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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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

**CERTIFIED MAIL**

September 7, 2007

Lloyd L. Groat & Netta E. Groat & Donald L. Groat  
Groat Brothers, Inc.  
608-618 West Scott Avenue  
Woodland, WA 98674

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**Re: Partial Sufficiency and Further Action Determination under  
WAC 173-340-515(5) for the following Hazardous Waste Site:**

- Name: Groat Brothers/Former Service Station
- Address: 608 West Scott Avenue, Woodland, WA 98674
- Facility/Site No.: 5365021
- VCP No.: SW0519

Dear Lloyd L. Groat and Netta E. Groat and Donald L. Groat:

Thank you for submitting your independent remedial action report for the Groat Brothers/Former Service Station facility (Site) for review by the State of Washington Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding whether further remedial action is necessary at the Site to meet the substantive requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC. Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. 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). The opinion is advisory only and not binding on Ecology.



Ecology's Toxics Cleanup Program has reviewed the following information regarding the Site:

1. Phase II Limited Investigation Report, Environmental Management, Inc., September 2002
2. Oil-Water Separator System Evaluation, Maul Foster Alongi, February 2003
3. Geophysical Survey, Maul Foster Alongi, February 2003
- ~~4. Dry Well Investigation, Maul Foster Alongi, March 2003~~
5. Site Investigation Report, Maul Foster Alongi, June 2003
6. Dry Well Removal, Maul Foster Alongi, November 2003
7. The Consultant Letter, Maul Foster Alongi LLC, March 2004
8. The Consultant Letter, Maul Foster Alongi, April 2005
9. Groundwater and Soil Characterization at Groat Brothers, Inc. Former Service Station, June 14, 2007

The documents listed above will be kept in the Central Files of the Southwest Regional Office of Ecology SWRO for review by appointment only. Appointments can be made by calling the SWRO resource contact at 360-407-6365.

The Site is defined by the extent of contamination caused by the following release(s):

- Diesel Range Organics in Ground Water
- Tetrachloroethene (PCE) in Ground Water

The Site is more particularly described in Enclosure A to this letter, which includes a detailed Site diagram. The description of the Site is based solely on the information contained in the documents listed above.

Based on a review of the independent remedial action report and supporting documentation listed above, **Ecology has determined that the independent remedial action(s) performed at the Site are sufficient to meet the substantive requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s):**

- Tetrachloroethene (PCE) in Ground Water

**However, the independent remedial action(s) performed at the Site are not sufficient to meet MTCA's substantive requirements for characterizing and addressing the following release(s):**

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- Diesel Range Organics in Ground Water (boring GP-79)

Therefore, pursuant to WAC 173-340-515(5), Ecology is issuing this opinion that **further remedial action is necessary** at this Site under MTCA.

Diesel-range organics were measured at 3,000 µg/l in groundwater under the service station building at test location GP-79. The concentration of Diesel-range organics exceeds the MTCA Method A cleanup level of 500 µg/l at the point of compliance. Therefore, a feasibility study in accordance with WAC 173-340-350 (8) should be conducted to determine if the applicant has considered all the permanent remedial action alternatives with respect to groundwater contamination at GP-79. Ecology will review the remedial action alternative/feasibility study and provide feedback. Table 1 in June 14, 2007 report shows the groundwater samples from DW-1-GW-12.0 and DW-1-GW-20.0 were collected on 10/13/2007. Please correct the date in Table 1 and submit a corrected copy of the Table 1 for Ecology's record.

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

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Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at 360-407-6256.

Sincerely,



Mohsen Kourehdar, P.E.  
Toxics Cleanup Program  
Southwest Regional Office

MK/ksc:September 2007 partial sufficiency FA

Enclosures: Attachment A

cc: Cowlitz County Health Department  
Maul Foster Alongi  
Bob Warren, Department of Ecology

### ENCLOSURE A

The site was used as a gasoline retail station, and automobile repair shop from 1967 to approximately 1990. The site is located in Woodland, Cowlitz County, Washington. **Figure 1** shows the layout of the service station with approximate location of former diesel Above-ground Storage Tanks (ASTs), gasoline Underground Storage Tanks (USTs), former pump island, stormwater catch basin, a dry well, and the former service station septic drain field. The application for the VCP shows there were four underground storage tanks (USTs) at the site with capacities of; 1,000 gallon waste oil tank removed in 2003, two gasoline 6,000 gallon USTs removed in 1990 and a 8,000 gallon gasoline UST removed in 1990.

During 2002, 2003 and 2004 several phases of push probe soil and groundwater investigation had been performed to determine the extent of soil and groundwater contamination at the site.

Also during the 2003, the oil-water separator discharge line was evaluated to see if oil-water separator is tied into the septic tank and/or if the septic system received discharge of oil from the service station operations associated with the former pump. During this evaluation it was concluded that the drain line from the oil-water separator attached to the dry well at the site. Geophysical survey was performed to locate the position of drain lines, sewer lines, a septic tank, and a 1,000 gallon UST. It was concluded that the hydraulic lifts were connected to the 1,000 gallon UST. In 2003, a geophysical survey was performed to locate the position of drain lines, sewer lines, a septic tank and a 1000-gallon underground storage tank (UST). Based on the geophysical survey, it was concluded that a 1000-gallon UST may have been connected to hydraulic lifts. The UST contained approximately 675-gallons of waste oil. The double chamber sump did not appear to be connected to the 1,000 gallons UST. It was recommended that oily water contained in the double-chambered sump should be removed and properly disposed off-site, and the 1000 gallon UST should be registered with Ecology and UST should be decommissioned according to the State's Law.

The soil and groundwater investigation from 2002-2004, did point to surface soil petroleum contamination all below MTCA Method A Cleanup standards. Except in the areas around the dry well and sample No. GP-79 approximately 16 feet southwest of dry well, a groundwater concentration of 3,000 µg/l was detected for diesel-range organics. Figure 1 shows the location of the GP-79. Table A shows the contaminated areas around the dry well. The soil push probe samples were extended to 20 feet bgs and groundwater samples were taken from top of the

groundwater table at approximately 6 feet bgs. The soil and groundwater samples were tested for gasoline range organics, diesel-range organics, heavy oil organics, Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), total cadmium, total chromium, and total lead. After this phase of investigation, the dry well was removed and 72 tons of contaminated soil was excavated and disposed of off-site.

**Table A:** Shows the results of testing from **Dry Well'** soil and groundwater. The **bold values** are exceeding the MTCA soil and groundwater Method A cleanup standards.

Parameters	Soil, mg/kg	Groundwater, ug/l
Gasoline range organics	<b>410</b>	<b>2,600</b>
Diesel-Range Organics	<b>16,000</b>	<b>590,000</b>
Heavy Oil Organics	<b>44,000</b>	<b>1,800,000</b>
Benzene	.120	<b>5.3</b>
Tetrachloroethene (PCE)	1.3	<b>14</b>
Total Cadmium	1.4	<b>161</b>
Total Lead	90.0	<b>8,630</b>
Total Chromium	<b>47.4</b>	<b>3,640</b>

Ecology issued an opinion letter on **June 10, 2006**, requiring the applicant to define the extent of groundwater contamination for TCE around the former drywell area and diesel contamination around GP-79. GP-79 showed a

concentration of 3,000 µg/l of diesel-range organics, which is above the groundwater MTCA Method A cleanup level of 500 µg/l. In response to Ecology's opinion letter, the applicant conducted a soil and groundwater study at the site. The results were reported to Ecology on **June 18, 2007**.

To determine the extent of vertical migration of PCE in groundwater in the former drywell area, Geoprobe boring GP-85 was advanced to 50 feet bgs. Two groundwater samples were collected from 30.5-34.5 feet bgs and 40.5-44.5 feet bgs. The groundwater samples were analyzed by Method SW8260B. In addition to PCE, Trichloroethene (TCE), Vinyl Chloride, cis-1,2-Dichloroethene, and trans-1,2-Dichloroethene known to be breakdown products' of PCE were also tested. Table B summarizes groundwater results before and after the former drywell removal. The removal consisted of excavation and disposal of 72 tons of soil around the former drywell (excavation depth was 10 feet bgs.) The concentration of PCE and other breakdown products' of PCE are below MTCA groundwater cleanup levels.

**Table B:** Showing PCE and breakdown products' concentration.

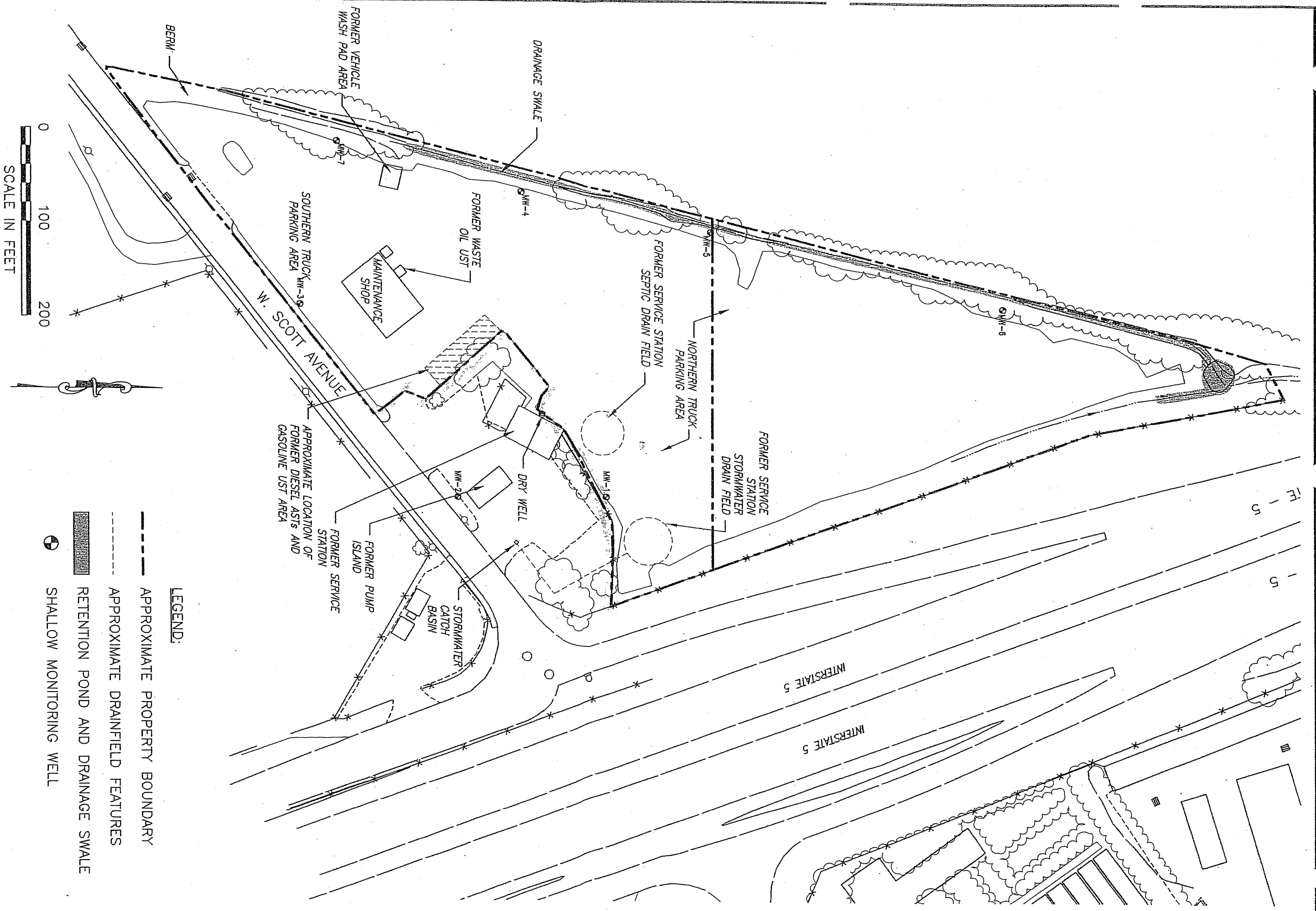
Date/location	PCE, groundwater, µg/l	TCE, µg/l	Chloroform, µg/l	Vinyl Chloride, µg/l	cis-1,2-Dichloroethene, µg/l	trans-1,2-Dichloroethene, µg/l
2003, dry well, 5.5-6 feet	14 <sup>(1)</sup>	<0.50 <sup>(1)</sup>	0.63 <sup>(1)</sup>	<0.50 <sup>(1)</sup>	<0.50 <sup>(1)</sup>	<0.50 <sup>(1)</sup>
2003/excavation water after dry well removal	<1.0 <sup>(2)</sup>	<1 <sup>(2)</sup>	1.74 <sup>(2)</sup>	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>
2004, 12-16 feet, push probe sampling	1.1 <sup>(2)</sup>	<0.50 <sup>(2)</sup>	2.1 <sup>(2)</sup>	<0.50 <sup>(2)</sup>	<0.50 <sup>(2)</sup>	<0.50 <sup>(2)</sup>
2004, 20-24 feet, push probe sampling	<0.50 <sup>(2)</sup>	<0.50 <sup>(2)</sup>	<0.50 <sup>(2)</sup>	<0.50 <sup>(2)</sup>	<0.50 <sup>(2)</sup>	<0.50 <sup>(2)</sup>
2007, 30.5-34.5 feet bgs, push probe sampling	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>	NA	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>
2007, 40.5-44.5 feet bgs, push probe sampling	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>	NA	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>	<1 <sup>(2)</sup>
MTCA Method A Groundwater Cleanup Levels	5	3	7.2 <sup>(3)</sup>	0.20	70 <sup>(4)</sup>	100 <sup>(4)</sup>

- (1) Prior to drywell removal
  - (2) After dry well removal
  - (3) Method B MTCA Groundwater Water Cleanup Levels
  - (4) Federal Primary maximum contaminant level (MCL)
- NA, not analyzed

In order to determine the extent of soil contamination around GP-79, two borings, GP-86 and GP-87 were completed to depths of 15 feet and 10 feet bgs, respectively. Soil samples were collected at 3.5 feet bgs in GP-86, and GP-87, above the groundwater table. Water samples were collected at intervals within 4-8 feet bgs in GP-86 and within 5.5-9.5 feet bgs in GP-87. Soil and groundwater samples were tested for **Diesel-range and Oil-range organics**. All the test results for the soil and groundwater showed non-detect. It appears the diesel contamination is localized under the building around GP-79.



LAYOUT: 1



- LEGEND:**
- APPROXIMATE PROPERTY BOUNDARY
  - - - APPROXIMATE DRAINFIELD FEATURES
  - ▒ RETENTION POND AND DRAINAGE SWALE
  - SHALLOW MONITORING WELL

Vancouver: (360) 694-2691  
 Portland: (971) 544-2139

**MAUL  
FOSTER  
ALONGI INC.**

DATE	06/02/04
DWN.	JLN
APPR.	ESL
REVIS.	
PROJECT NO.	8006.07.02

Figure 1  
 GROAT BROTHERS, INC.  
 WOODLAND, WASHINGTON

**SITE MAP**