

COISSUE



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Superfund Response and  
Investigation Branch  
SEP 11 1995

September 6, 1995

Dr. James Everets, Chief  
Superfund Response and Investigation Section  
Environmental Protection Agency, Region 10  
1200 Sixth Avenue  
Mail Stop HW-114  
Seattle, WA 98101

*Re: Snoqualmie Falls Plywood Fire*

Dear Dr. Everets:

Enclosed is a report authored by Dr. Matthew G. Dalton titled **Additional Assessment of PCB Contamination, T-12 Area, Weyerhaeuser Snoqualmie Mill Site**, that is a follow-up to the prior Interim Report. This report concludes that, based on three additional quarters of data, groundwater is not being contaminated with PCB's. Weyerhaeuser has substantially implemented Dr. Dalton's recommendations. Unless you have questions or concerns Weyerhaeuser intends to take no further actions.

Sincerely,

A handwritten signature in black ink, appearing to read "John P. Gross".

John P. Gross  
Remediation Manager



**ADDITIONAL ASSESSMENT OF PCB CONTAMINATION  
T-12 AREA  
WEYERHAEUSER SNOQUALMIE MILL SITE  
SNOQUALMIE, WASHINGTON**

**Prepared for:**

**Office of the Environment  
Weyerhaeuser Company**

**Dalton, Olmsted & Fuglevand, Inc. *Environmental Consultants***

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**November 1994**

**ADDITIONAL ASSESSMENT OF PCB CONTAMINATION  
T-12 AREA  
WEYERHAEUSER SNOQUALMIE MILL SITE  
SNOQUALMIE, WASHINGTON**

**EXECUTIVE SUMMARY**

After a fire, cleanup investigation showed that transformer oil containing PCBs had migrated into soil beneath the site of a transformer designated T-12. Source control remedial actions were completed including removal of the transformer; a concrete pad; surface soils in the vicinity of the transformer site; and deeper soils beneath the site to depths of about 6.5 to 13 feet. In October 1991, a geotextile/soil cover was installed in the general area of the spill site over surface soils containing generally low concentrations of PCBs.

To assess whether PCBs or other transformer constituents (i.e. chlorobenzenes) have migrated into ground water, shallow and deep wells were installed and sampled. Well water level measurements indicate that ground water flows generally to the south towards an adjacent Log Pond. Based on the analytical data of several quarters of monitoring, PCBs or chlorobenzenes have not migrated from the T-12 area in ground water.

The recommended "path forward" is to restrict access to the T-12 area. The cover system and existing wells should not be disturbed and a legal description should be prepared which delineates the T-12 area.

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**ADDITIONAL ASSESSMENT OF PCB CONTAMINATION  
T-12 AREA  
WEYERHAEUSER SNOQUALMIE MILL SITE  
SNOQUALMIE, WASHINGTON**

**INTRODUCTION**

This report documents the results of our well installation and soil and ground-water sampling activities as outlined in our work plan (DOF 1991) for the T-12 area at the Weyerhaeuser Snoqualmie Mill (Figure 1). The purpose of this work was to further assess the extent of PCBs in surface soils and possible migration of PCBs in ground water.

**PROJECT SUMMARY**

After a fire, cleanup investigation showed that transformer oil containing PCBs had migrated into soil beneath the site of a transformer designated T-12. Source control remedial actions have been completed including removal of: the transformer; a concrete pad; surface soils in the vicinity of the transformer site; and deeper soils beneath the site to depths of about 6.5 to 13 feet. In October 1991, a geotextile/soil cover was installed in the general area of the spill site over surface soils containing generally low concentrations of PCBs.

As part of the cleanup investigation, wells and boring were installed. Geologic sampling revealed that the site is underlain by a layered sequence generally consisting of 4 to 5 feet of granular backfill (termed shallow zone), which is underlain by approximately ten to eleven feet of clay, which in turn is underlain by at least fifteen feet of silty sand (termed deep zone).

Water samples collected from wells (since abandoned) from the shallow zone indicated little, if any, contaminant migration in the shallow zone. However, sampling of deeper soils in the immediate vicinity of the spill site suggested that PCB and transformer oil constituents may have migrated into the silty soils beneath the clay layer. Several additional wells (GEO-MW-1 to GEO-MW-4) were installed in the deep zone which did not detect chlorinated benzenes (a component of transformer oil) but low concentrations (less than 0.27 ug/l - ppb) of PCBs were detected. The PCB detections are suspect because no chlorinated benzenes were detected and similar concentrations were detected in the upgradient, cross gradient and downgradient wells.

A work plan was developed to further assess the extent of PCBs in surface soils, seasonal variations in ground-water flow directions and whether PCBs or chlorinated benzenes are migrating downgradient (via ground-water flow) in the deep zone. The results of the sampling efforts are presented in this report.

The data indicates that low concentrations of PCBs are present in near surface soils. PCBs were not detected in any of the wells sampled, at reported detection limits of 0.1 ug/l to 0.2 ug/l. Low concentrations (less than 1 ug/l) of some chlorinated hydrocarbons were reportedly detected but the presence of these compounds is not confirmed because low concentrations of these compounds were detected in a field blank and a consistent concentration pattern in ground water is not evident.

### **SCOPE OF WORK**

- The previously established soil sampling grid was extended and 53 soil samples (including 5 duplicate samples) were collected and analyzed for PCBs by the Weyerhaeuser laboratory;
- Four additional "deep" wells (DOF-MW-5 to DOF-MW-8) were installed to depths of 24.5 to 27.5 feet;
- Locations and elevations of all wells were surveyed and a staff gage was installed on the Log Pond. Water level measurements were made at the time of each round of ground-water sampling to assess ground-water flow directions;
- Three sets (May, August and November 1992) of ground-water samples were obtained from the existing and new wells (except GEO-MW-2). The samples were analyzed for PCBs and chlorinated hydrocarbons by the Weyerhaeuser laboratory; and
- This report was prepared to document the work described above.

### **FINDINGS**

- Geologic and hydrologic conditions encountered during drilling of wells DOF-MW-5 through -8 were consistent with the reported conditions of GEO-MW-1 through -4. The well locations (as surveyed by Myron Anderson & Associates, licensed surveyors) are shown on Figure 2.
- PCB and chlorinated hydrocarbons concentrations for soil samples analyzed from the lower portion of the clayey silt layer above the "deep" ground-water zone are below detection limits for all wells. A summary of the laboratory results is provided in Table 1. The detailed laboratory data are presented in Attachment A.

- PCB concentrations in ground-water samples from all of the wells (except GEO-MW-2, which was not sampled) are below reported detection limits of 0.1 to 0.2 ug/L for all three rounds of sampling (5/92, 8/92 and 11/92). Chlorinated hydrocarbon compounds were below detection limits of 0.004 to 1.4 ug/L for all three rounds of sampling with the exception that low concentrations (less than 1 ug/L) of some chlorinated hydrocarbon compounds were detected in some wells during the May 1992 round of sampling only. The presence of these compounds in ground water is not confirmed because low concentrations of these compounds were also detected in a field blank (none were detected in the rinsate blank) during the May 1992 round, and none were detected during subsequent rounds of sampling. A summary of the laboratory results is provided in Table 2. The detailed laboratory data are presented in Attachment A.
- Ground-water contours, estimated flow directions and horizontal hydraulic gradients are shown on Figures 3 through 5. The ground-water flow direction based on the ground-water measurements made in May, August, and November, 1992 (Table 3) is to the south toward the Log Pond, generally consistent with previous measurements and over the three measurement periods, 5/92, 8/92, and 11/92. Horizontal hydraulic gradients over most of the area of concern, varied from 0.004 to 0.007 feet/foot, over the period of measurements. In May and August, 1992, the hydraulic gradients were on the order of 0.005 feet/foot, while in November, 1992, the gradients were somewhat higher ranging from 0.006 to 0.007 feet/foot.
- Based on the analytical data and ground-water flow directions, PCBs or chlorobenzenes have not migrated from the spill site in ground water.
- PCB analyses of surface soil samples in the T-12 area are shown on Figure 6. The sampling indicates that the geotextile/soil cover have been installed over most of the area where PCB concentrations exceed 1 mg/kg. PCBs (Aroclor 1260) are present in surface soils above 1 mg/kg outside the previously covered area in the northeastern and northwestern corners of the cover and to a lesser degree in the southwestern corner of the cover area. Only one of the samples outside the cover exceeds 10 mg/kg. Based on the 114 sample locations (and on a lognormal data distribution), the average PCB concentration is estimated to be approximately 1 mg/kg, while the upper 95% confidence interval is estimated to be approximately 4.6 mg/kg. The upper 95% confidence interval was estimated using the method for lognormally distributed data in Ecology (1992).



## **RECOMMENDATIONS ("PATH FORWARD")**

- A legal description of the T-12 area should be developed.
- Access to the T-12 area should be restricted and the cover system should not be disturbed.
- Additional sand and gravel fill should be placed in the low area immediately west of wells DOF-MW-5 and GEO-MW-1. This recommendation is based on a site visit made on November 11, 1994.
- The existing wells should be protected to prevent damage to the wells and well monuments.

## **GROUND-WATER MONITORING WELLS AND SAMPLING**

### **FIELD OBSERVATIONS AND DOCUMENTATION**

Terry Olmsted, Sr. Consulting Engineering Geologist of Dalton, Olmsted & Fuglevand, was on-site to observe and document the field activities and to verify that the field activities were consistent with the sampling plan. He also collected the ground-water samples.

### **WELL LOCATIONS AND DEPTHS**

Four wells were installed at the locations shown on Figure 2 during the period from May 12 through May 14, 1992. The wells were screened at depths intervals of 14.5 to 24.5 feet and 17.5 to 27.5 feet, depending upon ground surface variations and conditions encountered. This is the same "deep zone" in which the previous deep wells were installed.

### **WELL INSTALLATION METHOD**

The wells were installed in the following manner:

A large-diameter hole was drilled into the top two to three feet of the clayey silt to allow a 12-inch diameter temporary steel casing to be placed in the hole. A smaller diameter hole was used to drill an additional 2 to 3 feet into the clayey silt to allow a ten inch diameter steel casing to be placed inside the 12-inch casing. Once the ten-inch casing was installed,

the annular space between the ten and 12 inch casings was filled with a cement/bentonite grout while the 12-inch casing was extracted. A hollow-stem auger was used to perform this procedure at well DOF-MW-5. At the remaining three wells, DOF-MW-6, -7, and -8, because of large cobbles and caving conditions in the upper fill materials, a cable tool drill rig was used to complete this operation.

Drilling proceeded to the total depth of the hole using a hollow-stem auger capable of fitting inside the ten-inch casing. During drilling, samples were obtained using a 3-inch diameter, by 2-foot-long split spoon barrel sampler on an approximate 2.5-foot depth interval, resulting in essentially continuous sampling. Samples were placed in laboratory-supplied glass jars for possible laboratory analysis, and immediately placed into a chilled cooler with frozen "blue ice."

Once the final drilling depth was reached, the boring was converted into a well by placing a 10-foot long, 2-inch diameter screen (0.010" slot) and riser pipe through the auger center, placing a sand pack around and 3-feet above the top of the screen, and placing a bentonite seal as the auger was extracted. The bentonite seal was installed to within 1-foot of the ground surface.

The wells were finished with a locking metal monument which was embedded in 1-foot of concrete.

The wells were developed by bailing. Purge water was contained in labeled drums pending analysis of ground-water samples.

### **LOGGING OF FIELD ACTIVITIES**

All soil samples were described as to material type using ASTM Method D-2488 as a general guide. Well installation details were also recorded. A log of each well is provided in Attachment B.

### **SURVEY OF WELL HEADS AND LOCATIONS**

The existing and new wells were surveyed by a licensed surveyor (Myron Anderson & Associates of Issaquah, Washington) to a common elevation datum. The horizontal position of the new wells (DOF MW-5 through -8) and existing wells (GEO-MW-1 through -4) were established by the surveyor, who also established a staff gage to determine the elevation of the Log Pond water level.

## **WATER LEVEL MEASUREMENTS**

Water levels were measured using a calibrated electric well probe. The probe was decontaminated between well measurements. A complete set of water-level measurements was made on May 20, August 18, and November 20, 1992. Water-level measurements and elevations are shown on Table 3. Ground-water contours estimated from the water-level measurements are shown on Figure 3 through 5.

## **GROUND-WATER SAMPLES**

Ground-water samples were obtained from existing wells GEO-MW-1, -3 and -4, and new wells DOF-MW-5, -6, -7 and -8 on May 19, 1992, August 18, 1992, and November 20, 1992. The samples were taken using a Voss disposable high-density polyethylene bailer for each well.

At least three casing volumes of water were removed from each wells prior to taking each sample. Field measurements of pH, temperature and electrical conductivity were made during the sampling. This information is summarized on Table 2.

## **DECONTAMINATION**

Soil sampling equipment was cleaned between sampling runs by washing the sampler in Alconox and rinsing with tap water. The drilling tools were steam cleaned prior to entering the site, between drilling locations and before leaving the site. All decontamination water was collected and placed in labeled drums pending analysis of the water.

## **SAMPLE LABELING AND CHAIN-OF-CUSTODY**

Each sample container was labeled as to location, depth, date and initials of sampler. Each sample to be analyzed by the laboratory was logged on a chain-of-custody form and standard chain-of-custody procedures were used as described below in the section on Surface Soil Sampling.

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## **LABORATORY ANALYSIS OF MONITORING WELL SOIL AND GROUND-WATER SAMPLES**

### **ANALYTICAL LABORATORY**

The Weyerhaeuser analytical laboratory analyzed the soil and water samples.

### **NUMBER OF SAMPLES**

One soil sample from each well was analyzed for PCBs and chlorinated hydrocarbons. The sample was obtained from the lower portion of the clayey silt strata to assess whether PCBs or chlorinated hydrocarbons have migrated downward through the clayey silt at each well location.

For each ground-water sampling round, one ground-water sample from each well was obtained, not including duplicates or field blanks.

### **ANALYSIS METHODS**

Soil samples were prepared using Modified EPA Method 3550. Soil and ground-water samples were analyzed for PCBs using EPA Method 8080 and for chlorinated hydrocarbons using EPA Method 8120.

### **QUALITY CONTROL**

For each sampling round, a duplicate analysis of one of the samples was performed. In addition, analyses were made of a field blank and rinsate blank. The laboratory performed method blanks, matrix spikes and matrix spike duplicates. The laboratory blanks, matrix spikes and matrix spike duplicates were performed at least once per sample batch. The results of the QC analyses was reported on QC data reports provided by the laboratory.

### **LABORATORY REPORTING**

The laboratory data (Attachment A) include the QC data reports, and copies of custody documents.

## **SURFACE SOIL SAMPLING**

The previously established grid sampling was expanded to determine the extent of surface soils containing greater than 1 mg/kg PCBs. The grid sampling locations are shown on Figure 6.

### **SOIL SAMPLING METHOD**

The sampling grid was expanded as shown on Figure 6. Each grid square was about 15 feet on a side. Samples were collected by Terry Olmsted, Sr. Consulting Engineering Geologist of Dalton, Olmsted & Fuglevand, on May 21 and 26, 1992, and on September 10, 1992. Fifty-three additional soil samples (including five duplicate samples) were collected generally near the center of each grid. The samples were obtained using a post-hole digger and bar and hand excavating a boring to a depth of 0.5 feet beneath the existing or original ground surface (in areas which are covered by the geomembrane and soil). The sample was obtained over the 0.5 foot interval. Clean stainless steel sampling spoons were used to obtain the samples.

Each sample was placed in a glass container provided by the analytical laboratory. The samples were placed in a chilled cooler with "blue ice" for transport to the laboratory.

### **DECONTAMINATION**

The excavation equipment was washed with Alconox detergent and rinsed with tap water and distilled water between each sampling location. Individual sampling spoons were used for each location so that no spoon decontamination was required in the field.

### **SAMPLE LABELING AND CHAIN-OF-CUSTODY**

Each sample container was labeled as to project site, location, depth, date and initials of sampler. Each sample was logged on a chain of custody form which included a site identifier, sample numbers, signature of collector, date and time of collection, sample type, signature of persons involved in the chain of custody, inclusive dates of possession, and analyses to be performed. A signed chain-of-custody seal was placed over the sample cooler, and samples were taken by Weyerhaeuser courier to the laboratory the same day or on the day following collection.

### **FIELD LOCATION OF SAMPLING SITES**

The sampling grids were located by measuring from the existing wells. The corners of each sampling grid were spray-painted on the ground surface. The sampling locations

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were generally taken at or near the center of each grid. A cloth tape was used to make the measurements.

## **LABORATORY ANALYSIS OF SURFACE SOIL SAMPLES FOR PCBS**

### **ANALYTICAL LABORATORY**

The Weyerhaeuser analytical laboratory analyzed the soil samples.

### **ANALYSIS METHODS**

Soil samples were prepared using modified method 3550 and analyzed using EPA Method 8080.

### **QUALITY CONTROL**

Analyses of duplicate samples of ten percent of the collected samples were performed. The duplicate samples were randomly selected. In addition to the field duplicates, the laboratory performed method blanks, matrix spikes and matrix spike duplicates. The laboratory blanks, matrix spikes and matrix spike duplicates were performed at least once per 20 samples. The results of the QC analyses were reported on QC data reports provided by the laboratory.

### **LABORATORY REPORTING**

The laboratory data (Attachment A) include the QC data reports, and copies of custody documents.

## REFERENCES

DOF (Dalton, Olmsted & Fuglevand), 1991, Work Plan, Additional Assessment of PCB Contamination, T-12 Area, Weyerhaeuser Snoqualmie Mill Site, dated November 5, 1991.

Ecology (Washington State Department of Ecology), 1992, Statistical Guidance for Ecology Site Managers, Washington State Department of Ecology Toxics Cleanup Program, August 1992, 92-54.

GeoEngineers, Inc., 1991, Subsurface PCB Assessment, Former Snoqualmie Falls Plywood Plant Electrical Transformer T-12, Snoqualmie, Washington, for Weyerhaeuser, Sept. 20, 1991, File No. 0249-23-14.

HDR Engineering, Inc., 1989, Assessment of PCB Contamination - Weyerhaeuser's Cascade Division, Snoqualmie Falls Plywood Plant Fire Site, for Weyerhaeuser Co., March, 1989.

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HDR Engineering, Inc., 1989, Additional Excavation Report, Snoqualmie Mill T-12 Site - Weyerhaeuser's Cascade Division, Snoqualmie Falls Plywood Plant Fire Site, for Weyerhaeuser Co., December, 1989.

HDR Engineering, Inc., 1991, Project Status Report: Technical Summary for T12 PCB Transformer Spill Location - Former Snoqualmie Plywood Plant Site, May 6, 1991.

HDR Engineering, Inc., 1991, Summary Report, Snoqualmie Mill T-12 Site, Weyerhaeuser Cascade Division, Snoqualmie Falls, Former Plywood Plant Area for Weyerhaeuser Co., May 1991.


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This report has been prepared using generally accepted professional practices, related to the nature of the work accomplished, in the same or similar localities, at the time the services were performed. This report was prepared for the exclusive use of the Weyerhaeuser Company for specific application to the project purpose. This report should not be construed to constitute a legal opinion. No other conditions, expressed or implied, should be understood.

We appreciate the opportunity of providing you with our services. If you have any questions, please call.

Sincerely,  
DALTON, OLMSTED & FUGLEVAND, INC.



Matthew G. Dalton  
Sr. Consulting Hydrogeologist



Table 1 - Summary of Analytical Results - Soil (mg/kg)

Monitoring Well Soil Samples

Sample No.	Depth (Ft.)	Aroclor 1260**	Chlorinated Hydrocarbons
DOF-MW-5 S-4	12.5-14.5	<0.10	Below method detection limits.
DOF-MW-6 S-5	15-17	<0.10	Below method detection limits.
DOF-MW-7 S-5	12.5-14.5	<0.10	Below method detection limits.
DOF-MW-8 S-6	15-17	<0.10	Below method detection limits.

Surface Soil Samples

Sample No.	Depth (Ft.)	Aroclor 1260 (see notes)	Sample No.	Depth (Ft.)	Aroclor 1260 (see notes)
A-1D	0-0.5	0.47	AE-3	0-0.5	0.39
AA-1D	0-0.5	0.30	AE-4A	0-0.5	0.28
AB-1C	0-0.5	2.3	AE-4B	0-0.5	1.4
AC-1	0-0.5*	0.71	AE-5	0-0.5	0.23
AC-1B	0-0.5*	0.28	AE-6	0-0.5	0.031
AC-1C	0-0.5	1.8	AF-4A	0-0.5	0.077
AC-2	0-0.5*	1.1	AF-4B	0-0.5	0.036
AC-3	0-0.5*	2.5	AF-5	0-0.5	0.024
AC-4A	0-0.5*	0.82	AF-6	0-0.5	0.12
AC-4B	0-0.5*	**0.09	D-1C	0-0.5*	**0.05
AC-5	0-0.5	0.090	D-6	0-0.5	2.2
AC-6	0-0.5	0.067	D-6(D)	0-0.5	2.0
AD-1	0-0.5*	0.75	D-7	0-0.5	2.5
AD-1(D)	0-0.5*	0.94	E-7	0-0.5	3.2
AD-1A	0-0.5*	0.18	F-7	0-0.5	2.1
AD-1C	0-0.5	0.11	G-1B	0-0.5*	**0.03
AD-2	0-0.5*	0.46	G-4A	0-0.5*	0.99
AD-3	0-0.5	7.3	G-6	0-0.5	1.3
AD-4A	0-0.5	21.0	G-7	0-0.5	4.5
AD-4A(D)	0-0.5	16.9	H-1	0-0.5*	0.19
AD-4B	0-0.5	0.43	H-1A	0-0.5*	<0.10
AD-5	0-0.5	0.19	H-1A(D)	0-0.5*	<0.10
AD-6	0-0.5	0.11	H-2	0-0.5*	<0.10
AD-6(D)	0-0.5	0.14	H-4A	0-0.5*	5.7
AE-1	0-0.5*	0.86	I-1	0-0.5	<0.10
AE-1A	0-0.5*	**0.06	I-2	0-0.5	**0.04
AE-2	0-0.5	0.40			

Notes: Detailed laboratory results presented in Attachment A. Depths with asterisk(\*) are below geotextile and soil cover. Aroclor's, other than 1260, below method detection limits. \*\* Indicates esimated concentration below quantitation limit. Sample Results in italics are supplemental samples taken in September 1992. All other samples taken in May 1992.

Table 2 - Summary of Analytical Results - Ground Water (ug/l)

T-12 Area  
Snoqualmie Mill Site

Analyte	GEO-MW-1			GEO-MW-3			GEO-MW-4			DOF-MW-5			DOF-MW-5	DOF-MW-6		
	5/19/92	8/18/92	11/20/92	5/19/92	8/18/92	11/20/92	5/19/92	8/18/92	11/20/92	5/19/92	8/18/92	11/20/92	5/19/92	5/19/92	8/18/92	11/20/92
<b>PCB's</b>	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
<b>Aroclor 1260</b>	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
<b>Chlorinated Hydrocarbons</b>																
Dichlorobenzene			<1.0			<1.0			<1.0			<1.0				<1.0
m-dichlorobenzene	<0.09	<0.40		<0.09	<0.40		<0.09	<0.40		<0.09	<0.40		<0.09	<0.09	14	
p-dichlorobenzene	0.6	6.9		<0.1	<0.50		<0.1	<0.50		<0.1	<0.50		<0.1	<0.1	<0.50	
Benzyl chloride	<0.01	<0.070		<0.01	<0.070		<0.01	85		<0.01	<0.070		<0.01	<0.01	<0.070	
o-dichlorobenzene	<0.09	<0.40		<0.09	<0.40		<0.09	8.3		<0.09	<0.40		<0.09	<0.09	<0.40	
Hexachloroethane	<0.004	<0.02		<0.004	<0.02		<0.004	0.16		<0.004	<0.02		<0.004		<0.02	
Benzal Chloride	<0.04	<0.20		<0.04	<0.20		<0.04	<0.20		<0.04	<0.20		<0.04		<0.20	
1,2,4-trichlorobenzene	<0.02	<0.09		0.13	<0.09		<0.02	<0.09		<0.02	<0.09		<0.02	<0.02	2.3	
Trichlorobenzene			<0.20			<0.20			<0.20			<0.20				<0.20
Hexachlorobutadiene	<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	0.008	<0.02	
Benzotrichloride	<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	<0.004	<0.02	
Hexachlorocyclopentadiene	<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	0.041	<0.02	
1,2,4,5-tetrachlorobenzene	<0.008	<0.40		<0.008	<0.40		<0.008	<0.40		<0.008	<0.40		<0.008	<0.008	<0.40	
Tetrachlorobenzene			<0.80			<0.80			<0.80			<0.80				<0.80
2-chloronaphthalene	<0.3	<1.4		<0.3	<1.4		<0.3	<1.4		0.6	<1.4		<0.3	<0.3	<1.4	
Hexachlorocyclohexane-a	<0.004	<0.02		0.011	<0.02		<0.004	<0.02		0.017	<0.02		<0.004	0.019	<0.02	
Hexachlorobenzene	<0.02	<0.09	<0.20	<0.02	<0.09	<0.20	<0.02	0.25	<0.20	<0.02	<0.09	<0.20	0.03	<0.02	0.30	<0.20
Hexachlorocyclohexane-g	<0.004	<0.02		0.045	<0.02		<0.004	<0.02		0.029	<0.02		0.051	0.014	<0.02	
<b>Field Parameters</b>																
pH	7.3	7.8	6.4	7.5	7.6	6.4	7.5	7.3	6.2	7.3	7.1	6.5	n.a.	7.5	7.0	6.3
Conductivity (umohs)	338	367	615	620	663	647	555	594	611	533	464	507	n.a.	718	799	867
Temperature (Degrees C.)	16	19	13	17	19	13	18	19	10	15	19	14	n.a.	19	19	13

Note: Refer to Detailed Laboratory Results, Attachment A. Field Measurements made using Corning Checkmate 90 pH and conductivity probes

Table 2 - Summary of Analytical Results - Ground Water (ug/l)

T-12 Area  
Snoqualmie Mill Site

Analyte	DOF-MW-7			DOF-MW-8			Field Blank			Rinse Blank		
	5/19/92	8/18/92	11/20/92	5/19/92	8/18/92	11/20/92	5/19/92	8/18/92	11/20/92	5/19/92	8/18/92	11/20/92
<b>PCB's</b>												
Aroclor 1260	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
<b>Chlorinated Hydrocarbons</b>												
Dichlorobenzene			<1.0			<1.0			<1.0			<1.0
m-dichlorobenzene	<0.09	2.3		<0.09	<0.40		<0.09	<0.40		<0.09	<0.40	
p-dichlorobenzene	<0.1	<0.50		<0.1	<0.50		<0.1	<0.50		<0.1	<0.50	
Benzyl chloride	<0.01	<0.070		0.72	<0.070		0.98	<0.070		<0.01	<0.070	
o-dichlorobenzene	<0.09	<0.40		<0.09	<0.40		0.1	<0.40		<0.09	<0.40	
Hexachloroethane	<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	<0.02	
Benzal Chloride	<0.04	<0.20		<0.04	<0.20		<0.04	<0.20		<0.04	<0.20	
1,2,4-trichlorobenzene	0.03	<0.09		<0.02	<0.09		<0.02	<0.09		<0.02	<0.09	
Trichlorobenzene			<0.20			<0.20			<0.20			<0.20
Hexachlorobutadiene	<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	<0.02	
Benzotrichloride	<0.004	<0.02		0.012	<0.02		<0.004	<0.02		<0.004	<0.02	
Hexachlorocyclopentadiene	<0.004	<0.02		<0.004	<0.02		<0.004	<0.02		<0.004	<0.02	
1,2,4,5-tetrachlorobenzene	<0.008	<0.40		<0.008	<0.40		<0.008	<0.40		<0.008	<0.40	
Tetrachlorobenzene			<0.80			<0.80			<0.80			<0.80
2-chloronaphthalene	<0.3	<1.4		<0.3	<1.4		0.4	<1.4		<0.3	<1.4	
Hexachlorocyclohexane-a	0.04	<0.02		0.01	<0.02		0.013	<0.02		<0.004	<0.02	
Hexachlorobenzene	<0.02	<0.09	<0.20	<0.02	<0.09	<0.20	<0.02	<0.09	<0.20	<0.02	<0.09	<0.20
Hexachlorocyclohexane-g	<0.004	<0.02		0.042	<0.02		<0.004	<0.02		<0.004	<0.02	
<b>Field Parameters</b>												
pH	7.2	7.0	6.3	7.7	7.2	6.4	n.a.			n.a.		
Conductivity (umohs)	673	715	693	997	1056	1129	n.a.			n.a.		
Temperature (Degrees C.)	20	19	14	19	19	14	n.a.			n.a.		

Note: Refer to Detailed Labora

**TABLE 3 - WATER LEVEL MEASUREMENTS**

T-12 Area  
Snoqualmie Mill Site

**Table 3. Water Level Measurements - Monitoring Wells and Log Pond**

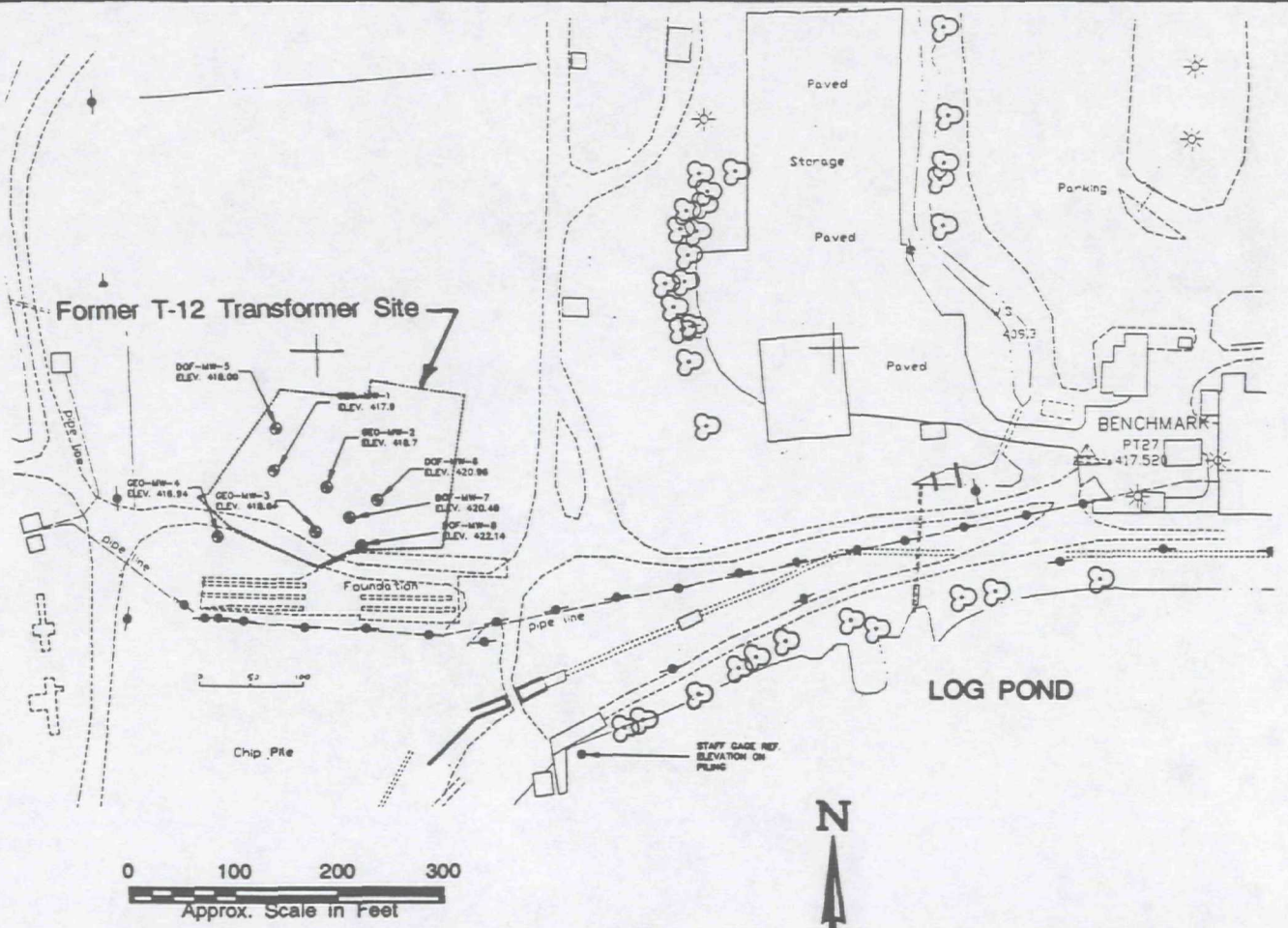
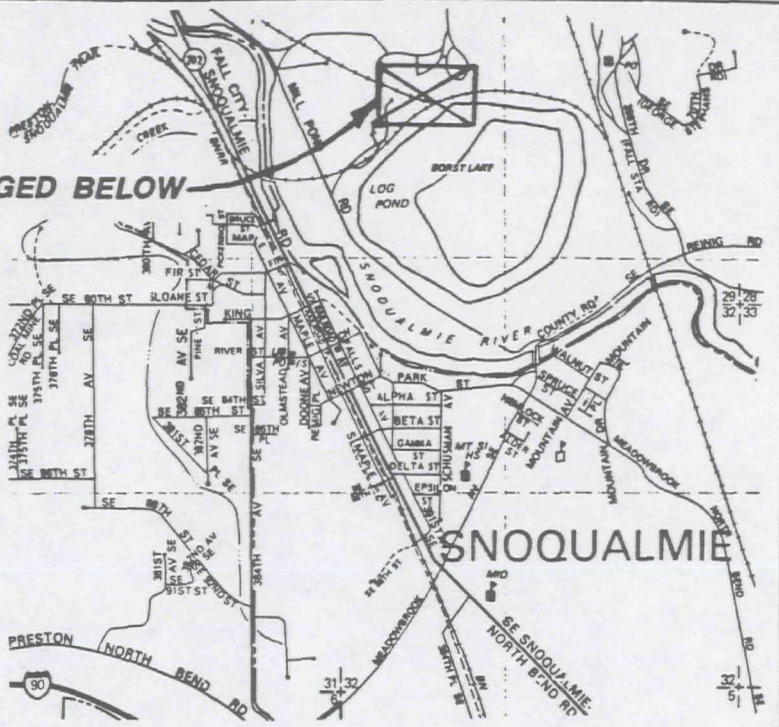
Measurement Point	Date Installed	Zone Screened	Screen Depth	Elev. of TOC (6/9/92 Survey <sup>1</sup> )	Date: 8/19/91	
					Depth from TOC	Elev. of water level
GEO-MW-1	8/12/91	Lower	19.5-24.5	417.90	8.94	408.96
GEO-MW-2	8/12/91	Lower	19.5-24.5	418.70	9.87	408.83
GEO-MW-3	8/16/91	Lower	19.5-24.5	418.64	9.98	408.66
GEO-MW-4	8/16/91	Lower	19.5-24.5	416.94	8.17	408.77
DOF-MW-5	5/13/92	Lower	14.5-24.5	418.00	n.a.	n.a.
DOF-MW-6	5/14/92	Lower	17.5-27.5	420.96	n.a.	n.a.
DOF-MW-7	5/14/92	Lower	17.5-27.5	420.49	n.a.	n.a.
DOF-MW-8	5/14/92	Lower	17.5-27.5	422.14	n.a.	n.a.
Log Pond	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

<sup>1</sup>Notes: (1) Elevations of top of PVC riser pipe (TOC) determined by Myron Anderson & Associates on June 9, 1992

Measurement Point	Date: 10/9/91		Date: 5/20/92		Date: 8/18/92	
	Depth from TOC	Elev. of water level	Depth from TOC	Elev. of water level	Depth from TOC	Elev. of water level
GEO-MW-1	9.29	408.61	8.04	409.86	8.58	409.32
GEO-MW-2	10.21	408.49	8.96	409.74	9.50	409.20
GEO-MW-3	10.34	408.30	9.10	409.54	9.66	408.98
GEO-MW-4	8.55	408.39	7.33	409.61	7.87	409.07
DOF-MW-5	n.a.	n.a.	7.47	410.53	8.12	409.88
DOF-MW-6	n.a.	n.a.	11.10	409.86	11.68	409.28
DOF-MW-7	n.a.	n.a.	10.79	409.70	11.35	409.14
DOF-MW-8	n.a.	n.a.	12.47	409.67	13.03	409.11
Log Pond	n.a.	n.a.	n.a.	(409.41 on 6/19/92)	Pond Staff Gage	408.82

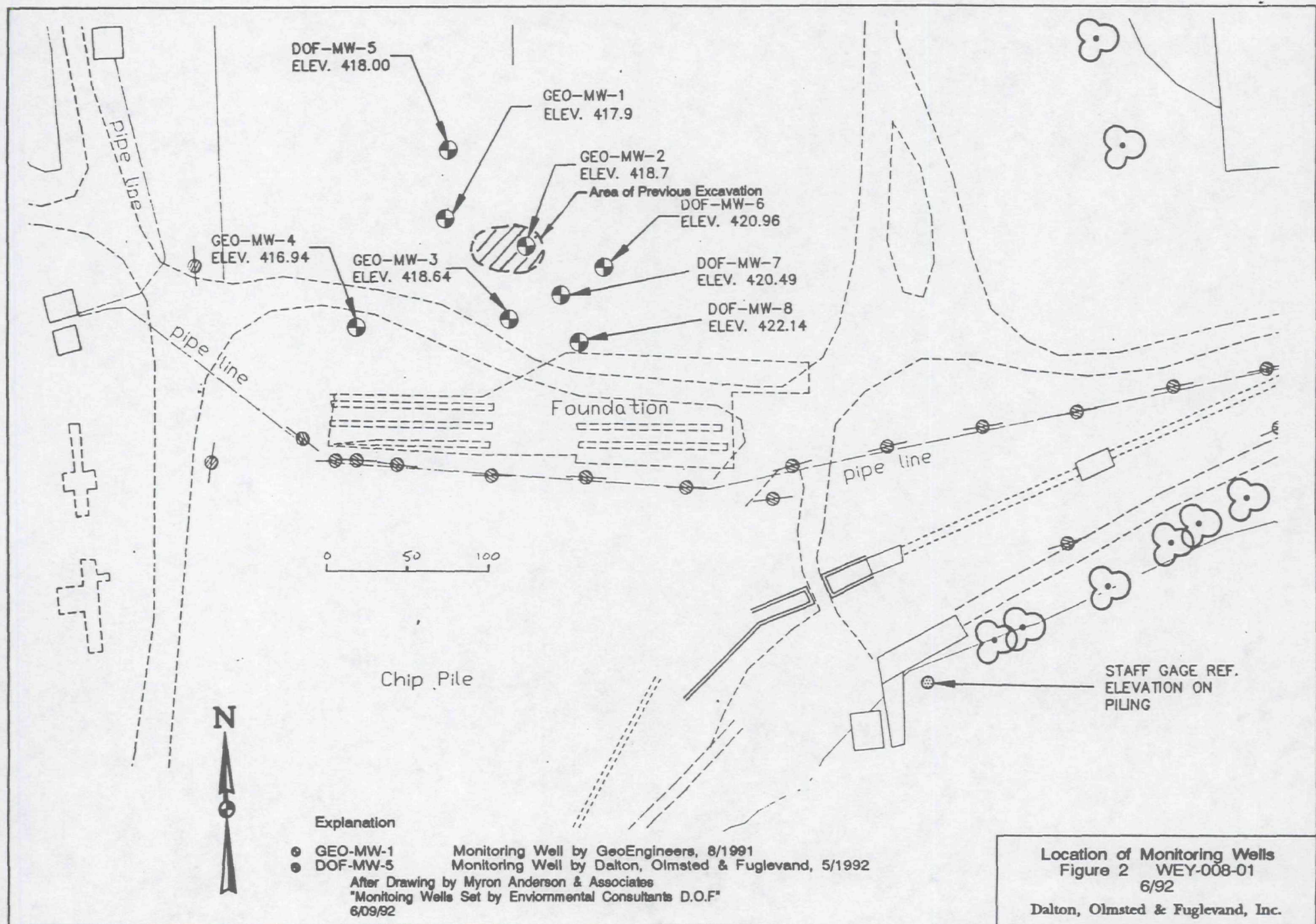
Measurement Point	Date: 11/20/92	
	Depth from TOC	Elev. of water level
GEO-MW-1	7.34	410.56
GEO-MW-2	8.21	410.49
GEO-MW-3	8.46	410.18
GEO-MW-4	6.71	410.23
DOF-MW-5	6.54	411.46
DOF-MW-6	10.33	410.63
DOF-MW-7	10.1	410.39
DOF-MW-8	11.76	410.38
Log Pond	Pond Staff Gage	409.32

AREA ENLARGED BELOW



After Drawing by Myron Anderson & Associates  
 "Monitoring Wells Set by Environmental Consultants D.O.F."  
 6/09/92

SITE VICINITY MAP  
 Figure 1 WEY-008-01  
 6/92  
 Dalton, Olmsted & Fuglevand Inc.

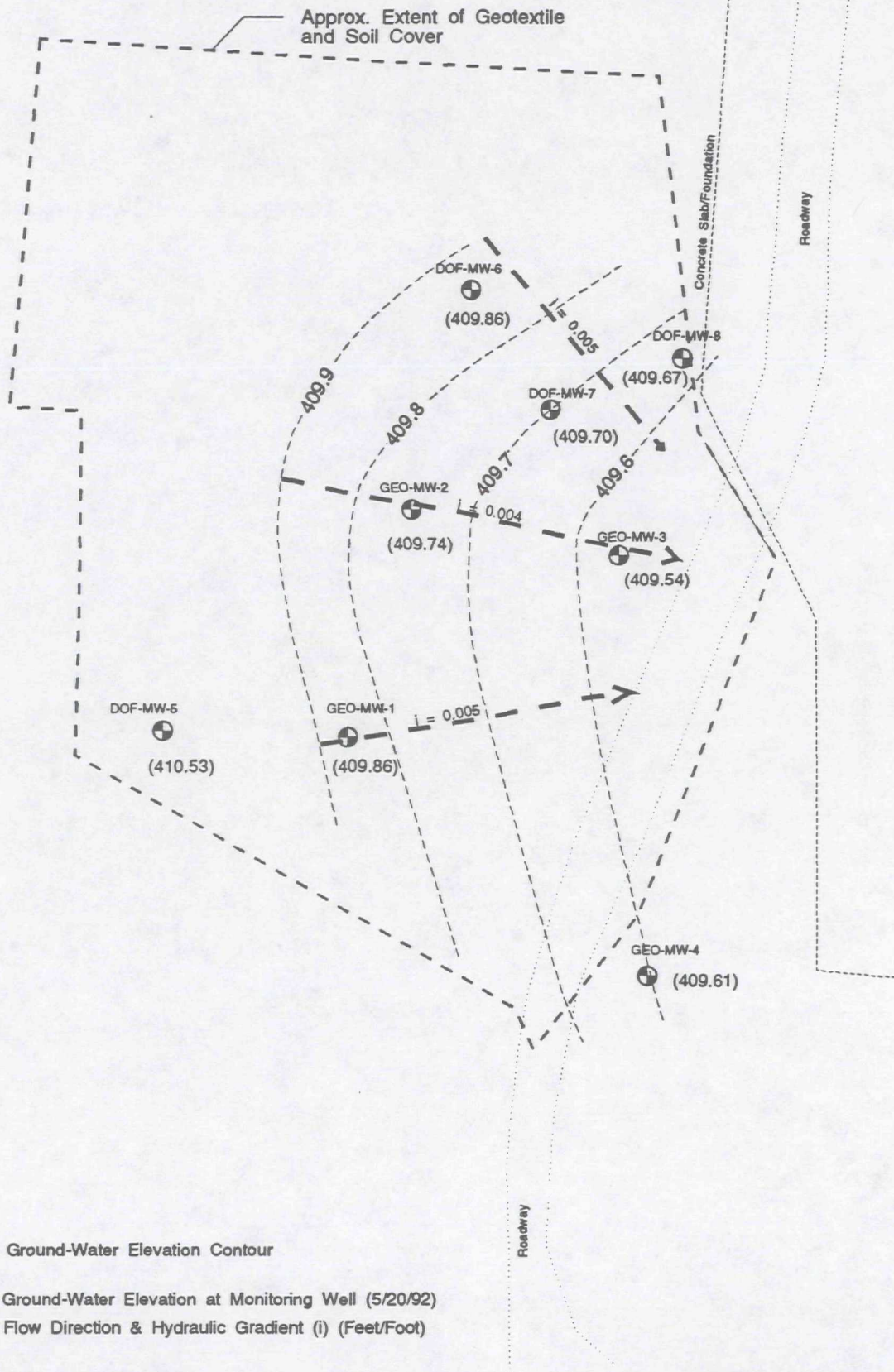


**Explanation**



- GEO-MW-1 Monitoring Well by GeoEngineers, 8/1991
  - DOF-MW-5 Monitoring Well by Dalton, Olmsted & Fuglevand, 5/1992
- After Drawing by Myron Anderson & Associates  
 "Monitoring Wells Set by Environmental Consultants D.O.F"  
 6/09/92

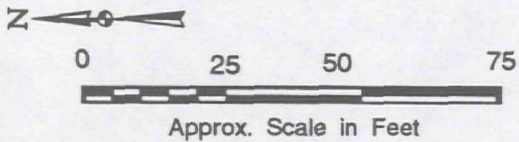
Location of Monitoring Wells  
 Figure 2 WEY-008-01  
 6/92

Dalton, Olmsted & Fuglevand, Inc.



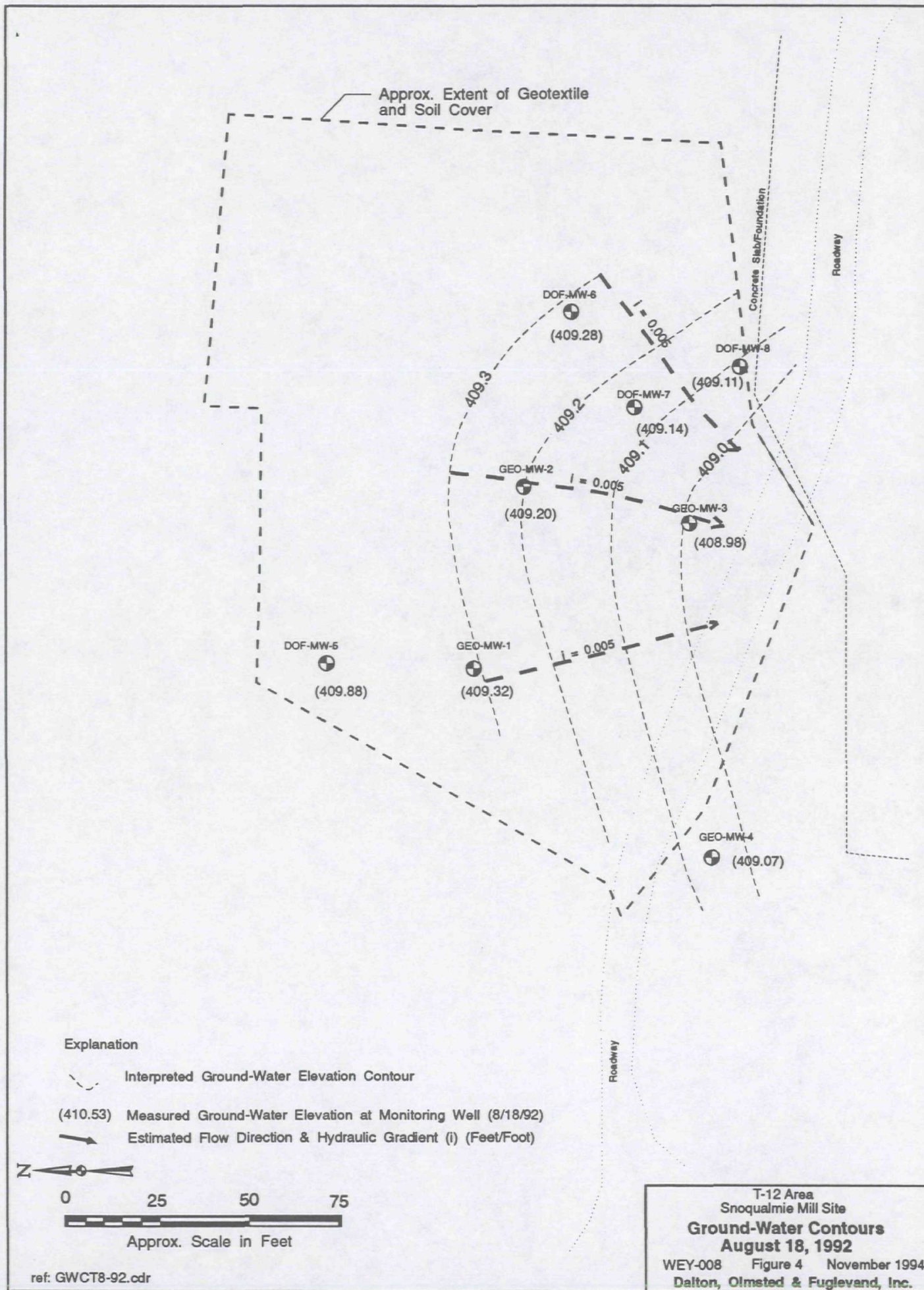
Explanation

-  Interpreted Ground-Water Elevation Contour
- (410.53) Measured Ground-Water Elevation at Monitoring Well (5/20/92)
-  Estimated Flow Direction & Hydraulic Gradient (i) (Feet/Foot)





ref: gwct5-92.cdr

T-12 Area  
Snoqualmie Mill Site  
**Ground-Water Contours**  
May 20, 1992  
WEY-008 Figure 3 November 94  
Dalton, Olmsted & Fuglevand, Inc.



Explanation

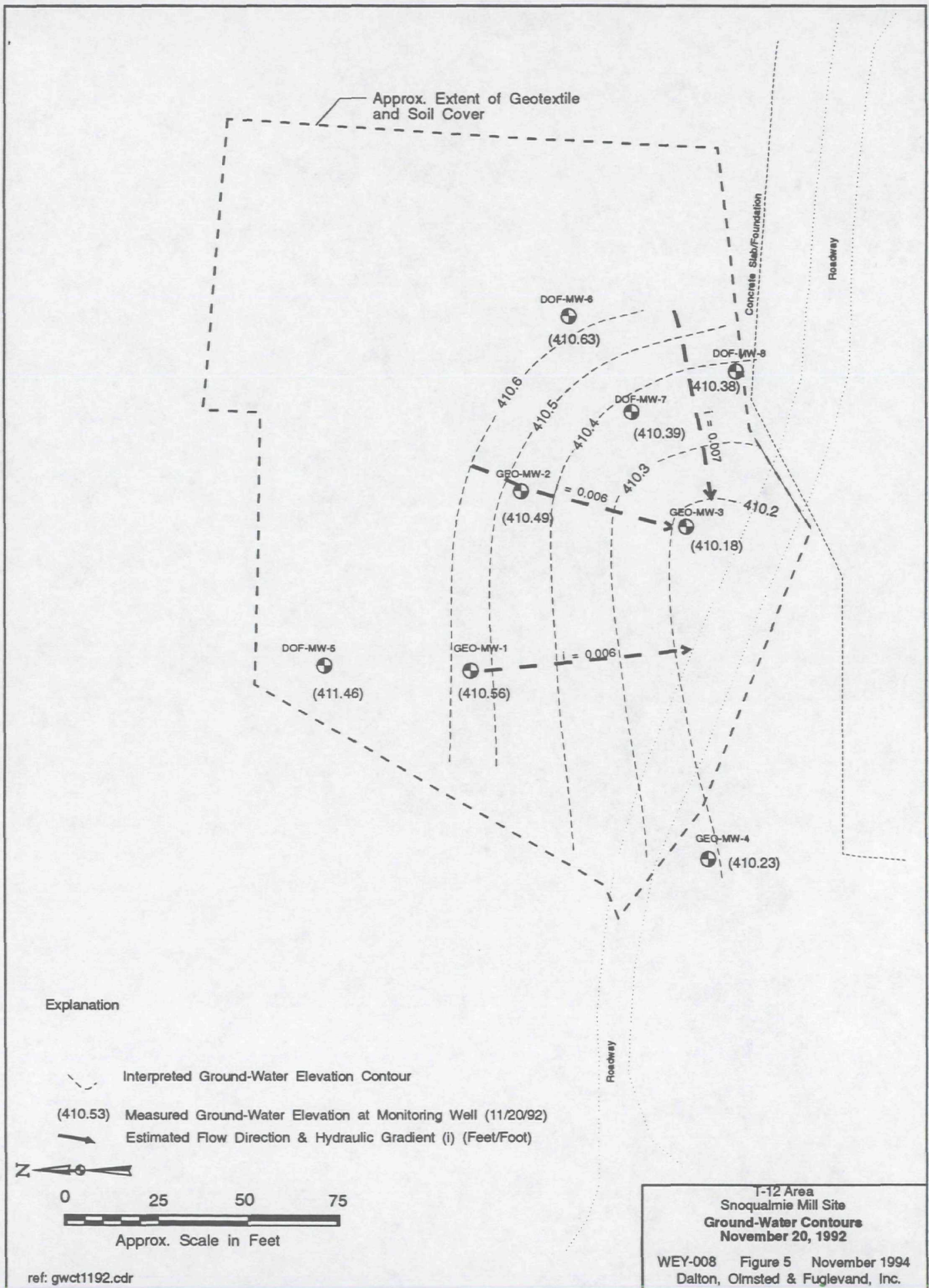
-  Interpreted Ground-Water Elevation Contour
- (410.53) Measured Ground-Water Elevation at Monitoring Well (8/18/92)
-  Estimated Flow Direction & Hydraulic Gradient (i) (Feet/Foot)



0 25 50 75

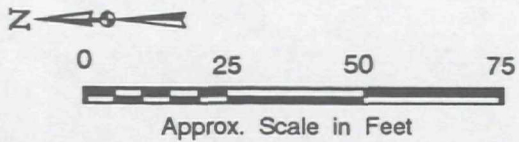
Approx. Scale in Feet





Explanation

- Interpreted Ground-Water Elevation Contour
- (410.53) Measured Ground-Water Elevation at Monitoring Well (11/20/92)
- Estimated Flow Direction & Hydraulic Gradient (i) (Feet/Foot)

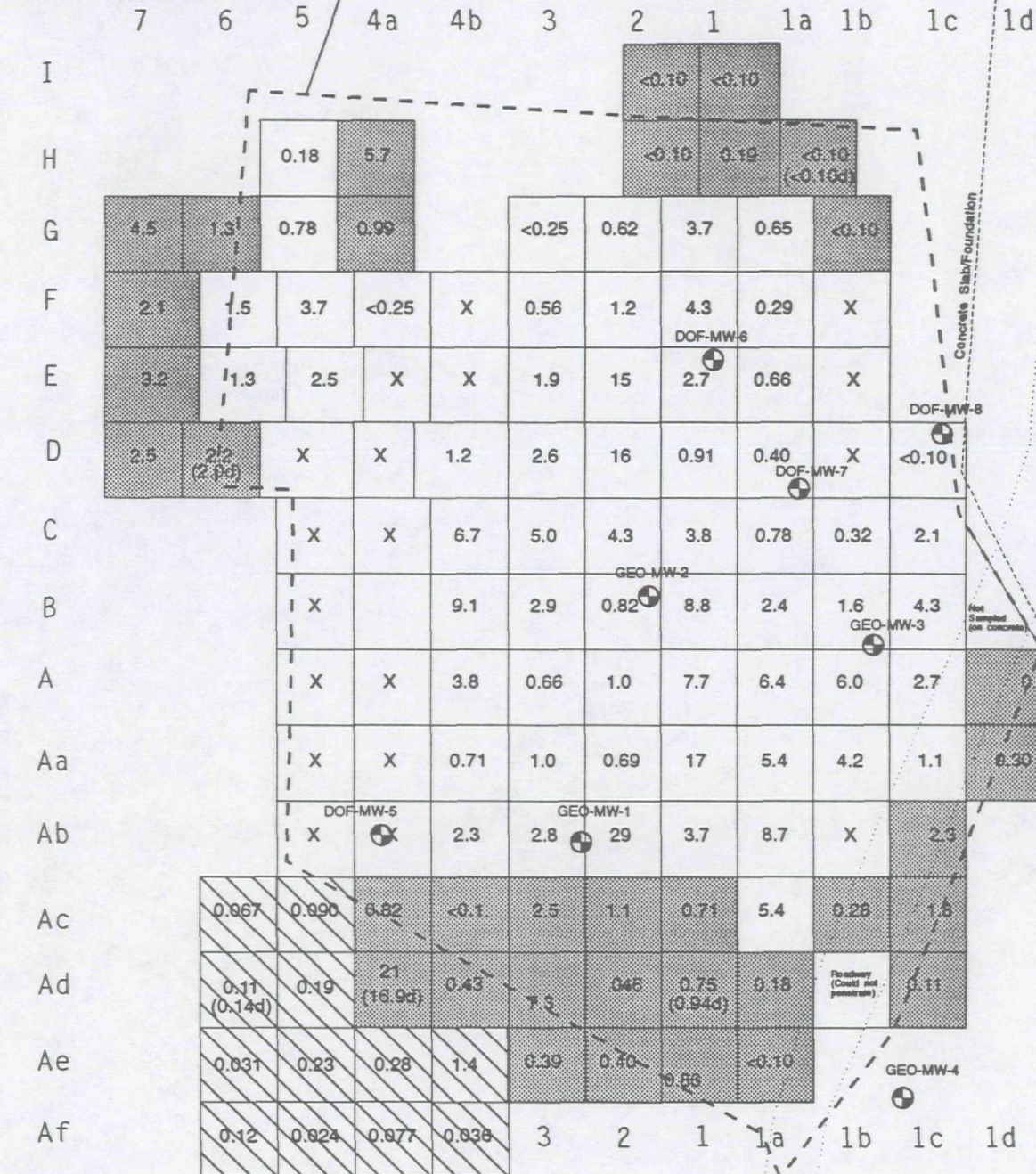


ref: gwct1192.cdr

T-12 Area  
Snoqualmie Mill Site  
**Ground-Water Contours**  
November 20, 1992

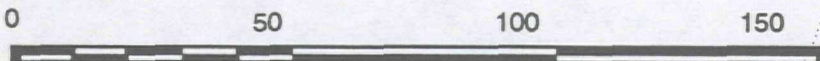
WEY-008 Figure 5 November 1994  
Dalton, Olmsted & Fuglevand, Inc.

Approx. Extent of Geotextile and Soil Cover



Sampling Grid Explanation

- 1.7 (1.8d) — PCB Conc. in ug/g
- Duplicate Sample PCB Conc. in ug/g
- Grids with "X" reported by others to be less than 1.0 mg/kg
- 0.82 — Additional Sampling Grid Results, May, 1992
- 0.12 — Additional Sampling Grid Results, September 1992



Approx. Scale in Feet

Ref: soilgrid.cdr

T-12 Area  
Snoqualmie Mill Site

Surface Soil Sampling Grid  
WEY-008 Figure 6 March 1993  
Dalton, Olmsted & Fuglevand, Inc.

**ATTACHMENT A**  
**RESULTS OF LABORATORY ANALYSES**



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**Weyerhaeuser Analysis and Testing Services  
Service Request 08733**

**SNOQUALMIE SOIL SAMPLES**

**Aroclor Analysis**

Thirty soils were analyzed for Aroclors, using a modified method 3050/8080. The results are summarized below.

Lab Sample Number	Sample Description		
80358	AC-1	05/21/92	1410
80359	AC-1B	05/21/92	1425
80360	AC-1C	05/21/92	1430
80361	AC-2	05/21/92	1400
80362	AC-3	05/21/92	1350
80363	AC-4A	05/21/92	1330
80364	AC-4B	05/21/92	1335
80365	AD-1	05/21/92	1545
80366	AD-1	05/21/92	1545 (D)
80367	AD-2	05/21/92	1530
80368	AD-3	05/21/92	1520
80369	AD-4A	05/21/92	1510
80370	AD-4A	05/21/92	1510 (D)
80371	AD-4B	05/21/92	1515
80372	D-6	05/21/92	1240
80373	D-6	05/21/92	1240 (D)
80374	D-7	05/21/92	1235
80375	E-7	05/21/92	1230
80376	F-7	05/21/92	1225
80377	G-1B	05/21/92	1120
80378	G-4A	05/21/92	1110
80379	G-6	05/21/92	10050
80380	G-7	05/21/92	1040
80381	H-1	05/21/92	1005
80382	H-1A	05/21/92	1015
80383	H-1A	05/21/92	1015 (D)
80384	H-2	05/21/92	0955
80385	H-4A	05/21/92	1030
80386	I-1	05/21/92	0940
80387	I-2	05/21/92	0935

Approved

*Michael J. [Signature]*

Date 6/4/92



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## SNOQUALMIE SOIL SAMPLES

UNITS IN PPM (UG/G)

CAS NO.	COMPOUND	80358	80359	80360	80361	80362
	Surrogate Recover (DCLBP)	91%	92%	70%	86%	88%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	0.71	0.28	1.8	1.1	2.5

CAS NO.	COMPOUND	80363	80364	80365	80366	80367
	Surrogate Recover (DCLBP)	93%	82%	88%	94%	94%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	0.82	*0.09	0.75	0.94	0.46

CAS NO.	COMPOUND	80368	80369	80370	80371	80372
	Surrogate Recover (DCLBP)	94%	94%	95%	88%	100%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	7.3	21.0	16.9	0.43	2.2

CAS NO.	COMPOUND	80373	80374	80375	80376	80377
	Surrogate Recover (DCLBP)	96%	96%	91%	98%	99%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	2.0	2.5	3.2	2.1	*0.03

Approved

*[Signature]* Date 6/4/97



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## SNOQUALMIE SOIL SAMPLES

UNITS IN PPM (UG/G)

CAS NO.	COMPOUND	80378	80379	80380	80381	80382
	Surrogate Recover (DCLBP)	94%	91%	91%	95%	83%
12674-11-2--	Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2--	Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5--	Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9--	Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6--	Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1--	Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5--	Aroclor-1260	0.99	1.3	4.5	6.19	<0.10

CAS NO.	COMPOUND	80383	80384	80385	80386	80387
	Surrogate Recover (DCLBP)	96%	90%	90%	84%	90%
12674-11-2--	Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2--	Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5--	Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9--	Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6--	Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1--	Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5--	Aroclor-1260	<0.10	<0.10	5.7	<0.10	*0.04

CAS NO.	COMPOUND	Method Blank
	Surrogate Recover (DCLBP)	92%
12674-11-2--	Aroclor-1016	<0.10
11104-28-2--	Aroclor-1221	<0.20
11141-16-5--	Aroclor-1232	<0.10
53469-21-9--	Aroclor-1242	<0.10
12672-29-6--	Aroclor-1248	<0.10
11097-69-1--	Aroclor-1254	<0.10
11096-82-5--	Aroclor-1260	<0.10

\*Indicates that the concentration is below the quantitation limit and therefore is only an estimate.

Approved

*[Signature]* Date 6/4/92



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**SNOQUALMIE SOIL SAMPLES**

**QA/QC Analysis**

Two sets of matrix spikes and matrix spike duplicates were analyzed along with the samples. The spike level was at 5.9 PPM and are summarized below.

	<b>% Recovery</b>	<b>Relative % Deviation</b>
Set I	92.3% 87.5%	1.35%
Set II	77.0% 80.3%	1.05%

Approved *[Signature]* Date 6/4/92





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**Meyerhaeuser Analysis and Testing Services  
Service Request 08715**

**SNOQUALMIE WATER SAMPLES**

**Aroclor Analysis**

Ten water samples were analyzed for Aroclors, using method 3010/8080.  
The results are summarized below.

Lab Sample Number	Sample Description		
90228	GEO-MW1	5/19/92	1230
90229	GEO-MW3	5/19/92	1330
90330	GEO-MW4	5/19/92	1630
90331	DOF-MW5	5/19/92	1100
90332	DOF-MW5 (D)	5/19/92	1100
90333	DOF-MW6	5/19/92	1530
90334	DOF-MW7	5/19/92	1500
90335	DOF-MW8	5/19/92	1400
90336	FIELD BLANK	5/19/92	1540
90337	RINSE BLANK	5/19/92	1545

**UNITS IN PPB (uG/L)**

CAS NO.	COMPOUND	90228	90229	90230	90231	90232
	Surrogate Recover (DCLBP)	88%	16%	36%	20%	15%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	<0.10	<0.10	<0.10	<0.10	<0.10

Approved *[Signature]* Date 8/4/92





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## SNOQUALMIE WATER SAMPLES

UNITS IN PPB (uG/L)

CAS NO.	COMPOUND	90233	90234	90235	90236	90237
	Surrogate Recover (DCLBP)	38%	19%	19%	64%	73%
12674-11-2--	Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2--	Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5--	Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9--	Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6--	Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1--	Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5--	Aroclor-1260	<0.10	<0.10	<0.10	<0.10	<0.10

CAS NO.	COMPOUND	METHOD BLANK
	Surrogate Recover (DCLBP)	92%
12674-11-2--	Aroclor-1016	<0.10
11104-28-2--	Aroclor-1221	<0.20
11141-16-5--	Aroclor-1232	<0.10
53469-21-9--	Aroclor-1242	<0.10
12672-29-6--	Aroclor-1248	<0.10
11097-69-1--	Aroclor-1254	<0.10
11096-82-5--	Aroclor-1260	<0.10

Approved

*[Signature]* Date 6/4/92

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**Weyerhaeuser Analytical and Testing Services**

**Service Request 08715**

**Snoqualmie Water Samples**

**Method 8120  
Chlorinated Hydrocarbon Analysis**

The samples and appropriate quality control samples were analyzed for chlorinated hydrocarbons by method 8120 using a five point calibration with point to point fitting to quantitate the results. Sample results are reported in ug/L (ppb).

Approved

Kerthand A. Q.

Date

6/16/92

SR # 08715  
 Date 6/9/92  
 Analyst K. Orr

Sample #	90228	90229	90230	90231	90232	90233	90234
Client ID	GEO-MW1	GEO-MW3	GEO-MW4	DOF-MW5	DOF-MW5(D)	DOF-MW6	DOF-MW7
	5/19/92	5/19/92	5/19/92	5/19/92	5/19/92	5/19/92	5/19/92
	1230	1330	1630	1100	1100	1530	1500

Analyte Names	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
m-dichlorobenzene	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
p-dichlorobenzene	0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl chloride	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-dichlorobenzene	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Hexachloroethane	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Benzal chloride	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
1,2,4-trichlorobenzene	< 0.02	0.13	< 0.02	< 0.02	< 0.02	< 0.02	0.03
Hexachlorobutadiene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.008	< 0.004
Benzotrichloride	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Hexachlorocyclopentadiene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.041	< 0.004
1,2,4,5-tetrachlorobenzene	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
2-chloronaphthalene	< 0.3	< 0.3	< 0.3	0.6	< 0.3	< 0.3	< 0.3
Hexachlorocyclohexane-a	< 0.004	0.011	< 0.004	0.017	< 0.004	0.019	0.040
Hexachlorobenzene	< 0.02	< 0.02	< 0.02	< 0.02	0.03	< 0.02	< 0.02
Hexachlorocyclohexane-g	< 0.004	0.045	< 0.004	0.029	0.051	0.014	< 0.004

SR # 08715  
 Date 6/9/92  
 Analyst K. Orr

Sample #	90235	90236	90237	Spike	Spike Dup	Blank
Client ID	DOF-MW8	FIELD	RINSE	BLANK	BLANK	
	5/19/92	BLANK	BLANK	Recovery	Recovery	
	1400	1540	1545			

Analyte Names	(ug/L)	(ug/L)	(ug/L)	(%)	(%)	(ug/L)
m-dichlorobenzene	< 0.09	< 0.09	< 0.09	102	103	< 0.08
p-dichlorobenzene	< 0.1	< 0.1	< 0.1	106	110	< 0.1
Benzyl chloride	0.72	0.98	< 0.01	101	133	< 0.01
o-dichlorobenzene	< 0.09	0.10	< 0.09	117	126	< 0.08
Hexachloroethane	< 0.004	< 0.004	< 0.004	89	91	< 0.004
Benzal chloride	< 0.04	< 0.04	< 0.04	-	12	< 0.03
1,2,4-trichlorobenzene	< 0.02	< 0.02	< 0.02	113	111	< 0.02
Hexachlorobutadiene	< 0.004	< 0.004	< 0.004	88	90	< 0.004
Benzotrichloride	0.012	< 0.004	< 0.004	11	15	< 0.004
Hexachlorocyclopentadiene	< 0.004	< 0.004	< 0.004	115	116	0.006
1,2,4,5-tetrachlorobenzene	< 0.008	< 0.008	< 0.008	91	98	< 0.008
2-chloronaphthalene	< 0.3	0.4	< 0.3	251	145	< 0.3
Hexachlorocyclohexane-a	0.010	0.013	< 0.004	132	129	< 0.004
Hexachlorobenzene	< 0.02	< 0.02	< 0.02	126	124	0.11
Hexachlorocyclohexane-g	0.042	< 0.004	< 0.004	127	130	< 0.004

**Weyerhaeuser Analytical and Testing Services**

**Service Request 08666**

**Snoqualmie Soil Samples**

**Method 8120  
Chlorinated Hydrocarbon Analysis**

The samples and appropriate quality control samples were analyzed for chlorinated hydrocarbons by method 8120 using a five point calibration with point to point fitting to quantitate the results. Sample results are reported in mg/L (ppm).

Approved

*Kathleen A. O.*

Date

6/15/92



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**Weyerhaeuser Analysis and Testing Services  
 Service Request 08666**

**SNOQUALMIE SOIL SAMPLES**

**Aroclor Analysis**

Eight soils were analyzed for Aroclors, using a modified method 3050/8080. The results are summarized below.

Lab Sample Number	Sample Description	Analysis Date	Sample ID
89984	DOE-MW5 - S-4	05/12	1130
89985	DOE-MW6 - S-5	05/14	1530
89986	DOE-MW7 - S-5	05/14	1220
89987	DOE-MW8 - S-6	05/14	0840
89988	MW5 AUGER CUTTINGS	05/14	1630 MW5
89989	MW6 AUGER CUTTINGS	05/14	1635 MW6
89990	MW7 AUGER CUTTINGS	05/14	1625 MW7
89991	MW8 AUGER CUTTINGS	05/14	1620 MW8

**UNITS IN PPM (UG/G)**

CAS NO.	COMPOUND	89984	89985	89986	89987	89988
	Surrogate Recover (DCLBP)	77%	82%	79%	73%	79%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	<0.10	<0.10	<0.10	<0.10	0.15

CAS NO.	COMPOUND	89989	89990	89991	Method Blank
	Surrogate Recover (DCLBP)	80%	70%	81%	82%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	<0.10	<0.10	*0.09	<0.10

\*Indicates that the concentration is below the quantitation limit and therefore is only an estimate

Approved Mufad Jone Date 6/5/97



SR # 08666  
 Date 6/9/24  
 Analyst K. Orr

Sample #	89984	89985	89986	89987	Spike	Spike Dup	Blank
Client ID	DOF-MW5	DOF-MW6	DOF-MW7	DOF-MW8	89984	89984	
	5/4/92	5/5/92	5/5/92	5/6/92	Recovery	Recovery	
	5/12 1130	5/14 1530	5/14 1220	5/14 0840			
Analyte Names	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(%)	(%)	(mg/L)
m-dichlorobenzene	< 0.04	< 0.04	< 0.04	< 0.04	75	77	< 0.04
p-dichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05	93	89	< 0.05
Benzyl chloride	< 0.007	< 0.007	< 0.007	< 0.007	58	108	< 0.007
o-dichlorobenzene	< 0.04	< 0.04	< 0.04	< 0.04	76	78	< 0.04
Hexachloroethane	< 0.002	< 0.002	< 0.002	< 0.002	68	71	< 0.002
Benzal chloride	< 0.02	< 0.02	< 0.02	< 0.02	*	69	< 0.02
1,2,4-trichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	25	81	< 0.01
Hexachlorobutadiene	< 0.002	< 0.002	< 0.002	< 0.002	70	73	< 0.002
Benzotrichloride	< 0.002	< 0.002	< 0.002	< 0.002	23	54	< 0.002
Hexachlorocyclopentadiene	< 0.002	< 0.002	< 0.002	< 0.002	80	85	< 0.002
1,2,4,5-tetrachlorobenzene	< 0.004	< 0.004	< 0.004	< 0.004	83	86	< 0.004
2-chloronaphthalene	< 0.1	< 0.1	< 0.1	< 0.1	71	95	< 0.1
Hexachlorocyclohexane-a	< 0.002	< 0.002	< 0.002	< 0.002	95	97	< 0.002
Hexachlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	91	91	< 0.01
Hexachlorocyclohexane-g	< 0.002	< 0.002	< 0.002	< 0.002	101	100	< 0.002

**Weyerhaeuser Analytical and Testing Services**

**Service Request 08759**

**Snoqualmie Soil Samples**

**Method 8120  
Chlorinated Hydrocarbon Analysis**

The samples and appropriate quality control samples were analyzed for chlorinated hydrocarbons by method 8120 using a five point calibration with point to point fitting to quantitate the results. Sample results are reported in mg/L (ppm).

Approved

Kathleen A. O.

Date

6/15/92



SR # 08759  
 Date 6/9/24  
 Analyst K. Orr

Sample # Client ID	90755 1 Drill Cutting & Water DOF-MW-8 (2 Barrels) 5/26 1400	90756 2 Drill Cutting & Water DOF-MW-7 (2 Barrels) 5/26 1420	90757 3 Drill Cutting & Water DOF-MW-6 (2 Barrels) 5/26 1440	90758 4 Decon Water Barrels 1&2 5/26 1500	90759 5 Decon Water Barrels 3&4 5/26 1515
Analyte Names	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
m-dichlorobenzene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
p-dichlorobenzene	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Benzyl chloride	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
o-dichlorobenzene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Hexachloroethane	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Benzal chloride	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2,4-trichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Hexachlorobutadiene	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Benzotrichloride	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorocyclopentadiene	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
1,2,4,5-tetrachlorobenzene	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
2-chloronaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclohexane-a	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Hexachlorocyclohexane-g	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002

SR # 08759  
Date 6/9/24  
Analyst K. Orr

Sample # Spike Spike Dup Blank  
Client ID Recovery Recovery  
90759 90759

Analyte Names	(mg/L)	(mg/L)	(mg/L)
m-dichlorobenzene	82	77	< 0.004
p-dichlorobenzene	94	89	< 0.005
Benzyl chloride	111	108	< 0.0007
o-dichlorobenzene	83	78	< 0.004
Hexachloroethane	75	71	< 0.0002
Benzal chloride	71	69	< 0.002
1,2,4-trichlorobenzene	85	81	< 0.001
Hexachlorobutadiene	77	73	< 0.0002
Benzotrichloride	56	54	< 0.0002
Hexachlorocyclopentadiene	94	85	< 0.0002
1,2,4,5-tetrachlorobenzene	89	86	< 0.0004
2-chloronaphthalene	93	95	< 0.01
Hexachlorocyclohexane-a	93	97	< 0.0002
Hexachlorobenzene	90	91	< 0.001
Hexachlorocyclohexane-g	102	100	< 0.0002



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**Weyerhaeuser Analysis and Testing Services  
Service Request 08759**

**SNOQUALMIE SOIL SAMPLES**

**Aroclor Analysis**

Ten soil and five water samples were analyzed for Aroclors, using a modified method 3050/8080. The results are summarized below.

Lab Sample Number	Sample Description		
90745	A-1D	05/26/92	1330
90746	AA-1D	05/26/92	1325
90747	AB-1C	05/26/92	1320
90748	AD-1A	05/26/92	1220
90749	AD-1C	05/26/92	1240
90750	AE-1	05/26/92	1310
90751	AE-2	05/26/92	1305
90752	AE-3	05/26/92	1300
90753	AE-1A	05/26/92	1315
90754	D-1C	05/26/92	1345
90755	1 DRILL CUTTING & WATER DOF-MW-8	05/26/92	1400
90756	2 DRILL CUTTING & WATER DOF-MW-7	05/26/92	1420
90757	3 DRILL CUTTING & WATER DOF-MW-6	05/26/92	1440
90758	4 DECON WATER BARRELS 1 & 2	05/26/92	1500
90759	5 DECON WATER BARRELS 3 & 4	05/26/92	1515

**UNITS IN PPM (UG/G)**

CAS NO.	COMPOUND	90745	90746	90747	90748	90749
	Surrogate Recover (DCLBP)	80%	74%	76%	77%	76%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	0.47	0.30	2.3	0.18	0.11

Approved

*Michael J. [Signature]*

Date 5/19/92



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## SNOQUALMIE SOIL SAMPLES

UNITS IN PPM (UG/G)

CAS NO.	COMPOUND	90750	90751	90752	90753	90754
	Surrogate Recover (DCLBP)	81%	64%	60%	79%	77%
12674-11-2--	Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2--	Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5--	Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9--	Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6--	Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1--	Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5--	Aroclor-1260	0.86	0.40	0.39	*0.06	*0.05

\*Indicates that the concentration is below the quantitation limit and therefore is only an estimate.

CAS NO.	COMPOUND	Soil Blank	Water Blank
	Surrogate Recover (DCLBP)	85%	77%
12674-11-2--	Aroclor-1016	<0.10	<0.010
11104-28-2--	Aroclor-1221	<0.20	<0.020
11141-16-5--	Aroclor-1232	<0.10	<0.010
53469-21-9--	Aroclor-1242	<0.10	<0.010
12672-29-6--	Aroclor-1248	<0.10	<0.010
11097-69-1--	Aroclor-1254	<0.10	<0.010
11096-82-5--	Aroclor-1260	<0.10	<0.010

UNITS IN PPM (MG/L)

CAS NO.	COMPOUND	90755	90756	90757	90758	90759
	Surrogate Recover (DCLBP)	65%	72%	45%	73%	42%
12674-11-2--	Aroclor-1016	<0.010	<0.010	<0.010	<0.010	<0.010
11104-28-2--	Aroclor-1221	<0.020	<0.020	<0.020	<0.020	<0.020
11141-16-5--	Aroclor-1232	<0.010	<0.010	<0.010	<0.010	<0.010
53469-21-9--	Aroclor-1242	<0.010	<0.010	<0.010	<0.010	<0.010
12672-29-6--	Aroclor-1248	<0.010	<0.010	<0.010	<0.010	<0.010
11097-69-1--	Aroclor-1254	<0.010	<0.010	<0.010	<0.010	<0.010
11096-82-5--	Aroclor-1260	<0.010	<0.010	<0.010	<0.010	<0.010

Approved

Date

6/2/82

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### SNOQUALMIE SOIL SAMPLES

#### QA/QC Analysis

Two sets of matrix spikes and matrix spike duplicates were analyzed along with the samples. The spike level was at 5.9 PPM (for the soil) and 0.59 PPM (for the water). The results are summarized below.

	% Recovery	Relative % Deviation
Set I	92.1%	5.85%
Soil	86.9%	
Set II	83.7%	0.25%
Water	84.0%	

Approved

Date

6/2/92



WEYERHAEUSER TECHNOLOGY CENTER  
Analytical Laboratories  
Tacoma, Washington

Service Request 08759  
Page 1

REPORT

<u>Sample Description</u>	<u>Analytical Lab Code</u>	<u>pH</u>
DOF-MW-8 5/26 1400	90755	11.9
DOF-MW-7 5/26 1420	90756	10.3
DOF-MW-6 5/26 1440	90757	9.5
Decon Water Barrels 1&2 5/26 1500	90758	9.5; 9.5
Decon Water Barrels 3&4 5/26 1515	90759	10.5

Approved

*Maxine Rade*

Date 6.2-92

19017 120th Avenue N.E., Suite 107 • Bothell, Washington 98011  
 Telephone (206) 486-7905 (FAX 486-7651)

LABORATORY Weyerhaeuser

CHAIN OF CUSTODY REPORT

CLIENT: <u>Weyerhaeuser - John Gross</u>				REPORT TO: <u>Dutton, Olmsted &amp; Fugerevan</u>				SAME DAY (2-8 HR.) RUSH (+150%)		
ADDRESS: <u>(A) PCB-S</u>				T. Olmsted				NEXT DAY RUSH (+100%)		
PHONE: <u>(B) NOCODE/1 = Chlor. Hydro 8120</u>				BILLING TO: <u>Weyerhaeuser John Gross</u>				2 DAY RUSH (+80%)		
PROJECT NAME: <u>Snoqualmie Mill</u>				P.O. NUMBER:				3 DAY RUSH (+60%)		
PROJECT NUMBER:				NCA QUOTE #:				5 DAY RUSH (+40%)		
SAMPLED BY: <u>T. Olmsted</u>				ANALYSIS REQUESTED				10 DAY STANDARD (LIST PRICE)		<input checked="" type="checkbox"/>
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION				SAMPLING DATE / TIME				COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER
MATRIX (N,S,O)				# OF CONT.				LAB #		
1 Dof-MW5 S-4				5/12/92 1130				S 1		AB
2 Dof-MW6 S-5				5/14/92 1530				S 1		
3 Dof-MW7 S-5				5/14/92 1220				S 1		
4 Dof-MW8 S-6				5/14/92 0840				S 1		↓
5 Auger Cuttings MW5				5/14/92 1630				S 1		
6 Auger Cuttings MW6				5/14/92 1635				S 1		
7 Auger Cuttings MW7				5/14/92 1625				S 1		
8 Auger Cuttings MW8				5/14/92 1620				S 1		↓
9										
10										
TOTAL # OF CONTAINERS										
RECEIVED?										
RELINQUISHED BY: <u>P. Olmsted</u>				DATE: <u>5/15/92</u>				RECEIVED BY: <u>Wanda J. Schepfer</u>		DATE: <u>5/15/92</u>
FIRM: <u>Dutton, Olmsted &amp; Fugerevan</u>				TIME: <u>1220</u>				FIRM: <u>WYCO SMD</u>		TIME: <u>1220</u>
RELINQUISHED BY:				DATE:				RECEIVED BY:		DATE:
FIRM:				TIME:				FIRM:		TIME:
SAMPLE RECEIPT INFORMATION:				CONTAINER CONDITION?: GOOD VIOLATED				COOL (4° C)? YES NO		
CUSTODY SEALS? GOOD VIOLATED NOT USED				HAZARDOUS SAMPLES?: NO YES; DESCRIBE ON BACK				PAGE 1 OF 1		

05/27/92 16:25 FAX 206 924 8654 W A T S 005/008

PCB's 8080  
 Chlorinated Hydrocarbons  
 8120  
 use as backup only  
 Sple #

004/008

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LABORATORY Weyerhaeuser

**CHAIN OF CUSTODY REPORT**

CLIENT: <u>Weyerhaeuser - John Gross</u>				REPORT TO: <u>Daton, Olmsted &amp; Fuglestad</u>				SAME DAY (2-8 HR.) RUSH (+150%)		
ADDRESS:				<u>T. Olmsted</u>				NEXT DAY RUSH (+100%)		
PHONE:				BILLING TO: <u>Weyerhaeuser</u>				2 DAY RUSH (+80%)		
FAX:				P.O. NUMBER: <u>John Gross</u>				3 DAY RUSH (+60%)		
PROJECT NAME: <u>Inogvalmie Mill</u>				NCA CODE #:				5 DAY RUSH (+40%)		
PROJECT NUMBER:				PCBs 8080 Chlorinated Hydrocarbons 8120				10 DAY STANDARD (LIST PRICE)		<input checked="" type="checkbox"/>
SAMPLED BY: <u>T. Olmsted</u>								ANALYSIS REQUESTED		COMMENTS & PRESERVATIVES USED
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	SAMPLING DATE / TIME	MATRIX (M, S, O)	# OF CONT.							
<u>1 DOF-MW-5</u>	<u>5/9/92 1100</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>2 DOF-MW-5(d)</u>	<u>1100</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>3 GEO-MW-1</u>	<u>1230</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>4 GEO-MW-3</u>	<u>1330</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>5 DOF-MW-8</u>	<u>1400</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>6 DOF-MW-7</u>	<u>1500</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>7 DOF-MW-6</u>	<u>1530</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>8 Field Blank</u>	<u>1540</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>9 Rinse Blank</u>	<u>1545</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
<u>10 GEO-MW-4</u>	<u>1630</u>	<u>W</u>	<u>1</u>	<u>X</u>	<u>X</u>					
RELINQUISHED BY: <u>T. Olmsted</u>				DATE: <u>5/20/92</u>		RECEIVED BY: _____		DATE: _____		
FIRM: <u>Daton Olmsted &amp; Fuglestad</u>				TIME: <u>10:30A</u>		FIRM: _____		TIME: _____		
RELINQUISHED BY: _____				DATE: _____		RECEIVED BY: <u>Robert J. ...</u>		DATE: <u>5-20-92</u>		
FIRM: _____				TIME: _____		FIRM: <u>Weyerhaeuser</u>		TIME: <u>01630</u>		
SAMPLE RECEIPT INFORMATION:				CONTAINER CONDITION?: GOOD VIOLATED		COOL (4° C)? YES NO		PAGE 1 OF 1		
CUSTODY ) 97 GOOD VIOLATED NOT USED				HAZARDOUS SAMPLES?: ) 0 YES; DESCRIBE ON BACK						

05/27/92 18:24 FAX 206 924 8654 W A T S



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LABORATORY Weyerhaeuser

**CHAIN OF CUSTODY REPORT**

CLIENT: <u>Weyerhaeuser - John Gross</u>				REPORT TO: <u>Dalton, Olmsted &amp; Fuglevand</u>				SAME DAY (2-8 HR.) RUSH (+150%)					
ADDRESS:				<u>T. Olmsted</u>				NEXT DAY RUSH (+100%)					
PHONE:				BILLING TO: <u>Weyerhaeuser</u>				2 DAY RUSH (+80%)					
FAX:				P.O. NUMBER: <u>John Gross</u>				3 DAY RUSH (+60%)					
PROJECT NAME: <u>Snogualmie Mill</u>				NCA QUOTE #:				5 DAY RUSH (+40%)					
PROJECT NUMBER:				ANALYSIS REQUESTED				10 DAY STANDARD (LIST PRICE)		X			
SAMPLED BY: <u>T. Olmsted</u>								COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER			
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	SAMPLING DATE / TIME	MATRIX (M,S,O)	# OF CONT.	Peds 8080						TOTAL # OF CONTAINERS RECEIVED?			
1 I-2	5/21/92 0935	S	1		X								
2 I-1	0940	S	1		X								
3 H-2	0955	S	1		X								
4 H-1	1005	S	1		X								
5 H-1a	1015	S	1		X								
6 H-1a(d)	1015	S	1		X								
7 H-4a	1030	S	1		X								
8 G-7	1040	S	1		X								
9 G-6	1050	S	1		X								
10 G-1b	1120	S	1	X									
RELINQUISHED BY: <u>T. Olmsted</u>				DATE: <u>5/21/92</u>		RECEIVED BY: <u>Bobby Foster</u>				DATE: <u>5/22/92</u>			
FIRM: <u>Dalton, Olmsted &amp; Fuglevand</u>				TIME: <u>1600</u>		FIRM: <u>Weyerhaeuser</u>				TIME: <u>1600</u>			
RELINQUISHED BY:				DATE:		RECEIVED BY:				DATE:			
FIRM:				TIME:		FIRM:				TIME:			
SAMPLE RECEIPT INFORMATION:			CONTAINER CONDITION?:			GOOD VIOLATED			COOL ( 4° C)?			YES NO	
CUSTODY ?			GOOD VIOLATED NOT USED			HAZARDOUS SAMPLES?:			YES; DESCRIBE ON BACK			PAGE 1 OF 3	

006/008

W A T S

05/27/92 18:26 FAX 206 924 6854

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 Telephone (206) 486-7906 (FAX 486-7651)

LABORATORY Weyerhaeuser

**CHAIN OF CUSTODY REPORT**

CLIENT: <u>Weyerhaeuser - John Gross</u>				REPORT TO: <u>Daiton, Olmsted &amp; Fuglevand</u>				SAME DAY (2-8 HR.) RUSH (+150%)			
ADDRESS:				<u>T. Olmsted</u>				NEXT DAY RUSH (+100%)			
PHONE:				BILLING TO: <u>Weyerhaeuser</u>				2 DAY RUSH (+80%)			
FAX:				P.O. NUMBER: <u>John Gross</u>				3 DAY RUSH (+60%)			
PROJECT NAME: <u>Snogualmie Mill</u>				MCA QUOTE #:				5 DAY RUSH (+40%)			
PROJECT NUMBER:				ANALYSIS REQUESTED				10 DAY STANDARD (LIST PRICE)		X	
SAMPLED BY: <u>T. Olmsted</u>								COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER	
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.							TOTAL # OF CONTAINERS RECEIVED?	
1 G-4a	5/21/92 1110	S	1	X							
2 F-7	1225	S	1	X							
3 E-7	1230	S	1	X							
4 D-7	1235	S	1	X							
5 D-6	1240	S	1	X							
6 D-6(d)	1240	S	1	X							
7 Ac-4a	1330	S	1	X							
8 Ac-4b	1335	S	1	X							
9 Ac-3	1350	S	1	X							
10 Ac-2	1400	S	1	X							
RELINQUISHED BY: <u>T. Olmsted</u>				DATE: <u>5/21/92</u>		RECEIVED BY: <u>[Signature]</u>				DATE: <u>5/22/92</u>	
FIRM: <u>Daiton, Olmsted &amp; Fuglevand</u>				TIME: <u>1600</u>		FIRM: <u>Weyerhaeuser</u>				TIME: <u>1600</u>	
RELINQUISHED BY:				DATE:		RECEIVED BY:				DATE:	
FIRM:				TIME:		FIRM:				TIME:	
SAMPLE RECEIPT INFORMATION:				CONTAINER CONDITION?:				COOL (4° C)?			
CUSTODY )				GOOD VIOLATED				YES NO			
) GOOD VIOLATED NOT USED				HAZARDOUS SAMPLES?:				YES; DESCRIBE ON BACK			

05/27/92 16:26 FAX 206 924 6654 W A T S 007/008

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LABORATORY \_\_\_\_\_

**CHAIN OF CUSTODY REPORT**

008/008

W A T S

05/27/92 16:27 FAX 206 924 6654

CLIENT: <u>Weyerhaeuser John Gross</u>				REPORT TO: <u>Dalton, Olmsted, &amp; Fuglevand</u>				SAME DAY (2-8 HR.) RUSH (+150%)		
ADDRESS:				T. Olmsted				NEXT DAY RUSH (+100%)		
PHONE:				BILLING TO: <u>Weyerhaeuser</u>				2 DAY RUSH (+80%)		
FAX:				P.O. NUMBER: <u>John Gross</u>				3 DAY RUSH (+60%)		
PROJECT NAME: <u>Snogvalmie Mill</u>				HCA QUOTE #:				5 DAY RUSH (+40%)		
PROJECT NUMBER:				ANALYSIS REQUESTED				10 DAY STANDARD (LIST PRICE)		X
SAMPLED BY: <u>T. Olmsted</u>								COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER
SAMPLE IDENTIFICATION:		SAMPLING	MATRIX	# OF						
NUMBER OR DESCRIPTION		DATE / TIME	(U, S, O)	CONT.						
1	Ac-1	5/21/92 1410	S	1	X					
2	Ac-1b	( 1425	S	1	X					
3	Ac-1c	1430	S	1	X					
4	Ad-4a	1510	S	1	X					
5	Ad-4a(d)	1510	S	1	X					
6	Ad-4b	1515	S	1	X					
7	Ad-3	1520	S	1	X					
8	Ad-2	1530	S	1	X					
9	Ad-1	1545	S	1	X					
10	Ad-1d	1545	S	1	X					
RELINQUISHED BY: <u>T. Olmsted</u> DATE: <u>5/21/92</u>							RECEIVED BY: _____ DATE: _____			
FIRM: <u>Dalton, Olmsted &amp; Fuglevand</u> TIME: <u>1600</u>							FIRM: _____ TIME: _____			
RELINQUISHED BY: _____ DATE: _____							RECEIVED BY: <u>Bonnie Chappel</u> DATE: <u>5/27/92</u>			
FIRM: _____ TIME: _____							FIRM: <u>Weyerhaeuser</u> TIME: <u>1600</u>			
SAMPLE RECEIPT INFORMATION:			CONTAINER CONDITION?:		GOOD VIOLATED		COOL (4° C)?		YES NO	
CUSTODY: ) 7			GOOD VIOLATED NOT USED		HAZARDOUS SAMPLES?: )		YES; DESCRIBE ON BACK		PAGE 3 OF 3	

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LABORATORY Weyerhaeuser

**CHAIN OF CUSTODY REPORT**

CLIENT: <u>Weyerhaeuser - John Gross</u>				REPORT TO: <u>Dalton, Olmsted &amp; Fuglevana</u>				SAME DAY (2-8 HR.) RUSH (+150%)					
				ADDRESS: <u>T. Olmsted</u>				BILLING TO: <u>Weyerhaeuser</u>				NEXT DAY RUSH (+100%)	
PHONE: _____ FAX: _____				P.O. NUMBER: <u>John Gross</u>				2 DAY RUSH (+80%)					
PROJECT NAME: <u>Snogualmie Mill</u>				NCA QUOTE #: _____				3 DAY RUSH (+60%)					
PROJECT NUMBER: _____				ANALYSIS REQUESTED				5 DAY RUSH (+40%)					
SAMPLED BY: <u>T. Olmsted</u>								10 DAY STANDARD (LIST PRICE)					
SAMPLE IDENTIFICATION:		SAMPLING	MATRIX	# OF	8000 RES					COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER	
NUMBER OR DESCRIPTION		DATE / TIME	(M,S,O)	CONT.									
1 Ad-1a		5/26/92 1220	S	1		X							
2 Ad-1c		( 1240	S	1		X							
3 Ae-3		1300	S	1		X							
4 Ae-2		1305	S	1		X							
5 Ae-1		1310	S	1		X							
6 Ae-1a		1315	S	1		X							
7 Ab-1c		1320	S	1		X							
8 Aa-1d		1325	S	1		X							
9 A-1d		1330	S	1	X								
10 D-1c		1345	S	1	X								
RELINQUISHED BY: <u>T. Olmsted</u>						DATE: <u>5/26/92</u>		RECEIVED BY: <u>[Signature]</u>		DATE: <u>5/27/92</u>			
FIRM: <u>Dalton, Olmsted &amp; Fuglevana</u>						TIME: <u>1600</u>		FIRM: <u>Weyerhaeuser</u>		TIME: <u>1101D</u>			
RELINQUISHED BY: _____						DATE: _____		RECEIVED BY: _____		DATE: _____			
FIRM: _____						TIME: _____		FIRM: _____		TIME: _____			
SAMPLE RECEIPT INFORMATION: <u>GOOD</u>			CONTAINER CONDITION?: <u>GOOD</u> VIOLATED			COOL (< 4° C)? <u>YES</u> NO							
CUSTODY: <u>GOOD</u> VIOLATED NOT USED			HAZARDOUS SAMPLES?: _____			YES; DESCRIBE ON BACK			PAGE <u>1</u> OF <u>2</u>				

002/008

W A T S

05/27/92 18:23 FAX 206 924 6654

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LABORATORY Weyerhaeuser

**CHAIN OF CUSTODY REPORT**

CLIENT: <u>Weyerhaeuser - John Gross</u>				REPORT TO: <u>Dalton, Olmsted &amp; Fuglevand</u> <u>T. Olmsted</u>				SAME DAY (2-8 HR.) RUSH (+150%)		
ADDRESS:				BILLING TO: <u>Weyerhaeuser</u> <u>John Gross</u>				NEXT DAY RUSH (+100%)		
PHONE:				P.O. NUMBER:				2 DAY RUSH (+80%)		
FAX:				NCA QUOTE #:				3 DAY RUSH (+60%)		
PROJECT NAME: <u>Snogualmie Mill</u>				ANALYSIS REQUESTED				5 DAY RUSH (+40%)		
PROJECT NUMBER:				PCB 8080 CHL. + HCL 8/20 PH				10 DAY STANDARD (LIST PRICE)		X
SAMPLED BY: <u>T. Olmsted</u>								COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.							TOTAL # OF CONTAINERS RECEIVED?
1 Drill Cuttings & Water DOF-MW-8 (2 barrels)	5/20/92 1400	W	1	X	X	X				
2 Drill Cuttings & Water DOF-MW-7 (2 barrels)	5/20/92 1420	W	1	X	X	X				
3 Drill Cuttings & Water DOF-MW-10 (2 barrels)	5/26/92 1440	W	1	X	X	X				
4 Decon Water Barrels 1 & 2	5/26/92 1500	W	1	X	X	X				
5 Decon Water Barrels 3 & 4	5/26/92 1575	W	1	X	X	X				
RELINQUISHED BY: <u>T. Olmsted</u>				DATE: <u>5/26/92</u>				RECEIVED BY: <u>[Signature]</u>		DATE: <u>5/27/92</u>
FIRM: <u>Dalton Olmsted &amp; Fuglevand</u>				TIME: <u>1600</u>				FIRM: <u>Weyerhaeuser</u>		TIME: <u>1610</u>
RELINQUISHED BY:				DATE:				RECEIVED BY:		DATE:
FIRM:				TIME:				FIRM:		TIME:
SAMPLE RECEIPT INFORMATION: <u>good</u>				CONTAINER CONDITION?: <u>GOOD</u> VIOLATED				COOL (4° C)? <u>YES</u> NO		
CUSTODY <u>57</u> <u>GOOD</u> VIOLATED NOT USED				HAZARDOUS SAMPLES?: <u>NO</u> YES; DESCRIBE ON BACK				PAGE <u>7</u> OF <u>7</u>		

05/27/92 16:24 FAX 206 924 6654 W A T S

003/008



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel [206] 924 6872  
Fax [206] 924 6654

### CASE NARRATIVE

#### WEYERHAEUSER (WEYER) ANALYTICAL AND TESTING SERVICES

Case Number: 09654  
SDG Number: AC-5  
Contract Number: Snoqualmie Soil

Samples from this case (09654) were received on 9/10/92. This case was comprised of soil samples for PCBs. The requested analyses were as follows:

<u>SAMPLE ID</u>	<u>MATRIX</u>	<u>ANALYSIS REQUESTED</u>
AC-5	SOIL	PEST
AC-6	SOIL	PEST
AD-5	SOIL	PEST
AD-6	SOIL	PEST
AD-6D	SOIL	PEST
AE-4B	SOIL	PEST
AE-4A	SOIL	PEST
AE-5	SOIL	PEST
AE-6	SOIL	PEST
AF-4B	SOIL	PEST
AF-4A	SOIL	PEST
AF-5	SOIL	PEST
AF-6	SOIL	PEST
AC-5MS	SOIL	PEST
AC-5MSD	SOIL	PEST

No anomalies existed with this sample set.



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Federal Way, Washington 98003  
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**Weyerhaeuser Analysis and Testing Services  
Service Request 09654**

**SNOQUALMIE SOIL SAMPLES**

**Aroclor Analysis**

Thirteen soil samples were analyzed for Aroclors, using method 3150/8080. The results are summarized below.

Lab Sample Number	Sample Description		
96053	AC-5	9/10/92	11:30
96054	AC-6	9/10/92	11:35
96055	AD-5	9/10/92	11:40
96056	AD-6	9/10/92	11:45
96057	AD-6(D)	9/10/92	11:50
96058	AE-4B	9/10/92	11:55
96059	AE-4A	9/10/92	12:05
96060	AE-5	9/10/92	12:10
96061	AE-6	9/10/92	12:15
96062	AF-4B	9/10/92	12:20
96063	AF-4	9/10/92	12:25
96064	AF-59	9/10/92	12:30
96065	AF-6	9/10/92	12:35

**UNITS IN PPB (UG/KG)**

CAS NO.	COMPOUND	96053	96054	96055	96056	96057
	Surrogate Recover (DCLBP)	92%	98%	97%	98%	96%
12674-11-2--	Aroclor-1016	<1.00	<1.00	<1.00	<1.00	<1.00
11104-28-2--	Aroclor-1221	<2.00	<2.00	<2.00	<2.00	<2.00
11141-16-5--	Aroclor-1232	<1.00	<1.00	<1.00	<1.00	<1.00
53469-21-9--	Aroclor-1242	<1.00	<1.00	<1.00	<1.00	<1.00
12672-29-6--	Aroclor-1248	<1.00	<1.00	<1.00	<1.00	<1.00
11097-69-1--	Aroclor-1254	<1.00	<1.00	<1.00	<1.00	<1.00
11096-82-5--	Aroclor-1260	90	67	190	110	140

Approved *[Signature]* Date 9/16/92



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Federal Way, Washington 98003  
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## SNOQUALMIE SOIL SAMPLES

UNITS IN PPB (UG/KG)

CAS NO.	COMPOUND	96058	96059	96060	96061	96062
	Surrogate Recover (DCLBP)	86%	91%	99%	91%	98%
12674-11-2--	Aroclor-1016	<1.00	<1.00	<1.00	<1.00	<1.00
11104-28-2--	Aroclor-1221	<2.00	<2.00	<2.00	<2.00	<2.00
11141-16-5--	Aroclor-1232	<1.00	<1.00	<1.00	<1.00	<1.00
53469-21-9--	Aroclor-1242	<1.00	<1.00	<1.00	<1.00	<1.00
12672-29-6--	Aroclor-1248	<1.00	<1.00	<1.00	<1.00	<1.00
11097-69-1--	Aroclor-1254	<1.00	<1.00	<1.00	<1.00	<1.00
11096-82-5--	Aroclor-1260	1400	280	230	31	36

CAS NO.	COMPOUND	96063	96064	96065	METHOD BLANK
	Surrogate Recover (DCLBP)	91%	87%	93%	99%
12674-11-2--	Aroclor-1016	<1.00	<1.00	<1.00	<1.00
11104-28-2--	Aroclor-1221	<2.00	<2.00	<2.00	<2.00
11141-16-5--	Aroclor-1232	<1.00	<1.00	<1.00	<1.00
53469-21-9--	Aroclor-1242	<1.00	<1.00	<1.00	<1.00
12672-29-6--	Aroclor-1248	<1.00	<1.00	<1.00	<1.00
11097-69-1--	Aroclor-1254	<1.00	<1.00	<1.00	<1.00
11096-82-5--	Aroclor-1260	77	24	120	<1.00

Approved

Date

6/16/97





32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

### SNOQUALMIE SOIL SAMPLES

#### QA/QC Analysis

One set of matrix spikes and matrix spike duplicates were analyzed along with the samples. The spike level was at 50 PPB of Aroclor 1260. The results are summarized below.

	% Recovery	Relative % Deviation
MS	115.7%	35%
MSD	81.9%	

Approved

Date 10/16/97



19017 120th Avenue N.E., Suite 107 • Bothell, Washington 98011  
 Telephone (206) 486-7905 (FAX 486-7651)

LABORATORY Weyerhaeuser

CHAIN OF CUSTODY REPORT

CLIENT: <u>Weyerhaeuser - John Gross</u>	REPORT TO: <u>T. Olmsted</u> <u>Dalton Olmsted &amp; Fuglestad</u> <u>(DOF)</u>	SAME DAY (2-8 HR.) RUSH (+150%)	
ADDRESS:	BILLING TO: <u>Weyerhaeuser</u>	NEXT DAY RUSH (+100%)	
PHONE:	P.O. NUMBER: <u>John Gross</u>	2 DAY RUSH (+80%)	
FAX:	NCA QUOTE #:	3 DAY RUSH (+60%)	
		5 DAY RUSH (+40%)	

PROJECT NAME: <u>Snoqualmie Mill T-12</u>				ANALYSIS REQUESTED	10 DAY STANDARD (LIST PRICE) X	
PROJECT NUMBER: <u>WEY-008</u>					COMMENTS & PRESERVATIVES USED	LABORATORY NUMBER
SAMPLED BY: <u>T. Olmsted</u>						
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.			
1 Ac 5	9/10/92 1130	S	1	X		
2 Ac 6	1135	S	1	X		
3 Ad 5	1140	S	1	X		
4 Ad 6	1145	S	1	X		
5 Ad 6(d)	1150	S	1	X		
6 Ae 4b	1155	S	1	X		
7 Ae 4a	1205	S	1	X		
8 Ae 5	1210	S	1	X		
9 Ae 6	1215	S	1	X		
10 Af 4b	1210	S	1	X		
				TOTAL # OF CONTAINERS RECEIVED?		

RELINQUISHED BY: <u>T. Olmsted</u>	DATE: <u>9/10/92</u>	RECEIVED BY: <u>Wane</u>	DATE: <u>9-10-92</u>
FIRM: <u>DOF</u>	TIME: <u>1300</u>	FIRM:	TIME: <u>1300</u>

RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
FIRM:	TIME:	FIRM:	TIME:

SAMPLE RECEIPT INFORMATION:	CONTAINER CONDITION?: GOOD VIOLATED	COOL ( 4° C)? YES NO	PAGE 1 OF 2
CUSTODY SEALS? GOOD VIOLATED NOT USED	HAZARDOUS SAMPLES?: NO YES; DESCRIBE ON BACK		

19017 120th Avenue N.E., Suite 107 • Bothell, Washington 98011  
 Telephone (206) 486-7905 (FAX 486-7651)

LABORATORY Weyerhaeuser

CHAIN OF CUSTODY REPORT

CLIENT: <u>Weyerhaeuser - John Gross</u>				REPORT TO: <u>T Olmsted</u>				SAME DAY (2-8 HR.) RUSH (+150%)			
ADDRESS:				DOF				NEXT DAY RUSH (+100%)			
PHONE:				BILLING TO: <u>Weyerhaeuser</u>				2 DAY RUSH (+80%)			
FAX:				P.O. NUMBER: <u>J Gross.</u>				3 DAY RUSH (+60%)			
PROJECT NAME: <u>Snogualmie Mill T-12</u>				NCA QUOTE #:				5 DAY RUSH (+40%)			
PROJECT NUMBER: <u>WEY-008</u>				ANALYSIS REQUESTED				10 DAY STANDARD (LIST PRICE)		X	
SAMPLED BY: <u>T. Olmsted</u>								COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER	
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION		SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	PCBs 8080						
1 Af 4a		9/10/92 1225	S	1		X					
2 AF 5		1230	S	2		X					
3 AF 6		1235	S	2		X					
4											
5											
6											
7											
8											
9											
10											
RELINQUISHED BY: <u>T. Olmsted</u>				DATE: <u>9/10/92</u>		RECEIVED BY: <u>Mark [Signature]</u>				DATE: <u>9-10-92</u>	
FIRM:				TIME: <u>1300</u>		FIRM:				TIME: <u>1300</u>	
RELINQUISHED BY:				DATE:		RECEIVED BY: <u>U</u>				DATE:	
FIRM:				TIME:		FIRM:				TIME:	
SAMPLE RECEIPT INFORMATION:						CONTAINER CONDITION?:		GOOD		VIOLATED	
CUSTODY SEALS?						GOOD		VIOLATED		NOT USED	
HAZARDOUS SAMPLES?:						NO		YES;		DESCRIBE ON BACK	
						COOL (4° C)?		YES		NO	
						PAGE		2		OF 2	

Weyerhaeuser Analytical and Testing Services

Service Request 09454

Snoqualmie Water Sample  
Dalton, Olmstead & Fuglevand, Inc.

Method 8120  
Chlorinated Hydrocarbon Analysis

The samples and appropriate quality control samples were analyzed for chlorinated hydrocarbons by method 8120 using a five point calibration with point to point fitting to quantitate the results. Sample results are reported in mg/L (ppm).

Approved

Kathleen J. O. O.

Date

10/6/92

SR # 09454  
Date 10/1/92  
Analyst K. Orr

Sample #	94709	94710	94711	94712	94713
Client ID	DOF-MW-5	GEO-MW-1	GEO-MW-3	GEO-MW-3D	DOF-MW-8
	8/18	8/18	8/18	8/18	8/18
	1020	1100	1130	1130	1245

Analyte Names	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
m-dichlorobenzene	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
p-dichlorobenzene	< 0.0005	0.00059	< 0.0005	< 0.0005	0.0009
Benzyl chloride	< 0.00007	< 0.00007	< 0.00007	< 0.00007	< 0.00007
o-dichlorobenzene	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Hexachloroethane	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Benzal chloride	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
1,2,4-trichlorobenzene	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
Hexachlorobutadiene	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Benzotrichloride	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Hexachlorocyclopentadiene	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
1,2,4,5-tetrachlorobenzene	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004
2-chloronaphthalene	< 0.0014	< 0.0014	< 0.0014	< 0.0014	< 0.0014
Hexachlorocyclohexane-a	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Hexachlorobenzene	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
Hexachlorocyclohexane-g	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002

SR # 09454  
 Date 10/1/92  
 Analyst K. Ott

Sample #	94714	94715	94716	94717	94718
Client ID	DOF-MW-7	Rinsate Blank	Field Blank	DOF-MW-6	GEO-MW-4
	8/18	8/18	8/18	8/18	8/18
	1330	1420	1415	1400	1430

Analyte Names	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
m-dichlorobenzene	0.0023	< 0.0004	< 0.0004	0.014	< 0.0004
p-dichlorobenzene	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Benzyl chloride	< 0.00007	< 0.00007	< 0.00007	< 0.00007	0.085
o-dichlorobenzene	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0083
Hexachloroethane	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00016
Benzal chloride	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
1,2,4-trichlorobenzene	< 0.00009	< 0.00009	< 0.00009	0.0023	< 0.00009
Hexachlorobutadiene	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Benzotrichloride	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Hexachlorocyclopentadiene	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
1,2,4,5-tetrachlorobenzene	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004
2-chloronaphthalene	< 0.0014	< 0.0014	< 0.0014	< 0.0014	< 0.0014
Hexachlorocyclohexane-a	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Hexachlorobenzene	< 0.00009	< 0.00009	< 0.00009	0.00030	0.00025
Hexachlorocyclohexane-g	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002

SR # 09454  
 Date 10/1/92  
 Analyst K. Orr

## Quality Control Data

Sample #	Blank Spike Recovery	Blank Spike Dup Recovery	Method Blank
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Analyte Names	(%)	(%)	(mg/L)
m-dichlorobenzene	43	43	< 0.0004
p-dichlorobenzene	131	198	< 0.0005
Benzyl chloride	104	114	< 0.00007
o-dichlorobenzene	59	58	< 0.0004
Hexachloroethane	73	71	< 0.00002
Benzal chloride	22	24	< 0.0002
1,2,4-trichlorobenzene	85	86	< 0.00009
Hexachlorobutadiene	77	73	< 0.00002
Benzotrichloride	20	20	< 0.00002
Hexachlorocyclopentadiene	83	80	< 0.00002
1,2,4,5-tetrachlorobenzene	51	68	< 0.00004
2-chloronaphthalene	79	84	< 0.0014
Hexachlorocyclohexane-a	126	105	< 0.00002
Hexachlorobenzene	95	88	< 0.00009
Hexachlorocyclohexane-g	112	81	< 0.00002

**Meyerhaeuser Analysis and Testing Services  
 Service Request 09454**

**SNOQUALMIE WATER SAMPLES**

**Aroclor Analysis**

Ten water samples were analyzed for Aroclors, using method 3510/8081.  
 The results are summarized below.

Lab Sample Number	Sample Description		
94709	DOF-MW-5	8/18/92	1020
94710	GEO-MW1	8/18/92	1100
94711	GEO-MW-3	8/18/92	1130
94712	GEO-MW-3D	8/18/92	1130
94713	DOF-MW-8	8/18/92	1245
94714	DOF-MW-7	8/18/92	1330
94715	RINSATE BLANK	8/18/92	1420
94716	FIELD BLANK	8/18/92	1415
94717	DOF-MW-6	8/18/92	1400
94718	GEO-MW-4	8/18/92	1430

**UNITS IN PPB (uG/L)**

CAS NO.	COMPOUND	94709	94710	94711	94712	94713
	Surrogate Recover (DCLP)	24%	42%	11%	22%	12%
12674-11-2	--Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2	--Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5	--Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9	--Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6	--Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1	--Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5	--Aroclor-1260	<0.10	<0.10	<0.10	<0.10	<0.10

Approved *[Signature]* Date 9/2/92

1





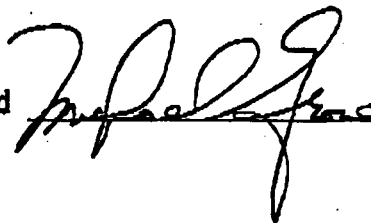
**SNOQUALMIE WATER SAMPLES**

UNITS IN PPB (uG/L)

CAS NO.	COMPOUND	94714	94715	94716	94717	94718
	Surrogate Recover (DCLP)	34%	18%	84%	12%	22%
12674-11-2--	Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2--	Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5--	Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9--	Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6--	Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1--	Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5--	Aroclor-1260	<0.10	<0.10	<0.10	<0.10	<0.10

CAS NO.	COMPOUND	METHOD BLANK
	Surrogate Recover (DCLBP)	89%
12674-11-2--	Aroclor-1016	<0.10
11104-28-2--	Aroclor-1221	<0.20
11141-16-5--	Aroclor-1232	<0.10
53469-21-9--	Aroclor-1242	<0.10
12672-29-6--	Aroclor-1248	<0.10
11097-69-1--	Aroclor-1254	<0.10
11096-82-5--	Aroclor-1260	<0.10

Approved



Date 9/2/97

2

19017 120th Avenue N.E., Suite 107 • Bothell, Washington 98011  
 Telephone (206) 486-7905 (FAX 486-7651)

LABORATORY Weyerhaeuser

**CHAIN OF CUSTODY REPORT**

CLIENT: <u>John Gross-Weyerhaeuser</u>				REPORT TO: <u>Dalton, Olmsted &amp; Fuglevand</u> <u>T. Olmsted</u>				SAME DAY (2-8 HR.) RUSH (+150%)																																																																																																																																																																																																																											
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PROJECT NAME: <u>Snogvalmie Mill</u>				ANALYSIS REQUESTED				5 DAY RUSH (+40%)																																																																																																																																																																																																																											
PROJECT NUMBER:								10 DAY STANDARD (LIST PRICE)																																																																																																																																																																																																																											
SAMPLED BY: <u>T. Olmsted</u>				PCB's 8080 Chlorinated Hydrocarbons 8120				COMMENTS & PRESERVATIVES USED		LABORATORY NUMBER																																																																																																																																																																																																																									
<table border="1"> <thead> <tr> <th>SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION</th> <th>SAMPLING DATE / TIME</th> <th>MATRIX (W,S,O)</th> <th># OF CONT.</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>1 DOF-MW-5</td> <td>8/18/92 1020</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 GEO-MW-1</td> <td>1100</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3 GEO-MW-3</td> <td>1130</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4 GEO-MW 3 (d)</td> <td>1130</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5 DOF-MW-8</td> <td>1240</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6 DOF-MW-7</td> <td>1330</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7 Rusate Blank</td> <td>1420</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8 Field Blank</td> <td>1415</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9 DOF-MW-6</td> <td>1400</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10 GEO-MW-4</td> <td>1430</td> <td>W</td> <td>1L</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>								SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.																	1 DOF-MW-5	8/18/92 1020	W	1L	X	X															2 GEO-MW-1	1100	W	1L	X	X															3 GEO-MW-3	1130	W	1L	X	X															4 GEO-MW 3 (d)	1130	W	1L	X	X															5 DOF-MW-8	1240	W	1L	X	X															6 DOF-MW-7	1330	W	1L	X	X															7 Rusate Blank	1420	W	1L	X	X															8 Field Blank	1415	W	1L	X	X															9 DOF-MW-6	1400	W	1L	X	X															10 GEO-MW-4	1430	W	1L	X	X														
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10 GEO-MW-4	1430	W	1L	X	X																																																																																																																																																																																																																														
RELINQUISHED BY: <u>T. Olmsted</u>				DATE: <u>8/18/92</u>				RECEIVED BY: <u>M. Shear</u>				DATE: <u>8/18/92</u>																																																																																																																																																																																																																							
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SAMPLE RECEIPT INFORMATION:				CONTAINER CONDITION?: GOOD VIOLATED				COOL ( 4° C)? YES NO				PAGE OF																																																																																																																																																																																																																							
CUSTODY SEALS? GOOD VIOLATED NOT USED				HAZARDOUS SAMPLES?: NO YES; DESCRIBE ON BACK																																																																																																																																																																																																																															



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**Weyerhaeuser Analysis and Testing Services  
Service Request 10311**

**SNOQUALMIE WATER SAMPLES**

**Aroclor Analysis**

Ten water samples were analyzed for Aroclors, using method 3520/8081.  
The results are summarized below.

Lab Sample Number	Sample Description	
99960	DOF-MW-5	11/20/92 1230
99961	DOF-MW-5(D)	11/20/92 1235
99962	FIELD BLANK	11/20/92 1140
99963	RINSATE BLANK	11/20/92 1145
99964	GEO-MW-1	11/20/92 1310
99965	GEO-MW-3	11/20/92 1350
99966	DOF-MW-8	11/20/92 1415
99967	DOF-MW-7	11/20/92 1445
99968	DOF-MW-6	11/20/92 1515
99969	GEO-MW-4	11/20/92 1600

**UNITS IN PPB (uG/L)**

CAS NO.	COMPOUND	99960	99961	99962	99963	99964
	Surrogate Recover (TCX)	99%	99%	113%	113%	92%
12674-11-2--	Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2--	Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5--	Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9--	Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6--	Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1--	Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5--	Aroclor-1260	<0.10	<0.10	<0.10	<0.10	<0.10

Approved

Date 12/9/92



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**Weyerhaeuser Analysis and Testing Services  
Service Request 10311**

**SNOQUALMIE WATER SAMPLES**

**Aroclor Analysis**

UNITS IN PPB (UG/L)

CAS NO.	COMPOUND	99965	99966	99967	99968	99969
	Surrogate Recover (TCX)	71%	90%	90%	100%	112%
12674-11-2--	Aroclor-1016	<0.10	<0.10	<0.10	<0.10	<0.10
11104-28-2--	Aroclor-1221	<0.20	<0.20	<0.20	<0.20	<0.20
11141-16-5--	Aroclor-1232	<0.10	<0.10	<0.10	<0.10	<0.10
53469-21-9--	Aroclor-1242	<0.10	<0.10	<0.10	<0.10	<0.10
12672-29-6--	Aroclor-1248	<0.10	<0.10	<0.10	<0.10	<0.10
11097-69-1--	Aroclor-1254	<0.10	<0.10	<0.10	<0.10	<0.10
11096-82-5--	Aroclor-1260	<0.10	<0.10	<0.10	<0.10	<0.10

CAS NO.	COMPOUND	METHOD BLANK
	Surrogate Recover (TCX)	116%
12674-11-2--	Aroclor-1016	<0.10
11104-28-2--	Aroclor-1221	<0.20
11141-16-5--	Aroclor-1232	<0.10
53469-21-9--	Aroclor-1242	<0.10
12672-29-6--	Aroclor-1248	<0.10
11097-69-1--	Aroclor-1254	<0.10
11096-82-5--	Aroclor-1260	<0.10

Approved

*[Signature]*

Date

6/4/93



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**Weyerhaeuser Analysis and Testing Services  
Service Request 10311**

**SNOQUALMIE WATER SAMPLES**

**Chlorinated Benzenes**

Ten water samples were analyzed for Chlorinated Benzenes by methods 3520/8120. The results summarized below.

Lab Sample Number	Sample Description		
99960	DOF-MW-5	11/20/92	1230
99961	DOF-MW-5(D)	11/20/92	1235
99962	FIELD BLANK	11/20/92	1140
99963	RINSATE BLANK	11/20/92	1145
99964	GEO-MW-1	11/20/92	1310
99965	GEO-MW-3	11/20/92	1350
99966	DOF-MW-8	11/20/92	1415
99967	DOF-MW-7	11/20/92	1445
99968	DOF-MW-6	11/20/92	1515
99969	GEO-MW-4	11/20/92	1600

**UNITS IN PPB (UG/L)**

COMPOUND	99960	99961	99962	99963
Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
Trichlorobenzene	<0.20	<0.20	<0.20	<0.20
Tetrachlorobenzene	<0.80	<0.80	<0.80	<0.80
Hexachlorobenzene	<0.20	<0.20	<0.20	<0.20

COMPOUND	99964	99965	99966	99967
Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
Trichlorobenzene	<0.20	<0.20	<0.20	<0.20
Tetrachlorobenzene	<0.80	<0.80	<0.80	<0.80
Hexachlorobenzene	<0.20	<0.20	<0.20	<0.20

COMPOUND	99968	99969
Dichlorobenzene	<1.0	<1.0
Trichlorobenzene	<0.20	<0.20
Tetrachlorobenzene	<0.80	<0.80
Hexachlorobenzene	<0.20	<0.20

Approved

*[Signature]*

Date 12/18/92



**ATTACHMENT B**  
**MONITORING WELL LOGS (DOF-MW-5 THROUGH -8)**

**Dalton, Olmsted & Fuglevand, Inc.**

Environmental Consultants

Weyerhaeuser - Sequoia Mill

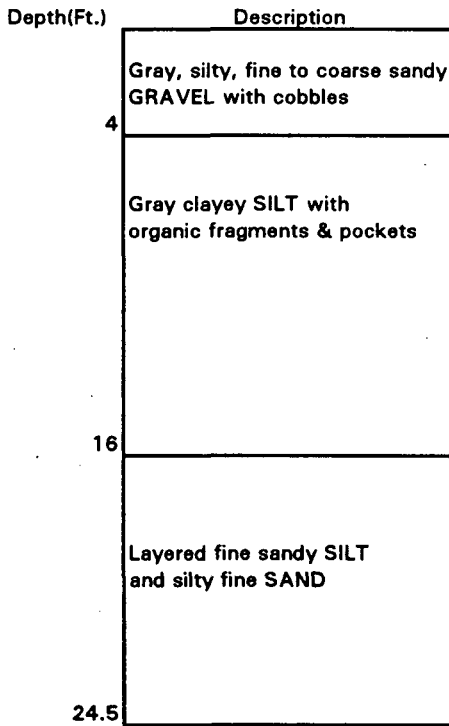
WEY-008-01

**MONITORING WELL NO. DOF-MW-5 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION**

Field Rep: T. Olmsted	Location: 40' N. of GEO-MW-1, 73' NW of GEO-MW-2
Drilling Co.: Holt	Elevation: 415.5'
Driller: Clyde Moore	Date Completed: 5/13/92
Drill Type: Mobile B57	Weather: Cool and Ptdy Cloudy
Size/Type Casing: 4" I.D. Hollow-Stem Auger	

Spl.No.	Type	Drill Action	pl Depth (Ft. From - To)	Blows/ 6 inches	Sample Length	Time	Sample Description
1	3" Drive	Rough	2.5-4	2/3/3	4"	945	Gray, silty, fine to coarse sandy GRAVEL, wet
2	"	Smooth	5-7	1/18-1/6	24"	1000	Gray, clayey SILT, with black organic pockets
3	"	"	8-10	1/18-1/6	24"	1030	Gray, clayey SILT, with black organic pockets
4	"	"	12.5-14.5	1/18-1/6	12"	1130	Gray, fine sandy SILT, with organic fragments
5	"	"	17.5 - 19.5	2-3-2-2	24"	1140	Gray silty fine SAND/fine sandy SILT with organic fragments
6	"	"	20-22	1/12-1-2	24"	1155	Layered, gray silty fine SAND/fine sandy SILT, with organic fragments
7	"	"	22.5 - 24.5	1-1-2-2	24"	1200	Gray silty fine SAND with organic fragments

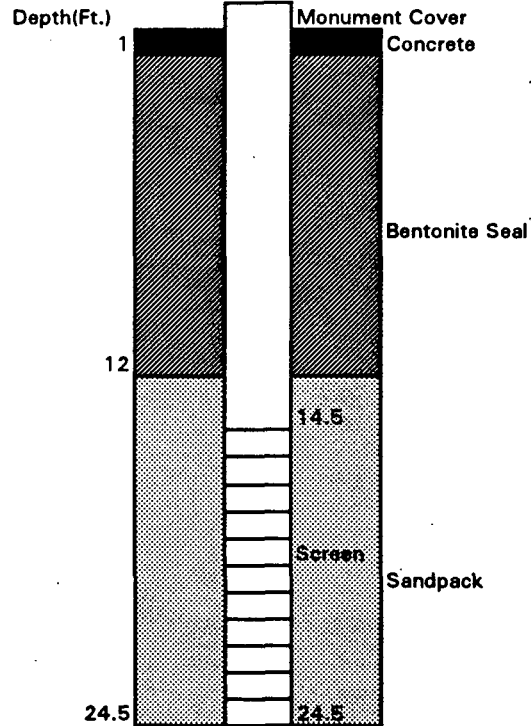
**SUMMARY LOG**



(Bottom of Well)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

**MONITORING WELL DIAGRAM**



**MONITORING WELL INFORMATION**

<b>Riser Length:</b> 15'	<b>Seal:</b> type Bentonite/Concrete depth (top/bot) 0'/12'
<b>Sandpack:</b> type: 10-20 Sand depth (top/bot) 12/24.	<b>Monument:</b> Above-ground Steel
<b>Screen:</b> type/slot PVC/0.010 length: 10'	



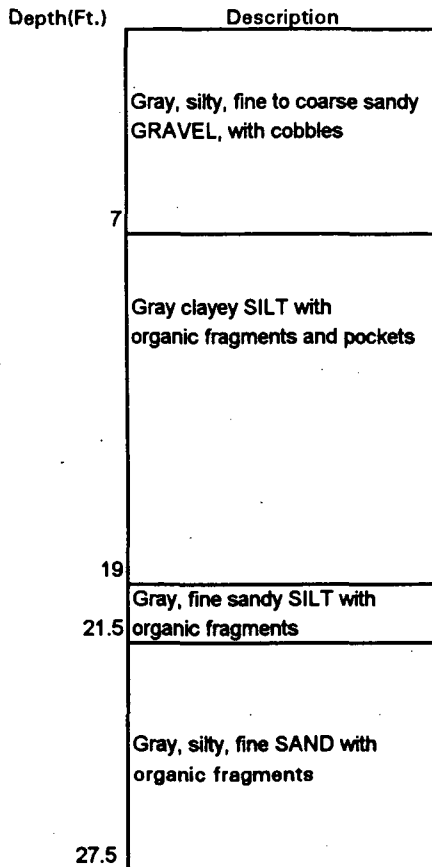
**Dalton, Olmsted & Fuglevand, Inc.**

Environmental Consultants  
 Weyershaeuser - Soquelmie Mill  
 WEY-008-01

**MONITORING WELL NO. DOF-MW-6 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION**

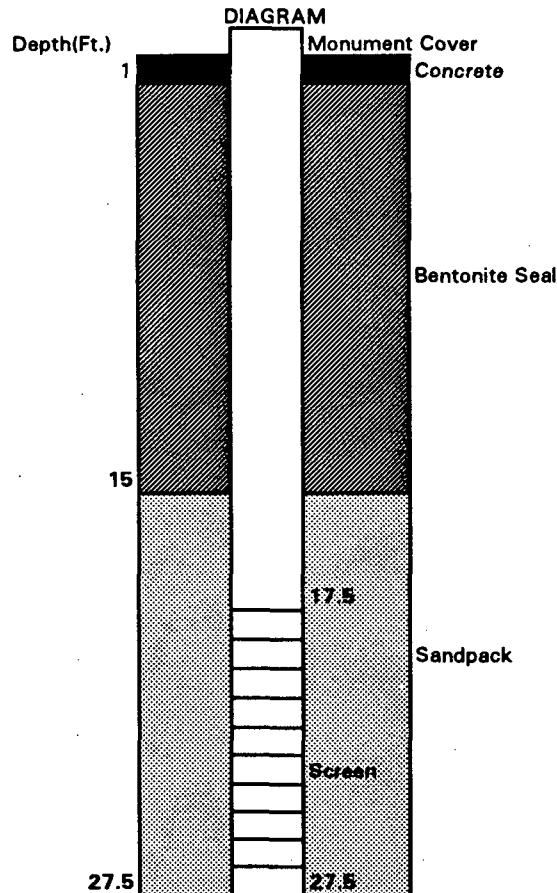
Field Rep: T. Olmsted				Location: 49' N. of GEO-MW-2, 65' NE of GEO-MW-3			
Drilling Co.: Holt				Elevation: 418.8'			
Driller: Clyde Moore				Date Completed: 5/14/92			
Drill Type: Mobile B57				Weather: Cool and Ptty Cloudy			
Size/Type Casing: 4" I.D. Hollow-Stem Auger							
Spl.No.	Type	Drill Action	Spl Depth (Ft. From - To)	Blows/ 6 inches	Sample Length	Time	Sample Description
1	3" Drive	Rough	2.5-4	9-12-15-18	18"	1530	Gray, silty, fine to coarse sandy GRAVEL, moist
2	"	Rough	5-7	9-12-17-8	8"	1540	Gray, silty, fine to coarse sandy GRAVEL, wet
3	"	Smooth @ 7	7.5-9.5	1/18-1/6	24"	1550	Gray, clayey SILT with organic fragments
4	"	smooth	10-12	1/12-1-2	24"	1605	Gray, clayey SILT with organic fragments
5	"	"	15-17	1-1-1-1	24"	1530	Gray, fine sandy SILT
6	"	"	17.5-19.5	1/12-1-1	24"	1535	Gray, clayey SILT with organic fragments
7	"	"	20-22	1/12-3-3	24"	1545	Bottom 6 inches, gray sandy SILT Gray, fine sandy SILT grading to silty, fine SAND at bottom
8	"	"	22.5-24.5	1-2-2-2	24"	1555	Gray, silty, fine SAND with organic fragments
9	"	"	25-27	1-1-1-1	24"	1600	Gray, silty, fine SAND with organic fragments

**SUMMARY LOG**



(Bottom of Well)  
 NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

**MONITORING WELL DIAGRAM**



**MONITORING WELL INFORMATION**

<b>Riser Length:</b> 20'	<b>Seal:</b> type Bentonite/Concrete depth (top/bot) 0'/15'
<b>Sandpack:</b> type: 10-20 Sand depth (top/bot) 15/27.5'	<b>Monument:</b> Above-ground Steel
<b>Screen:</b> type/slot PVC/0.010 length: 10'	

**Dalton, Olmsted & Fogleland, Inc.**

Environmental Consultants

Weyerhaeuser - Snoqualmie Mill

WEY-008-01

**MONITORING WELL NO. DOF-MW-7 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION**

Field Rep: T. Olmsted

Location: 35' SE of GEO-MW-2, and 33' NE of GEO-MW-3

Drilling Co.: Holt

Elevation: 418.1'

Driller: Clyde Moore

Date Completed: 5/14/1992

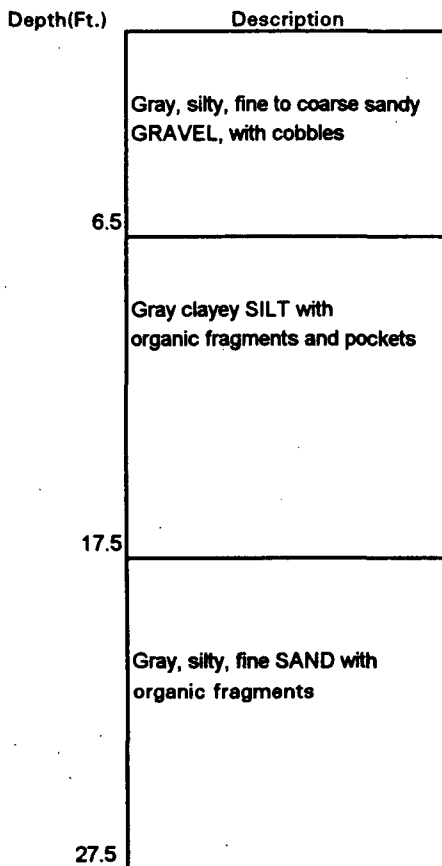
Drill Type: Mobile B57

Weather: Cool and P'tly Cloudy

Size/Type Casing: 4" I.D. Hollow-Stem Auger

Spl.No.	Type	Drill Action	Spl Depth (Ft.) From - To	Blows/ 6 inches	Sample Length	Time	Sample Description
1	3" Drive	Rough	2.5-4.5	9-10-17-17	18"	830	Brown, silty, fine to coarse sandy GRAVEL, moist
2	"	Rough	5-7	9-7-5-4	1"	835	Brown, silty, fine to coarse sandy GRAVEL, wet with wood fragments (water at 4.5')
3	"	smooth @ 6.5'	7.5-9.5	1/18-1/2	24"	845	Gray clayey SILT
4	"	"	10-12	1-2-2-2	24"	900	Gray clayey SILT, fine sandy
5	"	"	12.5-14.5	2-2-3-3	24"	1220	Gray clayey SILT
6	"	"	15-17	1/12-1-1	24"	1225	Gray clayey SILT with 6-inch sandy zone in mid-sample
7	"	"	17.5-19.5	1-1-2-2	24"	1235	Gray, silty, fine SAND with organic fragments
8	"	"	20-22	1-2-2-2	24"	1255	Gray, silty, fine SAND with organic fragments (less silt)
9	"	"	22.5-24.5	1-2-1-2	24"	1305	Layered silty fine SAND and fine sandy SILT with organic fragments
10	"	"	25-27	1-3-3-4	24"	1320	Gray, silty, fine SAND with organic fragments

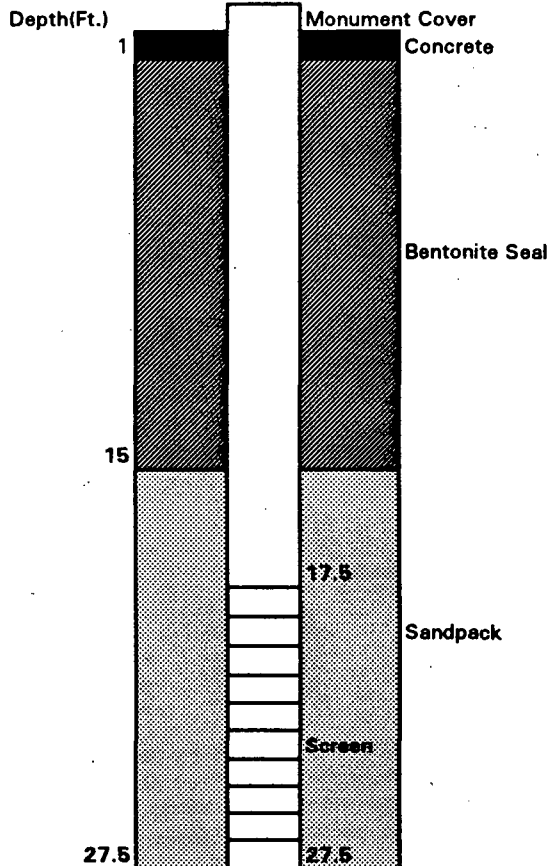
**SUMMARY LOG**



(Bottom of Well)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

**MONITORING WELL DIAGRAM**



**MONITORING WELL INFORMATION**

Riser Length: 20'	Seal: type Bentonite/Concrete depth (top/bot) 0'/15'
Sandpack: type: 10-20 Sand depth (top/bot) 15/27.5'	Monument: Above-ground Steel
Screen: type/slot PVC/0.010 length: 10'	

**Dalton, Olmsted & Fuglevand, Inc.**

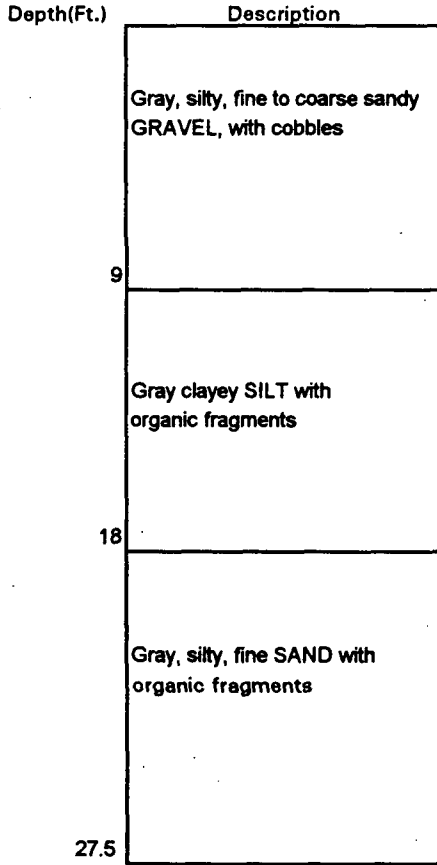
Environmental Consultants  
Weyerhaeuser - Snoqualmie Mill  
WEY-008-01

**MONITORING WELL NO. DOF-MW-8 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION**

Field Rep: T. Olmsted	Location: 65' S.E. of GEO-MW-2, and 43' E. of GEO-MW-3
Drilling Co.: Holt	Elevation: 419.4'
Driller: Clyde Moore	Date Completed: 5/14/92
Drill Type: Mobile B57	Weather: Cool and Ptty Cloudy
Size/Type Casing: 4" I.D. Hollow-Stem Auger	

Spl.No.	Type	Drill Action	Spl Depth (Ft.) From - To	Blows/ 6 inches	Sample Length	Time	Sample Description
1	3" Drive	Rough	2.5-4.5	6-10-15-18	24	1345	Gray-brown, fine to coarse sandy GRAVEL, moist
2	"	"	5-7	10-14-12-12	8	1350	Gray-brown, fine to coarse sandy GRAVEL, moist
3	"	smooth @ 9	7.5-9.5	9-4-2-2	8	1400	Gray-brown, fine to coarse sandy GRAVEL, wet (water at about 7 feet)
4	"	"	10-12	1/24	12	1410	Gray, clayey SILT, wet
5	"	"	12.5-14.5	1-2-2-2	18	830	Gray, clayey SILT, wet
6	"	"	15-17.5	1-1/12-1	24	840	Gray, clayey SILT, grading to fine sandy silt
7	"	"	17.5-19.5	1/12-1/12	24	845	Top 6" Gray, clayey SILT with organic frags. Bot 18" Gray, silty fine SAND with organic frags.
8	"	"	20-22	1/12-2-3	24	855	Gray, silty fine SAND with organic frags.
9	"	"	22.5-24.5	1-2-1-2	24	905	Gray, silty fine SAND with organic frags., becoming less silty
10	"	"	25-27	1-2-3-5	24	915	Gray, silty fine SAND with organic frags.

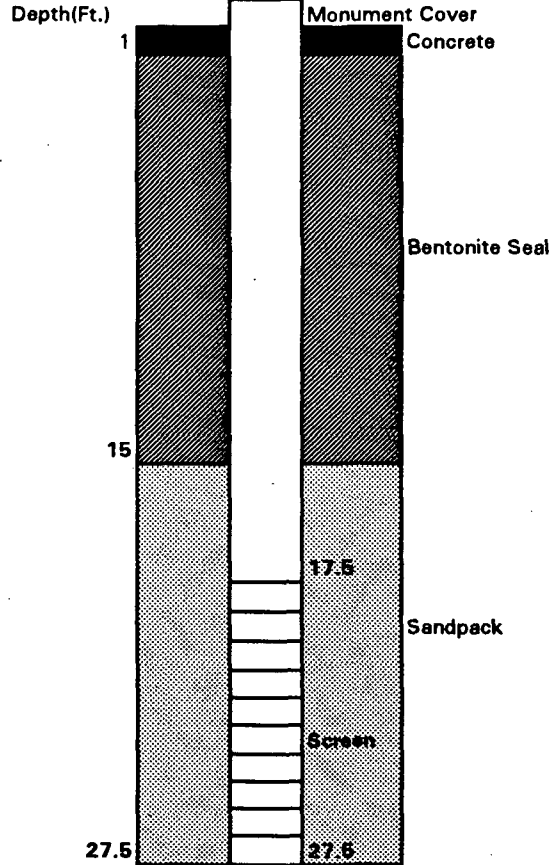
**SUMMARY LOG**



(Bottom of Well)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

**MONITORING WELL DIAGRAM**



**MONITORING WELL INFORMATION**

Riser Length: 20'	Seal: type Bentonite/Concrete
Sandpack: type: 10-20 Sand depth (top/bot) 15/27.5'	depth (top/bot) 0'/15'
Screen: type/slot PVC/0.010 length: 10'	Monument: Above-ground Steel