WASHINGTON STATE DEPARTMENT OF ECOLOGY
ENVIRONMENTAL INVESTIGATIONS AND LABORATORY SERVICES
MANCHESTER ENVIRONMENTAL LABORATORY

January 24, 1990

TO: Lee Bagley

FROM: Bob Carrell

SUBJECT: Custom Care Cleaners Samples 90037722 and 90037723

Sample 90037722 was primarily water and due to the small sample size a TPH was not able to be performed on it. Generally speaking, we need a minimum of one liter, preferably one gallon, of water for organic analyses. I was able to run a hydrocarbon identification with this sample however, and given the reduced weathering of the hydrocarbons in the water versus the soil sample (90037723), they appear to be the same. The boiling range of this mixture is consistent with that of stoddard solvent which you suspected as being present.

The TPH ran on the soil sample had 82,890 mg/Kg (wet weight basis) or 129,353 mg/Kg (dry weight basis) of hydrocarbons. Should you still desire a TPH on the water, please send in at least one liter for further analysis.

BC:mb

USEPA SF
1534942

REQUEST FOR ANALYSIS

ECOLOGY

LAB USE ONLY
Project Code _____
Lab Numbers _____

Approved By: [illegible]

Request Date: 1-18-90 Program Code: N0150

Requested By: Lee Bagley Scan No. 234-6375

Report Data To: Lee Bagley

Project Name: Custom Care Cleaners / Griffith's

Project Location: Vancouver

Sampling Dates: 1-17-90 Date To Lab: 1-19-90

Sample Pickup Location: SWRO

☒ Enforcement (Chain of Custody REQUIRED)

☐ Emergency (enclose separately REASONS and Approval by)

☐ Other Matrix (Describe): _____

No. of Sam. Other	Sed	H20	General Chem	No. of Sam. Other	Sed	H20	Gen Chem, Biology	No. of Sam. Other	Sed	H20	Organics & Toxics
			Turbidity				BOD/5 day				Base/Neutral/Acids
			pH				COD				Acid/Neutrals Only
			Conductivity				TOC	2	2		Volatile Organics
			Total Alkalinity								Pesticides/PCBs
			Hardness				Nutrients (3)				PCBs Only
			Chloride				Ammonia				Organophosphate Pest.
			Sulfate				Nitrate-Nitrite				Cl PhenoxyAcid Herb.
			Fluoride				Total Phosphorous				Purgeable Halocarbons
			Cyanide				Ortho-Phosphate				PAH
								2	2		TPH^W/Hydrocarbon Id
							Fecal Coli Bacteria				
			SOLIDS (4)								Hydrocarbon Analysis
			TSS				PP Metals				Phenolics (AAP)
			TS				EP Tox Metals				Oil & Grease
				Total			Diss	2			Ignitability
				Other	Sed	H20	H20 Specified Metals (list)				TOX
											Bioassay
			% Solids								NPDES (% effluent)
											HW Designation
			% Lipids								Other:

Comments: Samples are probably stoddard solvent and soil contaminated with stoddard; also need to analyze for "perc" family;

NOTE: Chain of Custody is recommended on all sampling events.

Sample Bottles Required:

Please send me 4 Ep-tox bottles (8 oz)

Sample Disposition After Analysis:

ECY 040-2-62 (Rev. 7/88)

State of Washington Department of Ecology
Manchester Environmental Laboratory
P.O Box 307 Manchester, WA. 98353

Data Review

March 1, 1990

Project : Custom Care

Samples : 037722 037723

Laboratory: Weyerhaeuser Technical Center 1683

By: Stuart Magoon

VOA Fraction (water)

Holding Times:

Sample	Date Collect	Date Man Lab Rec'd	Date Cntr Lab Rec'd	Date Extd	Date Anlz	#Days From Collect
037722	1/17	1/19	1/23	NA	1/24	7 of 14

This sample has met all the holding time requirements.

Surrogates:

Surrogate recoveries for this sample, and the method blank are within the CLP recovery limits.

Sample Data

This data is acceptable for use. Note that data qualifiers may modify the usefulness of the individual values.

Common contaminates such as Acetone often show up in the method blank. The "B" flag is used for analytes found in samples that are also detected in the method blank. For common solvents such as Acetone, amounts less than ten times that found in the method blank can be considered contaminates, and not native to the sample. Quantities detected above ten times that found in the method blank are considered real, not the result of contamination, and the "B" flag can be dropped. Note that I have changed the "B" flag to a "UJ" meaning the compound was not detected at the estimated detection limit. This was done because the detection of this compound was probably the result of contamination. The "UJ" qualifier means that the compound was analyzed for but not detected, and the quantitation limit is an estimated quantity.

VOA Fraction (soil)

Holding Times:

Sample	Date Collect	Date Man Lab Rec'd	Date Cntr Lab Rec'd	Date Extd	Date Anlz	#Days From Collect
037723	1/17	1/19	1/23	NA	1/25	8 of NE
037723DL	1/17	1/19	1/23	NA	1/26	9 of NE

No holding times have been established (NE) for soils; nine days is reasonable and acceptable.

Surrogates:
Surrogate recoveries for the method blanks are within the CLP recovery limits.
Surrogate recoveries for this sample, and the matrix spikes were only achievable for 1,2-Dichloroethane. D8-Toluene and Bromofluorobenzene recoveries were hampered by matrix effects resulting in elevated recoveries for D8-Toluene and incalculable recoveries for Bromofluorobenzene. This is not an unusual event when samples contain high levels of interfering compounds. The usefulness of this data should not be compromised by these results.

Matrix Spike & Matrix Spike Duplicate (MS/MSD):

Matrix spike/spike duplicate precision and recovery data are acceptable and within the QC limits.

Sample Data

This data is acceptable for use. Note that data qualifiers may modify the usefulness of the individual values.

Results for 037723DL have been included, although the values reported provide no additional information. This sample was analyzed at a dilution in order to try and achieve better surrogate recovery information. Use the results from the initial analysis of this sample (037723), not the second analysis (037723DL).

An "M" qualifier was added to Chlorobenzene to indicate that although the analyst believes the compound is present with a retention time match; the mass spectral data support is weak ("M").

A "J" qualifier was added to Chlorobenzene because the m/e ratios of the masses in the spectra were not correct, and the presence of interferences was suspected. These interferences may have biased the results high, which prompted the value to be flagged as an estimate ("J").

Weyerhaeuser

32901 Weyerhaeuser Way South
Federal Way, Washington 98003
Analytical Chemistry Laboratories
Tacoma, Washington 98477
Tel (206) 924 6035
Fax (206) 924 4207

rec'd 2/13/90 SM

CASE NARRATIVE

WEYERHAEUSER (WEYER)
ANALYTICAL AND TESTING SERVICES

Case Number: 01683
SDG Number: 037722
Contract Number: Custom Care

Samples from this case (01683) were received on 01/23/90. This case was comprised of a water and a soil sample for VOAs. The requested analysis were as follows:

SAMPLE ID	MATRIX	ANALYSIS REQUESTED
037722	water	VOA
037723	soil	VOA
037723DL	soil	VOA
037723MS	soil	VOA
037723MSD	soil	VOA

Several anomalies existed with this sample set that are listed below.

1. VOA

a) All samples and blanks contain a peak at approximately scan #50 that is >10% of the nearest internal standard. This peak is carbon dioxide and is not searched in any of the samples. A spectra of this peak is on file at the laboratory for review.

b.) Sample 037723 was analyzed initially under the Medium Level Method. Since high levels of organics were expected, the initial analysis was performed under a dilution of 4.0. The analysis still contained concentrations of compounds that raised the background and interfered with the surrogates. A second analysis was performed under a dilution factor of 50. Both results are included.

c.) Surrogate results were outside limits for all analyses of sample 037723 indicating a matrix problem. Bromofluorobenzene was not seen due to background

interferences and is flagged as a "D" based on the dilution.

d.) Sample 037722 was analyzed as a low level water sample. A dilution factor of 10 was used initially to eliminate interferences suspected from the hydrocarbons. Because the background was high in this original analysis, a rerun was not performed.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Dennis M Catalano

Dennis Catalano
Laboratory Manager

2/9/90
Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6242.

Sincerely,

Dennis M Catalano

Dennis Catalano, Manager
Organic Laboratory
Weyerhaeuser Analytical & Testing Services

2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Level:(low/med) MED

	~~EPA~~ SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	037723	155 *	D	104		2
02	037723DL	127 *	D	86		1
03	037723MS	146 *	D	104		2
04	037723MSD	158 *	D	118		1
05	VBLKM1	105	101	100		0
06	VBLKM2	99	96	99		0

		QC LIMITS
S1 (TOL)	= Toluene-d8	(81-117)
S2 (BFB)	= Bromofluorobenzene	(74-121)
S3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	037722	94	90	93		0
02	VBLKW1	92	93	90		0

		QC LIMITS
S1 (TOL)	= Toluene-d8	(88-110)
S2 (BFB)	= Bromofluorobenzene	(86-115)
S3 (DCE)	= 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Lab File ID: B2664 Lab Sample ID: VBLKW1

Date Analyzed: 01/24/90 Time Analyzed: 1023

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: VOA2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	~~EPA~~ SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	037722	43625	B2670	1443

COMMENTS:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Lab File ID: B2698 Lab Sample ID: VBLKM1

Date Analyzed: 01/25/90 Time Analyzed: 2254

Matrix: (soil/water) SOIL Level: (low/med) MED

Instrument ID: VOA2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	~~EPA~~ Client SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	037723	43626	B2699	2328
02	037723MS	43626MS	B2700	0003
03	037723MSD	43626MSD	B2701	0037

COMMENTS:

FORM IV VOA 1/87 Rev.

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Lab File ID: B2710 Lab Sample ID: VBLKM2

Date Analyzed: 01/26/90 Time Analyzed: 1244

Matrix: (soil/water) SOIL Level:(low/med) MED

Instrument ID: VOA2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	~~EPA~~ SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	037723DL	43626DL	B2711	1322

COMMENTS:

FORM IV VOA 1/87 Rev.

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix Spike - ~~EPA~~ Sample No.: 037723 Level:(low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	9770	0	8910	91	59-172
Trichloroethene	9770	0	10000	102	62-137
Benzene	9770	0	12700	130	66-142
Toluene	9770	17600	29400	121	59-139
Chlorobenzene	9770	6470	19300	131	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	9770	10500	108	-17	22	59-172
Trichloroethene	9770	10800	111	-8	24	62-137
Benzene	9770	12400	127	2	21	66-142
Toluene	9770	30600	133	-9	21	59-139
Chlorobenzene	9770	17000	108	19	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: 037723
INSTR ID:VOA2 4G

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

~~EPA~~ Gm SAMPLE NO.

037722

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) WATER Lab Sample ID: 43625

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: B2670

Level: (low/med) LOW Date Received: 01/23/90

% Moisture: not dec. ____ Date Analyzed: 01/24/90

Column: (pack/cap) CAP Dilution Factor: ~~1.0~~ Gm 10.

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	100	U
75-01-4	Vinyl chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene chloride	220	
67-64-1	Acetone	62	~~BJ~~ UJ sn
75-15-0	Carbon disulfide	50	U
75-35-4	1,1-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
108-05-4	Vinyl acetate	100	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	50	U
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	100	U
591-78-6	2-Hexanone	100	U
127-18-4	Tetrachloroethene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

037722

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) WATER Lab Sample ID: 43625

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: B2670

Level: (low/med) LOW Date Received: 01/23/90

% Moisture: not dec. ____ Date Analyzed: 01/24/90

Column (pack/cap) CAP Dilution Factor: ~~1.0~~ 10.

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown C9H18	16.62	130	J
2. 6236880	Cyclohexane, 1-ethyl-4-methy	17.07	140	J
3.	Unknown C9H18	18.17	120	J
4.	Unknown hydrocarbon	18.89	120	J
5.	Unknown hydrocarbon	19.44	170	J
6. 1331437	Cyclohexane, diethyl-	19.99	230	J
7.	Unknown C10H20	21.17	460	J
8. 2051301	Octane, 2,6-dimethyl-	21.72	150	J
9.	Unknown	22.42	130	J
10. 124185	Decane	23.29	290	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

~~EPA~~ SAMPLE NO.

037723

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: 43626

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2699

Level: (low/med) MED Date Received: 01/23/90

% Moisture: not dec. 36 Date Analyzed: 01/25/90

Column: (pack/cap) CAP Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	7800	U
74-83-9	Bromomethane	7800	U
75-01-4	Vinyl chloride	7800	U
75-00-3	Chloroethane	7800	U
75-09-2	Methylene chloride	3900	U
67-64-1	Acetone	7000	J
75-15-0	Carbon disulfide	3900	U
75-35-4	1,1-Dichloroethene	3900	U
75-34-3	1,1-Dichloroethane	3900	U
540-59-0	1,2-Dichloroethene (total)	3900	U
67-66-3	Chloroform	3900	U
107-06-2	1,2-Dichloroethane	3900	U
78-93-3	2-Butanone	7800	U
71-55-6	1,1,1-Trichloroethane	3900	U
56-23-5	Carbon tetrachloride	3900	U
108-05-4	Vinyl acetate	7800	U
75-27-4	Bromodichloromethane	3900	U
78-87-5	1,2-Dichloropropane	3900	U
10061-01-5	cis-1,3-Dichloropropene	3900	U
79-01-6	Trichloroethene	3900	U
124-48-1	Dibromochloromethane	3900	U
79-00-5	1,1,2-Trichloroethane	3900	U
71-43-2	Benzene	3900	U
10061-02-6	trans-1,3-Dichloropropene	3900	U
75-25-2	Bromoform	3900	U
108-10-1	4-Methyl-2-pentanone	7800	U
591-78-6	2-Hexanone	7800	U
127-18-4	Tetrachloroethene	1300	J
79-34-5	1,1,2,2-Tetrachloroethane	3900	U
108-88-3	Toluene	18000	
108-90-7	Chlorobenzene	6500	MJ
100-41-4	Ethylbenzene	6300	
100-42-5	Styrene	3900	U
1330-20-7	Xylene (total)	49000	

FORM I VOA 1/87 Rev.

M- Spectral match is weak

J- estimated quantity

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

037723

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: 43626

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2699

Level: (low/med) MED Date Received: 01/23/90

% Moisture: not dec. 36 Date Analyzed: 01/25/90

Column (pack/cap) CAP Dilution Factor: 4.0

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1678917	Cyclohexane, ethyl-	13.65	270000	J
2. 1839630	Cyclohexane, 1,3,5-trimethyl	14.72	370000	J
3. 2216333	Octane, 3-methyl-	15.87	220000	J
4.	Unknown hydrocarbon	18.59	530000	J
5. 1678928	Cyclohexane, propyl-	19.19	350000	J
6.	Unknown C10H20	19.74	380000	J
7.	Unknown	20.64	160000	J
8.	Unkown hydrocarbon	20.94	620000	J
9. 95636	Benzene, 1,2,4-trimethyl-	22.24	380000	J
10. 124185	Decane	23.07	620000	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

037723DL

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: 43626DL

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2711

Level: (low/med) MED Date Received: 01/23/90

% Moisture: not dec. 36 Date Analyzed: 01/26/90

Column: (pack/cap) CAP Dilution Factor: 50

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	98000	U
74-83-9	Bromomethane	98000	U
75-01-4	Vinyl chloride	98000	U
75-00-3	Chloroethane	98000	U
75-09-2	Methylene chloride	49000	U
67-64-1	Acetone	62000	BDJ
75-15-0	Carbon disulfide	49000	U
75-35-4	1,1-Dichloroethene	49000	U
75-34-3	1,1-Dichloroethane	49000	U
540-59-0	1,2-Dichloroethene (total)	49000	U
67-66-3	Chloroform	49000	U
107-06-2	1,2-Dichloroethane	49000	U
78-93-3	2-Butanone	98000	U
71-55-6	1,1,1-Trichloroethane	49000	U
56-23-5	Carbon tetrachloride	49000	U
108-05-4	Vinyl acetate	98000	U
75-27-4	Bromodichloromethane	49000	U
78-87-5	1,2-Dichloropropane	49000	U
10061-01-5	cis-1,3-Dichloropropene	49000	U
79-01-6	Trichloroethene	49000	U
124-48-1	Dibromochloromethane	49000	U
79-00-5	1,1,2-Trichloroethane	49000	U
71-43-2	Benzene	49000	U
10061-02-6	trans-1,3-Dichloropropene	49000	U
75-25-2	Bromoform	49000	U
108-10-1	4-Methyl-2-pentanone	98000	U
591-78-6	2-Hexanone	98000	U
127-18-4	Tetrachloroethene	49000	U
79-34-5	1,1,2,2-Tetrachloroethane	49000	U
108-88-3	Toluene	18000	DJ
108-90-7	Chlorobenzene	49000	U
100-41-4	Ethylbenzene	49000	U
100-42-5	Styrene	49000	U
1330-20-7	Xylene (total)	62000	D

FORM I VOA 1/87 Rev.

D = results from a dilution.

fm

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

~~EPA~~ SAMPLE NO.

037723DL

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: 43626DL

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2711

Level: (low/med) MED Date Received: 01/23/90

% Moisture: not dec. 36 Date Analyzed: 01/26/90

Column (pack/cap) CAP Dilution Factor: 50

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown hydrocarbon	18.22	1400000	J
2.	Unknown hydrocarbon	18.55	750000	J
3. 1678928	Cyclohexane, propyl-	18.80	1900000	J
4.	Unknown C10H22	19.07	1200000	J
5.	Unknown C10H20	19.37	1700000	J
6.	Unknown C10H22	20.57	3500000	J
7.	Unknown C10H22	21.12	1500000	J
8.	Unknown	21.82	2000000	J
9. 124185	Decane	22.67	3900000	J
10.	Unknown (possible C10H18)	23.19	730000	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKW1

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) WATER Lab Sample ID: VBLKW1

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: B2664

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 01/24/90

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5	U
67-64-1	Acetone	7	J
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKW1

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) WATER Lab Sample ID: VBLKW1

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: B2664

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 01/24/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKM1

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: VBLKM1

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2698

Level: (low/med) MED Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 01/25/90

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1300	U
74-83-9	Bromomethane	1300	U
75-01-4	Vinyl chloride	1300	U
75-00-3	Chloroethane	1300	U
75-09-2	Methylene chloride	630	U
67-64-1	Acetone	1300	U
75-15-0	Carbon disulfide	630	U
75-35-4	1,1-Dichloroethene	630	U
75-34-3	1,1-Dichloroethane	630	U
540-59-0	1,2-Dichloroethene (total)	630	U
67-66-3	Chloroform	630	U
107-06-2	1,2-Dichloroethane	630	U
78-93-3	2-Butanone	1300	U
71-55-6	1,1,1-Trichloroethane	630	U
56-23-5	Carbon tetrachloride	630	U
108-05-4	Vinyl acetate	1300	U
75-27-4	Bromodichloromethane	630	U
78-87-5	1,2-Dichloropropane	630	U
10061-01-5	cis-1,3-Dichloropropene	630	U
79-01-6	Trichloroethene	630	U
124-48-1	Dibromochloromethane	630	U
79-00-5	1,1,2-Trichloroethane	630	U
71-43-2	Benzene	630	U
10061-02-6	trans-1,3-Dichloropropene	630	U
75-25-2	Bromoform	630	U
108-10-1	4-Methyl-2-pentanone	1300	U
591-78-6	2-Hexanone	1300	U
127-18-4	Tetrachloroethene	630	U
79-34-5	1,1,2,2-Tetrachloroethane	630	U
108-88-3	Toluene	630	U
108-90-7	Chlorobenzene	630	U
100-41-4	Ethylbenzene	630	U
100-42-5	Styrene	630	U
1330-20-7	Xylene (total)	630	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKM1

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: VBLKM1

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2698

Level: (low/med) MED Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 01/25/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKM2

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: VBLKM2

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2710

Level: (low/med) MED Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 01/26/90

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1300	U
74-83-9	Bromomethane	1300	U
75-01-4	Vinyl chloride	1300	U
75-00-3	Chloroethane	1300	U
75-09-2	Methylene chloride	630	U
67-64-1	Acetone	700	J
75-15-0	Carbon disulfide	630	U
75-35-4	1,1-Dichloroethene	630	U
75-34-3	1,1-Dichloroethane	630	U
540-59-0	1,2-Dichloroethene (total)	630	U
67-66-3	Chloroform	630	U
107-06-2	1,2-Dichloroethane	630	U
78-93-3	2-Butanone	2200	
71-55-6	1,1,1-Trichloroethane	630	U
56-23-5	Carbon tetrachloride	630	U
108-05-4	Vinyl acetate	1300	U
75-27-4	Bromodichloromethane	630	U
78-87-5	1,2-Dichloropropane	630	U
10061-01-5	cis-1,3-Dichloropropene	630	U
79-01-6	Trichloroethene	630	U
124-48-1	Dibromochloromethane	630	U
79-00-5	1,1,2-Trichloroethane	630	U
71-43-2	Benzene	630	U
10061-02-6	trans-1,3-Dichloropropene	630	U
75-25-2	Bromoform	630	U
108-10-1	4-Methyl-2-pentanone	1300	U
591-78-6	2-Hexanone	1300	U
127-18-4	Tetrachloroethene	630	U
79-34-5	1,1,2,2-Tetrachloroethane	630	U
108-88-3	Toluene	630	U
108-90-7	Chlorobenzene	630	U
100-41-4	Ethylbenzene	630	U
100-42-5	Styrene	630	U
1330-20-7	Xylene (total)	630	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKM2

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: VBLKM2

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2710

Level: (low/med) MED Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 01/26/90

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

037723MS

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: 43626MS

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2700

Level: (low/med) MED Date Received: 01/23/90

% Moisture: not dec. 36 Date Analyzed: 01/26/90

Column: (pack/cap) CAP Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	7800	U
74-83-9	Bromomethane	7800	U
75-01-4	Vinyl chloride	7800	U
75-00-3	Chloroethane	7800	U
75-09-2	Methylene chloride	3900	U
67-64-1	Acetone	3800	~~J~~ UJ
75-15-0	Carbon disulfide	3900	U
75-35-4	1,1-Dichloroethene	3900	U
75-34-3	1,1-Dichloroethane	3900	U
540-59-0	1,2-Dichloroethene (total)	3900	U
67-66-3	Chloroform	3900	U
107-06-2	1,2-Dichloroethane	3900	U
78-93-3	2-Butanone	7800	U
71-55-6	1,1,1-Trichloroethane	3900	U
56-23-5	Carbon tetrachloride	3900	U
108-05-4	Vinyl acetate	1900	J
75-27-4	Bromodichloromethane	3900	U
78-87-5	1,2-Dichloropropane	3900	U
10061-01-5	cis-1,3-Dichloropropene	3900	U
79-01-6	Trichloroethene	3900	U
124-48-1	Dibromochloromethane	3900	U
79-00-5	1,1,2-Trichloroethane	3900	U
71-43-2	Benzene	3900	U
10061-02-6	trans-1,3-Dichloropropene	3900	U
75-25-2	Bromoform	3900	U
108-10-1	4-Methyl-2-pentanone	7800	U
591-78-6	2-Hexanone	7800	U
127-18-4	Tetrachloroethene	1600	J
79-34-5	1,1,2,2-Tetrachloroethane	3900	U
108-88-3	Toluene	3900	U
108-90-7	Chlorobenzene	3900	U
100-41-4	Ethylbenzene	6500	
100-42-5	Styrene	3900	U
1330-20-7	Xylene (total)	54000	

Sm

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

037723MSD

Lab Name: WEYERHAEUSER Contract: 046-5751

Lab Code: WEYER Case No.: 1683 SAS No.: _____ SDG No.: 037722

Matrix: (soil/water) SOIL Lab Sample ID: 43626MSD

Sample wt/vol: 4.0 (g/mL) G Lab File ID: B2701

Level: (low/med) MED Date Received: 01/23/90

% Moisture: not dec. 36 Date Analyzed: 01/26/90

Column: (pack/cap) CAP Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	7800	U
74-83-9	Bromomethane	7800	U
75-01-4	Vinyl chloride	7800	U
75-00-3	Chloroethane	7800	U
75-09-2	Methylene chloride	3900	U
67-64-1	Acetone	5300	J US
75-15-0	Carbon disulfide	3900	U
75-35-4	1,1-Dichloroethene	3900	U
75-34-3	1,1-Dichloroethane	3900	U
540-59-0	1,2-Dichloroethene (total)	3900	U
67-66-3	Chloroform	3900	U
107-06-2	1,2-Dichloroethane	3900	U
78-93-3	2-Butanone	7800	U
71-55-6	1,1,1-Trichloroethane	3900	U
56-23-5	Carbon tetrachloride	3900	U
108-05-4	Vinyl acetate	2500	J
75-27-4	Bromodichloromethane	3900	U
78-87-5	1,2-Dichloropropane	3900	U
10061-01-5	cis-1,3-Dichloropropene	3900	U
79-01-6	Trichloroethene	3900	U
124-48-1	Dibromochloromethane	3900	U
79-00-5	1,1,2-Trichloroethane	3900	U
71-43-2	Benzene	3900	U
10061-02-6	trans-1,3-Dichloropropene	3900	U
75-25-2	Bromoform	3900	U
108-10-1	4-Methyl-2-pentanone	7800	U
591-78-6	2-Hexanone	7800	U
127-18-4	Tetrachloroethene	1700	J
79-34-5	1,1,2,2-Tetrachloroethane	3900	U
108-88-3	Toluene	3900	U
108-90-7	Chlorobenzene	3900	U
100-41-4	Ethylbenzene	7200	
100-42-5	Styrene	3900	U
1330-20-7	Xylene (total)	55000	

8911

FORM I VOA 1/87 Rev.

511

State of Washington Department of Ecology

Program Code

SAMPLE DATA & ANALYSIS REQUIRED

Contract: 600
On hand: 210

Page 1 of 1

Project Code

Project/Name Custom Core / Contract Chemists

[X] Enforcement/Custody [ ] Class II

[ ] Possible Toxic/Hazardous Notes Stoddard Solvent

SAMPLING DATE Yr	Mo	Da	TIME Hr	Mn	FIELD STATION IDENTIFICATION	LAB SAMPLE NUMBER Wk	Seq	Matrix Code	Source Code	No. of Containers	General Chemistry: Turbidity, pH, Conductivity, Total Hardness, Chloride, TS, TSS, TNVS, TNVSS, TSS, % Solids, Nutrients (4), Ammonia, Nitrate-Nitrite, Total Phosphorous, Ortho-Phosphate, BOD/5 Day, COD Chem. Oxy Demand	Biology: Fecal Coliform Bacteria, Total Coliform Bacteria, Enterococcus, Fish Bioassay	Organic Chem.: Base/Neutrals/Acids, Volatile Organics, Pesticides/PCB's, PCB's Only, Purgeable Halocarbons, Herbicides, Hydrocarbon Analysis, Phenolics (AAP), Oil & Grease	TPH w/ Hydrocarbon I.D.	Phenols	METALS: P.P. Metals, EP Tox Metals, Specific List: Total / Recoverable / Totals / Dissolved
90	01	17	11	45	CC-1	037722	80	01	02				X	X	X	
90	01	17	11	45	CC-2	4	2240	49	02				X	X	X	

Project Officer Lee Bagley

Sampler(s) Lee Bagley

Recorder Lee Bagley

Date 1/17/90

Chain Of Custody Record

Relinquished By:	Received By:	Yr	Mo	Da	Hr	Mn	Seal I.D.	Condition of Seals	Comments
Lee Bagley	Sample Cooler	1	00	1	18	1015	0006789		
Locked & Sealed Custody Cooler	Pat Crawford	9	00	1	19	0635			
Pat Crawford									
	Jim Chen	90	01	19	0900				

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

Ecy 040-115 Rev. 7/87

★ Source Codes and Descriptions ★

Code	Description
00	Unspecified Source
01	Unknown Liquid Media (Drum/Tank)
02	Unknown Liquid Media (Spill Area)
03	Unknown Liquid Media (Waste Pond)
10	Water (General)
12	Ambient Stream/River
13	Lake/Reservoir
14	Estuary/Ocean
15	Spring/Seepage
16	Rain
17	Surface Runoff/Pond (General)
18	Irrigation Canal/Return Flow
20	Well (General)
21	Well (Industrial/Agricultural)
22	Well (Drinking Water Supply)
23	Well (Test/Observation)
24	Drinking Water Intake
25	Drinking Water (At Tap)
30	Effluent Wastewater (General)
31	Municipal Effluent
32	Municipal Inplant Waters
33	Sewage Runoff/Leachate
34	Industrial Effluent
35	Industrial Inplant Waters
36	Industrial Surface Runoff/Pond
37	Industrial Waste Pond
38	Landfill Runoff/Pond/Leachate
40	Sediment (General)
42	Bottom Sediment or Deposit
44	Sludge (General)
45	Sludge (Waste Pond)
46	Sludge (Drum/Tank)
48	Soil (General)
49	Soil (Spill/Contaminated Area)
50	Bore Hole Material

Code	Description
60	Air (General)
61	Ambient Air
62	Source or Effluent Air
63	Industrial or Workroom Air
64	Hi-Vol Filter
70	Tissue (General)
71	Fish Tissue
72	Shellfish Tissue
73	Bird Tissue
74	Mammal Tissue
75	Macroinvertebrate
76	Algae
77	Periphyton
78	Plant/Vegetation
80	Oil/Solvent (General)
81	Oil (Transformer/Capacitor)
82	Oil/Solvent (Drum/Tank)
83	Oil/Solvent (Spill Area)
84	Oil/Solvent (Waste Pond)
90	Commercial Product Formulation
95	Well Drill Water
96	Well Drill Mud
97	Well Sealing Material
98	Gravel Pack Material

RECEIVED
'90 FEB -7 P3:18
DEPARTMENT OF ... W. REGIONAL ...

Matrix Codes

10	Water-Total
11	Water-Dissolved
40	Sediment/Soil
45	Semi-Solid/Sludge
46	Sediment for EP Toxicity
70	Tissue
80	Oil/Solvent
00	Other