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J.H. BAXTER & CO., a California Limited Partnership

J Baxter

April 15, 2002

Ms. Kim Ogle, RCRA Project Manager
United States EPA, Region 10
1200 Sixth Avenue
Seattle, WA 98101

Subject: **April 15, 2002 Progress Report**
J. H. Baxter Arlington Facility
Docket No. RCRA-10-2001-0086

Dear Ms. Ogle:

This letter provides the April 15, 2002 progress report for work completed under the Administrative Order on Consent (AOC) for the J. H. Baxter (Baxter) facility during the period March 15 to April 15, 2002.

Significant Developments This Period

This section discusses significant developments for the referenced reporting period, including actions performed and any problems encountered relative to work required by the Order. Significant developments that occurred on this project during this reporting period are outlined below:

- Baxter received comments on the Site Investigation Work Plan from the Environmental Protection Agency (EPA) on March 20, 2002.

- On March 27, 2002, we met with you, Rene Fuentes, Bob Melton, and Chris Pace in your office to discuss EPA's comments on the Site Investigation Work Plan. Also in attendance were Baxter personnel from the Arlington facility, and staff from Premier Environmental Services (Premier). Baxter transmitted a letter to you dated April 15, 2002 confirming the agreements made during the meeting and requested that the due date of the revised work plan be extended until May 17, 2002.

- On April 5, a teleconference was held between Baxter, Premier, and EPA to discuss the approach for evaluating air data in the Site Investigation.

85 N. Baxter Road. P.O. Box 10797 Eugene, OR 97440-2797 Phone 541 689 3801 Fax 541 689 8303

- A quality assurance review for the December 2001 State Waste Discharge Permit (SWDP) lysimeter sampling event, January 2002 SWDP sampling event (Untreated Pole Storage Area drains, Stormwater Permit Monitoring Wells, and the closed woodwaste landfill wells), and February SWDP lysimeter sampling event are included in Attachment 1. Laboratory reports are provided in Attachment 2.

- The Baxter Team met via telephone and in person on numerous occasions to discuss and attempt to resolve discharge limit issues associated with the ESMS (see Anticipated Problems and Problem Resolution, below). During these meeting we developed a conceptual model of an approach that may meet the needs of the AOC and Ecology's contained-out determination.

- The April 2002 SWDP sampling event (Stormwater Permit Monitoring Wells, closed woodwaste landfill monitoring wells, and lysimeters) was conducted during the week of April 8, 2002.

- Laboratory results from the March 5, 2002 SWDP drain sampling event were received by Baxter on March 26, 2002. These data are currently being validated.

Anticipated Developments Next Period

This section discusses developments anticipated during the next reporting period.

- Baxter will provide written responses to each of EPA's comments on the Site Investigation Work Plan. The response letter will be transmitted to EPA no later than April 19, 2002.

- Baxter has requested an April 25, 2002 meeting with Washington State Department of Ecology (Ecology) and the EPA Project Manager to discuss the new approach for stormwater management at the Arlington Facility. Baxter will provide a letter outlining the new approach and provide conceptual drawings to Ecology and EPA before the meeting.

- Laboratory data from recent sampling events that are validated in accordance with the SWDP requirements will be summarized and forwarded to EPA with the next progress report.

Anticipated Problems and Problem Resolution

This section discusses anticipated problems, and planned resolution of past or anticipated problems.

- As discussed in the previous progress report, implementation of the Excess Stormwater Management Plan continues to be problematic. The operation of the Excess Stormwater Management System (ESMS) required a contained-out determination from Ecology to allow discharge of the treated water. The Ecology-issued contained-out determination included not only requirements for pentachlorophenol (PCP), which the system was designed to address, but also limits for dioxins no greater than 0.6 ppq toxic equivalents (TEQ). The ability of the treatment system in the ESMS to meet the state dioxin limits has been a significant obstacle in the implementation of the system. Baxter and its consultants have tried to identify technologies that would provide Baxter and Ecology with a sufficient comfort level that the standards could be consistently achieved. In literature searches regarding technologies for handling dioxins in water, we were unable to identify information that would demonstrate a successful pilot-scale or full-scale treatment of dioxins from similar conditions.

  Baxter continues to work on solutions to the issue. As discussed above, Baxter has requested a meeting with Ecology and the EPA Project Manager to present a preliminary overview of a proposed final stormwater management system that would address this issue. If Ecology and EPA concurs that the conceptual plan is an acceptable approach, then Baxter will submit detailed information to Ecology and EPA for review and approval.

Other Information

Any other information relevant to the Order is discussed in this section, including results of any sampling or testing completed within the reporting period.

- No other information relevant to the Order was generated during the reporting period.

Certification

I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to evaluate the information submitted. I certify that the information contained in or accompanying this submittal is true, accurate and complete. As to those identified portions(s) of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Rue A Thomas

Name: RueAnn Thomas
Title: Environmental Programs Director
Date: April 15, 2002

We trust this letter meets the intent of the Progress Report per Paragraph 71 of the AOC. If you have any questions, please contact me at (541) 689-3801.

Sincerely,

Rue A Thomas

RueAnn Thomas
Environmental Programs Director
Attachments:

cc: Jeanne Tran, Ecology
Dean Yasuda, Ecology
Georgia Baxter, J. H. Baxter & Co.
Mary Larson, J. H. Baxter & Co.
Sara Beth Watson, Steptoe and Johnson
Will Abercrombie, Hart Crowser Inc.
J. Stephen Barnett, Premier Environmental Services, LLC.

Attachment 1

Quality Assurance Review

Memorandum

Date:	April 10, 2002
To:	J. Stephen Barnett, Premier Environmental Services
From:	Kathy J. Gunderson
Subject:	Quality Assurance Review
Project Name:	J. H. Baxter Wood Preserving Facility, Arlington, Washington Fourth Quarter Sampling 2001 and First Quarter Sampling 2002
Project Number:	201029.1013

1.0 Introduction

This memorandum presents the Level III validation of the water sample analyses listed in Table 1. With the exception of the polychlorinated dibenzodioxins (PCDD) and polychlorinated dibenzofurans (PCDF), the analyses were performed by Columbia Analytical Services (CAS), Inc., located in Kelso, Washington. The PCDD and PCDF analyses were performed by Triangle Laboratories, Inc. (TLI), located in Durham, North Carolina. Level III validation is defined as assessing data quality using the quality control results submitted by the laboratory. Raw data were not reviewed.

The criteria used to qualify data are from the *Contract Laboratory Program National Functional Guidelines for Inorganic and Organic Data Review* (USEPA 1994 and 1999), the *EPA Region 10 Functional Guidelines for the Validation of High Resolution Mass Spectrometry Analysis of Polychlorinated Dibenzodioxin and Polychlorinated Dibenzofuran Data* (EPA Region 10 2001), the analytical methods, or the professional judgment of the validation chemist.

Matrix spike, duplicate, and laboratory control sample results were not reported and were not requested for the analyses preformed by CAS. These results will be requested for all future sampling events.

Table 1
Sample Data Reviewed

Sample ID	Date Collected	CAS Laboratory ID	PCP	Fuels	Metals	Inorganics	Dioxin/Furan
L-1	12-17-01	K2109434-1	X				X
L-2	12-17-01	K2109434-2	X	X			X
L-3	12-17-01	K2109434-2	X	X			X
L-3	1-15-02	TLI #56279r1					X
BXN-1	1-8-02	K2200199-1			X	X	
BXN-2	1-8-02	K2200199-2			X	X	
BXN-3	1-8-02	K2200199-3			X	X	
BXN-4	1-8-02	K2200199-4			X	X	
BXN-5	1-8-02	K2200199-5			X	X	
BXN-6	1-8-02	K2200199-6			X	X	
BXS-1	1-14-02	K2200333-1 & K2200325-1	X		X	X	
BXS-2	1-14-02	K2200325-2			X	X	
BXS-3	1-14-02	K2200325-3			X	X	
BXS-4	1-14-02	K2200325-4			X	X	
BXS-5	1-14-02	K2200325-5			X	X	
BXS-6	1-14-02	K2200325-6			X	X	
MW-2	1-15-02	K2200378-1	X		X	X	
HCMW-6	1-15-02	K2200378-2	X		X	X	
HCMW-7	1-15-02	K2200378-3	X		X	X	
MW-A	1-15-02	K2200378-4	X		X	X	
MW-B	1-15-02	K2200378-5	X		X	X	
7-8	1-15-02	K2200371-1	X	X		X	X
L-1	2-11-02	K2200945-1	X	X			X
L-2	2-11-02	K2200945-2	X	X			X
L-3	2-11-02	K2200945-3	X	X			X
L-3A	2-11-02	K2200945-4	X	X			X

PCP: Pentachlorophenol by Method 8151 (USEPA 1996)

Fuels Semivolatile Petroleum Products by Method NWTPH-Dx (WDOE 1997)

Metals Dissolved arsenic by Method 7060A (USEPA 1996), dissolved barium, cadmium, calcium, copper, iron, magnesium, manganese, nickel potassium, sodium, and zinc by Method 6010B (USEPA 1996)

Inorganics: Alkalinity and bicarbonate alkalinity by Method 310.1 (USEPA 1999a), chloride and sulfate by Method 300.0, chemical oxygen demand by Method 410.2 (USEPA 1999a), conductivity by Method 120.1 (USEPA 1999a), ammonia by Method 350.1 (USEPA 1999a), nitrate and nitrite by Method 353.2 (USEPA 1999a), pH by Method 150.1 (USEPA 1999a), tannin and lignin by Method 5550B (APHA 1998), total Coliform by Method 9221B (APHA 1998), total dissolved solids by Method 160.1 (USEPA 1999a), total suspended solids by Method 160.2 (USEPA 1999a), and total organic carbon by Method 415.1 (USEPA 1999a)

Dioxin/Furan: PCDDs and PCDFs by Method 1613B (USEPA 1999a)

2.0 Review of Pentachlorophenol Analyses

2.1 Custody, Preservation, Holding Times, and Completeness – Acceptable with Discussion

Except as noted below, the samples were extracted and analyzed within the required holding times and the samples were properly preserved. Sample custody was maintained as required from sample collection to laboratory receipt. The reports are complete and contain results for all samples and tests requested on the chain-of-custody (COC) forms.

The CAS portions of the K2109434 and K2200371 reports are not paginated to ensure the reports are complete.

The temperature of the samples in delivery groups K2200333 and K2200378 was above the recommended temperature range of 2 to 6 °C at the time of laboratory receipt. The temperature range of the samples was 6.7 to 7.3°C. Data qualifiers are not recommended.

The extraction of the samples collected 12-17-01 was preformed past the 7 day holding time. The samples were qualified as estimated (J) or estimated detection limit (UJ) as shown below.

Sample ID	Analyte	Qualification	Quality Control Exceedance
L-1 (12-17-01)	Pentachlorophenol	J	Extraction holding time exceeded
L-2 (12-17-01)		UJ	
L-3 (12-17-01)		J	

2.2 Blank Analyses – Acceptable

2.2.1 Method Blanks

Method blanks were analyzed at the required frequency. Pentachlorophenol was not detected in the method blanks above the reporting limit.

2.2.2 Field Blanks

Samples MW-B and L-3A (2-11-02) were identified as field blanks. The field blanks do not contain reportable levels of pentachlorophenol.

2.3 Surrogate Analyses – Acceptable

Surrogate compounds were added to all samples and blanks. All percent recovery values are within the laboratory's control limits.

2.4 Field Duplicates – Acceptable

Sample MW-A was identified as a field duplicate of sample MW-2. A relative percent difference (RPD) value could not be calculated because positive results were not reported for either sample.

2.5 Overall Assessment of Data

For sample L-3 (12-17-01), the percent difference between the analytical column results for pentachlorophenol is greater than the Method 8000B (USEPA 1996) criteria of 40%. The pentachlorophenol result of sample L-3 (12-17-01) has been qualified as estimated (J).

Sample ID	Analyte	Qualification	Quality Control Exceedance
L-3 (12-17-01)	Pentachlorophenol	J	Duel column difference greater than 40%

The lack of matrix spike/matrix spike duplicate and laboratory control sample results limits the ability to define the accuracy and precision of the data set. Since the method blanks and surrogate recovery values are acceptable, the data are assumed to be acceptable.

The quality of the data is judged against the EPA guidance documents listed above. Upon consideration of the information presented here, the data are acceptable except where flagged with data qualifiers that modify the usefulness of the individual values.

3.0 Review of Semivolatile Petroleum Product Analyses

3.1 Custody, Preservation, Holding Times, and Completeness – Acceptable

The samples were extracted and analyzed within the required holding times, sample custody was maintained as required, and the samples were properly preserved. The reports are complete and contain results for all samples and tests requested on the COC forms.

3.2 Blank Analyses – Acceptable

3.2.1 Method Blanks

Method blanks were analyzed at the required frequency and target analytes were not detected above the reporting limits.

3.2.2 Field Blanks

Sample L-3A was identified as a field blank. Target analyses were not detected above the reporting limits.

3.3 Surrogate Analyses – Acceptable

Surrogate compounds were added to all samples and blanks as required. All percent recovery values are within the Method criteria of 50 to 150%.

3.4 Field Duplicates

The field duplicates were not analyzed for semivolatile petroleum products.

3.5 Overall Assessment of Data

The lack of matrix spike/matrix spike duplicate and laboratory control sample results limits the ability to define the accuracy and precision of the data set. Since the method blanks and surrogate recovery values are acceptable, the data are assumed to be acceptable.

The quality of the data is judged against the EPA guidance documents listed above. Upon consideration of the information presented here, the data are acceptable.

4.0 Review of Metals Analyses

4.1 Custody, Preservation, Holding Times, and Completeness – Acceptable

The samples were analyzed within the required holding times, sample custody was maintained as required, and the samples were properly preserved. The reports are complete and contain results for all samples and tests requested on the COC forms.

4.2 Blank Analyses – Acceptable

4.2.1 Method Blanks

Method blanks were analyzed at the required frequency and target analytes were not detected above the reporting limits.

4.2.2 Field Blanks

Samples BXN-6, BXS-5, and MW-B were identified as field blanks. The field blanks are free of target analytes above the reporting limits.

4.3 Field Duplicates – Acceptable

Three field duplicates are associated with the data. The precision of the field duplicates is acceptable as shown by the low RPD values listed in Table 2.

4.4 Overall Assessment of Data

The lack of matrix spike, duplicate, and laboratory control sample results limits the ability to define the accuracy and precision of the data set. Since the method blanks and field duplicates are acceptable, the data are assumed to be acceptable.

The quality of the data is judged against the EPA guidance documents listed above. Upon consideration of the information presented here, the data are acceptable.

5.0 Review of Inorganic Analyses

5.1 Custody, Preservation, Holding Times, and Completeness – Acceptable with Qualifications

The samples were analyzed within the required holding times and sample custody was maintained as required. Except as noted below, the samples were properly preserved. The reports are complete and contain results for all samples and tests requested on the COC forms.

The temperature of the samples in delivery groups K2200333 and K2200378 was above the recommended temperature range of 2 to 6 °C at the time of laboratory receipt. The temperature of the samples was 6.7 and 7.3°C. Data qualifiers are not recommended.

The bicarbonate result of sample BXS-6 was incorrectly reported as ND. The laboratory was contacted and confirmed that the bicarbonate result is the same as the alkalinity result. The results page was corrected by the validation chemist and will be resubmitted by the laboratory.

The case narrative for report K2200199/K2200325 was resubmitted by the laboratory to define the X flag applied to the total Coliform results.

The sample bottles containing the total Coliform aliquots of samples BXN-1 and BXN-3 were not properly closed when they arrived at the laboratory. The laboratory did not analyze these samples for total Coliform.

The total Coliform analyses of samples BXS-1, BXS-2, BXS-3, BXS-5, and BXS-6 were preformed past the 30-hour holding time. Since all results were undetected, the samples were qualified as estimated detection limit (UJ).

Sample ID	Analyte	Qualification	Quality Control Exceedance
BXS-1 BXS-2 BXS-3 BXS-5 BXS-6	Total Coliform	UJ	Analysis holding time exceeded

5.2 Blank Analyses – Acceptable

5.2.1 Method Blanks

Method blanks were analyzed at the required frequency and target analytes were not detected above the reporting limits.

5.2.2 Field Blanks

Samples BXN-6, BXS-5, and MW-B were identified as field blanks. The field blanks are free of target analyses above the reporting limits.

5.3 Field Duplicates – Acceptable with Discussion

Three field duplicates are associated with the data. The RPD values of the field duplicate are listed in Table 2.

The RPD value of ammonia in field duplicate pair BXN-1/BXN-5 is high at 157%. Data qualifiers are not required because the results meet the alternative critical of less than five times the reporting limit and less than one reporting limit apart.

5.4 Overall Assessment of Data

The lack of matrix spike, duplicate, and laboratory control sample results limits the ability to define the accuracy and precision of the data set. Since the method blanks and field duplicates are acceptable, the data are assumed to be acceptable.

The quality of the data is judged against the EPA guidance documents listed above. Upon consideration of the information presented here, the data are acceptable.

6.0 Review of Polychlorinated Dibenzodioxin and Polychlorinated Dibenzofuran Analyses

6.1 Custody, Preservation, Holding Times, and Completeness – Acceptable

All samples were extracted and analyzed within the required holding times, all samples were received intact and were properly preserved, and sample custody was maintained as required. The reports are complete and contain results for all samples and tests requested on the COCs.

6.2 Blank Analyses – Acceptable with Qualifications

6.2.1 Method Blanks

Method blanks were analyzed at the required frequency. The method blanks are free of 2,3,7,8-substituted PCDDs and PCDFs as required by the Method.

The method blanks contained low levels of non-2,3,7,8-substituted PCDD and PCDF target analytes. Region 10 Functional Guidelines requires associated sample concentrations less than five times the blank concentration to be qualified as estimated detection limit (UJ). Sample concentrations greater than five times the blank concentration are not qualified. Associated sample results were qualified as shown in the following table.

Sample ID	Analyte	Qualification	Quality Control Exceedance
L-1 (12-17-01)	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8,9-OCDD 1,2,3,4,6,7,8,9-OCDF	UJ	Result is less than 5 times the method blank concentration
L-2 (12-17-01)	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8,9-OCDF	UJ	Result is less than 5 times the method blank concentration
L-3 (1-15-02)	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD 1,2,3,6,7,8-HxCDD 1,2,3,4,6,7,8,9-OCDD 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF 1,2,3,4,6,7,8,9-OCDF	UJ	Result is less than 5 times the method blank concentration
L-1 (2-11-02)	1,2,3,4,6,7,8-HpCDD	UJ	Result is less than 5 times the method blank concentration

6.2.2 Field Blanks

Sample L-3A was identified as a field blank. The target analytes 1,2,3,4,6,7,8,9-OCDD and 1,2,3,4,7,8-HxCDF were detection in the field blank at 5.3 pg/L and 1.6 pg/L, respectively. Region 10 Functional Guidelines requires associated sample concentrations less than five times the blank concentration to be qualified as estimated detection limit (UJ). The associated samples were qualified as shown in the following table.

Sample ID	Analyte	Qualification	Quality Control Exceedance
L-2 (2-11-02)	1,2,3,4,6,7,8,9-OCDD	UJ	Result is less than 5 times the field blank concentration

6.3 Isotope Dilution Internal Standard (Surrogate) Analyses – Acceptable with Qualifications

Labeled isotope dilution internal standard compounds were added to all samples, blanks, and QC samples as required. Except as noted below, all percent recovery values are within Method 1613B criteria.

Fourteen out of fifteen internal standard recovery values are below the Method criteria for sample L-3 (12-17-01). The recovery values range from 13.3 to 22.0%. Since the sample was re-collected (L-3 collected 1-15-02), the original analysis has been rejected (qualified R).

Sample ID	Analyte	Qualification	Quality Control Exceedance
L-3 (12-17-01)	All	R	Internal standard recovery below method criteria (Rejected in favor of reanalysis)

6.4 Instrument Recovery Internal Standard Analyses – Acceptable

Labeled instrument recovery internal standard compounds were added to all samples, blanks, and QC samples as required. All instrument recovery internal standards meet the Region 10 Functional Guidelines criteria.

6.5 Cleanup Recovery Internal Standard Analyses – Acceptable

The labeled cleanup recovery internal standard was added to all samples (and associated QC samples) that required cleanup. All cleanup recovery internal standards meet the Method 1613B criteria of 35 to 197%.

6.6 Compound Identification – Acceptable with Qualifications

Second column confirmational analyses of 2,3,7,8-TCDD and 2,3,7,8-TCDF positive results were preformed as required. The ratio of the integrated ion peaks were compared to the Method criteria and, except as noted below, all are acceptable.

2,3,7,8-TCDD was detected in the original analysis of sample 7-8. The sample was reanalyzed for confirmation on a dissimilar analytical column. As specified by the Region 10 Functional Guidelines, the primary analysis result has been rejected (qualified R) in favor of the non-detected confirmation result.

The ion abundance ratios of 2,3,4,6,7,8-HxCDF in sample L-1 (2-11-02) and 1,2,3,4,7,8-HxCDF in sample L-3A (2-11-02) are outside the Method 1613B criteria. The results for these analytes have been qualified as estimated detection limit (UJ).

The laboratory flagged the total TCDF and total PeCDF results of sample 7-8 X, indicating that coeluting interferences are contributing greater than 10% of the quantitated area. To alert the data user to the potential high bias to these results they have been qualified as estimated (J).

Sample ID	Analyte	Qualification	Quality Control Exceedance
7-8 (original analysis)	2,3,7,8-TCDD	R	Rejected in favor of confirmation analysis result
L-1 (2-11-02)	2,3,4,6,7,8-HxCDF	UJ	Ion abundance ratio outside method criteria
L-3A (2-11-02)	1,2,3,4,7,8-HxCDF	UJ	Ion abundance ratio outside method criteria
7-8	Total TCDF Total PeCDF	J	Coeluting interference greater than 10% of total area

6.7 Ongoing Precision and Recovery Analyses – Acceptable

Ongoing precision and recovery samples were analyzed at the required frequency and all percent recovery values are within the Method criteria.

6.8 Field Duplicates

The field duplicates were not analyzed for PCDDs or PCDFs.

6.9 Overall Assessment of Data Useability

The laboratory reported several results in sample 7-8 that are above the calibration range. Ideally, the laboratory should have analyzed the sample at a dilution. All results that are above the calibration range have been qualified as estimated (J).

Sample ID	Analyte	Qualification	Quality Control Exceedance
7-8	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8,9-OCDD 1,2,3,4,6,7,8,9-OCDF Total HpCDD	J	Result above the calibration range

The quality of the data is judged against the EPA guidance documents listed above. Upon consideration of the information presented here, the data are acceptable except where flagged with data qualifiers that modify the usefulness of the individual values. Results that are rejected are not useable for any purpose.

7.0 Definition of Data Qualifiers

7.1 Organic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are taken from *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA 1999).

U The analyte was analyzed for but not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R The sample results are rejected due to serious deficiencies in the ability to analyze the samples and meet quality control criteria. The presence or absence of the analyte cannot be verified.

7.2 Inorganic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are taken from Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 1994).

U The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J The associated value is an estimated quantity.

UJ The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

R The data are unusable. (Note: Analyte may or may not be present.)

8.0 References

EPA Region 10. 2001. Functional Guidelines for the Validation of High Resolution Mass Spectrometry Analysis of Polychlorinated Dibenzodioxin and Polychlorinated Dibenzofuran Data, Revision 5.0. EPA Region 10 Office of Environmental Assessment Quality Assurance Unit. July 16, 2001.

APHA. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. American Public Health Association. 1998.

USEPA. 1994. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. United States Environmental Protection Agency. Office of Solid Waste and Emergence Response. February 1994.

USEPA. 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Updates I, II, IIA, IIB, and III. United States Environmental Protection Agency. Office of Solid Waste. December 1996.

USEPA. 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency Office of Emergency and Remedial Response. EPA540/R-99/008. October 1999.

USEPA. 1999a. Methods and Guidance for Analysis of Water, Version 2.0. United States Environmental Protection Agency Office of Science and Technology. EPA 821-C-99-004. CD ROM. June 1999.

WDOE. 1997. Analytical Methods for Petroleum Hydrocarbons. Prepared by the Washington State Department of Ecology Toxics Cleanup Program and the Ecology Environmental Laboratory. June 1997.

Table 2
Field Duplicate Precision

Sample ID	Duplicate ID	Analyte	Sample Value	Duplicate Value	RPD
BXN-1	BXN-5	Barium	27.7	27.8	0.4
		Iron	4980	5250	5.3
		Manganese	1750	1740	0.6
		Nickel	32	27	17
		Chloride	14.4	14.2	1.4
		COD	8	9	12
		Conductivity	424	431	1.6
		Ammonia	0.07	0.58	157
		Nitrate & Nitrite	1.5	1.4	6.9
		pH	6.28	6.32	0.6
		Sulfate	27.4	26.6	3.0
		Tannin & lignin	0.6	0.5	18
		TDS	272	257	5.7
		TOC	2.1	2.2	4.6
BXS-1	BXS-6	Barium	27.1	27.2	0.4
		Manganese	464	470	1.3
		Nickel	27	22	20
		Zinc	14	< 10	NC
		Alkalinity	242	238	1.7
		Chloride	5.0	4.9	2.0
		COD	20	17	16
		Conductivity	471	474	0.6
		Bicarbonate	242	238	1.6
		Nitrate & Nitrite	0.2	0.3	40
		pH	6.17	6.14	0.5
		Sulfate	6.8	7.0	2.9
		Tannin & lignin	0.3	0.4	28
		TDS	275	246	11
		TOC	5.8	5.8	0
MW-2	MW-A	Calcium	11300	11000	2.7
		Magnesium	7170	6980	2.7
		Sodium	5690	5370	5.8

RPD Relative percent difference
COD Chemical oxygen demand
TDS Total dissolved solids
TOC Total organic carbon
< The analyte was not detected at or above the reporting limit
NC Not calculable
Metals results are in ug/L
Inorganic results are in mg/L, except pH, which is in pH units

Table 3
Summary of Qualified Data

Sample ID	Analyte	Qualification	Quality Control Exceedance
L-1 (12-17-01) L-2 (12-17-01) L-3 (12-17-01)	Pentachlorophenol	J UJ J	Extraction holding time exceeded
L-3 (12-17-01)	Pentachlorophenol	J	Duel column difference greater than 40%
BXS-1 BXS-2 BXS-3 BXS-5 BXS-6	Total Coliform	UJ	Analysis holding time exceeded
L-1 (12-17-01)	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8,9-OCDD 1,2,3,4,6,7,8,9-OCDF	UJ	Result is less than 5 times the method blank concentration
L-2 (12-17-01)	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8,9-OCDF	UJ	Result is less than 5 times the method blank concentration
L-3 (1-15-02)	1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD 1,2,3,6,7,8-HxCDD 1,2,3,4,6,7,8,9-OCDD 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF 1,2,3,4,6,7,8,9-OCDF	UJ	Result is less than 5 times the method blank concentration
L-1 (2-11-02)	1,2,3,4,6,7,8-HpCDD	UJ	Result is less than 5 times the method blank concentration
L-2 (2-11-02)	1,2,3,4,6,7,8,9-OCDD	UJ	Result is less than 5 times the field blank concentration
L-3 (12-17-01)	All PCDDs and PCDFs	R	Internal standard recovery below method criteria (Rejected in favor of reanalysis)
7-8 (original analysis)	2,3,7,8-TCDD	R	Rejected in favor of confirmation analysis result
L-1 (2-11-02)	2,3,4,6,7,8-HxCDF	UJ	Ion abundance ratio outside method criteria
L-3A (2-11-02)	1,2,3,4,7,8-HxCDF	UJ	Ion abundance ratio outside method criteria
7-8	Total TCDF Total PeCDF	J	Coeluting interference greater than 10% of total area
7-8	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8,9-OCDD 1,2,3,4,6,7,8,9-OCDF Total HpCDD	J	Result above the calibration range

Analytes and qualifiers are only listed once when they apply to all samples.

Attachment 2

Laboratory Analytical Reports

Columbia Analytical Services INC.
An Employee-Owned Company

February 22, 2002 Service Request No: K2200371

RueAnn Thomas
J.H. Baxter Company
85 N Baxter Street
Eugene, OR 97402

Re: Untreated Drains-Composite

Dear RueAnn:

Enclosed are the results of the sample(s) submitted to our laboratory on January 16, 2002. For your reference, these analyses have been assigned our service request number K2200371.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

The Dioxins/Furans analysis has been performed by Triangle Laboratories, Inc. The report is included in Appendix A.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

Columbia Analytical Services, Inc.

for

Mingta Lin
Project Chemist

ML/ll

cc: Mary Larsen, J.H. Baxter Company (Arlington)

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: J.H. Baxter & Company
Project: Untreated Drains-Composite
Sample Matrix: Water

Service Request: K2200371
Date Collected: 01/15/02
Date Received: 01/16/02
Date Extracted: NA

Inorganic Parameters
Units: mg/L (ppm)

Analyte:	pH (Units)	Solids, Total Suspended (TSS)
EPA Method:	150.1	160.2
Method Reporting Limit:	--	5
Date Analyzed:	01/16/02	01/18/02
Sample Name	**Lab Code**	
7-8	K2200371-001	6.53	480
Method Blank	K2200371-MB	--	ND

RQ 9-2

Approved By: M L Faith Date: 1/23/02

3ADW/061694

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200371
Project:	Untreated Drains-Composite	**Date Collected:**	01/15/2002
Sample Matrix:	Water	**Date Received:**	01/16/2002

Diesel and Residual Range Organics

Sample Name:	7-8	**Units:**	ug/L
Lab Code:	K2200371-001	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	4400	Y	250	1	01/18/02	01/23/02	KWG0200529	
Residual Range Organics (RRO)	7200	O	500	1	01/18/02	01/23/02	KWG0200529	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	98	50-150	01/23/02	Acceptable
n-Triacontane	91	50-150	01/23/02	Acceptable

KP 1-8-02

Comments:

Analytical Results

Client: J.H. Baxter & Company
Project: Untreated Drains-Composite
Sample Matrix: Water

Service Request: K2200371
Date Collected: NA
Date Received: NA

Diesel and Residual Range Organics

Sample Name: Method Blank
Lab Code: KWG0200529-5

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	250	1	01/18/02	01/22/02	KWG0200529	
Residual Range Organics (RRO)	ND	U	500	1	01/18/02	01/22/02	KWG0200529	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	92	50-150	01/22/02	Acceptable
n-Triacontane	89	50-150	01/22/02	Acceptable

Comments:

Analytical Results

Client: J.H. Baxter & Company
Project: Untreated Drains-Composite
Sample Matrix: Water

Service Request: K2200371
Date Collected: 01/15/2002
Date Received: 01/16/2002

Pentachlorophenol

Sample Name: 7-8
Lab Code: K2200371-001

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	65	D	2.0	10	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	60	38-119	01/30/02	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC

Analytical Results

Client: J.H. Baxter & Company
Project: Untreated Drains-Composite
Sample Matrix: Water

Service Request: K2200371
Date Collected: NA
Date Received: NA

Pentachlorophenol

Sample Name: Method Blank
Lab Code: KWG0200644-4

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	69	38-119	01/30/02	Acceptable

Comments:

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SR#: 16220371

PAGE 1 OF 1 COC #

PROJECT NAME: J.H. Baxter & Co.
PROJECT NUMBER: Untreated Drains - Composite
PROJECT MANAGER: Tom Orthmeyer
COMPANY/ADDRESS: 16520 188th St. NE PO Box 305 Arlington, WA 98223
PHONE #: 360 435-2146 FAX #: 360 435-3085
SAMPLER'S SIGNATURE: Jim Clawson

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 413.1☐ 418.1☐ 1664 SGT☐ 1664 HEM☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics Tri☐ Tetra☐	PAHs 8310☐ SIM☐ (PCP X)	GC/MS-SIM PAH☐	Phenol☐ Phthalates☐ Metals, Total or Dissolved (See list below)	Cyanide☐	(pH) Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS TDS (circle) NH_3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOX 9020☐ AOX 1650☐ 506☐	NWTPH-Dx	Dioxins/Furans	REMARKS
7-8	1-15-02	3:45pm	1	Water	6							X					X			X	X	

REPORT REQUIREMENTS

- X I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To: J.H. Baxter & Co.
PO Box 10717
Eugene, OR 97440

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER: ___ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Dioxins/Furans - Use Method 1613
NWTPH-Dx - Please use Silica Gel Cleanup.

Attn: RoeAnn Thomas
Mary Larson

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Jim Clawson	Tracy Black		
Signature	Signature	Signature	Signature
1-15-02 4:00pm	1/16/02 1655		
Date/Time	Date/Time	Date/Time	Date/Time
Jim Clawson	BLACK		
Printed Name	Printed Name	Printed Name	Printed Name
J.H. Baxter & Co.	CAS		
Firm	Firm	Firm	Firm

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Project/Client GHBay Work Order K22 00371

Cooler received on 1/16/02 and opened on 1/16/02 by TBlack

1.	Were custody seals on outside of cooler? If yes, how many and where? 1 front	(Y)	N				
2.	Were seals intact and signature & date correct?	(Y)	N				
3.	COC #						
	Temperature of cooler(s) upon receipt:	2.1					
	Temperature Blank:	0.8					
4.	Were custody papers properly filled out (ink, signed, etc.)?	(Y)	N				
5.	Type of packing material present bubble wrap - loose ice in bags						
6.	Did all bottles arrive in good condition (unbroken)?	(Y)	N				
7.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(Y)	N				
8.	Did all bottle labels and tags agree with custody papers?	(Y)	N				
9.	Were the correct types of bottles used for the tests indicated?	(Y)	N				
10.	Were all of the preserved bottles received at the lab with the appropriate pH?	Y	N				
11.	Were VOA vials checked for absence of air bubbles, and if present, noted below?	Y	N				
12.	Did the bottles originate from CAS/K or a branch laboratory?	(Y)	N				
13.	Are CWA Microbiology samples received with > ½ the 24 hr. hold time remaining from collection?	Y	N				
14.	Was CL2/Residual negative?	Y	N				

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 1613B (9/97)

Date:	February 4, 2002
Client ID:	Columbia Analytical Services
P.O. Number:	K2200371
TLI Project Number:	56465

Overview

The sample and associated QC samples were extracted and analyzed according to procedures described in EPA Method 1613B (September 1997). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 1613 dioxin/furan analysis of the water sample.

Quality Control Samples

A laboratory method blank and an ongoing precision and recovery (OPR) sample are extracted and analyzed with each batch of samples.

Quality Control Remarks

This analytical data has been released after being subjected to a series of inspections. General deviations from acceptable QC requirements are identified below. Specific QC issues associated with this particular project are:

Sample receipt: One water sample was received from Columbia Analytical Services in good condition on January 23, 2002 at 5°C and stored in a refrigerator at 4°C. The client's chain-of-custody indicated no chemical preservatives were utilized prior to shipment.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The analysis of the field sample exhibits the presence of saturated OCDD analyte signals (signals outside the dynamic range of the instrument). The affected analytes is flagged "S" on the quantitation report. The results for this analytes should be considered minimum estimates of the actual concentrations present in the sample.

General Comments: No 2,3,7,8-substituted target analytes were detected in the method blank above the target detection limit (TDL).

The detection limits in some samples may be above the Target Detection Limit due to Method 1613B reporting format which requires that GC peaks which do not meet QC criteria for ion-abundance ratio be reported in the detection limit.

The analytical data presented in this report are consistent with the guidelines of Method 1613B. Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services

have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Mary McDonald, at 919/544-5729 ext. 4021.

For Triangle Laboratories, Inc.,

Released by,

Kenneth Varley

Kenneth Varley

Report Preparation Chemist

The total number of pages in the data package is: 360

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SR#: K220037 1

PAGE 1 OF 1 COC #

PROJECT NAME

PROJECT NUMBER

PROJECT MANAGER Mingta Lin

COMPANY/ADDRESS P.O. Box 479
Kelso - WA. 98626

PHONE # 360-501-3345 FAX #

SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐ 8021☐ BTEX☐ Diesel☐ Oil☐ ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen	Oil & Grease/TRPH 413.1☐ 418.1☐ 1664 SGT☐ 1664 HEM☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	GC/MS-SIM PAH☐ Phenol☐ Phthalates☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOX 9020☐ AOX 1650☐ 506☐	Dioxins/Furans				REMARKS
7-8	1/15/02	1545	1	H2O																		X				

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. #

Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 Day

___ Standard (10-15 working days)

___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER: (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Dioxins = use method 1613
Furans

Sent to Triangle labs

RELINQUISHED BY:

Signature: Tom Black — Date/Time: 1/21/02 0900

Printed Name: Black — Firm: CAS

RECEIVED BY:

Signature: Bill Hunt — Date/Time: 1/22/02 1200

Printed Name: Bill Hunt — Firm: TLI

RELINQUISHED BY:

Signature — Date/Time

Printed Name — Firm

RECEIVED BY:

Signature — Date/Time

Printed Name — Firm

TLI Project: **56465**
Client Sample: **7-8**

1613, Revision B PCDD/PCDF Analysis (c)

Analysis File: **U007712**

Client Project:	K2200371				
Sample Matrix:	AQUEOUS	Date Received:	01/23/2002	Spike File:	SP161B2S
TLI ID:	316-39-1A	Date Extracted:	01/25/2002	ICal:	UF5121B
		Date Analyzed:	01/31/2002	ConCal:	UB20076
Sample Size:	1.050 L	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U007709	% Lipid:	n/a
GC Column:	DB-5	Analyst:	CGK	% Solids:	n/a

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	14.6 R		0.89	27:23	1.001	___
1,2,3,7,8-PeCDD	250		1.52	31:32	1.000	___
1,2,3,4,7,8-HxCDD	756		1.24	34:38	1.000	___
1,2,3,6,7,8-HxCDD	2050		1.25	34:44	1.000	___
1,2,3,7,8,9-HxCDD	1590		1.22	35:03	1.010	___
1,2,3,4,6,7,8-HpCDD	57530 J		1.03	38:04	1.000	E__
1,2,3,4,6,7,8,9-OCDD	135600 J		0.97	41:49	0.999	SE_
2,3,7,8-TCDF	18.3		0.79	26:43	1.001	___
1,2,3,7,8-PeCDF	44.6		1.49	30:31	1.000	JB_
2,3,4,7,8-PeCDF	50.0		1.50	31:13	1.001	B__
1,2,3,4,7,8-HxCDF	412		1.22	33:56	1.000	___
1,2,3,6,7,8-HxCDF	290		1.23	34:03	1.000	___
2,3,4,6,7,8-HxCDF	557		1.18	34:31	1.000	___
1,2,3,7,8,9-HxCDF	ND	2.1				___
1,2,3,4,6,7,8-HpCDF	17390		1.03	37:01	1.000	___
1,2,3,4,7,8,9-HpCDF	907		1.06	38:36	1.000	___
1,2,3,4,6,7,8,9-OCDF	47030 J		0.88	42:05	1.005	E__

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	78.1	8		___
Total PeCDD	954	11		___
Total HxCDD	11540	7		___
Total HpCDD	100640 J	2		E__
Total TCDF	258 J	9		X__
Total PeCDF	1970 J	10		X__
Total HxCDF	14230	12		___
Total HpCDF	47560	4		___

Triangle Laboratories, Inc.®
2445 S. Alston Ave. • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

104402

Printed: 19:55 02/01/2002

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TLI Project: **56465** 1613, Revision B, Tetra Only PCDD/PCDF Analysis (c)
Client Sample: **7-8** Analysis File: **P020318**

Client Project:	K2200371				
Sample Matrix:	AQUEOUS	Date Received:	01/23/2002	Spike File:	SPCONB2S
TLI ID:	316-39-1A	Date Extracted:	01/25/2002	ICal:	PF21222
		Date Analyzed:	02/01/2002	ConCal:	P020313
Sample Size:	1.050 L	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U007709	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDF	ND	14.4				___

Internal Standard	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	946	49.7	29%-140%	0.78	23:28	1.052	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	22:18	___

Data Reviewer: _____ 02/04/2002

CONB_PSR v1.00, LARS 6.25.04

Triangle Laboratories, Inc.®
2445 S. Alston Ave. • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:22 02/04/2002

TLI Project: **56465**
Client Sample: **7-8**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **U007712**

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	1020	53.6	31%-137%	0.79	27:22	1.006	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	1000	52.7	25%-181%	1.61	31:32	1.159	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	927	48.7	32%-141%	1.24	34:38	0.988	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	986	51.8	28%-130%	1.23	34:43	0.990	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1130	59.3	23%-140%	1.07	38:03	1.086	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	2300	60.4	17%-157%	0.92	41:52	1.194	
$^{13}C_{12}$-2,3,7,8-TCDF	933	49.0	29%-140%	0.78	26:42	0.982	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1000	52.7	24%-185%	1.56	30:31	1.122	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1010	52.9	21%-178%	1.55	31:12	1.147	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1060	55.9	26%-152%	0.54	33:56	0.968	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1090	57.3	26%-123%	0.51	34:02	0.971	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	924	48.5	28%-136%	0.53	34:31	0.985	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	925	48.6	29%-147%	0.51	35:19	1.008	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	994	52.2	28%-143%	0.47	37:00	1.056	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	916	48.1	26%-138%	0.46	38:35	1.101	

Cleanup Standard	Conc. (pg/L)	% Recovery	QC Limits	RT	RRT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	173	91.0	42%-164%	27:23	1.007	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	27:12	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.25	35:03	

Data Reviewer: _____ 02/01/2002

161B_PSR v2.04, LARS 6.25.04

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Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 19:55 02/01/2002

TLI Project: 56465
Client Sample: 7-8

Toxicity Equivalents Report
Analysis File: U007712

Client Project:	K2200371				
Sample Matrix:	AQUEOUS	Date Received:	01/23/02	Spike File:	SP161B2S
TLI ID:	316-39-1A	Date Extracted:	01/25/02	ICal:	UF5121B
		Date Analyzed:	01/31/02	ConCal:	UB20076
Sample Size:	1.050 L	Dilution Factor:	1	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U007709	% Lipid:	n/a
GC Column:	DB-5	Analyst:	CGK	% Solids:	n/a

Analytes	Conc. (pg/L)		TEF		Equivalent
2,3,7,8-TCDD	14.6	x	1.	=	14.6
1,2,3,7,8-PeCDD	250	x	1.	=	250
1,2,3,4,7,8-HxCDD	756	x	0.1	=	75.6
1,2,3,6,7,8-HxCDD	2050	x	0.1	=	205.0
1,2,3,7,8,9-HxCDD	1590	x	0.1	=	159.0
1,2,3,4,6,7,8-HpCDD	57530	x	0.01	=	575.30
1,2,3,4,6,7,8,9-OCDD	135600	x	0.0001	=	13.5600
2,3,7,8-TCDF	LTD	x	0.1	=	
1,2,3,7,8-PeCDF	LTD	x	0.05	=	
2,3,4,7,8-PeCDF	50.0	x	0.5	=	25.0
1,2,3,4,7,8-HxCDF	412	x	0.1	=	41.2
1,2,3,6,7,8-HxCDF	290	x	0.1	=	29.0
2,3,4,6,7,8-HxCDF	557	x	0.1	=	55.7
1,2,3,7,8,9-HxCDF	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDF	17390	x	0.01	=	173.90
1,2,3,4,7,8,9-HpCDF	907	x	0.01	=	9.07
1,2,3,4,6,7,8,9-OCDF	47030	x	0.0001	=	4.7030

Total WHO Dioxin TEFs for Humans: 1632 pg/L

{...} indicates that the value is that of a Detection Limit.
Note: LTD = Less Than Target Detection Limit

GRY_TEF v1.08, MILES 4.22.16

Triangle Laboratories, Inc.®
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Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 20:07 02/01/02

Toxicity Equivalents Report

TLI Project: 56465
Sample: 7-8
File: U007712

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	14.6	1.0	14.60000
1,2,3,7,8-PeCDD	250	1.0	250.00000
1,2,3,4,7,8-HxCDD	756	0.1	75.60000
1,2,3,6,7,8-HxCDD	2050	0.1	205.00000
1,2,3,7,8,9-HxCDD	1590	0.1	159.00000
1,2,3,4,6,7,8-HpCDD	57530	0.01	575.30000
1,2,3,4,6,7,8,9-OCDD	135600	0.0001	13.56000
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	50.0	0.5	25.00000
1,2,3,4,7,8-HxCDF	412	0.1	41.20000
1,2,3,6,7,8-HxCDF	290	0.1	29.00000
2,3,4,6,7,8-HxCDF	557	0.1	55.70000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	17390	0.01	173.90000
1,2,3,4,7,8,9-HpCDF	907	0.01	9.07000
1,2,3,4,6,7,8,9-OCDF	47030	0.0001	4.70300

Total WHO Dioxin TEFs for Humans **1631.63 pg/L**

Columbia Analytical Services INC.
An Employee-Owned Company

February 26, 2002 Service Request No: K2109434

Rue Ann Thomas
J.H. Baxter Company
85 N Baxter Street
Eugene, OR 97402

Re: J.H. Baxter & Co./Lysimeters

Dear Rue Ann:

Enclosed are the results of the sample(s) submitted to our laboratory on 12/20/01. For your reference, these analyses have been assigned our service request number K2109434.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

Columbia Analytical Services, Inc.

Mingta Lin
Project Chemist

ML/dj

cc: Mary Larson (J.H. Baxter, Arlington)

317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	J.H. Baxter & Company	**Service Request No.:**	K2109434
Project:	Lysimeters	**Date Received:**	12/20/02
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Three water samples were received for analysis at Columbia Analytical Services on 12/20/02. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel and Residual Range Organics by Method NWTPH-Dx

A sulfuric-acid/silica-gel cleanup on the sample extracts was requested on all samples. Since the analytes were not detected in the extracts without the cleanup, no further cleanup was performed.

No anomalies associated with the analysis were observed.

Pentachlorophenol by EPA Method 8151M

Holding Time Exceptions:
The preparation of all samples was initially performed on 12/21/01 within holding time. There was contamination from the extraction/derivitization procedures present in the extraction batch KWG0108630. The contamination was significant enough to prevent report of the original analysis. Efforts were made to re-extract the samples as soon as possible after the analytical system was back in control. However, re-extraction of the samples was performed past the recommended holding time. The results from the re-analysis have been reported.

Sample Confirmation Notes:
The confirmation comparison criterion of 40% difference for Pentachlorophenol was exceeded in sample L-3. The result is less than two times the MRL and precision data is not meaningful.

Dioxins/Furans by EPA Method 1613B

This analysis is performed by Triangle Laboratories, Inc (TLI). Narratives related to this analysis have been addressed in the TLI report (Appendix A).

Approved by mth **Date** 2/26/02

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2109434
Date Collected: 12/17/2001
Date Received: 12/20/2001

Diesel and Residual Range Organics

Sample Name: L-1
Lab Code: K2109434-001

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	420	1	12/22/01	12/26/01	KWG0108657	
Residual Range Organics (RRO)	ND	U	840	1	12/22/01	12/26/01	KWG0108657	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	73	50-150	12/26/01	Acceptable
n-Triacontane	83	50-150	12/26/01	Acceptable

RP 4.3.02

Comments:

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2109434
Project:	J.H. Baxter & Co./Lysimeters	**Date Collected:**	12/17/2001
Sample Matrix:	Water	**Date Received:**	12/20/2001

Diesel and Residual Range Organics

Sample Name:	L-2	**Units:**	ug/L
Lab Code:	K2109434-002	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	470	1	12/22/01	12/26/01	KWG0108657	
Residual Range Organics (RRO)	ND	U	930	1	12/22/01	12/26/01	KWG0108657	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	73	50-150	12/26/01	Acceptable
n-Triacontane	79	50-150	12/26/01	Acceptable

KP 4-3-02

Comments:

COLUMBIA ANALYTICAL SERVICES, INC

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2109434
Date Collected: 12/17/2001
Date Received: 12/20/2001

Diesel and Residual Range Organics

Sample Name: L-3
Lab Code: K2109434-003

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	450	1	12/22/01	12/26/01	KWG0108657	
Residual Range Organics (RRO)	ND	U	900	1	12/22/01	12/26/01	KWG0108657	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	76	50-150	12/26/01	Acceptable
n-Triacontane	81	50-150	12/26/01	Acceptable

KP 43-2

Comments:

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2109434
Project:	J.H. Baxter & Co./Lysimeters	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Diesel and Residual Range Organics

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0108657-5	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	250	1	12/22/01	12/26/01	KWG0108657	
Residual Range Organics (RRO)	ND	U	500	1	12/22/01	12/26/01	KWG0108657	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	77	50-150	12/26/01	Acceptable
n-Triacontane	94	50-150	12/26/01	Acceptable

Comments:

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2109434
Date Collected: 12/17/2001
Date Received: 12/20/2001

Pentachlorophenol

Sample Name: L-1
Lab Code: K2109434-001

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	**0.49**	J	0.20	1	01/10/02	01/25/02	KWG0200443	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	86	38-119	01/25/02	Acceptable

KQ 4-3-02

Comments:

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2109434
Date Collected: 12/17/2001
Date Received: 12/20/2001

Pentachlorophenol

Sample Name: L-2
Lab Code: K2109434-002

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q		MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	UJ	0.20	1	01/10/02	01/25/02	KWG0200443	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	88	38-119	01/25/02	Acceptable

KP 4-3-02

Comments:

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2109434
Date Collected: 12/17/2001
Date Received: 12/20/2001

Pentachlorophenol

Sample Name: L-3
Lab Code: K2109434-003

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	**0.31**	P J	0.20	1	01/10/02	01/25/02	KWG0200443	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	91	38-119	01/25/02	Acceptable

Comments:

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2109434
Date Collected: NA
Date Received: NA

Pentachlorophenol

Sample Name: Method Blank
Lab Code: KWG0200443-4

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/10/02	01/25/02	KWG0200443	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	73	38-119	01/25/02	Acceptable

Comments:

CHAIN OF CUSTODY

Analytical Services INC.
An Employee-Owned Company

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: KZ1094434

PAGE 1 OF 1 COC #

PROJECT NAME: J.H. Baxter & Co.
PROJECT NUMBER: Lysimeters
PROJECT MANAGER: Tom Orthmeyer
COMPANY/ADDRESS: 6520 188th STAVE PO Box 305
Arlington, WA 98223
PHONE #: 360 435-2146 FAX #: 360 435-3035
SAMPLER'S SIGNATURE: Jim Clawson

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 413.1☐ 418.1☐ 1664 SGT☐ 1664 HEM☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics Tri☐ Tetra☐	PAHs 8310☐ SIM☐ (PCP)	GC/MS-SIM PAH☐	Metals, Total or Dissolved (See list below) Phenol☐ Phthalates☐	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle) NH_3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOX 9020☐ AOX 1650☐ 506☐	Nutrient - DX	Dioxin/Furan	REMARKS
L-1	12-17	10:15Am		Water	2							X								X	X	
L-2	12-17	11:30Am		Water	2							X								X	X	
L-3	12-17	12:35pm		Water	2							X								X	X	

REPORT REQUIREMENTS

- X I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To: J.H. Baxter & Co
PO Box 5902
San Mateo, CA 94402

TURNAROUND REQUIREMENTS

- ___ 24 hr. ___ 48 hr.
- ___ 5 Day
- X Standard (10-15 working days)
- ___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Dioxin/Furan - Use Method 1613

Attn: RuAnn Thomas
Mary Larson

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Jim Clawson 12-17-01 2:30pm	12/18/01 0800		
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Jim Clawson J.H. Baxter & Co.	CAS		
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Project/Client BARNER Work Order K21 94434

Cooler received on 12/20/01 and opened on 12/20/01 by GH

1. Were custody seals on outside of cooler? YES NO
   If yes, how many and where? 1T 1B
2. Were seals intact and signature & date correct? YES NO
3. COC #
   Temperature of cooler(s) upon receipt: 3.1
   Temperature Blank: 4.7
4. Were custody papers properly filled out (ink, signed, etc.)? YES NO
5. Type of packing material present Bubble
6. Did all bottles arrive in good condition (unbroken)? YES NO
7. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
8. Did all bottle labels and tags agree with custody papers? YES NO
9. *Were the correct types of bottles used for the tests indicated?* YES NO
10. Were all of the preserved bottles received at the lab with the appropriate pH and/or Cl2/Res negative? YES NO
11. Were VOA vials checked for absence of air bubbles, and if present, noted below? YES NO
12. Did the bottles originate from CAS/K or a branch laboratory? YES NO

Explain any discrepancies

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials
				—		
				—		

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 1613B (9/97)

Date:	February 25, 2002
Client ID:	Columbia Analytical Services
P.O. Number:	K2109434
TLI Project Number:	56279 and 56279r1

Overview

The samples and associated QC samples were extracted and analyzed according to procedures described in EPA Method 1613B (September 1997). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 1613 dioxin/furan analyses of the water samples.

Quality Control Samples

A laboratory method blank and an ongoing precision and recovery (OPR) sample are extracted and analyzed with each batch of samples.

Quality Control Remarks

This analytical data has been released after being subjected to a series of inspections. General deviations from acceptable QC requirements are identified below. Specific QC issues associated with this particular project are:

Sample receipt: Three water samples were received from Columbia Analytical Services in good condition on December 27, 2001 at 5.0°C and stored in a refrigerator at 4°C. The client's chain-of-custody did not indicate whether or not chemical preservatives were utilized prior to shipment. A replacement sample was received on January 23, 2002 for sample L-3 under project number 56466.

The sample bottles were only three-quarters full when received.

The sample identifications on the sample labels did not exactly match those for project 56279 on the client's chain of custody. The sample identifications on the sample labels were used for all reports and paperwork.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The samples under project 56279 were processed without the addition of a clean-up standard. The sample Lysimeter-3 from project 56279 has low recoveries for the internal standards. As a result, the detection limits for this sample are above the target detection limits. Sample L-3 from project 56279r1 has possible contamination from a laboratory source. However, the levels are all below the target detection limits. As per the client's request, both sets of data will be released.

The minimum levels for the field samples were not obtained because the method required sample volumes of 1.0 liter for each sample were not available for extraction.

General Comments: No 2,3,7,8-substituted target analytes were detected in the method blank above the target detection limit (TDL).

The analytical data presented in this report are consistent with the guidelines of Method 1613B. Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Mary McDonald, at (919) 544-5729 ext. 4021.

For Triangle Laboratories, Inc.,

Released by,

Kenneth Varley

Kenneth Varley
Report Preparation Chemist

The total number of pages in the data package is: 101.

Analytical Services INC.
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CHAIN OF CUSTODY

SR#: KZ109434

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PAGE _____ OF _____ COC #_____

PROJECT NAME

PROJECT NUMBER MINGTA LIN

PROJECT MANAGER CAS

COMPANY/ADDRESS PO BOX 479

KELSO WA 98626

PHONE # FAX #

SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FiQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 413.1☐ 418.1☐ 1664 SGT☐ 1664 HEM☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics Tri☐ Tetra☐ - 8151M PCP☐	PAHS 8310☐ SIM☐	GC/MS-SIM PAH☐ Phenol☐	Metals, Total or Dissolved (See list below) Phthalates☐	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle) NH_3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOX 9020☐ AOX 1650☐ 506☐	DIOXINS				REMARKS
L-1	12/17	1015		H_2O	1																X				KZ109434-001
L-2	12/17	1130		H_2O	1																X				-002
L-3	12/17	1235		H_2O	1																X				-003

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. # KZ109434

Bill To: _____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.

____ 5 Day

____ Standard (10-15 working days)

____ Provide FAX Results

_____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Dioxins/Furans by EPA 1613. No raw data in package.

SENT TO TRIANGLE

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Dawn Blanck	Signature:	Signature	Signature
Date/Time: 12/20/07 0900	Date/Time: 12/27/07 1100	Date/Time	Date/Time
Printed Name: BLANCK	Printed Name:	Printed Name	Printed Name
Firm: CAS	Firm:	Firm	Firm

BCOC #1 04/01

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE _____ PAGE 1 OF 1

PROJECT NAME _____ #

PROJECT MANAGER Minghsi Liu

COMPANY/ADDRESS P.O. Box 479 Kelso, WA 98626

PHONE _____

SAMPLERS SIGNATURE _____

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	ANALYSIS REQUESTED	REMARKS
L-3	1/15	0900		H2O	1	16 AHUS	

RELINQUISHED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time 1/16/02 1530

RECEIVED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time 1/16/02 1700

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr. ___ 5 day
✓ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# G200388
Bill To _____

SAMPLE RECEIPT:
Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: K200388

RELINQUISHED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

RECEIVED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

SPECIAL INSTRUCTIONS/COMMENTS:

Replacement sample for CAS lab ID: K210 9434-003.
pls. use this bottle to complete the analysis of this sample.
(Dioxins / Furans by EPA 1613).
Sent to Illinois Labs

14

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

Columbia Analytical Services

TLI Project: **56279**
Client Sample: **Lysimeter-1**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **W306407**

Client Project:	**Arlington Lysimeter**				
Sample Matrix:	**AQUEOUS**	Date Received:	**12/27/2001**	Spike File:	**SP161B2S**
TLI ID:	**314-51-1**	Date Extracted:	**12/28/2001**	ICal:	**WF5628B**
		Date Analyzed:	**12/31/2001**	ConCal:	**WB13063**
Sample Size:	**0.730 L**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**W306402**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**JSY**	% Solids:	**<0.1**

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	ND	1.6				—
1,2,3,7,8-PeCDD	ND	1.6				—
1,2,3,4,7,8-HxCDD	ND	1.7				—
1,2,3,6,7,8-HxCDD	ND	1.8				—
1,2,3,7,8,9-HxCDD	ND	1.7				—
1,2,3,4,6,7,8-HpCDD	3.2 NJ		0.95	37:15	1.000	JB_
1,2,3,4,6,7,8,9-OCDD	34.1 NJ		0.87	40:48	1.000	JB_
2,3,7,8-TCDF	ND	1.3				—
1,2,3,7,8-PeCDF	ND	1.3				—
2,3,4,7,8-PeCDF	ND	1.0				—
1,2,3,4,7,8-HxCDF	ND	1.1				—
1,2,3,6,7,8-HxCDF	ND	1.1				—
2,3,4,6,7,8-HxCDF	ND	1.2				—
1,2,3,7,8,9-HxCDF	ND	1.5				—
1,2,3,4,6,7,8-HpCDF	ND	1.5				—
1,2,3,4,7,8,9-HpCDF	ND	1.8				—
1,2,3,4,6,7,8,9-OCDF	4.9 NJ		0.87	41:00	1.005	JB_

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	ND		5.0	—
Total PeCDD	ND		8.3	—
Total HxCDD	ND		8.4	—
Total HpCDD	5.9	2		—
Total TCDF	ND		1.3	—
Total PeCDF	ND		1.2	—
Total HxCDF	ND		1.2	—
Total HpCDF	ND		3.1	—

161B_PSR v2.04, LARS 6.25.04

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1/04.4.02

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TLI Project: **56279**
Client Sample: **Lysimeter-1**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **W306407**

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	1810	66.1	31%-137%	0.78	26:32	1.006	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2130	77.8	25%-181%	1.51	30:49	1.169	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	2110	77.2	32%-141%	1.21	33:56	0.989	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2210	80.6	28%-130%	1.23	34:01	0.991	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2940	107	23%-140%	1.03	37:14	1.085	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	6370	116	17%-157%	0.86	40:47	1.188	
$^{13}C_{12}$-2,3,7,8-TCDF	1710	62.4	29%-140%	0.74	25:49	0.979	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1910	69.6	24%-185%	1.50	29:46	1.129	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	2250	82.1	21%-178%	1.52	30:29	1.156	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	2300	83.9	26%-152%	0.50	33:15	0.969	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2240	81.7	26%-123%	0.51	33:21	0.972	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2060	75.3	28%-136%	0.50	33:49	0.985	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2180	79.5	29%-147%	0.50	34:35	1.008	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2440	88.9	28%-143%	0.44	36:12	1.055	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	2790	102	26%-138%	0.43	37:43	1.099	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	26:22	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	34:19	

Data Reviewer: _____ 02/25/2002

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Toxicity Equivalents Report

TLI Project: 56279
Sample: Lysimeter-1
File: W306407

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	3.2	0.01	0.03200
1,2,3,4,6,7,8,9-OCDD	34.1	0.0001	0.00341
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	4.9	0.0001	0.00049

Total WHO Dioxin TEFs for Humans **0.036** **pg/L**

Toxicity Equivalents Report

TLI Project: **56279**

Sample: **Lysimeter-1**

File: **W306407**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	0	0.0001	0.00000
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	0	0.0001	0.00000

Total WHO Dioxin TEFs for Humans **0.** **pg/L**

TLI Project: **56279**
Client Sample: **Lysimeter-2**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **W306408**

Client Project:	**Arlington Lysimeter**				
Sample Matrix:	**AQUEOUS**	Date Received:	**12/27/2001**	Spike File:	**SP161B2S**
TLI ID:	**314-51-2**	Date Extracted:	**12/28/2001**	ICal:	**WF5628B**
		Date Analyzed:	**12/31/2001**	ConCal:	**WB13063**
Sample Size:	**0.720 L**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**W306402**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**JSY**	% Solids:	**<0.1**

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	ND	1.5				___
1,2,3,7,8-PeCDD	ND	1.4				___
1,2,3,4,7,8-HxCDD	ND	4.7				J__
1,2,3,6,7,8-HxCDD	ND	1.7				___
1,2,3,7,8,9-HxCDD	ND	1.6				___
1,2,3,4,6,7,8-HpCDD	5.7 UJ		0.97	37:15	1.000	JB_
1,2,3,4,6,7,8,9-OCDD	59.0		0.78	40:48	1.000	JB_
2,3,7,8-TCDF	ND	1.4				___
1,2,3,7,8-PeCDF	ND	1.2				___
2,3,4,7,8-PeCDF	ND	1.0				___
1,2,3,4,7,8-HxCDF	1.2		1.22	33:15	1.000	J__
1,2,3,6,7,8-HxCDF	ND	1.0				___
2,3,4,6,7,8-HxCDF	ND	1.0				___
1,2,3,7,8,9-HxCDF	ND	1.4				___
1,2,3,4,6,7,8-HpCDF	ND	2.0				J__
1,2,3,4,7,8,9-HpCDF	ND	1.7				___
1,2,3,4,6,7,8,9-OCDF	10.7 UJ		0.96	40:59	1.005	JB_

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	ND		1.5	___
Total PeCDD	ND		6.8	___
Total HxCDD	ND		13.1	___
Total HpCDD	5.7	1		___
Total TCDF	ND		3.2	___
Total PeCDF	ND		2.2	___
Total HxCDF	3.1	2		___
Total HpCDF	4.6	1		___

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TLI Project: **56279**
Client Sample: **Lysimeter-2**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **W306408**

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	1780	64.1	31%-137%	0.78	26:32	1.006	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2230	80.5	25%-181%	1.51	30:49	1.169	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	2100	75.8	32%-141%	1.23	33:56	0.988	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2080	74.9	28%-130%	1.22	34:01	0.991	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2820	101	23%-140%	1.01	37:14	1.084	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	5500	99.1	17%-157%	0.86	40:47	1.188	
$^{13}C_{12}$-2,3,7,8-TCDF	1670	60.3	29%-140%	0.75	25:49	0.979	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2040	73.4	24%-185%	1.48	29:47	1.130	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	2380	85.6	21%-178%	1.49	30:29	1.156	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	2160	77.9	26%-152%	0.50	33:15	0.968	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2150	77.4	26%-123%	0.51	33:21	0.971	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2050	73.9	28%-136%	0.50	33:50	0.985	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2110	75.9	29%-147%	0.51	34:35	1.007	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2220	80.1	28%-143%	0.43	36:12	1.054	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	2550	91.6	26%-138%	0.43	37:43	1.099	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	26:22	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	34:20	

Data Reviewer: _____ 02/25/2002

161B_PSR v2.04, LARS 6.25.04

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Toxicity Equivalents Report

TLI Project: **56279**

Sample: **Lysimeter-2**

File: **W306408**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	5.7	0.01	0.05700
1,2,3,4,6,7,8,9-OCDD	59	0.0001	0.00590
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	1.2	0.1	0.12000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	10.7	0.0001	0.00107

Total WHO Dioxin TEFs for Humans **0.184** **pg/L**

Toxicity Equivalents Report

TLI Project: **56279**

Sample: **Lysimeter-2**

File: **W306408**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	0	0.0001	0.00000
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	0	0.0001	0.00000

Total WHO Dioxin TEFs for Humans **0.** **pg/L**

TLI Project: **56279** — 1613, Revision B PCDD/PCDF Analysis (c)
Client Sample: **Lysimeter-3** — Analysis File: **T020076**

Client Project:	**Arlington Lysimeter**				
Sample Matrix:	**AQUEOUS**	Date Received:	**12/27/2001**	Spike File:	**SP161B2S**
TLI ID:	**314-51-3**	Date Extracted:	**12/28/2001**	ICal:	**TF5627B**
		Date Analyzed:	**01/07/2002**	ConCal:	**TB20067**
Sample Size:	**0.640 L**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**W306402**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**CRW**	% Solids:	**<0.1**

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	ND R	21.1				
1,2,3,7,8-PeCDD	ND	23.1				
1,2,3,4,7,8-HxCDD	ND	20.7				
1,2,3,6,7,8-HxCDD	ND	22.0				
1,2,3,7,8,9-HxCDD	ND	21.3				
1,2,3,4,6,7,8-HpCDD	ND	27.5				
1,2,3,4,6,7,8,9-OCDD	435		0.88	40:37	1.000	
2,3,7,8-TCDF	ND R	15.7				
1,2,3,7,8-PeCDF	ND	17.6				
2,3,4,7,8-PeCDF	ND	14.5				
1,2,3,4,7,8-HxCDF	ND	13.3				
1,2,3,6,7,8-HxCDF	ND	13.6				
2,3,4,6,7,8-HxCDF	ND	13.6				
1,2,3,7,8,9-HxCDF	ND	20.7				
1,2,3,4,6,7,8-HpCDF	ND	18.4				
1,2,3,4,7,8,9-HpCDF	ND	22.4				
1,2,3,4,6,7,8,9-OCDF	ND	83.2				J

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	ND		21.1	
Total PeCDD	ND		23.1	
Total HxCDD	ND		21.3	
Total HpCDD	ND		27.5	
Total TCDF	15.9	1		
Total PeCDF	ND		15.9	
Total HxCDF	ND		14.7	
Total HpCDF	ND		20.1	

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TLI Project: **56279** 1613, Revision B PCDD/PCDF Analysis (c)
Client Sample: **Lysimeter-3** Analysis File: **T020076**

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	446	14.3	31%-137%	0.79	26:11	1.008	***
$^{13}C_{12}$-1,2,3,7,8-PeCDD	503	16.1	25%-181%	1.58	30:22	1.169	***
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	543	17.4	32%-141%	1.10	33:28	0.988	***
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	564	18.1	28%-130%	1.25	33:33	0.991	***
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	688	22.0	23%-140%	1.08	36:51	1.088	***
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	1210	19.3	17%-157%	0.92	40:36	1.199	
$^{13}C_{12}$-2,3,7,8-TCDF	417	13.3	29%-140%	0.70	25:28	0.980	***
$^{13}C_{12}$-1,2,3,7,8-PeCDF	438	14.0	24%-185%	1.54	29:21	1.130	***
$^{13}C_{12}$-2,3,4,7,8-PeCDF	510	16.3	21%-178%	1.60	30:02	1.156	***
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	496	15.9	26%-152%	0.51	32:45	0.967	***
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	527	16.9	26%-123%	0.52	32:51	0.970	***
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	535	17.1	28%-136%	0.51	33:21	0.985	***
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	495	15.8	29%-147%	0.49	34:09	1.008	***
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	614	19.7	28%-143%	0.44	35:48	1.057	***
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	632	20.2	26%-138%	0.42	37:22	1.103	***

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	25:59	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.23	33:52	

Data Reviewer: _____ 02/25/2002

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Toxicity Equivalents Report

TLI Project: **56279**

Sample: **Lysimeter-3**

File: **T020076**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	435	0.0001	0.04350
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	0	0.0001	0.00000

Total WHO Dioxin TEFs for Humans **0.044** **pg/L**

Note: This value is the same for TEFs without detection limits and for TEFs without detection limits and using 0 for all values less than the minimum levels.

Columbia Analytical Services

TLI Project: **56279r1**
Client Sample: **Lysimeter-3**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **U007710**

Client Project:	**Arlington Lysimeter**				
Sample Matrix:	**AQUEOUS**	Date Received:	**01/23/2002**	Spike File:	**SP161B2S**
TLI ID:	**316-40-1**	Date Extracted:	**01/25/2002**	ICal:	**UF5121B**
		Date Analyzed:	**01/31/2002**	ConCal:	**UB20076**
Sample Size:	**0.950 L**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**U007709**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**CGK**	% Solids:	**<0.1**

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	8.5		0.85	27:23	1.000	J__
1,2,3,7,8-PeCDD	18.4 UJ		1.57	31:31	1.000	JB_
1,2,3,4,7,8-HxCDD	17.7 UJ		1.24	34:38	1.000	JB_
1,2,3,6,7,8-HxCDD	19.1 UJ		1.23	34:43	1.000	JB_
1,2,3,7,8,9-HxCDD	21.8		1.37	35:03	1.010	J__
1,2,3,4,6,7,8-HpCDD	ND	17.3				J__
1,2,3,4,6,7,8,9-OCDD	50.5 UJ		0.86	41:50	1.000	JB_
2,3,7,8-TCDF	8.0		0.89	26:42	1.001	J__
1,2,3,7,8-PeCDF	ND	21.0				J__
2,3,4,7,8-PeCDF	17.7		1.58	31:12	1.000	J__
1,2,3,4,7,8-HxCDF	16.7 UJ		1.14	33:57	1.000	JB_
1,2,3,6,7,8-HxCDF	17.1 UJ		1.17	34:02	1.000	JB_
2,3,4,6,7,8-HxCDF	16.8 UJ		1.19	34:31	1.000	JB_
1,2,3,7,8,9-HxCDF	21.8		1.27	35:19	1.000	J__
1,2,3,4,6,7,8-HpCDF	20.0 UJ		0.91	37:01	1.000	JB_
1,2,3,4,7,8,9-HpCDF	18.0 UJ		0.93	38:36	1.000	JB_
1,2,3,4,6,7,8,9-OCDF	31.2 UJ		0.94	42:04	1.006	JB_

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	8.5	1		___
Total PeCDD	24.3	3		___
Total HxCDD	63.2	4		___
Total HpCDD	ND		21.1	___
Total TCDF	8.0	1		___
Total PeCDF	17.7	1		___
Total HxCDF	72.4	4		___
Total HpCDF	40.5	3		___

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TLI Project: **56279r1**
Client Sample: **Lysimeter-3**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **U007710**

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	1280	60.9	31%-137%	0.78	27:23	1.007	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	1360	64.4	25%-181%	1.63	31:31	1.159	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	1320	62.6	32%-141%	1.33	34:38	0.989	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1390	66.1	28%-130%	1.18	34:42	0.990	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1370	65.2	23%-140%	1.05	38:03	1.086	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	2320	55.0	17%-157%	0.89	41:49	1.194	
$^{13}C_{12}$-2,3,7,8-TCDF	1210	57.5	29%-140%	0.78	26:41	0.981	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1190	56.7	24%-185%	1.56	30:32	1.123	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1350	64.0	21%-178%	1.57	31:12	1.147	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1490	70.6	26%-152%	0.53	33:56	0.969	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1510	71.5	26%-123%	0.52	34:02	0.971	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1400	66.7	28%-136%	0.53	34:31	0.985	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1410	67.2	29%-147%	0.53	35:19	1.008	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1300	61.9	28%-143%	0.46	37:00	1.056	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1340	63.8	26%-138%	0.46	38:35	1.101	

Cleanup Standard	Conc. (pg/L)	% Recovery	QC Limits	RT	RRT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	150	71.2	42%-164%	27:23	1.007	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.79	27:12	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.25	35:02	

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Toxicity Equivalents Report

TLI Project: **56279r1**

Sample: **Lysimeter-3**

File: **U007710**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	8.5	1.0	8.50000
1,2,3,7,8-PeCDD	18.4	1.0	18.40000
1,2,3,4,7,8-HxCDD	17.7	0.1	1.77000
1,2,3,6,7,8-HxCDD	19.1	0.1	1.91000
1,2,3,7,8,9-HxCDD	21.8	0.1	2.18000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	50.5	0.0001	0.00505
2,3,7,8-TCDF	8	0.1	0.80000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	17.7	0.5	8.85000
1,2,3,4,7,8-HxCDF	16.7	0.1	1.67000
1,2,3,6,7,8-HxCDF	17.1	0.1	1.71000
2,3,4,6,7,8-HxCDF	16.8	0.1	1.68000
1,2,3,7,8,9-HxCDF	21.8	0.1	2.18000
1,2,3,4,6,7,8-HpCDF	20	0.01	0.20000
1,2,3,4,7,8,9-HpCDF	18	0.01	0.18000
1,2,3,4,6,7,8,9-OCDF	31.2	0.0001	0.00312

Total WHO Dioxin TEFs for Humans **50.038 pg/L**

Toxicity Equivalents Report

TLI Project: **56279r1**

Sample: **Lysimeter-3**

File: **U007710**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	0	0.0001	0.00000
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	0	0.0001	0.00000

Total WHO Dioxin TEFs for Humans **0.** **pg/L**

Columbia Analytical Services INC.
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March 4, 2002 Service Request No: K2200945

RuAnn Thomas
J.H. Baxter Company
85 N Baxter Street
Eugene, OR 97402

Re: J.H. Baxter & Co./Lysimeters

Dear RuAnn:

Enclosed are the results of the sample(s) submitted to our laboratory on 2/12/02. For your reference, these analyses have been assigned our service request number K2200945.

The analysis of Dioxins/Furans has been performed by Triangle Laboratories, Inc. (TLI). The TLI report is included in Appendix A.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

Columbia Analytical Services, Inc.

Mingta Lin
Project Chemist

ML/dj

cc: Mary Larson (J.H. Baxter, Arlington, WA)

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: K2280945

PAGE 1 OF 1 COC #

PROJECT NAME: J.H. Baxter & CO
PROJECT NUMBER: Lysimeters
PROJECT MANAGER: Tom Orthmeyer
COMPANY/ADDRESS: 16520 188th St. NE PO Box 305, Arlington, WA 98223
PHONE #: 360 435-2146 FAX #: 360 435-3035
SAMPLER'S SIGNATURE: Jim Clawson

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS
L-1	2-11-02	9:30A		Water	2
L-2	2-11-02	11:00A		Water	2
L-3	2-11-02	12:30P		Water	2
L-3A	2-11-02	8:45A		WATER	2

Semivolatile Organics by GC/MS 625☐ 8270☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen
Oil & Grease/TRPH 413.1☐ 418.1☐ 1664 SGT☐ 1664 HEM☐
PCB's Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐
Chlorophenolics - 8151M (POP'D)
Tri☐ Tetra☐
PAHS 8310☐ SIM☐
GC/MS-SIM PAH☐
Phenol☐ Phthalates☐
Metals, Total or Dissolved (See list below)
Cyanide☐ Hex-Chrom☐
pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)
NH_3-N, COD, Total-P, TKN, TOC, DOC (circle)
TOX 9020☐ AOX 1650☐ 506☐
NWTPH-DX
Dioxins/Furans
00004
REMARKS

REPORT REQUIREMENTS

X I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To: JH Baxter Co
PO Box 10797
Eugene, OR 97440

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hr

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Dioxin/Furan - Use method 1613
NWTPH-DX - Please use Silica Gel cleanup.

Attn: RoeAnn Thomas
MaryLarson

RELINQUISHED BY:

Jim Clawson — 2-11-02 2:00pm
Signature — Date/Time
Jim Clawson — J.H. Baxter & Co.
Printed Name — Firm

RECEIVED BY:

Signature — 2/12/02 Date/Time
Printed Name — Firm

RELINQUISHED BY:

Signature — Date/Time
Printed Name — Firm

RECEIVED BY:

Signature — Date/Time
Printed Name — Firm

RCOC #1 04/01

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Project/Client JX Baxter Work Order K22 00945.

Cooler received on 2/12/02 and opened on 2/12/02 by VBlack

1.	Were custody seals on outside of cooler? If yes, how many and where? 1 front					(Y)	N
2.	Were seals intact and signature & date correct?					(Y)	N
3.	COC #	___	___	___	___	___	
	Temperature of cooler(s) upon receipt:	2.5	___	___	___	___	
	Temperature Blank:	0.2	___	___	___	___	
4.	Were custody papers properly filled out (ink, signed, etc.)?					(Y)	N
5.	Type of packing material present Bubble						
6.	Did all bottles arrive in good condition (unbroken)?					(Y)	N
7.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?					(Y)	N
8.	Did all bottle labels and tags agree with custody papers?					(Y)	N
9.	Were the correct types of bottles used for the tests indicated?					(Y)	N
10.	Were all of the preserved bottles received at the lab with the appropriate pH?					~~Y~~	~~N~~
11.	Were VOA vials checked for absence of air bubbles, and if present, noted below?					~~Y~~	~~N~~
12.	Did the bottles originate from CAS/K or a branch laboratory?					(Y)	N
13.	Are CWA Microbiology samples received with > ½ the 24 hr. hold time remaining from collection?					~~Y~~	~~N~~
14.	Was CL2/Residual negative?					~~Y~~	~~N~~

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

00005

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: 02/11/2002
Date Received: 02/12/2002

Diesel and Residual Range Organics - Silica Gel Treated

Sample Name: L-1
Lab Code: K2200945-001

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	250	1	02/15/02	02/21/02	KWG0201144	
Residual Range Organics (RRO)	ND	U	500	1	02/15/02	02/21/02	KWG0201144	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	80	50-150	02/21/02	Acceptable
n-Triacontane	82	50-150	02/21/02	Acceptable

Comments:

00006

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200945
Project:	J.H. Baxter & Co./Lysimeters	**Date Collected:**	02/11/2002
Sample Matrix:	Water	**Date Received:**	02/12/2002

Diesel and Residual Range Organics - Silica Gel Treated

Sample Name:	L-2	**Units:**	ug/L
Lab Code:	K2200945-002	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	280	1	02/15/02	02/21/02	KWG0201144	
Residual Range Organics (RRO)	ND	U	560	1	02/15/02	02/21/02	KWG0201144	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	81	50-150	02/21/02	Acceptable
n-Triacontane	86	50-150	02/21/02	Acceptable

RX482

Comments:

00007

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: 02/11/2002
Date Received: 02/12/2002

Diesel and Residual Range Organics - Silica Gel Treated

Sample Name: L-3
Lab Code: K2200945-003

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	280	1	02/15/02	02/21/02	KWG0201144	
Residual Range Organics (RRO)	ND	U	560	1	02/15/02	02/21/02	KWG0201144	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	82	50-150	02/21/02	Acceptable
n-Triacontane	85	50-150	02/21/02	Acceptable

RJ 4/8/02

Comments:

00008

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: 02/11/2002
Date Received: 02/12/2002

Diesel and Residual Range Organics - Silica Gel Treated

Sample Name: L-3A
Lab Code: K2200945-004

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	250	1	02/15/02	02/21/02	KWG0201144	
Residual Range Organics (RRO)	ND	U	500	1	02/15/02	02/21/02	KWG0201144	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	74	50-150	02/21/02	Acceptable
n-Triacontane	79	50-150	02/21/02	Acceptable

RPA 8-2

Comments:

00009

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: NA
Date Received: NA

Diesel and Residual Range Organics - Silica Gel Treated

Sample Name: Method Blank
Lab Code: KWG0201144-3

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	250	1	02/15/02	02/20/02	KWG0201144	
Residual Range Organics (RRO)	ND	U	500	1	02/15/02	02/20/02	KWG0201144	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	84	50-150	02/20/02	Acceptable
n-Triacontane	89	50-150	02/20/02	Acceptable

Comments:

00010

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: 02/11/2002
Date Received: 02/12/2002

Pentachlorophenol

Sample Name: L-1
Lab Code: K2200945-001

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	02/14/02	02/16/02	KWG0201130	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	83	38-119	02/16/02	Acceptable

KP4'8-2

Comments:

00011

COLUMBIA ANALYTICAL SERVICES, INC

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: 02/11/2002
Date Received: 02/12/2002

Pentachlorophenol

Sample Name: L-2
Lab Code: K2200945-002

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	02/14/02	02/16/02	KWG0201130	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	78	38-119	02/16/02	Acceptable

'omments:

00012

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: 02/11/2002
Date Received: 02/12/2002

Pentachlorophenol

Sample Name: L-3
Lab Code: K2200945-003

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	02/14/02	02/16/02	KWG0201130	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	77	38-119	02/16/02	Acceptable

RX482L

Comments:

00013

Analytical Results

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: 02/11/2002
Date Received: 02/12/2002

Pentachlorophenol

Sample Name: L-3A
Lab Code: K2200945-004

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	02/14/02	02/16/02	KWG0201130	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	86	38-119	02/16/02	Acceptable

RPT8-2

Comments:

00014

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./Lysimeters
Sample Matrix: Water

Service Request: K2200945
Date Collected: NA
Date Received: NA

Pentachlorophenol

Sample Name: Method Blank
Lab Code: KWG0201130-4

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	02/14/02	02/16/02	KWG0201130	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	74	38-119	02/16/02	Acceptable

Comments:

00015

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 1613B (9/97)

Date:	February 22, 2002
Client ID:	Columbia Analytical Services
P.O. Number:	K2200945
TLI Project Number:	56653

Overview

The samples and associated QC samples were extracted and analyzed according to procedures described in EPA Method 1613B (September 1997). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 1613 dioxin/furan analyses of four water samples.

Quality Control Samples

A laboratory method blank and an ongoing precision and recovery (OPR) sample are extracted and analyzed with each batch of samples.

Quality Control Remarks

This analytical data has been released after being subjected to a series of inspections. General deviations from acceptable QC requirements are identified below. Specific QC issues associated with this particular project are:

Sample receipt: Four water samples were received from Columbia Analytical Services in good condition on February 15, 2002 at 5.0°C and stored in a refrigerator at 4°C. The client's chain-of-custody did not indicate whether or not chemical preservatives were utilized prior to shipment.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The minimum levels for samples L-1, L-2, L-3, and L-3a were not obtained because the method required sample volumes of 1.0 liter per sample were not available for extraction.

General Comments: No 2,3,7,8-substituted target analytes were detected in the method blank above the target detection limit (TDL).

The analytical data presented in this report are consistent with the guidelines of Method 1613B. Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Mary McDonald, at (919) 544-5729, ext. 4021.

For Triangle Laboratories, Inc.,

Released by,

Kenneth Varley

Kenneth Varley

Report Preparation Chemist

The total number of pages in the data package is: 149 .

Columbia Analytical Services, INC.
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 2/13/02 PAGE 1 OF 1

PROJECT NAME _____ #_____

PROJECT MANAGER Mingta Lin

COMPANY/ADDRESS CAS
PO Box 479
Kelso, WA 98626.

PHONE: _____ FAX: _____

SAMPLERS SIGNATURE _____

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Dioxins	REMARKS
L-1	2/11/02	0930		W	1		
L-2	2/11/02	1100		W	1		
L-3	2/11/02	1230		W	1		
L-3a	2/11/02	0845		W	1		

ANALYSIS REQUESTED

RELINQUISHED BY:
Signature: Kristi Morrow
Printed Name: Kristi Morrow
Firm: CAS
Date/Time: 2/14/02 0930

RECEIVED BY:
Signature: Bill Hurst
Printed Name: Bill Hurst
Firm: TLI Inc
Date/Time: 2-15-02 1000

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
___ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# K2200945
Bill To _____

SAMPLE RECEIPT:
Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: K2200945

RELINQUISHED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

RECEIVED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

SPECIAL INSTRUCTIONS/COMMENTS:
Dioxins/Furans by EPA 1613 Narrow data in Package

Sent to Triangle

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

LABCOC 11/01

Columbia Analytical Services

TLI Project: **56653**
Client Sample: **L-1**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **U019803**

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-1	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.740 L	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)		DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	ND		1.6				
1,2,3,7,8-PeCDD	ND		1.7				
1,2,3,4,7,8-HxCDD	ND		2.2				
1,2,3,6,7,8-HxCDD	ND		2.2				
1,2,3,7,8,9-HxCDD	ND		2.0				
1,2,3,4,6,7,8-HpCDD	4.4	UJ		1.16	37:11	0.979	JB
1,2,3,4,6,7,8,9-OCDD	45.9			0.90	41:42	1.000	J
2,3,7,8-TCDF	ND		1.3				
1,2,3,7,8-PeCDF	ND		1.1				
2,3,4,7,8-PeCDF	ND		0.9				
1,2,3,4,7,8-HxCDF	ND		1.4				
1,2,3,6,7,8-HxCDF	ND		1.8				
2,3,4,6,7,8-HxCDF	1.9	UJ		(1.06)	34:28	1.000	J
1,2,3,7,8,9-HxCDF	ND		2.1				
1,2,3,4,6,7,8-HpCDF	ND		2.2				
1,2,3,4,7,8,9-HpCDF	ND		3.3				
1,2,3,4,6,7,8,9-OCDF	ND		6.4				

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	ND		1.6	
Total PeCDD	ND		3.9	
Total HxCDD	5.1	1		
Total HpCDD	4.4	1		
Total TCDF	3.0	1		
Total PeCDF	ND		1.0	
Total HxCDF	1.9	1		
Total HpCDF	ND		4.4	

FA 45-2

Triangle Laboratories, Inc.®
2445 S. Alston Ave. • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 17:05 02/22/02

77

TLI Project: 56653
Client Sample: L-1

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: U019803

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	1390	51.5	31%-137%	0.79	27:18	1.007	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2260	83.6	25%-181%	1.55	31:27	1.160	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	1640	60.8	32%-141%	1.24	34:33	0.988	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1720	63.5	28%-130%	1.23	34:38	0.990	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1450	53.7	23%-140%	1.07	37:58	1.086	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	2850	52.8	17%-157%	0.89	41:42	1.193	
$^{13}C_{12}$-2,3,7,8-TCDF	1160	43.1	29%-140%	0.77	26:36	0.981	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1640	60.5	24%-185%	1.57	30:27	1.123	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1800	66.7	21%-178%	1.57	31:07	1.148	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1570	58.3	26%-152%	0.52	33:52	0.969	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1520	56.4	26%-123%	0.53	33:57	0.971	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1550	57.3	28%-136%	0.53	34:27	0.985	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1580	58.6	29%-147%	0.53	35:14	1.008	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1290	47.8	28%-143%	0.47	36:55	1.056	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1260	46.5	26%-138%	0.46	38:29	1.101	

Cleanup Standard	Conc. (pg/L)	% Recovery	QC Limits	RT	RRT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	177	65.4	42%-164%	27:18	1.007	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	27:07	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	34:58	

Data Reviewer: _____ 02/22/02

161B_PSR v2.04, LARS 6.25.04

Triangle Laboratories, Inc.®
2445 S. Alston Ave. • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 17:05 02/22/02

Toxicity Equivalents Report

TLI Project: **56653**

Sample: **L-1**

File: **U019803**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	4.4	0.01	0.04400
1,2,3,4,6,7,8,9-OCDD	45.9	0.0001	0.00459
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	1.9	0.1	0.19000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	0	0.0001	0.00000

Total WHO Dioxin TEFs for Humans **0.239** **pg/L**

TLI Project: **56653**
Client Sample: **L-1**

Toxicity Equivalents Report
Analysis File: **U019803**

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-1	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.740 L	Dilution Factor:	1	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)		TEF		Equivalent
2,3,7,8-TCDD	LTD	x	1.	=	
1,2,3,7,8-PeCDD	LTD	x	1.	=	
1,2,3,4,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDD	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDD	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDD	LTD	x	0.0001	=	
2,3,7,8-TCDF	LTD	x	0.1	=	
1,2,3,7,8-PeCDF	LTD	x	0.05	=	
2,3,4,7,8-PeCDF	LTD	x	0.5	=	
1,2,3,4,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDF	LTD	x	0.1	=	
2,3,4,6,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDF	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDF	LTD	x	0.01	=	
1,2,3,4,7,8,9-HpCDF	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDF	LTD	x	0.0001	=	

Total WHO Dioxin TEFs for Humans: 0. pg/L

{...} indicates that the value is that of a Detection Limit.
Note: LTD = Less Than Target Detection Limit

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TLI Project: **56653**
Client Sample: **L-2**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **U019804**

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-2	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.800 L	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)		DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	ND		5.2				
1,2,3,7,8-PeCDD	ND		4.4				
1,2,3,4,7,8-HxCDD	ND		6.0				
1,2,3,6,7,8-HxCDD	ND		5.7				
1,2,3,7,8,9-HxCDD	ND		5.4				
1,2,3,4,6,7,8-HpCDD	ND		8.7				
1,2,3,4,6,7,8,9-OCDD	24.2	WJ		0.90	41:43	1.000	J
2,3,7,8-TCDF	ND		4.3				
1,2,3,7,8-PeCDF	ND		3.5				
2,3,4,7,8-PeCDF	ND		2.7				
1,2,3,4,7,8-HxCDF	ND		3.8				
1,2,3,6,7,8-HxCDF	ND		4.2				
2,3,4,6,7,8-HxCDF	ND		3.8				
1,2,3,7,8,9-HxCDF	ND		5.4				
1,2,3,4,6,7,8-HpCDF	ND		5.5				
1,2,3,4,7,8,9-HpCDF	ND		6.8				
1,2,3,4,6,7,8,9-OCDF	ND		6.7				

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	ND		5.2	
Total PeCDD	ND		4.4	
Total HxCDD	ND		5.7	
Total HpCDD	ND		12.5	
Total TCDF	ND		4.3	
Total PeCDF	ND		3.0	
Total HxCDF	ND		4.2	
Total HpCDF	ND		6.0	

161B_PSR v2.04, LARS 6.25.04

Kop 4 5 2

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TLI Project: 56653
Client Sample: L-2

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: U019804

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	1490	59.4	31%-137%	0.81	27:18	1.006	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2540	101	25%-181%	1.56	31:28	1.160	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	1730	69.3	32%-141%	1.26	34:33	0.988	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1880	75.3	28%-130%	1.23	34:39	0.991	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1790	71.6	23%-140%	1.12	37:59	1.086	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	4070	81.4	17%-157%	0.89	41:42	1.193	
$^{13}C_{12}$-2,3,7,8-TCDF	1160	46.4	29%-140%	0.79	26:37	0.981	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1730	69.3	24%-185%	1.52	30:28	1.123	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	2030	81.3	21%-178%	1.58	31:08	1.147	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1650	66.1	26%-152%	0.52	33:52	0.969	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1660	66.3	26%-123%	0.53	33:58	0.971	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1750	70.1	28%-136%	0.52	34:27	0.985	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1760	70.6	29%-147%	0.52	35:14	1.008	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1550	62.0	28%-143%	0.45	36:54	1.055	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1680	67.0	26%-138%	0.48	38:30	1.101	

Cleanup Standard	Conc. (pg/L)	% Recovery	QC Limits	RT	RRT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	179	71.5	42%-164%	27:20	1.007	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	27:08	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.24	34:58	

Data Reviewer: CEM 02/22/02

161B_PSR v2.04, LARS 6.25.04

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TLI Project: 56653
Client Sample: L-2

Toxicity Equivalents Report
Analysis File: U019804

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-2	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.800 L	Dilution Factor:	1	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)		TEF		Equivalent
2,3,7,8-TCDD	LTD	x	1.	=	
1,2,3,7,8-PeCDD	LTD	x	1.	=	
1,2,3,4,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDD	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDD	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDD	LTD	x	0.0001	=	
2,3,7,8-TCDF	LTD	x	0.1	=	
1,2,3,7,8-PeCDF	LTD	x	0.05	=	
2,3,4,7,8-PeCDF	LTD	x	0.5	=	
1,2,3,4,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDF	LTD	x	0.1	=	
2,3,4,6,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDF	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDF	LTD	x	0.01	=	
1,2,3,4,7,8,9-HpCDF	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDF	LTD	x	0.0001	=	

Total WHO Dioxin TEFs for Humans: 0. pg/L

{...} indicates that the value is that of a Detection Limit.
Note: LTD = Less Than Target Detection Limit

GRY_TEF v1.08, MILES 4.22.16

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Toxicity Equivalents Report

TLI Project: **56653**

Sample: **L-2**

File: **U019804**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	24.2	0.0001	0.00242
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	0	0.0001	0.00000

Total WHO Dioxin TEFs for Humans **0.002** **pg/L**

Initial ... e...

Data Review By: CBM 2/22/02

Calculated Noise Height: 3.18

Page No. 1 Listing of U019804B.dbf
02/22/02 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area/Ht	Area/Ht.Peak1	Area/Ht.Peak2	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.880-1.071			
304-306	DC	NL				Height	12.75	5.86	6.89				
304-306		0	Peaks				0.00						
13C12-TCDF						0.65-0.89				0.945-1.133			
316-318	DC	NL				Height	10.66	5.06	5.60				
				26:14		0.84	133.36	60.77	72.59	0.986			
				26:37		0.79	16,940.93	7,452.96	9,487.97	1.000	13C12-2378-TCDF	IS0	
						Height	4,416.27	1,947.01	2,469.26				
	DC	SN		27:48	RO	0.42	33.78			1.044			
	DC	SN		28:04	RO	3.35	18.22			1.054			
316-318		2	Peaks				17,074.29						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.904-1.042			
320-322	DC	NL				Height	7.53	3.80	3.73				
	DC	SN		25:33		0.65	30.97			0.936			
	DC	SN		25:48	RO	1.03	8.83			0.945			
	DC	SN		26:03		0.78	13.62			0.954			
	DC	SN		28:10	RO	0.98	15.63			1.032			
320-322		0	Peaks				0.00						
37Cl-TCDD										0.927-1.073			
328	DC	NL				Height	3.43	3.43					
	DC	WL		24:44			12.05			0.906			
	DC	WL		25:00			4.92			0.916			
	DC	WL		25:10			11.35			0.922			
				25:20			23.23	23.23		0.928			
	DC	SN		25:29			11.02			0.933			
	DC	SN		25:39			10.98			0.940			
	DC	SN		26:37			4.33			0.975			
	DC	SN		26:46			8.51			0.980			
				27:03			11.37	11.37		0.991			
				27:20			1,648.78	1,648.78		1.001	37Cl-TCDD		CLS
	DC	SN		27:36			17.16			1.011			
	DC	SN		27:47			16.91			1.018			
	DC	SN		28:01			6.31			1.026			
	DC	SN		28:12			22.88			1.033			
	DC	SN		28:22			10.12			1.039			
	DC	SN		28:29			8.10			1.043			
	DC	SN		28:35			5.59			1.047			
	DC	SN		28:46			12.58			1.054			
328		3	Peaks				1,683.38						
13C12-TCDD						0.65-0.89				0.921-1.067			
332-334	DC	NL				Height	20.54	13.73	6.81				

TLI Project: **56653** 1613, Revision B PCDD/PCDF Analysis (c)
Client Sample: **L-3** Analysis File: **U019805**

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-3	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.525 L	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	ND	2.6				___
1,2,3,7,8-PeCDD	ND	2.7				___
1,2,3,4,7,8-HxCDD	ND	3.5				___
1,2,3,6,7,8-HxCDD	ND	3.6				___
1,2,3,7,8,9-HxCDD	ND	3.3				___
1,2,3,4,6,7,8-HpCDD	ND	6.1				___
1,2,3,4,6,7,8,9-OCDD	54.4		0.95	41:43	1.000	J__
2,3,7,8-TCDF	ND	2.2				___
1,2,3,7,8-PeCDF	ND	1.9				___
2,3,4,7,8-PeCDF	ND	1.5				___
1,2,3,4,7,8-HxCDF	ND	3.3				
1,2,3,6,7,8-HxCDF	ND	2.7				___
2,3,4,6,7,8-HxCDF	ND	2.4				___
1,2,3,7,8,9-HxCDF	ND	3.3				___
1,2,3,4,6,7,8-HpCDF	ND	3.6				___
1,2,3,4,7,8,9-HpCDF	ND	5.4				___
1,2,3,4,6,7,8,9-OCDF	10.6		0.92	41:56	1.006	J__

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	ND		2.6	___
Total PeCDD	ND		6.2	___
Total HxCDD	8.5	1		___
Total HpCDD	ND		6.1	___
Total TCDF	ND		4.3	___
Total PeCDF	ND		1.7	___
Total HxCDF	ND		3.3	___
Total HpCDF	ND		4.2	___

161B_PSR v2.04, LARS 6.25.04

KP 4-5-02

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TLI Project: **56653** 1613, Revision B PCDD/PCDF Analysis (c)
Client Sample: **L-3** Analysis File: **U019805**

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	2090	54.7	31%-137%	0.80	27:18	1.007	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3350	88.0	25%-181%	1.56	31:28	1.160	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	2500	65.5	32%-141%	1.31	34:33	0.988	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2620	68.8	28%-130%	1.15	34:38	0.990	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2300	60.3	23%-140%	1.08	37:58	1.086	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	4630	60.8	17%-157%	0.90	41:42	1.193	___
$^{13}C_{12}$-2,3,7,8-TCDF	1640	43.1	29%-140%	0.78	26:37	0.982	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2370	62.1	24%-185%	1.55	30:27	1.123	___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	2720	71.5	21%-178%	1.57	31:08	1.148	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	2460	64.5	26%-152%	0.53	33:52	0.969	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2300	60.3	26%-123%	0.53	33:57	0.971	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2450	64.2	28%-136%	0.53	34:27	0.985	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2410	63.4	29%-147%	0.52	35:14	1.008	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2080	54.5	28%-143%	0.46	36:55	1.056	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1990	52.1	26%-138%	0.46	38:29	1.101	___

Cleanup Standard	Conc. (pg/L)	% Recovery	QC Limits	RT	RRT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	243	63.8	42%-164%	27:19	1.007	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	27:07	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.23	34:58	___

Data Reviewer: _____ 02/22/02

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Printed: 17:05 02/22/02

TLI Project: **56653**
Client Sample: **L-3**

Toxicity Equivalents Report
Analysis File: **U019805**

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-3	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.525 L	Dilution Factor:	1	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)		TEF		Equivalent
2,3,7,8-TCDD	LTD	x	1.	=	
1,2,3,7,8-PeCDD	LTD	x	1.	=	
1,2,3,4,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDD	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDD	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDD	LTD	x	0.0001	=	
2,3,7,8-TCDF	LTD	x	0.1	=	
1,2,3,7,8-PeCDF	LTD	x	0.05	=	
2,3,4,7,8-PeCDF	LTD	x	0.5	=	
1,2,3,4,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDF	LTD	x	0.1	=	
2,3,4,6,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDF	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDF	LTD	x	0.01	=	
1,2,3,4,7,8,9-HpCDF	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDF	LTD	x	0.0001	=	

Total WHO Dioxin TEFs for Humans: 0. pg/L

{...} indicates that the value is that of a Detection Limit.
Note: LTD = Less Than Target Detection Limit

GRY_TEF v1.08, MILES 4.22.16

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Toxicity Equivalents Report

TLI Project: **56653**

Sample: **L-3**

File: **U019805**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	54.4	0.0001	0.00544
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	0	0.1	0.00000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	10.6	0.0001	0.00106

Total WHO Dioxin TEFs for Humans **0.007** **pg/L**

Initial ... e...

Data Review By: JLJ 2/22/02

Calculated Noise Height: 3.45

Page No. 1 Listing of U019805B.dbf
02/22/02 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area/Ht	Area/Ht.Peak1	Area/Ht.Peak2	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.880-1.071			
304-306	DC	NL				Height	13.82	7.14	6.68				
A				25:55	RO	1.29	60.63	34.11	26.52	0.974			J
304-306			1 Peak				60.63						
13C12-TCDF						0.65-0.89				0.945-1.133			
316-318	DC	NL				Height	11.52	4.98	6.54				
				26:14	RO	0.60	275.22	102.83	172.39	0.986			
				26:37		0.78	50,961.10	22,354.50	28,606.60	1.000	13C12-2378-TCDF	IS0	
						Height	14,129.66	6,129.85	7,999.81				
316-318			2 Peaks				51,236.32						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.904-1.042			
320-322	DC	NL				Height	7.77	4.15	3.62				
	DC	SN		24:52		0.85	23.11			0.911	1368-TCDD		AN
	DC	SN		26:35	RO	2.56	82.73			0.974			
	DC	SN		26:51	RO	3.06	20.43			0.984			
320-322			0 Peaks				0.00						
37Cl-TCDD										0.927-1.073			
328	DC	NL				Height	4.40	4.40					
	DC	WL		25:12			13.11			0.923			
	DC	SN		25:59			31.88			0.952			
				26:41			22.64	22.64		0.977			
	DC	SN		26:57			9.12			0.987			
	DC	SN		27:04			12.23			0.991			
				27:19			4,770.02	4,770.02		1.001	37Cl-TCDD		CLS
				27:37			36.45	36.45		1.012			
	DC	SN		27:49			10.14			1.019			
	DC	SN		27:53			12.49			1.021			
	DC	SN		28:02			17.07			1.027			
				28:17			39.78	39.78		1.036			
	DC	SN		28:31			2.92			1.045			
	DC	SN		28:32			3.05			1.045			
	DC	SN		28:38			12.08			1.049			
328			4 Peaks				4,868.89						
13C12-TCDD						0.65-0.89				0.921-1.067			
332-334	DC	NL				Height	20.83	12.89	7.94				
				27:07		0.80	65,597.70	29,163.40	36,434.30	0.993	13C12-1234-TCDD	RS1	
				27:18		0.80	42,474.20	18,867.00	23,607.20	1.000	13C12-2378-TCDD	IS1	
						Height	11,705.37	5,204.07	6,501.30				
				27:51		0.77	94.47	41.24	53.23	1.020			
332-334			3 Peaks				108,166.37						

SJL 2/21/02
KP 4-5-02

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TLI Project: **56653**
Client Sample: **L-3a**

1613, Revision B PCDD/PCDF Analysis (c)

Analysis File: **U019806**

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-4	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.945 L	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)	DL	Ratio	RT	RRT	Flags
2,3,7,8-TCDD	ND	1.0				
1,2,3,7,8-PeCDD	ND	1.1				
1,2,3,4,7,8-HxCDD	ND	4.1				
1,2,3,6,7,8-HxCDD	ND	1.5				
1,2,3,7,8,9-HxCDD	ND	1.4				
1,2,3,4,6,7,8-HpCDD	ND	2.6				
1,2,3,4,6,7,8,9-OCDD	5.3		0.81	41:44	1.000	J
2,3,7,8-TCDF	ND	0.9				
1,2,3,7,8-PeCDF	ND	0.8				
2,3,4,7,8-PeCDF	ND	0.7				
1,2,3,4,7,8-HxCDF	1.6 UJ		(1.42)	33:53	1.000	J
1,2,3,6,7,8-HxCDF	ND	1.0				
2,3,4,6,7,8-HxCDF	ND	1.0				
1,2,3,7,8,9-HxCDF	ND	1.4				
1,2,3,4,6,7,8-HpCDF	ND	1.4				
1,2,3,4,7,8,9-HpCDF	ND	1.9				
1,2,3,4,6,7,8,9-OCDF	ND	2.1				

Totals	Conc. (pg/L)	Number	DL	Flags
Total TCDD	ND		3.6	
Total PeCDD	3.8	1		
Total HxCDD	ND		11.8	
Total HpCDD	ND		2.6	
Total TCDF	ND		0.9	
Total PeCDF	ND		0.7	
Total HxCDF	1.6	1		
Total HpCDF	ND		1.6	

161B_PSR v2.04, LARS 6.25.04

RQ 4.5-2

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TLI Project: **56653**
Client Sample: **L-3a**

1613, Revision B PCDD/PCDF Analysis (c)
Analysis File: **U019806**

Internal Standards	Conc. (pg/L)	% Recovery	QC Limits	Ratio	RT	RRT	Flags
$^{13}C_{12}$-2,3,7,8-TCDD	1260	59.3	31%-137%	0.79	27:18	1.006	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2000	94.4	25%-181%	1.59	31:28	1.160	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	1440	68.3	32%-141%	1.24	34:33	0.988	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1530	72.3	28%-130%	1.24	34:38	0.990	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1280	60.6	23%-140%	1.11	37:59	1.086	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	2780	65.6	17%-157%	0.90	41:43	1.193	
$^{13}C_{12}$-2,3,7,8-TCDF	1000	47.2	29%-140%	0.77	26:37	0.981	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1450	68.4	24%-185%	1.56	30:27	1.122	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1630	77.2	21%-178%	1.58	31:08	1.147	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1380	65.2	26%-152%	0.52	33:52	0.969	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1330	62.9	26%-123%	0.53	33:58	0.971	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1400	66.0	28%-136%	0.52	34:27	0.985	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1420	67.0	29%-147%	0.52	35:14	1.008	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1200	56.8	28%-143%	0.45	36:56	1.056	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1190	56.3	26%-138%	0.47	38:30	1.101	

Cleanup Standard	Conc. (pg/L)	% Recovery	QC Limits	RT	RRT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	147	69.7	42%-164%	27:19	1.007	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	27:08	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.23	34:58	

Data Reviewer: _____ 02/22/02

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Printed: 16:16 02/22/02

TLI Project: **56653**
Client Sample: **L-3a**

Toxicity Equivalents Report
Analysis File: **U019806**

Client Project:	K2200945				
Sample Matrix:	AQUEOUS	Date Received:	02/15/02	Spike File:	SP161B2S
TLI ID:	318-29-4	Date Extracted:	02/18/02	ICal:	UF5206B
		Date Analyzed:	02/22/02	ConCal:	UB20197
Sample Size:	0.945 L	Dilution Factor:	1	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U019802	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JSY	% Solids:	n/a

Analytes	Conc. (pg/L)		TEF		Equivalent
2,3,7,8-TCDD	LTD	x	1.	=	
1,2,3,7,8-PeCDD	LTD	x	1.	=	
1,2,3,4,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDD	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDD	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDD	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDD	LTD	x	0.0001	=	
2,3,7,8-TCDF	LTD	x	0.1	=	
1,2,3,7,8-PeCDF	LTD	x	0.05	=	
2,3,4,7,8-PeCDF	LTD	x	0.5	=	
1,2,3,4,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,6,7,8-HxCDF	LTD	x	0.1	=	
2,3,4,6,7,8-HxCDF	LTD	x	0.1	=	
1,2,3,7,8,9-HxCDF	LTD	x	0.1	=	
1,2,3,4,6,7,8-HpCDF	LTD	x	0.01	=	
1,2,3,4,7,8,9-HpCDF	LTD	x	0.01	=	
1,2,3,4,6,7,8,9-OCDF	LTD	x	0.0001	=	

Total WHO Dioxin TEFs for Humans: 0. pg/L

{...} indicates that the value is that of a Detection Limit.
Note: LTD = Less Than Target Detection Limit

GRY_TEF v1.08, MILES 4.22.16

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Printed: 16:52 02/22/02

Toxicity Equivalents Report

TLI Project: **56653**

Sample: **L-3a**

File: **U019806**

Analyte	Conc. pg/L	TEF	Equivalent
2,3,7,8-TCDD	0	1.0	0.00000
1,2,3,7,8-PeCDD	0	1.0	0.00000
1,2,3,4,7,8-HxCDD	0	0.1	0.00000
1,2,3,6,7,8-HxCDD	0	0.1	0.00000
1,2,3,7,8,9-HxCDD	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDD	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDD	5.3	0.0001	0.00053
2,3,7,8-TCDF	0	0.1	0.00000
1,2,3,7,8-PeCDF	0	0.05	0.00000
2,3,4,7,8-PeCDF	0	0.5	0.00000
1,2,3,4,7,8-HxCDF	1.6	0.1	0.16000
1,2,3,6,7,8-HxCDF	0	0.1	0.00000
2,3,4,6,7,8-HxCDF	0	0.1	0.00000
1,2,3,7,8,9-HxCDF	0	0.1	0.00000
1,2,3,4,6,7,8-HpCDF	0	0.01	0.00000
1,2,3,4,7,8,9-HpCDF	0	0.01	0.00000
1,2,3,4,6,7,8,9-OCDF	0	0.0001	0.00000

Total WHO Dioxin TEFs for Humans **0.161** **pg/L**

Columbia Analytical Services INC.
An Employee-Owned Company

February 22, 2002

Service Request No: K2200333
K2200378

RueAnn Thomas
J.H. Baxter Company
85 N Baxter Street
Eugene, OR 97402

Re: Permit Monitoring Wells

Dear RueAnn:

Enclosed are the results of the sample(s) submitted to our laboratory on January 15, 2002. For your reference, these analyses have been assigned our service request number K2200333.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

Columbia Analytical Services, Inc.

for

Mingta Lin
Project Chemist

ML/ll

cc: Mary Larsen, J.H. Baxter Company (Arlington)

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

BXS Wells

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: J.H. Baxter & Company
Project: Permit Monitoring Wells
Sample Matrix: Water

Service Request: K2200333
Date Collected: 01/14/02
Date Received: 01/15/02
Date Extracted: NA
Date Analyzed: 01/17/02

Solids, Total Suspended (TSS)
EPA Method 160.2
Units: mg/L (ppm)

Sample Name	Lab Code	MRL	Result
BXS-1	K2200333-001	5	ND
Method Blank	K2200333-MB	5	ND

KP 1.8.02

Approved By: Mil Smith Date: 1/23/02

IAMRL/102594

COL IBIA ANALYTICAL SERVICES, I ..

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client : J.H. Baxter & Company
Project Name : Permit Monitoring Wells
Project No. : NA

Service Request : K2200333

Sample Name :	**Lab Code :**
BXS-1	K2200333-001
Method Blank	K2200333-MB

Comments:

Approved By: _____ Date: 1/31/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200333
Project Name :	Permit Monitoring Wells	**Date Collected :**	01/14/02
Project No. :	NA	**Date Received :**	01/15/02
Matrix :	Water	**Date Extracted :**	01/30/02

Dissolved Metals

Sample Name :	BXS-1	**Units :**	ug/L (ppb)
Lab Code :	K2200333-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/31/02	47300	
Iron	6010B	20	01/31/02	ND	
Magnesium	6010B	20	01/31/02	29300	
Potassium	6010B	2000	01/31/02	2800	
Sodium	6010B	100	01/31/02	11400	

K04-12

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200333
Project Name :	Permit Monitoring Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Water	**Date Extracted :**	01/30/02

Dissolved Metals

Sample Name :	Method Blank	**Units :**	ug/L (ppb)
Lab Code :	K2200333-MB	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/31/02	ND	
Iron	6010B	20	01/31/02	ND	
Magnesium	6010B	20	01/31/02	ND	
Potassium	6010B	2000	01/31/02	ND	
Sodium	6010B	100	01/31/02	ND	

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200333
Project:	Permit Monitoring Wells	**Date Collected:**	01/14/2002
Sample Matrix:	Water	**Date Received:**	01/15/2002

Pentachlorophenol

Sample Name:	BXS-1	**Units:**	ug/L
Lab Code:	K2200333-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	8151M		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	37		0.20	1	01/18/02	01/27/02	KWG0200590	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	59	40-100	01/27/02	Acceptable

Comments:

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200333
Project:	Permit Monitoring Wells	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Pentachlorophenol

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0200590-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	8151M		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/18/02	01/27/02	KWG0200590	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	58	40-100	01/27/02	Acceptable

Comments:

Columbia Analytical Services, Inc.
An Employee-Owned Company

CHAIN OF CUSTODY

K2200355

SR#: ~~K2200355~~ Ap

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PAGE 1 OF 1 COC # 0

PROJECT NAME: J.H. Baxter & Co.
PROJECT NUMBER: Permit Monitoring Wells
PROJECT MANAGER: Tom Orthmeyer
COMPANY/ADDRESS: 6520 188th St N.E. P.O. Box 305
Arlington, WA. 98223
PHONE #: 360-435-2146 FAX #: 360-435-3035
SAMPLER'S SIGNATURE: Jim Clawson

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	BTEX☐ 8021☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 413.1☐ 418.1☐	1664 SGT☐ 1664 HEM☐	PCB's Aroclors☐	Congeners☐	Pesticides/Herbicides 608☐ 8081A☐	8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐	PCP (X)	PAHS 8310☐	SIM☐	GC/MS-SIM PAH☐	Phenol☐	Phthalates☐	Metals: Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOX 9020☐	AOX 1650☐ 506☐				REMARKS
BXS-1	1-14-02	12:30pm	1	Water	3																													

REPORT REQUIREMENTS

- X I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: J.H. Baxter & Co.
P.O. Box 1097
Eugene, Or. 97440

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

ATTN: RoaAnn Thomas
: Mary Larson

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Jim Clawson	1-14-02 4:30pm		1/15/02 1300				
Signature	Date/Time	Signature	Date/Time	Signature	Date/Time	Signature	Date/Time
Jim Clawson	J.H. Baxter & Co.	A Painter	CAS				
Printed Name	Firm	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

BCOC #1 04/01

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

SHORT HOLD TIME

Project/Client BAXTER Work Order K22 ~~0205~~ 00333

Cooler received on 1/15/02 and opened on 1/15/02 by AP

1.	Were custody seals on outside of cooler? If yes, how many and where?					(Y) N
2.	Were seals intact and signature & date correct?					(Y) N
3.	COC #					
	Temperature of cooler(s) upon receipt:	(7.3)				
	Temperature Blank:	MP				
4.	Were custody papers properly filled out (ink, signed, etc.)?					(Y) N
5.	Type of packing material present None					
6.	Did all bottles arrive in good condition (unbroken)?					(Y) N
7.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?					(Y) N
8.	Did all bottle labels and tags agree with custody papers?					(Y) N
9.	Were the correct types of bottles used for the tests indicated?					(Y) N
10.	Were all of the preserved bottles received at the lab with the appropriate pH?					(Y) N
11.	Were VOA vials checked for absence of air bubbles, and if present, noted below?					Y N
12.	Did the bottles originate from CAS/K or a branch laboratory?					(Y) N
13.	Are CWA Microbiology samples received with > ½ the 24 hr. hold time remaining from collection?					Y N
14.	Was CL2/Residual negative?					Y (N) AP

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials
ALL				ALL	X	(WOA)

00011

MW Wells

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: J.H. Baxter & Company
Project: Permit Monitoring Wells
Sample Matrix: Water

Service Request: K2200378
Date Collected: 01/15/02
Date Received: 01/17/02
Date Extracted: NA
Date Analyzed: 01/18/02

Solids, Total Suspended (TSS)
EPA Method 160.2
Units: mg/L (ppm)

Sample Name	Lab Code	MRL	Result
MW-2	K2200378-001	5	ND
HCMW-6	K2200378-002	5	ND
HCMW-7	K2200378-003	5	730
MW-A	K2200378-004	5	ND
MW-B	K2200378-005	5	ND
Method Blank	K2200378-MB	5	ND

Approved By: _____ Date: 1/23/02

IAMRL/102594

COLUMBIA ANALYTICAL SERVICES, INC.

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client : J.H. Baxter & Company
Project Name : Permit Monitoring Wells
Project No. : NA

Service Request : K2200378

Sample Name :	Lab Code :
MW-2	K2200378-001
HCMW-6	K2200378-002
HCMW-7	K2200378-003
MW-A	K2200378-004
MW-B	K2200378-005
Method Blank	K2200378-MB

Comments:

Approved By: _____ Date: 2/1/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200378
Project Name :	Permit Monitoring Wells	**Date Collected :**	01/15/02
Project No. :	NA	**Date Received :**	01/17/02
Matrix :	Water	**Date Extracted :**	01/22/02

Dissolved Metals

Sample Name :	MW-2	**Units :**	ug/L (ppb)
Lab Code :	K2200378-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/29/02	11300	
Iron	6010B	20	01/29/02	ND	
Magnesium	6010B	20	01/29/02	7170	
Potassium	6010B	2000	01/29/02	ND	
Sodium	6010B	100	01/29/02	5690	

K94702

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200378
Project Name :	Permit Monitoring Wells	**Date Collected :**	01/15/02
Project No. :	NA	**Date Received :**	01/17/02
Matrix :	Water	**Date Extracted :**	01/22/02

Dissolved Metals

Sample Name :	HCMW-6	**Units :**	ug/L (ppb)
Lab Code :	K2200378-002	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/29/02	10900	
Iron	6010B	20	01/29/02	ND	
Magnesium	6010B	20	01/29/02	7160	
Potassium	6010B	2000	01/29/02	ND	
Sodium	6010B	100	01/29/02	4380	

KQX480L

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200378
Project Name :	Permit Monitoring Wells	**Date Collected :**	01/15/02
Project No. :	NA	**Date Received :**	01/17/02
Matrix :	Water	**Date Extracted :**	01/22/02

Dissolved Metals

Sample Name :	HCMW-7	**Units :**	ug/L (ppb)
Lab Code :	K2200378-003	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/29/02	12600	
Iron	6010B	20	01/29/02	ND	
Magnesium	6010B	20	01/29/02	7610	
Potassium	6010B	2000	01/29/02	ND	
Sodium	6010B	100	01/29/02	5300	

RPAR

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200378
Project Name :	Permit Monitoring Wells	**Date Collected :**	01/15/02
Project No. :	NA	**Date Received :**	01/17/02
Matrix :	Water	**Date Extracted :**	01/22/02

Dissolved Metals

Sample Name :	MW-A	**Units :**	ug/L (ppb)
Lab Code :	K2200378-004	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/29/02	11000	
Iron	6010B	20	01/29/02	ND	
Magnesium	6010B	20	01/29/02	6980	
Potassium	6010B	2000	01/29/02	ND	
Sodium	6010B	100	01/29/02	5370	

K2200378

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200378
Project Name :	Permit Monitoring Wells	**Date Collected :**	01/15/02
Project No. :	NA	**Date Received :**	01/17/02
Matrix :	Water	**Date Extracted :**	01/22/02

Dissolved Metals

Sample Name :	MW-B	**Units :**	ug/L (ppb)
Lab Code :	K2200378-005	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/29/02	ND	
Iron	6010B	20	01/29/02	ND	
Magnesium	6010B	20	01/29/02	ND	
Potassium	6010B	2000	01/29/02	ND	
Sodium	6010B	100	01/29/02	ND	

K2200378

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200378
Project Name :	Permit Monitoring Wells	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Water	**Date Extracted :**	01/22/02

Dissolved Metals

Sample Name :	Method Blank	**Units :**	ug/L (ppb)
Lab Code :	K2200378-MB	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Calcium	6010B	50	01/29/02	ND	
Iron	6010B	20	01/29/02	ND	
Magnesium	6010B	20	01/29/02	ND	
Potassium	6010B	2000	01/29/02	ND	
Sodium	6010B	100	01/29/02	ND	

Analytical Results

Client: J.H. Baxter & Company
Project: Permit Monitoring Wells
Sample Matrix: Water

Service Request: K2200378
Date Collected: 01/15/2002
Date Received: 01/17/2002

Pentachlorophenol

Sample Name: MW-2
Lab Code: K2200378-001

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	76	38-119	01/30/02	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200378
Project:	Permit Monitoring Wells	**Date Collected:**	01/15/2002
Sample Matrix:	Water	**Date Received:**	01/17/2002

Pentachlorophenol

Sample Name:	HCMW-6	**Units:**	ug/L
Lab Code:	K2200378-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	8151M		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	63	38-119	01/30/02	Acceptable

Comments:

Analytical Results

Client: J.H. Baxter & Company
Project: Permit Monitoring Wells
Sample Matrix: Water

Service Request: K2200378
Date Collected: 01/15/2002
Date Received: 01/17/2002

Pentachlorophenol

Sample Name: HCMW-7
Lab Code: K2200378-003

Extraction Method: METHOD
Analysis Method: 8151M

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	67	38-119	01/30/02	Acceptable

Comments:

00022

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200378
Project:	Permit Monitoring Wells	**Date Collected:**	01/15/2002
Sample Matrix:	Water	**Date Received:**	01/17/2002

Pentachlorophenol

Sample Name:	MW-A	**Units:**	ug/L
Lab Code:	K2200378-004	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	8151M		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	68	38-119	01/30/02	Acceptable

Comments:

00023

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200378
Project:	Permit Monitoring Wells	**Date Collected:**	01/15/2002
Sample Matrix:	Water	**Date Received:**	01/17/2002

Pentachlorophenol

Sample Name:	MW-B	**Units:**	ug/L
Lab Code:	K2200378-005	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	8151M		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	70	38-119	01/30/02	Acceptable

Comments:

00024

Analytical Results

Client:	J.H. Baxter & Company	**Service Request:**	K2200378
Project:	Permit Monitoring Wells	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Pentachlorophenol

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0200644-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	8151M		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Pentachlorophenol	ND	U	0.20	1	01/21/02	01/30/02	KWG0200644	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromo-2,6-dichlorophenol	69	38-119	01/30/02	Acceptable

Comments:

00025

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: 1C220378 PAGE 1 OF 1 COC # 0026

PROJECT NAME: T.H. Baxter & Co.
PROJECT NUMBER: Permit Monitoring Wells
PROJECT MANAGER: Tom Orthmeyer
COMPANY/ADDRESS: 6520 188th St NE PO Box 305, Arlington, WA 98223
PHONE #: 360 435-2146 FAX #: 360 435-3035
SAMPLER'S SIGNATURE: Jim Clawson

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen	Oil & Grease/TRPH 413.1☐ 418.1☐ 1664 SGT☐ 1664 HEM☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ (PCP☒)	PAHs 8310☐ SIM☐	GC/MS-SIM PAH☐ Phenol☐ Phthalates☐	Metals (Total or Dissolved) (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOX 9020☐ AOX 1650☐ 506☐					REMARKS
~~BX-1~~				Water	3							X			X	X									
MW-2	1-15-02	10:15AM	1		3							X			X	X									
HCMW-5	NO WATER				3							X			X	X									
HCMW-6	1-15-02	2:00pm	2		3							X			X	X									
HCMW-7	1-15-02	11:30AM	3		3							X			X	X									
MW-A	1-15-02	9:30AM	4		3							X			X	X									
MW-B	1-15-02	8:30AM	5	↓	3							X			X	X									

REPORT REQUIREMENTS

- X I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To: J.H. Baxter & Co
PO Box 10797
Eugene OR 97440

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B (Ca) Cd Co Cr Cu (Fe) Pb (Mg) Mn Mo Ni (K) Ag (Na) Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Attn: RuAnn Thomas
Mary Larson

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Jim Clawson	Signature: Tony Black	Signature:	Signature:
Date/Time: 1-15-02 4:00pm	Date/Time: 1/17/02 0905	Date/Time:	Date/Time:
Printed Name: Jim Clawson	Printed Name: BLACK	Printed Name:	Printed Name:
Firm: J.H. Baxter & Co.	Firm: CAS	Firm:	Firm:

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Project/Client J.H. Baxter Work Order K22 00278

Cooler received on 1/16/02 and opened on 1/16/02 by BW

1.	Were custody seals on outside of cooler? If yes, how many and where? 1 Front					(Y)	N
2.	Were seals intact and signature & date correct?					(Y)	N
3.	COC #	4399					
	Temperature of cooler(s) upon receipt:	6.3					
	Temperature Blank:	6.7					
4.	Were custody papers properly filled out (ink, signed, etc.)?					(Y)	N
5.	Type of packing material present bubble wrap - loose ice in bags						
6.	Did all bottles arrive in good condition (unbroken)?					(Y)	N
7.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?					(Y)	N
8.	Did all bottle labels and tags agree with custody papers?					(Y)	N
9.	Were the correct types of bottles used for the tests indicated?					(Y)	N
10.	Were all of the preserved bottles received at the lab with the appropriate pH?					(Y)	N
11.	Were VOA vials checked for absence of air bubbles, and if present, noted below?					Y	N
12.	Did the bottles originate from CAS/K or a branch laboratory?					(Y)	N
13.	Are CWA Microbiology samples received with > ½ the 24 hr. hold time remaining from collection?					Y	N
14.	Was CL2/Residual negative?					(Y)	N KB

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials
All Samples					✓	

00027

CRFREV.DOC12/24/01

Columbia Analytical Services INC.
An Employee-Owned Company

February 22, 2002

Service Request No: K2200325
K2200199

RueAnn Thomas
J.H. Baxter Company
85 N Baxter Street
Eugene, OR 97402

Re: Arlington Plant Groundwater/BXS-WELLS/BXN-WELLS

Dear RueAnn:

Enclosed are the results of the sample(s) submitted to our laboratory on January 15, 2002. For your reference, these analyses have been assigned our service request numbers K2200325 and K2200199.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3345.

Respectfully submitted,

Columbia Analytical Services, Inc.

Mingta Lin
Project Chemist

ML/ll

cc: Mary Larsen, J.H. Baxter Company (Arlington)

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Re bmitted 4/10/02
KP

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	J.H. Baxter & Company	**Service Request No.:**	K2200325 K2200199
Project:	BXS Wells/BXN Wells	**Date Received:**	1/10, 15/02
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Six BXN well six BXS well samples were received for analysis at Columbia Analytical Services on 1/10/02 and 1/15/02, respectively. The exceptions are also noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form, except that documented on the Cooler Receipt and Preservation form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Inorganic Parameters

Selected samples were received past the recommended holding time for Total Coliform analysis. The sample results have been flagged "X" to indicate the holding time exceedance.

The Total Coliform sample containers for samples BXN-1 and BXN-3 were receipt opened. Analysis was not performed on these two samples since the sample condition was inappropriate for this analysis.

Total and Dissolved Metals

No anomalies associated with the analysis of these samples were observed.

00001

Approved by_____ **Date**_____

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

BXS Wells

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	J.H. Baxter & Company	**Service Request:**	K2200325
Project:	BXS Wells-Landfill/BXS-WELLS	**Date Collected:**	1/14/02
Sample Matrix:	Water	**Date Received:**	1/15/02
		Date Extracted:	NA

Inorganic Parameters
Units: mg/L (ppm)

Analyte:	Alkalinity as CaCO3	Chloride	Chemical Oxygen Demand (COD)	Conductivity (umhos/cm)	Bicarbonate as CaCO3
EPA Method:	310.1	300.0	410.2	120.1	SM 2320 B
Method Reporting Limit:	2	0.2	5	2	2
Date Analyzed:	1/24/02	1/16/02	1/16/02	1/23/02	1/24/02
Sample Name **Lab Code**					
BXS-1 K2200325-001	242	5.0	20	471	242
BXS-2 K2200325-002	466	6.1	41	842	466
BXS-3 K2200325-003	450	3.2	54	806	450
BXS-4 K2200325-004	96	2.0	7	192	96
BXS-5 K2200325-005	ND	ND	ND	ND	ND
BXS-6 K2200325-006	238	4.9	17	474	~~ND~~ 238
Method Blank K2200325-MB	ND	ND	ND	ND	ND

1/24/02

SM *Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.

Approved By: _____ Date: 1/29/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	J.H. Baxter & Company	**Service Request:**	K2200325
Project:	BXS Wells-Landfill/BXS-WELLS	**Date Collected:**	1/14/02
Sample Matrix:	Water	**Date Received:**	1/15/02
		Date Extracted:	NA

Inorganic Parameters
Units: mg/L (ppm)

Analyte:	Ammonia as Nitrogen	Nitrate + Nitrite as Nitrogen	pH (Units)	Sulfate	Tannin and Lignin
EPA Method:	350.1	353.2	150.1	300.0	SM 5550B
Method Reporting Limit:	0.05	0.2	--	0.2	0.2
Date Analyzed:	1/17/02	1/16/02	1/15/02	1/16/02	1/17/02
Sample Name **Lab Code**					
BXS-1 K2200325-001	ND	0.2	6.17	6.8	0.3
BXS-2 K2200325-002	ND	ND	6.34	0.3	1.3
BXS-3 K2200325-003	0.07	ND	6.45	0.7	9.9
BXS-4 K2200325-004	0.47	ND	8.03	1.1	0.5
BXS-5 K2200325-005	ND	ND	5.77	ND	ND
BXS-6 K2200325-006	ND	0.3	6.14	7.0	0.4
Method Blank K2200325-MB	ND	ND	--	ND	ND

KQ 1-5-02

SM *Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.

Approved By: CMMR Date: 1/29/02

5A5M/120294
00325WET.DM1 - 5Tests (2) 1/29/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	J.H. Baxter & Company	**Service Request:**	K2200325
Project:	BXS Wells-Landfill/BXS-WELLS	**Date Collected:**	1/14/02
Sample Matrix:	Water	**Date Received:**	1/15/02
		Date Extracted:	NA

Inorganic Parameters
Units: mg/L (ppm)

Analyte:	**Solids, Total Dissolved (TDS)**	**Carbon, Total Organic (TOC)**
EPA Method:	160.1	415.1
Method Reporting Limit:	5	0.5
Date Analyzed:	1/17/02	1/22/02

Sample Name	**Lab Code**		
BXS-1	K2200325-001	275	5.8
BXS-2	K2200325-002	428	13.5
BXS-3	K2200325-003	496	19.1
BXS-4	K2200325-004	136	1.0
BXS-5	K2200325-005	ND	ND
BXS-6	K2200325-006	246	5.8
Method Blank	K2200325-MB	ND	ND

KP4.5.02

Approved By: _____ Date: 1/29/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: J.H. Baxter & Company
Project: BXS Wells-Landfill/BXS-WELLS
Sample Matrix: Water

Service Request: K2200325
Date Collected: 1/14/02
Date Received: 1/15/02
Date Extracted: NA
Date Analyzed: 1/15/02

Coliform, Total
SM 9221B
Units: MPN/100 ml

Sample Name	Lab Code	MRL	Time Test Started		Result
BXS-1	K2200325-001	2	1520	hrs	ND (X) UJ
BXS-2	K2200325-002	2	1520	hrs	ND (X) ↓
BXS-3	K2200325-003	2	1520	hrs	ND (X)
BXS-4	K2200325-004	2	1520	hrs	ND
BXS-5	K2200325-005	2	1520	hrs	ND (X) UJ
BXS-6	K2200325-006	2	1520	hrs	ND (X) UJ

1/24-5-02

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Approved By: _____ Date: 1/29/02

COL. .IBIA ANALYTICAL SERVICES, I. .

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client : J.H. Baxter & Company
Project Name : BXS Wells-Landfill
Project No. : BXS-WELLS

Service Request : K2200325

Sample Name :	Lab Code :
BXS-1	K2200325-001
BXS-2	K2200325-002
BXS-3	K2200325-003
BXS-4	K2200325-004
BXS-5	K2200325-005
BXS-6	K2200325-006
Method Blank	K2200325-MB

Comments:

Approved By: _____ Date: 1/28/02

COL[illegible]MBIA ANALYTICAL SERVICES, I[illegible].

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200325
Project Name :	BXS Wells-Landfill	**Date Collected :**	01/14/02
Project No. :	BXS-WELLS	**Date Received :**	01/15/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXS-1	**Units :**	ug/L (ppb)
Lab Code :	K2200325-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/23/02	ND	
Barium	6010B	5.0	01/25/02	27.1	
Cadmium	6010B	5.0	01/25/02	ND	
Copper	6010B	10	01/25/02	ND	
Iron	6010B	20	01/25/02	ND	
Manganese	6010B	5.0	01/25/02	464	
Nickel	6010B	20	01/25/02	27	
Zinc	6010B	10	01/25/02	14	

1924 pc

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200325
Project Name :	BXS Wells-Landfill	**Date Collected :**	01/14/02
Project No. :	BXS-WELLS	**Date Received :**	01/15/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXS-2	**Units :**	ug/L (ppb)
Lab Code :	K2200325-002	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/23/02	ND	
Barium	6010B	5.0	01/25/02	52.3	
Cadmium	6010B	5.0	01/25/02	ND	
Copper	6010B	10	01/25/02	ND	
Iron	6010B	20	01/25/02	806	
Manganese	6010B	5.0	01/25/02	1500	
Nickel	6010B	20	01/25/02	39	
Zinc	6010B	10	01/25/02	11	

1/24/02

COL' 'BIA ANALYTICAL SERVICES, I' '.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200325
Project Name :	BXS Wells-Landfill	**Date Collected :**	01/14/02
Project No. :	BXS-WELLS	**Date Received :**	01/15/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXS-3	**Units :**	ug/L (ppb)
Lab Code :	K2200325-003	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/23/02	6.0	
Barium	6010B	5.0	01/25/02	71.2	
Cadmium	6010B	5.0	01/25/02	ND	
Copper	6010B	10	01/25/02	ND	
Iron	6010B	20	01/25/02	5760	
Manganese	6010B	5.0	01/25/02	15600	
Nickel	6010B	20	01/25/02	33	
Zinc	6010B	10	01/25/02	ND	

K9492

COL' 'BIA ANALYTICAL SERVICES, I' '.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200325
Project Name :	BXS Wells-Landfill	**Date Collected :**	01/14/02
Project No. :	BXS-WELLS	**Date Received :**	01/15/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXS-4	**Units :**	ug/L (ppb)
Lab Code :	K2200325-004	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/23/02	ND	
Barium	6010B	5.0	01/25/02	27.1	
Cadmium	6010B	5.0	01/25/02	ND	
Copper	6010B	10	01/25/02	ND	
Iron	6010B	20	01/25/02	50.0	
Manganese	6010B	5.0	01/25/02	127	
Nickel	6010B	20	01/25/02	ND	
Zinc	6010B	10	01/25/02	ND	

COLU BIA ANALYTICAL SERVICES, I

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200325
Project Name :	BXS Wells-Landfill	**Date Collected :**	01/14/02
Project No. :	BXS-WELLS	**Date Received :**	01/15/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXS-5	**Units :**	ug/L (ppb)
Lab Code :	K2200325-005	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/23/02	ND	
Barium	6010B	5.0	01/25/02	ND	
Cadmium	6010B	5.0	01/25/02	ND	
Copper	6010B	10	01/25/02	ND	
Iron	6010B	20	01/25/02	ND	
Manganese	6010B	5.0	01/25/02	ND	
Nickel	6010B	20	01/25/02	ND	
Zinc	6010B	10	01/25/02	ND	

19410

COL' 'BIA ANALYTICAL SERVICES, I' '

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200325
Project Name :	BXS Wells-Landfill	**Date Collected :**	01/14/02
Project No. :	BXS-WELLS	**Date Received :**	01/15/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXS-6	**Units :**	ug/L (ppb)
Lab Code :	K2200325-006	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/23/02	ND	
Barium	6010B	5.0	01/25/02	27.2	
Cadmium	6010B	5.0	01/25/02	ND	
Copper	6010B	10	01/25/02	ND	
Iron	6010B	20	01/25/02	ND	
Manganese	6010B	5.0	01/25/02	470	
Nickel	6010B	20	01/25/02	22	
Zinc	6010B	10	01/25/02	ND	

KQ 1/25/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200325
Project Name :	BXS Wells-Landfill	**Date Collected :**	NA
Project No. :	BXS-WELLS	**Date Received :**	NA
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	Method Blank	**Units :**	ug/L (ppb)
Lab Code :	K2200325-MB	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/23/02	ND	
Barium	6010B	5.0	01/25/02	ND	
Cadmium	6010B	5.0	01/25/02	ND	
Copper	6010B	10	01/25/02	ND	
Iron	6010B	20	01/25/02	ND	
Manganese	6010B	5.0	01/25/02	ND	
Nickel	6010B	20	01/25/02	ND	
Zinc	6010B	10	01/25/02	ND	

KQ 4 02

CHAIN OF CUSTODY

SR#: K2200325

Columbia Analytical Services INC.
An Employee-Owned Company
1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

PAGE 1 OF 1 COC # 11916

PROJECT NAME: J.H. Baxter & Co.
PROJECT NUMBER: BXS Wells - Landfill
PROJECT MANAGER: Tom Orthmeyer
COMPANY/ADDRESS: 6520 188th St NE PO Box 305, Arlington, WA 98223
PHONE #: 360 435-2146 FAX #: 360 435-3035
SAMPLER'S SIGNATURE: Jim Clawson

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
BXS-1	1-14-02	12:30pm	1	Water	4	
BXS-2	1-14-02	2:00pm	2		4	
BXS-3	1-14-02	2:30pm	3		4	
BXS-4	1-14-02	3:30pm	4		4	
BXS-5	1-14-02	1:30pm	5		4	
BXS-6	1-14-02	11:30Am	6	↓	4	

Semivolatile Organics by GC/MS 625☐ 8270☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
☐ Fuel Fingerprint (FiQ) ☐ NW-HCID Screen
Oil & Grease/TRPH 413.1☐ 418.1☐ 1664 SGT☐ 1664 HEM☐
PCB's Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
PAHS 8310☐ SIM☐
GC/MS-SIM PAH☐ Phenol☐ Phthalates☐
Metals (See list below) Total or (Dissolved)
Cyanide☐ Hex-Chrom☐
pH Cond Cl SO4 PO4 F NO3 NO2
BOD, TSS (TDS) (circle) NH3-N COD
DOC (circle) Total-P, TKN, TOC
TOX 9020☐ AOX 1650☐ 506☐
Tannin/Lignin
Total coliforms

REPORT REQUIREMENTS

X I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To: J.H. Baxter & Co
PO Box 10797
Eugene OR 97440

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: (Al) (As) Sb (Ba) Be B Ca (Cd) Co Cr (Cu) (Fe) Pb Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Attn. RoxAnn Thomas
Mary Larson

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Jim Clawson	Signature:	Signature:	Signature:
Date/Time: 1-14-02 4:30pm	Date/Time: 1/15/02 1:30	Date/Time:	Date/Time:
Printed Name: Jim Clawson	Printed Name:	Printed Name:	Printed Name:
Firm: J.H. Baxter & Co.	Firm: CAS	Firm:	Firm:

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

SHORT HOLD TIME

Project/Client BAXTER Work Order K22 00325

Cooler received on 1/15/02 and opened on 1/15/02 by AP

1. Were custody seals on outside of cooler? GM (Y) N
   If yes, how many and where? _____
2. Were seals intact and signature & date correct? (Y) N
3. COC #
   Temperature of cooler(s) upon receipt: 7.3
   Temperature Blank: N/P
4. Were custody papers properly filled out (ink, signed, etc.)? (Y) N
5. Type of packing material present NONE
6. Did all bottles arrive in good condition (unbroken)? (Y) N
7. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (Y) N
8. Did all bottle labels and tags agree with custody papers? (Y) N
9. Were the correct types of bottles used for the tests indicated? (Y) N
10. Were all of the preserved bottles received at the lab with the appropriate pH? (Y) N
11. Were VOA vials checked for absence of air bubbles, and if present, noted below? Y N
12. Did the bottles originate from CAS/K or a branch laboratory? (Y) N
13. Are CWA Microbiology samples received with > ½ the 24 hr. hold time remaining from collection? Y N
14. Was CL2/Residual negative? Y (N) AP

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials
ALL				ALL	X	

00017

CRFREV.DOC12/24/01

BXN Wells

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./BXN-WELLS
Sample Matrix: Water

Service Request: K2200199
Date Collected: 1/8/02
Date Received: 1/10/02
Date Extracted: NA

Inorganic Parameters
Units: mg/L (ppm)

Analyte:		Chloride	Chemical Oxygen Demand (COD)	Conductivity (umhos/cm)	Ammonia as Nitrogen	Nitrite/Nitrate as Nitrogen
EPA Method:		300.0	410.2	120.1	350.3	353.2
Method Reporting Limit:		0.2	5	2	0.05	0.2
Date Analyzed:		1/11/02	1/15/02	1/14/02	1/24/02	1/14/02
Sample Name	**Lab Code**					
BXN-1	K2200199-001	14.4	8	424	0.07	1.5
BXN-2	K2200199-002	11.4	6	227	0.05	2.0
BXN-3	K2200199-003	15.4	54	687	0.56	ND
BXN-4	K2200199-004	48.7	32	766	11.7	6.2
BXN-5	K2200199-005	14.2	9	431	0.58	1.4
BXN-6	K2200199-006	ND	ND	ND	ND	ND
Method Blank	K2200199-MB	ND	ND	ND	ND	ND

FQ 4.5.02

Approved By: M L Smith Date: 1/25/02

5A5M/120294
00199WET.DM1 - 5Tests 1/24/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./BXN-WELLS
Sample Matrix: Water

Service Request: K2200199
Date Collected: 1/8/02
Date Received: 1/10/02
Date Extracted: NA

Inorganic Parameters
Units: mg/L (ppm)

Analyte:		pH (Units)	Sulfate	Tannin and Lignin	Solids, Total Dissolved (TDS)	Carbon, Total Organic
EPA Method:		150.1	300.0	SM 5550 B	160.1	415.1
Method Reporting Limit:		--	0.2	0.2	5	0.5
Date Analyzed:		1/9/02	1/11/02	1/17/02	1/11/02	1/21/02
Sample Name	**Lab Code**					
BXN-1	K2200199-001	6.28	27.4	0.6	272	2.1
BXN-2	K2200199-002	6.29	17.7	0.3	159	1.0
BXN-3	K2200199-003	6.62	10.7	5.3	416	15.1
BXN-4	K2200199-004	6.70	17.1	5.0	400	8.8
BXN-5	K2200199-005	6.32	26.6	0.5	257	2.2
BXN-6	K2200199-006	6.22	ND	ND	<10 i	ND
Method Blank	K2200199-MB	-	ND	ND	ND	ND

KQ 45-2

Approved By: _____ Date: 1/25/02

5A5M/120294
00199WET.DM1 - 5Tests (2) 1/23/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: J.H. Baxter & Company
Project: J.H. Baxter & Co./BXN-WELLS
Sample Matrix: Water

Service Request: K2200199
Date Collected: 1/8/02
Date Received: 1/10/02
Date Extracted: NA
Date Analyzed: 1/10/02

Coliform, Total
SM 9221B
Units: MPN/100 ml

Sample Name	Lab Code	MRL	Time Test Started		Result
BXN-1	K2200199-001	2	1310	hrs	-
BXN-2	K2200199-002	2	1310	hrs	900
BXN-3	K2200199-003	2	1310	hrs	-
BXN-4	K2200199-004	2	1310	hrs	ND
BXN-5	K2200199-005	2	1310	hrs	2
BXN-6	K2200199-006	2	1310	hrs	ND

KA 1.15.02

SM *Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.

Approved By: _____ Date: 1/25/02

COLUMBIA ANALYTICAL SERVICES, INC.

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client : J.H. Baxter & Company
Project Name : J.H. Baxter & Co.
Project No. : BXN-WELLS

Service Request : K2200199

Sample Name :	Lab Code :
BXN-1	K2200199-001
BXN-2	K2200199-002
BXN-3	K2200199-003
BXN-4	K2200199-004
BXN-5	K2200199-005
BXN-6	K2200199-006
Method Blank	K2200199-MB

Comments:

Approved By: _____ Date: 1/25/02

COLU BIA ANALYTICAL SERVICES, IN

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200199
Project Name :	J.H. Baxter & Co.	**Date Collected :**	01/08/02
Project No. :	BXN-WELLS	**Date Received :**	01/10/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXN-1	**Units :**	ug/L (ppb)
Lab Code :	K2200199-001	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/22/02	ND	
Barium	6010B	5.0	01/23/02	27.7	
Cadmium	6010B	5.0	01/23/02	ND	
Copper	6010B	10	01/23/02	ND	
Iron	6010B	20	01/23/02	4980	
Manganese	6010B	5.0	01/23/02	1750	
Nickel	6010B	20	01/23/02	32	
Zinc	6010B	10	01/23/02	ND	

COL' 'BIA ANALYTICAL SERVICES, I' '.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200199
Project Name :	J.H. Baxter & Co.	**Date Collected :**	01/08/02
Project No. :	BXN-WELLS	**Date Received :**	01/10/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXN-2	**Units :**	ug/L (ppb)
Lab Code :	K2200199-002	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/22/02	ND	
Barium	6010B	5.0	01/23/02	8.5	
Cadmium	6010B	5.0	01/23/02	ND	
Copper	6010B	10	01/23/02	ND	
Iron	6010B	20	01/23/02	ND	
Manganese	6010B	5.0	01/23/02	916	
Nickel	6010B	20	01/23/02	21	
Zinc	6010B	10	01/23/02	ND	

KP 1/22

COL' 'BIA ANALYTICAL SERVICES, I' '.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200199
Project Name :	J.H. Baxter & Co.	**Date Collected :**	01/08/02
Project No. :	BXN-WELLS	**Date Received :**	01/10/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXN-3	**Units :**	ug/L (ppb)
Lab Code :	K2200199-003	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/22/02	21.4	
Barium	6010B	5.0	01/23/02	145	
Cadmium	6010B	5.0	01/23/02	ND	
Copper	6010B	10	01/23/02	ND	
Iron	6010B	20	01/23/02	42400	
Manganese	6010B	5.0	01/23/02	4830	
Nickel	6010B	20	01/23/02	35	
Zinc	6010B	10	01/23/02	ND	

KQ 1/22

COL' 'BIA ANALYTICAL SERVICES, I' '.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200199
Project Name :	J.H. Baxter & Co.	**Date Collected :**	01/08/02
Project No. :	BXN-WELLS	**Date Received :**	01/10/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXN-4	**Units :**	ug/L (ppb)
Lab Code :	K2200199-004	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/22/02	ND	
Barium	6010B	5.0	01/23/02	179	
Cadmium	6010B	5.0	01/23/02	ND	
Copper	6010B	10	01/23/02	17.3	
Iron	6010B	20	01/23/02	39.4	
Manganese	6010B	5.0	01/23/02	9090	
Nickel	6010B	20	01/23/02	85	
Zinc	6010B	10	01/23/02	ND	

K94922

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200199
Project Name :	J.H. Baxter & Co.	**Date Collected :**	01/08/02
Project No. :	BXN-WELLS	**Date Received :**	01/10/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXN-5	**Units :**	ug/L (ppb)
Lab Code :	K2200199-005	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/22/02	ND	
Barium	6010B	5.0	01/23/02	27.8	
Cadmium	6010B	5.0	01/23/02	ND	
Copper	6010B	10	01/23/02	ND	
Iron	6010B	20	01/23/02	5250	
Manganese	6010B	5.0	01/23/02	1740	
Nickel	6010B	20	01/23/02	27	
Zinc	6010B	10	01/23/02	ND	

COL' 'BIA ANALYTICAL SERVICES, I' '.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200199
Project Name :	J.H. Baxter & Co.	**Date Collected :**	01/08/02
Project No. :	BXN-WELLS	**Date Received :**	01/10/02
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	BXN-6	**Units :**	ug/L (ppb)
Lab Code :	K2200199-006	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/22/02	ND	
Barium	6010B	5.0	01/23/02	ND	
Cadmium	6010B	5.0	01/23/02	ND	
Copper	6010B	10	01/23/02	ND	
Iron	6010B	20	01/23/02	ND	
Manganese	6010B	5.0	01/23/02	ND	
Nickel	6010B	20	01/23/02	ND	
Zinc	6010B	10	01/23/02	ND	

KAS 1/30/02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	J.H. Baxter & Company	**Service Request :**	K2200199
Project Name :	J.H. Baxter & Co.	**Date Collected :**	NA
Project No. :	BXN-WELLS	**Date Received :**	NA
Matrix :	Water	**Date Extracted :**	01/21/02

Dissolved Metals

Sample Name :	Method Blank	**Units :**	ug/L (ppb)
Lab Code :	K2200199-MB	**Basis :**	NA

Analyte	Analysis Method	MRL	Date Analyzed	Result	Result Notes
Arsenic	7060A	5.0	01/22/02	ND	
Barium	6010B	5.0	01/23/02	ND	
Cadmium	6010B	5.0	01/23/02	ND	
Copper	6010B	10	01/23/02	ND	
Iron	6010B	20	01/23/02	ND	
Manganese	6010B	5.0	01/23/02	ND	
Nickel	6010B	20	01/23/02	ND	
Zinc	6010B	10	01/23/02	ND	

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: K2200199 PAGE 1 OF 1 COC #

01129

PROJECT NAME: J.H. Baxter & Co.
PROJECT NUMBER: Bxn Wells - Landfill
PROJECT MANAGER: Tom Orthmeyer
COMPANY/ADDRESS: 16520 15th St NE PO Box 305, Arlington, WA 98223
PHONE #: 360 435-2140 FAX #: 360 435-3035
SAMPLER'S SIGNATURE: Jim Clawson

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
BXN-1	1-8-02	11:00Am	1	Water	4	
BXN-2	1-8-02	10:00Am	2	"	4	
BXN-3	1-8-02	12:00pm	3	"	4	
BXN-4	1-8-02	1:30pm	4	"	4	
BXN-5	1-8-02	9:00Am	5	"	4	
BXN-6	1-8-02	8:30Am	6	"	4	

Semivolatile Organics by GC/MS 625 ☐ 8270 ☐
Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐
Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐
☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen
Oil & Grease/TRPH 413.1 ☐ 418.1 ☐ 1664 SGT ☐ 1664 HEM ☐
PCB's Aroclors ☐ Congeners ☐
Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐
Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐
PAHS 8310 ☐ SIM ☐
GC/MS-SIM PAH ☐ Phenol ☐ Phthalates ☐
(Metals) Total or Dissolved (See list below)
Cyanide ☐ Hex-Chrom ☐
pH, Cond, CDSO4, PO4, F, NO2, NO3, BOD, TSS, (TDS) (circle)
NH3-N, COD, DOC (circle) Total-P, TKN, (TOC)
TOX 9020 ☐ AOX 1650 ☐ 506 ☐
Tannin/Lignin
Total Coliforms

REPORT REQUIREMENTS

X I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To: J.H. Baxter & Co
PO Box 10197
Eugene OR 97440

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co Cr (Cu) (Fe) Pb Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORHTWEST OTHER: (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Attn: RueAnn Thomas
Mary Larson

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Jim Clawson	Signature: [illegible]	Signature:	Signature:
Date/Time: 1-8-02 2pm	Date/Time: 1/10/01 1050	Date/Time:	Date/Time:
Printed Name: Jim Clawson	Printed Name: [illegible]	Printed Name:	Printed Name:
Firm: J.H. Baxter & Co	Firm: CAS	Firm:	Firm:

RCOC #1 04/01

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Greyhound 0199

Project/Client JH Baxter Work Order K22

Cooler received on 1-10-02 and opened on 1-10-02 by

1.	Were custody seals on outside of cooler? If yes, how many and where? 1 Front					Y	N
2.	Were seals intact and signature & date correct?					Y	N
3.	COC #						
	Temperature of cooler(s) upon receipt:	4.0					
	Temperature Blank:	3.2					
4.	Were custody papers properly filled out (ink, signed, etc.)?					Y	N
5.	Type of packing material present Ice, Water.						
6.	Did all bottles arrive in good condition (unbroken)?					Y	N
7.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?					Y	N
8.	Did all bottle labels and tags agree with custody papers?					Y	N
9.	Were the correct types of bottles used for the tests indicated?					Y	N
10.	Were all of the preserved bottles received at the lab with the appropriate pH?					Y	N
11.	Were VOA vials checked for absence of air bubbles, and if present, noted below?					~~Y~~	~~N~~
12.	Did the bottles originate from CAS/K or a branch laboratory?					Y	N
13.	Are CWA Microbiology samples received with > ½ the 24 hr. hold time remaining from collection?					Y	N
14.	Was CL2/Residual negative?					~~Y~~	~~N~~

Explain any discrepancies: TOC for BX-1 opened in Cooler. Also, TOC for BX-3 opened in Cooler (came open. & Sample contained. Rec'd all 24 hr tests past hold.

~~RESOLUTION~~

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials