

**Site Hazard Assessment
Summary Score Sheets
January 6, 2006**

Site Name:	Schleuter Property	Section: Township: Range	18 27N 5E
Site Address	1515 196 th St SE	Ecology Facility Site ID	2886743
City: County: State: Postal Code:	Bothell Snohomish WA 98012	ERTS	545943
Lat:	47° 49' 13.19		
Long:	122° 12' 42.08		

Site Summary:

Site Location and Description

The Schleuter property is located 1515 196th St. SE Bothell and will here after be referred to as the site. The site is located one-quarter mile west of the Bothell Everett Hwy. The site is less that 100 feet northeast of North Creek, which is a year round creek that flows to the Sammamish River, and eventually to Lake Washington. The site is surrounded by rural/residential properties. The site is vacant. It appears to be partially developed with light industrial remnants. Portions of the property are covered with high grass and Alder trees. The site consists of several structures, including a red barn located on the western most portion of the property. Close to the center of the property there is an open walled, covered and paved work area. The footprint of the paved area extends from under the cover 30-40 feet to the south. To the east of the paved area is an enclosed production facility. On the east side of this production facility is a graded, graveled space approximately one half acres in size. The rest of the property is overgrown with high grass and scrub weeds. See Figure 1.

Site History

On September 1, 2000, the Snohomish Health District (SHD) received a complaint concerning the possible dumping of oil and antifreeze into North creek. The complaint also noted that contaminated soils had been brought from a Seattle shipyard to the northwest corner of the property.

Deanna Colon, of the SHD initially responded to the complaint. She noted considerable soil staining around the concrete pad, and on the eastern, graded

portion of the property. The complaint was, in turn, assigned to Gary Hanada and Geoffrey Crofoot who conducted a routine site visit on September 22, 2000, for the purposes of an initial investigation (II).

They confirmed soil staining on the northeast portion of the property. Dumping into North Creek was not confirmed.

The staining appeared to be leaked or spilled petroleum products. The stains accounted for approximately 20 square feet of contamination. Use of the Photoionization Detector (PID) at the time of the site visit did not indicate elevated levels of Volatile Organic Compounds (VOC's.) Suspected pollutants in this area were heavy oils, diesel and, potentially, metals.

They noted imported piles of soil on the western side of the property approximately 50-70 feet north of 196th SE. The piles of soils can be clearly seen from 196th St. SE. At the time of the September 22, 2000, site visit, the soils appeared to have been in place for several years due to the degree of vegetation uniformly covering the top of the piles. No stressed vegetation in this area was noted.

Mr. Crofoot and Mr. Hanada spoke with the closest neighbor to the west who noted that in order to dump into the creek a person would have to access her property. She said she would have probably seen suspicious activity since she is at home most of the time. She noted that the property in question had been used as a construction yard where machinery was stored.

No samples were taken at the time of inspection.

As a result of the inspection a letter was drafted and sent on November 3, 2000, to the property owner, Heluth and or Anne Schlueter. The letter requested permission to re-access the property and take soil samples. On November 11, 2000, Jeral Stewart, a part owner, responded to the letter by phone and stated that he did not want the SHD on his property. As a result, no samples were collected at the site.

Due to the lack of analytical evidence and the observed staining the SHD recommended to Ecology that the site be listed on the Confirmed and Suspected Contaminated Sites (CSCS) list.

On August 8, 2003, the SHD received a complaint at the site regarding illegal dumping. On August 19, 2003, Melissa Spencer of the SHD investigated the complaint and confirmed the dumping of various material including garbage, junked cars, furniture and appliances.

On October 20, 2003, a an illegal-dumping cleanup crew funded by a Snohomish County grant noted that a silver trailer parked at the site smelled strongly of ammonia. Ammonia manufacturing as part of a methamphetamine lab was suspected and Ecology Spill Response was called to the site. Ecology removed the manufacturing material (propane tank) and the trailer was subsequently demolished. No further action was taken by the SHD regarding the possible

methamphetamine lab, as the site appeared to be more of a dumpsite for methamphetamine production components rather than a manufacturing site.

On March 15, 2004, the SHD received another complaint concerning illegal dumping at the site. On March 18, 2004, the complaint was confirmed. In addition, the vacant property appeared to be a haven for vagrants and drug activity.

On August 2, 2004, yet another complaint was received regarding illegal dumping at the site. Melissa Spencer of Snohomish County Health District confirmed the violations. At the time of the complaint there appeared to be another on-going meth lab investigation/action at the site.

On January 26, 2005, the SHD received an ERTS referral from Ecology regarding the site. The ERTS referral noted that the site had many leaking drums of chemicals and piles of material that look like sand blasting grit. The complaint also noted pallets of asbestos.

Considering the history of the site, the SHD planned to conduct a site visit with the intention of collecting soil samples

Recent Sampling Events

On February 9, 2005, the SHD collected eight samples from in a rough line extending across the approximate center of the property in an east/west orientation.

The SHD looked for low areas where standing water may have occurred, soil staining, and areas of stressed vegetation.

Both channel samples and discrete samples were collected where appropriate. Analysis included NWTPH Dx and metals (As, Cd, Cr, and Pb.) Please see Table 1 which details the sampling activities. Simple jar packing methods were used for the aforementioned analysis as no volatiles analyses were planned. Soil was collected in 4oz glass jars and sealed with Teflon coated lids. Containers were placed on double-bagged ice packets and stored in a cooler for export to the lab. Samples were sent to Edge Analytical in Burlington, WA for analysis.

Sample locations were photographed and a GPS unit was used to determine the latitude and longitude of the location.

See the attached figure one which site map for sample locations.

Surface Water and Ground Water Features

As previously mentioned, the site is less that 100 feet northeast of North Creek, which is a year round creek that flows to the Sammamish River, and eventually to Lake Washington. Well logs indicate that wells are completed in the range of 26 to 210 feet below the grounds surface.

Ground and Surface Water Uses

Fifty-two drinking water wells were located within an approximate two-mile radius of the site. A population of 156 appears to be served by ground water in the area. Wells are completed with in the range of 26 to 210 feet below ground surface (bgs.) Static water levels range from 8 feet bgs to 110 bgs.

151.75 acres of land are irrigated by surface water downstream of the site. 150.25 acres are irrigated with well water within two miles of the site. The Alderwood Water District serves the area. The Alderwood Water District receives water from the City of Everett. Neither the Alderwood nor Everett water systems have surface water collection within two miles of the site.

Compounds of Concern and Sampling Results

The compounds of concern at the site heavy metals cadmium and lead (Cd and Pb) and lube oil range hydrocarbons. The compounds of concern were selected because soil staining with observable oil-like wastes were observed at the site. Meth lab components were not sampled for as no released were observed. Metals were considered because the original complainant had noted that soils imported to the site originated from dredging operation thought to be contaminated with heavy metals. Impacts to soil have been confirmed with soil sampling.

Areas of Impact

The area of impact is soil. The area on the northeast portion of the red barn identified as S-S5 has levels of NWTPH heavy oil and lead are considerably higher than the MTCA Method A clean up levels for soil. It is noteworthy that sample S-S5 was collected from a small area that has TPH contamination with waste oil. Additional areas of impact are the piles of clay-like material found at the site. The piles have levels of Cd that exceed MTCA Method A levels for soil.

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

Soil samples confirm NWTPH heavy oil contamination in the soil at this site. Soil sampling has confirmed the presence of cadmium at the site in levels that exceed MTCA method A clean up standards for soil. For these reasons the SHD recommends that the site should be scored and ranked under the Washington Ranking Method (WARM).

Table 1

February 9, 2005

SHD Soil Sampling @ 1515 196th ST SE

Schleuter Site

Analysis →		As	Cd	Cr	Pb	NWTPH Dx	NWTPH Heavy Oils
MTCA Method A Clean-up Level →		20	2	19/20 00	250	2000	2000
Location ↓	Sample Depth ↓						
S-S1	16 inches	8.01	2.51	31.53	16.36	ND	ND
S-S2	0-14 inches	14.52	1.94	21.71	17.92	ND	ND
S-S3	6-19 inches	10.83	1.52	16.03	13.22	ND	ND
S-S4	10 inches	4.00	1.3	27.49	6.06	ND	ND
S-S5	3-4 inches	6.85	2.10	36.0	*748	ND	*70,000
S-S6	10 inches	10.37	1.71	32.51	5.16	NA	NA
S-S7	10 inches	4.01	2.59	36.68	4.45	NA	NA
S-S8	10 inches	4.78	2.82	78.0	5.10	NA	NA

All results are noted in mg/kg unless otherwise noted

Bold type depicts MTCA exceedances.

ND = Non-Detect

NA = Analysis not performed

* = Sample collected in a highly contaminated area below a leaking 5 gallon oil bucket

ROUTE SCORES:

Surface Water/Human Health: 7.9 Surface Water/Environ.: 23.4
Air/Human Health: 21.3 Air/Environmental: 2.5
Ground Water/Human Health: 33.9

OVERALL RANK: 4

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source:1

Cadmium
Lead TPH

Explain basis for choice of substance(s) to be used in scoring.

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

List those management units to be considered for scoring: Source:1, 2

Contaminated on-site limited to subsurface soils.

Explain basis for choice of unit to be used in scoring.

Chemical analyses of on-site surface soils indicated concentrations of Cadmium that exceed Method A MTCA clean up levels for soils.

2. AIR ROUTE

List those substances to be considered for scoring: Source:1, 2

Cadmium
Lead, TPH

Explain basis for choice of substance(s) to be used in scoring.

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

List those management units to be considered for scoring: Source:1,2

Contamination-site limited to subsurface soils.

Explain basis for choice of unit to be used in scoring.

Chemical analyses of on-site surface soils indicated concentrations of Cadmium that exceed Method A MTCA clean up levels for soils.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source: 1,2

Cadmium
Lead, TPH

Explain basis for choice of substance(s) to be used in scoring.

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

List those management units to be considered for scoring: Source: 1,2

Contamination on-site in subsurface soils.

Explain basis for choice of unit to be used in scoring.

Chemical analyses of on-site surface soils indicated concentrations of Cadmium that exceed Method A MTCA clean up levels for soils.

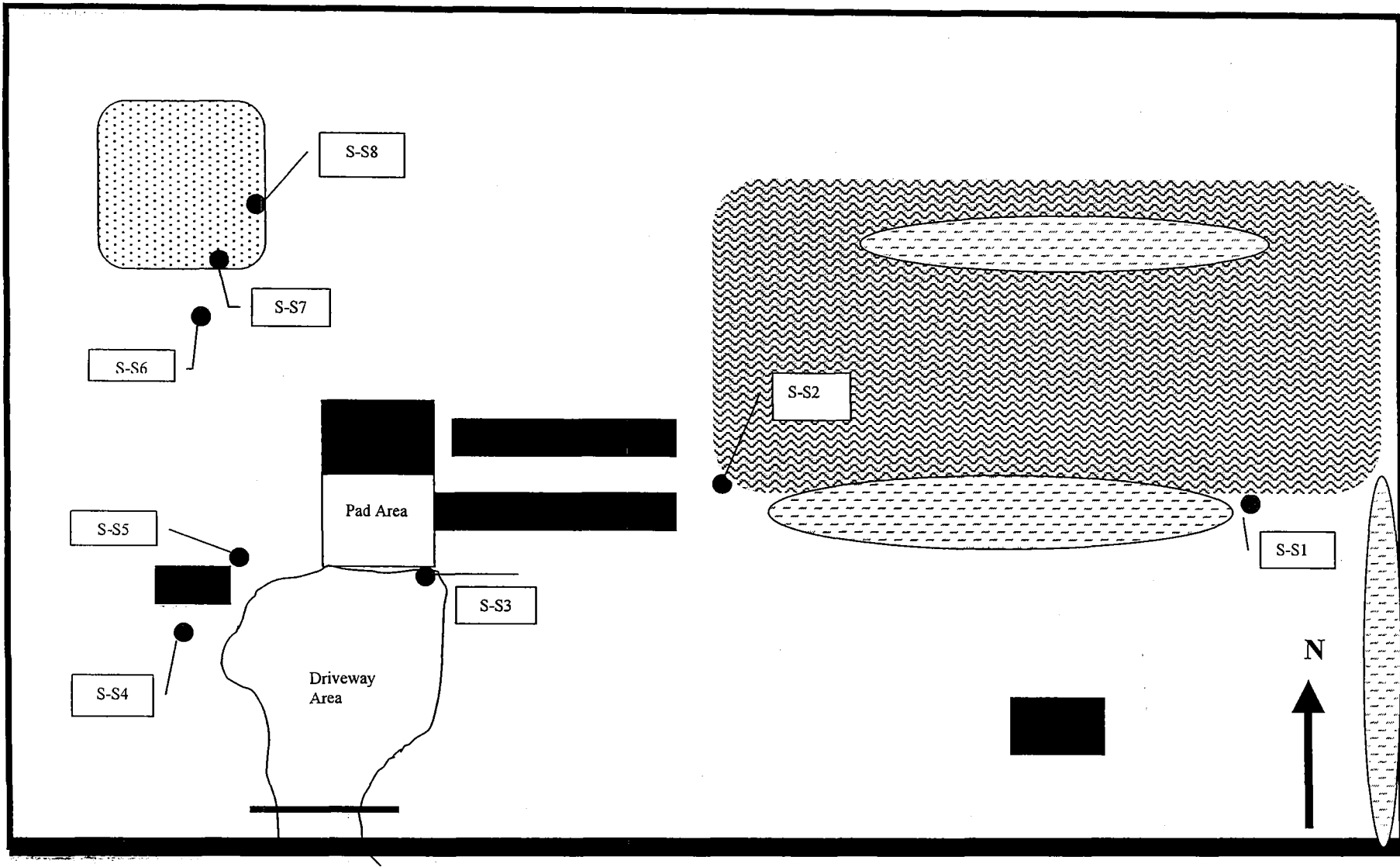







Figure 1
 Schleuter Property
 1515 196th Street SE
 February, 2005
 Snohomish Health District

Areas of Illegal Dumping	
Structures	
Sample Areas	
Fill Area	
Open Graveled Area	

**WORKSHEET 4
SURFACE WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS**1.1 Human Toxicity**

Substance	Drinking Water Standard (ug/l)	Acute Toxicity		Chronic Toxicity		Carcinogenicity			
		Val.	(mg/kg-bw)	Val.	(mg/kg/da)	Val.	WOE	PF	Val.
1 Cadmium	5	8	225	5	0.005	5	B1	ND	X
2 Lead	5	8	ND	x	0.001	10	B2	ND	x

Source: 1,2,3,Highest Value: 82 Bonus Points? 2Final Toxicity Value 12**1.2 Environmental Toxicity**

Substance	(X) Freshwater () Marine Acute Criteria (ug/l)	Val.	Non-human Mammalian Acute Toxicity		Source: <u>1,2,3</u> Value: <u>8</u>
			(mg/kg)	Val.	
1 Cadmium	3.9	8			
2 lead	82	6			

1.3 Substance quantitySource: 1,2,3 Value: 1

Explain basis: Unknown quantity. Use default of 1.

**WORKSHEET 5
AIR ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual) - Please review before scoring.

1.2 Human Toxicity

Substance	Air Standard	Acute Toxicity		Chronic Toxicity		Carcinogenicity			
	(ug/m3)	Val.	(mg/kg)	Val.	(mg/kg/da)	Val.	WOE	PF	Val.
1 Cadmium	0.00056	10	25	10	ND	X	B1	6.1	6
2 Lead	0.5	10	ND	X	ND	X	B2	ND	X

Source: 1,2,3
Highest Value: 10
2 Bonus Points? 2
Final Toxicity Value 12

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility

Vapor Pressure (s):

NA

Source: 1,2,3 Value: 0

1.3.2 Particulate Mobility

Soil type: Sandy loam

Erodibility: 86

Climactic Factor: 1 to 10

1

Source: 1,2,3 Value: 1

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

equals

Final Matrix Value: 6

1.5 Environmental Toxicity/Mobility

Source: 1,2,3

Non-human Mammalian

Substance	Inhal. Toxicity (mg/m ³)	Value	Mobility	Value	Matrix Value
1 Cadmium	25	10	1	1	5

Highest Environmental Toxicity Matrix Value

Source: 1,2,3 Value: 5

**WORKSHEET 5 (CONTINUED)
AIR ROUTE**

1.6 Substance Quantity: Unknown use default of one.
Explain basis

Source: 1,2,3 Value: 1

2.0 MIGRATION POTENTIAL

2.1 Containment: uncontaminated soil less than 2 feet thick

Source: 1,2,3 Value: 5

3.0 TARGETS

3.1 Nearest Population: Less than 1000 feet to the south

Source: 16, 17 Value: 10

3.2 Distance to, and Name (s) of, Nearest Sensitive
Environment (s) 4655 feet to North Creek Park

Source: 5, 6 Value: 1

3.3 Population within 0.5 miles: sq rt of 3086 56

Source: 16 Value: 56

4.0 RELEASE

Explain basis for scoring a release to air:
no confirmed release

Source: 1,2,3 Value: 0

**WORKSHEET 6
GROUND WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/da)	Val.	Carcinogenicity			
							WOE	PF	Val.	
1 Cadmium	5	5	8	225	5	0.005	5	B1	ND	X
2 Lead	5	5	8	ND	x	0.001	10	B2	ND	x

Source: 1, 2, 3
Highest 8
2 Bonus: 2
Final Toxicity Value: 12

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions Cd is 3

Source: 1, 2, 3 Value: 3

OR
Solubility (mg/l)

1.3 Substance Quantity Unknown Quantity use Default of 1
Explain basis:

Source: 1, 2, 3 Value: 1

2.0 MIGRATION POTENTIAL

2.1 Containment Spill to soil
Explain basis:

Source: 1, 2, 3 Value: 10

2.2 Net Precipitation: 22.8-5.9= 16.9 inches

Source: 1, 2, 3, 4 Value: 2

2.3 Subsurface Hydraulic Conductivity: 10-7 to 10-5

Source: 1, 2, 3, 9 Value: 2

2.4 Vertical Depth to Ground Water: 0-25 feet to gw for local wells

Source: 9, 10 Value: 8

**WORKSHEET 6
GROUND WATER ROUTE**

3.0 TARGETS

- 3.1 Ground Water Usage: Private supply but alternative source available Source: 7, 9, 10 Value: 4
- 3.2 Distance to Nearest Drinking Water Well: 855 feet to the southwest Source: 9, Value: 4
- 3.3 Population Served within 2 Miles: Sq Rt of 156=12.4 Source: 16 Value: 12
- 3.4 Area Irrigated by (Groundwater) Wells within 2 miles: .75(sq. Rt 0) Source: 7, 16 Value: 0

4.0 RELEASE

- Explain basis for scoring a release to ground water: No confirmed release to ground water Source: 1, 2, 3 Value: 0

Sources Used in Scoring

1. Washington Department of Ecology and SHD, "Schlueter Initial Investigation File."
2. Washington Department of Ecology, WARM Scoring Manual, April, 1992.
3. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
4. National Weather Service, Washington Climate Data, Snohomish County
5. U.S.G.S. Topo. Map, Bothel Quad., 7.5 Min. Series, Photorev. 1973.

6. Washington Department of Ecology, Water Rights Application Tracking System
7. Washington Department of Health, SADIE
8. Soil Conservation Service, Soil Survey of Snohomish County Area, July 1983.
9. Washington Department of Ecology, Online Well Log Search
<http://apps.ecy.wa.gov/wellog/>
10. Department Of The Interior, US Geologic Survey, Geologic Map of the Everett 7.5 Minute Quad, James P. Minard, 1985
11. Snohomish County Aerial Photograph, S18 /T27N /R5E, 1947-2003.
12. Metro Scan for Windows, 2000
13. FIRM Flood Maps
14. Thomas Guide, 2004
15. EPA Enviromapper Store Front
<http://www.epa.gov/enviro/html/em/index.html>
16. Snohomish County Assessors/Treasurers On-line information page.
<http://198.238.192.103/propsys/Asr-Tr-PropInq/Prplnq01-Entry.asp>