detected above the concentration shown.

Values shown in bold indicate that the analyte was detected at this concentration.

Shaded values indicate exceedences of the respective MTCA Method A cleanup level.



**TABLE 2**  
**Summary of Chemical Analytical Results - Soil<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Diesel-range Hydrocarbons <sup>2</sup>	Heavy Oil-range Hydrocarbons <sup>3</sup>	Mineral Oil Hydrocarbons <sup>4</sup>
B1-14'	6/14/07	14.0	<10.0	<25.0	<40
B1-20'	6/14/07	20.0	<10.0	<25.0	<40
B2-14'	6/14/07	14.0	<10.0	<25.0	<40
B2-20'	6/14/07	20.0	<10.0	<25.0	<40
B3-16'	6/20/07	16.0	<10.0	<25.0	<40
B4-20'	6/20/07	20.0	<10.0	<25.0	<40
B5-12'	6/20/07	12.0	<b>64</b>	<25.0	<40
B6-4'	6/20/07	4.0	<b>7,980</b>	<25.0	<40
B7-12'	6/20/07	12.0	<10.0	<25.0	<40
B8-20'	6/20/07	20.0	<10.0	<25.0	<40
B11-8'	6/14/07	8.0	<10.0	<25.0	<40
B11-15'	6/14/07	15.0	<10.0	<25.0	<40
B12-11'	6/14/07	11.0	<10.0	<b>4,180</b>	<40
B12-16'	6/14/07	16.0	<10.0	<25.0	<40
TP1A-4'	6/14/07	4.0	<10.0	<25.0	<40
TP1B-3.5'	6/14/07	3.5	<10.0	<25.0	<40
TP2A-3.5'	6/14/07	3.5	<10.0	<25.0	<40
TP2B-4'	6/14/07	4.0	<10.0	<25.0	<40
TP3A-2.5'	6/14/07	2.5	<10.0	<25.0	<40
TP3B-3'	6/14/07	3.0	<10.0	<25.0	<40
TP3C-2.5'	6/14/07	2.5	<10.0	<25.0	<40
TP3D-2'	6/14/07	2.0	<10.0	<25.0	<40
TP4A-1'	6/14/07	1.0	<10.0	<25.0	<40
TP4B-1'	6/14/07	1.0	<10.0	<25.0	<40
HA1-1'	6/14/07	1.0	<10.0	<25.0	<40
HA2-1'	6/14/07	1.0	<10.0	<25.0	<40
MTCA Method A cleanup Level			2,000	2,000	4,000

**Notes**

<sup>1</sup> Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.

<sup>2</sup> Analysis of diesel-range hydrocarbons was conducted using method NWTPH-Dx.

<sup>3</sup> Analysis of heavy oil-range hydrocarbons was conducted using method NWTPH-Dx Extended.

<sup>4</sup> Analysis of mineral oil-range hydrocarbons was conducted using method NWTPH-Dx Extended.

All analytical results presented in the above table are expressed in milligrams per kilogram (mg/kg).

"<10.00" - indicates that the analyte was not detected above the concentration shown.

"-" - indicates that the sample was not analyzed for this compound.

Values shown in bold indicate that the analyte was detected at this concentration.

Shaded values indicate exceedances of the respective MTCA Method A cleanup level.

**TABLE 3**  
**Summary of Chemical Analytical Results - Ground Water<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Gasoline-range Hydrocarbons <sup>2</sup>	Volatile Organic Compounds <sup>3</sup>				Diesel-range Hydrocarbons <sup>4</sup>	Heavy Oil-range Hydrocarbons <sup>5</sup>	Lead <sup>6</sup>
			B	E	T	X			
B4W-20	6/20/07	<100	<1.0	<1.0	<2.0	<3.0	<250	<500	<2.5
B11-W	6/14/07	<100	<1.0	<1.0	<2.0	<3.0	<250	<500	<2.5
B12-W	6/14/07	<100	<1.0	<1.0	<2.0	<3.0	<250	<500	<2.5
MTCA Method A cleanup Level		800	5.0	700	1,000	1,000	500	500	15

**Notes:**

<sup>1</sup>Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratory Olympia, Washington.

<sup>2</sup>Analysis of gasoline-range hydrocarbons was conducted using method NWTPH-G.

<sup>3</sup>Analysis of volatile organic compounds was conducted using EPA method 8260B.

<sup>4</sup>Analysis of diesel-range hydrocarbons was conducted using method NWTPH-Dx.

<sup>5</sup>Analysis of heavy oil-range hydrocarbons was conducted using method NWTPH-Dx Extended.

<sup>6</sup>Analysis of total lead was conducted using EPA Method 7421.

All analytical results presented in the above table are expressed in micrograms per liter (µg/l).

B-benzene, E-ethylbenzene, T-toluene, X-total xylenes

"<500" indicates that the analyte was not detected above the concentration shown.

"-" indicates that the sample was not analyzed for this compound.

Values shown in **bold** indicate that the analyte was detected at this concentration.

Shaded values indicate exceedences of the respective MTCA Method A cleanup level.



TABLE 4

**Summary of Chemical Analytical Results - Soil<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Chlorinated Pesticides <sup>2</sup>			Sum of listed constituents
			4,4-DDD	4,4-DDE	4,4-DDT	
B11-8'	6/14/07	8.0	1.68	0.419	0.04	2.139
B11-15'	6/14/07	15.0	0.007	0.009	0.007	0.023
B12-11'	6/14/07	11.0	0.005	0.005	0.009	0.019
B12-16'	6/14/07	16.0	0.004	0.005	0.007	0.016
MTCA Method A Cleanup Level <sup>3</sup>						3.00

**Notes:**

<sup>1</sup>Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.

<sup>2</sup>Analysis of Chlorinated Pesticides was conducted using method SW846 8081.

<sup>3</sup>Combined constituents levels of 4,4-DDD, 4,4-DDE and 4,4-DDT must be greater than listed value.

All analytical results presented in the above table are expressed in milligrams per kilogram (mg/kg).

"<10.00" indicates that the analyte was not detected above the concentration shown.

"n.d." indicates that the sample was not analyzed for this compound.

Values shown in **bold** indicate that the analyte was detected at this concentration.

Shaded values indicate exceedences of the respective MTCA Method A cleanup level.

TABLE 5

**Summary of Chemical Analytical Results - Water<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Chlorinated Pesticides <sup>2</sup>			Sum of listed constituents
			4,4-DDD	4,4-DDE	4,4-DDT	
B11-W	6/14/07	15.0	0.049	0.045	0.023	0.117
B12-W	6/14/07	11.0	0.036	0.047	0.062	0.145
MTCA Method A Cleanup Level <sup>3</sup>						0.3 µg/L

**Notes:**

<sup>1</sup> Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.

<sup>2</sup> Analysis of Chlorinated Pesticides was conducted using method SW846 8081.

<sup>3</sup> Combined constituents levels of 4,4-DDD, 4,4-DDE and 4,4-DDT must be greater than listed value.

All analytical results presented in the above table are expressed in micrograms per liter (µg/L).

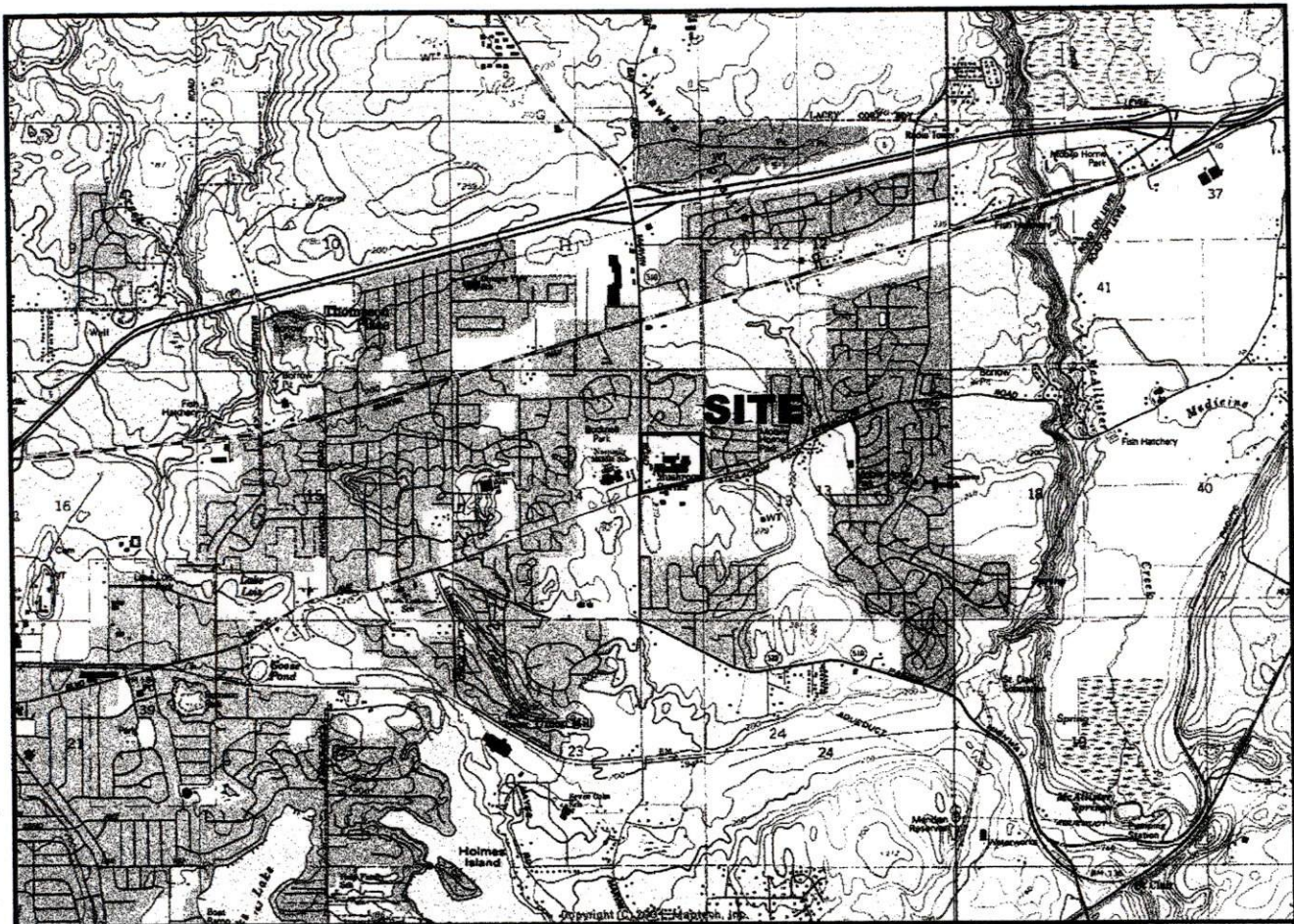
"<10.00" - indicates that the analyte was not detected above the concentration shown.

"- " - indicates that the sample was not analyzed for this compound.

Values shown in **bold** indicate that the analyte was detected at this concentration.

Shaded values indicate exceedences of the respective MTCA Method A cleanup level.





Source: Maptech CD, Lacey, Washington 7.5 minute quadrangle, 1955, photorevised 1994

**NORTH**

**Approximate Scale 1 inch = 4,000 feet**

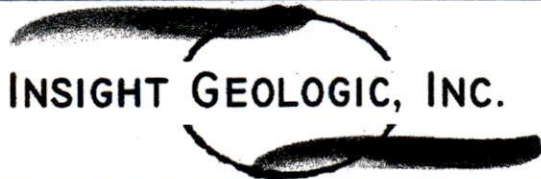
**INSIGHT GEOLOGIC, INC.**

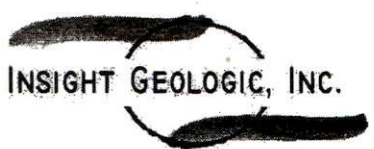
**VICINITY MAP**

**FIGURE 1**

**ATTACHMENT A**  
**BORING LOGS**



SOIL CLASSIFICATION SYSTEM				
MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS  More Than 50% Retained on No. 200 Sieve	GRAVEL  More Than 50% of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND  More Than 50% of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS  More Than 50% Passes No. 200 Sieve	SILT AND CLAY  Liquid Limit Less Than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY  Liquid Limit 50 or More	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
	HIGHLY ORGANIC SOILS		PT	PEAT
	NOTES:		SOIL MOSTURE MODIFIERS:	
1. Field classification is based on visual evaluation of soil in general accordance with ASTM D2488-90.		Dry - Absence of moisture, dusty, dry to the touch		
2. Descriptions of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and/or test data.		Moist - Damp, but no visible water		
		Wet - Visible free water or saturated, usually soil is obtained from below water table		
			SOIL CLASSIFICATION SYSTEM	
			FIGURE A-1	

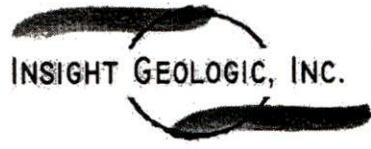
Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B1</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>20 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/14/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
------------	-----------	--------------------------	------	------------------

0		48/16	GM	GRAVEL WITH SAND: Light gray, fine to coarse gravel with fine to coarse sand and silt, loose, moist
		48/31		
5				
		48/22		Grades medium dense
10				
		48/42		Grades dense
15				
		48/41	ML	GRAVELLY SILT: Light gray silt with fine to medium gravel, very dense, moist
20				

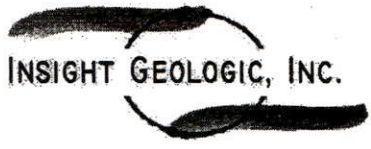


Project Name: <b>Ostrom's Farms</b>	Well No.: <b>B2</b>	
Location: <b>Ostrom's Farms</b>	Total Depth: <b>20 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/14/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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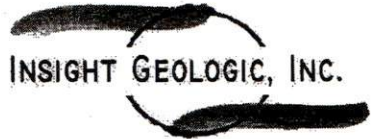
0		48/12	SP	SAND: Dark brown, silty, fine to medium sand with fine to medium gravel, loose, moist
5		48/17	GM	GRAVEL WITH SAND: Brown, fine to medium gravel with fine to coarse sand and silt, loose, moist
		48/25		Grades medium dense
10		48/34		Grades very dense
15		48/48		
20				

Project Name: <b>Ostrom's Farm</b>	Well No. : <b>B3</b>	
Location : <b>Ostrom's Farm</b>	Total Depth : <b>16 Feet</b>	
Drilling Contractor : <b>NW Probe</b>		
Drilling Equipment : <b>Power Probe 9630</b>		
Driller : <b>Rob Warren</b>		
Logged By : <b>Kevin Vandehay</b>		
Date : <b>6/20/07</b>		
Depth to water : <b>N/A</b>		

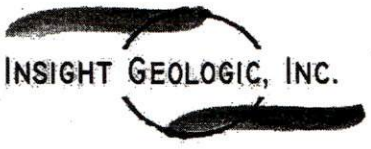
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/23	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
		48/25	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
5				
		48/26	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
10				
		48/30	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
15				
20				



Project Name: <b>Ostrom's Farm</b>		Well No. : <b>B4</b>		
Location : <b>Ostrom's Farm</b>		Total Depth : <b>20 Feet</b>		
Drilling Contractor : <b>NW Probe</b>				
Drilling Equipment : <b>Power Probe 9630</b>				
Driller : <b>Rob Warren</b>				
Logged By : <b>Kevin Vandehey</b>				
Date : <b>6/20/07</b>				
Depth to water : <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION

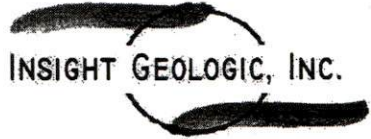
0		48/20	SP	SAND: Dark brown, silty, fine to medium sand with fine to medium gravel, loose, moist
5		48/22	GM	GRAVEL WITH SAND: Light brown, fine to medium gravel with fine to coarse sand and silt, medium dense, moist
		48/12		Grades dense
10		48/26	SP	SAND: Light gray, fine to coarse sand with fine gravel, trace silt, dense, moist
15		48/32	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to coarse sand and silt, very dense, moist to wet
20				

Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B5</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>18 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/20/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/17	SM	SILTY SAND: Dark brown, silty, fine sand with fine gravel, loose, moist
5		48/19	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with coarse to fine sand and silt, loose, moist
10		48/31		Grades medium dense
15		48/18		Grades dense
		24/24		Grades very dense

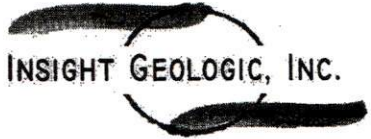


Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B6</b>	 <b>INSIGHT GEOLOGIC, INC.</b>
Location: <b>Ostrom's Farm</b>	Total Depth: <b>16 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/20/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/10	ML	SILT: Dark brown silt with fine to medium gravel, loose, moist, slight oil smell
5		48/14	GM	GRAVEL WITH SAND: Light gray, fine to coarse gravel with fine to coarse sand and silt, medium dense, moist
		48/28		Grades dense
10		48/32		Grades very dense
15				

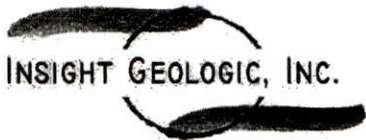
Project Name: <b>Ostrom's Farm</b>	Well No. : <b>B7</b>	
Location : <b>Ostrom's Farm</b>	Total Depth : <b>16 Feet</b>	
Drilling Contractor : <b>NW Probe</b>		
Drilling Equipment : <b>Power Probe 9630</b>		
Driller : <b>Rob Warren</b>		
Logged By : <b>Kevin Vandehey</b>		
Date : <b>6/20/07</b>		
Depth to water : <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/18	SM	SILTY SAND: Dark brown, silty, fine to medium sand with fine gravel, loose, moist
5		48/16	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to coarse sand and silt, medium dense, moist
		48/25		Grades dense
10		48/26		Grades very dense
15				

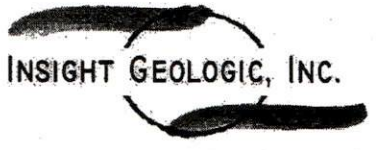


Project Name: <b>Ostrom's</b>	Well No.: <b>B8</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>20 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/20/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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0		48/13	GM	GRAVEL WITH SAND: Light gray, fine to coarse gravel with fine to coarse sand and silt, medium dense, moist
5		48/25		Grades dense
10		48/28		
15		48/31		
20		48/34		Grades very dense

Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B9</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>20 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/20/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0	48/17	GM	GRAVEL WITH SAND: Light brown, fine to medium gravel with fine to coarse sand and silt, loose, moist
5	48/18		
10	48/21		Grades medium dense
15	48/29		Grades dense
20	48/31		Grades very dense

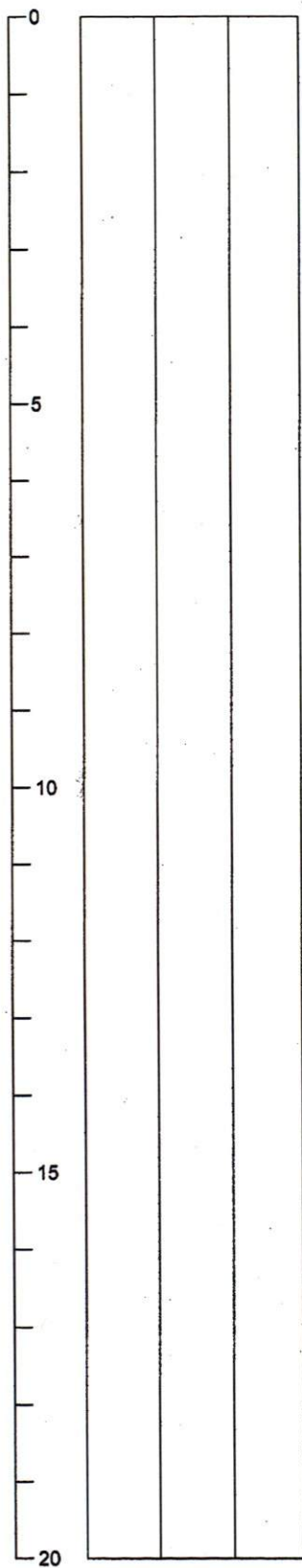


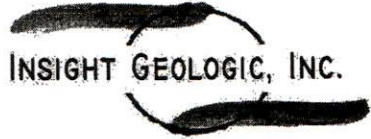
Project Name: **Ostrom's**

Well No. : **B10**

**Not Drilled**

**INSIGHT GEOLOGIC, INC.**



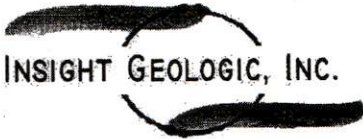
Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B11</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>15.5 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/14/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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0		48/17	SM	SILTY SAND: Dark brown, silty, fine to medium sand, loose, moist
5		48/23	ML	SILT: Dark brown/black silt, soft, moist
				Petroleum odor at 7 feet
10		48/16	GM	GRAVEL WITH SAND: Gray, fine to medium gravel with fine to coarse sand and silt, dense, moist to wet
15		42/	ML	SILT: Green gray silt with fine to medium sand and fine to medium gravel, very dense, wet

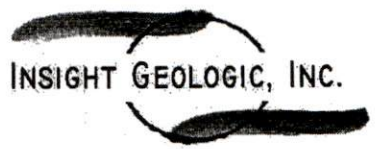


Project Name: <b>Ostrom's Farm</b>	Well No. : <b>B12</b>	
Location : <b>Ostrom's Farm</b>	Total Depth : <b>16 Feet</b>	
Drilling Contractor : <b>NW Probe</b>		
Drilling Equipment : <b>Power Probe 9630</b>		
Driller : <b>Rob Warren</b>		
Logged By : <b>Kevin Vandehey</b>		
Date : <b>6/14/07</b>		
Depth to water : <b>13 Feet</b>		

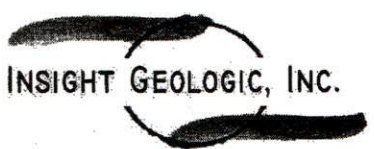
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/0		No recovery
5		48/3	SM	SILTY SAND: Brown, silty fine sand with fine to medium gravel, loose, dry
10		48/16	GM	GRAVEL WITH SAND: Brown, fine to coarse gravel with fine to coarse sand and silt, dense, moist
15		48/33	SM	SILTY SAND: Gray, fine to coarse sand with fine to coarse gravel and silt, very dense, moist to wet

Project Name: <b>Ostrom's farm</b>		Well No.: <b>B13</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>19 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehey</b>				
Date: <b>6/14/07</b>				
Depth to water: <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION

0		48/16	SM	SILTY SAND: Dark brown, silty fine sand with fine to medium gravel, loose, moist
		48/3		
5				
		48/13	GM	GRAVEL WITH SAND: Light gray, fine to coarse gravel with fine to medium sand and silt, medium dense, moist
10				
		48/24		Grades dense
15				
		48/27		Grades very dense

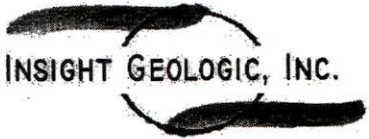


Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B14</b>	 <b>INSIGHT GEOLOGIC, INC.</b>
Location: <b>Ostrom's Farm</b>	Total Depth: <b>20 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/14/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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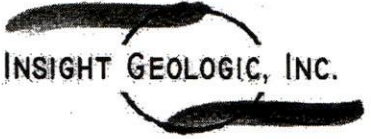
0		48/7	SM	SILTY SAND: Dark brown, silty sand with fine gravel, loose, moist
5		48/0		No sample recovered
10		48/7	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to medium sand and silt, medium dense, moist
15		48/25		Grades dense
20		48/29		Grades very dense

Project Name: <b>Ostrom's farm</b>	Well No. : <b>B15</b>	
Location : <b>Ostrom's Farm</b>	Total Depth : <b>20 Feet</b>	
Drilling Contractor : <b>NW Probe</b>		
Drilling Equipment : <b>Power Probe 9630</b>		
Driller : <b>Rob Warren</b>		
Logged By : <b>Kevin Vandehey</b>		
Date : <b>6/14/07</b>		
Depth to water : <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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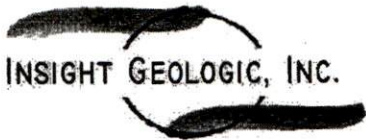
0		48/15	SM	SILTY SAND: Dark brown silty fine sand, occasional fine gravel, loose, moist
5		48/13	GM	GRAVEL WITH SAND: Brown, fine to coarse gravel with fine to coarse sand and silt, loose, moist
10		48/12		Grades medium dense
15		48/13		Grades dense
20		48/31		Grades very dense



Project Name: <b>Ostrom's Farm</b>	Well No. : <b>B16</b>	
Location : <b>Ostrom's Farm</b>	Total Depth : <b>20 Feet</b>	
Drilling Contractor : <b>NW Probe</b>		
Drilling Equipment : <b>Power Probe 9630</b>		
Driller : <b>Rob Warren</b>		
Logged By : <b>Kevin Vandehey</b>		
Date : <b>6/15/07</b>		
Depth to water : <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/10	SM	SILTY SAND: Dark brown, silty fine to medium sand with fine to medium gravel, loose, moist
5		48/23	SP	SAND: Light gray, fine to coarse sand with fine to coarse gravel and silt, medium dense, moist
10		48/24	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to coarse sand and silt, dense, moist
15		48/25		
20		48/20		Grades very dense

Project Name: <b>Ostrom's Farm</b>		Well No. : <b>B17</b>		
Location : <b>Ostrom's Farm</b>		Total Depth : <b>17 Feet</b>		
Drilling Contractor : <b>NW Probe</b>				
Drilling Equipment : <b>Power Probe 9630</b>				
Driller : <b>Rob Warren</b>				
Logged By : <b>Kevin Vandehey</b>				
Date : <b>6/15/07</b>				
Depth to water : <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION

0	48/16	GM	GRAVEL WITH SAND: Brown, fine to coarse gravel with fine to coarse sand and silt, loose, moist
5	48/22		Grades medium dense
10	48/26		Grades dense
15	48/35		Grades very dense
	48/		



taken. Insight Geologic, Inc. reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

### **DO NOT REDRAW THE EXPLORATION LOGS**

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

### **READ THESE PROVISIONS CLOSELY**

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. Insight Geologic, Inc. includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with Insight Geologic, Inc. if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or site.

### **GEOTECHNICAL, GEOLOGIC AND GEOENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED**

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

### **BIOLOGICAL POLLUTANTS**

Insight Geologic, Inc.’s Scope of Work specifically excludes the investigation, detection, or assessment of the presence of Biological Compounds which are Pollutants in or around any structure. Accordingly, this report includes no interpretations, recommendations, findings, or conclusions for the purpose of detecting, assessing, or abating Biological Pollutants. The term “Biological Pollutants” includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

with the Client and generally accepted environmental practices in this area at the time this report was prepared.

### **ENVIRONMENTAL REGULATIONS ARE ALWAYS EVOLVING**

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. Insight Geologic, Inc. cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

### **UNCERTAINTY MAY REMAIN EVEN AFTER THIS PHASE II ESA IS COMPLETED**

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

### **SUBSURFACE CONDITIONS CAN CHANGE**

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or ground water fluctuations. Always contact Insight Geologic, Inc. before applying this report to determine if it is still applicable.

### **SOIL AND GROUND WATER END USE**

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or ground water). Note that hazardous substances may be present in some of the site soil and/or ground water at detectable concentrations that are less than the referenced cleanup levels. Insight Geologic, Inc. should be contacted prior to the export of soil or ground water from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or ground water from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

### **MOST ENVIRONMENTAL FINDINGS ARE PROFESSIONAL OPINIONS**

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are



## **ATTACHMENT C**

### **REPORT LIMITATIONS AND GUIDELINES FOR USE<sup>1</sup>**

This Attachment provides information to help you manage your risks with respect to the use of this report.

#### **ENVIRONMENTAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS**

This report has been prepared for the exclusive use of Ostrom's Farms and their authorized agents. This report may be made available to regulatory agencies for review. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

Insight Geologic, Inc. structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Ostrom's Farms should rely on this environmental report without first conferring with Insight Geologic, Inc.. This report should not be applied for any purpose or project except the one originally contemplated.

#### **THIS ENVIRONMENTAL REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS**

This report has been prepared for the Ostrom's Mushroom Facility located at 8322 Steilacoom Road SE in Lacey, Washington. Insight Geologic, Inc. considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless Insight Geologic, Inc. specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, Insight Geologic, Inc. should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

#### **RELIANCE CONDITIONS FOR THIRD PARTIES**

Our report was prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement

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<sup>1</sup> Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; [www.asfe.org](http://www.asfe.org).

**ATTACHMENT C**  
**LIMITATIONS AND GUIDELINES FOR USE**



# Libby Environmental, Inc.

4139 Libby Road NE  
Olympia, WA 98506  
Ph: 360-352-2110  
Fax: 360-352-4154

Client: Insight Geologic

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Client Project # \_\_\_\_\_

# Chain of Custody Record

Date: 6-20-07

Page: 1 of 1

Project Manager: \_\_\_\_\_

Project Name: Ostrom's Farm

Location: \_\_\_\_\_

Collector: Kevin Chubb Date of Collection: 6-20-07

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B SEM VOL 8270 VOA 8021B BTEX ONLY	NWTPH-HCID	NWTPH-GX	NWTPH-DX	PAH 8270	PCBs 8082	MTCA 5 Metals	Lead	Field Note/# Containers
1 B3-12	12'	8:45	Soil	VOA Jar									
2 B3-16	16'	8:55	"	"	X			X					
3 B4-8	8'	9:15	"	"	X			X					
4 B4-20	20'	9:40	"	"	X			X					
5 B4-20	20'	10:45	Water	VOA Jar	X			X					
6 B6-4	4'	10:05	Soil	VOA Jar	X			X					
7 B6-16	16'	10:30	"	"	X			X					
8 B5-12	12'	11:05	"	"	X			X					
9 B5-20	20'	11:10	"	"	X			X					
10 B7-12	12'	12:00	"	"	X			X					
11 B7-16	16'	12:25	"	"	X			X					
12 B8-12	12'	13:10	"	"	X			X					
13 B8-20	20'	13:35	"	"	X			X					
14 B9-15	15'	13:55	"	"	X			X					
15 B9-20	20'	14:15	"	"	X			X					
16													
17													
18													

Relinquished by: Kevin Chubb Date / Time: 6/20/07 16:25

Received by: Kevin Chubb Date / Time: 6/20/07 16:25

Relinquished by: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Remarks: \_\_\_\_\_

Sample Receipt: \_\_\_\_\_

Good Condition? \_\_\_\_\_

Cold? \_\_\_\_\_

Seals Intact? \_\_\_\_\_

Total Number of Containers: \_\_\_\_\_

TAT 24HR 48HR 5-Day



# Libby Environmental, Inc.

4139 Libby Road NE  
Olympia, WA 98506  
Ph: 360-352-2110  
Fax: 360-352-4154

Client: Insight Geologic Inc.

Address:

Phone:

Fax:

Client Project #

## Chain of Custody Record

Date: 6/15/07

Page: 1 of 1

Project Manager: Bill Halbert

Project Name: Ostrows

Location:

Collector:

Date of Collection: 6-15-07

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B BTEX Only	VOA 8021B	SEM VOL 8270	NWTPH-HCID	NWTPH-GX	NWTPH-DX	PAH 8270	PCBs 8082	MTCAs 8082	Field Note/# Containers
1 B16-12	12	9:05	Soil	4oz Jar										Hold
2 <del>B16-20</del> B16-20	20	9:30	Soil	4oz Jar										Hold
3 B17-15	15	10:15	Soil	"										Hold
4 B17-17	17	10:45	Soil	"										Hold
5 TPA-4	4'	11:45	Soil	VOA Jar										
6 TPA-3.5	3.5	12:00	Soil	"										
7 TPA-3.5	3.5	12:16	Soil	"										
8 TPA-4	4	12:20	Soil	"										
9 TPA-3	3	13:30	Soil	"										
10 TPA-2.5	2.5	14:00	Soil	"										
11 TPA-2.5		12:46	Soil	"										
12 TPA-2		14:25	Soil	"										
13 HA1-1		14:45	Soil	"										
14 TPA-1	1'	15:00	Soil	"										
15 TPA-1	1'	15:15	Soil	"										
16 HA2	1'	15:30	Soil	"										
17														
18														

Relinquished by: <u>Ken Vanhook</u>	Date / Time: <u>6/15/07 15:30</u>	Received by: <u>Bill Halbert</u>	Date / Time: <u>6-15-07</u>	Remarks:
Relinquished by:	Date / Time:	Received by:	Date / Time:	
Relinquished by:	Date / Time:	Received by:	Date / Time:	
Relinquished by:	Date / Time:	Received by:	Date / Time:	
Sample Receipt: Good Condition? <input type="checkbox"/> Cold? <input type="checkbox"/> Seals Intact? <input type="checkbox"/> Total Number of Containers:				TAT 24HR 48HR 5-Day



# Libby Environmental, Inc.

4139 Libby Road NE  
Olympia, WA 98506  
Ph: 360-352-2110  
Fax: 360-352-4154

# Chain of Custody Record

Date: 6/14/07 Page: 1 of 1

Client: Insight Geology, Inc.

Project Manager: Bill Hallert

Address: \_\_\_\_\_

Project Name: Ostions

Phone: \_\_\_\_\_

Location: \_\_\_\_\_

Client Project # \_\_\_\_\_

Collector: Kevin Chandler Date of Collection: 6/14/07

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B VOA 8021B BTEX ONLY	SEM VOL 8270	NWTPH-HCID	NWTPH-GX	NWTPH-DX	PAH-DX EXL	PCBs 8082	MTCA 5 Metals	Residues	Field Note/# Containers
1 B1-14	14		Soil	VOA 414										
2 B1-20	20		"	"										
3 B2-14	14	10:15	"	"										
4 B2-20	20	10:30	"	"										
5 B11-8	8	11:15	"	"										
6 B11-15	15	11:30	"	"										
7 B11-W	13	11:35	H <sub>2</sub> O	"										
8 B12-11	11	12:45	Soil	"										
9 B12-16	16	12:55	"	"										
10 B12-41	13	13:30	H <sub>2</sub> O	"										
11 B13-14	14	14:00	Soil	"										
12 B13-19	17	14:20	Soil	"										
13 B14-15	15	15:15	"	"										
14 B4-20	20	15:30	"	"										
15 B15-12	12	15:50	Soil	"										
16 B15-20	20	16:00	Soil	"										
17														
18														

Relinquished by: <u>Don V. May</u>	Date / Time: <u>6/15/07 15:30</u>	Received by: <u>Kevin Chandler</u>	Date / Time: <u>6-14-07</u>	Remarks:
Relinquished by:	Date / Time:	Received by:	Date / Time:	
Relinquished by:	Date / Time:	Received by:	Date / Time:	
Sample Receipt: Good Condition? <input type="checkbox"/> Cold? <input type="checkbox"/> Seals Intact? <input type="checkbox"/> Total Number of Containers <input type="text"/>			TAT 24HR 48HR 5-Day	



# SPECTRA Laboratories

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07/10/2007


Libby Environmental, LLC  
4139 Libby Rd NE  
Olympia, WA 98506  
Attn: Sherry Chilcutt

Project: Ostrom's  
Client ID: B12-W  
Sample Matrix: Water  
Date Sampled: 06/14/2007  
Date Received: 06/19/2007  
Spectra Project: 2007060301  
Spectra Number: 6

Analyte	Result	Units	Method
4,4'-DDD	0.036	µg/L	SW846 8081
4,4'-DDE	0.047	µg/L	SW846 8081
4,4'-DDT	0.062	µg/L	SW846 8081
Aldrin	<0.01	µg/L	SW846 8081
Dieldrin	<0.01	µg/L	SW846 8081
Endosulfan I	<0.01	µg/L	SW846 8081
Endosulfan II	<0.01	µg/L	SW846 8081
Endosulfan Sulfate	<0.01	µg/L	SW846 8081
Endrin	<0.01	µg/L	SW846 8081
Endrin Aldehyde	<0.01	µg/L	SW846 8081
Endrin Ketone	<0.01	µg/L	SW846 8081
Heptachlor	<0.01	µg/L	SW846 8081
Heptachlor Epoxide	<0.01	µg/L	SW846 8081
Methoxychlor	<0.01	µg/L	SW846 8081
alpha-BHC	<0.01	µg/L	SW846 8081
alpha-Chlordane	<0.01	µg/L	SW846 8081
beta-BHC	<0.01	µg/L	SW846 8081
delta-BHC	<0.01	µg/L	SW846 8081
gamma-BHC (Lindane)	<0.01	µg/L	SW846 8081
gamma-Chlordane	<0.01	µg/L	SW846 8081

Surrogate	% Recovery	Method
Decachlorobiphenyl	110	SW846 8081

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a5/jjb

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07/10/2007

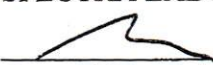
Libby Environmental, LLC  
4139 Libby Rd NE  
Olympia, WA 98506  
Attn: Sherry Chilcutt

Project: Ostrom's  
Client ID: B12-16  
Sample Matrix: Soil  
Date Sampled: 06/14/2007  
Date Received: 06/19/2007  
Spectra Project: 2007060301  
Spectra Number: 5

Analyte	Result	Units	Method
4,4-DDD	0.004	mg/Kg	SW846 8081
4,4-DDE	0.005	mg/Kg	SW846 8081
4,4-DDT	0.007	mg/Kg	SW846 8081
Aldrin	<0.002	mg/Kg	SW846 8081
Dieldrin	<0.002	mg/Kg	SW846 8081
Endosulfan I	<0.002	mg/Kg	SW846 8081
Endosulfan II	<0.002	mg/Kg	SW846 8081
Endosulfan Sulfate	<0.002	mg/Kg	SW846 8081
Endrin	<0.002	mg/Kg	SW846 8081
Endrin Aldehyde	<0.002	mg/Kg	SW846 8081
Endrin Ketone	<0.002	mg/Kg	SW846 8081
Heptachlor	<0.002	mg/Kg	SW846 8081
Heptachlor Epoxide	<0.002	mg/Kg	SW846 8081
Methoxychlor	<0.002	mg/Kg	SW846 8081
alpha-BHC	<0.002	mg/Kg	SW846 8081
alpha-Chlordane	<0.002	mg/Kg	SW846 8081
beta-BHC	<0.002	mg/Kg	SW846 8081
delta-BHC	<0.002	mg/Kg	SW846 8081
gamma-BHC (Lindane)	<0.002	mg/Kg	SW846 8081
gamma-Chlordane	<0.002	mg/Kg	SW846 8081

Surrogate	% Recovery	Method
Decachlorobiphenyl	102	SW846 8081

SPECTRA LABORATORIES



Steve Hibbs, Laboratory Manager  
a5/jjb

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07/10/2007

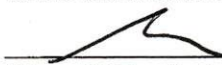
Libby Environmental, LLC  
4139 Libby Rd NE  
Olympia, WA 98506  
Attn: Sherry Chilcutt

Project: Ostrom's  
Client ID: B12-11  
Sample Matrix: Soil  
Date Sampled: 06/14/2007  
Date Received: 06/19/2007  
Spectra Project: 2007060301  
Spectra Number: 4

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
4,4-DDD	0.005	mg/Kg	SW846 8081
4,4-DDE	0.005	mg/Kg	SW846 8081
4,4-DDT	0.009	mg/Kg	SW846 8081
Aldrin	<0.002	mg/Kg	SW846 8081
Dieldrin	<0.002	mg/Kg	SW846 8081
Endosulfan I	<0.002	mg/Kg	SW846 8081
Endosulfan II	<0.002	mg/Kg	SW846 8081
Endosulfan Sulfate	<0.002	mg/Kg	SW846 8081
Endrin	<0.002	mg/Kg	SW846 8081
Endrin Aldehyde	<0.002	mg/Kg	SW846 8081
Endrin Ketone	<0.002	mg/Kg	SW846 8081
Heptachlor	<0.002	mg/Kg	SW846 8081
Heptachlor Epoxide	<0.002	mg/Kg	SW846 8081
Methoxychlor	<0.002	mg/Kg	SW846 8081
alpha-BHC	<0.002	mg/Kg	SW846 8081
alpha-Chlordane	<0.002	mg/Kg	SW846 8081
beta-BHC	<0.002	mg/Kg	SW846 8081
delta-BHC	<0.002	mg/Kg	SW846 8081
gamma-BHC (Lindane)	<0.002	mg/Kg	SW846 8081
gamma-Chlordane	<0.002	mg/Kg	SW846 8081

<u>Surrogate</u>	<u>% Recovery</u>	<u>Method</u>
Decachlorobiphenyl	110	SW846 8081

SPECTRA LABORATORIES

  
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07/10/2007


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4139 Libby Rd NE  
Olympia, WA 98506  
Attn: Sherry Chilcutt

Project: Ostrom's  
Client ID: B11-W  
Sample Matrix: Water  
Date Sampled: 06/14/2007  
Date Received: 06/19/2007  
Spectra Project: 2007060301  
Spectra Number: 3

Analyte	Result	Units	Method
4,4'-DDD	0.049	µg/L	SW846 8081
4,4'-DDE	0.045	µg/L	SW846 8081
4,4'-DDT	0.023	µg/L	SW846 8081
Aldrin	<0.01	µg/L	SW846 8081
Dieldrin	<0.01	µg/L	SW846 8081
Endosulfan I	<0.01	µg/L	SW846 8081
Endosulfan II	<0.01	µg/L	SW846 8081
Endosulfan Sulfate	<0.01	µg/L	SW846 8081
Endrin	<0.01	µg/L	SW846 8081
Endrin Aldehyde	<0.01	µg/L	SW846 8081
Endrin Ketone	<0.01	µg/L	SW846 8081
Heptachlor	<0.01	µg/L	SW846 8081
Heptachlor Epoxide	<0.01	µg/L	SW846 8081
Methoxychlor	<0.01	µg/L	SW846 8081
alpha-BHC	<0.01	µg/L	SW846 8081
alpha-Chlordane	<0.01	µg/L	SW846 8081
beta-BHC	<0.01	µg/L	SW846 8081
delta-BHC	<0.01	µg/L	SW846 8081
gamma-BHC (Lindane)	<0.01	µg/L	SW846 8081
gamma-Chlordane	<0.01	µg/L	SW846 8081

Surrogate	% Recovery	Method
Decachlorobiphenyl	119	SW846 8082

SPECTRA LABORATORIES

  
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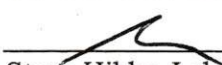
Libby Environmental, LLC  
4139 Libby Rd NE  
Olympia, WA 98506  
Attn: Sherry Chilcutt

Project: Ostrom's  
Client ID: B11-15'  
Sample Matrix: Soil  
Date Sampled: 06/14/2007  
Date Received: 06/19/2007  
Spectra Project: 2007060301  
Spectra Number: 2

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
4,4-DDD	0.007	mg/Kg	SW846 8081
4,4-DDE	0.009	mg/Kg	SW846 8081
4,4-DDT	0.007	mg/Kg	SW846 8081
Aldrin	<0.002	mg/Kg	SW846 8081
Dieldrin	<0.002	mg/Kg	SW846 8081
Endosulfan I	<0.002	mg/Kg	SW846 8081
Endosulfan II	<0.002	mg/Kg	SW846 8081
Endosulfan Sulfate	<0.002	mg/Kg	SW846 8081
Endrin	<0.002	mg/Kg	SW846 8081
Endrin Aldehyde	<0.002	mg/Kg	SW846 8081
Endrin Ketone	<0.002	mg/Kg	SW846 8081
Heptachlor	<0.002	mg/Kg	SW846 8081
Heptachlor Epoxide	<0.002	mg/Kg	SW846 8081
Methoxychlor	<0.002	mg/Kg	SW846 8081
alpha-BHC	<0.002	mg/Kg	SW846 8081
alpha-Chlordane	<0.002	mg/Kg	SW846 8081
beta-BHC	<0.002	mg/Kg	SW846 8081
delta-BHC	<0.002	mg/Kg	SW846 8081
gamma-BHC (Lindane)	<0.002	mg/Kg	SW846 8081
gamma-Chlordane	<0.002	mg/Kg	SW846 8081

<u>Surrogate</u>	<u>% Recovery</u>	<u>Method</u>
Decachlorobiphenyl	110	SW846 8081

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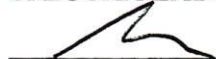
Libby Environmental, LLC  
4139 Libby Rd NE  
Olympia, WA 98506  
Attn: Sherry Chilcutt

Project: Ostrom's  
Client ID: B11-8'  
Sample Matrix: Soil  
Date Sampled: 06/14/2007  
Date Received: 06/19/2007  
Spectra Project: 2007060301  
Spectra Number: 1

Analyte	Result	Units	Method
4,4-DDD	1.68	mg/Kg	SW846 8081
4,4-DDE	0.419	mg/Kg	SW846 8081
4,4-DDT	0.040	mg/Kg	SW846 8081
Aldrin	<0.002	mg/Kg	SW846 8081
Dieldrin	<0.002	mg/Kg	SW846 8081
Endosulfan I	<0.002	mg/Kg	SW846 8081
Endosulfan II	<0.002	mg/Kg	SW846 8081
Endosulfan Sulfate	<0.002	mg/Kg	SW846 8081
Endrin	<0.002	mg/Kg	SW846 8081
Endrin Aldehyde	<0.002	mg/Kg	SW846 8081
Endrin Ketone	<0.002	mg/Kg	SW846 8081
Heptachlor	<0.002	mg/Kg	SW846 8081
Heptachlor Epoxide	<0.002	mg/Kg	SW846 8081
Methoxychlor	<0.002	mg/Kg	SW846 8081
alpha-BHC	<0.002	mg/Kg	SW846 8081
alpha-Chlordane	<0.002	mg/Kg	SW846 8081
beta-BHC	<0.002	mg/Kg	SW846 8081
delta-BHC	<0.002	mg/Kg	SW846 8081
gamma-BHC (Lindane)	<0.002	mg/Kg	SW846 8081
gamma-Chlordane	<0.002	mg/Kg	SW846 8081

Surrogate	% Recovery	Method
Decachlorobiphenyl	94	SW846 8081

SPECTRA LABORATORIES



Steve Hibbs, Laboratory Manager  
a5/jjb

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## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

OSTROMS PROJECT  
Lacey, Washington  
Insight Geologic, Inc.  
Libby Env.Project No.L070614-10

### QA/QC for Lead in Soil by EPA Method 7421

Sample Number	Date Analyzed	Lead (mg/kg)
LCS	7/1/07	100%
MS	7/1/07	104%
MSD	7/1/07	113%
RPD	7/1/07	8.3
Practical Quantitation Limit		5.0

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%  
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt



## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Lead in Soil by EPA Method 7421

Sample Number	Date Analyzed	Lead (mg/kg)
Method Blank	7/1/07	nd
B6-4'	7/1/07	nd
B5-12'	7/1/07	nd
B7-12'	7/1/07	23
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

### OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### QA/QC for Lead in Soil by EPA Method 7421

Sample Number	Date Analyzed	Lead (mg/kg)
LCS	6/18/07	108
TP3C-2.5' MS	6/18/07	93%
TP3C-2.5' MSD	6/18/07	105%
RPD	6/18/07	12
Practical Quantitation Limit		5.0

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Lead in Soil by EPA Method 7421

Sample Number	Date Analyzed	Lead (mg/kg)
Method Blank	6/18/07	nd
B1-14'	6/18/07	nd
B1-20'	6/18/07	nd
B2-14'	6/18/07	nd
B2-20'	6/18/07	nd
B11-8'	6/18/07	nd
B11-15'	6/18/07	nd
B12-11'	6/18/07	nd
B12-11' Dup	6/18/07	nd
B12-16'	6/18/07	nd
TP1A-4'	6/18/07	nd
TP1B-3.5'	6/18/07	nd
TP2A-3.5'	6/18/07	nd
TP2B-4'	6/18/07	nd
TP2B-4' Dup	6/18/07	nd
TP3A-2.5"	6/18/07	nd
TP3B-3'	6/18/07	5.6
TP3C-2.5'	6/18/07	nd
TP3D-2	6/18/07	6.0
HA1-1	6/18/07	nd
T4A-1	6/18/07	nd
T4B-1	6/18/07	nd
HA2	6/18/07	nd
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### QA/QC for Lead in Water by EPA Method 7421

Sample Number	Date Analyzed	Lead (ug/l)
LCS	6/18/07	108
MS	6/18/07	78%
MSD	6/18/07	77%
RPD	6/18/07	1.3
Practical Quantitation Limit		2.5

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Total Lead in Water by EPA Method 7421

Sample Number	Date Analyzed	Lead (ug/l)
Method Blank	6/18/07	nd
B11-W	6/18/07	nd
B11-W Dup	6/18/07	nd
B12-W	6/18/07	nd
Practical Quantitation Limit		2.5

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	6/20/07	104	nd
B6-4	6/20/07	81	nd
B5-12	6/20/07	113	nd
B7-12	6/20/07	112	nd
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Trifluorotoluene): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	6/15/07	79	nd
TP1A-4'	6/15/07	80	nd
TP1B-3.5'	6/15/07	76	nd
TP2A-3.5'	6/15/07	80	nd
TP2B-4'	6/15/07	68	nd
TP2B-4' Dup	6/15/07	78	nd
TP3A-2.5"	6/15/07	66	nd
TP3B-3'	6/15/07	78	nd
TP3C-2.5'	6/15/07	82	nd
TP3D-2	6/15/07	68	nd
HA1-1	6/15/07	70	nd
T4A-1	6/15/07	75	nd
T4B-1	6/15/07	68	nd
HA2	6/15/07	68	nd
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Trifluorotoluene): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	6/14/07	87	nd
B1-14'	6/14/07	95	nd
B1-20'	6/14/07	99	nd
B2-14'	6/14/07	88	nd
B2-20'	6/14/07	88	nd
B11-8'	6/14/07	113	nd
B11-15'	6/14/07	79	nd
B12-11'	6/14/07	92	nd
B12-11' Dup	6/14/07	92	nd
B12-16'	6/14/07	92	nd
Practical Quantitation Limit			10

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Trifluorotoluene): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (ug/l)
Method Blank	6/14/07	87	nd
B11-W	6/14/07	86	nd
B11-W Dup	6/14/07	92	nd
B12-W	6/14/07	82	nd
Practical Quantitation Limit			100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Trifluorotoluene): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

### OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)	Mineral Oil (ug/l)	Oil (ug/l)
Method Blank	6/21/07	91	nd	nd	nd
B4W-20	6/21/07	108	nd	nd	nd
Practical Quantitation Limit			200	400	400

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

### OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)	Mineral Oil (ug/l)	Oil (ug/l)
Method Blank	6/14/07	87	nd	nd	nd
B11-W	6/14/07	130	nd	nd	nd
B12-W	6/14/07	124	nd	nd	nd
Practical Quantitation Limit			200	400	400

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

### OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Hydrocarbon Identification by NWTPH-HCID for Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)	Diesel (mg/kg)	Mineral Oil (mg/kg)	Heavy Oil (mg/kg)
Method Blank	6/14/2007	116	nd	nd	nd	nd
B13-14	6/14/2007	87	nd	nd	nd	nd
B13-19	6/14/2007	116	nd	nd	nd	nd
Practical Quantitation Limit			20	50	100	100

"nd" Indicates not detected at listed detection limits.

"D" Indicates detected above the listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

### OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Mineral Oil (mg/kg)	Oil (mg/kg)
Method Blank	6/20/2007	108	nd	nd	nd
B3-16	6/20/2007	86	nd	nd	nd
B4-20	6/20/2007	72	nd	nd	nd
B6-4	6/20/2007	int	7900	nd	nd
B5-12	6/20/2007	76	64	nd	nd
B7-12	6/20/2007	94	nd	nd	nd
B8-20	6/20/2007	103	nd	nd	nd
B8-20 Dup	6/20/2007	96	nd	nd	nd
Practical Quantitation Limit			25	40	40

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

## LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

### OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Mineral Oil (mg/kg)	Oil (mg/kg)
Method Blank	6/15/2007	101	nd	nd	nd
TP1A-4'	6/15/2007	81	nd	nd	nd
TP1B-3.5'	6/15/2007	87	nd	nd	nd
TP2A-3.5'	6/15/2007	95	nd	nd	nd
TP2B-4'	6/15/2007	92	nd	nd	nd
TP3A-2.5"	6/15/2007	77	nd	nd	nd
TP3B-3'	6/15/2007	75	nd	nd	nd
TP3C-2.5'	6/15/2007	83	nd	nd	nd
TP3D-2	6/15/2007	80	nd	nd	nd
HA1-1	6/15/2007	119	nd	nd	nd
TP4A-1	6/15/2007	76	nd	nd	nd
TP4B-1	6/15/2007	97	nd	nd	nd
HA2	6/15/2007	96	nd	nd	nd
HA2 Dup	6/15/2007	110	nd	nd	nd
Practical Quantitation Limit			25	40	40

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env. Project No. L070614-10

### Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Mineral Oil (mg/kg)	Oil (mg/kg)
Method Blank	6/14/2007	116	nd	nd	nd
B1-14'	6/14/2007	110	nd	nd	nd
B1-20'	6/14/2007	101	nd	nd	nd
B2-14'	6/14/2007	99	nd	nd	nd
B2-20'	6/14/2007	91	nd	nd	nd
B11-8'	6/14/2007	108	nd	nd	4100
B11-15'	6/14/2007	121	nd	nd	nd
B12-11'	6/14/2007	117	nd	nd	nd
B12-11' Dup	6/14/2007	86	nd	nd	nd
B12-16'	6/14/2007	108	nd	nd	nd
Practical Quantitation Limit			25	40	40

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

OSTROMS PROJECT  
Lacey, Washington  
Insight Geologic, Inc.  
Libby Env.Project No.L070614-10

## QA/QC Data - EPA 8260B Analyses

Sample Identification:						
	Matrix Spike			Matrix Spike Duplicate		RPD
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
1,1-Dichloroethene	40	37.1	93	40	38.7	97
Benzene	40	33.3	83	40	35.4	89
Toluene	40	35.3	88	40	36.5	91
Chlorobenzene	40	45.6	114	40	47.9	120
Trichloroethene (TCE)	40	39.9	100	40	41.4	104

### Surrogate Recovery

Dibromofluoromethane  
1,2-Dichloroethane-d4  
Toluene-d8  
4-Bromofluorobenzene

Laboratory Control Sample			
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
1,1-Dichloroethene	40	43.9	110
Benzene	40	45.6	114
Toluene	40	41.2	103
Chlorobenzene	40	51.3	128
Trichloroethene (TCE)	40	49.4	124

### Surrogate Recovery

Dibromofluoromethane 120  
1,2-Dichloroethane-d4 109  
Toluene-d8 108  
4-Bromofluorobenzene 102

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

OSTROMS PROJECT  
Lacey, Washington  
Insight Geologic, Inc.  
Libby Env.Project No.L070614-10

## VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN WATER

Sample Description		Method	B4W-20	B4W-20
		Blank		Dup
Date Extracted	Reporting	N/A	6/20/07	6/20/07
Date Analyzed	Limits	6/21/07	6/21/07	6/21/07
		(ug/l)	(ug/l)	(ug/l)
Bromoform	1.0	nd	nd	nd
Isopropylbenzene	4.0	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd	nd
Bromobenzene	1.0	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd
n-Propylbenzene	1.0	nd	nd	nd
2-Chlorotoluene	1.0	nd	nd	nd
4-Chlorotoluene	1.0	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd	nd
tert-Butylbenzene	1.0	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd	nd
sec-Butylbenzene	1.0	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd	nd
Isopropyltoluene	1.0	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd	nd
n-Butylbenzene	1.0	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd	nd
1,2,4-Trichlorobenzene	2.0	nd	nd	nd
Hexachloro-1,3-butadiene	5.0	nd	nd	nd
Naphthalene	5.0	nd	nd	nd
1,2,3-Trichlorobenzene	5.0	nd	nd	nd
Surrogate Recovery				
Dibromofluoromethane		117	121	121
1,2-Dichloroethane-d4		106	105	121
Toluene-d8		107	107	110
4-Bromofluorobenzene		98.3	106	118

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN WATER

Sample Description		Method Blank	B4W-20	B4W-20 Dup
Date Sampled	Reporting	N/A	6/20/07	6/20/07
Date Analyzed	Limits	6/21/07	6/21/07	6/21/07
	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	2.0	nd	nd	nd
Chloromethane	2.0	nd	nd	nd
Vinyl chloride *	0.2	nd	nd	nd
Bromomethane	2.0	nd	nd	nd
Chloroethane	2.0	nd	nd	nd
Trichlorofluoromethane	2.0	nd	nd	nd
1,1-Dichloroethene	2.0	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	1.0	nd	nd	nd
1,1-Dichloroethane	1.0	nd	nd	nd
2,2-Dichloropropane	2.0	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	1.0	nd	nd	nd
Chloroform	1.0	nd	nd	nd
1,1,1-Trichloroethane (TCA)	1.0	nd	nd	nd
Carbon tetrachloride	1.0	nd	nd	nd
1,1-Dichloropropene	1.0	nd	nd	nd
Benzene	1.0	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	nd	nd
1,2-Dichloropropane	1.0	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	1.0	nd	nd	nd
Toluene	1.0	nd	nd	nd
Trans-1,3-Dichloropropene	1.0	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd	nd
1,3-Dichloropropane	1.0	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd
Chlorobenzene	1.0	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd
Total Xylenes	1.0	nd	nd	nd
Styrenes	1.0	nd	nd	nd



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

OSTROMS PROJECT  
Lacey, Washington  
Insight Geologic, Inc.  
Libby Env.Project No.L070614-10

## QA/QC Data - EPA 8260B Analyses

Sample Identification: B11-12						
	Matrix Spike			Matrix Spike Duplicate		
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
1,1-Dichloroethene	40	37.1	93	40	38.7	97
Benzene	40	33.3	83	40	35.4	89
Toluene	40	35.3	88	40	36.5	91
Chlorobenzene	40	45.6	114	40	47.9	120
Trichloroethene (TCE)	40	39.9	100	40	41.4	104

RPD

Surrogate Recovery		
Dibromofluoromethane	118	114
1,2-Dichloroethane-d4	113	99
Toluene-d8	109	107
4-Bromofluorobenzene	104	103

Laboratory Control Sample			
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
1,1-Dichloroethene	40	39.0	98
Benzene	40	34.0	85
Toluene	40	35.4	89
Chlorobenzene	40	45.8	115
Trichloroethene (TCE)	40	40.2	101

Surrogate Recovery		
Dibromofluoromethane	117	
1,2-Dichloroethane-d4	106	
Toluene-d8	108	
4-Bromofluorobenzene	104	

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN WATER

Sample Description	Method	B11-W	B11-12
	Blank		
Date Extracted	Reporting	N/A	6/14/07
Date Analyzed	Limits	6/15/07	6/15/07
	(ug/l)	(ug/l)	(ug/l)
Bromoform	1.0	nd	nd
Isopropylbenzene	4.0	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd
Bromobenzene	1.0	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd
n-Propylbenzene	1.0	nd	nd
2-Chlorotoluene	1.0	nd	nd
4-Chlorotoluene	1.0	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd
tert-Butylbenzene	1.0	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd
sec-Butylbenzene	1.0	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd
Isopropyltoluene	1.0	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd
n-Butylbenzene	1.0	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd
1,2,4-Trichlorobenzene	2.0	nd	nd
Hexachloro-1,3-butadiene	5.0	nd	nd
Naphthalene	5.0	nd	nd
1,2,3-Trichlorobenzene	5.0	nd	nd
Surrogate Recovery			
Dibromofluoromethane	111	115	115
1,2-Dichloroethane-d4	106	108	106
Toluene-d8	108	106	108
4-Bromofluorobenzene	106	104	105

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN WATER

Sample Description		Method Blank	B11-W	B11-12
Date Sampled	Reporting	N/A	6/14/07	6/14/07
Date Analyzed	Limits	6/15/07	6/15/07	6/15/07
	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	2.0	nd	nd	nd
Chloromethane	2.0	nd	nd	nd
Vinyl chloride *	0.2	nd	nd	nd
Bromomethane	2.0	nd	nd	nd
Chloroethane	2.0	nd	nd	nd
Trichlorofluoromethane	2.0	nd	nd	nd
1,1-Dichloroethene	2.0	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	1.0	nd	nd	nd
1,1-Dichloroethane	1.0	nd	nd	nd
2,2-Dichloropropane	2.0	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	1.0	nd	nd	nd
Chloroform	1.0	nd	nd	nd
1,1,1-Trichloroethane (TCA)	1.0	nd	nd	nd
Carbon tetrachloride	1.0	nd	nd	nd
1,1-Dichloropropene	1.0	nd	nd	nd
Benzene	1.0	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	nd	nd
1,2-Dichloropropane	1.0	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	1.0	nd	nd	nd
Toluene	1.0	nd	nd	nd
<i>Trans</i> -1,3-Dichloropropene	1.0	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd	nd
1,3-Dichloropropane	1.0	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd
Chlorobenzene	1.0	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd
Total Xylenes	1.0	nd	nd	nd
Styrenes	1.0	nd	nd	nd



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		B11-15'	B12-11'	B12-16'	B12-16' Dup	Method Blank	TP1A 4'
Date Extracted	Reporting	6/14/07	6/14/07	6/14/07	6/14/07	N/A	6/15/07
Date Analyzed	Limits	6/14/07	6/14/07	6/14/07	6/14/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.02	nd	nd	nd	nd	nd	nd
Isopropylbenzene	0.08	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.02	nd	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.02	nd	nd	nd	nd	nd	nd
n-Propylbenzene	0.02	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
Isopropyltoluene	0.02	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
n-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.03	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd	nd
Naphthalene	0.03	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		105	125				
1,2-Dichloroethane-d4		80.2	114				
Toluene-d8		110	116				
4-Bromofluorobenzene		102	110				

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		B8-20	B12-11'	B12-16'	B12-16' Dup	Method Blank	TP1A 4'
Date Extracted	Reporting	6/20/07	6/14/07	6/14/07	6/14/07	N/A	6/15/07
Date Analyzed	Limits	6/23/07	6/14/07	6/14/07	6/14/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride *	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.03	nd	nd	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.02	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.02	nd	nd	nd	nd	nd	nd
Trans-1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.03	nd	nd	nd	nd	nd	nd
Total Xylenes	0.03	nd	nd	nd	nd	nd	nd
Styrenes	0.02	nd	nd	nd	nd	nd	nd

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### QA/QC Data - EPA 8260B Analyses

Sample Identification: L070613-1						
	Matrix Spike			Matrix Spike Duplicate		
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
1,1-Dichloroethene	2.00	1.70	85	2.00	1.41	71
Benzene	2.00	1.97	99	2.00	1.58	79
Toluene	2.00	2.04	102	2.00	1.68	84
Chlorobenzene	2.00	2.39	120	2.00	2.11	106
Trichloroethene (TCE)	2.00	2.25	113	2.00	1.89	95
Surrogate Recovery						
Dibromofluoromethane						18.6
1,2-Dichloroethane-d4						22.0
Toluene-d8						19.4
4-Bromofluorobenzene						12.4
						17.4

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
1,1-Dichloroethene	2.00	2.39	120
Benzene	2.00	2.36	118
Toluene	2.00	2.10	105
Chlorobenzene	2.00	2.52	126
Trichloroethene (TCE)	2.00	2.63	132
Surrogate Recovery			
Dibromofluoromethane			119
1,2-Dichloroethane-d4			101
Toluene-d8			112
4-Bromofluorobenzene			101

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description	Method	B3-16'	B4-20'	B6-4'	B5-12'	B7-12'
	Blank					
Date Extracted	Reporting	N/A	6/20/07	6/20/07	6/20/07	6/20/07
Date Analyzed	Limits	6/21/07	6/21/07	6/23/07	6/21/07	6/21/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.02	nd	nd	nd	nd	nd
Isopropylbenzene	0.08	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.02	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.02	nd	nd	nd	nd	nd
n-Propylbenzene	0.02	nd	nd	nd	nd	nd
2-Chlorotoluene	0.02	nd	nd	nd	nd	nd
4-Chlorotoluene	0.02	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.02	nd	nd	0.12	nd	nd
tert-Butylbenzene	0.02	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.02	nd	nd	nd	nd	nd
sec-Butylbenzene	0.02	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.02	nd	nd	nd	nd	nd
Isopropyltoluene	0.02	nd	nd	0.06	nd	nd
1,4-Dichlorobenzene	0.02	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.02	nd	nd	nd	nd	nd
n-Butylbenzene	0.02	nd	nd	0.10	nd	nd
1,2-Dibromo-3-Chloropropane	0.03	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd
Naphthalene	0.03	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd	nd
Surrogate Recovery						
Dibromofluoromethane	113	111	119	126	115	118
1,2-Dichloroethane-d4	93.3	100	101	126	98.5	94.6
Toluene-d8	111	106	124	114	111	114
4-Bromofluorobenzene	98.3	97.8	111	107	106	106

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env. Project No. L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		Method Blank	B3-16'	B4-20'	B6-4'	B5-12'	B7-12'
Date Extracted	Reporting	N/A	6/20/07	6/20/07	6/20/07	6/20/07	6/20/07
Date Analyzed	Limits	6/23/07	6/21/07	6/23/07	6/23/07	6/23/07	6/23/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride *	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.02	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.02	nd	nd	nd	nd	nd	nd
Trans-1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.03	nd	nd	nd	nd	nd	nd
Total Xylenes	0.03	nd	nd	nd	0.056	nd	nd
Styrenes	0.02	nd	nd	nd	nd	nd	nd

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		TP3C-2.5'	TP3D-2'	HA1-1	HA2	TP4A-1	TP4B-1
Date Extracted	Reporting	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
Date Analyzed	Limits	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.02	nd	nd	nd	nd	nd	nd
Isopropylbenzene	0.08	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.02	nd	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.02	nd	nd	nd	nd	nd	nd
n-Propylbenzene	0.02	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
Isopropyltoluene	0.02	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
n-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.03	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd	nd
Naphthalene	0.03	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		112	114	111	108	110	113
1,2-Dichloroethane-d4		103	103	97.2	98.2	103	105
Toluene-d8		107	107	107	106	108	108
4-Bromofluorobenzene		104	102	109	98.4	99.3	102

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env. Project No. L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		TP3C-2.5'	TP3D-2'	HA1-1	HA2	TP4A-1	TP4B-1
Date Extracted	Reporting	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
Date Analyzed	Limits	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride *	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.02	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.02	nd	nd	0.31	nd	nd	nd
<i>Trans</i> -1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.03	nd	nd	nd	nd	nd	nd
Total Xylenes	0.03	nd	nd	nd	nd	nd	nd
Styrenes	0.02	nd	nd	nd	nd	nd	nd

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### QA/QC Data - EPA 8260B Analyses

Sample Identification: TP3C-2.5'						
Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
1,1-Dichloroethene	2.00	1.61	81	2.00	1.61	81
Benzene	2.00	2.00	100	2.00	1.96	98
Toluene	2.00	1.52	76	2.00	1.99	100
Chlorobenzene	2.00	2.22	111	2.00	2.19	110
Trichloroethene (TCE)	2.00	2.36	118	2.00	2.33	117

#### Surrogate Recovery

Dibromofluoromethane	113	109
1,2-Dichloroethane-d4	101	93
Toluene-d8	106	107
4-Bromofluorobenzene	99	99

#### Laboratory Control Sample

	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
1,1-Dichloroethene	2.00	1.95	98
Benzene	2.00	1.69	85
Toluene	2.00	1.77	89
Chlorobenzene	2.00	2.29	115
Trichloroethene (TCE)	2.00	2.01	101

#### Surrogate Recovery

Dibromofluoromethane	117
1,2-Dichloroethane-d4	106
Toluene-d8	108
4-Bromofluorobenzene	104

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		TP1B-3.5'	TP2A-3.5'	TP2B-4'	TP3A-2.5'	TP3A-2.5'	TP3B-3'
						Dup	
Date Extracted	Reporting	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
Date Analyzed	Limits	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.02	nd	nd	nd	nd	nd	nd
Isopropylbenzene	0.08	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.02	nd	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.02	nd	nd	nd	nd	nd	nd
n-Propylbenzene	0.02	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
Isopropyltoluene	0.02	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
n-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.03	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd	nd
Naphthalene	0.03	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		118	119	117	109	105	117
1,2-Dichloroethane-d4		117	119	116	105	96.8	109
Toluene-d8		106	107	107	102	103	107
4-Bromofluorobenzene		107	104	105	110	103	108

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		TP1B-3.5'	TP2A-3.5'	TP2B-4'	TP3A-2.5'	TP3A-2.5' Dup	TP3B-3'
Date Extracted	Reporting	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
Date Analyzed	Limits	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride *	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.02	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.02	nd	nd	nd	nd	nd	nd
<i>Trans</i> -1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.03	nd	nd	nd	nd	nd	nd
Total Xylenes	0.03	nd	nd	nd	nd	nd	nd
Styrenes	0.02	nd	nd	nd	nd	nd	nd

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		B11-15'	B12-11'	B12-16'	B12-16' Dup	Method Blank	TP1A 4'
Date Extracted	Reporting	6/14/07	6/14/07	6/14/07	6/14/07	N/A	6/15/07
Date Analyzed	Limits	6/14/07	6/14/07	6/14/07	6/14/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.02	nd	nd	nd	nd	nd	nd
Isopropylbenzene	0.08	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.02	nd	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.02	nd	nd	nd	nd	nd	nd
n-Propylbenzene	0.02	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	0.02	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.02	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
Isopropyltoluene	0.02	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.02	nd	nd	nd	nd	nd	nd
n-Butylbenzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.03	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd	nd
Naphthalene	0.03	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		116	119	122	117	111	125
1,2-Dichloroethane-d4		114	117	113	111	106	124
Toluene-d8		106	109	106	105	108	110
4-Bromofluorobenzene		111	111	111	105	106	104

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		B11-15'	B12-11'	B12-16'	B12-16' Dup	Method Blank	TP1A 4'
Date Extracted	Reporting	6/14/07	6/14/07	6/14/07	6/14/07	N/A	6/15/07
Date Analyzed	Limits	6/14/07	6/14/07	6/14/07	6/14/07	6/15/07	6/15/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride *	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.02	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.02	nd	nd	nd	nd	nd	nd
<i>Trans</i> -1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.03	nd	nd	nd	nd	nd	nd
Total Xylenes	0.03	nd	nd	nd	nd	nd	nd
Styrenes	0.02	nd	nd	nd	nd	nd	nd



# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env.Project No.L070614-10

### QA/QC Data - EPA 8260B Analyses

Sample Identification: L070613-1							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
1,1-Dichloroethene	2.00	1.70	85	2.00	1.41	71	18.6
Benzene	2.00	1.97	99	2.00	1.58	79	22.0
Toluene	2.00	2.04	102	2.00	1.68	84	19.4
Chlorobenzene	2.00	2.39	120	2.00	2.11	106	12.4
Trichloroethene (TCE)	2.00	2.25	113	2.00	1.89	95	17.4
Surrogate Recovery							
Dibromofluoromethane			113			111	
1,2-Dichloroethane-d4			109			96	
Toluene-d8			110			105	
4-Bromofluorobenzene			106			96	

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
1,1-Dichloroethene	2.00	1.49	75
Benzene	2.00	1.79	90
Toluene	2.00	1.83	92
Chlorobenzene	2.00	2.40	120
Trichloroethene (TCE)	2.00	2.17	109
Surrogate Recovery			
Dibromofluoromethane			116
1,2-Dichloroethane-d4			112
Toluene-d8			109
4-Bromofluorobenzene			102

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

OSTROMS PROJECT  
Lacey, Washington  
Insight Geologic, Inc.  
Libby Env.Project No.L070614-10

## VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description	Method	B1-14'	B1-20'	B2-14'	B2-20'	B11-8'
	Blank					
Date Extracted	Reporting	N/A	6/14/07	6/14/07	6/14/07	6/14/07
Date Analyzed	Limits	6/14/07	6/14/07	6/14/07	6/14/07	6/14/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.02	nd	nd	nd	nd	nd
Isopropylbenzene	0.08	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.02	nd	nd	nd	nd	nd
Bromobenzene	0.03	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.02	nd	nd	nd	nd	nd
n-Propylbenzene	0.02	nd	nd	nd	nd	nd
2-Chlorotoluene	0.02	nd	nd	nd	nd	nd
4-Chlorotoluene	0.02	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.02	nd	nd	nd	nd	nd
tert-Butylbenzene	0.02	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.02	nd	nd	nd	nd	nd
sec-Butylbenzene	0.02	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.02	nd	nd	nd	nd	nd
Isopropyltoluene	0.02	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	0.02	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.02	nd	nd	nd	nd	nd
n-Butylbenzene	0.02	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.03	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd	nd	nd	nd
Naphthalene	0.03	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd	nd
Surrogate Recovery						
Dibromofluoromethane	114	122	118	124	123	125
1,2-Dichloroethane-d4	108	114	112	114	116	118
Toluene-d8	105	108	106	110	107	108
4-Bromofluorobenzene	105	109	112	110	110	112

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

\* INSTRUMENT DETECTION LIMIT

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

## OSTROMS PROJECT

Lacey, Washington

Insight Geologic, Inc.

Libby Env. Project No. L070614-10

### VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260B IN SOIL

Sample Description		Method Blank	B1-14'	B1-20'	B2-14'	B2-20'	B11-8'
Date Extracted	Reporting	N/A	6/14/07	6/14/07	6/14/07	6/14/07	6/14/07
Date Analyzed	Limits	6/14/07	6/14/07	6/14/07	6/14/07	6/14/07	6/14/07
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd	nd	nd	nd	nd
Chloromethane	0.06	nd	nd	nd	nd	nd	nd
Vinyl chloride *	0.02	nd	nd	nd	nd	nd	nd
Bromomethane	0.09	nd	nd	nd	nd	nd	nd
Chloroethane	0.06	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Methylene chloride	0.02	nd	nd	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.02	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	0.02	nd	nd	nd	nd	nd	nd
Chloroform	0.02	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.02	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Benzene	0.02	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.03	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.02	nd	nd	nd	nd	nd	nd
Dibromomethane	0.04	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.02	nd	nd	nd	nd	nd	nd
<i>cis</i> -1,3-Dichloropropene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.02	nd	nd	nd	nd	nd	nd
Trans-1,3-Dichloropropene	0.03	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.03	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd	nd
Chlorobenzene	0.02	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.03	nd	nd	nd	nd	nd	nd
Total Xylenes	0.03	nd	nd	nd	nd	nd	nd
Styrenes	0.02	nd	nd	nd	nd	nd	nd



**ATTACHMENT B  
CHEMICAL ANALYTICAL PROGRAM**

**ANALYTICAL METHODS**

Chain-of-custody procedures were followed during the transfer of field samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality assurance/quality control (QA/QC) records are included in this Attachment. The analytical results are also summarized in the text of this report.

**ANALYTICAL DATA REVIEW**

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries, and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report.

**ANALYTICAL DATA REVIEW SUMMARY**

Based on our data quality review, it is our opinion that the analytical data are of acceptable quality for their intended use.





# Libby Environmental, Inc.

4139 Libby Road N.E., Olympia, WA 98506-2518

July 13, 2007

Bill Halbert  
Insight Geologic, PLLC  
2528 Ellis Street  
Olympia, WA 98501

Dear Mr. Halbert:

Please find enclosed the analytical data report for the Ostrom's Farm project located in Olympia Washington. Mobile Lab Services were conducted on June 14 & 15, 2007. Soil and water samples were analyzed for Diesel & Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, Hydrocarbon Identification by NWTPH-HCID, VOC's by EPA Method 8260B, Total Lead by EPA Method 7000 Series, and Pesticides by EPA Method 8081.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this analytical work is also enclosed. All soil samples are reported on a dry weight basis.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt  
President  
Libby Environmental, Inc.

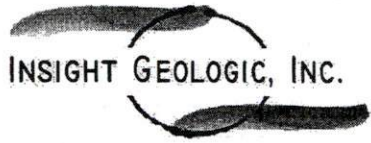
Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com



**ATTACHMENT B**  
**LABORATORY REPORTS**

Duplicate of  
July 2007  
Report.

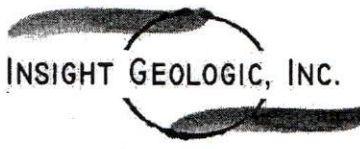


Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B17</b>	
Location: <b>Ostrom's Farm</b>		Total Depth: <b>17 Feet</b>	
Drilling Contractor: <b>NW Probe</b>			
Drilling Equipment: <b>Power Probe 9630</b>			
Driller: <b>Rob Warren</b>			
Logged By: <b>Kevin Vandehey</b>			
Date: <b>6/15/07</b>			
Depth to water: <b>N/A</b>			

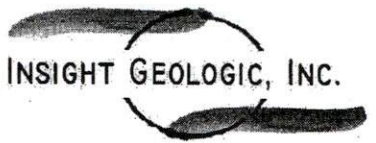
  

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/16	GM	GRAVEL WITH SAND: Brown, fine to coarse gravel with fine to coarse sand and silt, loose, moist
		48/22		Grades medium dense
5		48/26		Grades dense
10		48/35		Grades very dense
15		48/		

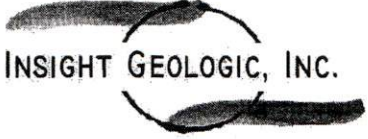
Project Name: <b>Ostrom's</b>		Well No. : <b>B16</b>	 <b>INSIGHT GEOLOGIC, INC.</b>	
Location : <b>Ostrom's Farm</b>		Total Depth : <b>20 Feet</b>		
Drilling Contractor : <b>NW Probe</b>				
Drilling Equipment : <b>Power Probe 9630</b>				
Driller : <b>Rob Warren</b>				
Logged By : <b>Kevin Vandehey</b>				
Date : <b>6/15/07</b>				
Depth to water : <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION

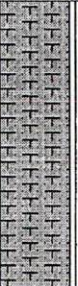
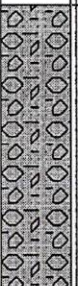
0		48/10	SM	SILTY SAND: Dark brown, silty fine to medium sand with fine to medium gravel, loose, moist
5		48/23	SP	SAND: Light gray, fine to coarse sand with fine to coarse gravel and silt, medium dense, moist
10		48/24	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to coarse sand and silt, dense, moist
15		48/25		
20		48/20		Grades very dense

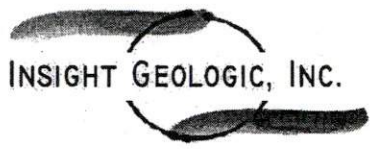
Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B15</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>20 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehey</b>				
Date: <b>6/14/07</b>				
Depth to water: <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION

0		48/15	SM	SILTY SAND: Dark brown silty fine sand, occasional fine gravel, loose, moist
5		48/13	GM	GRAVEL WITH SAND: Brown, fine to coarse gravel with fine to coarse sand and silt, loose, moist
		48/12		Grades medium dense
10		48/13		Grades dense
15		48/31		Grades very dense
20				



Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B14</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>20 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehey</b>				
Date: <b>6/14/07</b>				
Depth to water: <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION

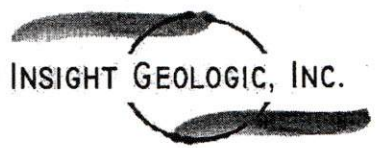
0		48/7	SM	SILTY SAND: Dark brown, silty sand with fine gravel, loose, moist
5		48/0		No sample recovered
10		48/7	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to medium sand and silt, medium dense, moist
15		48/25		Grades dense
20		48/29		Grades very dense

Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B13</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>19 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/14/07</b>		
Depth to water: <b>N/A</b>		

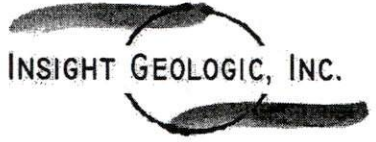
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/16	SM	SILTY SAND: Dark brown, silty fine sand with fine to medium gravel, loose, moist
5		48/3		
10		48/13	GM	GRAVEL WITH SAND: Light gray, fine to coarse gravel with fine to medium sand and silt, medium dense, moist
15		48/24		Grades dense
		48/27		Grades very dense

Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B12</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>16 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehey</b>				
Date: <b>6/14/07</b>				
Depth to water: <b>13 Feet</b>				
Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION

0		48/0		No recovery
5		48/3	SM	SILTY SAND: Brown, silty fine sand with fine to medium gravel, loose, dry
10		48/16	GM	GRAVEL WITH SAND: Brown, fine to coarse gravel with fine to coarse sand and silt, dense, moist
15		48/33	SM	SILTY SAND: Gray, fine to coarse sand with fine to coarse gravel and silt, very dense, moist to wet



Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B11</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>15.5 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehey</b>				
Date: <b>6/14/07</b>				
Depth to water: <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION

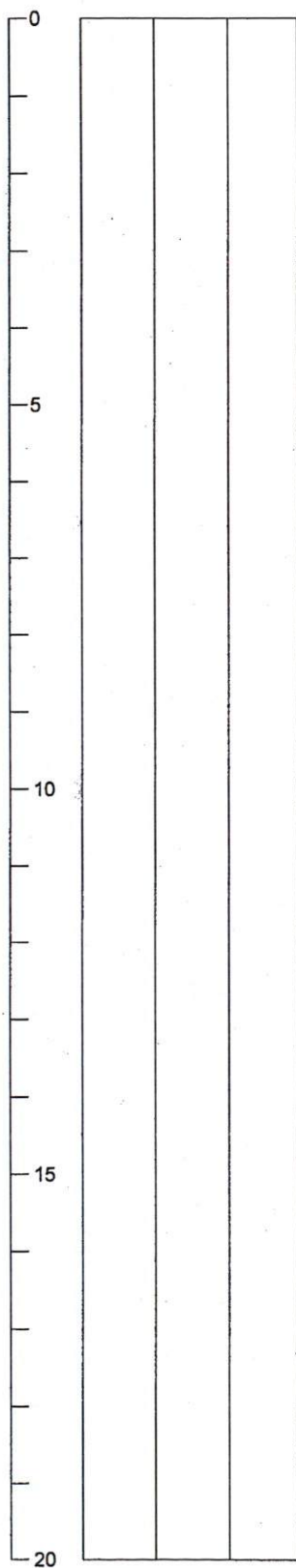
0		48/17	SM	SILTY SAND: Dark brown, silty, fine to medium sand, loose, moist
5		48/23	ML	SILT: Dark brown/black silt, soft, moist
				Petroleum odor at 7 feet
		48/16	GM	GRAVEL WITH SAND: Gray, fine to medium gravel with fine to coarse sand and silt, dense, moist to wet
10				
		42/	ML	SILT: Green gray silt with fine to medium sand and fine to medium gravel, very dense, wet
15				

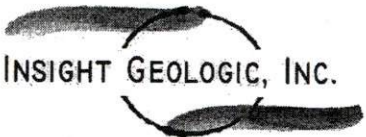
Project Name: **Ostrom's Farm**

Well No. : **B10**

**Not Drilled**

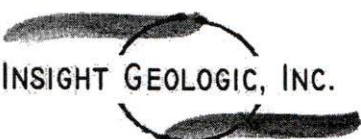
**INSIGHT GEOLOGIC, INC.**



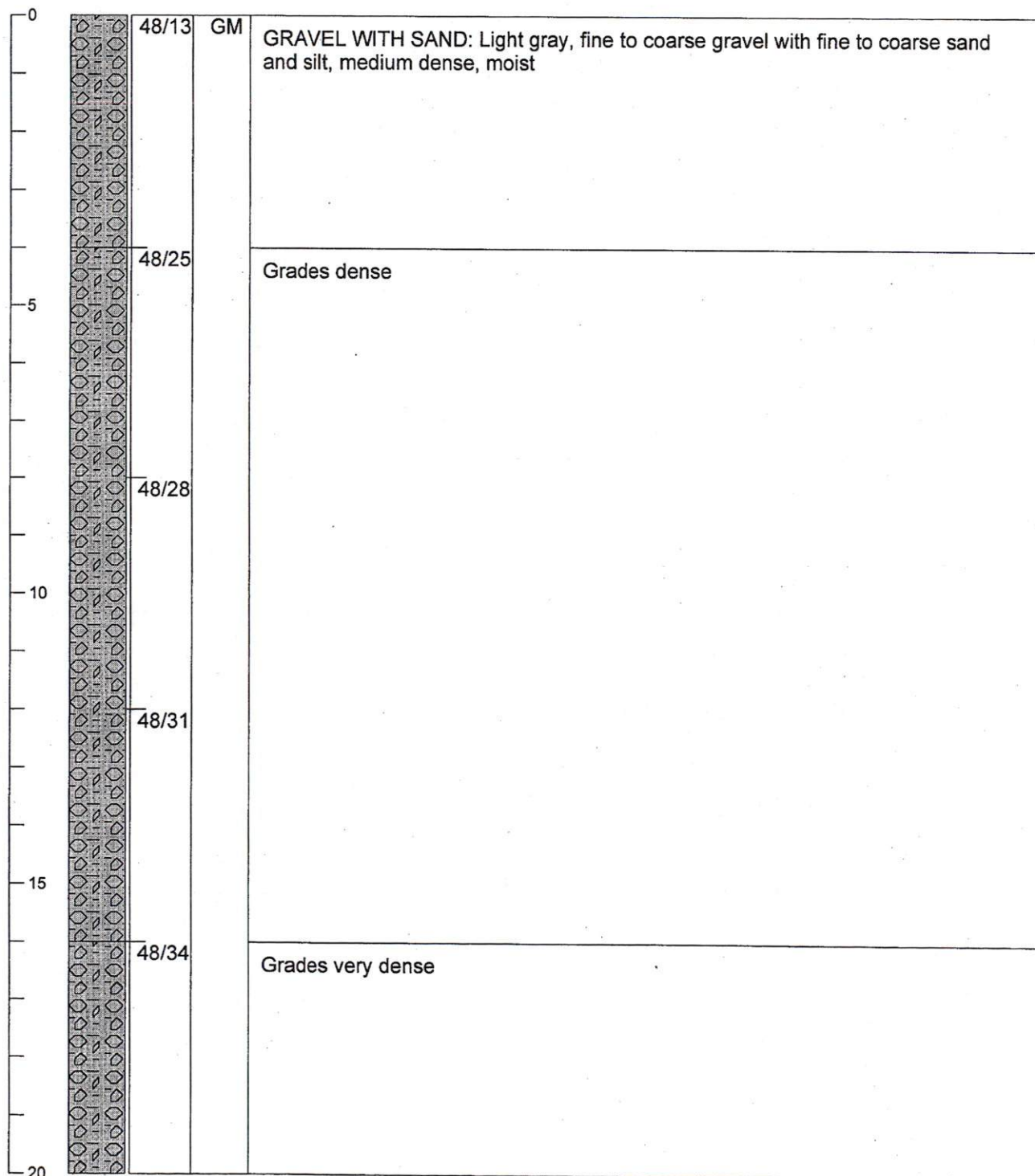
Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B9</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>20 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehey</b>				
Date: <b>6/20/07</b>				
Depth to water: <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION

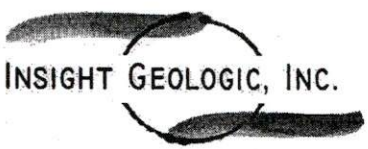
0	48/17	GM	GRAVEL WITH SAND: Light brown, fine to medium gravel with fine to coarse sand and silt, loose, moist
5	48/18		
10	48/21		Grades medium dense
15	48/29		Grades dense
20	48/31		Grades very dense





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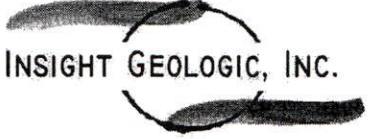


Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B7</b>	
Location: <b>Ostrom's Farm</b>		Total Depth: <b>16 Feet</b>	
Drilling Contractor: <b>NW Probe</b>			
Drilling Equipment: <b>Power Probe 9630</b>			
Driller: <b>Rob Warren</b>			
Logged By: <b>Kevin Vandehey</b>			
Date: <b>6/20/07</b>			
Depth to water: <b>N/A</b>			

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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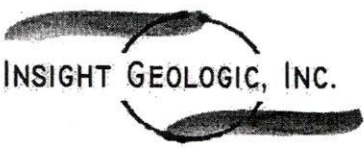
0		48/18	SM	SILTY SAND: Dark brown, silty, fine to medium sand with fine gravel, loose, moist
5		48/16	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to coarse sand and silt, medium dense, moist
		48/25		Grades dense
10		48/26		Grades very dense
15				

Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B6</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>16 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/20/07</b>		
Depth to water: <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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0		48/10	ML	SILT: Dark brown silt with fine to medium gravel, loose, moist, slight oil smell
		48/14	GM	GRAVEL WITH SAND: Light gray, fine to coarse gravel with fine to coarse sand and silt, medium dense, moist
5		48/28		Grades dense
10		48/32		Grades very dense
15				

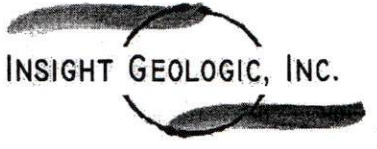


Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B5</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>18 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/20/07</b>		
Depth to water: <b>N/A</b>		

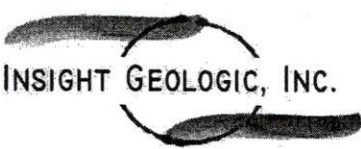
  


Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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0		48/17	SM	SILTY SAND: Dark brown, silty, fine sand with fine gravel, loose, moist
5		48/19	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with coarse to fine sand and silt, loose, moist
		48/31		Grades medium dense
10		48/18		Grades dense
15		24/24		Grades very dense

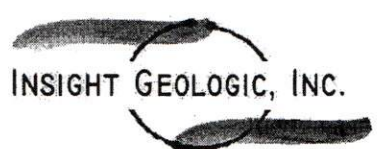
Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B4</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>20 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehey</b>				
Date: <b>6/20/07</b>				
Depth to water: <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION

0		48/20	SP	SAND: Dark brown, silty, fine to medium sand with fine to medium gravel, loose, moist
5		48/22	GM	GRAVEL WITH SAND: Light brown, fine to medium gravel with fine to coarse sand and silt, medium dense, moist
10		48/12		Grades dense
15		48/26	SP	SAND: Light gray, fine to coarse sand with fine gravel, trace silt, dense, moist
20		48/32	GM	GRAVEL WITH SAND: Light gray, fine to medium gravel with fine to coarse sand and silt, very dense, moist to wet

Project Name: <b>Ostrom's Farm</b>		Well No.: <b>B3</b>		
Location: <b>Ostrom's Farm</b>		Total Depth: <b>16 Feet</b>		
Drilling Contractor: <b>NW Probe</b>				
Drilling Equipment: <b>Power Probe 9630</b>				
Driller: <b>Rob Warren</b>				
Logged By: <b>Kevin Vandehay</b>				
Date: <b>6/20/07</b>				
Depth to water: <b>N/A</b>				
Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION

0		48/23	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
		48/25	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
5				
		48/26	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
10				
		48/30	GM	GRAVEL: Light gray fine to coarse, with fine to medium sand, and silt, loose, moist
15				
20				

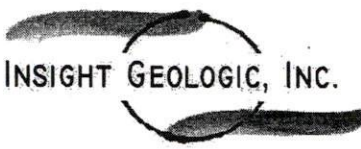


Project Name: <b>Ostrom's Farms</b>	Well No. : <b>B2</b>	
Location : <b>Ostrom's Farms</b>	Total Depth : <b>20 Feet</b>	
Drilling Contractor : <b>NW Probe</b>		
Drilling Equipment : <b>Power Probe 9630</b>		
Driller : <b>Rob Warren</b>		
Logged By : <b>Kevin Vandehey</b>		
Date : <b>6/14/07</b>		
Depth to water : <b>N/A</b>		

Depth/Feet	Lithology	Inches Driven /Recovery	USCS	SOIL DESCRIPTION
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0		48/12	SP	SAND: Dark brown, silty, fine to medium sand with fine to medium gravel, loose, moist
5		48/17	GM	GRAVEL WITH SAND: Brown, fine to medium gravel with fine to coarse sand and silt, loose, moist
10		48/25		Grades medium dense
15		48/34		Grades very dense
20		48/48		

Project Name: <b>Ostrom's Farm</b>	Well No.: <b>B1</b>	
Location: <b>Ostrom's Farm</b>	Total Depth: <b>20 Feet</b>	
Drilling Contractor: <b>NW Probe</b>		
Drilling Equipment: <b>Power Probe 9630</b>		
Driller: <b>Rob Warren</b>		
Logged By: <b>Kevin Vandehey</b>		
Date: <b>6/14/07</b>		
Depth to water: <b>N/A</b>		


  

Depth/Feet	Lithology	Inches Driven / Recovery	USCS	SOIL DESCRIPTION
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0		48/16	GM	GRAVEL WITH SAND: Light gray, fine to coarse gravel with fine to coarse sand and silt, loose, moist
		48/31		
5				
		48/22		Grades medium dense
10				
		48/42		Grades dense
15				
		48/41	ML	GRAVELLY SILT: Light gray silt with fine to medium gravel, very dense, moist
20				

**ATTACHMENT A**  
**BORING LOGS**



SOIL CLASSIFICATION SYSTEM				
MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS  More Than 50% Retained on No. 200 Sieve	GRAVEL  More Than 50% of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND  More Than 50% of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS  More Than 50% Passes No. 200 Sieve	SILT AND CLAY  Liquid Limit Less Than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY  Liquid Limit 50 or More	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT
<div>NOTES:</div> <div>1. Field classification is based on visual evaluation of soil in general accordance with ASTM D2488-90.</div> <div>2. Descriptions of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and/or test data.</div> <div>SOIL MOSTURE MODIFIERS:</div> <div>Dry - Absence of moisture, dusty, dry to the touch</div> <div>Moist - Damp, but no visible water</div> <div>Wet - Visible free water or saturated, usually soil is obtained from below water table</div>				
			SOIL CLASSIFICATION SYSTEM	
			FIGURE A-1	

July 17, 2007

Ostrom's Farms  
8323 Steilacoom Road SE  
Lacey, Washington 98512

Attention: Chris Street

Report  
Subsurface Environmental Assessment  
Ostrom's Mushroom Farm  
Steilacoom, Washington  
File No. 0335-01-03

## INTRODUCTION

Insight Geologic, Inc. is pleased to provide this report regarding our subsurface investigation activities at the Ostrom's Farms Mushroom Facility located at 8322 Steilacoom Road SE in Lacey, Washington. The Ostrom's Farm property is located northeast of the intersection between Marvin Road SW and SW Steilacoom Road in the city of Lacey. The property occupies approximately 34 acres of land zoned as low-density residential. The site is generally flat with a gentle slope to the north. Site elevations range from approximately 230 feet above mean sea level (MSL) in the southern portion to about 212 MSL at the northern property line. The majority of the property has been cleared of trees for the development of the growing facility buildings, drive areas and compost production. Surrounding land use consists of single family residential housing to the north and east, Nisqually Middle School is located to the west of the facility across Marvin Road. The site is shown relative to surrounding physical features in the Vicinity Map, Figure 1.

The facility is operated for the commercial production of mushrooms. Included in the operation is the production of compost used as the growing media for the mushrooms. Water is supplied by a water supply well and through an intertie with the City of Lacey. Sanitary wastes are disposed of through onsite septic tanks and drainfields. Stormwater is either recycled and used for compost production or is used to spray irrigate landscaped areas. Growing room wash down water is generally disposed of to ground.

Various chemicals are used and stored on site. They include malathion, diazinon, permethrin, formaldehyde, "BFW-31" a corrosion inhibitor, various drums of sanitizers, bulk lubricating oil and diesel fuel. During the investigation and remediation of spent mushroom compost disposed of on the south side of Steilacoom Road the following pesticides were detected: aldrin, alpha-BHC, chlordane, DDT, DDD, DDE, dieldrin, endosulfan I and II,



endrin, heptachlor epoxide and methoxychlor. The detection of these compounds in and near the spent mushroom compost indicates that they have been used in the past at the production facility.

Insight Geologic performed a Phase I Environmental Site Assessment (ESA) of Ostrom's Farms' Lacey, Washington growing facility in March 2007. The results of our Phase I ESA indicated several areas of potential environmental concern including:

1. The facility has had a series of underground storage tanks located on the property. Some have been removed, others have been abandoned in place and at least one is still active for standby boiler fuel. Because of the exempt status of the tanks for agricultural purposes, periodic tightness testing is not conducted. No information could be found in the Washington State Department of Ecology (Ecology) files regarding the closure of underground tanks at the site, and therefore, no information is available regarding soil and/or ground water conditions adjacent to the tanks.
2. At least one spill of diesel fuel from the existing above ground storage tank has occurred. The fuel reportedly flowed to a catch basin that drains to the septic system in the northwest portion of the site.
3. Several batteries were observed in the fueling area exposed to the elements. Metals, particularly lead, can leach from the batteries and enter the stormwater system or migrate to ground water.
4. Soil outside the bulk lubricating oil storage area was observed to be heavily stained with oil, likely as the result of spills during deliveries.
5. A series of historic and active infiltration areas for wash water and stormwater are, or have been, located in the northern portion of the property. These infiltration facilities are unlined and the influent does not receive treatment prior to discharge. These facilities have the potential to have historically received water containing pesticides including DDT.
6. Treated soil from previous environmental remediation projects in the early 1990s was used in landscape berms in several areas of the property.

At the request of Ostroms Farms, Insight Geologic performed subsurface sampling and analysis of soil and ground water samples from the areas identified during the Phase I ESA.

### **SCOPE OF SERVICES**

The purpose of our services was to evaluate soil and ground water conditions in the areas of the identified environmental concerns on the property. We conducted the following tasks for this phase of the project:

1. Prepare a Health and Safety Plan for Insight Geologic's representatives while on site.



2. Conduct utility location at the site to assess the presence of potential subsurface obstructions.
3. Drill 12 exploratory borings on the site using a truck mounted drilling rig to collect representative soil and ground water samples from the borings.
4. Collect representative soil samples from 12 hand-augered borings in the area of the waste water disposal ponds and treated soil stockpiles (berms).
5. Provide for the chemical analysis of selected soil and ground water samples for the presence of gasoline-range hydrocarbons using Ecology method NWTPH-Gx, diesel- and oil-range hydrocarbons using Ecology Method NWTPH-Dx (extended), volatile organic compounds (VOCs) using EPA Method 8260, chlorinated pesticides using EPA Method 8081 and lead using EPA 7000 series methodology.
6. Evaluate the laboratory results with respect to current Ecology Model Toxics Control Act (MTCA) Method A cleanup levels.

## **SUMMARY OF ACTIVITIES**

### **GENERAL**

We visited the site on June 14 and 20 2007 to collect representative soil and ground water samples from several areas of potential environmental concern identified on the property during our Phase I ESA conducted in March 2007. The areas of environmental concern included the former maintenance shop, the former boiler house, the current fueling area, the current underground storage tank for the existing boiler, and areas containing treated petroleum-containing soil used for landscaping. Borings were drilled using an AMS Power Probe rig that uses a combination of hydraulic and vibratory methods to advance a 4-foot long sampler having acetate liners into the ground. Upon retrieval, the sampler is opened and the soil contained inside the sampler is observed for visual and olfactory indications of contamination. A representative sample is collected from each sampled interval, placed into a jar which is sealed, labeled and placed into an ice chest for storage pending analysis. The soil from the sampled interval is described by the field geologist in general accordance with the Unified Soil Classification System on boring logs. The logs of the borings conducted at the Ostrom's Farm facility are contained in Attachment A to this report.

If ground water was encountered in a boring, a sample was collected using polyethylene tubing inserted down the inside of the drill string and connected to a peristaltic pump. The water was pumped from the boring until it was relatively clear and free of suspended sediment. When purging was complete, representative ground water samples were collected into laboratory-supplied containers appropriate for the intended analyses. The samples were delivered to an on-site mobile laboratory for analysis operated by Libby Environmental of Olympia, Washington.

## **SOIL**

Eleven borings and 12 hand auger borings were conducted at the site in the locations depicted in Figure 2. In general, the soils encountered in the borings consisted of loose to dense sand and gravel containing variable amounts of silt. The materials encountered appeared to be glacial outwash and ablation till deposited during the waning stages of the Vashon Stage of the Fraser glaciation which ended between 10,000 and 15,000 years ago.

## **GROUND WATER**

Ground water was encountered at depths between about 10 and 15 feet below ground surface in two borings (B-11 and B-12) located near the waste water disposal pond in the northeastern portion of the site. Ground water samples were collected from each of the borings and submitted for analysis. Ground water was not encountered in any of the other borings conducted.

## **CHEMICAL ANALYSIS**

Soil and ground water samples were analyzed by Libby Environmental for the presence of gasoline-, diesel- and oil-range hydrocarbons using Ecology Method NWTPH-G and NWTPH-Dx (extended), for volatile aromatic hydrocarbons (VOCs) using EPA Method 8260 and for lead using EPA method 7000 series methodology. Selected soil and ground water samples were also analyzed for the presence of chlorinated pesticides using EPA Method 8081. Laboratory reports are contained in Attachment B. Laboratory results are summarized in Tables 1 – 5.

## **RESULTS**

### **SOIL**

Laboratory reports indicated the presence of diesel-range hydrocarbons in the soil sample collected from boring B-6 at a depth of 4 feet below ground surface in the fueling area at a concentration of 7,900 milligrams per kilogram (mg/kg). The Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup level for diesel in soil is 2,000 mg/kg. Oil-range hydrocarbons were detected in boring B-12 near the wastewater disposal pond at a depth of 11 feet below ground surface at a concentration of 4,100 mg/kg. The MTCA Method A cleanup level for oil-range hydrocarbons is 2,000 mg/kg. Diesel- and oil-range hydrocarbons either were not detected or were detected at concentrations less than the respective cleanup levels in the remaining samples analyzed. Gasoline-range hydrocarbons were not detected in any of the soil samples. Lead and VOCs either were not detected, or were detected at concentrations less than individual cleanup levels. The chlorinated pesticide DDT (dichloro-diphenyl-trichloroethane) and breakdown products DDD (dichloro-diphenyl-dichloroethylene) and DDE (dichloro-diphenyl-dichloroethene) were detected in the four soil samples analyzed from borings B-11 and B-12 in the area of the



wastewater disposal pond at concentrations less than Ecology's MTCA Method A cleanup level of 3.0 mg/kg for the sum of the three compounds.

## **GROUND WATER**

DDT, DDD and DDE were detected in the two ground water samples collected from borings B-11 and B-12 at concentrations less than Ecology's MTCA Method A cleanup level of 0.3 micrograms per liter ( $\mu\text{g/l}$ ) for the sum of the three compounds. Gasoline-, diesel- and oil-range hydrocarbons were not detected in the water samples. VOCs and lead were not detected in the water samples.

## **CONCLUSIONS**

Insight Geologic has performed a subsurface investigation of suspected areas of environmental concern at the Ostrom's Farms Mushroom Facility in Lacey, Washington. The subsurface investigation was performed following our completion of a Phase I environmental site assessment of the property in March 2007.

The results of our subsurface investigation indicate the presence of diesel-range hydrocarbons in shallow soil in the fueling area of the property at concentrations exceeding Ecology's MTCA Method A cleanup level of 2,000 mg/kg. We understand that a fuel spill occurred in the fueling area several years ago and it is our opinion that this is the likely source of contamination in this area.

Oil-range hydrocarbons were detected in soil at a depth of 11 feet below ground surface in the area of the wastewater disposal pond at concentrations exceeding Ecology's MTCA Method A cleanup level of 2,000 mg/kg. We understand that storm water flows from the concrete apron area outside the maintenance building to stormwater catch basins and then to the wastewater disposal pond without any pre treatment. It appears that oil-range hydrocarbons from spills and maintenance conducted on the apron area have migrated to the waste water disposal pond and impacted shallow soils. Ground water in this area does not appear to have been affected by fuel or oil-range hydrocarbons, VOCs or lead.

DDT, DDD and DDE were detected in soil and ground water samples collected from the area of the waste water disposal pond at concentrations slightly less than their respective cleanup levels. These compounds appear to be relics of the historic use of DDT on the property prior to 1972 when it was banned for use in the United States.

Soil in the area of the former maintenance shop, the former boiler house and underground storage tank, and the present boiler house and stand-by fuel tank does not appear to have been impacted by fuel- or oil-range hydrocarbons, VOCs or lead.

Soil remediated in the early 1990s to remove petroleum hydrocarbons and subsequently used in landscape berms in the north and east portions of the property does not appear to contain petroleum hydrocarbons, VOCs or lead at concentrations greater than Ecology's MTCA Method A cleanup levels for these compounds.



Based on the results of our subsurface investigation, we recommend remediation of petroleum-contaminated soil detected in the fueling area and in the waste water disposal pond. Remediation should be conducted under Ecology's oversight through the Voluntary Cleanup Program (VCP) so that a determination of "No Further Action" (NFA) may be obtained when remediation is completed. Given the relatively shallow depth of the impacted soil, excavation and disposal appears to be the most cost effective option for cleanup.

### LIMITATIONS

We have prepared this report for use by Ostrom's Farms regarding the subsurface investigation of areas of suspected environmental concern at their mushroom growing facility located at 8322 Steilacoom Road SE in Lacey, Washington. This report may be made available to regulatory agencies.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Attachment C titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

— ♦ —

We trust this report meets your current requirements. Please contact us if you have questions regarding information presented in this report, or if you require additional information. We appreciate the opportunity to be of service to you on this project.

Yours very truly,

INSIGHT GEOLOGIC, INC.



William E. Halbert, L.G, L.HG.  
Principal Hydrogeologist

Attachments

**TABLE 1**  
**Summary of Chemical Analytical Results - Soil<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Gasoline-range Hydrocarbons <sup>2</sup>	Volatile Organic Compounds <sup>3</sup>				1,3,5-Trimethylbenzene <sup>4</sup>	Isopropyltoluene <sup>5</sup>	n-Butylbenzene <sup>6</sup>	Lead <sup>7</sup>
				B	E	T	X				
B1-14'	6/14/07	14.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B1-20'	6/14/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B2-14'	6/14/07	14.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B2-20'	6/14/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B3-16'	6/20/07	16.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B4-20'	6/20/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B5-12'	6/20/07	12.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B6-4'	6/20/07	4.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<b>0.1200</b>	<b>0.0600</b>	<b>0.100</b>	<5.0
B7-12'	6/20/07	12.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B8-20	6/20/07	20.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B11-8'	6/14/07	8.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B11-15'	6/14/07	15.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B12-11'	6/14/07	11.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
B12-16'	6/14/07	16.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP1A-4'	6/14/07	4.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP1B-3.5'	6/14/07	3.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP2A-3.5'	6/14/07	3.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP2B-4'	6/14/07	4.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP3A-2.5'	6/14/07	2.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP3B-3'	6/14/07	3.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<b>5.6</b>
TP3C-2.5'	6/14/07	2.5	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP3D-2'	6/14/07	2.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<b>6.0</b>
TP4A-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
TP4B-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
HA1-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<b>0.3100</b>	<0.030	<0.0200	<0.0200	<0.0200	<5.0
HA2-1'	6/14/07	1.0	<10.0	<0.0200	<0.0300	<0.0200	<0.030	<0.0200	<0.0200	<0.0200	<5.0
MTCA Method A cleanup levels			30/100	0.03	6.0	7.0	9.0	N/A	N/A	N/A	250

**Notes:**

- <sup>1</sup> Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.
  - <sup>2</sup> Analysis of gasoline-range hydrocarbons was conducted using method NWTPH-Gx.
  - <sup>3</sup> Analysis of volatile organic compounds was conducted using EPA method 8260B.
  - <sup>4</sup> Analysis of 1,3,5-Trimethylbenzene was conducted using EPA method 8260B.
  - <sup>5</sup> Analysis of Isopropyltoluene was conducted using EPA method 8260B.
  - <sup>6</sup> Analysis of n-Butylbenzene was conducted using EPA method 8260B.
  - <sup>7</sup> Analysis of lead was conducted using EPA 7000 series methodology.
  - <sup>8</sup> The lower of the two cleanup levels shown for gasoline-range hydrocarbons applies if benzene is present in the same sample.
- All analytical results presented in the above table are expressed in milligrams per kilogram (mg/kg).
- B-benzene, E-ethylbenzene, T-toluene, X-total xylenes
- <5.00" - indicates that the analyte was not detected above the concentration shown.
- Values shown in bold indicate that the analyte was detected at this concentration.
- Shaded values indicate exceedences of the respective MTCA Method A cleanup level.



**TABLE 2**  
**Summary of Chemical Analytical Results - Soil<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Diesel-range Hydrocarbons <sup>2</sup>	Heavy Oil-range Hydrocarbons <sup>3</sup>	Mineral Oil Hydrocarbons <sup>4</sup>
B1-14'	6/14/07	14.0	<10.0	<25.0	<40
B1-20'	6/14/07	20.0	<10.0	<25.0	<40
B2-14'	6/14/07	14.0	<10.0	<25.0	<40
B2-20'	6/14/07	20.0	<10.0	<25.0	<40
B3-16'	6/20/07	16.0	<10.0	<25.0	<40
B4-20'	6/20/07	20.0	<10.0	<25.0	<40
B5-12'	6/20/07	12.0	<b>64</b>	<25.0	<40
B6-4'	6/20/07	4.0	<b>7,900</b>	<25.0	<40
B7-12'	6/20/07	12.0	<10.0	<25.0	<40
B8-20'	6/20/07	20.0	<10.0	<25.0	<40
B11-8'	6/14/07	8.0	<10.0	<25.0	<40
B11-15'	6/14/07	15.0	<10.0	<25.0	<40
B12-11'	6/14/07	11.0	<10.0	<b>4,100</b>	<40
B12-16'	6/14/07	16.0	<10.0	<25.0	<40
TP1A-4'	6/14/07	4.0	<10.0	<25.0	<40
TP1B-3.5'	6/14/07	3.5	<10.0	<25.0	<40
TP2A-3.5'	6/14/07	3.5	<10.0	<25.0	<40
TP2B-4'	6/14/07	4.0	<10.0	<25.0	<40
TP3A-2.5'	6/14/07	2.5	<10.0	<25.0	<40
TP3B-3'	6/14/07	3.0	<10.0	<25.0	<40
TP3C-2.5'	6/14/07	2.5	<10.0	<25.0	<40
TP3D-2'	6/14/07	2.0	<10.0	<25.0	<40
TP4A-1'	6/14/07	1.0	<10.0	<25.0	<40
TP4B-1'	6/14/07	1.0	<10.0	<25.0	<40
HA1-1'	6/14/07	1.0	<10.0	<25.0	<40
HA2-1'	6/14/07	1.0	<10.0	<25.0	<40
MTCA Method A cleanup Level			2,000	2,000	4,000

**Notes:**

<sup>1</sup>Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.

<sup>2</sup>Analysis of diesel-range hydrocarbons was conducted using method NWTPH-Dx.

<sup>3</sup>Analysis of heavy oil-range hydrocarbons was conducted using method NWTPH-Dx Extended.

<sup>4</sup>Analysis of mineral oil-range hydrocarbons was conducted using method NWTPH-Dx Extended.

All analytical results presented in the above table are expressed in milligrams per kilogram (mg/kg).

"<10.00" - Indicates that the analyte was not detected above the concentration shown.

"-" - Indicates that the sample was not analyzed for this compound.

Values shown in bold indicate that the analyte was detected at this concentration.

Shaded values indicate exceedences of the respective MTCA Method A cleanup level.



**TABLE 3**  
**Summary of Chemical Analytical Results - Ground Water<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Gasoline-range Hydrocarbons <sup>2</sup>	Volatile Organic Compounds <sup>3</sup>				Diesel-range Hydrocarbons <sup>4</sup>	Heavy Oil-range Hydrocarbons <sup>5</sup>	Lead <sup>6</sup>
			B	E	T	X			
B4W-20	6/20/07	<100	<1.0	<1.0	<2.0	<3.0	<250	<500	<2.5
B11-W	6/14/07	<100	<1.0	<1.0	<2.0	<3.0	<250	<500	<2.5
B12-W	6/14/07	<100	<1.0	<1.0	<2.0	<3.0	<250	<500	<2.5
MTCA Method A cleanup Level		800	5.0	700	1,000	1,000	500	500	15

**Notes:**

<sup>1</sup>Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratory Olympia, Washington

<sup>2</sup>Analysis of gasoline-range hydrocarbons was conducted using method NWTPH-G

<sup>3</sup>Analysis of volatile organic compounds was conducted using EPA method 8260B

<sup>4</sup>Analysis of diesel-range hydrocarbons was conducted using method NWTPH-Dx

<sup>5</sup>Analysis of heavy oil-range hydrocarbons was conducted using method NWTPH-Dx Extended

<sup>6</sup>Analysis of total lead was conducted using EPA Method 7421

All analytical results presented in the above table are expressed in micrograms per liter (µg/l)

B-benzene, E-ethylbenzene, T-toluene, X-total xylenes

"<500" - indicates that the analyte was not detected above the concentration shown

"-" - indicates that the sample was not analyzed for this compound

Values shown in **bold** indicate that the analyte was detected at this concentration

Shaded values indicate exceedences of the respective MTCA Method A cleanup level

TABLE 4

**Summary of Chemical Analytical Results - Soil<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Chlorinated Pesticides <sup>2</sup>			Sum of listed constituents
			4,4-DDD	4,4-DDE	4,4-DDT	
B11-8'	6/14/07	8.0	1.68	0.419	0.04	2.139
B11-15'	6/14/07	15.0	0.007	0.009	0.007	0.023
B12-11'	6/14/07	11.0	0.005	0.005	0.009	0.019
B12-16'	6/14/07	16.0	0.004	0.005	0.007	0.016
MTCA Method A Cleanup Level <sup>3</sup>						3.00

**Notes:**

<sup>1</sup>Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.

<sup>2</sup>Analysis of Chlorinated Pesticides was conducted using method SW846 8081

<sup>3</sup>Combined constituents levels of 4,4-DDD, 4,4-DDE and 4,4-DDT must be greater than listed value.

All analytical results presented in the above table are expressed in milligrams per kilogram (mg/kg).

"<10.00" - indicates that the analyte was not detected above the concentration shown.

"-" - indicates that the sample was not analyzed for this compound.

Values shown in **bold** indicate that the analyte was detected at this concentration.

Shaded values indicate exceedences of the respective MTCA Method A cleanup level.



**TABLE 5**  
**Summary of Chemical Analytical Results - Water<sup>1</sup>**  
**Ostrom's Farms**  
**Lacey, Washington**

Sample Number	Sample Date	Depth (feet)	Chlorinated Pesticides <sup>2</sup>			Sum of listed constituents
			4,4-DDD	4,4-DDE	4,4-DDT	
B11-W	6/14/07	15.0	0.049	0.045	0.023	0.117
B12-W	6/14/07	11.0	0.036	0.047	0.062	0.145
MTCA Method A Cleanup Level <sup>3</sup>						0.3 µg/L

**Notes:**

<sup>1</sup>Laboratory analysis of all samples conducted by Libby Environmental Chemistry Laboratories in Olympia, Washington.

<sup>2</sup>Analysis of Chlorinated Pesticides was conducted using method SW846 8081.

<sup>3</sup>Combined constituents levels of 4,4-DDD, 4,4-DDE and 4,4-DDT must be greater than listed value.

All analytical results presented in the above table are expressed in micrograms per liter (µg/L).

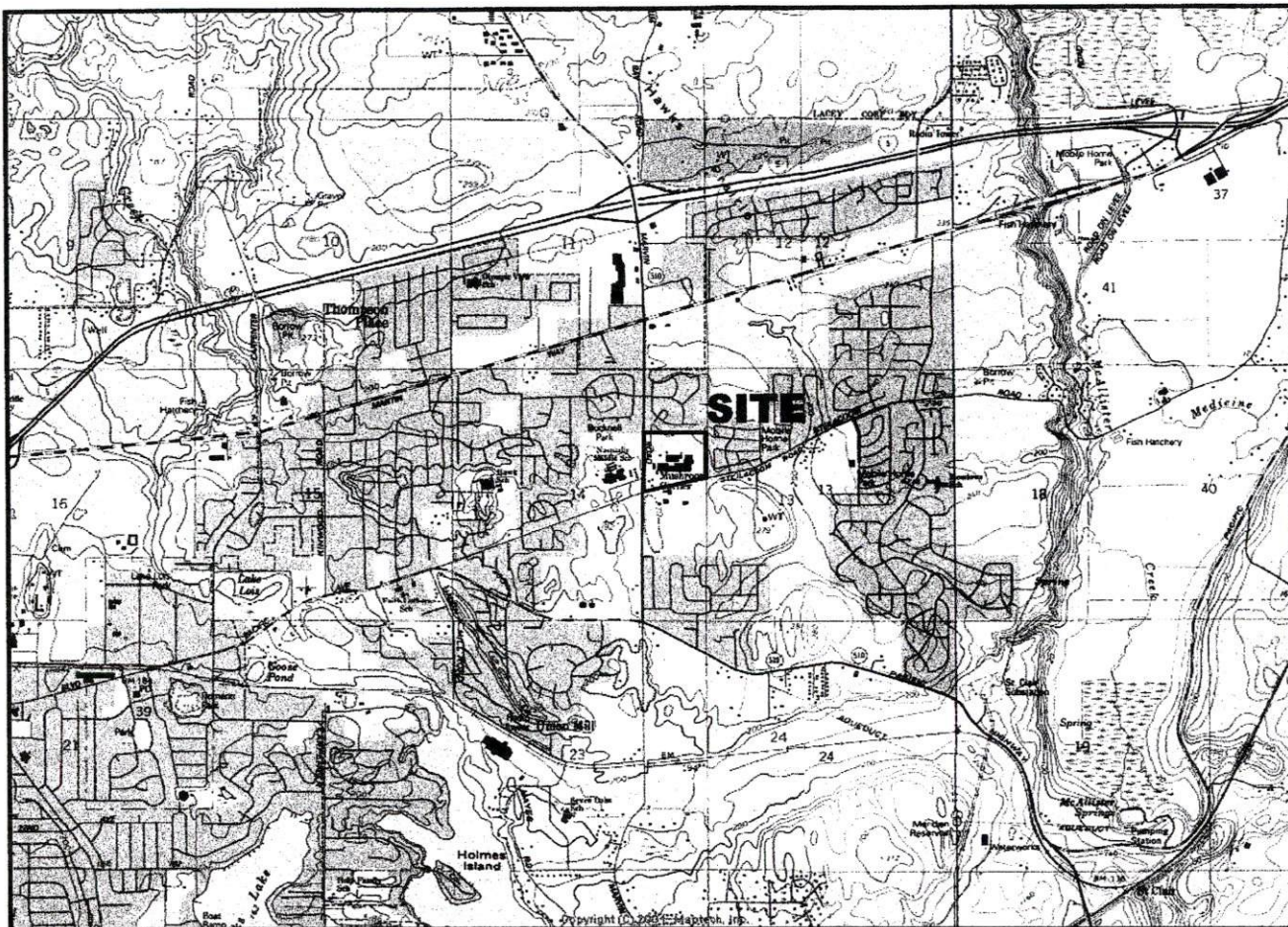
"<10.00" indicates that the analyte was not detected above the concentration shown.

"-" indicates that the sample was not analyzed for this compound.

Values shown in **bold** indicate that the analyte was detected at this concentration.

Shaded values indicate exceedences of the respective MTCA Method A cleanup level.





Source: Maptech CD, Lacey, Washington 7.5 minute quadrangle, 1955, photorevised 1994



**NORTH**

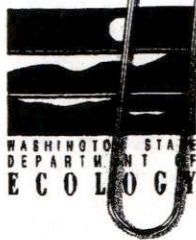
**Approximate Scale 1 inch = 4,000 feet**

**INSIGHT GEOLOGIC, INC.**

**VICINITY MAP**

**FIGURE 1**

**1998**



Department of Ecology  
Cashiering Section  
P.O. Box 5128  
Lacey, WA 98509-5128

## Invoice for Voluntary Cleanup Program

February 6, 1998

Stemen Env. Inc.  
120 State Ave. NE, Ste 125  
Olympia, WA 98501-1131

For Ecology Assistance on : Ostrom Mushroom Farm  
ID Number: SW0010

Hours Worked by:	Hours	Hourly Rate	Total Charge
Cline	9.00	\$81.00	\$729.00
	0 0.00	\$0.00	\$0.00
	0 0.00	\$0.00	\$0.00
Other Charges			\$0.00

Total Charges to date \$729.00

Paid to date:  
11/13/97 \$500.00

**Amount Due(Refund Due) \$229.00**

If you have questions regarding this invoice, please direct them to  
Pat Melone at (360)407-7214.

Please pay the amount due upon receipt of this invoice.  
Submit bottom portion of invoice with payment. Thank You.  
Review results will be formalized after payment is made.

**Ostrom Mushroom Farm**

Coding:173-02-94-005000- 20 50

**Amount due: \$229.00**



## Voluntary Cleanup Program Site Log

Site ID: SW0010

**MONTH: Aug.-Nov.      Year 1997**

**Rate/Hr.\$81.00**[illegible]

Ostrom.XLS

Date: 2/4/98

**1997**



# Voluntary Cleanup Program

Washington State - Department of Ecology - Toxics Cleanup Program

## Site Summary

This summary is a required component of your request for assistance under the Voluntary Cleanup Program

Which of the following apply? ☐ Requesting assistance on a planned cleanup.  
☐ Requesting assistance on a ongoing cleanup.  
☒ Requesting review of a completed cleanup.

Note: If you submitted your Request for Assistance (ECY 020-74) previously without a Site Summary (this form) or this is a revised Site Summary, please provide this completed form to Ecology at least five (5) working days prior to the meeting/site visit/documentation review (whichever comes first).

### A) Site Identification:

Name of Site: Ostrom's Inc.

Alternate Name(s) for Site: \_\_\_\_\_

Street Address of Site: 8323 Steilacoom Rd. S.E.

City: Olympia State: WA Zip: 98513

County: Thurston UBI Number: \_\_\_\_\_

Mailing Address (if different from above): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Township 18N Range 1W Section 18 Quarter-Quarter \_\_\_\_\_

If known:

Latitude: Degree \_\_\_\_\_ Minute \_\_\_\_\_ Second \_\_\_\_\_

Longitude: Degree \_\_\_\_\_ Minute \_\_\_\_\_ Second \_\_\_\_\_

Method Used to calculate Lat/Long: \_\_\_\_\_

How large (in Acres) is the site? 65

Please attach two maps to this form.

1) An area map, showing general location of the site in relation to surrounding bodies of water, cities, highways, and streets. (Please mark site location.)

2) A site diagram showing surrounding cross-streets, labeled building outlines, sampling and well locations, etc..

### B) Person/Organization making request for Assistance/Review:

Name: Paul W. Stemen

Firm: Stemen Environmental, Inc.

Street Address: 120 State Ave NE #145

City: Olympia State: WA Zip: 98501

Telephone Number: ( 360 ) 438-9521 Extension: \_\_\_\_\_

Fax Number: ( 360 ) 412-1225 E-Mail Address: \_\_\_\_\_



Which best describes your involvement with the site? (Check all that apply.)

Current Owner ☐ Former Owner ☐ Potential Purchaser ☐  
 Current Operator ☐ Former Operator ☐ Other (specify) \_\_\_\_\_  
 Environmental Consultant for Ostrom's Inc.  
 Attorney \_\_\_\_\_ for \_\_\_\_\_  
 Insurance Carrier \_\_\_\_\_ for \_\_\_\_\_  
 Other (specify) \_\_\_\_\_ for \_\_\_\_\_

### C) Release Information:

Date of Release(if known): UKN Date of Discovery: 5/97

**Drinking Water:** Number of Drinking Water Supply Wells within 1/2 mile 7

Are there any drinking water systems affected? ☐ yes ☒ no

If yes, has alternate drinking water been provided? ☐ yes ☐ no

If Drinking Water systems are affected, are the systems public, private, or both?

**Aquatics:** Are there any creeks, streams, ponds, wetlands, or shorelands...

on or adjacent to the site? ☐ yes ☒ no

Within 1/4 mile of the site? ☐ yes ☒ no

Where are they located? \_\_\_\_\_

Are they impacted by contamination from the site? ☐ yes ☐ no ☐ unknown

**General Hazardous Substance Categories:** Please complete the chart below. List the contaminants known or suspected at the site prior to cleanup, and mark the appropriate medium (i.e. soil) with: **C** (confirmed and above MTCA); **B** (confirmed but below MTCA); **S** (suspected); **N/A** (not-applicable); **O** (tested & not present); or **U** (unknown).

Contaminant	Class (for Office Use)	Affected Media:					Date of Release (if known)
		Soil	Ground- Water	Surface Water	Air	Sediment	
<i>Example:</i> lead		C	O	S	U	S	1967-82
1) T.P.H		C	O	N/A	N/A	N/A	UNK
2) Chlorinated Pes		C	O	N/A	N/A	N/A	UNK
3) _____							
4) _____							
5) _____							
6) _____							

### D) Report Information of Assessment or Remediation Work Done to Date

#### Assessment:

Has site assessment work been done at this site? Yes ☒ No ☐ In-progress ☐

If Yes, when? 5/97 Were results reported to Ecology? Yes ☒ No ☐ Date 11/97

Desc be: (list reports in "E" below)

Independent Remedial Action Report

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## Remediation:

Has any site cleanup work been done at the site? Yes X No \_\_\_\_\_ In-progress \_\_\_\_\_  
If yes, please continue to answer the remaining questions in this section to the best of your ability.

When was the cleanup work done? 9/97

Were results reported to Ecology? Yes X No \_\_\_\_\_ Date 11/97

Describe: (list reports in "E" below) \_\_\_\_\_

Independent Remedial Action Report

Does contamination remain on-site after cleanup activities? Yes \_\_\_\_\_ No X

If yes, describe: (list reports in "E" below)

For each contaminant listed in **Part C) Release Information (above)**, please describe the quantity of the contaminant (in pounds) which was removed or treated as a result of the cleanup activities:

Contaminant	Class (for Office Use)	Pounds of Contaminant:				
		Incinerated	Washed	Removed	Treated	Contained

Example

lead

		<u>10</u>	<u>20</u>	<u>40</u>	<u>10</u>	<u>60</u>
1) T.P.H		<u>75</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
2) Chlorinated Pest		<u>280</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
3)						
4)						
5)						
6)						
7)						
8)						
9)						
10)						
11)						
12)						

As a result of the cleanup:

How many acres of land were returned to **unrestricted** use? 63

How many acres of land were returned to **restricted** use? 2

How many cubic feet of contaminated soil was remediated or contained? 355

How many gallons of contaminated groundwater was remediated or contained? N/A

How many people are now at reduced risk as a result of the cleanup action? N/A

How many pounds of potential pollution was prevented as a result of the cleanup action? N/A



METHODS/TREATMENTS USED		SOIL	GROUNDWATER	SURFACE WATER	DRINKING WATER	AIR	WASTES
Method A		X					
Method B		X					
Method C							
Have these levels been met throughout the site? Y or N							
<u>Destruction or Detoxification</u>							
<u>Carbon Adsorption</u> <sup>1</sup>		NA					NA
<u>Biological Treatment</u>						NA	
<u>Chemical Destruction</u>							
<u>Incineration</u>		X	NA	NA	NA		
<sup>1</sup> Carbon followed by regeneration; use of granular activated carbon followed by landfilling would be classified in these tables as volume reduction and off-site landfill							
<u>Media Transfer</u>							
<u>Air Stripping/Air Sparging</u>		NA					NA
<u>Aeration/Vapor Extraction</u>			NA	NA	NA	NA	
<u>Thermal Desorption</u>			NA	NA	NA		NA
<u>Immobilization</u>							
<u>Vitrification</u>			NA	NA	NA		
<u>Solidification/Stabilization</u>			NA	NA	NA		
<u>Reuse/Recycling</u> <sup>2</sup>							
<u>Specify</u>							
<sup>2</sup> For example, reuse of free petroleum product recovered in a pump and treat system.							
<u>Separation/Volume Reduction</u>							
<u>Solvent Extraction</u>			NA	NA	NA		
<u>Soil Washing</u>			NA	NA	NA		
<u>Physical Separation</u> <sup>3</sup>							
<sup>3</sup> For example, oil/water separators.							
<u>Land Disposal/Containment</u>							
<u>Containment or On-site Landfill</u>				NA			
<u>Off-site Landfill</u>			NA	NA	NA		
<u>Institutional Controls</u>							
<u>Specify</u>							
<u>Others</u>							
<u>Specify Treatment Method</u>							



**Type (code) of Owner/Operator (for below):**

Private(1) Municipal(2) County (3) Federal (4) State(5) Tribal(6) Mixed(7) Other (8) Unknown (9) Public Entity Acquisition via Bankruptcy (10) Financial Institution Acquisition via Bankruptcy (11)

1) Current Site Owner: Ostrom's Inc Type: 1  
Street Address: 8323 Steilacoom Rd S.E.  
City: Olympia State: WA Zip: 98513  
Contact Person (if different than owner, above): William Street  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone Number: ( 360 ) 491-1410 Extension: \_\_\_\_\_  
Fax Number: ( 360 ) 438-2594 E-Mail Address: \_\_\_\_\_  
Dates of Ownership: 1965 to Present

2) Current Facility Operator: Ostrom's Inc. Type: 1  
Street Address: 8323 Steilacoom Rd. S.E.  
City: Olympia State: WA Zip: 98513  
Contact Person (if different than operator, above): William Street  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone Number: ( 360 ) 491-1410 Extension: \_\_\_\_\_  
Fax Number: ( 360 ) 438-2594 E-Mail Address: \_\_\_\_\_  
Dates of Operation: 1965 to Present

3) Former Site Owner: \_\_\_\_\_ Type: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Contact Person (if different than owner, above): \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone Number: ( \_\_\_\_ ) \_\_\_\_\_ Extension: \_\_\_\_\_  
Fax Number: ( \_\_\_\_ ) \_\_\_\_\_ E-Mail Address: \_\_\_\_\_  
Dates of Ownership: \_\_\_\_\_ to \_\_\_\_\_

4) Former Facility Operator: \_\_\_\_\_ Type: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Contact Person (if different than operator, above): \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone Number: ( \_\_\_\_ ) \_\_\_\_\_ Extension: \_\_\_\_\_  
Fax Number: ( \_\_\_\_ ) \_\_\_\_\_ E-Mail Address: \_\_\_\_\_  
Dates of Operation: \_\_\_\_\_ to \_\_\_\_\_

**E) Documentation:**

Please list titles of all site reports below. Include name of consulting firm & year completed. (If there is not enough room for the entire list, please attach additional page(s) as necessary.)

Title:	By:	Date:
Geoenviromental Review	Terra Associates, Inc.	6-10-97
Independent Remedial Action	Stemen Environmental, Inc.	11-3-97

Is additional information concerning the contaminants treated or removed, or cleanup or remediation methods used available in a database? Yes \_\_\_ No X If yes, what programming software is used? \_\_\_\_\_ Is a copy included for our use? Yes \_\_\_ No \_\_\_

**F) Property Type:** Commercial X Industrial \_\_\_ Residential \_\_\_ Other \_\_\_ (Please specify) \_\_\_\_\_

Property currently being used? \_\_\_ Yes X No

Plans for change in use? X Yes \_\_\_ No If yes, please specify: Housing Development

**G) Standard Industrial Classification (SIC) Codes:**

List all that apply. If none apply, or if you don't know your SIC code, list activities conducted at the site (i.e. automotive repair and maintenance, construction equipment storage. etc.).

\_\_\_\_\_  
\_\_\_\_\_

**H) Dangerous Waste Facilities:**

Does the facility have a dangerous waste identification number? No X Yes \_\_\_

If Yes, What is the number? WAD \_\_\_\_\_

**I) Tank Information:**

Complete this table for ALL tanks, whether underground (UST) or aboveground (AST), including unregulated tanks.

(\* Unleaded, leaded, diesel, bunker-C, waste oil, heating oil, aviation fuel, other (identify))

(\*\*Tank status: Left in Place, Removed, Closed in Place)

Tank ID	AST/UST	Size	*Product	Was free product encountered?		**Tank status
				on GW	in excavation	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

**J) Owner/Operator History**

(Please photocopy and attach copies if additional owners and/or operators are known)



**K) Other Involved Parties.**

(Please photocopy and attach copies if additional parties are involved)

1) Environmental Consultant: Paul W. Stemen  
Representing: Ostrom's Inc.  
Firm: Stemen Environmental, Inc.  
Street Address: 120 State Ave. NE #145  
City: Olympia State: WA Zip: 98501  
Telephone Number: (360) 438-9521 Extension: \_\_\_\_\_  
Fax Number: (360) 412-1225 E-Mail Address: \_\_\_\_\_

2) Site Control Person if other than Owner/Operator. (This must be a person who is on-site during normal working hours and is authorized and qualified to answer questions about the site, or a person who is available during normal business hours and has knowledge about the site and the remediations)

Name: Dudley Kirk  
Relation to site/owner/operator: Operations Manager  
Firm: Ostrom's Inc.  
Street Address: 8323 Steilacoom Rd. SE  
City: Olympia State: WA Zip: 98513  
Telephone Number: (360) 491-1410 Extension: \_\_\_\_\_  
Fax Number: (360) 438-2594  
Dates of Involvement with site: 4-97 to Present

3) Name: \_\_\_\_\_  
Relation to site/owner/operator: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone Number: ( \_\_\_\_ ) \_\_\_\_\_ Extension: \_\_\_\_\_  
Fax Number: ( \_\_\_\_ ) \_\_\_\_\_  
Dates of Involvement with site: \_\_\_\_\_ to \_\_\_\_\_

4) Name: \_\_\_\_\_  
Relation to site/owner/operator: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone Number: ( \_\_\_\_ ) \_\_\_\_\_ Extension: \_\_\_\_\_  
Fax Number: ( \_\_\_\_ ) \_\_\_\_\_  
Dates of Involvement with site: \_\_\_\_\_ to \_\_\_\_\_





STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

P.O. Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

November 21, 1997

Mr. William Street  
Ostrom Farms  
8323 Steilacoom Road Southeast  
Olympia, WA 98513

Dear Mr. Street:

Thank you for submitting the results of your independent remedial action(s) for review by the Washington State Department of Ecology (Ecology). Ecology appreciates your initiative in pursuing this administrative option under the Model Toxics Control Act (MTCA).

Ecology's Toxics Cleanup Program has reviewed the following information regarding the soils remediation activities at the Ostrom Farms Facility, located at 8323 Steilacoom Road Southeast, Olympia, Washington, and including Tax Parcels #1181441000, 1183320000, and 11813310100 in Section 18, of Township 18 N., Range 1 W:

- Terra Associates, Inc., *Geoenvironmental Review, Marvin Park Villages, Marvin Road, Lacey Washington*, June 10, 1997
- Stemen Environmental, Inc., *Independent Remedial Action Report for Tax Parcels # 118144000, 1183320000, & 11813310100, Olympia, Washington*, November 3, 1997.

The above-listed reports will be kept in the Central Files of the Southwest Regional Office (SWRO) of Ecology for review by appointment only. Appointments can be made by calling the SWRO resource person, at (360) 407-6365.

Based upon the above listed information, Ecology has determined that, at this time, the release of Chlorinated Pesticides and TPH into the soil no longer poses a threat to human health or the environment. Therefore, Ecology is issuing this determination that no further remedial action is necessary at this site under MTCA, Chapter 70.105D Revised Code of Washington (RCW). However, please note that because your actions were not conducted under a consent decree with Ecology, this letter is written pursuant to RCW 70.105D.030(1)(i) and does not constitute a settlement by the state under RCW 70.105D.040(4) and is not binding on Ecology.

Ecology's no further action determination is made only with respect to the releases identified in the report dated November 3, 1997. This no further action determination applies only to the area of the property affected by the releases at 8323 Steilacoom Road Southeast, Parcels #118144000, 1183320000, and 11813310100, Olympia, Washington, as identified in the reports. It does not apply to any other release or potential release at the property, any other areas on the property, nor any other properties owned or operated by Mr. William Street.



Ecology will update its database to reflect this "No Further Action" determination. Your site will not appear in future publications of the Confirmed & Suspected Contaminated Sites Report (previously known as the Affected Media and Contaminants Report).

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 determination.

If you have any questions about any of the information presented in this letter, please contact me at (360) 407-6767.

Sincerely,



Charles S. Cline  
Toxics Cleanup Program  
Southwest Regional Office

CC:cg(3\tcp)

cc: Paul W. Stemen, Stemen Environmental, Inc.



## FACILITY SITE INFORMATION (TCP)

624 75678

Site Name: OSTR . MUSH ROOM FARM E. ... ID: \_\_\_\_\_Location Description: \_\_\_\_\_  
\_\_\_\_\_

Geographic Position:

- 01 = Centroid of STR Unit  
02 = Centroid of STR Qtr. Section  
03 = Centroid of STR QTR QTR Section  
04 = Centroid of STR QTR QTR QTR Section  
05 = Facility/Site Centroid  
06 = NE Corner of Land Parcel  
07 = NW Corner of Land Parcel  
08 = Plant Entrance  
09 = SE Corner of Land Parcel  
11 = SW Corner of Land Parcel  
99 = Unknown

Site Address:

8323 STELLACOOM ROAD SE

City:

OLYMPIA

Zip:

98503-

County:

THURSTON

WRIA ID: \_\_\_\_\_

Indian Land: ☐

Collection Source:

- 01 = Not Applicable  
02 = "1:500,000  
03 = "1:250,000  
04 = "1:125,000  
05 = "1:100,000  
06 = "1:63,360  
07 = "1:62,500  
08 = "1:50,000  
09 = "1:25,000  
10 = "1:24,000  
11 = "1:20,000  
12 = "1:15,840  
13 = "1:10,000  
14 = "1:12,000  
15 = "1:25,001-1:50,000  
16 = "1:50,001-1:100,000  
17 = "1:20,001-1:125,000  
18 = "1:15,001-1:20,000  
19 = "1:10,000-1:15,000  
20 = "1:5,001-1:10,000  
21 = "1:501-1:5,000  
22 = <=1:500  
23 = <1:500  
99 = Unknown

Collection Method:

- 01 = Address Matching—Block Face  
02 = Address Matching—House Number  
03 = Address Matching—Street Centerline  
04 = Address Matching—Unknown  
05 = Aerial Photography—Rectified  
06 = Aerial Photography—Unknown  
07 = Aerial Photography—Unrectified  
08 = Cadastral Survey  
09 = Census Block 1990 Centroid  
10 = Census Block Group 1990 Centroid  
11 = Conversion from STR  
12 = Digital or manual raw photo extraction  
13 = Digitized of CTR screen/digital data  
14 = Digitized—paper map  
15 = GPS (Carrier/Geodetic)  
16 = GPS (Code/Geodetic)  
17 = GPS (Kinematic)  
18 = GPS (Unknown)  
19 = Hand Measured—paper map  
20 = LORAN-C  
21 = Orthophotography—digital  
22 = Orthophotography—paper  
23 = Satellite Imagery—Landsat MSS  
24 = Satellite Imagery—Landsat TM  
25 = Satellite Imagery—Other  
26 = Satellite Imagery—SPOT Panchromatic  
27 = Satellite Imagery—SPOT Multi Spectral  
28 = Zip Code Centroid  
99 = Unknown

Horizontal Datum:

- 01 = North American Datum 1927-NAD27  
02 = North American Datum 1983 ('91 adj.) = NAD83  
03 = HARN  
04 = WGS84 (GPS NAVD88)  
99 = Unknown

Areal Extent Code:

- 01 = Large Facility/Complex or area > 10 Acre  
02 = Small Facility/Complex or area > 1 Acre < 10 Acre  
03 = Large Building or area > 5,000 sq. ft.  
04 = Small Building or area < 5,000 sq. ft.  
05 = Crossing or Intersection of two features; e.g., bridge stream  
06 = Small object or area < 10 sq. ft.; e.g., well  
99 = Unknown

Accuracy Level:

- 01 = > 1/100 meter  
02 = < 1/10 meter and > 1/100 meter  
03 = < 1 meter and > 1/10 meter  
04 = +/- 10 feet (3 meter)  
05 = +/- 20 feet (6 meter)  
06 = +/- 40 feet (12 meter)  
07 = +/- 100 feet (35 meter)  
08 = +/- 180 feet (55 meter)  
09 = +/- 250 feet  
10 = +/- 500 feet  
11 = +/- 1000 feet  
12 = +/- 2000 feet  
13 = > 2000 feet  
99 = Unknown



	Degrees	Minutes	Seconds		Number	Direction	Quarter	Circle one
Latitude:	<u>47</u>	<u>1</u>	<u>48</u>	Section:	<u>13 &amp; 1.</u>		Sec 1	NW NE SW SE
Longitude:	<u>122</u>	<u>45</u>	<u>47</u>	Township:	<u>18 N</u>	<u>NW 1/4 SW 1/4</u>	Sec 2	NW NE SW SE
If you don't have LAT/LONG, please provide map of site!				Range:	<u>1 W</u>	<u>SEC. 13</u> <u>SEC. 14</u> <u>NE 1/4 SE 1/4</u>	Sec 3	NW NE SW SE

Ecology Interaction (check all that apply):	System:
<input type="checkbox"/> FCS Federal (Superfund Cleanup Site)	<input checked="" type="checkbox"/> SIS
<input checked="" type="checkbox"/> LUST LUST Facility	<input type="checkbox"/> UST/LUST
<input type="checkbox"/> SCS State Cleanup Site	<input type="checkbox"/> _____
<input checked="" type="checkbox"/> VOLCLNST Voluntary Cleanup Site	<input type="checkbox"/> _____
Active Status: _____ Date: _____ Inactive Status: _____ Date: _____	

Sic Code:	Description:
1. <u>01</u>	<u>MUSHROOM FARM - AGRICULTURE</u>
2. _____	_____

If this site is a sub-site or operable unit of a larger site, include the name and FS ID# of the parent site:

FS ID#: \_\_\_\_\_ Site Name: \_\_\_\_\_

Company Name: <u>THE OSTROM COMPANY</u>		Title: <u>MR MS DR</u>
Last Name: _____	First Name: _____	Middle Initial: _____
Address: <u>8323 STELLACOOM ROAD SE</u>		PO Box: _____
City: <u>OLYMPIA</u>	State: <u>WA</u>	Zip: <u>98503-</u> Country: <u>USA</u>
Tax ID#: _____	UBI#: _____	Phone#: <u>(360) 491-1410</u> Ext: _____
Fax#: _____	Alt Phone#: _____	E-Mail Address: _____
Relationship Code: <u>PLP</u> <u>LEO</u>	AC = Application Contact AGT = Agent AP = Affected Party APPL = Applicant ATT = Attorney BC = Billing Contact BO = Business Owner CA = Co Applicant CG = Current Generator CNTR = Contractor CRP = Cost Recovery Party	DBA = Doing Business As FG = Former Generator FOPER = Former Operator FOWNR = Former Owner FT = Former Haz Waste Transporter HWT = Haz Waste Transporter IC = Inspection Contact LAG = Land Owner LEO = Legal Owner MH = Mortgage Holder OP = Operator
	PE = Project Engineer PI = Public Involvement Person PLP = Potentially Liable Person PM = Project Manager PRMT = Permittee PRP = Potentially Responsible Party SA = Site Attorney SC = Site Contact SO = Site Owner TSC = Toxics Site Contact UNK = Unknown	
Relationship Start Date: _____ Relationship End Date: _____		



# SIS INFORMATION

Site Name: Ostrom mushroom farm

FS ID: 62475678

TCP ID: S-34-6216-000 Tax Parcel #: \_\_\_\_\_

UBAT: ☐ Warm Bin #: \_\_\_\_\_

Ecology Status:

4

- 1 = Awaiting SHA  
2 = Ranked, Awaiting RA  
3 = RA in progress  
4 = Independent RA

- 5 = Construction Completed, O & M Underway  
6 = RA Completed, Confirmational Monitoring Underway  
7 = RA Conducted, residual contamination left on site; on-going institutional controls required  
8 = RA and other activities completed

Statute:

2

- 1 = CERCLA  
2 = MTCA Only  
3 = RCW 70.105B  
4 = RCW 90.48  
5 = RCRA-C  
6 = RCRA-D  
7 = MTCA (SED)

Independent Status:

3

- 1 = Release report received, awaiting assessment by PLP  
2 = Independent Site Assessment or Interim RA Report received  
3 = Independent Final RA Report received

(This field is required if Ecology Status is 4)

Program Plan:

3

- 1 = Prepayment  
2 = Program Plan  
3 = IRAP

Owner Type:

1

- 1 = Private  
2 = Municipal  
3 = County  
4 = Federal

- 5 = State  
6 = Tribal  
7 = Mixed  
8 = Other

- 9 = Unknown  
10 = Publicly-Owned (Bankrupt)  
11 = Financial Institution Owned (Bankrupt)

NFA

Code:

1

- 1 = NFA after assessment (or IRAP)  
2 = Removed from Hazardous Sites List (HSL)  
3 = Referred (transferred to another Ecology Prog.)  
4 = Referred to another agency

- 5 = Referred to local governmental entity  
6 = Cleaned up under prior authority  
7 = Cleanup completed, not on HSL

NFA

Date:

11/21/97

ERTS ID: \_\_\_\_\_

LUST ID: \_\_\_\_\_

AFRS Code: \_\_\_\_\_

Site Comments: \_\_\_\_\_

Activity Code	Activity Status	Start Date	End Date	Activity Lead	Action By	Neg. Start Date	Legal Mech.
<u>ii</u>	<u>C</u>				<u>7</u>		<u>7</u>
<u>RC</u>	<u>C</u>				<u>7</u>		<u>7</u>
<u>IRAP</u>	<u>C</u>	<u>7/11/97</u>	<u>11/21/97</u>	<u>CLINE</u>	<u>7</u>		<u>7</u>

Activity Codes:

- SD = Site Discovery  
II = Initial Investigation  
ENL = Early Notice Letter  
SHA = Site Hazard Assessment  
HSL = Hazardous Sites Listing  
CED = Cleanup Engineering Design

- EA = Emergency Action  
IA = Interim Action  
RC = Routine Cleanup Action  
CAP = Cleanup Action Plan  
IRRP = IRAP Paid  
IIRRU = IRAP Unpaid

- CC = Cleanup Construction  
COM = Cleanup Operation & Maintenance  
PR = Periodic Review (5 year)  
RHSL = Removal from Hazardous Site List  
RI/FS = Remedial Investigation/Feasibility Study  
FPA = Federal Preliminary Assessment

Activity Status Codes:

- C = Completed  
I = In Process  
P = Planned  
X = Canceled

Action By Codes:

- 1 = Ecology  
2 = Ecology w/Contractor  
3 = EPA  
4 = Local Government  
5 = Other  
6 = PLP  
7 = PLP w/Contractor

Legal Mech:

- 1 = Enforcement Order  
2 = Agreed Order  
3 = Consent Decree  
4 = Governmental Action  
5 = Other  
6 = Not Applicable  
7 = Independent

Activity Comments: \_\_\_\_\_



Media	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Groundwater																	
2 Surface Water																	D W
3 Air																	
4 Soil				R C			R C										T Y
5 Sediment																	P E
6 Drinking Water																	

Contaminant Codes: 
 1 = Base/Neutral Organics  
 2 = Halogenated Organic Compounds  
 3 = Metals—Priority Pollutants  
 4 = Metals—Other  
 5 = PCB  
 6 = Pesticides  
 7 = Petroleum Products  
 8 = Phenolic Compounds  
 9 = Non-Halogenated Solvents  
 10 = Dioxins  
 11 = PAH  
 12 = Reactive Wastes  
 13 = Corrosive Wastes  
 14 = Radioactive Wastes  
 15 = Conventional Contaminants, Organic  
 16 = Conventional Contaminants, Inorganic  
 17 = Asbestos

Status Codes: B = Below Cleanup Levels  
 R = Remediated  
 C = Confirmed (above cleanup levels)  
 S = Suspected  
 Drinking Water Types: 1 = Single Family  
 2 = Community

IRAP Review Results: NFA Review Fee: \$500 Total Hours: 9  
 Cleanup Conducted: ☒ Cleanup Permanent: ☒ NFA Standard: ☒ IRAP Comment: \_\_\_\_\_

Check all that apply	<input type="checkbox"/> 1. Drug Lab	<input type="checkbox"/> 5. Landfill	<input type="checkbox"/> 9. Spill
	<input type="checkbox"/> 2. Drum	<input checked="" type="checkbox"/> 6. Land Application	<input type="checkbox"/> 10. Storm Drain
	<input type="checkbox"/> 3. Impoundment	<input type="checkbox"/> 7. Pesticide Application	<input type="checkbox"/> 11. Tank
	<input type="checkbox"/> 4. Improper Handling	<input type="checkbox"/> 8. Pesticide Disposal	<input type="checkbox"/> 12. Unknown

Alternate Site Names:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_





THURSTON COUNTY  
WASHINGTON  
SINCE 1852

Environmental Health Division

7/1/97

David,

Enclosed is the data from Ostroms property (Marvin Park Villages) in Lacey.

The thick report is the first one by Terra Associates. The second packet is by Stemen Environmental.

His samples are taken from an area surrounding the initial sample sites of Terra.

I would be more than happy to assist you in any way. I will tell Mr. Stemen that an IRAP is the next step for his client.

Thaf G.T

Mailing Address: 2000 Lakeridge Dr. SW, Olympia, WA 98502-6045  
Location: 921 Lakeridge Dr. SW, Rm. 113, Olympia, WA 98502-6045 (206) 754-4111

Ex. 6509



6/30/97

Paul Stemen  
438-9521

Terra

65 acre site

\$79/hour

DDT - right at method A

Not able to duplicate previous values.

Hits in fill, not native soil.

\$500 down

Old compost.

Also an old landfill area showed some hits

Old dump - Wyn Hoffman / John Libby  
said waste could stay.

Proposing a cap with clean fill → greenbelt

Also 72,000 ppm petroleum

Excavate and clean.

+ park  
No toxics  
just compaction  
issues

Haul off pesticides. Want to develop  
in a year. Developers need ~~fill~~

Releases have been reported.

Monitoring  
wells on site.

Gerald / Tracey Forsberg

No historical use of contaminants on this  
site.

No lenders yet.

\$500 deposit.

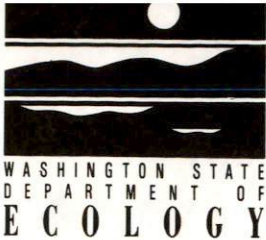
Composited samples

Took more discrete samples in a matrix.  
Soil incineration of piles



TRAP now  
based on actual  
costs



File Name Ostrom's Mushroom FarmCounty Thurston

Date

6/23/97

TELEPHONE RECORD

File type

TCP

Time

☒ a.m. ☐ p.m.☐ CALLED BY  
☐ CALLED

Mr./Ms.

Paul Stemen

Your Name

Dave Smith

Telephone

438-9521

Address

Stemen Environmental(local)

Representing

Ostrom Farm's Inc. (Bill Street, owner,  
8323 Steilacoom Rd, SE,  
Lacey, WA 98513)

Project

Preparation for residential development of land owned by  
Ostrom's Mushroom Farm.

Discussed

65-acre parcels: Tax #'s 1181-441-0001181-332-0001181-332-010All near Ostrom's Mushroom Farm.Confirmed release of some petroleum hydrocarbons and  
pesticides (DDT, chlordane) above MTCA level A.Thurston County has inspected for solid waste issues  
(John Libby).~~I advise~~Cleanup work anticipated. I advised IRAP route  
based on existing information (DDT + chlordane appear to be  
only marginally exceeding MTCA Level A, and petroleum contamination  
appears limited).Mr. Stemen will ask Ostrom's if they want to go  
IRAP. ~~and if so~~ He will contact Chuck Choe, Ecology.  
He knows Mike Blum and suggested  
Mike as an IRAP contact

Signed

David W. Smith

1995



April 27, 1995

Ms. Lynn Gooding  
Underground Storage Tank Section  
Department of Ecology  
PO Box 47655  
Olympia WA 98504-7655

Dear Lynn:

Attached are the data from our recent sampling done by Spectra Laboratories, Inc., on the soil we have been remediating for almost two years.

The chemist indicates that all the samples were well below the remediation point, so it appears we might be able to move this soil to a permanent site on our property.

Please let me know if you have any questions or if there is any other information I need to provide.

Sincerely,

William K. Street  
President

WKS:bn

Enclosures

Ostrom Farms  
Mushroom Growers and Packers  
Since 1928





# SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

RECEIVED

April 25, 1995

'95 APR 28 P2:53

Dudley Kirk  
Ostrom Farms  
8323 Steilacoom Road S.E.  
Olympia, WA 98513

RECEIVED  
S.W. Inc. 4/28/95

Re: UST Soil

Dear Mr. Kirk:

Please find enclosed the results for the above referenced project(s).

If you have any questions or need any further information, please feel free to call any time.

Sincerely,

SPECTRA LABORATORIES, INC.



Mike Minner  
Lab Director

Enclosure



# SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

April 24, 1995


Ostrom Farms  
8323 Steilacoom Road S.E.  
Olympia, WA 98513

Attn: Dudley Kirk

Project: UST Soil  
Sample Matrix: Soil  
Date Sampled: 4-19-95  
Date Received: 4-19-95  
Date Analyzed: 4-21-95  
Spectra Project: S504-154

<u>Spectra #</u>	<u>Sample ID:</u>	<u>WTPH-D, mg/Kg</u>	<u>Surrogate Recovery</u> <u>p-Terphenyl</u>
2420	A-1	<25	80%
2421	B-1	<25	91%
2422	C-1	<25	90%
2423	D-1	<25	111%
2424	E-1	42	101%
2425	F-1	<25	114%

SPECTRA LABORATORIES, INC.

  
\_\_\_\_\_  
Steven G. Hibbs, Chemist



# SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

April 24, 1995

Ostrom Farms  
8323 Steilacoom Road S.E.  
Olympia, WA 98513

Attn: Dudley Kirk

Method: WTPH-D  
Sample Matrix: Soil  
Spectra Project: S504-154  
Applies to Spectra #'s  
2420 through 2425

HYDROCARBON ANALYSIS  
QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Method Blank  
Units: mg/Kg

Date Extracted: 4-14-95  
Date Analyzed: 4-14-95

<u>Compound</u>	<u>Sample Result</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>% Recovery</u>	<u>Dup. Result</u>	<u>Dup. % Recovery</u>	<u>RPD</u>
Diesel	<25	249	209	84	208	84	0

METHOD BLANK

Date Extracted: 4-21-95


Date Analyzed: 4-21-95

WTPH-D, mg/Kg

<25

Surrogate Recovery - p-terphenyl - 123%

SPECTRA LABORATORIES, INC.

  
Steven G. Hibbs, Chemist



ALL INFORMATION  
BEFORE 1995  
HAS BEEN RELOCATED TO ARCHIVES.  
DATED FROM: 1991 TO  
1993.

Facility name: Ostrum Mushroom Farms

Location: 8323 Steilacoom Rd, Olympia, WA 98503

EPA Region: X

Person(s) in charge of the facility: Mr. William Street,  
The Ostrum Company  
8323 Steilacoom Rd, SE, Olympia, WA 98503

Name of Reviewer: Barbara J. Morson fg Date: 17 APRIL 1984

General description of the facility:  
 (For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

This mushroom farm utilizes a wide variety of pesticides on a regular basis which are washed down, + untreated wastewater is discharged through a French drain to ground. State files end in 1982 when company filed Chap. 11. Company reorganized + is still operating. Additional sampling is needed to substantiate any alleged ground contamination.

Scores:  $S_M = 36.7$  ( $S_{GW} = 63.33$   $S_{SW} = 3.7$   $S_a = 0$ )  
 $S_{FE} = 0$   
 $S_{DC} = 16.67$

FIGURE 1  
HRS COVER SHEET

**DRAFT**

Ground Water Route Work Sheet *						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
<b>[1]</b> Observed Release	0      45	1	0	45	3.1	
If observed release is given a score of 45, proceed to line <b>[4]</b> . If observed release is given a score of 0, proceed to line <b>[2]</b> .						
<b>[2]</b> Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 <b>(2)</b> 3	2	4	6		
Net Precipitation	0 1 2 <b>(3)</b>	1	3	3		
Permeability of the Unsaturated Zone	0 1 2 <b>(3)</b>	1	3	3		
Physical State	0 1 2 <b>(3)</b>	1	3	3		
Total Route Characteristics Score			13	15		
<b>[3]</b> Containment	0 1 2 <b>(3)</b>	1	3	3	3.3	
<b>[4]</b> Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 <b>(18)</b>	1	18	18		
Hazardous Waste Quantity	0 <b>(1)</b> 2 3 4 5 6 7 8	1	1	8		
Total Waste Characteristics Score			19	26		
<b>[5]</b> Targets					3.5	
Ground Water Use	0 1 2 <b>(3)</b>	3	9	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 <b>(40)</b>	1	40	40		
Total Targets Score			49	49		
<b>[6]</b> If line <b>[1]</b> is 45, multiply <b>[1]</b> x <b>[4]</b> x <b>[5]</b> If line <b>[1]</b> is 0, multiply <b>[2]</b> x <b>[3]</b> x <b>[4]</b> x <b>[5]</b>			36,300	57,330		
<b>[7]</b> Divide line <b>[6]</b> by 57,330 and multiply by 100			S <sub>gw</sub> = 63.3			

FIGURE 2  
GROUND WATER ROUTE WORK SHEET

DRAFT



Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
<b>1</b> Observed Release	<u>0</u> 45	1	<u>0</u>	45	4.1	
If observed release is given a value of 45, proceed to line <b>4</b> . If observed release is given a value of 0, proceed to line <b>2</b> .						
<b>2</b> Route Characteristics					4.2	
Facility Slope and Intervening Terrain	<u>0</u> 1 2 3	1	<u>0</u>	3		
1-yr. 24-hr. Rainfall	0 1 2 <u>3</u>	1	<u>2</u>	3		
Distance to Nearest Surface Water	0 <u>1</u> 2 3	2	<u>2</u>	6		
Physical State	0 1 2 <u>3</u>	1	<u>3</u>	3		
Total Route Characteristics Score			<u>7</u>	15		
<b>3</b> Containment	0 1 2 <u>3</u>	1	<u>3</u>	3	4.3	
<b>4</b> Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 <u>18</u>	1	<u>18</u>	18		
Hazardous Waste Quantity	0 <u>1</u> 2 3 4 5 6 7 8	1	<u>1</u>	8		
Total Waste Characteristics Score			<u>19</u>	26		
<b>5</b> Targets					4.5	
Surface Water Use	0 1 <u>2</u> 3	3	<u>6</u>	9		
Distance to a Sensitive Environment	<u>0</u> 1 2 3	2	<u>0</u>	6		
Population Served/Distance to Water Intake Downstream	<u>0</u> 4 6 8 10 12 16 18 20 24 30 32 35 40	1	<u>0</u>	40		
Total Targets Score			<u>6</u>	55		
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b> If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>			<u>2394</u>	64,350		
<b>7</b> Divide line <b>6</b> by 64,350 and multiply by 100			$S_{SW} = 3.72$			

FIGURE 7  
SURFACE WATER ROUTE WORK SHEET

DRAFT

Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
<b>1</b> Observed Release	0	45	1	0	45	5.1
Date and Location:						
Sampling Protocol:						
If line <b>1</b> is 0, the $S_a = 0$ . Enter on line <b>5</b> . If line <b>1</b> is 45, then proceed to line <b>2</b> .						
<b>2</b> Waste Characteristics						5.2
Reactivity and Incompatibility	0 1 2 3		1		3	
Toxicity	0 1 2 3		3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8		1		8	
Total Waste Characteristics Score				20		
<b>3</b> Targets						5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30		1		30	
Distance to Sensitive Environment	0 1 2 3		2		6	
Land Use	0 1 2 3		1		3	
Total Targets Score				39		
<b>4</b> Multiply <b>1</b> x <b>2</b> x <b>3</b>			0		35,100	
<b>5</b> Divide line <b>4</b> by 35,100 and multiply by 100			$S_a = 0$			

FIGURE 9  
AIR ROUTE WORK SHEET

DRAFT

	s	s <sup>2</sup>
Groundwater Route Score (S <sub>gw</sub> )	63.33	4010.69
Surface Water Route Score (S <sub>sw</sub> )	3.72	13.84
Air Route Score (S <sub>a</sub> )	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		4024.53
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		63.44
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		36.7

FIGURE 10  
WORKSHEET FOR COMPUTING S<sub>M</sub>



Fire and Explosion Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
<b>1</b> Containment	1	3	1		3	7.1
<b>2</b> Waste Characteristics						7.2
Direct Evidence	0	3	1		3	
Ignitability	0	1 2 3	1		3	
Reactivity	0	1 2 3	1		3	
Incompatibility	0	1 2 3	1		3	
Hazardous Waste Quantity	0	1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score					20	
<b>3</b> Targets						7.3
Distance to Nearest Population	0	1 2 3 4 5	1		5	
Distance to Nearest Building	0	1 2 3	1		3	
Distance to Sensitive Environment	0	1 2 3	1		3	
Land Use	0	1 2 3	1		3	
Population Within 2-Mile Radius	0	1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0	1 2 3 4 5	1		5	
Total Targets Score					24	
<b>4</b> Multiply <b>1</b> x <b>2</b> x <b>3</b>					1,440	
<b>5</b> Divide line <b>4</b> by 1,440 and multiply by 100				SFE = 0		

**FIGURE 11**  
**FIRE AND EXPLOSION WORK SHEET**

Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
<b>1</b> Observed Incident	<u>0</u> 45	1	<u>0</u>	45	8.1	
If line <b>1</b> is 45, proceed to line <b>4</b> If line <b>1</b> is 0, proceed to line <b>2</b>						
<b>2</b> Accessibility	0 <u>1</u> 2 3	1	<u>1</u>	3	8.2	
<b>3</b> Containment	0 <u>15</u>	1	<u>15</u>	15	8.3	
<b>4</b> Waste Characteristics Toxicity	0 1 2 <u>3</u>	5	<u>15</u>	15	8.4	
<b>5</b> Targets					8.5	
Population Within a 1-Mile Radius	0 1 2 3 <u>4</u> 5	4	<u>16</u>	20		
Distance to a Critical Habitat	<u>0</u> 1 2 3	4	<u>0</u>	12		
Total Targets Score			<u>16</u>	32		
<b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b> If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b>			<u>3600</u>	21,600		
<b>7</b> Divide line <b>6</b> by 21,600 and multiply by 100			SDC = <u>16.67</u>			

**FIGURE 12**  
**DIRECT CONTACT WORK SHEET**

EPA REGION X  
DOCUMENTATION RECORDS  
FOR  
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: OSTEOM MUSHROOM

LOCATION: Olympia Washington

**DRAFT**



GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None

Rationale for attributing the contaminants to the facility:

N/A

\* \* \*

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Vashon Recessional Outwash - poorly sorted, horizontally stratified sand and gravel.

IP Site Visit / USB #10 V.2

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

35'-40'

DePettit  
Clark Trubel  
Marian Leviscek } well logs

Depth from the ground surface to the lowest point of waste disposal/storage:

-0-

(septic drainage discharge)

✓  
HRS score = 2  
(Users Manual, p. 12)

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

45.9 inches

(Olympia Airport Data)

Mean annual lake or seasonal evaporation (list months for seasonal):

18.4 inches

(Olympia Airport Data)

Net precipitation (subtract the above figures):

27.5

HRS SCORE = 3  
(USER GUIDE pg 12)  
Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Permeable glacial outwash - sandy gravels

(WSB #10, vol. 2)

Permeability associated with soil type:

High  $\geq 10^{-3}$  cm/sec

(from Soils Type)  
Physical State

HRS SCORE = 3  
USER GUIDE pg 15

Physical state of substances at time of disposal (or at present time for generated gases):

liquids + particulate matter have been disposed of through French drain - it's unknown whether particulates are contaminated w/ pesticides

HRS SCORE = 3  
(USER GUIDE pg 12)

(WDOE Sample Data, 10/13/81 +  
\*\*\* Lauck's lab sample data Sept 23, 1981

### 3 CONTAINMENT

#### Containment

Method(s) of waste or leachate containment evaluated:

French drain to ground - wastewater is untreated

(Letter to Mr. Rod Sorenson From Greg Cloud, WDOE on 6/9/82)

Method with highest score:

no methods applicable From chart - scored as if no  
containment or as landfill with no cover & no liner

HRS SCORE = 3

(USE GUIDE PG 17)

### 4 WASTE CHARACTERISTICS

#### Toxicity and Persistence

Compound(s) evaluated:

Formaldehyde

Lindane Tox 3, Pers 3

Molathion

Perlate

Zinc

(water sample data from Laucks Lab 9/23/82)

Compound with highest score:

Lindane

HRS SCORE = 18

(USEC GUIDE PG 18)

#### Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

unknown, but greater than 0 - septic tank discharge to ground

Basis of estimating and/or computing waste quantity:

see above

HRS Score = 1

(Users guide, pg. 23)

\*\*\*



## 5 TARGETS

### Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Drinking water

HRS SCORE = 3  
(USER GUIDE pg 25)

(well logs from area surrounding facility)

### Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

2 wells on property - one with water at 54 ft, one with water at 199 ft from ground level.

(Certificates of Groundwater Rights Nos 2548-A + 105-A)

Distance to above well or building:

< 100 ft

(USGS Topo + well log)

### Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Olympia draws its water from McAllister Springs, about 2 miles from site - >10,000 people

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

unknown

Total population served by ground water within a 3-mile radius:

>10,000

HRS SCORE = 40  
(USER GUIDE pg 24)

## SURFACE WATER ROUTE

### 1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

NO KNOWN OR REPORTED

HRS SCORE = 0  
(USER GUIDE PG 29)

Rationale for attributing the contaminants to the facility:

None

\* \* \*

### 2 ROUTE CHARACTERISTICS

#### Facility Slope and Intervening Terrain

Average slope of facility in percent:

< 3% to west-northwest

(USGS Topo - Lacey)

Name/description of nearest downslope surface water:

Long Lake

(USGS Topo - Lacey)

Average slope of terrain between facility and above-cited surface water body in percent:

< 3%

(USGS Topo)

HRS SCORE = 0  
(USER GUIDE PG 31)

Is the facility located either totally or partially in surface water?

NO Small <sup>artificial</sup> pond or creek located in southwest corner of property. Vegetation below water is dead (black).

(R. Peshkin, personal observation, 4/4/84)

Is the facility completely surrounded by areas of higher elevation?

NO - area is kettle topography, but generally slopes to the west.

(USGS Topo)

1-Year 24-Hour Rainfall in Inches

between 2-3 inches

HRS SCORE = 2  
(USER GUIDE Pg 32).

(Extrapolated from NWS data)  
Distance to Nearest Downslope Surface Water

Long Lake is  $\sim 1\frac{1}{4}$  miles away to SW

(USGS Topo) HRS SCORE 1  
(USER GUIDE Pg 32)  
Physical State of Waste

Liquid  
(septic to ground)

HRS SCORE = 3  
(USER GUIDE Pg 12) \* \* \*

### 3 CONTAINMENT

#### Containment

Method(s) of waste or leachate containment evaluated:

Septic tank drainfield discharge to ground  
- no soil or ground water sampling has been conducted to determine contamination

Method with highest score:

Have used landfill with no liner + no leachate system, or surface impoundment with no containment as basis for scoring.  
Neither really fits, but HRS score = 3

(User's manual, Table 9, p. 35)



#### 4 WASTE CHARACTERISTICS

##### Toxicity and Persistence

Compound(s) evaluated

see groundwater, Section 4

Compound with highest score:

Lindane

HRS SCORE = 18  
(USER GUIDE PG 18)

##### Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

unknown, but greater than 0, therefore  
HRS score = 1

(Users Manual, p 23)

Basis of estimating and/or computing waste quantity:

see groundwater

\* \* \*

#### 5 TARGETS

##### Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Long Lake - recreation, no drinking water, no known irrigation -

(Thurston County Health Dept, 4/16/84)

HRS SCORE = 2

USER GUIDE PG 24

Is there tidal influence?

NO

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None  
HRS SCORE = 0  
(USER GUIDE PG 25)  
(USGS Topo, Nisqually + Lacey)

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None

(USGS Topo, Nisqually + Lacey)

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None - Nisqually NWR over 1 mile away

(USGS Topo map)

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

None — KNOWN OR SUSPECTED

HRS SCORE = 0

USER GUIDE PG 24

(Thurston County Health Dept., Susie Coomes,  
pers. comm., 4/17/84)

Computation of land area irrigated by above-cited intake(s) and  
conversion to population (1.5 people per acre):

N/A

Total population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles.

N/A



AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

N/A

Date and location of detection of contaminants

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

\* \* \*

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

None documented  
(PSAPCA has complaints  
of odor, but no pesticide  
complaints)

Therefore,  $S_A = 0$   
(HRS User's Guide, pg 39)

Toxicity

Most toxic compound:

N/A

whole page

N/A

Hazardous Waste Quantity

Total quantity of hazardous waste:

N/A

Basis of estimating and/or computing waste quantity:

N/A

\* \* \*

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi

0 to 1 mi

0 to 1/2 mi

0 to 1/4 mi

N/A

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

N/A

Distance to critical habitat of an endangered species, if 1 mile or less:

N/A

whole page  
N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

N/A



## FIRE AND EXPLOSION

### 1 CONTAINMENT

Hazardous substances present:

N/A

Type of containment, if applicable:

N/A

No certified threat or potential threat because of waste types. -----

Therefore,  $SFE = 0$

(HRS User's Guide, pg. 49)

\* \* \*

### 2 WASTE CHARACTERISTICS

#### Direct Evidence

Type of instrument and measurements:

N/A

#### Ignitability

Compound used:

N/A

#### Reactivity

Most reactive compound:

N/A

#### Incompatibility

Most incompatible pair of compounds:

N/A

\* \* \*

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

N/A

whole page  
N/A

Basis of estimating and/or computing waste quantity:

N/A

\*\*\*

3 TARGETS

Distance to Nearest Population

N/A

Distance to Nearest Building

N/A

Distance to Sensitive Environment

Distance to wetlands:

N/A

Distance to critical habitat:

N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national state park, forest, or wildlife reserve, if 2 miles or less: \_\_\_\_\_

N/A

whole page  
N/A

Distance to residential area, if 2 miles or less: \_\_\_\_\_

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less: \_\_\_\_\_

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less: \_\_\_\_\_

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site? \_\_\_\_\_

N/A

Population Within 2-Mile Radius

N/A

Buildings Within 2-Mile Radius

N/A



DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None

HRS SCORE = 0

(USER GUIDE PG 57)

\*\*\*

2 ACCESSIBILITY

Describe type of barrier(s):

Site fenced, + locked - but no known 24 hour surveillance system -

(IRB site visit, 4/4/84)

HRS SCORE = 1

(USER GUIDE PG 57)

\*\*\*

3 CONTAINMENT

Type of containment, if applicable:

Effluent drain to ground - unknown whether surface soils contaminated. Much of site is covered with asphalt, but there is potential for contact with soil in some areas

\*\*\*

HRS score = 15

(User's Guide, pg. 59)

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Lindane  
Malathion  
Benlate  
Zineb

Compound with highest score:

Lindane Tox 3

HRS score 3

\*\*\* (User's guide, pg. 18)

5 TARGETS

Population within one-mile radius

Approximately 7800 people

HRS score: 4  
(users guide, p. 59)

(Based on 1980 census Data, office of financial management Olympia)  
Distance to critical habitat (of endangered species)

None known.

HRS score 0  
(users guide, p. 59)