LEVEL II ENVIRONMENTAL SITE ASSESSMENT
WEYERHAEUSER COMPANY
7001 396TH SOUTHEAST DRIVE
SNOQUALMIE, WASHINGTON
DELTA PROJECT NO. M003-106

This report was prepared for:

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1.0 INTRODUCTION

1.1 Purpose

This report summarizes the Level II Environmental Site Assessment (ESA) soil sampling activities completed at the above-referenced site on behalf of Weyerhaeuser Company (Weyerhaeuser). Weyerhaeuser retained Delta Environmental Consultants, Inc. (Delta) to conduct the ESA at the site to characterize areas of concern identified in a Level I Environmental Site Assessment (ESA) prepared by ENSAFE, dated July 28, 2003.

1.2 Scope of Services

Field activities were conducted by Delta on November 24 and 25, 2003, these included:

- Excavation of two test pits using a backhoe, the collection of representative soil samples from each test pit, and field screening with a photo ionization detector (PID).
- Collection of 12 soil samples from areas identified in the Level I ESA and from other areas identified by Delta during an initial site visit.

Other activities included:

- Conduct site inspections
- Interviews with stakeholders
- Review of agency files; and
- Preparation of this Level II Environmental Site Assessment Report.

During Delta's site visit additional areas that may require additional investigation and/or records review were identified and included:

- Employee interviews suggest that there may be some electrical equipment under the powerhouse the may contain PCB dielectric oils;
- A 50,000-gallon above ground storage tank (AST), used to store fuel oil, located immediately west of the powerhouse; and
- Anecdotal employee information regarding the use of anti-stain dip tanks that may have used water based pentachlorophenol.

2.0 BACKGROUND INFORMATION

2.1 Site Description

The former Snoqualmie (Cascade Lumber mill) wood products manufacturing site (the Site) is located at 7001 396th Southeast Drive in Snoqualmie, King County, Washington. A Topographic Location Map is included as Figure 1. The Site encompasses 576 acres and is located in Section 29, Township 24 North, and Range 8 East. Historically, the primary operations at the Site were to produce lumber from raw logs at the sawmill. The sawmill and associated finishing operations are reported to have started in the early 1900s. Operations over the past 20 years have been limited to lumber drying, finishing, and shipping, and wood residuals recycling. Anti sap stain wood preserving activities may also have also occurred at the site in dip tanks using water based pentachlorophenol. Surrounding properties consist of the Glacier Mining sand and gravel operations to the north, the City of Snoqualmie sewage treatment plant to the west and the Snoqualmie River to the south, and forested land to the east.

The mill site is relatively flat. Storm water from surface runoff is directed into a ditch system that trends north to south through the Site. The ditch flows south to a setting pond prior to discharging to the mill pond. The settling pond is equipped with an oil skimmer and floating boom system. Figure 2 is a map of the Site and surrounding properties.

2.1.1 Regional Geology

The Snoqualmie area is located in the upland area along the eastern perimeter of the Puget Lowland, which is an elongated basin bordered by the Cascade Range to the east and the Olympic Mountains to the west. The central portion of the basin is largely filled by glacial and glaciofluvial sediments. The layer of glacial sediments in the Snoqualmie area is considerably thinner than in the basin. In the vicinity of the Site, Quaternary-age unconsolidated sediments predominate the surficial geology (Harding Lawson Associates, 1994).

2.1.2 Site Soils and Geology

The Site soils, as described from past investigations generally consist of fill material including wood debris and silty clay ranging from seven to 15 feet below ground surface (bgs). A fine to medium-grained saturated sand underlies the silty clay. Beneath the sand is a second clay layer that is

reportedly up to 22 feet thick. Bedrock may be as deep as 500 feet bgs beneath the Site (Harding Lawson Associates, 1994).

2.1.3 Site Hydrogeology

The hydrology of the Site has been studied in the Morbark area, former sawmill area, former underground fuel storage tank area and aboveground road oil storage area. Based on existing data and general hydrologic conditions in the area, it is assumed that the Snoqualmie River influences the ground water flow characteristics at the site. Ground water studies have suggested that shallow ground water is perched within a silty clay unit. The ground water flow direction across the Site apparently varies within the study area. At the Morbark and former Sawmill areas, ground water flow direction was determined to be towards the north and northeast (IT Corporation 2000). The ground water flow direction at the underground fuel storage tank and aboveground road oil storage areas was determined to be towards the south and southwest (Shaw Environmental 2002). Depth to ground water seasonally fluctuates between 6 to 10 feet bgs

2.2 Previous Investigation Activities/Site Observations

This sub-section provides a brief description of past investigations at the Site and the current regulatory status. Previous soil and ground water assessment and remediation activities have been conducted as described below.

2.2.1 Level I ESA

Previous investigative activities at the Site are summarized in a Level I ESA prepared by ENSAFE (July 28, 2003). Various subsurface soil and ground water assessments and remediation activities have occurred at the Site, including the former sawmill area, Mobark area, former underground fuel storage tank, aboveground road oil storage area, current lube oil storage area, and PCB spill area.

2.2.2 Former Sawmill, Power House Area

In 1990, Harding Lawson Associates (HLA) conducted a soil and ground water investigation in the former Sawmill and Powerhouse areas that identified petroleum impacted soil and ground water above the regulatory standards established at that time. The source of the petroleum was believed to be cooling and lubrication oils from sawmill operations. Approximately 1,000 cubic yards of soil were excavated in January 1990. During excavation, it was determined that the extent of the impacted soil

was greater than originally believed and excavation activities were discontinued. After an additional soil investigation conducted by HLA on February 1990, an estimated 4,500 to 5,200 tons of soil were identified above the 1990 Washington Model Toxics Control Act (MTCA) cleanup level of 200 milligrams per kilogram (mg/kg). No further excavation activities have been conducted since January 1990. Current clean up levels for diesel range organics (DRO) and heavy oil range hydrocarbons (HORH) is 2,000 mg/kg under the MTCA Method A criteria, therefore the anticipated volume of removal should be less than the previously calculated volumes of 5,200 tons. Current analytical methods required by Ecology have a lower detection limit than the previous methods used.

The former sawmill and powerhouse area remedial actions were being conducted independently. The groundwater monitoring network consists of seven monitoring wells. Historical total petroleum hydrocarbons (TPH) data from the monitoring well network indicated that TPH was not greater than the detection limit of 10 mg/l. The current MTCA Method A cleanup level for TPH is 0.5 mg/l.

During Delta's site visit a 50,000-gallon above ground storage tank that contained No. 6 fuel oil was observed on the south site of the former powerhouse. The tank had standing water in the secondary containment. Weyerhaeuser employee reported to Delta that there might be electrical equipment in the basement of the Powerhouse that contains PCB dielectric oils. The basement periodically floods and is manually pumped since mill operations have ceased.

2.2.3 Morbark Area

The Morbark operations consisted of a debarker and chipper. Lube oil used in the machinery leaked, impacting the soil and ground water in the area of operations. In 1998, EMCON conducted a soil and ground water investigation in this area to characterize past releases. A cleanup level of 4,418 parts per million (ppm) was calculated by EMCON under the Ecology's interim total petroleum hydrocarbon (TPH) policy. Approximately 1,386 tons of TPH impacted soil was excavated. Some soil in the northeastern portion of the chipper area was not removed due to structural constraints associated with a nearby building. Subsequent testing revealed that the removal of the impacted soil reduced the TPH concentrations in ground water below the MTCA Method A cleanup levels. The Washington Department of Ecology (Ecology) does not appear to have issued an no further action (NFA) determination for this area.

2.2.4 Former Underground Fuel Storage Tank, Aboveground Road Oil Storage Area, and Current Lube Oil Storage Area

Available documents indicated that a release had occurred at the former underground fuel storage tank and former aboveground oil storage tank areas. Approximately 1,000 cubic yards of soil were removed in 1989 in the former underground fuel storage tank area and 600 cubic yards were excavated from the aboveground oil storage tank area. A MTCA Method B cleanup level was calculated for the former underground fuel storage tank area at 3,600 mg/kg (DRO) and 3,200 mg/kg heavy oil range hydrocarbons for the aboveground oil storage area

The results from sampling the shallow ground water near the former aboveground oil storage tank area have been below the MTCA Method A cleanup levels. The former underground fuel storage tank area has one monitoring point (A1-9) that periodically detects the presence of benzene at concentrations slightly above the Method A level of 5 micrograms per liter (ug/L) (parts per billion). Impacted soil still remains under the roadway in both areas above the MTCA Method A cleanup levels for DRO and heavy oil range hydrocarbons.

In 1998, EMCON conducted a soil and ground water investigation that resulted in the detection of impacted soil above the Method B Site cleanup level of 3,200 mg/kg near the current lube oil storage facility (approximately 75 feet south of the former road storage tanks). Emcon attributed the soil impacts observed at this location to the then current oil storage activities.

2.2.5 PCB Spill Area

Transformer T-12 released PCBs into the environment during a fire at the site on February 5, 1989. PCB-impacted soils were excavated to a depth of 10 feet bgs where a clay layer was encountered. A decision was made to discontinue the excavation activities to protect the shallow ground water beneath the clay layer. The excavation was lined with a geotextile and back filled with 10 feet of native (clean) clay. Prior to backfilling, the clay at the base of the excavation was assessed for the presence of PCBs. Concentrations of PCBs in the clay ranged from 33 mg/kg to 34,000 mg/kg. Monitoring wells were subsequently installed and sampled. PCBs were not detected in the ground water. The area remains fenced and is posted as a PCB spill area. In September 1995, Weyerhaeuser notified the U.S. Environmental Protection Agency (USEPA) Region 10 office that no further action (NFA) would be taken at the time. No response was

received from USEPA. The MTCA Industrial Method A cleanup level for PCBs in soils in 1.0 mg/kg and the EPA Region Preliminary Remedial Goals (PRGs) for PCBs is 0.22 mg/kg

3.0 LEVEL II INVESTIGATION AREAS

Delta conducted Level II activities in the following areas previously identified during the Level I ESA by ENSAFE and in areas identified during a site visit by Delta conducted in early August 2003.

3.1 Boiler Ash Fill Area

During a site reconnaissance visit by Delta in early August 2003, boiler ash was observed on the ground in the area west of the former sawmill building. The ash was gray to black in color and covered an area of approximately 5 acres.

3.2 Transformer T-18

Transformer T-18 is an active transformer located between the Shipping and Clear Lumber Shed in the northern portion of the Site. Transformer T-18 is labeled as a non-PCB transformer. During the Level I ESA, oil staining was observed on the gravel and a concrete pad beneath the transformer.

3.3 Lumber Strapping Area

A lumber strapping area is located on the west side of the shipping building. During the Level I ESA, oil staining was observed from an apparent hydraulic oil leak. The Level I ESA also reported on a previously undocumented release and cleanup were conducted in this area. The release was reportedly hydraulic oil from the strapping equipment.

3.4 Wood Debris Fill Area

A fill area was noted from aerial photos covering an area of at least 10-acres west of the mill operations area. The fill area is presently overgrown with small trees and brush, slopes to the south and rises approximately 20 feet above the local topography of the Site. The location of the fill area is shown on Figure 2.

3.5 Former Vehicle Wash Pad

During the Delta site reconnaissance visit on November 25, 2003, a concrete wash pad and sump were noted in the location of the former vehicle wash pad. The wash pad slopes toward a sump that discharge to a ditch that flows to the mill's storm water outfall. Oil staining was observed on the wash pad.

3.6 Chip Truck Hydraulic Lift Area

During the Delta site reconnaissance visit on November 25, 2003, hydraulic oil staining was observed on the soil beneath an active chip truck hydraulic lift located near the former Plywood Building area. This area is currently being used by Northfork Enterprises.

4.0 SAMPLING ACTIVITIES/ANALYTICAL RESULTS

Generally, the soil sample from a test pit exhibiting the highest PID headspace reading was submitted for laboratory analysis. When headspace readings were zero or at background levels, the sample from directly above the water table interface, or directly below the fill material (in the absence of ground water), or near the depth interval representing the bottom of a sump was submitted for laboratory analysis.

4.1 Boiler Ash Fill Area

Five near surface soil samples (A-01 through A-05) were collected from an area west of the former sawmill building. The sample locations are illustrated on Figure 2. Soil samples were submitted for laboratory analysis for polynuclear aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) Method 8270C, Resource Conservation and Recovery Act (RCRA) metals, and pH.

PAHs were detected in all soil samples. The MTCA Method A level of 0.1 mg/kg for benzo(a)pyrene was exceeded in three of the five samples. Arsenic was also detected at a concentration of 180 mg/kg, which is above the MTCA Method A cleanup level of 20 mg/kg. The pH of the samples ranged from 7.4 to 8.1 standard units (su).

4.2 Transformer T-18

Three hand auger borings (T18-01, T18-02, and T18-03) were advanced to a depth of one foot bgs. Figure 2 illustrates the sample locations. Soils encountered were generally gravelly and stained with oil. Three soil samples (one from each location) were submitted for laboratory analysis for DRO and heavy oil range hydrocarbons by NWTPH-Dx with silica gel cleanup.

DROs and heavy oil range hydrocarbons were detected in samples T18-1, T18-2, and T18-3. The DRO concentrations ranged from 120 mg/kg (T18-1) to 18,000 mg/kg (T18-2). Heavy oil range hydrocarbons concentrations ranged from 400 mg/kg (T18-1) to 3,500 mg/kg (T18-2). The MTCA Method A cleanup level for DRO and heavy oil range hydrocarbons is 2,000 mg/kg.

4.3 Lumber Strapping Area

The floor and the trench of the Strapping area are concrete. A trench containing hydraulic lines runs through the area. Delta noted a sheen in the backfill and surface water in the trench during the November 2003 site visit; therefore one soil sample was collected from the hydraulic line conduit trench backfill, at a depth of 0.5 feet, at the location shown in Figure 2. It could not be determined at the time of the sampling if the hydraulic trench had a concrete bottom due to the numerous hydraulic conduits and pea gravel backfill. The soil sample (STRAP-01) was submitted for laboratory analysis for DRO and heavy oil range hydrocarbons by NWTPH-Dx with silica gel cleanup.

DROs were detected at a concentration of 1,700 mg/kg and heavy oil range hydrocarbons were detected at a concentration of 8,300 mg/kg in the soil sample taken from the hydraulic line conduit trench. The MTCA Method A cleanup level for heavy oil range hydrocarbons is 2,000 mg/kg.

4.4 Wood Debris Fill Area

Two test pits were excavated on the northern end of the wood debris fill area. Logs, soil, and wood debris were encountered during the excavation of the test pits. The depth of the excavation was limited in depth due to the presence of large logs. One soil sample (LOGS) was collected at a depth of three feet bgs. The soil sample was submitted for laboratory analysis for DROs and heavy oil range hydrocarbons by NWTPH-Dx with silica gel cleanup. Figure 2 illustrates the sample location.

Low-level concentrations of DROs and heavy oil range hydrocarbons were detected at concentrations of 18 mg/kg and 57 mg/kg, respectively. The concentrations detected are below the MTCA Method A cleanup level of 2,000 mg/kg for DROs and heavy oil range hydrocarbons.

4.5 Former Vehicle Wash Pad

The Former Vehicle Wash Pad consists of degraded concrete and is covered in some areas with soil. Debris dislodged during washing and wash water was collected on the pad and flowed to a sump, which acted as an oil water separator, before discharging to a ditch. During Delta's November 2003 site visit staining was noted on the soil covered areas of the wash pad. One surface soil sample (S-01) was collected from the soil on top of the former vehicle wash pad (Figure 2). Sampling around the sump area was not possible with hand tools because the sump is adjacent to a steep embankment and

overgrown with heavy vegetation. The soil sample was submitted for laboratory analysis for DROs and heavy oil range hydrocarbons by NWTPH-Dx with silica gel cleanup.

DROs were detected at a concentration of 500 mg/kg and heavy oil range hydrocarbons were detected at a concentration of 4,400 mg/kg. The MTCA Method A cleanup level for heavy oil range hydrocarbons detection is 2,000 mg/kg.

4.6 Chip Truck Hydraulic Lift Area

The Chip Truck Hydraulic Lift Area is underlain by layers of degraded concrete and asphalt. The integrity and the extent of the area with asphalt or concrete surfacing could not be determine at the time of the investigation due to the wood debris from chipping operations and standing water. The soil in the area appeared to be stained by petroleum and contained wood debris. One soil sample (Chip Dump) was collected at a depth of one foot bgs from beneath the chip truck lift near the hydraulic unit. The sample location is illustrated on Figure 3. The soil sample was submitted for laboratory analysis for DROs and heavy oil range hydrocarbons by NWTPH-Dx with silica gel cleanup.

DROs and heavy oil range hydrocarbons were detected at concentrations of 220 mg/kg and 1,500 mg/kg, respectively, below the MTCA Method A cleanup level of 2,000 mg/kg for DROs and heavy oil range hydrocarbons.

5.0 CONCLUSIONS

This Level II ESA was conducted to investigate areas of potential environmental concern identified in the Level I ESA prepared by ENSAFE in July 2003. The Level II ESA identifies potential issues that may require further investigation and/or remediation and includes those potential issues identified in previous site assessments conducted at the Site.

The general reference levels for determining if soils or ground water are impacted at levels requiring remedial action depend on the contaminant of concern (COC). The Washington Model Toxics Control Act (MTCA) establishes three methods to determine whether cleanup may be necessary. Method A is the default method used as to determine if a site is impacted at a level that may require remedial activities. Method A sets specific maximum concentration limits (MCL) for residential land uses. If the MCL is exceeded, the need for remedial activity may be triggered.

Sites used for non-residential purposes may apply, a risk-based approach can used to determine whether remedial activity may be required. MTCA has two risk-based methods, Method B and Method C, which are used to establish alternate contaminant levels (ACLs). For Method B and Method C analyses, impacted soils are evaluated by analytical testing to determine if they pose a potential threat to human health or the environment. These analyses along with other factors are used to determine site specific ACLs.

The analytical results from the sampling activities conducted at the Site during this Level II ESA indicate there are some soil and ground water impacts above MTCA Method A cleanup levels. Additional work may be required to address these impacts.

Historic information reviewed prior to conducting this Level II ESA also indicates that there may be outstanding regulatory issues that may pose environmental concerns. These include:

1. Anecdotal information provided by employees indicates that a water-based pentachlorophenol dip tank may have been used at the site. Based on available information, Delta was unable to determine if these activities actually occurred;
2. Oil staining and free-standing water was observed within the secondary containment for fuel oil storage tank at the powerhouse;

3. Employee interviews suggest that there may be some electrical equipment under the Powerhouse the may contain PCB dielectric oils;

4. Prior site investigation and/or remediation activities indicate soil and/or groundwater near the former Sawmill/Powerhouse area, Morbark area, the former UST and AST areas, and lube oil storage area may be impacted by petroleum hydrocarbons above MTCA Method A levels. Regulatory agency records searches did not indicate whether Ecology has issued NFA determinations for these areas;

5. Residual PCBs impacts from the former T-12 transformer release have not been resolved with the regulatory agencies. The reports reviewed by Delta indicate that residual concentrations of PCB may exceed the MTCA Method A and region 9 PRGs for PCBs in soil. Analyses of PCB pyrolysis isomers may also be appropriate; and,

6. There is boiler ash residue located in the vicinity of the Powerhouse. Washington regulations govern the handling, storage, and disposal, or use of ash as a soil amendment.

6.0 RECOMMENDATIONS

The following recommendations include assessment of potential petroleum impacts both through the Phase II ESA and that may be discovered during demolition activities. The recommendations address specific Ecology or EPA required activities and assume that future land use for this property will be residential.

1. Additional employee interviews and records review should be conducted to substantiate claims of wood treating activities at the site. If the claim is substantiated an investigation should be conducted in the confirmed area of former wood treating.
2. The impacted areas in the powerhouse/sawmill regions of the Site, that reported above the 2,000 mg/kg concentration, including the powerhouse building basement and fuel oil storage tank, should be re-evaluated and the ground water monitoring wells should be resampled for TPH. This may require limited soil assessment in historic and visible release areas; collecting groundwater samples from the existing monitoring well network and collecting soil/water samples from the powerhouse basement.
3. Limited characterization is needed for the Morbark area, former UST area former AST area and lube oil storage area to obtain data demonstrating Ecology compliance and/or impact delineation prior to initiating remedial actions.
4. Additional petroleum hydrocarbon investigation is recommended in the transformer T-18 area, lumber strapping area, chip truck lift area, and former vehicle wash area to delineate impacted soil and evaluate impacts to ground water.
5. Weyerhaeuser should request a NFA letter from the EPA for the transformer spill area T-12 (PCBs in soil) and should place a deed restriction notice for the spill area if this is compatible with the future land use. The area of PCBs may need to be delineated to 1.0 mg/kg to meet the MTCA Method A cleanup level for industrial soil or an ACL will need to be established under MTCA Method B or C.
6. The volume of boiler ash in the Powerhouse area should be evaluated and future handling of the boiler ash conducted according to Ecology regulations for disposal or soil amendment.

7.0 REMARKS

The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

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Date 6/29/04

8.0 REFERENCES

Harding Lawson Associates, October 17, 1994, *Level I Environmental Assessment Snoqualmie Truck Shop*

ENSAFE, July 28, 2003, *Level I Environmental Site Assessment*

Shaw Environmental, December 9, 2002, *2002 Annual Groundwater Sampling Report, Former Underground Fuel Storage Tank and Aboveground Road Oil Storage Tank Areas*

IT Corporation, October 20, 2000, *2000 Annual Groundwater Sampling Report, Former Morbark Log Chipper Area Weyerhaeuser Snoqualmie Mill*

TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
WEYERHAEUSER CASCADE LUMBER MILL
SNOQUALMIE, WASHINGTON

DELTA PROJECT NO. M003-106

PERIOD: From 11/24/2003 thru 11/25/2003 - Inclusiv
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	2-Methy napthalene (ug/kg)	Acenaphthylene (ug/kg)	Anthracene (ug/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Benzo(a) anthracene (ug/kg)
MTCA-METHA			5000			20		
REG9-PRGS					22000000		5400	620
A-01	11/24/2003	0.00	39	61	75	[100]	343	270
A-02	11/24/2003	0.00	39	150	260	[180]	450	[1100]
A-03	11/24/2003	0.00	8	13	13	[40]	225	28
A-04	11/24/2003	0.00	20	57	79	[60]	302	330
A-05	11/24/2003	0.00	13	38	40	[50]	286	88
CHIPDUMP-01	11/25/2003	0.50						
LH-01	11/24/2003	3.00						
S-01	11/25/2003	0.50						
STRAP-01	11/24/2003	0.50						
T18-01	11/24/2003	1.00						
T18-02	11/24/2003	1.00						
T18-03	11/24/2003	1.00						

[x]=Greater than Action Leve

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
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SNOQUALMIE, WASHINGTON

DELTA PROJECT NO. M003-106

PERIOD: From 11/24/2003 thru 11/25/2003 - Inclusiv
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	Benzo(a)pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzo(k)fluoranthene (ug/kg)	Cadmium (mg/kg)	Chromium (mg/kg)
MTCA-METHA			100		100			
REG9-PRGS			62	620		6200	37	210
A-01	11/24/2003	0.00	[140]	[910]	[290]	280	2	62
A-02	11/24/2003	0.00	[700]	[5800]	[1800]	1700	3	88
A-03	11/24/2003	0.00	28	75	34	22	<1	142
A-04	11/24/2003	0.00	[150]	[1000]	[280]	330	2	44
A-05	11/24/2003	0.00	50	260	73	70	1	45
CHIPDUMP-01	11/25/2003	0.50						
LH-01	11/24/2003	3.00						
S-01	11/25/2003	0.50						
STRAP-01	11/24/2003	0.50						
T18-01	11/24/2003	1.00						
T18-02	11/24/2003	1.00						
T18-03	11/24/2003	1.00						

[x]=Greater than Action Leve

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SOIL SAMPLE ANALYTICAL RESULTS
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PERIOD: From 11/24/2003 thru 11/25/2003 - Inclusiv
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	Chrysene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)	Dibenzofuran (ug/kg)	Diesel (mg/kg)	Fluoranthene (ug/kg)	Fluorene (ug/kg)
MTCA-METHA						2000		
REG9-PRGS			62000	62	290000		2300000	2700000
A-01	11/24/2003	0.00	530	32	200		1800	21
A-02	11/24/2003	0.00	3200	[220]	420		7000	51
A-03	11/24/2003	0.00	44	<6	30		220	<6
A-04	11/24/2003	0.00	640	38	190		2500	15
A-05	11/24/2003	0.00	180	9	100		970	9
CHIPDUMP-01	11/25/2003	0.50				220		
LH-01	11/24/2003	3.00				18		
S-01	11/25/2003	0.50				500		
STRAP-01	11/24/2003	0.50				1700		
T18-01	11/24/2003	1.00				180		
T18-02	11/24/2003	1.00				[18000]		
T18-03	11/24/2003	1.00				[9700]		

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DELTA PROJECT NO. M003-106

PERIOD: From 11/24/2003 thru 11/25/2003 - Inclusiv
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	Hydrogen ion	Indeno (1,2,3-cd) pyrene (ug/kg)	Lead (mg/kg)	Mercury (mg/kg)	Naphthalene (ug/kg)	Phenanthrene (ug/kg)
MTCA-METHA REG9-PRGS				620	400	23	56000	
A-01	11/24/2003	0.00	7.7	320	80	<0.1	210	980
A-02	11/24/2003	0.00	7.8	[2300]	110	0.1	460	2400
A-03	11/24/2003	0.00	7.4	26	50	<0.1	36	140
A-04	11/24/2003	0.00	8.1	360	70	0.1	230	1000
A-05	11/24/2003	0.00	7.6	81	40	<0.1	140	580
CHIPDUMP-01	11/25/2003	0.50						
LH-01	11/24/2003	3.00						
S-01	11/25/2003	0.50						
STRAP-01	11/24/2003	0.50						
T18-01	11/24/2003	1.00						
T18-02	11/24/2003	1.00						
T18-03	11/24/2003	1.00						

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WEYERHAEUSER CASCADE LUMBER MILL
SNOQUALMIE, WASHINGTON

DELTA PROJECT NO. M003-106

PERIOD: From 11/24/2003 thru 11/25/2003 - Inclusiv
SAMPLE TYPE: Soil

SITE	DATE	DEPTH	Pyrene (ug/kg)	TPH (as motor oil) (E5030-8015) (mg/kg)
MTCA-METHA				2000
REG9-PRGS			2300000	
A-01	11/24/2003	0.00	1000	
A-02	11/24/2003	0.00	3600	
A-03	11/24/2003	0.00	150	
A-04	11/24/2003	0.00	1600	
A-05	11/24/2003	0.00	600	
CHIPDUMP-01	11/25/2003	0.50		1500
LH-01	11/24/2003	3.00		57
S-01	11/25/2003	0.50		[4400]
STRAP-01	11/24/2003	0.50		[8300]
T18-01	11/24/2003	1.00		400
T18-02	11/24/2003	1.00		[3500]
T18-03	11/24/2003	1.00		[2300]

[x]=Greater than Action Leve

FIGURES

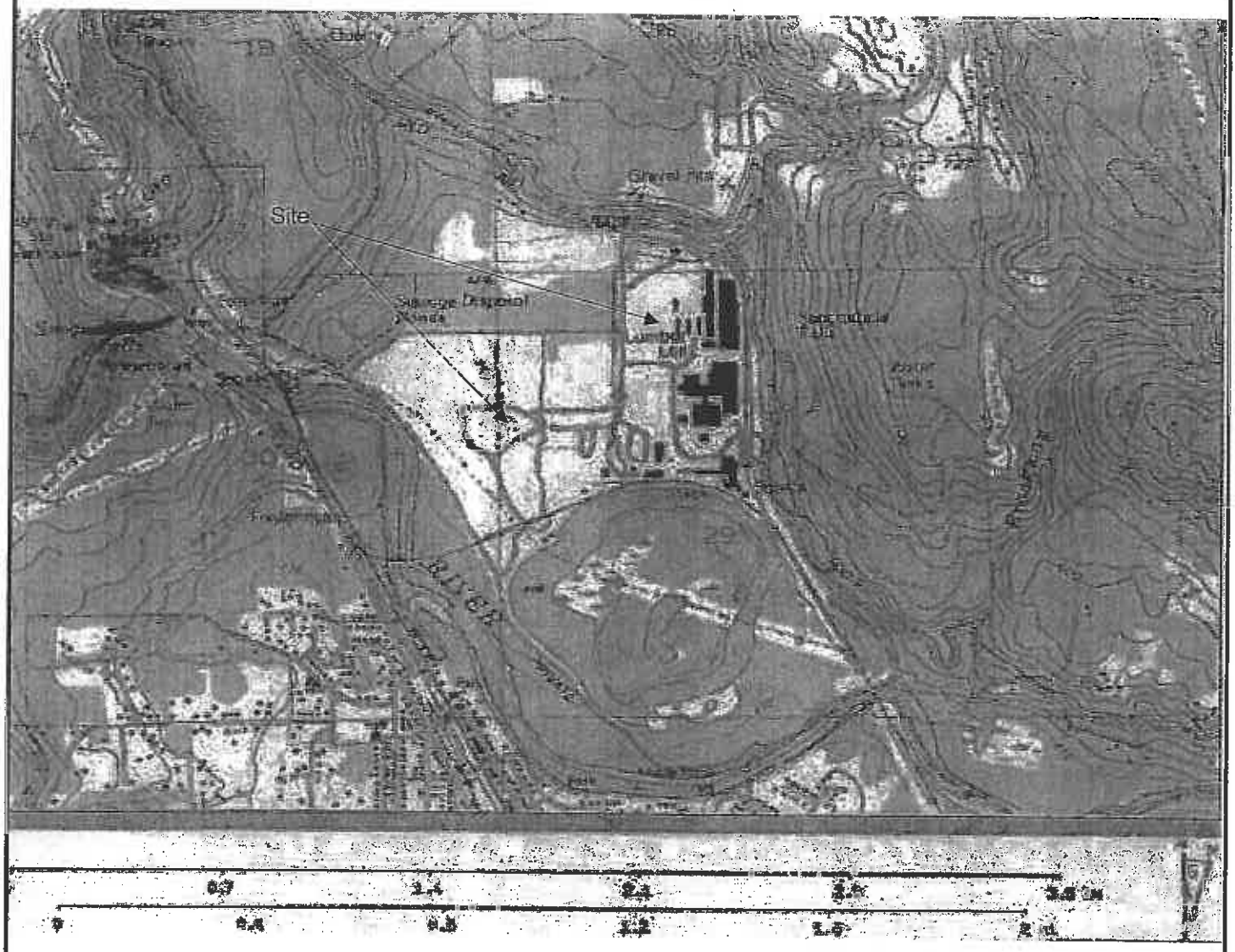
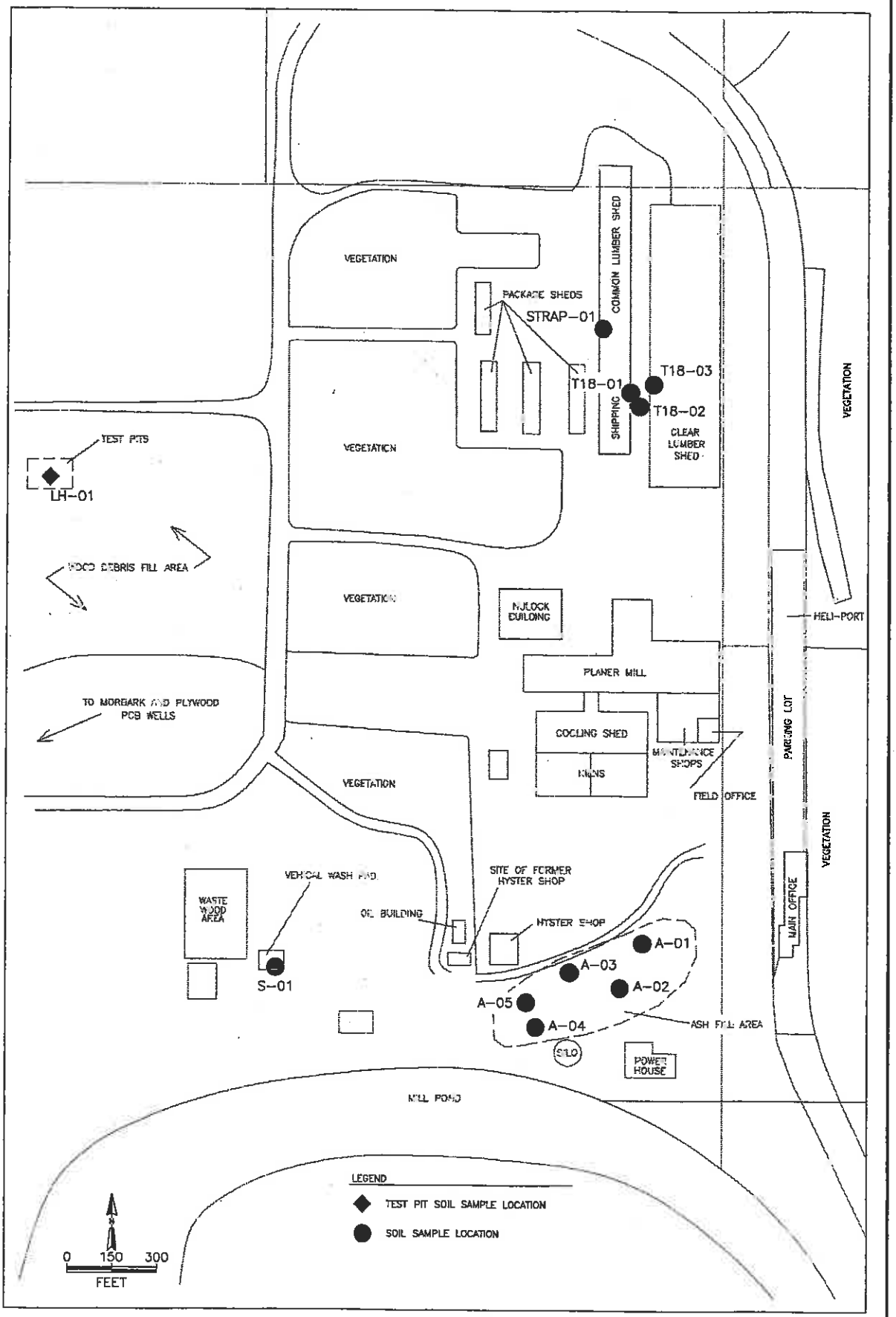


FIGURE 1 - TOPOGRAPHIC LOCATION MAP

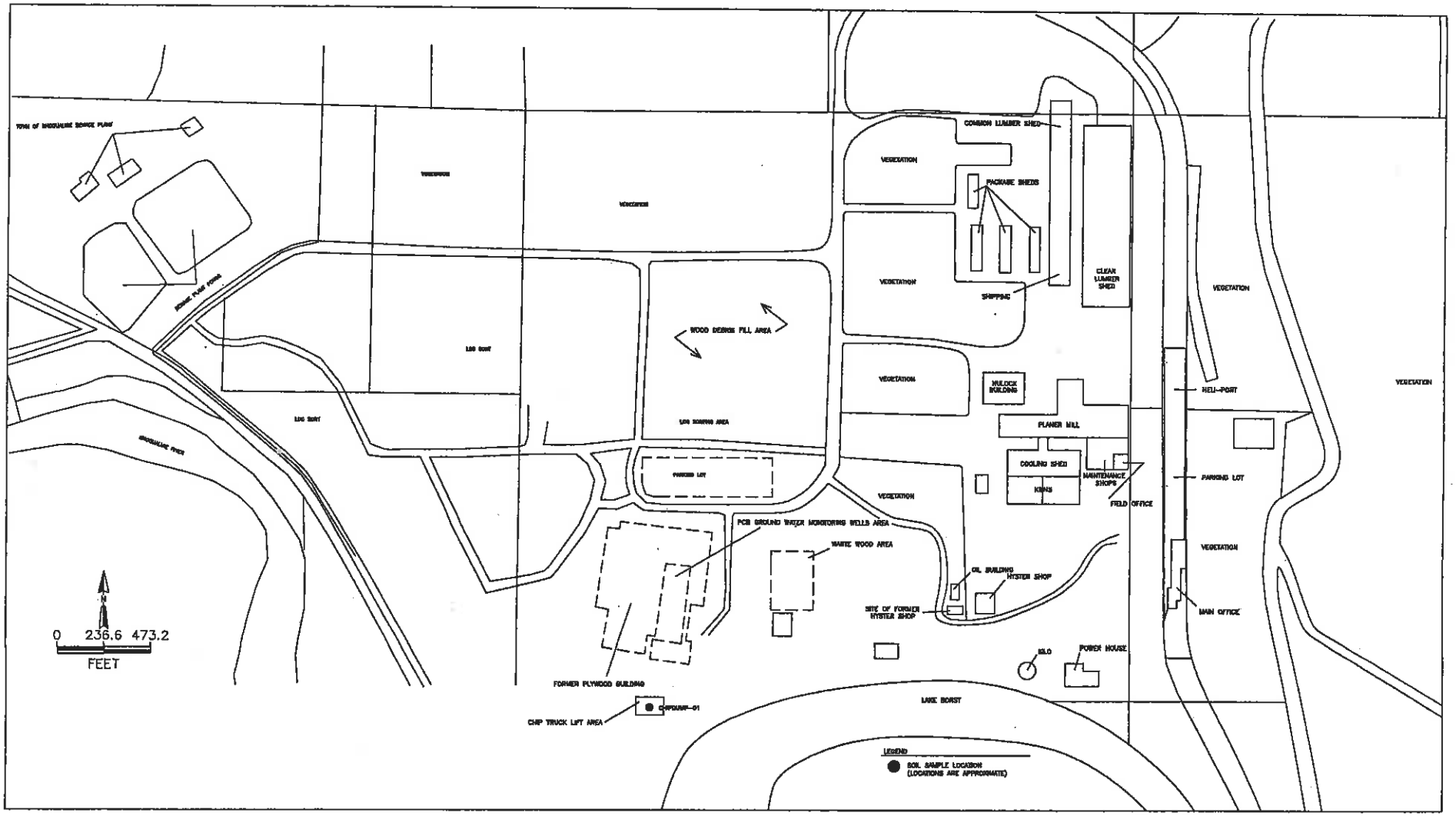
WEYERHAEUSER COMPANY **WEYERHAEUSER CASCADE LUMBER MILL** **SNOQUALMIE, WASHINGTON** **USGS SNOQUALMIE, WA QUAD MAP** **MAP DATE: 1993**	**PROJECT NO: M003-106** **DATE: 2/4/2004** **TOPO SCALE: 1:24,000** **VIEW SCALE:** **DRAWN BY: NLJ**	**Delta Environmental Consultants, Inc.** **8008 Corporate Center Dr., Suite 100** **Charlotte, North Carolina 28226**



Delta Environmental Consultants, Inc.

TITLE:
SITE DETAIL MAP
WEYERHAEUSER CASCADE LUMBER MILL
SNOQUALMIE, WASHINGTON

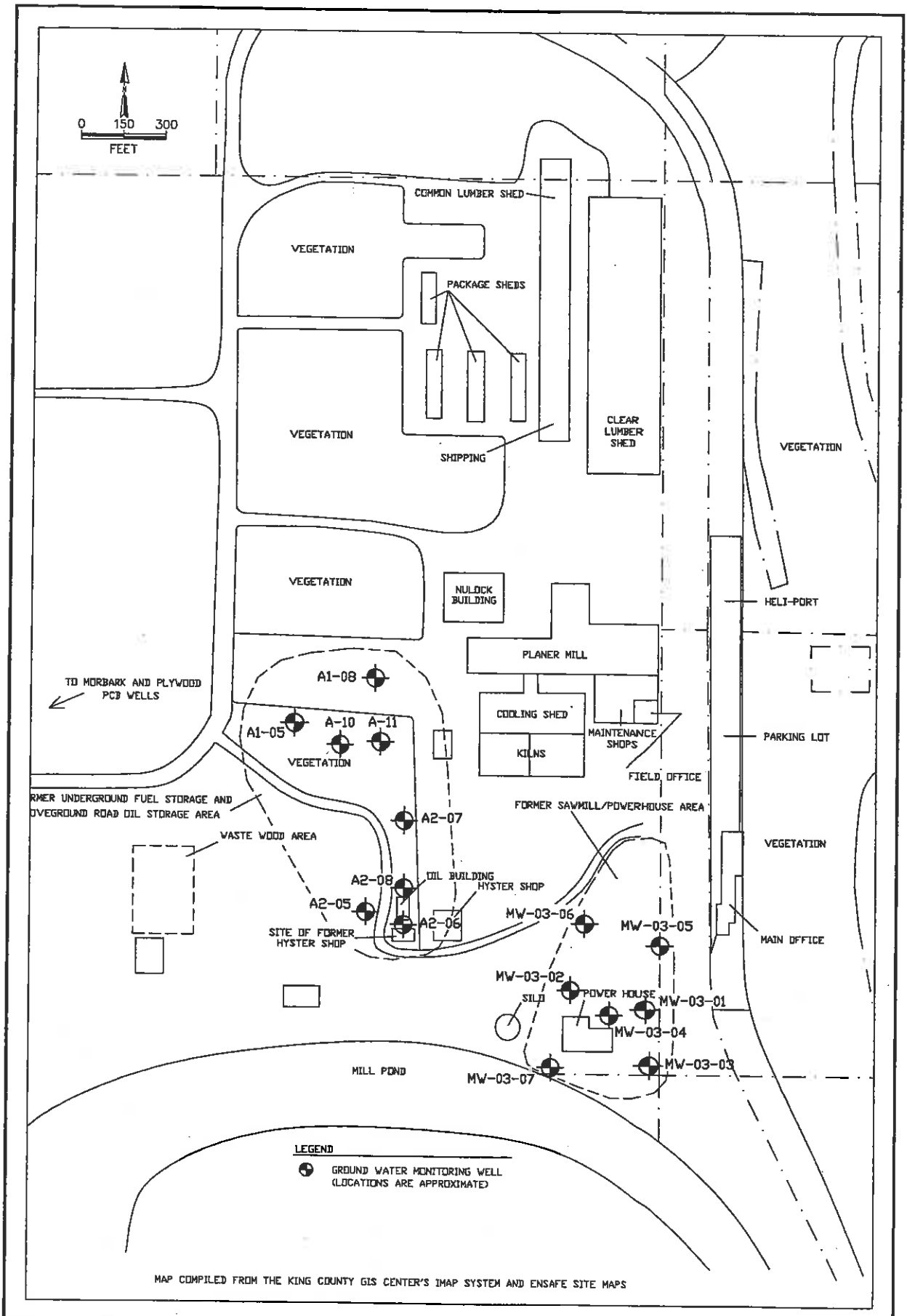
DWN: SPW	DES.:	PROJECT NO.: M003-106
CHKD:	APPD:	
DATE: 12/17/03	REV.:	FIGURE NO.: 2



Delta Environmental Consultants, Inc.

TITLE:
SITE MAP
WEYERHAEUSER CASCADE LUMBER MILL
SNOQUALMIE, WASHINGTON

DWN: NLJ	DES.:	PROJECT NO.: M003-106	
CHKD:	APPD:		
DATE: 2/4/2004	REV.:	FIGURE NO.: 3	



Delta Environmental Consultants, Inc.

TITLE:
EXISTING GROUND WATER MONITORING WELLS
WEYERHAEUSER CASCADE LUMBER MILL
SNOQUALMIE, WASHINGTON

DWN: LC	DES.:	PROJECT NO.: M003-106
CHKD:	APPD:	
DATE: 12/09/03	REV.:	FIGURE NO.: 4

APPENDIX A

SOIL SAMPLE ANALYTICAL RESULTS

Weyerhaeuser Analytical & Testing Services
32901 Weyerhaeuser Way South
Federal Way, WA 98003

Service Request 03-3093
WA Cert #C020

Report
Snoqualmie Mill Closure - November 2003

Client ID		**MDL 8270SIM**	A-1	A-2	A-3
Sample Date and Time		11/27/2000	11/24/2003 10:20	11/24/2003 10:30	11/24/2003 10:35
Lab ID		MDL	03-3093-001	03-3093-002	03-3093-003
		ug/kg	ug/kg	ug/kg	ug/kg
Analyte	CAS				
Naphthalene	91-20-3	0.77	**210**	**460**	**36**
2-Methylnaphthalene	91-57-6	0.70	**39**	**39**	**8**
Acenaphthylene	208-96-8	0.63	**61**	**150**	**13**
Acenaphthene	83-32-9	0.67	<6	<9	<6
Dibenzofuran	132-64-9	0.70	**200**	**420**	**30**
Fluorene	86-73-7	0.63	**21**	**51**	<6
Phenanthrene	85-01-8	0.70	**980**	**2400**	**140**
Anthracene	120-12-7	0.63	**75**	**260**	**13**
Fluoranthene	206-44-0	0.50	**1800**	**7000**	**220**
Pyrene	129-00-0	0.63	**1000**	**3600**	**150**
Benzo(a)anthracene	56-55-3	0.20	**270**	**1100**	**28**
Chrysene	218-01-9	0.13	**530**	**3200**	**44**
Benzo(b)fluoranthene	205-99-2	0.50	**910**	**5800**	**75**
Benzo(k)fluoranthene	207-08-9	0.13	**280**	**1700**	**22**
Benzo(a)pyrene	50-32-8	0.30	**140**	**700**	**28**
Indeno(1,2,3-cd)pyrene	193-39-5	0.40	**320**	**2300**	**26**
Dibenzo(a,h)anthracene	53-70-3	0.40	**32**	**220**	<6
Benzo(g,h,i)perylene	191-24-2	0.60	**290**	**1800**	**34**
Surrogates (%recovery)	**Limits**				
1-Methylnaphthalene-d10	20-119		92%	81%	89%
o-Terphenyl	38-145		123%	123%	115%
Pyrene-d10	54-118		81%	88%	80%
Benzo(g,h,i)perylene-d12	41-137		45%	60%	55%
Date Extracted			12/4/2003	12/4/2003	12/4/2003
Date Analyzed			12/11/2003	12/11/2003	12/11/2003

*: The surrogate recovery is outside the lab QC limits.

Method: 8270C-PAHSIM
Approved: Randy Eatherton
Telephone: (253)-924-6431

Date: 12/15/2003

Weyerhaeuser Analytical & Testing Services
32901 Weyerhaeuser Way South
Federal Way, WA 98003

Service Request 03-3093
WA Cert #C020

Report
Snoqualmie Mill Closure - November 2003

Client ID		**MDL**	A-4	A-5	A-5
		8270SIM			DUP
Sample Date and Time		11/27/2000	11/24/2003 10:50	11/24/2003 11:00	11/24/2003 11:00
Lab ID		MDL	03-3093-004	03-3093-005	03-3093-005DUP
		ug/kg	ug/kg	ug/kg	ug/kg
Analyte	CAS				
Naphthalene	91-20-3	0.77	**230**	**140**	**140**
2-Methylnaphthalene	91-57-6	0.70	**20**	**13**	**14**
Acenaphthylene	208-96-8	0.63	**57**	**38**	**45**
Acenaphthene	83-32-9	0.67	<6	<6	<6
Dibenzofuran	132-64-9	0.70	**190**	**100**	**100**
Fluorene	86-73-7	0.63	**15**	**9**	**9**
Phenanthrene	85-01-8	0.70	**1000**	**580**	**570**
Anthracene	120-12-7	0.63	**79**	**40**	**40**
Fluoranthene	206-44-0	0.50	**2500**	**970**	**920**
Pyrene	129-00-0	0.63	**1600**	**600**	**530**
Benzo(a)anthracene	56-55-3	0.20	**330**	**88**	**83**
Chrysene	218-01-9	0.13	**640**	**180**	**170**
Benzo(b)fluoranthene	205-99-2	0.50	**1000**	**260**	**230**
Benzo(k)fluoranthene	207-08-9	0.13	**330**	**70**	**74**
Benzo(a)pyrene	50-32-8	0.30	**150**	**50**	**45**
Indeno(1,2,3-cd)pyrene	193-39-5	0.40	**360**	**81**	**65**
Dibenzo(a,h)anthracene	53-70-3	0.40	**38**	**9**	**7**
Benzo(g,h,i)perylene	191-24-2	0.60	**280**	**73**	**61**
Surrogates (%recovery)	**Limits**				
1-Methylnaphthalene-d10	20-119		66%	81%	81%
o-Terphenyl	38-145		94%	102%	107%
Pyrene-d10	54-118		57%	74%	70%
Benzo(g,h,i)perylene-d12	41-137		**25%***	46%	**39%***
Date Extracted			12/4/2003	12/4/2003	12/4/2003
Date Analyzed			12/11/2003	12/11/2003	12/11/2003

*: The surrogate recovery is outside the lab QC limits.

Method: 8270C-PAHSIM
Approved: Randy Eatherton Date: 12/15/2003
Telephone: (253)-924-6431

Weyerhaeuser Analytical & Testing Services
32901 Weyerhaeuser Way South
Federal Way, WA 98003

Service Request 03-3093
WA Cert #C020

Report
Snoqualmie Mill Closure - November 2003

Client ID		**MDL**	Method Blank
		8270SIM	12/4/2003
Sample Date and Time		11/27/2000	PAHSBL2S1_
Lab ID		MDL	120403
		ug/kg	ug/kg
Analyte	CAS		
Naphthalene	91-20-3	0.77	<3
2-Methylnaphthalene	91-57-6	0.70	<3
Acenaphthylene	208-96-8	0.63	<3
Acenaphthene	83-32-9	0.67	<3
Dibenzofuran	132-64-9	0.70	<3
Fluorene	86-73-7	0.63	<3
Phenanthrene	85-01-8	0.70	<3
Anthracene	120-12-7	0.63	<3
Fluoranthene	206-44-0	0.50	<3
Pyrene	129-00-0	0.63	<3
Benzo(a)anthracene	56-55-3	0.20	<3
Chrysene	218-01-9	0.13	<3
Benzo(b)fluoranthene	205-99-2	0.50	<3
Benzo(k)fluoranthene	207-08-9	0.13	<3
Benzo(a)pyrene	50-32-8	0.30	<3
Indeno(1,2,3-cd)pyrene	193-39-5	0.40	<3
Dibenzo(a,h)anthracene	53-70-3	0.40	<3
Benzo(g,h,i)perylene	191-24-2	0.60	<3
Surrogates (%recovery)	**Limits**		
1-Methylnaphthalene-d10	20-119		88%
o-Terphenyl	38-145		98%
Pyrene-d10	54-118		99%
Benzo(g,h,i)perylene-d12	41-137		135%
Date Extracted			12/4/2003
Date Analyzed			12/11/2003

*: The surrogate recovery is outside the lab QC limits.

Method: 8270C-PAHSIM
Approved: Randy Eatherton
Telephone: (253)-924-6431

Date: 12/15/2003

Weyerhaeuser Analytical & Testing Services
32901 Weyerhaeuser Way South
Federal Way, WA 98003

Service Request 03-3093
WA Cert #C020

Report
Snoqualmie Mill Closure - November 2003

Client ID			A-3 MS	A-3 MSD	
Sample Date and Time		QC	11/24/2003 10:35	11/24/2003 10:35	
Lab ID		Limits	03-3093-003MS	03-3093-003MSD	MS/MSD
		%Rec	%Rec	%Rec	%RPD
Analyte	CAS				
Naphthalene	91-20-3	29-122	111%	**132%****	17%
2-Methylnaphthalene	91-57-6	27-137	99%	100%	1%
Acenaphthylene	208-96-8	23-127	123%	115%	7%
Acenaphthene	83-32-9	37-117	100%	98%	2%
Dibenzofuran	132-64-9	37-126	**147%****	**146%****	1%
Fluorene	86-73-7	42-121	**128%****	**126%****	1%
Phenanthrene	85-01-8	50-130	**269%****	**264%****	2%
Anthracene	120-12-7	51-109	**115%****	**110%****	4%
Fluoranthene	206-44-0	56-142	**342%****	**350%****	2%
Pyrene	129-00-0	49-137	**254%****	**230%****	10%
Benzo(a)anthracene	56-55-3	51-120	111%	105%	6%
Chrysene	218-01-9	54-124	105%	98%	7%
Benzo(b)fluoranthene	205-99-2	56-139	**164%****	**149%****	9%
Benzo(k)fluoranthene	207-08-9	53-145	74%	70%	5%
Benzo(a)pyrene	50-32-8	52-120	81%	72%	12%
Indeno(1,2,3-cd)pyrene	193-39-5	50-144	**47%****	**36%****	27%
Dibenzo(a,h)anthracene	53-70-3	46-149	52%	**44%****	16%
Benzo(g,h,i)perylene	191-24-2	50-136	**37%****	**24%****	**44%*****
Surrogates (%recovery)	Limits				
1-Methylnaphthalene-d10	20-119		92%	94%	
o-Terphenyl	38-145		114%	118%	
Pyrene-d10	54-118		88%	86%	
Benzo(g,h,i)perylene-d12	41-137		50%	43%	
Date Extracted			12/4/2003	12/4/2003	
Date Analyzed			12/11/2003	12/11/2003	

**: The spike recovery is outside lab QC limits, primarily due to high levels of the compounds in original sample.

***: The MS/MSD RPD is above the 30% limit.

Method: 8270C-PAHSIM
Approved: Randy Eatherton
Telephone: (253)-924-6431

Date: 12/15/2003

Weyerhaeuser Analytical & Testing Services
32901 Weyerhaeuser Way South
Federal Way, WA 98003

Service Request 03-3093
WA Cert #C020

Report
Snoqualmie Mill Closure - November 2003

Client ID			LCS
			12/4/2003
Sample Date and Time		QC	PAHSLC2S1_
Lab ID		Limits	120403
		%Rec	%Rec
Analyte	CAS		
Naphthalene	91-20-3	29-122	81%
2-Methylnaphthalene	91-57-6	27-137	87%
Acenaphthylene	208-96-8	23-127	73%
Acenaphthene	83-32-9	37-117	89%
Dibenzofuran	132-64-9	37-126	99%
Fluorene	86-73-7	42-121	102%
Phenanthrene	85-01-8	50-130	99%
Anthracene	120-12-7	51-109	97%
Fluoranthene	206-44-0	56-142	100%
Pyrene	129-00-0	49-137	101%
Benzo(a)anthracene	56-55-3	51-120	101%
Chrysene	218-01-9	54-124	95%
Benzo(b)fluoranthene	205-99-2	56-139	115%
Benzo(k)fluoranthene	207-08-9	53-145	110%
Benzo(a)pyrene	50-32-8	52-120	107%
Indeno(1,2,3-cd)pyrene	193-39-5	50-144	96%
Dibenzo(a,h)anthracene	53-70-3	46-149	106%
Benzo(g,h,i)perylene	191-24-2	50-136	99%
Surrogates (%recovery)	Limits		
1-Methylnaphthalene-d10	20-119		87%
o-Terphenyl	38-145		99%
Pyrene-d10	54-118		101%
Benzo(g,h,i)perylene-d12	41-137		126%
Date Extracted			12/4/2003
Date Analyzed			12/11/2003

Method: 8270C-PAHSIM
Approved: Randy Eatherton
Telephone: (253)-924-6431

Date: 12/15/2003

Weyerhaeuser Analytical & Testing Services
32901 Weyerhaeuser Way South
Federal Way, WA 98003

Service Request 03-3093

Report

Snoqualmie Mill Closure - November 2003

EPA #	Total Constituent Metals	A-1 11/24/2003 1020 001	Duplicate 001D	A-2 11/24/2003 1030 002	A-3 11/24/2003 1035 003	A-4 11/24/2003 1050 004	A-5 11/24/2003 1100 005	QL	MCL	Method Number
		mg/Kg, as-received basis								
D004	Arsenic	100	110	180	40	60	50	20	100	E-3050/E-6010
D005	Barium	343	353	450	225	302	286	1	2000	E-3050/E-6010
D006	Cadmium	2	2	3	<1	2	1	1	20	E-3050/E-6010
D007	Chromium	62	62	88	142	44	45	1	100	E-3050/E-6010
D008	Lead	80	70	110	50	70	40	10	100	E-3050/E-6010
D009	Mercury	<0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	4	E-245
D010	Selenium	<2	<2	<2	<2	<2	<2	2	20	E-3050/E-200.9
D011	Silver	<1	<1	<1	<1	<1	<1	1	100	E-3050/E-6010

pH Analysis	001	001D	002	003	004	005	QL	MCL	Method Number
pH	7.7	—	7.8	7.4 ; 7.4	8.1	7.6	N/A	N/A	9045C SW846
Ratio (Soil : Water)	1 : 2	—	1 : 2	1 : 1	1 : 2	1 : 1			
Temperature (°C)	21	—	20	21	21	21			

Notes:

(1) Total metals results that are well below the calculated MCL meet the requirements of passing TCLP. Results within ± 20% of the calculated MCL would need further analysis to statistically determine whether it passes or not.

(2) RCRA requires evaluation of results on the as-received basis for hazardous waste determination.

Approved: Dan Deprez Date: 12/15/03
Telephone: (253) 924-6188

Weyerhaeuser Analytical & Testing Services
32901 Weyerhaeuser Way South
Federal Way, WA 98003

Service Request 03-3093
WA Cert.# C020

Report
Snoqualmie Mill Closure - November 2003
Unit in mg/Kg

Client ID	Date Sampled	Time Sampled	Lab ID	Diesel Range	Motor Oil Range	O-terphenyl % Rec	Date Extracted	Date Analyzed
T18-1	11/24/2003	11:20	006	**180**	**400**	83%	12/8/2003	12/11/2003
T18-1	11/24/2003	11:20	006DUP	**120**	**250**	84%	12/8/2003	12/11/2003
T18-2	11/24/2003	11:25	007	**18000 D**	**3,500**	97%	12/8/2003	12/12/2003
T18-3	11/24/2003	11:35	008	**9700 D**	**2,300**	106%	12/8/2003	12/12/2003
STRAP-1	11/24/2003	12:00	009	**1,700**	**8,300**	80%	12/8/2003	12/15/2003
LH-1	11/24/2003	15:50	010	**18**	**57**	83%	12/8/2003	12/15/2003
Chip Dump	11/25/2003	12:40	011	**220**	**1,500**	81%	12/8/2003	12/11/2003
S-1	11/25/2003	12:30	012	**500**	**4,400**	80%	12/8/2003	12/12/2003
Method Blank			BLANK	<12	<50	77%	12/8/2003	12/12/2003
			QA/QC Analysis					
			Units in % Recovery					
Lab Control Sample			LCS	86%	NA	81%	12/8/2003	12/11/2003

NOTE: All samples were cleaned with acid and silica gel.

Reviewed: Randy Eatherton
Phone: (253) 924-6431

Date: ########