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B00060-Wey-040



ANALYTICAL LABORATORY SERVICES REQUEST

Weyerhaeuser Research and Development - Analysis and Testing

Request Number: 02683

Title: WESTINGHOUSE 1100 EM1		
Number of Samples: 14	Project Number: 046-5751	Groups: 1,3,4,7,A,V
Date Received: 05/18/90	Date Desired: 06/15/90	Estimated Completion Date: 06/15/90
Submitted By: BECHTOLD, BECKY	Location: WTC 2F25	Telephone: 6148
Reviewed By: DOXSEE, Kari	Location: 2F 25	Telephone: 924-6148
Copy To:		

Sample Description and History:

*****ONLY PERFORM SO4 AND NO3 WATER LAB TESTS AFTER ANIONS TEST HAS BEEN COMPLETED*****

SAMPLE(S) ADDED

Group	Series	Test Code	Test Description	Report Range	Report Basis	Lower Limit of Sensitivity
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1	A	CLP/ORG	Westinghouse - Organic CLP Deliverables			
3	B	CLPINOR3	Westinghouse - Inorganic Group 3 CLP Deliverables			
3	D	CLPINOR3 DISSOLVED	WESTINGHOUSE INORGANIC GROUP 3 CLP DELIVERABLES			
✓	C	CLPINOR4	Westinghouse - Inorganic Group 4 CLP Deliverables			
✓	E	ALKA	Alkalinity SM403			
✓	E	AOX	Absorbable Organic Halides (TOX) 9020			
✓	E	COD	COD 410.1			
✓	E	COND	Specific Conductivity of water 120.1			
✓	E	NH3-N	Nitrogen, Ammonia in water 350.1			
✓	E	NO3-W	Nitrate/Nitrite-Nitrogen in Water 353.2			
✓	E	PH-WATER	pH of waters 150.1			
4	E	SO4-W	Sulfate, Turbidimetric in water 375.4			
✓	E	SOL-TDS	Total Dissolved solids 160.1			
✓	E	TURB	Turbidity 180.1			



Interim Report Desired?	Hazardous Samples? Yes	No	
Reference:	Record Book:		
Resubmitted Approved: <i>Maxine Rest</i>	Date: 6-22-90	Signature applies to attached pages	Page Number: 000001

Printed on: 05/20/90

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ANALYTICAL LABORATORY SERVICES REQUEST

Weyerhaeuser Research and Development - Analysis and Testing

Request Number: 02683

Group	Series	Test Code	Test Description
		Report Range	Report Basis Lower Limit of Sensitivity

- 7 F NOCODE7 S04/7, CL-DION, N03-W, P04 = ANIONS
- 7 F TOC-LL/7 Total organic carbon - low level - ampule

Sample Number	Series to Be Evaluated	Submitter's Designation
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50007	ABC EF	B000G0
50008	D	B000G1
50009	A	B000G8 - VOA ONLY
50010	ABC EF	B000J2
50011	D	B000J3
50012	ABC EF	B000G4
50013	D	B000G5
50056	ABC EF	B000G9
50057	D	B000H0
50058	A	B000J1 - VOA ONLY
50059	ABC EF	B000H3
50060	D	B000H4
50061	ABC EF	B000H7
50062	D	B000H8

red 5/18



USE FOR QC red 5/19 > EXTRA VOLUME



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Analytical Laboratories
Tacoma, Washington

Service Request 02683
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REPORT

Westinghouse Water Samples
1100 EM1

<u>Sample Description</u>	<u>Analytical Lab Code</u>	<u>pH</u>	<u>Turbidity NTU</u>	<u>Specific Conductance μs/Cm</u>	<u>TDS mg/L</u>	<u>Alkalinity mg/L CaCO₃</u>	<u>COD mg/L</u>
B000G0	50007	7.9	0.7	730	540	160	<5
B000J2	50010	7.4	4.6	1000	680; 710	223; 226	13
B000G4	50012	8.0; 8.0	1.8; 1.8	410	280	140	9
B000G9	50056	7.8	1.7	560	370	200	10; 7
B000H3	50059	8.0	1.2	400	280	150	7
B000H7	50061	8.0; 8.0	0.3	440; 440	300	160	8

<u>Sample Description</u>	<u>Analytical Lab Code</u>	<u>NH₃-N mg/L</u>	<u>NO₃-NO₂-N mg/L</u>	<u>SO₄ mg/L</u>	<u>AOX mg/L</u>	<u>CN mg/L</u>	<u>TP mg/L</u>
B000G0	50007	0.02; 0.04	32.8	57; 59	0.06	<0.01; <0.01	0.04
B000J2	50010	<0.02	1.5; 1.5	58	0.02	<0.01	0.08
B000G4	50012	0.04	2.8	44	<0.01	<0.01	0.07
B000G9	50056	0.02	4.4	29	0.02	<0.01	0.04
B000H3	50059	<0.02	2.8	26	0.03	<0.01	0.07
B000H7	50061	<0.02	2.2	39	<0.01; <0.01	<0.01; <0.01	0.06; 0.06

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Notebook _____

Approved Maxine Rade Date 6-22-90 Page Number _____


SR 02683

WEYERHAEUSER TECHNOLOGY CENTER
Analytical Laboratories
Tacoma, Washington

TOC REPORT
WESTINGHOUSE 1100 EMI

SUBMITTER'S DESIGNATION	SAMPLE NUMBER	TOC C mg/L AS REC'D BASIS	DATE ANALYZED	DATE SAMPLED
B000G0	50007	0.8	6/7/90	5/16/90
B000J2	50010	2.7	6/7/90	5/16/90
B000G4	50012	2.5	6/7/90	5/16/90
B000G9	50056	1.7	6/7/90	5/17/90
B000H3	50059	1.7	6/7/90	5/17/90
B000H7	50061	0.9	6/7/90	5/17/90

Approved



Date 6/27/90

Notebook

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SR 02683

WEYERHAEUSER TECHNOLOGY CENTER
Analytical Laboratories
Tacoma, Washington

SUBMITTER'S DESIGNATION	SAMPLE NUMBER	TOC C mg/L AS REC'D BASIS
B000G0	50007	0.8
B000G0	50007 DUPL.	1.1
	RPD	25.5

SUBMITTER'S DESIGNATION	SAMPLE NUMBER	TOC C mg/L AS REC'D BASIS
B000G0	50007	0.8
B000G0	50007 SPIKE	10.8
	SPIKE ADDED	11.1
	% RECOVERY	90

Approved



Date 6/27/90

Notebook

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ANALYTICAL LABORATORY SERVICES REQUEST

Request Number: 02683

Weyerhaeuser Research and Development - Analysis and Testing

Title: WESTINGHOUSE 1100 EM1		
Number of Samples: 14	Project Number: 046-5751	Groups: 1,3,4(7),A,V
Date Received: 05/18/90	Date Desired: 06/15/90	Estimated Completion Date: 06/15/90
Submitted By: BECHTOLD, BECKY	Location: WTC 2F25	Telephone: 6148
Reviewed By: DOXSEE, Kari	Location: 2F 25	Telephone: 924-6148
Copy To:		

Sample Description and History

*****ONLY PERFORM SO4 AND NO3 WATER LAB TESTS AFTER ANIONS TEST HAS BEEN COMPLETED*****

[Handwritten signature]

Group	Series	Test Code	Test Description	Report Range	Report Basis	Lower Limit of Sensitivity
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- 1 A CLP/ORG Westinghouse - Organic CLP Deliverables
- 3 B CLPINOR3 Westinghouse - Inorganic Group 3 CLP Deliverables
- 3 D CLPINOR3 DISSOLVED - WESTINGHOUSE INORGANIC GROUP 3 CLP DELIVERABLES
- 4 C CLPINOR4 Westinghouse - Inorganic Group 4 CLP Deliverables
- 4 E ALKA Alkalinity SM403
- 4 E AOX Absorbable Organic Halides (TOX) 9020
- 4 E COD COD 410.1
- 4 E COND Specific Conductivity of water 120.1
- 4 E NH3-N Nitrogen, Ammonia in water 350.1
- 4 E NO3-W Nitrate/Nitrite-Nitrogen in Water 353.2
- 4 E PH-WATER pH of waters 150.1
- 4 E SO4-W Sulfate, Turbidimetric in water 375.4
- 4 E SOL-TDS Total Dissolved solids 160.1
- 4 E TURB Turbidity 180.1

Interim Report Desired?	Hazardous Samples? Yes	No	
Reference:	Record Book		
Results Approved: <i>[Signature]</i>	Date: 6-26-90	Signature applies to attached pages	Page Number: 002



ANALYTICAL LABORATORY SERVICES REQUEST

Weverhueser Research and Development - Analysis and Testing

Request Number 02683

Group	Series	Test Code	Test Description
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Report Range	Report Date	and Unit of Measurement
7	F	NOCODE7 S04/7, CL-DION, NO3-W, PO4 = ANIONS
7	F	TOC-LL/7 Total organic carbon - low level - ampule

Sample Number	Sample Description	Sample Location	Sample Date
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50007	ABC EF	B000G0	<i>SAMPLED</i>
50008	D	B000G1	<i>5-16-90</i>
50009	A	B000G8	VOA ONLY
50010	ABC EF	B000J2	<i>5-16</i>
50011	D	B000J3	
50012	ABC EF	B000G4	<i>5-16</i>
50013	D	B000G5	
50056	ABC EF	B000G9	<i>5-17</i>
50057	D	B000H0	
50058	A	B000J1	VOA ONLY
50059	ABC EF	B000H3	<i>5-17</i>
50060	D	B000H4	
50061	ABC EF	B000H7	<i>5-17</i>
50062	D	B000H8	

EXTRA VOLUME

SR 02683

WEYERHAEUSER TECHNOLOGY CENTER
Analytical Laboratories
Tacoma, Washington

ANION REPORT
WESTINGHOUSE 1100 EMI

SUBMITTER'S DESIGNATION	SAMPLE NUMBER	FLUORIDE F mg/L AS REC'D BASIS	CHLORIDE Cl mg/L AS REC'D BASIS	BROMIDE Br mg/L AS REC'D BASIS	NITRATE NITROGEN NO ₃ -N mg/L AS REC'D BASIS	PHOSPHATE PO ₄ mg/L AS REC'D BASIS	SULPHATE SO ₄ mg/L AS REC'D BASIS	DATE ANALYZED	DATE SAMPLED
B000G0	50007	0.4	14.6	0.2	32.2	<0.5	59.4	5/19/90 6/6/90	5/16/90
B000J2	50010	<0.1	127.3	0.2	1.5	<0.5	25.6	5/19/90 6/6/90	5/16/90
B000G4	50012	0.4	9.8	<0.2	2.4	<0.5	32.1	5/19/90 6/6/90	5/16/90
B000G9	50056	0.3	28.4	<0.2	3.9	<0.5	26.6	5/19/90 6/6/90	5/17/90
B000H3	50059	0.3	9.3	<0.2	2.5	<0.5	26.2	5/19/90 6/6/90	5/17/90
B000H7	50061	0.3	11.0	<0.2	2.1	<0.5	32.2	5/19/90 6/6/90	5/17/90

Approved



Date 6/27/90

Notebook

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VALIDATION SUMMARY

OSM RCRA LEVEL C/CLP-SAS DATA ASSESSMENT

DATE 08/07/90 SAMPLES/MATRIX B000G0 B000H7
 REVIEWED BY JA Kerch B000J2
 LABORATORY Weyerhaeuser B000G4
 CASE # — B000G9
 SDG # SR2682 B000H3 all water

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	TGC	Anions	Water Lab Data (see Notes)
1. <u>HOLDING TIME</u>		<u>0</u>	<u>0</u>	<u>X</u>
2. <u>SPIKE RECOVERY</u>		<u>0</u>	<u>0</u>	<u>0</u>
3. <u>DUPLICATE ANALYSIS</u>		<u>0</u>	<u>0</u>	<u>X</u>
4. <u>CALIBRATIONS</u>		<u>0</u>	<u>0</u>	<u>0</u>
5. <u>LCS</u>		<u>0</u>	<u>0</u>	<u>0</u>
6. <u>BLANKS</u>		<u>0</u>	<u>X</u>	<u>0</u>
7. _____		_____	_____	_____
8. _____		_____	_____	_____
9. _____		_____	_____	_____
10. _____		_____	_____	_____

0 = data had no problems
 X = data qualified due to minor problems
 M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT: no major problems - all results acceptable w/attached qualification

NOTES: Water Lab Data includes - pH, Turbidity, Conductivity, TDS Alkalinity, COD, Nitrate/Nitrite, Nitrogen/Ammonia, Sulfate, TOC, CN, TF

o Refer to the corresponding attachments for explanation of any problems.

RCRA LEVEL C/CLP-SAS QC

Name JA Lerch *ff* Date 08/07/90

QC Check: Holding time

COMMENTS: TOC - all samples analyzed within 28d HT
Anions - all samples analyzed within 28d HT
Water Data - TOX holding time exceeded; all
other analyses completed within
HT requirements

ACTION: qualify associated data as per
OSM guidelines

sample # constituent value/qual

sample # constituent value/qual

Water Data

~~all~~
all TOX J, UJ

WATER DATA HT's

Alkalinity 14 days
pH immediately
COD 28
Sulfate 28
CN 14
turbidity 2
conductivity 28
TOX 7

RCRA LEVEL C/CLP-SAS QC

Name JA Lerch Date 08/08/90

QC Check: Spike Recovery

COMMENTS: TOC - (800000) - 70R within 75-125% R

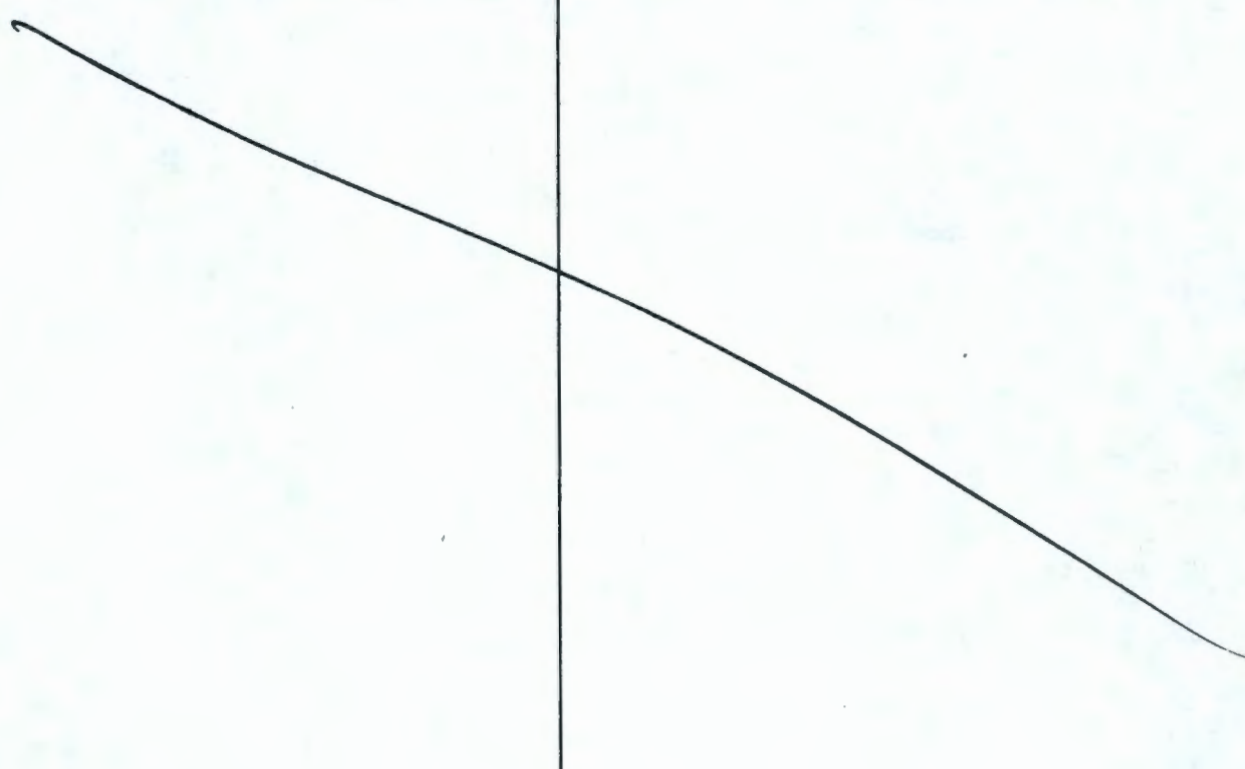
Anions - all spike 70R within 75-125% limits

Water Data - all spike recoveries within 75-125%.

(spikes not required for all samples

ACTION: none

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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RCRA LEVEL C/CLP-SAS QC

Name JA Lerch Date 08/08/90

QC Check: Duplicate Analysis

COMMENTS: TOC - duplicate RPD within limits (200060)

Anions - all RPD's < 5%

Water Data - COD, ~~Ammonia-Nitrogen~~ ^{Ammonia-} Nitrogen RPD out of control; all other RPD's < 5%

ACTION: qualify associated results as per OSM guidelines

sample # constituent value/qual | sample # constituent value/qual

Water Data

all COD UJ, J
all NH₃-N UJ, J

RCRA LEVEL C/CLP-SAS QC

Name JA Lerch *jd* Date 08/08/90

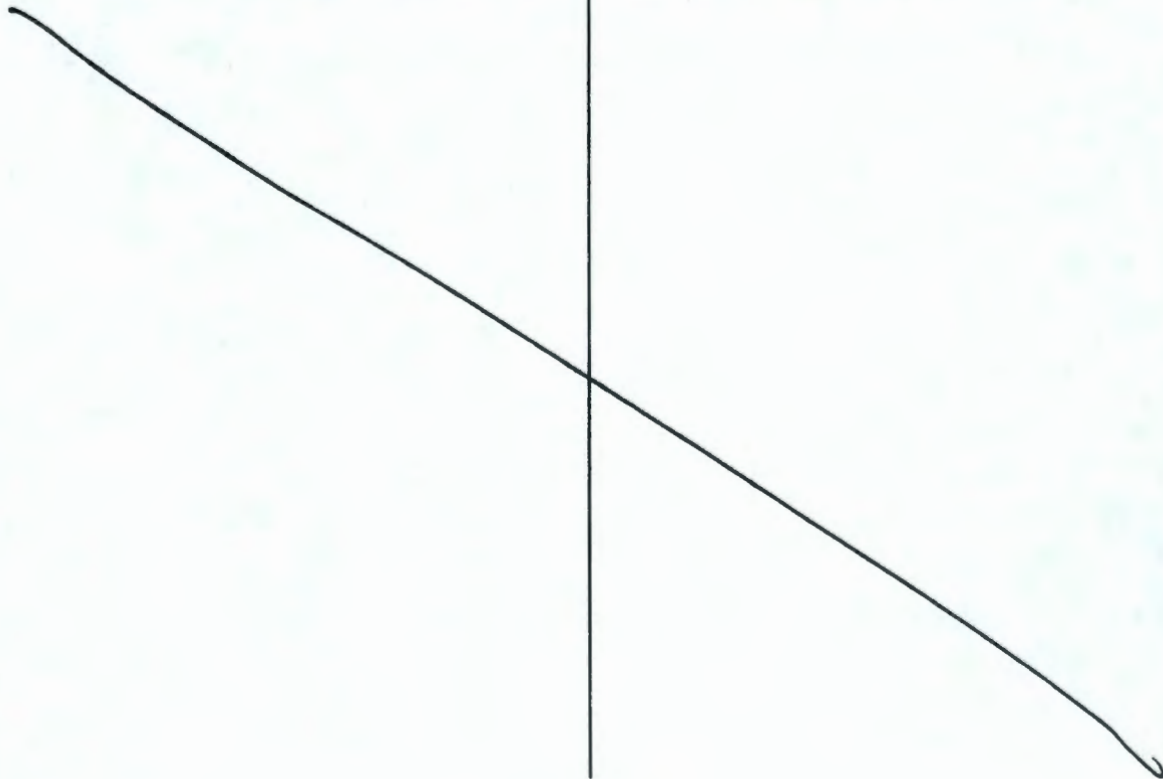
QC Check: Calibrations

COMMENTS: TOC - 6pt calibration used; all ICV + CCV
%R within 90-110%

Anions - all ICV + CCV %R within 90-110% limits
Water Data - all calibrations ok; recoveries
within limits

ACTION: none

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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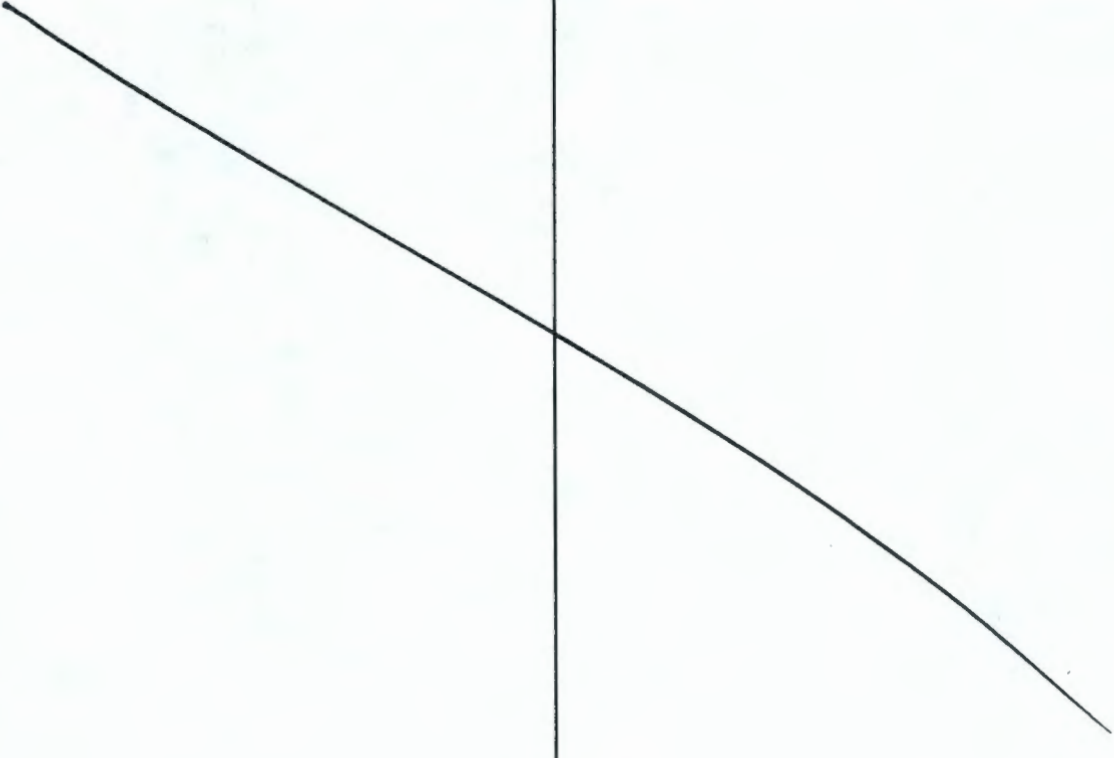
RCRA LEVEL C/CLP-SAS QC

Name JA Lerch *jd* Date 08/08/90

QC Check: LCS

COMMENTS: TOC - LCS 7.8 within 80-120% limits
Anions - 2 LCS; all recoveries within 80-120%
Water Data - all recoveries within 80-120%
when LS was run

ACTION: none

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
					

RCRA LEVEL C/CLP-SAS QC

Name JA Lerch Date 08/08/90

QC Check: Blanks

COMMENTS: TOC - all ICB + CCB results < detection limit

Anions - Cl detected at trace levels in several blanks;
all other blank results < DLimit

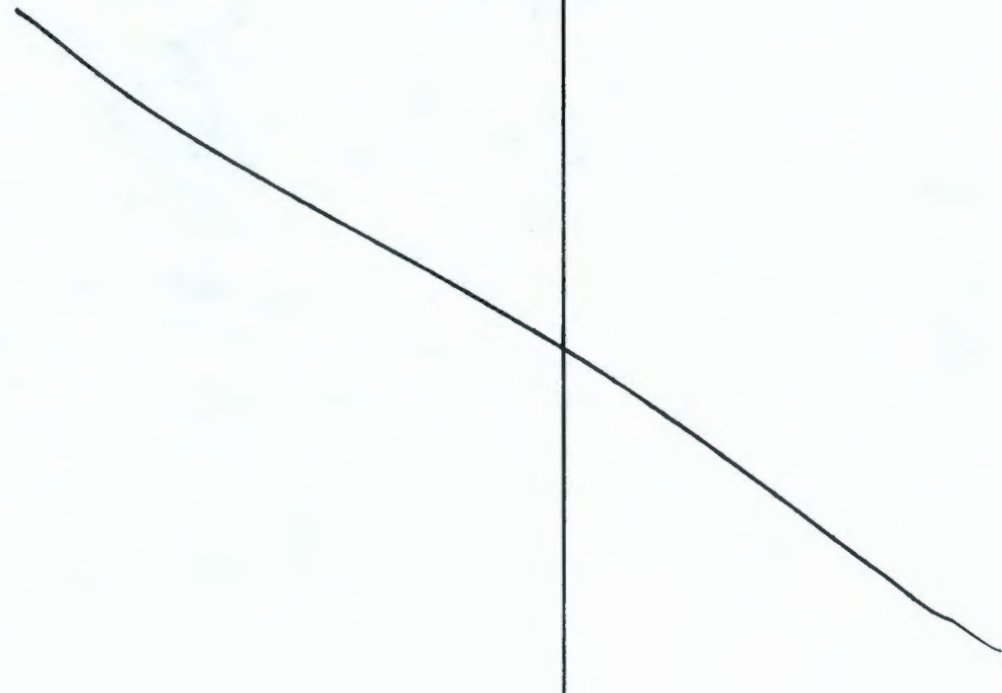
Water Data - all blank analyses < detection
limit

ACTION: quality associated results as per
OSM guidelines

sample # constituent value/qual | sample # constituent value/qual

Anions

all Cl acceptable



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Analytical Laboratories
Tacoma, Washington

Service Request 02683
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REPORT

Westinghouse Water Samples
1100 EM1

<u>Sample Description</u>	<u>Analytical Lab Code</u>	<u>pH</u>	<u>Turbidity NTU</u>	<u>Specific Conductance μs/Cm</u>	<u>TDS mg/L</u>	<u>Alkalinity mg/L CaCO₃</u>	<u>COD mg/L</u>
B000G0	50007	7.9	0.7	730	540	160	<5 μ J
B000J2	50010	7.4	4.6	1000	680; 710	223; 226	13 J
B000G4	50012	8.0; 8.0	1.8; 1.8	410	280	140	9 J
B000G9	50056	7.8	1.7	560	370	200	10J 7J
B000H3	50059	8.0	1.2	400	280	150	7J
B000H7	50061	8.0; 8.0	0.3	440; 440	300	160	8 J

<u>Sample Description</u>	<u>Analytical Lab Code</u>	<u>NH₃-N mg/L</u>	<u>NO₃-NO₂-N mg/L</u>	<u>SO₄ mg/L</u>	<u>AOX mg/L</u>	<u>CN mg/L</u>	<u>TP mg/L</u>
B000G0	50007	0.02J	0.04J	32.8	57; 59	0.06 J	<0.01; <0.01
B000J2	50010	<0.02 μ J	1.5; 1.5	58	58	0.02 J	0.08
B000G4	50012	0.04 J	2.8	44	<0.01 μ J	<0.01	0.07
B000G9	50056	0.02 J	4.4	29	0.02 J	<0.01	0.04
B000H3	50059	<0.02 μ J	2.8	26	0.03 J	<0.01	0.07
B000H7	50061	<0.02 μ J	2.2	39	<0.01 μ J	<0.01 μ J	<0.01; <0.01

JJ 08/08/90

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Notebook _____

Approved *Maxine Rade* Date 6-22-90 Page Number _____