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Swinomish Indian Tribal Community

OFFICE OF PLANNING & COMMUNITY DEVELOPMENT

11430 Moorage Way
La Conner, WA 98257

30 September 2010

To whom it may concern,

From: Jon Boe, Environmental Specialist, Swinomish Planning Department

Subj: Due diligence re the disposal of the Skagit Plastics debris pile refuse located on the McGlinn Island causeway (Swinomish Reservation, La Conner, WA).

Author's qualifications: I have a master's degree in environmental science from Western Washington University and have been employed as an environmental specialist with the Swinomish Planning Department for nearly three years. I have authored four Brownfields Phase I environmental site assessments for areas on the Swinomish Reservation. I collaborated with an environmental contractor to complete the Phase II environmental assessment of potentially contaminated sites on the Swinomish Reservation. This involved substantial sampling and analysis of suspected contaminated material, as well as the development of cleanup proposals.

During a 2008 brownfields assessment of tribal trust lands on the Swinomish Reservation, a debris pile was discovered on the dredge spoil causeway between McGlinn Island and the town of La Conner. This property became part of the Swinomish Reservation and came into tribal trust status in 1992. The subject pile has been overgrown in Blackberries and assorted brush and trees for many years. Analysis of historic aerial photos suggested some unregulated dumping of refuse began at the site as far back as the 1960s. A physical examination of the pile suggests the bulk of it is debris associated with fiberglass boat manufacture. The origin of this was most likely the Skagit Plastics boat factory, which previously existed several hundred feet to the north of the current pile, and which burned in the 1980s. The debris in the pile is generally well mixed with soil and sand. A portion of the pile is metal refuse such as empty cans. No asbestos or petroleum material was physically evident and the refuse matrix had no significant odor. The debris pile has been exposed to the elements for an estimated 20-30 years. In the brownfields assessment, three screening samples from the pile were analyzed for asbestos, TPHs, SVOCs, TAL metals and dioxin/furans. The results of these tests are attached as Enclosure 1 (samples SP 10, 11, 12).

Several contaminants in the initial screening samples of the soil matrix were found to be above Washington State Model Toxics Control Act (MTCA) soil cleanup levels. These are highlighted in Enclosure 1 (dioxin/furans, cPAHs, total lead and total cadmium. No asbestos was detected in any of the screening samples.

Material is regulated as dangerous waste if it has one or more of the characteristics of a hazardous waste (ignitability, corrosivity, reactivity, or toxicity).

1. The material in the subject pile is not ignitable, corrosive, or reactive.
2. Dioxin/furan equivalent levels in the screening samples (which probably resulted from burned material in the pile) exceed only the most conservative criteria in the MTCA for soil cleanup actions. They are 2-3 orders of magnitude below the 1 part per billion land disposal criteria found in an EPA regulation search.
3. Total cPAH levels in the screening samples barely exceeded the most conservative soil cleanup levels in the MTCA. Total PAH concentration was 2-3 orders of magnitude below the 1% criteria Washington State uses for designation as a hazardous waste (persistent contaminants).
4. Lead and cadmium are among the 40 chemicals used for toxicity characterization based on leaching characteristics (Enclosure 2). Because lead and cadmium in the screening samples exceeded MTCA soil cleanup levels, these contaminants were given additional analysis.

Lead and cadmium (Pb and Cd) in the brownfields assessment screening samples were found at total levels that approached (Cd) or exceeded (Pb) the Toxic Characteristics Leaching Procedure (TCLP) total soil criteria and were subjected to TCLP analysis.

In late September 2010, eight test pits were dug into the pile down to the grade level of the original dredge spoils. Material from the vertical extent of each pit was consolidated in a stainless container and a 4 oz sample taken for TCLP analysis. Sampling procedures complied with the EPA approved quality control document prepared for the original Brownfields assessment screening samples. The laboratory report on the TCLP tests for lead and cadmium is attached as Enclosure 3. Lead and cadmium in all eight TCLP extract samples was either not detected or at estimated levels well below the TCLP criteria for toxics characterization.

Conclusion:

The results of both the screening and TCLP sampling and chemical analysis of the Skagit Plastics pile material, as well as the physical assessment and known history of the site, support characterization of the pile material as non-regulated waste, that can be disposed of as normal landfill waste.

A handwritten signature in black ink, appearing to be 'JRB' with a stylized flourish at the end.

**2008 Brownfields Phase II Environmental Site Assessment
Screening Results from the Skagit Plastics Debris Pile,**

(McGlenn Island Causeway, Swinomish Reservation, La Conner, WA)

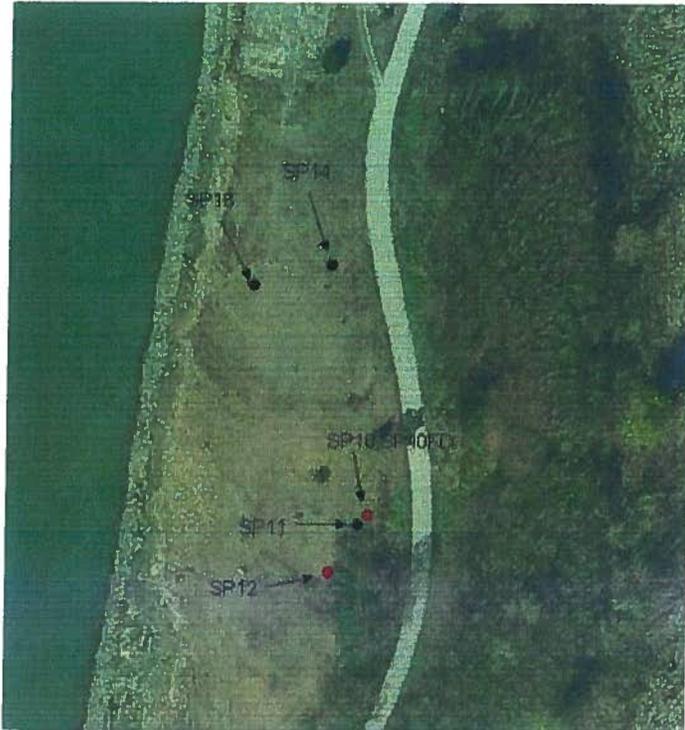


Figure 3-4 Skagit Plastics Area Sampling Locations – McGlinn Island

On October 30, 2008, five soil samples were collected from the Skagit Plastics Debris Area. Figure 3-4 shows the locations of samples SP10 through SP14. Samples SP10 through SP12 were collected from the perimeter of a partially buried debris pile along McGlinn Island Lane. Samples SP13 and SP14 were collected near the Reservation boundary. All five samples were submitted to Fremont Analytical to be analyzed for SVOCs and TAL metals and to Pace Analytical for dioxin/furan analysis. Samples SP10 through SP12 also were submitted for asbestos analysis at Fremont Analytical.

The concentration of benzo(a)pyrene-equivalent cPAHs in SP11 and SP12 were 0.1 mg/kg and 0.15 mg/kg, respectively (Table B-4). These concentrations slightly exceed the MTCA Method A cleanup level. The concentrations of cadmium in SP10 and SP12 were about 3 and 5 times the MTCA Method A cleanup level of 2 mg/kg, respectively. The concentration of lead in SP12 slightly exceeded the MTCA Method A cleanup level of 250 mg/kg. All other analytes detected in SP10 through SP14 were below MTCA Method A cleanup levels. Asbestos also was not detected in any of the soil samples submitted for analysis (Table B-5).

The dioxin/furan 2,3,7,8-TCDD TEQ levels in samples SP10 and SP12 were 54.1 ng/kg and 63.75 ng/kg, respectively (Table B-2). These concentrations are well above the calculated MTCA Method B cleanup level of 11 ng/kg. SP11 had detectable levels of dioxins/furans but did not have a 2,3,7,8-TCDD TEQ concentration at a level exceeding the MTCA cleanup level. Dioxins/furans detected in SP13 and SP14

Table B-5
Asbestos Sample Results
Front Street Site
 Swinomish Indian Tribal Community Phase II ESA
 LaConner, Washington

Sample ID	Sample Description	Non-Fibrous Materials	Other Fibrous Materials	% Other Fibrous Materials	Asbestos Type	% Asbestos
<i>Samples Collected October 30, 2008</i>						
SP10	Layer 1	Black Soil	Fine particles, Binder/Filler, Sand, Paint, Rusted Metal,	Cellulose Glass Fibers	NR NR	None Detected ND
SP11	Layer 1	Black Soil	Fine particles, Binder/Filler, Sand, Paint	Cellulose Glass Fibers Synthetic Fibers	NR NR NR	None Detected ND
SP12	Layer 1	Black Soil	Fine particles, Binder/Filler, Sand, Paint, Rusted Metal	Cellulose Glass Fibers Synthetic Fibers	NR NR NR	None Detected ND
AS4	<i>Samples Collected March 12, 2009</i>					
Layer 1	Black asphaltic fibrous material with granules	Asphalt/Binder, Granules	Cellulose	45%	None Detected	ND
Layer 2	Black asphaltic mastic	Asphalt/Binder, Mastic Binder	None Detected	ND	None Detected	ND
AS5						
Layer 1	Black asphaltic material	Asphalt/Binder	None Detected	ND	Chrysotile	5%
Layer 2	Black asphaltic fibrous material	Asphalt/Binder	Cellulose	48%	None Detected	ND
Layer 3	Black asphaltic material with granules	Asphalt/Binder, Granules	None Detected	ND	None Detected	ND
AS6						
Layer 1	Tan compressed fibrous material with paint	Fine particles, adhesive/binder, paint	Cellulose	97%	None Detected	ND

Table B-2
Dioxins/Furans in Soil Analytical Results
 Swinomish Indian Tribal Community Phase II ESA
 LaConner, Washington

Sample ID:			L15	L16	L17	SP10	SP10-FD
Sample Date:			10/30/2008	10/30/2008	10/30/2008	10/30/2008	10/30/2008
Analysis Date:			11/14/2008	11/14/2008	11/14/2008	11/14/2008	11/14/2008
Sample Description:			Soil	Soil	Soil	Soil	Soil
Units:			ng/kg	ng/kg	ng/kg	ng/kg	ng/kg
Congener	TEF	Soil Screening Criteria					
2,3,7,8-TCDF	0.1		0.15	0.00	0.77	34.0	36.0
2,3,7,8-TCDD	1		1.70	0.00	1.00	1.5	1.2
1,2,3,7,8-PeCDF	0.05		0.28	0.00	0.00	20.0	18.0
2,3,4,7,8-PeCDF	0.5		0.00	0.14	0.00	58.0	44.0
1,2,3,7,8-PeCDD	0.5		11.00	0.78	2.30	6.1	5.0
1,2,3,4,7,8-HxCDF	0.1		0.00	0.00	0.18	33.0	31.0
1,2,3,6,7,8-HxCDF	0.1		0.97	0.00	0.00	26.0	23.0
2,3,4,6,7,8-HxCDF	0.1		1.00	0.31	0.00	37.0	33.0
1,2,3,7,8,9-HxCDF	0.1		0.00	0.00	0.00	8.6	6.9
1,2,3,4,7,8-HxCDD	0.1		19.00	0.82	1.70	6.2	5.2
1,2,3,6,7,8-HxCDD	0.1		32.00	2.00	3.20	12.0	10.0
1,2,3,7,8,9-HxCDD	0.1		47.00	2.20	3.80	11.0	9.4
1,2,3,4,6,7,8-HpCDF	0.01		0.00	1.70	0.76	85.0	0.0
1,2,3,4,7,8,9-HpCDF	0.01		0.64	0.00	0.00	13.0	9.4
1,2,3,4,6,7,8-HpCDD	0.01		590.00	33.00	22.00	120.0	110.0
OCDF	0.001		19.00	2.20	0.65	110.0	73.0
OCDD	0.001		1500.00	160.00	30.00	460.0	450.0
TEQ		11 ng/kg	24.651	1.502	3.373	54.080	43.767

Exposure Point Concentration Calculations for Site Sample Areas			
Samples	Average	Standard Deviation	95% UCL
	ng/kg	ng/kg	ng/kg
Lime Storage Area	9.84	12.86	31.52
Skagit Plastics Area	24.72	31.47	54.73

Table Key:

FD	Field Duplicate
HxCDD	hexachlorodibenzo-p-dioxin
HxCDF	hexachlorodibenzo-p-furan
HpCDD	heptachlorodibenzo-p-dioxin
HpCDF	heptachlorodibenzo-p-furan
ID	Identification
L	Lime Storage Area
ng/kg	nanograms per kilogram
OCDD	octochlorodibenzo-p-dioxin
OCDF	octochlorodibenzo-p-furan
PeCDD	pentachlorodibenzo-p-dioxin
PeCDF	pentachlorodibenzo-p-furan
SP	Skagit Plastics
TCDD	tetrachlorodibenzo-p-dioxin
TCDF	tetrachlorodibenzo-p-furan
TEF	Toxic Equivalency Factors
TEQ	Toxic Equivalency
UCL	Upper Confidence Limit

Table B-2
Dioxins/Furans in Soil Analytical Results
 Swinomish Indian Tribal Community Phase II ESA
 LaConner, Washington

Sample ID:			SP11	SP12	SP13	SP14
Sample Date:			10/30/2008	10/30/2008	10/30/2008	10/30/2008
Analysis Date:			11/14/2008	11/15/2008	11/14/2008	11/14/2008
Sample Description:			Soil	Soil	Soil	Soil
Units:			ng/kg	ng/kg	ng/kg	ng/kg
Congener	TEF	Soil Screening Criteria				
2,3,7,8-TCDF	0.1		3.90	29.0	0.000	0.000
2,3,7,8-TCDD	1		0.44	3.7	0.000	0.000
1,2,3,7,8-PeCDF	0.05		2.10	21.0	0.080	0.000
2,3,4,7,8-PeCDF	0.5		5.50	53.0	0.110	0.140
1,2,3,7,8-PeCDD	0.5		0.68	14.0	0.000	0.170
1,2,3,4,7,8-HxCDF	0.1		2.70	34.0	0.000	0.180
1,2,3,6,7,8-HxCDF	0.1		1.90	33.0	0.120	0.000
2,3,4,6,7,8-HxCDF	0.1		2.50	47.0	0.190	0.000
1,2,3,7,8,9-HxCDF	0.1		0.00	8.8	0.000	0.098
1,2,3,4,7,8-HxCDD	0.1		0.80	13.0	0.150	0.220
1,2,3,6,7,8-HxCDD	0.1		1.40	31.0	0.180	0.310
1,2,3,7,8,9-HxCDD	0.1		1.40	22.0	0.000	0.000
1,2,3,4,6,7,8-HpCDF	0.01		0.00	110.0	0.000	0.640
1,2,3,4,7,8,9-HpCDF	0.01		0.78	8.9	0.000	0.000
1,2,3,4,6,7,8-HpCDD	0.01		18.00	210.0	1.300	1.700
OCDF	0.001		9.10	40.0	1.600	1.300
OCDD	0.001		75.00	390.0	7.300	10.000
TEQ		11 ng/kg	5.367	63.749	0.145	0.271

Table B-4
McGlinn Island and Causeway Sample Results
 Swinomish Indian Tribal Community Phase II ESA
 LaConner, Washington

Sample ID:		BD10	BD10-FD	SP10	SP11	SP12
Sample Date:		11/12/2008	11/12/2008	10/30/2008	10/30/2008	10/30/2008
Sample Description:		Soil	Soil	Soil	Soil	Soil
Units:		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte Name	CAS #					
Total Petroleum Hydrocarbons						
TPH, diesel range organics		20 U	20 U			
TPH, mineral oil		40 U	40 U			
TPH, heavy oils		80	60			
SVOCs						
1-Methylnaphthalene	90-12-0	0.1 U		0.1 U	0.1 U	0.1 U
1,2-Dinitrobenzene	528-29-0	0.1 U		0.1 U	0.1 U	0.1 U
1,3-Dinitrobenzene	99-65-0	0.5 U		0.5 U	0.5 U	0.5 U
1,4-Dinitrobenzene	100-25-4	0.5 U		0.5 U	0.5 U	0.5 U
2-Methylnaphthalene	91-57-6	0.1 U		0.1 U	0.1 U	0.1 U
2,4,5,-Trichlorophenol	95-95-4	0.2 U		0.2 U	0.2 U	0.2 U
Acenaphthene	83-32-9	0.1 U		0.1 U	0.1 U	0.1 U
Acenaphthylene	208-96-8	0.1 U		0.1 U	0.1 U	0.1 U
Aniline	62-53-3	0.2 U		0.2 U	0.2 U	0.2 U
Anthracene	120-12-7	0.1 U		0.1 U	0.1 U	2.5
Benzo(g,h,i)perylene	191-24-2	0.08 U		0.08 U	0.08 U	0.08 U
Benzyl Butyl phthalate	85-68-7	0.1 U		0.1 U	0.1 U	0.1 U
Bis(2-chloroisopropyl)ether	39638-32-	0.51		0.43	0.43	0.42
bis (2-Ethylhexyl) adipate	103-23-1	0.1 U		0.1 U	0.1 U	0.1 U
bis (2-Ethylhexyl) phthalate	117-81-7	0.1 U		0.1 U	0.1 U	0.1 U
Dibenzofuran	132-64-9	0.1 U		0.1 U	0.1 U	0.1 U
Diethylphthalate	84-66-2	0.1 U		0.1 U	0.1 U	0.1 U
Dimethylphthalate	131-11-3	0.1 U		0.4	0.1 U	0.5
Di-n-butyl phthalate	84-74-2	1.4		0.1 U	0.1 U	0.34
Di-n-octyl phthalate	117-84-0	0.1 U		0.1 U	0.1 U	0.1 U
Diphenylamine	122-39-4	0.5 U		0.5 U	0.5 U	0.5 U
Fluoranthene	206-44-0	0.1 U		0.1 U	0.1 U	0.1 U
Fluorene	86-73-7	0.1 U		0.1 U	0.1 U	0.1 U
Naphthalene	91-20-3	0.1 U		0.1 U	0.1 U	0.1 U
Phenanthrene	85-01-8	0.1 U		0.1 U	0.1 U	0.4 U
Phenol	108-95-2	0.2 U		0.2 U	0.2 U	0.2 U
Pyrene	129-00-0	0.1 U		0.1 U	0.1 U	0.1 U
carcinogenic PAHs (cPAHs)						
Benzo(a)anthracene	56-55-3	0.08 U		0.08 U	0.09	0.11
Benzo[a]pyrene	50-32-8	0.08 U		0.08 U	0.08 U	0.08 U
Benzo(b)fluoranthene	205-99-2	0.08 U		0.08 U	0.20	0.29
Benzo(k)fluoranthene	207-08-9	0.08 U		0.08 U	0.20	0.50
Chrysene	218-01-9	0.3		0.08 U	0.08 U	0.08 U
Dibenzo (a,h) anthracene	53-70-3	0.08 U		0.08 U	0.08 U	0.12
Indeno(1,2,3-cd)pyrene	193-39-5	0.08 U		0.08 U	0.08 U	0.09
TTEC ¹ benzo(a)pyrene		0.06		0.06 U	0.10	0.15

Table B-4
McGlenn Island and Causeway Sample Results
 Swinomish Indian Tribal Community Phase II ESA
 LaConner, Washington

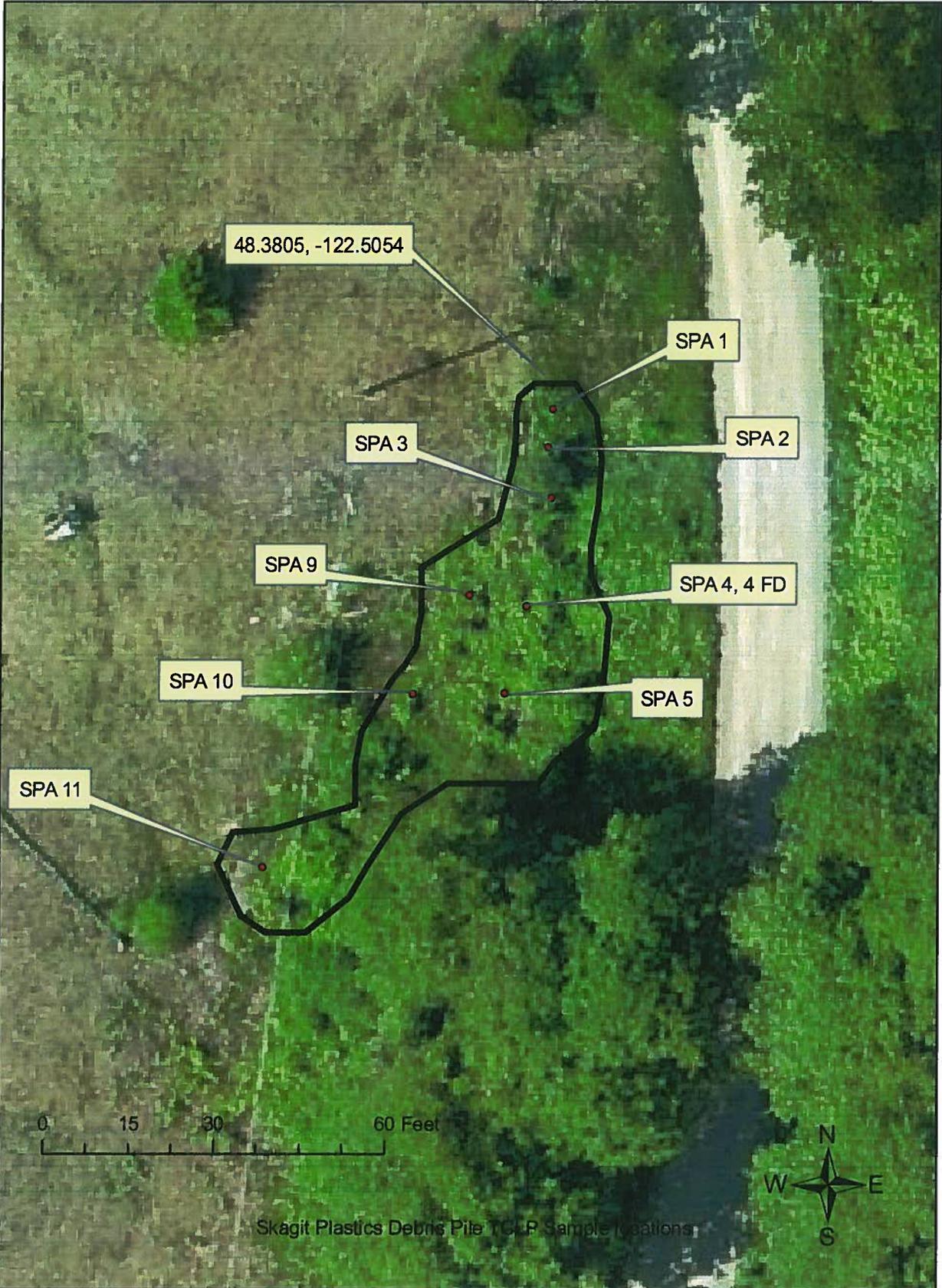
Sample ID:		BD10	BD10-FD	SP10	SP11	SP12
Sample Date:		11/12/2008	11/12/2008	10/30/2008	10/30/2008	10/30/2008
Sample Description:		Soil	Soil	Soil	Soil	Soil
Units:		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
<i>TAL Metals</i>						
Aluminum	7429-90-5	7900 J		8700 J	5300 J	6500 J
Antimony	7440-36-0	0.3 U		0.5 J	0.3 U	0.5 J
Arsenic	7440-38-2	3.2		2.1	1.9	2.1
Barium	7440-39-3	29		95	21	310
Beryllium	7440-41-7	0.91		1.7	0.21	2.8
Cadmium	7440-43-9	0.2 U		6.9	0.2 U	9.7
Calcium	471-34-1	2200		4700	2100	4400 J
Chromium (total)	7440-47-3	27		27	14	19
Cobalt	7440-48-4	6.8		81	14	90
Copper	7440-50-8	13		53	11	160
Iron	7439-89-6	13000 J		13000 J	9900 J	13000 J
Lead	7439-92-1	7.3		170	7.6	280
Magnesium	7439-95-4	49000		4000 J	3600 J	3000 J
Manganese	7439-96-5	380		180 J	140 J	240 J
Mercury	7439-97-6	0.25 U		0.25 U	0.25 U	0.25 U
Nickel	7440-02-0	27		24	16	18
Potassium	1310-58-3	200 U		230	310	200 U
Selenium	7782-49-2	1.0 U		1.0 U	1.0 U	1.0 U
Silver	7440-22-4	0.2 U		0.2 U	0.2 U	0.3
Sodium	7647-14-5	370		280 J	200 J	310 J
Thallium	7440-28-0	0.25 U		0.25 U	0.25 U	1.1
Vanadium	1314-62-1	9.1		1.0 U	1.0 U	1.0 U
Zinc	7440-66-6	34		580	63	840

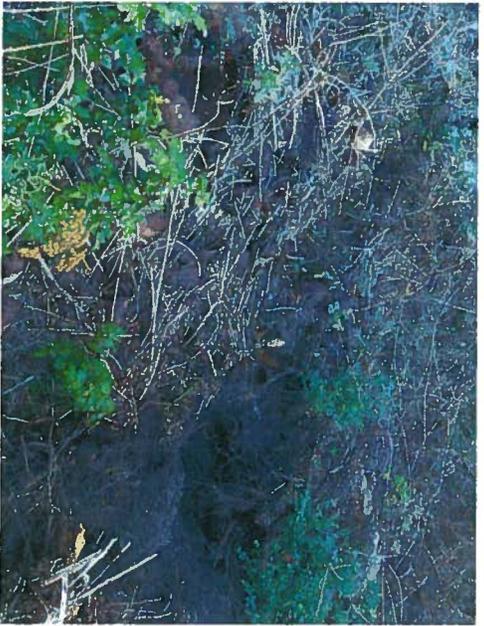
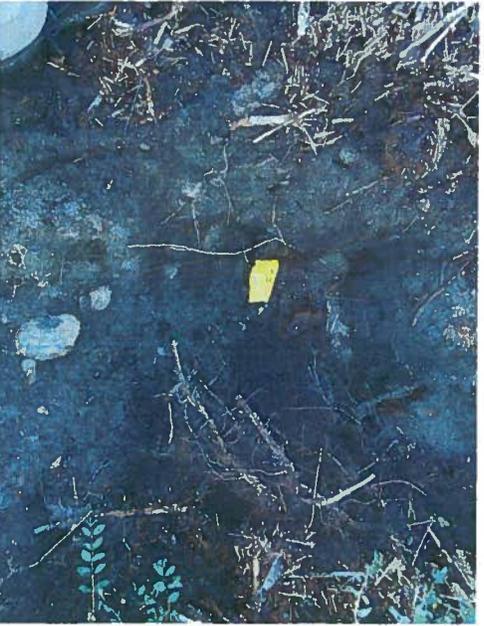
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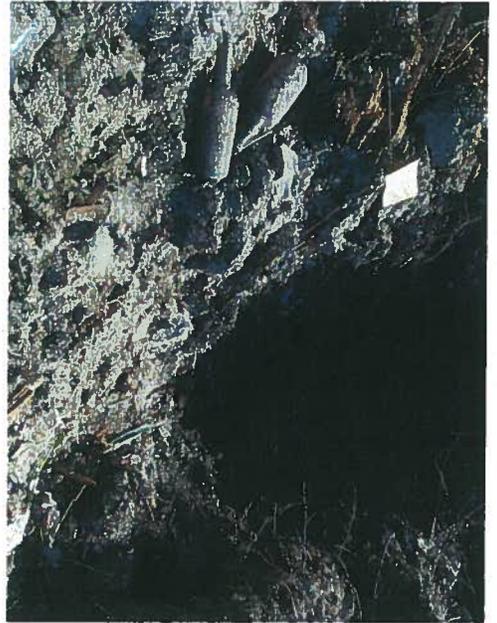
Table 1
Total Soil and TCLP Criteria for Toxicity Characterization
 (Note: This table is not a list of required sampling parameters, please see
 General Comment No. 2 of this guidance)

Contaminant	CAS Number	Total Soil Criteria (mg/kg)	TCLP Criteria (mg/l)
Arsenic	7440-38-2	100	5.0
Barium	7440-39-3	2,000	100.0
Benzene	71-43-2	10	0.5
Cadmium	7440-43-9	20	1.0
Carbon tetrachloride	56-23-5	10	0.5
Chlordane	57-74-9	0.6	0.03
Chlorobenzene	108-90-7	2,000	100.0
Chloroform	67-66-3	120	6.0
Chromium	7440-47-3	100	5.0
Cresol, o-	95-48-7	4,000	200.0
Cresol, m-	108-39-4	4,000	200.0
Cresol, p-	106-44-5	4,000	200.0
Cresol	NA	4,000	200.0
D, 2,4-	94-75-7	200	10.0
Dichlorobenzene, 1,4-	106-46-7	150	7.5
Dichloroethane, 1,2-	107-06-2	10	0.5
Dichloroethylene, 1,1-	75-35-4	14	0.7
Dinitrotoluene, 2,4-	121-14-2	2.6	0.13
Endrin	72-20-8	0.4	0.02
Heptachlor (and it's epoxide)	76-44-8	0.16	0.008
Hexachlorobenzene	118-74-1	2.6	0.13
Hexachlorobutadiene	87-68-3	10	0.5
Hexachloroethane	67-72-1	60	3.0
Lead	7439-92-1	100	5.0
Lindane	58-89-9	8	0.4
Mercury	7439-97-6	4	0.2
Methoxychlor	72-43-5	200	10.0
Methyl ethyl ketone	78-93-3	4,000	200.0
Nitrobenzene	98-95-3	40	2.0
Pentachlorophenol	87-86-5	2,000	100.0
Pyridine	110-86-1	100	5.0
Selenium	7782-49-2	20	1.0
Silver	7440-22-4	100	5.0
Tetrachloroethylene	127-18-4	14	0.7
Toxaphene	8001-35-2	10	0.5
Trichloroethylene	79-01-6	10	0.5
Trichlorophenol, 2,4,5-	95-95-4	8,000	400.0
Trichlorophenol, 2,4,6-	88-06-2	40	2.0
TP, 2,4,5- (Silvex)	93-72-1	20	1.0
Vinyl chloride	75-01-4	4	0.2

**2010 TCLP Testing Results from the Skagit Plastics Debris Pile,
(McGlenn Island Causeway, Swinomish Reservation, La Conner, WA)**









Fremont
Analytical

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Swinomish Indian Tribal Community

Attn: Jon Boe

Swinomish Office of Planning & Community Development
11430 Moorage Way
La Conner, WA 98257

RE: Skagit Plastics Dump Pile

Fremont Project No: CHM100923-2

September 28th, 2010

Jon:

Enclosed are the analytical results for the **Skagit Plastics Dump Pile** soil samples delivered (by Fed Ex) to Fremont Analytical on September 23rd, 2010

Sample Receipt: The samples were received in good condition - in the proper containers (10 -4oz soil jars) properly sealed, labeled and within holding times. The samples were received in a cooler with wet ice, with a cooler temperature of 4.2°C, which is within the recommended laboratory cooler temperature range (<4°C - 10°C). The samples were stored in refrigeration units at the USEPA-recommended temperature of 4°C ± 2°C. There were no sample receipt issues to report.

Sample Analysis: Examination of these samples was conducted for the presence of the following:

- **Metals by EPA Method 6020 with EPA Method 1311 Extraction (TCLP)**

These applications were performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control method parameters have been applied. There were no sample analysis issues to report.

Laboratory Notations: There were several positive detections below the laboratory Method Reporting Limit (MRL). These detections are noted with a J Flag (estimated value).

Please contact the laboratory if you should have any questions about the results,

Thank you for using Fremont Analytical!

Sincerely,

Michelle Clements
Lab Manager / Sr. Chemist

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Seattle, WA 98109

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F: 206-352-7178

email: info@fremontanalytical.com

Metals in Soil by EPA Method 6020 with EPA Method 1311 Extraction

Project: Skagit Plastics Dump Pile
Client: Swinomish Indian Tribal Community
Client Project #: N/A
Lab Project #: CHM100923-2

EPA 6020 (TCLP) (mg/L)	MRL	Method Blank	LCS	Duplicate		RPD %	SPA 2	SPA 3
				SPA 1	SPA 1			
Date Extracted		9/23/10	9/23/10	9/23/10	9/23/10		9/23/10	9/23/10
Date Analyzed		9/24/10	9/24/10	9/24/10	9/24/10		9/24/10	9/24/10
Matrix				Extract	Extract		Extract	Extract
Cadmium (Cd)	0.20	nd	124%	nd	nd		nd	nd
Lead (Pb)	0.20	nd	135%	0.114 J	0.104 J	9%	nd	nd

nd Indicates no detection at the listed reporting limits

int Indicates that interference prevents determination

J Indicates estimated value

MRL Indicates Method Reporting Limit

LCS Indicates Laboratory Control Sample

MS Indicates Matrix Spike

MSD Indicates Matrix Spike Duplicate

RPD Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%

Acceptable Recovery Limits:

LCS, LCSD, MS, MSD: 65% to 135%

Spike Concentrations:

Pb, Cd = 500 µg/L



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Project: Skagit Plastics Dump Pile
Client: Swinomish Indian Tribal Community
Client Project #: N/A
Lab Project #: CHM100923-2

EPA 6020 (TCLP) (mg/L)	MRL	SPA 4	SPA 4 FD	SPA 5	SPA 9	SPA 10	SPA 11	SPA RB
Date Extracted		9/23/10	9/23/10	9/23/10	9/23/10	9/23/10	9/23/10	9/23/10
Date Analyzed		9/24/10	9/24/10	9/24/10	9/24/10	9/24/10	9/24/10	9/24/10
Matrix		Extract	Extract	Extract	Extract	Extract	Extract	Filtrate
Cadmium (Cd)	0.20	nd	nd	0.128 J	nd	nd	nd	nd
Lead (Pb)	0.20	0.185 J	0.234	0.156 J	0.160 J	nd	nd	nd

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Project: Skagit Plastics Dump Pile
Client: Swinomish Indian Tribal Community
Client Project #: N/A
Lab Project #: CHM100923-2

EPA 6020 (TCLP) (mg/L)	MRL	MS	MSD	RPD %
		SPA 1	SPA 1	
Date Extracted		9/23/10	9/23/10	
Date Analyzed		9/24/10	9/24/10	
Matrix		Extract	Extract	
Cadmium (Cd)	0.20	108%	115%	6%
Lead (Pb)	0.20	113%	116%	3%

"nd" Indicates no detection at the listed reporting limits

"int" Indicates that interference prevents determination

"J" Indicates estimated value

"MRL" Indicates Method Reporting Limit

"LCS" Indicates Laboratory Control Sample

"MS" Indicates Matrix Spike

"MSD" Indicates Matrix Spike Duplicate

"RPD" Indicates Relative Percent Difference

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Acceptable Recovery Limits:

LCS, LCSD, MS, MSD: 65% to 135%

Spike Concentrations:

Pb, Cd = 500 µg/L



Fremont
ANALYTICAL

2930 Westlake Ave. N. Suite 100
Seattle, WA 98103

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Chain of Custody Record

Laboratory Project No (Internal): CHM100423-2
Page: 1 of: 3
Project Name: Skagit Plastics Dump Site
Location: met. 2.0. Island Co. Wash.
Collected by: Tom Rose

Client: Skagit Plastics Tribal Community
Address: 11430 Broadway Way
City, State, Zip: La Center WA 98547
Tel: 800-460-2031

Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8021B BTK	NWTH-GK	NWTH-HClO	NWTH-Ox/DEX	SEM-VOL R270C	PAH R270	PCB B08Z	CI PESTICIDES B081	CI HERBICIDES B151A	Metals*	Total (T) Dissolved (D)	Anions (A)**	Project No:	Comments/Depth
1 SPA 1	1345	sp. 1	402	9/22/10															
2 SPA 2	1350																		
3 SPA 3	1300																		
4 SPA 4	1310																		
5 SPA 4 FD	1312																		
6 SPA 5	1320																		
7 SPA 9	1350																		
8 SPA 10	1340																		
9 SPA 11	1325																		
10 SPA RB	1315	RB	RB																

Reports To (PM): _____ **Fax:** _____ **Email:** _____

Metals Analysis (Circle): MTCA 5 BURA 8 Nitrate Nitrite Chloride Sulfate Priority Pollutants TAL Individual Ag Al Ar B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Ni (Pb) Sb Se Sr Sn Tl U V Zn

Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide Iodide O-Phosphate Fluoride Nitrate+Nitrite

Sample Receipt:

Received	Date/Time	Received	Date/Time
<i>[Signature]</i>	9/23/10 10:35	<i>[Signature]</i>	9/23/10 10:35

Food? 4
Cooler Temperature 4.2
Seal Intact? N/A
Total Number of Containers 10
TAT -> 24HR 48HR Standards